Title: Encyclopaedia Britannica, 11th Edition, "Chicago, University of" to "Chiton"

Author: Various

Release Date: February 20, 2010 [EBook #31329]

Language: English

Credits: Produced by Marius Masi, Don Kretz, Juliet Sutherland and the Online Distributed Proofreading Team at https://www.pgdp.net

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THE ENCYCLOPÆDIA BRITANNICA

A DICTIONARY OF ARTS, SCIENCES, LITERATURE AND GENERAL INFORMATION

ELEVENTH EDITION

VOLUME VI SLICE II

Chicago, University of to Chiton

Articles in This Slice

CHICAGO, UNIVERSITY OF, one of the great educational institutions of the United States, established under Baptist auspices in the city of Chicago, and opened in 1892.[1] Though the president and two-thirds of the trustees are always Baptists, the university is non-sectarian except as regards its divinity school. An immense ambition and the extraordinary organizing ability shown by its first president, William R. Harper, determined and characterized the remarkable growth of the university's first decade of activity. The grounds include about 140 acres. Of these about 60 acres—given in part by Marshall Field and laid out by Frederick Law Olmsted—border the Midway Plaisance, connecting Washington and Jackson parks. On these grounds the main part of the university stands. The buildings are mostly of grey limestone, in Gothic style, and grouped in quadrangles. The Mitchell tower is a

shortened reproduction of Magdalen tower, Oxford, and the University Commons, Hutchinson Hall, is a duplicate of Christ Church hall, Oxford. Dormitories accommodate about a fifth of the students. The quadrangles include clubs, dining halls, dormitories, gymnasiums, assembly halls, recitation halls, laboratories and libraries. In the first college year, 1892-1893, there were 698 students; in that of 1907-1908 there were 5038,[2] of whom 2186 were women. There are faculties of arts, literature, science, divinity,[3] medicine (organized in 1901), law (1902), education, and commerce and administration. The astronomical department, the Yerkes Observatory, is located on William's Bay, Lake Geneva, Wisconsin, about 65 m. from Chicago. It has the largest refracting telescope in the world (clear aperture 40 in., focal length about 61 ft.). The Chicago Institute, founded and endowed by Mrs Anita McCormick Blaine as an independent normal school, became a part of the university in 1901. The school of education, as a whole, brings under university influence hundreds of children from kindergarten age upwards to young manhood and womanhood, apart from the university classes proper. Chicago was the second university of the country to give its pedagogical department such scope in the union of theory and practice. The nucleus of the library (450,000 volumes in 1908) was purchased in Berlin soon after the university's organization, in one great collection of 175,000 volumes. Scholarly research has been fostered in every possible way, and the university press has been active in the publication of various departmental series and the following periodicals:—*Biblical World*, *American Journal of Theology*, *American Journal of Semitic Languages and Literatures*, *American Journal of Sociology*, *Journal of Political Economy*, *Modern Philology*, *Classical Philology*, *Classical Journal*, *Journal of Geology*, *Astrophysical Journal*, *Botanical Gazette*, *Elementary School Teacher and School Review*. The courses in the College of Commerce and Administration link the university closely with practical life. In extension work the university has been active from the beginning, instruction being given not only by lectures but by correspondence (a novel and unique feature among American universities); in the decade 1892-1902, 1715 persons were prepared by the latter method for matriculation in the university (11.6% of the total number of matriculants in the decade). Extension lectures were given in twenty-two states. At Chicago the work of the university is continuous throughout the year: the "summer quarter" is not as in other American schools a supplement to the teaching year, but an integral part; and it attracts the teachers of the middle western states and of the south. In the work of the first two years, known together as the Junior College, men and women are in the main given separate instruction; but in the Senior College years unrestricted co-education prevails. Students are mainly controlled by self-government in small groups ("the house system"). Relations with "affiliated" (private) colleges and academies and "co-operating" (public) high-schools also present interesting features.

The value of the property of the university in 1908 was about $25,578,000. Up to the 30th of June 1908 it had received from gifts actually paid $29,651,849, of which $22,712,631 were given by John D. Rockefeller.[4] The value of buildings in 1908 was $4,508,202, of grounds $4,406,191, and of productive funds $14,186,235. Upon the death of President Harper, Harry Pratt Judson (b. 1849), then head professor of political science and dean of the faculties of arts, became acting president, and on the 20th of January 1907 he was elected president.

See the *Decennial Publications* of the University (since 1903), especially vol. i. for details of history and administration.

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1 A small Baptist college of the same name—-established in 1855 on land given by S.A. Douglas—went out of existence in 1886.

2 If, however, the total is reckoned on the basis of nine months of residence the figure for 1907-1908 would be 3202.

3 The Divinity School has a graduate department and three under-graduate departments, doing work in English, in Danish and Norwegian, and in Swedish. Allied with the Divinity School of the University is the "Disciples' Divinity House" (1894), a theological school of the Disciples of Christ.

4 The words "founded by John D. Rockefeller" follow the title of the university on all its letterheads and official documents. Mr Rockefeller would not allow his name to be a part of the title, nor has he permitted the designation of any building by his name. President Harper was selected by him to organize the university, and it was his will that the president and two-thirds of the trustees should be "always" Baptists. President Harper more than once stated most categorically that contrary to prevalent beliefs no donor of funds to the university "has ever (1902) by a single word or act indicated his dissatisfaction with the instruction given to students in the university, or with the public expression of opinion made by any officer of the university"; and certainly so far as the public press reveals, no other university of the country has had so many professors who have in various lines, including economics, expressed radical views in public.

CHICANE, the pettifogging subterfuge and delay of sharp law-practitioners, also any deliberate attempt to gain unfair advantage by petty tricks. A more common English form of the word is “chicanery.” “Chicane” is technically used also as a term in the game of bridge for the points a player may score if he holds no trumps. The word is French, derived either from *chaugān*, Persian for the stick used in the game of “polo,” still played on foot and called *chicane* in Languedoc (the military use of *chicaner*, to take advantage of slight variations in ground, suits this derivation), or from *chic*, meaning little or petty, from the Spanish *chico*, small, which appears in the phrase “*chic à chic*,” little by little.

CHICHELEY, HENRY (1364-1443), English archbishop, founder of All Souls College, Oxford, was born at Higham Ferrers, Northamptonshire, in 1363 or 1364. Chicheley told the pope in 1443, in asking leave to retire from the archbishopric, that he was in his eightieth year. He was the third and youngest son of Thomas Chicheley, who appears in 1368 in still extant town records of Higham Ferrers as a suitor in the mayor’s court, and in 1381-1382, and again in 1384-1385, was mayor: in fact, for a dozen years he and Henry Barton, school master of Higham Ferrers grammar school, and one Richard Brabazon, filled the mayoralty in turns. His occupation does not appear; but his eldest son, William, is on the earliest extant list (1373) of the Grocers’ Company, London. On the 9th of June 1405 Chicheley was admitted, in succession to his father, to a burgage in Higham Ferrers. His mother, Agnes Pincheon, is said to have been of gentle birth. There is therefore no foundation in fact for the silly story (copied into the *Diet. Nat. Biog.* from a local historian, J. Cole, Wellingborough, 1838) that Henry Chicheley was picked up by William of Wykeham when he was a poor ploughboy “eating his scanty meal off his mother’s lap,” whatever that means. The story was unknown to Arthur Duck, fellow of All Souls, who wrote Chicheley’s life in 1617. It is only the usual attempt, as in the cases of Whittington, Wolsey and Gresham, to exaggerate the rise of a successful man. The first recorded appearance of Henry Chicheley himself is at New College, Oxford, as Checheley, eighth among the undergraduate fellows, in July 1387, in the earliest extant hall-book, which contains weekly lists of those dining in Hall. It is clear from Chicheley’s position in the list, with eleven fellows and eight scholars, or probationer-fellows, below him, that this entry does not mark his first appearance in the college, which had been going on since 1375 at least, and was chartered in 1379. He must have come from Winchester College in one of the earliest batches of scholars from that college, the sole feeder of New College, not from St John Baptist College, Winchester, as guessed by Dr William Hunt in the *Dict. Nat. Biog.* (and repeated in Mr Grant Robertson’s *History of All Souls College*) to cover the mistaken supposition that St Mary’s College was not founded till 1393. St Mary’s College was in fact formally founded in 1382, and the school had been going on since 1373 (A.F. Leach, *History of Winchester College*), while no such college as St John’s College at Winchester ever existed.

Chicheley appears in the Hall-books of New College up to the year 1392/93, when he was a B.A. and was absent for ten weeks from about the 6th of December to the 6th of March, presumably for the purpose of his ordination as a sub-deacon, which was performed by the bishop of Derry, acting as suffragan to the bishop of London. He was then already beneficed, receiving a royal ratification of his estate as parson of Llanvarchell in the diocese of St Asaph on the 20th of March 1391/92 (*Cal. Pat. Rolls*). In the Hall-book, marked 1393/94, but really for 1394/95, Chicheley’s name does not appear. He had then left Oxford and gone up to London to practise as an advocate in the principal ecclesiastical court, the court of arches. His rise was rapid. Already on the 8th of February 1395/96 he was on a commission with several knights and clerks to hear an appeal in a case of *John Molton, Esquire v. John Shawe, citizen of London*, from Sir John Cheyne, kt., sitting for the constable of England in a court of chivalry. Like other ecclesiastical lawyers and civil servants of the day; he was paid with ecclesiastical preferments. On the 13th of April 1396 he obtained ratification of the parsonage of St Stephen’s, Walbrook, presented on the 30th of March by the abbot of Colchester, no doubt through his brother Robert, who restored the church and increased its endowment. In 1397 he was made archdeacon of Dorset by Richard Mitford, bishop of Salisbury, but litigation was still going on about it in the papal court till the 27th of June 1399, when the pope extinguished the suit, imposing perpetual silence on Nicholas Bubwith, master of the rolls, his opponent. In the first year of Henry IV. Chicheley was parson of Sherston, Wiltshire, and prebendary of Nantgwyly in the college of Abergwilly, North Wales; on the 23rd of February 1401/2, now called doctor of laws, he was pardoned for bringing in, and allowed to use, a bull of the pope “providing” him to the chancellorship of Salisbury cathedral, and canonries in the nuns’ churches of Shaftesbury and Wilton in that diocese; and on the 9th of

January 1402/3 he was archdeacon of Salisbury. This year his brother Robert was senior sheriff of London. On the 7th of May 1404, Pope Boniface IX. provided him to a prebend at Lincoln, notwithstanding he already held prebends at Salisbury, Lichfield, St Martin's-le-Grand and Abergwyly, and the living of Brington. On the 9th of January 1405 he found time to attend a court at Higham Ferrers and be admitted to a burgage there. In July 1405 Chicheley began a diplomatic career by a mission to the new Roman pope Innocent VII., who was professing his desire to end the schism in the papacy by resignation, if his French rival at Avignon would do likewise. Next year, on the 5th of October 1406, he was sent with Sir John Cheyne to Paris to arrange a lasting peace and the marriage of Prince Henry with the French princess Marie, which was frustrated by her becoming a nun at Poissy next year. In 1406 renewed efforts were made to stop the schism, and Chicheley was one of the envoys sent to the new pope Gregory XII. Here he utilized his opportunities. On the 31st of August 1407 Guy Mone (he is always so spelt and not Mohun, and was probably from one of the Hampshire Meons; there was a John Mone of Havant admitted a Winchester scholar in 1397), bishop of St David's, died, and on the 12th of October 1407 Chicheley was by the pope provided to the bishopric of St David's. Another bull the same day gave him the right to hold all his benefices with the bishopric.

At Siena in July 1408 he and Sir John Cheyne, as English envoys, were received by Gregory XII. with special honour, and Bishop Repingdon of Lincoln, ex-Wycliffite, was one of the new batch of cardinals created on the 18th of September 1408, most of Gregory's cardinals having deserted him. These, together with Benedict's revolting cardinals, summoned a general council at Pisa. In November 1408 Chicheley was back at Westminster, when Henry IV. received the cardinal archbishop of Bordeaux and determined to support the cardinals at Pisa against both popes. In January 1409 Chicheley was named with Bishop Hallum of Salisbury and the prior of Canterbury to represent the Southern Convocation at the council, which opened on the 25th of March 1409, arriving on the 24th of April. Obedience was withdrawn from both the existing popes, and on the 26th of June a new pope elected instead of them. Chicheley and the other envoys were received on their return as saviours of the world; though the result was summed up by a contemporary as trischism instead of schism, and the Church as giving three husbands instead of two. Chicheley now became the subject of a leading case, the court of king's bench deciding, after arguments reheard in three successive terms, that he could not hold his previous benefices with the bishopric, and that, spite of the maxim *Papa potest omnia*, a papal bull could not supersede the law of the land (*Year-book* ii. H. iv. 37, 59, 79). Accordingly he had to resign livings and canonries wholesale (April 28, 1410). As, however, he had obtained a bull (August 20, 1409) enabling him to appoint his successors to the vacated preferments, including his nephew William, though still an undergraduate and not in orders, to the chancellorship of Salisbury, and a prebend at Lichfield, he did not go empty away. In May 1410 he went again on an embassy to France; on the 11th of September 1411 he headed a mission to discuss Henry V.'s marriage with a daughter of the duke of Burgundy; and he was again there in November. In the interval Chicheley found time to visit his diocese for the first time and be enthroned at St David's on the 11th of May 1411. He was with the English force under the earl of Arundel which accompanied the duke of Burgundy to Paris in October 1411 and there defeated the Armagnacs, an exploit which revealed to England the weakness of the French. On the 30th of November 1411 Chicheley, with two other bishops and three earls and the prince of Wales, knelt to the king to receive public thanks for their administration. That he was in high favour with Henry V. is shown by his being sent with the earl of Warwick to France in July 1413 to conclude peace. Immediately after the death of archbishop Arundel he was nominated by the king to the archbishopric, elected on the 4th of March, translated by papal bull on the 28th of April, and received the pall without going to Rome for it on the 24th of July.

These dates are important as they help to save Chicheley from the charge, versified by Shakespeare (*Henry V.* act i. sc. 2) from Hall's *Chronicle*, of having tempted Henry V. into the conquest of France for the sake of diverting parliament from the disendowment of the Church. There is no contemporary authority for the charge, which seems to appear first in Redman's rhetorical history of Henry V., written in 1540 with an eye to the political situation at that time. As a matter of fact, the parliament at Leicester, in which the speeches were supposed to have been made, began on the 30th of April 1414 before Chicheley was archbishop. The rolls of parliament show that he was not present in the parliament at all. Moreover parliament was so far from pressing disendowment that on the petition of the Commons it passed a savage act against the heresies "commonly called Lollardry" which "aimed at the destruction of the king and all temporal estates," making Lollards felons and ordering every justice of the peace to hunt down their schools, conventicles, congregations and confederacies.

In his capacity of archbishop, Chicheley remained what he had always been chiefly, the lawyer and diplomatist. He was present at the siege of Rouen, and the king committed to him

personally the negotiations for the surrender of the city in January 1419 and for the marriage of Katherine. He crowned Katherine at Westminster (20th February 1421), and on the 6th of December baptized her child Henry VI. He was of course a persecutor of heretics. No one could have attained or kept the position of archbishop at the time without being so. So he presided at the trial of John Claydon, Skinner and citizen of London, who after five years' imprisonment at various times had made public abjuration before the late archbishop, Arundel, but now was found in possession of a book in English called *The Lanterne of Light*, which contained the heinous heresy that the principal cause of the persecution of Christians was the illegal retention by priests of the goods of this world, and that archbishops and bishops were the special seats of antichrist. As a relapsed heretic, he was "left to the secular arm" by Chicheley. On the 1st of July 1416 Chicheley directed a half-yearly inquisition by archdeacons to hunt out heretics. On the 12th of February 1420 proceedings were begun before him against William Taylor, priest, who had been for fourteen years excommunicated for heresy, and was now degraded and burnt for saying that prayers ought not to be addressed to saints, but only to God. A striking contrast was exhibited in October 1424, when a Stamford friar, John Russell, who had preached that any religious *potest concumbere cum muliere* and not mortally sin, was sentenced only to retract his doctrine. Further persecutions of a whole batch of Lollards took place in 1428. The records of convocation in Chicheley's time are a curious mixture of persecutions for heresy, which largely consisted in attacks on clerical endowments, with negotiations with the ministers of the crown for the object of cutting down to the lowest level the clerical contributions to the public revenues in respect of their endowments. Chicheley was tenacious of the privileges of his see, and this involved him in a constant struggle with Henry Beaufort, bishop of Winchester. In 1418, while Henry V. was alive, he successfully protested against Beaufort's being made a cardinal and legate *a latere* to supersede the legatine jurisdiction of Canterbury. But during the regency, after Henry VI.'s accession, Beaufort was successful, and in 1426 became cardinal and legate. This brought Chicheley into collision with Martin V. The struggle between them has been represented as one of a patriotic archbishop resisting the encroachments of the papacy on the Church of England. In point of fact it was almost wholly personal, and was rather an incident in the rivalry between the duke of Gloucester and his half-brother, Cardinal Beaufort, than one involving any principle. Chicheley, by appointing a jubilee to be held at Canterbury in 1420, "after the manner of the Jubilee ordained by the Popes," threatened to divert the profits from pilgrims from Rome to Canterbury. A ferocious letter from the pope to the papal nuncios, on the 19th of March 1423, denounced the proceeding as calculated "to ensnare simple souls and extort from them a profane reward, thereby setting up themselves against the apostolic see and the Roman pontiff, to whom alone so great a faculty has been granted by God" (*Cal. Pap. Reg.* vii. 12). Chicheley also incurred the papal wrath by opposing the system of papal provision which diverted patronage from English to Italian hands, but the immediate occasion was to prevent the introduction of the bulls making Beaufort a cardinal. Chicheley had been careful enough to obtain "Papal provisions" for himself, his pluralities, his bishopric and archbishopric.

But, after all, it is not as archbishop or statesman, persecutor, papalist or antipapalist that Chicheley is remembered, but for his educational foundations. He endowed a hutch, *i.e.* chest or loan-fund for poor scholars at New College, and another for the university of Oxford at large. He founded no less than three colleges, two at Oxford, one at Higham Ferrers, while there is reason to believe that he suggested and inspired the foundation of Eton and of King's College. His first college at Oxford, in perishing, gave birth to St John's College, which now holds its site. This was St Bernard's College, founded by Chicheley under licence in mortmain in 1437 for Cistercian monks, on the model of Gloucester Hall and Durham College for the southern and northern Benedictines. Nothing more than a site and building was required by way of endowment, as the young monks, who were sent there to study under a provisor, were supported by the houses of the order to which they belonged. The site was five acres, and the building is described in the letters patent "as a fitting and noble college mansion in honour of the most glorious Virgin Mary and St Bernard in Northgates Street outside the Northgate of Oxford." It was suppressed with the Cistercian abbeys in 1539, and granted on the 11th of December 1546 to Christ Church, Oxford, who sold it to Sir Thomas Pope in 1553 for St John's College.

The college at Higham Ferrers was a much earlier design. On the 2nd of May 1422 Henry V., in right of the duchy of Lancaster, "hearing that Chicheley inflamed by the pious fervour of devotion intended to enlarge divine service and other works of piety at Higham Ferrers, in consideration of his fruitful services, often crossing the seas, yielding to no toils, dangers or expenses ... especially in the conclusion of the present final peace with our dearest father the king of France," granted for 300 marks (£200) licence to found, on three acres at Higham Ferrers, a perpetual college of eight chaplains and four clerks, of whom one was to teach

grammar and the other song ... “and six choristers to pray for himself and wife and for Henry IV. and his wife Mary ... and to acquire the alien priory of Merseye in Essex late belonging to St Ouen’s, Rouen,” as endowment. A papal bull having also been obtained, on the 28th of August 1425, the archbishop, in the course of a visitation of Lincoln diocese, executed his letters patent founding the college, dedicating it to the Virgin, St Thomas à Becket and St Edward the Confessor, and handed over the buildings to its members, the vicar of Higham Ferrers being made the first master or warden. He further endowed it in 1434 with lands in Bedfordshire and Huntingdonshire, and his brothers, William and Robert, gave some houses in London in 1427 and 1438. The foundation was closely modelled on Winchester College, with its warden and fellows, its grammar and song schoolmasters, but a step in advance was made by the masters being made fellows and so members of the governing body. Attached was also a bede or almshouse for twelve poor men. Both school and almshouse had existed before, and this was merely an additional endowment. The whole endowment was in 1535 worth some £200 a year, about a fifth of that of Winchester College. Unfortunately, All Souls being a later foundation, the college at Higham Ferrers was not affiliated to it, and so fell with other colleges not part of the universities. On the 18th of July 1542 it was surrendered to Henry VIII., and its possessions granted to Robert Dacres on condition of maintaining the grammar school and paying the master £10 a year, the same salary as the headmasters of Winchester and Eton, and maintaining the almshouse. Both still exist, but the school has been deprived of its house, and the Fitzwilliam family, who now own the lands, still continue to pay only £10 a year.

All Souls College was considerably later. The patent for it, dated 20th of May 1438, is for a warden and 20 scholars, to be called “the Warden and College of the souls of all the faithful departed,” to study and pray “for the soul of King Henry VI. and the souls of Henry V., Thomas, duke of Clarence, and all the dukes, earls, barons, knights, squires and other nobles and subjects of our father who during the time and in the service of our father and ourselves ended their lives in the wars of the kingdom of France, and for the souls of all the faithful departed.” For this, the king granted Berford’s Hall, formerly Charleston’s Inn, which Chicheley’s trustees had granted to him so as to obtain a royal grant and indefeasible title. Richard Andrews, the king’s secretary, like Chicheley himself a scholar of Winchester and fellow of New College, was named as first warden. A papal bull for the college was obtained on the 21st of June 1439; and further patents for endowments from the 11th of May 1441 to the 28th of January 1443, when a general confirmation charter was obtained, for which £1000 (£30,000 at least of our money) was paid. It is commonly represented that the endowment was wholly derived from alien priories bought by Chicheley from the crown. In truth, not so large a proportion of the endowment of All Souls was derived from this source as was that of New College. The only alien priories granted were Abberbury in Oxfordshire, Wedon Pinkney in Northamptonshire, Romney in Kent, and St Clare and Llangenith in Wales, all very small affairs, single manors and rectories, and these did not form a quarter of the whole endowment. The rest, particularly the manor of Edgware, which made the fortune of the college, was bought from private owners. Early in 1443 the college was opened by Chicheley with four bishops in state. The statutes, not drawn up until the end of April 1443, raised the number of the college to forty. Like the college buildings, they are almost an exact copy of those of New College, *mutatis mutandis*. The college is sometimes described as being different from other colleges in being merely a large chantry to pray for the souls of the dead warriors. But it was no more a chantry than the other colleges, all of which, like the monasteries and collegiate churches, were to pray for their founders’ and other specified souls. Indeed, All Souls was more of a lay foundation than its model. For while at New College only twenty out of seventy fellows were to study law instead of arts, philosophy and theology, at All Souls College sixteen were to be “jurists” and only twenty-four “artists”; and while at New College there were ten chaplains and three clerks necessarily, at All Souls the number was not defined but left optional; so that there are now only one chaplain and four bible clerks.

Ten days after he sealed the statutes, on the 12th of April 1443, Chicheley died and was buried in Canterbury cathedral on the north side of the choir, under a fine effigy of himself erected in his lifetime. There is what looks like an excellent contemporary portrait in one of the windows of All Souls College, which is figured in the *Victoria County History* for Hampshire, ii. 262.

(A. F. L.)

CHICHEN-ITZA, or CHICHEN, an ancient ruined city of Yucatan, Mexico, situated 22 m. W. of Valladolid. The name is derived from that of the Itza, a tribe of the great Mayan stock, which formerly inhabited the city, and *chichen*, having reference probably to two wells or pools which doubtless originally supplied the inhabitants with water and are still in existence. The history of the city is unknown, though it is regarded as probable that it preserved its independence long after the Spaniards had taken possession of the rest of the district. The area covered by the ruins is approximately 1 sq. m., and other remains are found in the neighbouring forest. (See CENTRAL AMERICA: *Archaeology*.)

CHICHESTER OF BELFAST, ARTHUR CHICHESTER, BARON (1563-1625), lord-deputy of Ireland, second son of Sir John Chichester of Raleigh, Devonshire, by Gertrude, daughter of Sir William Courtenay of Powderham, was born at Raleigh in May 1563, and was educated at Exeter College, Oxford. He commanded a ship against the Spanish Armada in 1588, and is said to have served under Drake in his expedition of 1595. Having seen further service abroad, he was sent to Ireland at the end of 1598, and was appointed by the earl of Essex to the governorship of Carrickfergus. When Essex returned to England, Chichester rendered valuable service under Mountjoy in the war against the rebellious earl of Tyrone, and in 1601 Mountjoy recommended him to Cecil in terms of the highest praise as the fittest person to be entrusted with the government of Ulster. On the 15th of October 1604 Chichester was appointed lord-deputy of Ireland. He announced his policy in a proclamation wherein he abolished the semi-feudal rights of the native Irish chieftains, substituting for them fixed dues, while their tenants were to become dependent "wholly and immediately upon his majesty." Tyrone and other Irish clan chieftains resented this summary interference with their ancient social organization, and their resistance was strengthened by the ill-advised measures against the Roman Catholics which Chichester was compelled to take by the orders of the English ministers. He himself was moderate and enlightened in his views on this matter, and it was through his influence that the harshness of the anti-Catholic policy was relaxed in 1607. Meantime his difficulties with the Irish tribal leaders remained unsolved. But in 1607, by "the flight of the Earls" (see O'NEILL), he was relieved of the presence of the two formidable Ulster chieftains, the earls of Tyrone and Tyrconnell. Chichester's policy for dealing with the situation thus created was to divide the lands of the fugitive earls among Irishmen of standing and character; but the plantation of Ulster as actually carried out was much less favourable and just to the native population than the lord-deputy desired. In 1613 Chichester was raised to the peerage as Baron Chichester of Belfast, and in the following year he went to England to give an account of the state of Ireland. On his return to Ireland he again attempted to moderate the persecuting policy against the Irish Catholics which he was instructed to enforce; and although he was to some extent successful, it was probably owing to his opposition to this policy that he was recalled in November 1614. The king, however, told him "You may rest assured that you do leave that place with our very good grace and acceptation of your services"; and he was given the post of lord-treasurer of Ireland. After living in retirement for some years, Chichester was employed abroad in 1622; in the following year he became a member of the privy council. He died on the 19th of February 1625 and was buried at Carrickfergus.

Lord Chichester married Lettice, daughter of Sir John Perrot and widow of Walter Vaughan of Golden Grove. He had no children, and his title became extinct at his death. The heir to his estates was his brother Sir Edward Chichester (d. 1648), governor of Carrickfergus, who in 1625 was created Baron Chichester of Belfast and Viscount Chichester of Carrickfergus. This nobleman's eldest son Arthur (1606-1675), who distinguished himself as Colonel Chichester in the suppression of the rebellion of 1641, was created earl of Donegall in 1647, and was succeeded in his titles by his nephew, whose great-grandson, Arthur, 5th earl of Donegall, was created Baron Fisherwick in the peerage of Great Britain (the other family titles being in the peerage of Ireland) in 1790, and earl of Belfast and marquess of Donegall in the peerage of Ireland in 1791. The present marquess of Donegall is his descendant.

See S.R. Gardiner in *Dict. Nat. Biog.* and *History of England, 1603-1642* (London, 1883); Fynes Moryson, *History of Ireland, 1599-1603* (Dublin, 1735).

(R. J .M.)

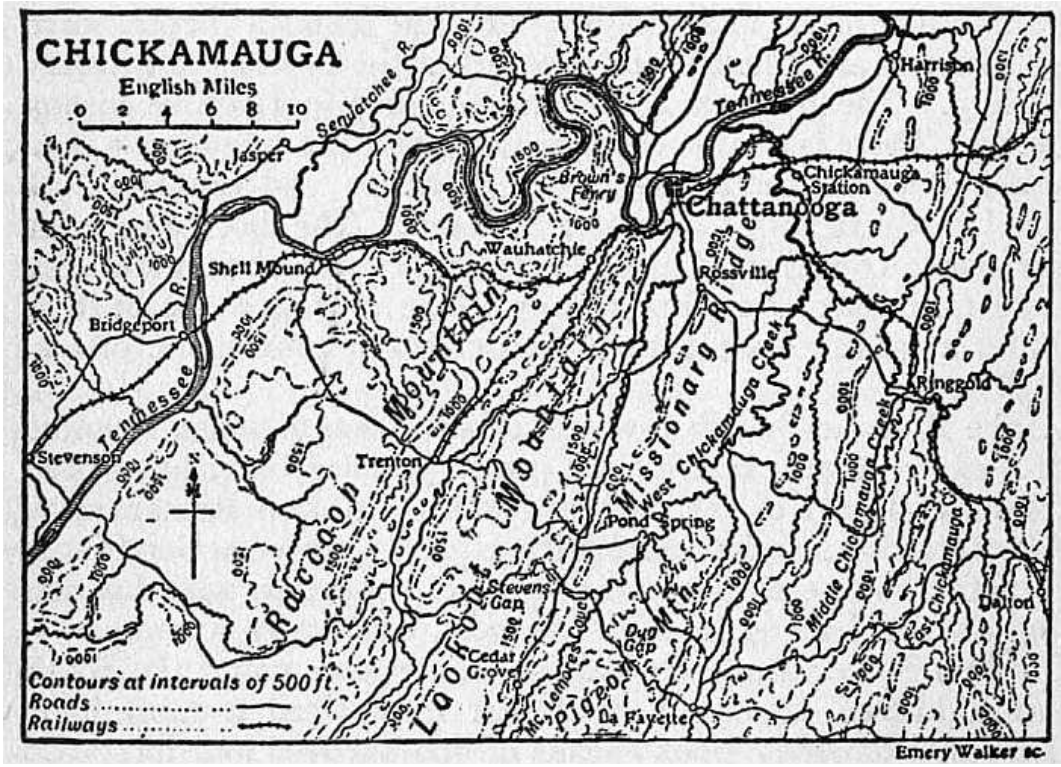
CHICHESTER, a city and municipal borough in the Chichester parliamentary division of Sussex, England, 69 m. S.S.W. from London by the London, Brighton & South Coast railway. Pop. (1901) 12,224. It lies in a plain at the foot of a spur of the South Downs, a mile from the head of Chichester Harbour, an inlet of the English Channel. The cathedral church of the Holy Trinity was founded towards the close of the 11th century, after the see had been removed to Chichester from Selsey in 1075. The first church was consecrated in 1108, but fires in 1114 and 1187 caused building to continue steadily until the close of the 13th century. Bishop Ralph Luffa (1091-1123) was the first great builder, and was followed by Seffrid II. (1180-1204). Norman work appears in the nave (arcade and triforium), choir (arcade) and elsewhere; but there is much very beautiful Early English work, the choir above the arcade and the eastern part being especially fine. The nave is remarkable in having double aisles on each side, the outer pair being of the 13th century. The church is also unique among English cathedrals in the possession of a detached campanile, a massive and beautiful Perpendicular structure with the top storey octagonal. The principal modern restorations are the upper part of the north-west tower, which copies the Early English work of that on the south-west; and the fine central tower and spire, which had been erected at different periods in the 14th century, but collapsed, doing little damage to the fabric, in 1861. Under the direction of Sir Gilbert Scott and others they were reconstructed with scrupulous care in preserving the original plan. The Lady chapel at the east end is in the main early Decorated, but greatly restored; the library is a fine late Norman vaulted room; the cloisters are Perpendicular and well restored; and the bishop’s palace retains an Early English chapel. The cathedral is 393 ft. long within, 131 ft. across the transepts, and 90 ft. across the nave with its double aisles. The height of the spire is 277 ft.

At the junction of the four main streets of the town stands the market cross, an exquisite octagonal structure in ornate Perpendicular style, built by Bishop Story, c. 1500, perhaps the finest of its kind in the United Kingdom. The hospital of St Mary was founded in the 12th century, but the existing buildings are in a style transitional from Early English to Decorated. Its use as an almshouse is maintained. Other ancient buildings are the churches of St Olave, in the construction of which Roman materials were used; and of St Andrew, where is the tomb of the poet William Collins, whose memorial with others by the sculptor Flaxman is in the cathedral; the Guildhall, formerly a Grey Friars’ chapel, of the 13th century; the Canon Gate leading into the cathedral close; and the Vicars College. The city retains a great part of its ancient walls, which have a circuit of about a mile and a half, and, at least in part, follow the line of Roman fortifications. The principal modern buildings, besides churches and chapels, are the council house, corn exchange, market house, and museum of the Chichester Literary Society. The grammar school was founded in 1497 by Bishop Story. There is a large cattle market, and the town has a considerable agricultural trade, with breweries and tanneries. A canal connects with Chichester Harbour. The diocese includes the whole county of Sussex except a few parishes, with very small portions of Kent and Surrey. The municipal borough is under a mayor, six aldermen and eighteen councillors. Area, 1538 acres.

The Romano-British town on this site was perhaps Regnum or Regni. Many inscriptions, pottery, coins, &c., have been found, and part of the medieval walls contain a Roman cave. An interesting inscription from this site is preserved at Goodwood. Situated on one Roman road in direct connexion with London and another leading from east to west, Chichester (*Cissaceaster*, *Cicestre*) remained of considerable importance under the South Saxon kings. In 967 King Edgar established a mint here. Though Domesday Book speaks of one hundred and forty-two burgages in Chichester and a charter of Henry I. mentions the borough, the earliest extant charter is that granted by Stephen, confirming to the burgesses their customs and rights of the borough and gild merchant as they had them in the time of his grandfather. This was confirmed by Henry II. Under Henry III. the fee farm rent was £38: 10s., but this was reduced by a charter of 10 Edward II. to £36, the customs of wool, hides and skins being reserved to the king. Edward III. directed that the Sussex county court should be held at Chichester, and this was confirmed in the following year. Confirmations of the previous charters were also granted by Edward III., Richard II., Henry VI., Edward IV., and Henry VII, who gave the mayor and citizens cognizance of all kinds of pleas of assize touching lands and hereditaments of freehold tenure. A court leet, court of record and bailiffs’ court of liberties still exist. The charters were also confirmed by Henry VIII., Edward VI., Philip and Mary, and Elizabeth. In 1604 the city was incorporated under a mayor and aldermen. Since 1295, when it first returned a member, Chichester has been regularly represented in parliament. Throughout the middle ages Chichester was a place of great commercial importance, Edward III. establishing a wool staple here in 1348. Fairs were granted by Henry I. and Henry VII, Fuller mentions the Wednesday market as being famous for corn, while Camden speaks of that on Saturday as the greatest for fish in the county. The markets and a fair on the 20th of October are still held.

See *Victoria County History, Sussex*; Alexander Hay, *History of Chichester* (Chichester, 1804).

CHICKAMAUGA CREEK, a small tributary of the Tennessee river, which it joins near Chattanooga, Tennessee, U.S.A. It gives its name to the great battle of Chickamauga in the American Civil War, fought on the 19-20th of September 1863, between the Federal army of the Cumberland under Major-General W.S. Rosecrans and the Confederate army under General Braxton Bragg. For the general operations of Rosecrans' army in 1863 see AMERICAN CIVIL WAR. A successful war of manœuvre had brought the army of the Cumberland from Murfreesboro to Decherd, Tenn., and Bragg's army lay on the Tennessee at and above Chattanooga. Rosecrans was expected by the enemy to manœuvre so as to gain touch with the Union forces in the upper Tennessee valley, but he formed an entirely different plan of operations. One part of the army demonstrated in front of Chattanooga, and the main body secretly crossed the river about Stevenson and Bridgeport (September 4th). The country was mountainous, the roads few and poor, and the Federals had to take full supplies of food, forage and ammunition with them, but Rosecrans was an able commander, his troops were in good hands, and he accepted the risks involved. These were intensified by the want of good maps, and, in the event, at one moment the army was placed in a position of great danger. A corps under A. McD. McCook moved south-eastward across the ridges to Alpine, another under Thomas marched via Trenton on McLemore's Cove. The presence of Federal masses in Lookout Valley caused Bragg to abandon Chattanooga at once, and the object of the manœuvre was thus accomplished; but owing to the want of good maps the Union army was at the same time exposed to great danger. The head of Thomas's column was engaged at Dug Gap, on the 11th, against the flank guard of Bragg's army, and at the time McCook was far away to the south, and Crittenden's corps, which had occupied Chattanooga on the 9th, was also at a distance. Thomas was isolated, but Rosecrans, like every other commander under whom he served, placed unbounded confidence in his tenacity, and if Bragg was wrong in neglecting to attack him on the 14th, subsequent events went far to disarm criticism. By the 18th of September Rosecrans had at last collected his army on Chickamauga Creek covering Chattanooga. But Bragg had now received heavy reinforcements, and lay, concentrated for battle, on the other side of the Creek.



The terrain of the battle of Chickamauga (19th-20th of September) had little influence on its course. Both armies lay in the plain, the two lines roughly parallel. Bragg's intention was to force his attack home on Rosecrans' left wing, thus cutting him off from Chattanooga and

throwing him back into the mountain country whence he had come. On the 19th a serious action took place between the Confederate right and Rosecrans' left under Thomas. On the 20th the real battle began. The Confederates, in accordance with Bragg's plans, pressed hard upon Thomas, to whom Rosecrans sent reinforcements. One of the divisions detached from the centre for this purpose was by inadvertence taken out of the first line, and before the gap could be filled the Confederate central attack, led by Longstreet and Hood, the fighting generals of Lee's army, and carried out by veteran troops from the Virginian battlefields, cut the Federal army in two. McCook's army corps, isolated on the Federal right, was speedily routed, and the centre shared its fate. Rosecrans himself was swept off the field in the rout of half of his army. But Thomas was unshaken. He re-formed the left wing in a semicircle, and aided by a few fresh brigades from Rossville, resisted for six hours the efforts of the whole Confederate army. Rosecrans in the meantime was rallying the fugitives far to the rear near Chattanooga itself. The fury of Bragg's assault spent itself uselessly on the heroic divisions under Thomas, who remained on the field till night and then withdrew in good order to Rossville. Here he remained on the 21st, imposing respect upon the victors. On the 22nd Rosecrans had re-established order, and Thomas fell back quietly to Chattanooga, whither Bragg slowly pursued. For the subsequent events of the campaign see CHATTANOOGA. The losses in the battle bear witness to a severity in the fighting unusual even in the American Civil War. Of 70,000 Confederates engaged at least 18,000 were killed and wounded, and the Federals lost 16,000 out of about 57,000. The battlefield has been converted into a national park, and was used during the Spanish American War (1898) as a place of mobilization for the U.S. volunteers.

CHICKASAWS, a tribe of North American Indians of Muskhogean stock, now settled in the western part of Oklahoma. Their former range was northern Mississippi and portions of Tennessee. According to their own tradition and the evidence of philology, they are closely connected with the Creeks and Choctaws; and they believe that they emigrated with these tribes from the west, crossed the Mississippi, and settled in the district that now forms the north-east part of the state of that name. Here they were visited by De Soto in 1540. From the first they were hostile to the French colonists. With the English, on the other hand, their relations were more satisfactory. In 1786 they made a treaty with the United States; and in 1793 they assisted the whites in their operations against the Creeks. In the early years of the 19th century part of their territory was ceded for certain annuities, and a portion of the tribe migrated to Arkansas; and in 1832-1834, the remainder, amounting to about 3600, surrendered to the United States the 6,442,400 acres of which they were still possessed, and entered into a treaty with the Choctaws for incorporation with that tribe. In 1855, however, they effected a separation of this union, with which they had soon grown dissatisfied, and by payment to the Choctaws of $150,000 obtained a complete right to their present territory. In the Civil War they joined the Confederates and suffered in consequence; but their rights were restored by the treaty of 1865. In 1866 they surrendered 7,000,000 acres; and in 1873 they adopted their former slaves. They had an independent government consisting of a governor, a senate, and a house of representatives; but tribal government virtually ceased in 1906. The Chickasaws of pure or mixed blood numbered 4826 in 1900, and with the fully admitted "citizens," *i.e.* the freed slaves and adopted whites, the whole nation amounted to some 10,000.

See *Handbook of American Indians* (Washington, 1907).

CHICKASHA, a city and the county-seat of Grady county, Oklahoma, U.S.A., near the Washita river, about 45 m. S.S.W. of Oklahoma city. Pop. (1900) 3209; (1907) 7862, including 1643 negroes; (1910) 10,320. Chickasha is served by the St Louis & San Francisco, the Chicago, Rock Island & Pacific and the Oklahoma Central railways. It is the trade centre of a very fertile section of the Washita Valley, whose principal products are Indian corn, cotton, fruits and vegetables and live-stock. The city has various manufactures, including flour, cotton-seed oil, lumber, furniture and farm implements. Chickasha was founded in 1892 and was chartered as a city in 1899.

CHICKEN-POX (Syn. *varicella*, a Low Latin diminutive of *variola*), a specific contagious disease characterized by an eruption of vesicles in the skin. The disease usually occurs in epidemics, and is one of childhood, the patients being generally between two and six years old. The incubation period is from ten to fifteen days; there are practically no prodromal symptoms, the only indication being a slight amount of fever for some twenty-four hours, after which the eruption makes its appearance. A number of raised red papules appear on the trunk, either on the back or chest; in from twelve to twenty-four hours these develop into tense vesicles filled with a clear fluid, which in another thirty-six hours or so becomes opalescent. During the fourth day these vesicles dry and shrivel up, and the scabs fall off, leaving as a rule no scar. Fresh spots appear during the first three days, so that at the end of that time they can be seen in all stages of growth and decay. The eruption is most marked on the chest, but it also occurs on the face and limbs, and on the mucous membrane of the mouth and palate. The temperature begins to fall after the appearance of the rash, but a certain slight amount may persist after the disappearance of all symptoms. It rarely rises above 102 F. The disease runs a very favourable course in the majority of cases, and after effects are rare. One attack does not confer immunity, and in numerous cases one individual has had three attacks. The diet should be light, and the patient should be prevented from scratching the spots, which would lead to ulceration and scarring. After the first few days there is no necessity to confine the patient to bed. In the large majority of cases, it is easy to distinguish the disease from smallpox, but in certain patients it is very difficult. The chief points in the differential diagnosis are as follows. (1) In chicken-pox the rash is distributed chiefly on the trunk, and less on the limbs. (2) Some of the vesicles are oval, whereas in smallpox they are always hemispherical. They are also more superficial, and have not at the outset the hard shotty feeling of the more virulent disease. (3) The vesicles attain their full growth within twelve to twenty-four hours. (4) The pustules are usually monocular. (5) There is no prodromal period.

CHICLANA, or Chiclana de la Frontera, a town of southern Spain, in the province of Cadiz, 12 m. by rail S.E. of Cadiz. Pop. (1900) 10,868. Chiclana occupies a fertile valley, watered by the river Lirio, and sheltered, on the north and south, by low hills covered with vines and plantations. It faces the gulf of Cadiz, 3 m. W., and, from its mild climate and pleasant surroundings, is the favourite summer residence of the richer Cadiz merchants; its hot mineral springs also attract many visitors. In the neighbourhood are the Roman ruins of Chiclana la Vieja, the town of Medina Sidonia (*q.v.*), and, about 5 m. S., the battlefield of Barrosa, where the British under Sir Thomas Graham (Lord Lynedoch) defeated the French under Marshal Victor, on the 5th of March 1811.

CHICOPEE, a city of Hampden county, Massachusetts, U.S.A., situated on the E. side of the Connecticut river, at the mouth of the Chicopee river, immediately N. of Springfield. Pop. (1890) 14,050; (1900) 19,167, of whom 8139 were foreign-born; (1910, census) 25,401. Chicopee is served by the Boston & Maine railway. The city, which has an area of about 25 sq. m., contains five villages. Chicopee Center, Chicopee Falls, Willimansett, Fairview and Aldenville. Chicopee Falls lies on both sides of the Chicopee river, which falls some 70 ft. in less than 3 m. and furnishes valuable power for manufactories. The most important products are cotton goods (two large factories having, together, about 200,000 spindles), fire-arms (especially the Stevens rifles), tools, rubber and elastic goods, sporting goods, swords, automobiles and agricultural implements. Here, too, is a bronze statuary foundry, in which some of the finest monuments, bronze doors, &c., in the country have been cast, including the doors of the Capitol at Washington. The bronze casting industry here was founded by Nathan Peabody Ames (1803-1847), who was first a sword-maker and in 1836 began the manufacture of cannon and church bells. The total value of the city's factory product in 1905 was

$7,715,653, an increase of 43.2% in five years. There is a public library. The municipality owns and operates the water-works system and the electric lighting plant. Chicopee was settled about 1638, was set off from Springfield as an independent township in 1848, and was chartered as a city in 1890. Chicopee Falls was the home of Edward Bellamy. The name of the city is an Indian word meaning “cedar-tree” or “birch-bark place.”

CHICORY. The chicory or succory plant, *Cichorium Intybus* (natural order, Compositae), in its wild state is a native of Great Britain, occurring most frequently in dry chalky soils, and by road-sides. It has a long fleshy tap-root, a rigid branching hairy stem rising to a height of 2 or 3 ft.—the leaves around the base being lobed and toothed, not unlike those of the dandelion. The flower heads are of a bright blue colour, few in number, and measure nearly an inch and a half across. Chicory is cultivated much more extensively on the continent of Europe—in Holland, Belgium, France and Germany—than in Great Britain; and as a cultivated plant it has three distinct applications. Its roots roasted and ground are used as a substitute for, adulterant of, or addition to coffee; both roots and leaves are employed as salads; and the plant is grown as a fodder or herbage crop which is greedily consumed by cattle. In Great Britain it is chiefly in its first capacity, in connexion with coffee, that chicory is employed. A large proportion of the chicory root used for this purpose is obtained from Belgium and other neighbouring continental countries; but a considerable quantity is cultivated in England, chiefly in Yorkshire. For the preparation of chicory the older stout white roots are selected, and after washing they are sliced up into small pieces and kiln-dried. In this condition the material is sold to the chicory roaster, by whom it is roasted till it assumes a deep brown colour; afterwards when ground it is in external characteristics very like coffee, but is destitute of its pleasing aromatic odour. Neither does the roasted chicory possess any trace of the alkaloid caffeine which gives their peculiar virtues to coffee and tea. The fact, however, that for over a hundred years it has been successfully used as a substitute for or recognized addition to coffee, while in the meantime innumerable other substances have been tried for the same purpose and abandoned, indicates that it is agreeable and harmless. It gives the coffee additional colour, bitterness and body. It is at least in very extensive and general use; and in Belgium especially its infusion is largely drunk as an independent beverage.

The blanched leaves are much esteemed by the French as a winter salad known by the name of *Barbe de capucin*. When intended for winter use, chicory is sown in May or June, commonly in drills, and the plants are thinned out to 4 in. apart. If at first the leaves grow very strong, they are cut off, perhaps in the middle of August, about an inch from the ground, so as to promote the production of new leaves, and check the formation of flower-stems. About the beginning of October the plants are raised from the border, and all the large leaves cut off; the roots are also shortened, and they are then planted pretty closely together in boxes filled with rich light mould, and watered when needful. When frost comes on, the boxes are protected by any kind of litter and haulm. As the salad is wanted, they are removed into some place having a moderately increased temperature, and where there is no light. Each box affords two crops of blanched leaves, and these are reckoned fit for cutting when about 6 in. long. Another mode of obtaining the young leaves of this plant in winter is to sow seeds in a bed of light rich mould, or in boxes in a heat of from 55° to 60°, giving a gentle watering as required. The leaves will be fit to be cut in a fortnight after sowing, and the plants will afford a second crop.

In Belgium a variety of chicory called *Witloef* is much preferred as a salad to the French *Barbe de capucin*. The seeds are sown and the plants thinned out like those of the ordinary sort. They are eventually planted in light soil, in succession, from the end of October to February, at the bottom of trenches a foot or more in depth, and covered over with from 2 to 3 ft. of hot stable manure. In a month or six weeks, according to the heat applied, the heads are fit for use and should be cut before they reach the manure. The plants might easily be forced in frames on a mild hot-bed, or in a mushroom-house, in the same way as sea-kale. In Belgium the fresh roots are boiled and eaten with butter, and throughout the Continent the roots are stored for use as salads during winter.

See also Endive (*Cichorium endivia*).

CHIDAMBARAM, or Chedumbrum, a town of British India, in the South Arcot district of Madras, 7 m. from the coast and 151 m. S. of Madras by rail. Pop. (1901) 19,909. The pagodas at Chidambaram are the oldest in the south of India, and portions of them are gems of art. Here is supposed to have been the northern frontier of the ancient Chola kingdom, the successive capitals of which were Uriyur on the Cauvery, Combaconum and Tanjore. The principal temple is sacred to Siva, and is said to have been rebuilt or enlarged by a leper emperor, who came south on a pilgrimage and was cured by bathing in the temple tank; upwards of 60,000 pilgrims visit the temple every December. It contains a "hall of a thousand pillars," one of numerous such halls in India, the exact number of pillars in this case being 984; each is a block of solid granite, and the roof of the principal temple is of copper-gilt. Three hundred of the highest-caste Brahmins live with their families within the temple enclosure.

CHIEF (from Fr. *chef*, head, Lat. *caput*), the head or upper part of anything, and so, in heraldry, the upper part of the escutcheon, occupying one-third of the whole. When applied to a leading personage, a head man or one having the highest authority, the term chief or chieftain (Med. Lat. *capitanus*, O. Fr. *chevetaine*) is principally confined to the leader of a clan or tribe. The phrase "in chief" (Med. Lat. *in capite*) is used in feudal law of the tenant who holds his fief direct from the lord paramount (see Feudalism).

CHIEMSEE, also called Bayrisches Meer, the largest lake in Bavaria, lying on a high plateau 1600 ft. above the sea, between the rivers Inn (to which it drains through the Alz) and Salzach. With a length of 6 and a breadth of 9 m., it has an area of about 33 sq. m., and contains three islands, Herrenwörth, Frauenwörth and Krautinsel. The first, which has a circumference of 6½ m. and is beautifully wooded, is remarkable for the romantic castle which Louis II. of Bavaria erected here. It was the seat of a bishop from 1215 to 1805, and until 1803 contained a Benedictine monastery. The shores of the lake are flat on the north and south sides, but its other banks are flanked by undulating hills, which command beautiful and extensive views. The waters are clear and it is well stocked with trout and carp; but the fishing rights are strictly preserved. Steamers ply on the lake, and the railway from Rosenheim to Salzburg skirts the southern shores.

CHIENG MAI, the capital of the Lao state of the same name and of the provincial division of Siam called Bayap, situated in 99° 0′ E., 18° 46′ N. The town, enclosed by massive but decaying walls, lies on the right bank of the river Me Ping, one of the branches of the Me Nam, in a plain 800 ft. above sea-level, surrounded by high, wooded mountains. It has streets intersecting at right angles, and an enceinte within which is the palace of the Chao, or hereditary chief. The east and west banks of the river are connected by a fine teak bridge. The American Presbyterian Mission, established here in 1867, has a large number of converts and has done much good educational work. Chieng Mai, which the Burmese have corrupted into Zimmé, by which name it is known to many Europeans, has long been an important trade centre, resorted to by Chinese merchants from the north and east, and by Burmese, Shans and Siamese from the west and south. It is, moreover, the centre of the teak trade of Siam, in which many Burmese and several Chinese and European firms are engaged. The total value of the import and export trade of the Bayap division amounts to about £2,500,000 a year. The Siamese high commissioner of Bayap division has his headquarters in Chieng Mai, and though the hereditary chief continues as the nominal ruler, as is also the case in the other Lao states of Nan, Prè, Lampun, Napawn Lampang and Tern, which make up the division, the government is entirely in the hands of that official and his staff. The government forest department, founded in 1896, has done good work in the division, and the conservator of

forests has his headquarters in Chieng Mai. The headquarters of an army division are also situated here. A British consul resides at Chieng Mai, where, in addition to the ordinary law courts, there is an international court having jurisdiction in all cases in which British subjects are parties. The population, about 20,000, consists mainly of Laos, with many Shans, a few Burmese, Chinese and Siamese and some fifty Europeans. Hill tribes (Ka) inhabit the neighbouring mountains in large numbers.

Chieng Mai was formerly the capital of a united Lao kingdom, which, at one time independent, afterwards subject to Burma and then to Siam, and later broken up into a number of states, has finally become a provincial division of Siam. In 1902 a rising of discontented Shans took place in Bayap which at one time seemed serious, several towns being attacked and Chieng Mai itself threatened. The disturbance was quelled and the malcontents eventually hunted out, but not without losses which included the commissioner of Prè and a European officer of gendarmerie.

CHIERI, a town and episcopal see of Piedmont, Italy, in the province of Turin, 13 m. S.E. by rail and 8 m. by road from the town of Turin. Pop. (1901) 11,929 (town), 13,803 (commune). Its Gothic cathedral, founded in 1037 and reconstructed in 1405, is the largest in Piedmont, and has a 13th century octagonal baptistery. Chieri was subject to the bishop of Turin in the 9th and 10th centuries, it became independent in the 11th century. In 1347 it submitted voluntarily to Count Amedeus VI. of Savoy to save itself from the marquis of Monferrato, and finally came under the dominion of Savoy in the 16th century. In 1785 it was made into a principality of the duke of Aosta. It was an early centre of trade and manufacture; and in the middle of the 15th century produced about 100,000 pieces of cotton goods per annum.

See L. Cibrario, *Delle storie di Chieri* (Turin, 1855).

CHIETI, a city of the Abruzzi, Italy, the capital of the province of Chieti, and the seat of an archbishop, 140 m. E.N.E. of Rome by rail, and 9 m. W. of Castellammare Adriatico. Pop. (1901) 26,368. It is situated at a height of 1083 ft. above sea-level, 3 m. from the railway station, from which it is reached by an electric tramway. It commands a splendid view of the Apennines on every side except the east, where the Adriatic is seen. It is an active modern town, upon the site of the ancient *Teate Marrucinorum* (*q.v.*), with woollen and cotton manufactories and other smaller industries. The origin of the see of Chieti dates from the 4th century, S. Justinus being the first bishop. The cathedral has been spoilt by restoration, and the decoration of the exterior is incomplete; the Gothic campanile of 1335 is, however, fine. The cathedral possesses two illuminated missals. Close by is the town hall, which contains a small picture gallery, in which, in 1905, was held an important exhibition of ancient Abruzzese art. The de Laurentiis family possesses a private collection of some importance. To the north of Chieti is the octagonal church of S. Maria del Tricaglio, erected in 1317, which is said (without reason) to stand upon the site of a temple of Diana. The order of the Theatines, founded in 1524, takes its name from the city. Under the Lombards Chieti formed part of the duchy of Benevento; it was destroyed by Pippin in 801, but was soon rebuilt and became the seat of a count. The Normans made it the capital of the Abruzzi.

CHI-FU, Chefoo, or Yen-t'ai (as it is called by the natives), a seaport of northern China, on the southern coast of the Gulf of Chih-li, in the province of Shan-tung, near the mouth of the Yi-ho, about 30 m. E. of the city of Têng-chow-fu. It was formerly quite a small place, and had only the rank of an unwalled village; but it was chosen as the port of Têng-chow, opened to foreign trade in 1858 by the treaty of Tientsin, and it is now the residence of a Tao-t'ai, or intendant of circuit, the centre of a gradually increasing commerce, and the seat of a British

consulate, a Chinese custom-house, and a considerable foreign settlement. The native town is yearly extending, and though most of the inhabitants are small shop-keepers and coolies of the lowest class, the houses are for the most part well and solidly built of stone. The foreign settlement occupies a position between the native town and the sea, which neither affords a convenient access for shipping nor allows space for any great extension of area. Its growth, however, has hitherto been steady and rapid. Various streets have been laid out, a large hotel erected for the reception of the visitors who resort to the place as a sanatorium in summer, and the religious wants of the community are supplied by a Roman Catholic and a Protestant church. Though the harbour is deep and extensive, and possessed of excellent anchorage, large vessels have to be moored at a considerable distance from the shore. Chi-fu has continued to show fair progress as a place of trade, but the total volume is inconsiderable, having regard to the area it supplies. In 1880 the total exports and imports were valued at £2,724,000, in 1899 they amounted to £4,228,000, and in 1904 to £4,909,908. In 1895 there entered the port 905 vessels representing a tonnage of 835,248 tons, while in 1905 the number of vessels had risen to 1842, representing a tonnage of 1,492,514 tons. The imports are mainly woollen and cotton goods, iron and opium, and the exports include bean cake, bean oil, peas, raw silk, straw-braid, walnuts, a coarse kind of vermicelli, vegetables and dried fruits. Communication with the interior is only by roads, which are extremely defective, and nearly all the traffic is by pack animals. From its healthy situation and the convenience of its anchorage, Chi-fu has become a favourite rendezvous for the fleets of the European powers in Chinese waters, and consequently it has at times been an important coaling station. It lies in close proximity to Korea, Port Arthur and Wei-hai-Wei, and it shared to some extent in the excitement to which the military and naval operations in these quarters gave rise. The Chi-fu convention was signed here in 1876 by Sir Thomas Wade and Li-Hung-Chang.

CHIGI-ALBANI, the name of a Roman princely family of Sienese extraction descended from the counts of Ardenghesca. The earliest authentic mention of them is in the 13th century, and they first became famous in the person of Agostino Chigi (d. 1520), an immensely rich banker who built the palace and gardens afterwards known as the Farnesina, decorated by Raphael, and was noted for the splendour of his entertainments; Pope Julius II. made him practically his finance minister and gave him the privilege of quartering his own (Della Rovere) arms with those of the Chigi. Fabio Chigi, on being made pope (Alexander VII.) in 1655, conferred the Roman patriciate on his family, and created his nephew Agostino prince of Farnese and duke of Ariccia, and the emperor Leopold I. created the latter *Reichsfürst* (prince of the Holy Roman Empire) in 1659. In 1712 the family received the dignity of hereditary marshals of the Church and guardians of the conclaves, which gave them a very great importance on the death of every pope. On the marriage in 1735 of another Agostino Chigi (1710-1769) with Giulia Albani, heiress of the Albani, a Venetian patrician family, said to be of Albanian origin, her name was added to that of Chigi. The family owns large estates at Siena.

See A. von Reumont, *Geschichte der Stadt Rom*, vol. iii. (Berlin, 1868); *Almanach de Gotha*.

CHIGWELL, a parish and residential district in the Epping parliamentary division of Essex, England; with stations (Chigwell Lane and Chigwell) on two branches of the Great Eastern railway, 12 m. N.E. from London. Pop. (1901) 2508. The old village church of St Mary, principally Perpendicular, has a Norman south door. The village lies in a branch of the Roding valley, fragments of Hainault Forest lying to the south and east, bordering the village of Chigwell Row. The village of Chigwell appears in the Domesday survey. The pleasant scenery of the neighbourhood, which attracts large numbers both of visitors and of residents from London, is described in Dickens's novel, *Barnaby Rudge*, and the King's Head Inn, Dickens's "Maypole," still stands. The old grammar school, founded by Samuel Harsnett, archbishop of York (d. 1631), whose fine memorial brass is in St Mary's church, has become one of the minor modern institutions of the English public school type. William Penn attended school at Chigwell from his home at Wanstead.

CHIH-LI (“Direct Rule”), the metropolitan province of China, in which is situated Peking, the capital of the empire. It contains eleven prefectural cities, and occupies an area of 58,950 sq. m. The population is 29,400,000, the vast majority of whom are resident in the plain country. This province forms part of the great delta plain of China proper, 20,000 sq. m. of which are within the provincial boundaries; the remainder of the territory consists of the mountain ranges which define its northern and western frontier. The plain of Chih-li is formed principally by detritus deposited by the Pei-ho and its tributary the Hun-ho (“muddy river”), otherwise known as the Yung-ting-ko, and other streams having their sources in mountains of Shan-si and other ranges. It is bounded E. by the Gulf of Chih-li and Shan-tung, and S. by Shan-tung and Ho-nan. The proportion of Mahommedans among the population is very large. In Peking there are said to be as many as 20,000 Mahommedan families, and in Pao-ting Fu, the capital of the province, there are about 1000 followers of the prophet. The extremes of heat and cold in Chih-li are very marked. During the months of December, January and February the rivers are frozen up, and even the Gulf of Chih-li is fringed with a broad border of ice. There are four rivers of some importance in the province: the Pei-ho, with the Hun-ho, which rises in the mountains in Mongolia and, flowing to the west of Peking, forms a junction with the Pei-ho at Tientsin; the Shang-si-ho, which rises in the mountains on the north of the province of Shan-si, and takes a south-easterly course as far as the neighbourhood of Ki Chow, from which point it trends north-east and eventually joines the Hun-ho some 15 m. above Tientsin; the Pu-to-ho, which rises in Shan-si, and after running a parallel course to Shang-si-ho on the south, empties itself in the same way into the Hun-ho; and the Lan-ho, which rises in Mongolia, enters the province on the north-east after passing to the west of Jehol, passes the city of Yung-p‘ing Fu in its course (which is south-easterly) through Chih-li, and from thence winds its way to the north-eastern boundary of the Gulf of Chih-li. The province contains three lakes of considerable size. The largest is the Ta-lu-tsze Hu, which lies in 37° 40′ N. and 115° 20′ E.; the second in importance is one which is situated to the east of Pao-ting Fu; and the third is the Tu-lu-tsze Hu, which lies east by north of Shun-te Fu. Four high roads radiate from Peking, one leading to Urga by way of Süan-hwa Fu, which passes through the Great Wall at Chang-kiu K‘ow; another, which enters Mongolia through the Ku-pei K‘ow to the north-east, and after continuing that course as far as Fung-ning turns in a north-westerly direction to Dolonnor; a third striking due east by way of T‘ung-chow and Yung-p‘ing Fu to Shan-hai Kwan, the point where the Great Wall terminates on the coast; and a fourth which trends in a south-westerly direction to Pao-ting Fu and on to T‘ai-yuen Fu in Shan-si. The mountain ranges to the north of the province abound with coal, notably at Chai-tang, T‘ai-gan-shan, Miao-gan-ling, and Fu-tao in the Si-shan or Western Hills. “At Chai-tang,” wrote Baron von Richthofen, “I was surprised to walk over a regular succession of coal-bearing strata, the thickness of which, estimating it step by step as I proceeded gradually from the lowest to the highest strata, exceeds 7000 ft.” The coal here is anthracite, as is also that at T‘ai-gan-shan, where are found beds of greater value than any in the neighbourhood of Peking. In Süan-hwa Fu coal is also found, but not in such quantities as in the places above named. Iron and silver also exist in small quantities in different parts of the province, and hot and warm springs are very common at the foot of the hills along the northern and western edges of the province. The principal agricultural products are wheat, kao-liang, oats, millet, maize, pulse and potatoes. Fruits and vegetables are also grown in large quantities. Of the former the chief kinds are pears, apples, plums, apricots, peaches, persimmons and melons. Tientsin is the Treaty Port of the province.

CHIHUAHUA, a northern frontier state of Mexico, bounded N. and N.E. by the United States (New Mexico and Texas), E. by Coahuila, S. by Durango, and W. by Sinaloa and Sonora. Pop. (1895) 260,008; (1900) 327,784. Area, 87,802 sq. m. The surface of the state is in great part an elevated plateau, sloping gently toward the Rio Grande. The western side, however, is much broken by the Sierra Madre and its spurs, which form elevated valleys of great fertility. An arid sandy plain extending from the Rio Grande inland for 300 to 350 m. is quite destitute of vegetation where irrigation is not used. There is little rainfall in this region and the climate is hot and dry. The more elevated plateaus and valleys have the heavier rainfall, but the average for the state is barely 39 in.; an impermeable clay substratum prevents its absorption by the soil, and the bare surface carries it off in torrents. The great Bolsón de Mapimí depression, in the S.E. part of the state, was once considered to be an unreclaimable desert, but experiments with irrigation have shown its soil to be highly fertile, and the conversion of the narrow valleys of the sierras on the west into irrigation reservoirs promises to reclaim a considerable part of its area. The only river of consequence is the Conchos, which flows north

and north-east into the Rio Grande across the whole length of the state. In the north there are several small streams flowing northward into lakes. Agriculture has made little progress in Chihuahua, and the scarcity of water will always be a serious obstacle to its development outside the districts where irrigation is practicable. The climate and soil are favourable to the production of wheat, Indian corn, beans, indigo, cotton and grapes, from which wine and brandy are made. The principal grape-producing district is in the vicinity of Ciudad Juárez. Stock-raising is an important industry in the mountainous districts of the west, where there is excellent pasturage for the greater part of the year. The principal industry of the state, however, is mining—its mineral resources including gold, silver, copper, mercury, lead and coal. The silver mines of Chihuahua are among the richest in Mexico, and include the famous mining districts of Batopilas, Chihuahuilla, Cosihuiriachic, Jesús María, Parral, and Santa Eulalia or Chihuahua el Viejo. There are more than one hundred of these mines, and the total annual yield at the end of the 19th century was estimated at $4,500,000. The state is traversed from north to south by the Mexican Central railway, and there are short branches to some of the mining districts.

Chihuahua originally formed part of the province of Nueva Viscaya, with Durango as the capital. In 1777 the northern provinces, known as the Provincias Internas, were separated from the viceroyalty, and in 1786 the provinces were reorganized as intendencias, but Chihuahua was not separated from Durango until 1823. An effort was made to overthrow Spanish authority in 1810, but its leader Hidalgo and two of his lieutenants were captured and executed, after which the province remained passive until the end of the struggle. The people of the state have been active partizans in most of the revolutionary outbreaks in Mexico, and in the war of 1862-66 Chihuahua was loyal to Juárez. The principal towns are the capital Chihuahua, El Parral, 120 m. S.S.E. of the state capital, in a rich mining district (pop. 14,748 in 1900), Ciudad Juárez and Jimenez, 120 m. S.E. of Chihuahua (pop. 5881 in 1900).

CHIHUAHUA, a city of Mexico, capital of the above state, on the Chihuahua river, about 1000 m. N.W. of Mexico City and 225 m. S. by E. of El Paso. Pop. (1895) 18,279; (1900) 30,405. The city stands in a beautiful valley opening northward and hemmed in on all other sides by spurs of the Sierra Madre. It is 4635 ft. above sea-level, and its climate is mild and healthy. The city is laid out regularly, with broad streets, and a handsome plaza with a monument to Hidalgo and his companions of the revolution of 1810, who were executed here. The most noteworthy of its public buildings is the fine old parish church of San Francisco, begun in 1717 and completed in 1789, one of the best specimens of 18th-century architecture in Mexico. It was built, it is said, with the proceeds of a small tax on the output of the Santa Eulalia mine. Other prominent buildings are the government palace, the Porfirio Diaz hospital, the old Jesuit College (now occupied by a modern institution of the same character), the mint, and an aqueduct built in the 18th century. Chihuahua is a station on the Mexican Central railway, and has tramways and telephones. Mining is the principal occupation of the surrounding district, the famous Santa Eulalia or Chihuahua el Viejo mines being about 12 m. from the city. Next in importance is agriculture, especially fruit-growing. Manufacturing is making good progress, especially the weaving of cotton fabrics by modern methods. The manufacture of cotton and woollen goods are old industries in Chihuahua, but the introduction of American skill and capital toward the end of the 19th century placed them on an entirely new footing. The manufacture of gunpowder for mining operations is another old industry.

Chihuahua was founded between 1703 and 1705 as a mining town, and was made a villa in 1715 with the title San Felipe el Real de Chihuahua. Because of the rich mines in its vicinity it soon became one of the most prosperous towns in northern Mexico, although the state was constantly raided by hostile Indians. In 1763 it had a population of nearly 5000. The war of independence was followed by a period of decline, owing to political disorder and revolution, which lasted until the presidency of General Porfirio Diaz. In the war between Mexico and the United States, Chihuahua was captured on the 1st of March 1847, by Colonel A.W. Doniphan, and again on the 7th of March by General Price. In 1864 President Juárez made the city his provisional capital for a short time.

CHILAS, a hill village in the North-West Frontier Province of India. It is dominated by a fort on the left bank of the Indus, about 50 m. below Bunji, 4100 ft. above sea-level. It was occupied by a British force early in 1893, when a determined attack was made on the place by the Kohistanis from the Indus valley districts to the south-west, aided by contingents from Darel and Tangir west of Gilgit and north of the Indus. Its importance consists in its position with reference to the Kashmir-Gilgit route via Astor, which it flanks. It is now connected with Bunji by a metalled road. Chilas is also important from its command of a much shorter and more direct route to Gilgit from the Punjab frontier than that of Kashmir and the Burzil pass. By the Kashmir route Gilgit is 400 m. from the rail-head at Rawalpindi. The Kagan route would bring it 100 m. nearer, but the unsettled condition of the country through which the road passes has been a bar to its general use.

CHILBLAINS (or Kibe; *Erythema pernio*), a mild form of frostbite, affecting the fingers or toes and other parts, and causing a painful inflammatory swelling, with redness and itching of the affected part. The chief points to be noticed in its aetiology are (1) that the lesions occur in the extremities of the circulation, and (2) that they are usually started by rapid changes from heat to cold or vice versa. The treatment is both general and local. In the general treatment, if a history of blanching fingers (fingers or hands going “dead”) can be obtained, the chilblains may be regarded as mild cases of Raynaud’s disease, and these improve markedly under a course of nitrites. Cardiac tonics are often helpful, especially in those cases where there is some attendant lesion of the heart. But the majority of cases improve wonderfully on a good course of a calcium salt, *e.g.* calcium lactate or chloride; fifteen grains three times a day will answer in most cases. The patient should wash in soft tepid water, and avoid extremes of heat and cold. In the local treatment, two drugs are of great value in the early congestive stage—ichthyol and formalin. Ichthyol, 10 to 20% in lanoline spread on linen and worn at night, often dispels an attack at the beginning. Formalin is equally efficacious, but requires more skill in its use. It can be used as an ointment, 10 to 50% for delicate skins, stronger for coarser skins. It should be replaced occasionally by lanoline. If the stage of ulceration has been reached, a paste made from the following prescription, spread thickly on linen and frequently changed, soon cures:—Hydrarg. ammoniat. gr. v., ichthyol ɱx, pulveris zinci oxidi ʒiv, vaseline ʒss.

CHILD, SIR FRANCIS (1642-1713), English banker, was a Wiltshire man, who, having been apprenticed to a goldsmith, became himself a London goldsmith in 1664. In 1671 he married Elizabeth (d. 1720), daughter of another goldsmith named William Wheeler (d. 1663), and with his wife’s stepfather, Robert Blanchard (d. 1681), took over about the same time the business of goldsmiths hitherto carried on by the Wheelers. This was the beginning of Child’s Bank. Child soon gave up the business of a goldsmith and confined himself to that of a banker. He inherited some wealth and was very successful in business; he was jeweller to the king, and lent considerable sums of money to the government. Being a freeman of the city of London, Child was elected a member of the court of common council in 1681; in 1689 he became an alderman, and in the same year a knight. He served as sheriff of London in 1691 and as lord mayor in 1699. His parliamentary career began about this time. In 1698 he was chosen member of parliament for Devizes and in 1702 for the city of London, and was again returned for Devizes in 1705 and 1710. He died on the 4th of October 1713, and was buried in Fulham churchyard. Sir Francis, who was a benefactor to Christ’s hospital, bought Osterley Park, near Isleworth, now the residence of his descendant the earl of Jersey.

Child had twelve sons. One, Sir Robert, an alderman, died in 1721. Another, Sir Francis (c. 1684-1740), was lord mayor of London in 1732, and a director of the East India Company. He was chosen member of parliament for the city of London in 1722, and was member for Middlesex from 1727 until his death. After the death of the younger Sir Francis at Fulham on the 20th of April 1740 the banking business passed to his brother Samuel, and the bank is still owned by his descendants, the principal proprietor being the earl of Jersey. Child’s Bank was at first conducted at the Marygold, next Temple Bar in Fleet Street, London; and the present bank occupies the site formerly covered by the Marygold and the adjacent Devil tavern.

CHILD, FRANCIS JAMES (1825-1896), American scholar and educationist, was born in Boston on the 1st of February 1825. He graduated at Harvard in 1846, taking the highest rank in his class in all subjects; was tutor in mathematics in 1846-1848; and in 1848 was transferred to a tutorship in history, political economy and English. After two years of study in Europe, in 1851 he succeeded Edward T. Channing as Boylston professor of rhetoric, oratory and elocution. Child studied the English drama (having edited *Four Old Plays* in 1848) and Germanic philology, the latter at Berlin and Göttingen during a leave of absence, 1849-1853; and he took general editorial supervision of a large collection of the British poets, published in Boston in 1853 and following years. He edited Spenser (5 vols., Boston, 1855), and at one time planned an edition of Chaucer, but contented himself with a treatise, in the *Memoirs of the American Academy of Arts and Sciences* for 1863, entitled "Observations on the Language of Chaucer's Canterbury Tales," which did much to establish Chaucerian grammar, pronunciation and scansion as now generally understood. His largest undertaking, however, grew out of an original collection, in his British Poets series, of *English and Scottish Ballads*, selected and edited by himself, in eight small volumes (Boston, 1857-1858). Thenceforward the leisure of his life—much increased by his transfer, in 1876, to the new professorship of English—was devoted to the comparative study of British vernacular ballads. He accumulated, in the university library, one of the largest folklore collections in existence, studied manuscript rather than printed sources, and carried his investigations into the ballads of all other tongues, meanwhile giving a sedulous but conservative hearing to popular versions still surviving. At last his final collection was published as *The English and Scottish Popular Ballads*, at first in ten parts (1882-1898), and then in five quarto volumes, which remain the authoritative treasury of their subject. Professor Child worked—and overworked—to the last, dying in Boston on the 11th of September 1896, having completed his task save for a general introduction and bibliography. A sympathetic biographical sketch was prefixed to the work by his pupil and successor George L. Kittredge.

CHILD, SIR JOHN (d. 1690), governor of Bombay, and in fact if not in name the first governor-general of the British settlements in India, was born in London. He was sent as a little boy to his uncle, the chief of the factory at Rajapur; and in 1682 was appointed chief of the East India Company's affairs at Surat and Bombay, while at the same time his brother, Sir Josiah Child (*q.v.*), was governor of the company at home. The two brothers showed themselves strong men and guided the affairs of the company through the period of struggle between the Moguls and Mahrattas. They have been credited by history with the change from unarmed to armed trade on the part of the company; but as a matter of fact both of them were loth to quarrel with the Mogul. War broke out with Aurangzeb in 1689, but in the following year Child had to sue for peace, one of the conditions being that he should be expelled from India. He escaped this expulsion by his death in 1690.

CHILD, SIR JOSIAH (1630-1699), English merchant, economist and governor of the East India Company, was born in London in 1630, the second son of Richard Child, a London merchant of old family. After serving his apprenticeship in the business, to which he succeeded, he started on his own account at Portsmouth, as victualler to the navy under the Commonwealth, when about twenty-five. He amassed a comfortable fortune, and became a considerable stock-holder in the East India Company, his interest in India being accentuated by the fact that his brother John (*q.v.*) was making his career there. He was returned to parliament in 1659 for Petersfield; and in later years sat for Dartmouth (1673-1678) and for Ludlow (1685-1687). He was made a baronet in 1678. His advocacy, both by speech and by pen, under the pseudonym of Philopatris, of the East India Company's claims to political power, as well as to the right of restricting competition with its trade, brought him to the notice of the shareholders, and he became a director in 1677, and, subsequently, deputy-

governor and governor. In this latter capacity he was for a considerable time virtually the sole ruler of the company, and directed its policy as if it were his own private business. He and his brother have been credited with the change from unarmed to armed traffic; but the actual renunciation of the Roe doctrine of unarmed traffic by the company was resolved upon in January 1686, under Governor Sir Joseph Ash, when Child was temporarily out of office. He died on the 22nd of June 1699. Child made several important contributions to the literature of economics; especially *Brief Observations concerning Trade and the Interest of Money* (1668), and *A New Discourse of Trade* (1668 and 1690). He was a moderate in those days of the "mercantile system," and has sometimes been regarded as a sort of pioneer in the development of the free-trade doctrines of the 18th century. He made various proposals for improving British trade by following Dutch example, and advocated a low rate of interest as the "*causa causans* of all the other causes of the riches of the Dutch people." This low rate of interest he thought should be created and maintained by public authority. Child, whilst adhering to the doctrine of the balance of trade, observed that a people cannot always sell to foreigners without ever buying from them, and denied that the export of the precious metals was necessarily detrimental. He had the mercantilist partiality for a numerous population, and became prominent with a new scheme for the relief and employment of the poor; it is noteworthy also that he advocated the reservation by the mother country of the sole right of trade with her colonies. Sir Josiah Child's eldest son, Richard, was created Viscount Castlemain in 1718 and earl of Tylney in 1731.

See also Macaulay, *History of England*, vol. iv.; R. Grant, *Sketch of the History of the East India Company* (1813); D. Macpherson, *Annals of Commerce* (1805); B. Willson, *Ledger and Sword* (1903).

(T. A. I.)

CHILD, LYDIA MARIA (1802-1880), American author, was born at Medford, Massachusetts, on the 11th of February 1802. She was educated at an academy in her native town and by her brother Convers Francis (1795-1863), a Unitarian minister and from 1842 to 1863 Parkman professor in the Harvard Divinity School. Her first stories, *Hobomok* (1824) and *The Rebels* (1825), were popular successes. She was a schoolmistress until 1828, when she married David Lee Child (1794-1874), a brilliant but erratic Boston lawyer and journalist. From 1826 to 1834 she edited *The Juvenile Miscellany*, the first children's monthly periodical in the United States. About 1831 both she and her husband began to identify themselves with the anti-slavery cause, and in 1833 she published *An Appeal for that Class of Americans called Africans*, a stirring portrayal of the evils of slavery, and an argument for immediate abolition, which had a powerful influence in winning recruits to the anti-slavery cause. Henceforth her time was largely devoted to the anti-slavery cause. From 1840 to 1844, assisted by her husband, she edited the *Anti-Slavery Standard* in New York City. After the Civil War she wrote much in behalf of the freedmen and of Indian rights. She died at Wayland, Massachusetts, on the 20th of October 1880. In addition to the books above mentioned, she wrote many pamphlets and short stories and *The (American) Frugal Housewife* (1829), one of the earliest American books on domestic economy, *The Mother's Book* (1831), a pioneer cook-book republished in England and Germany, *The Girls' Own Book* (1831), *History of Women* (2 vols., 1832), *Good Wives* (1833), *The Anti-Slavery Catechism* (1836), *Philothea* (1836), a romance of the age of Pericles, perhaps her best book, *Letters from New York* (2 vols., 1843-1845), *Fact and Fiction* (1847), *The Power of Kindness* (1851), *Isaac T. Hopper: a True Life* (1853), *The Progress of Religious Ideas through Successive Ages* (3 vols., 1855), *Autumnal Leaves* (1857), *Looking Toward Sunset* (1864), *The Freedman's Book* (1865), *A Romance of the Republic* (1867), and *Aspirations of the World* (1878).

See *The Letters of Lydia Maria Child, with a Biographical Introduction by J.G. Whittier* (Boston, 1883); and a chapter in T.W. Higginson's *Contemporaries* (Boston, 1899).

CHILD, the common term for the offspring of human beings, generally below the age of puberty; the term is the correlative of "parent," and applies to either sex, though some early dialectical uses point to a certain restriction to a girl. The word is derived from the A.S. *cild*,

an old Teutonic word found in English only, in other Teutonic languages *kind* and its variants being used, usually derived from the Indo-European root *ken*, seen in Gr. γένος, Lat. *genus*, and Eng. "kin"; *cild* has been held to be a modification of the same root, but the true root is *kilth*, seen in Goth. *kilthei*, womb, an origin which appears in the expressions "child-birth," "to be with child," and the like; the plural in A.S. was *cild*, and later *cildru*, which in northern M.E. became *childre or childer*, a form dialectically extant, and in southern English *childeren* or *children* (with the plural termination -en, as in "brethren"). There are several particular uses of "child" in the English version of the Bible, as of a young man in the "Song of the three holy children," of descendants or members of a race, as in "children of Abraham," and also to express origin, giving a description of character, as "children of darkness." During the 13th and 14th centuries "child" was used, in a sense almost amounting to a title of dignity, of a young man of noble birth, probably preparing for knighthood. In the *York Mysteries* of about 1440 (quoted in the *New English Dictionary*) occurs "be he churl or child," obviously referring to gentle birth, cf. William Bellenden's translation (1553) of Livy (ii. 124) "than was in Rome ane nobill childe ... namit Caius Mucius." The spelling "childe" is frequent in modern usage to indicate its archaic meaning. Familiar instances are in the line of an old ballad quoted in *King Lear*, "childe Roland to the dark tower came," and in Byron's *Childe Harold*. With this use may be compared the Spanish and Portuguese *Infante* and *Infanta*, and the early French use of *Valet* (*q.v.*).

Child-study.—The physical, psychological and educational development of children, from birth till adulthood, has provided material in recent years for what has come to be regarded as almost a distinct part of comparative anthropological or sociological science, and the literature of adolescence (*q.v.*) and of "child-study" in its various aspects has attained considerable proportions. In England the British Child Study Association was founded in 1894, its official organ being the *Paidologist*, while similar work is done by the Childhood Society, and, to a certain extent, by the Parents' National Educational Union (which issues the *Parents' Review*). In America, where specially valuable work has been done, several universities have encouraged the study (notably Chicago, while under the auspices of Professor John Dewey); and Professor G. Stanley Hall's initiative has led to elaborate inquiries, the principal periodical for the movement being the *Pedagogical Seminary*. The impetus to this study of the child's mind and capacities was given by the classic work of educationists like J.A. Comenius, J.H. Pestalozzi, and F.W.A. Froebel, but more recent writers have carried it much further, notably W.T. Preyer (*The Mind of the Child*, 1881), whose psychological studies stamp him as one of the chief pioneers in new methods of investigation. Other authorities of first-rate importance (their chief works only being given here) are J. Sully (*Studies of Childhood*, 1896), Earl Barnes (*Studies in Education*, 1896, 1902), J.M. Baldwin (*Mental Development in the Child and the Race*, 1895), Sigismund (*Kind und Welt*, 1897), A.F. Chamberlain (*The Child*, 1900), G. Stanley Hall (*Adolescence*, 1904; he had from 1882 been the leader in America of such investigations), H. Holman and R. Langdon Down (*Practical Child Study*, 1899), E.A. Kirkpatrick (*Fundamentals of Child-study*, 1903), and Prof. Tracy of Toronto (*Psychology of Childhood*, 5th ed., 1901); while among a number of contributions worth particular attention may be mentioned W.B. Drummond's excellent summary, *Introduction to Child Study* (1907), which deals succinctly with methods and results; Irving King's *Psychology of Child Development* (1906, useful for its bibliography); Prof. David R. Major's *First Steps in Mental Growth* (1906); and Miss M. Shinn's *Notes an the Development of a Child* (1893) and Mrs Louise E. Hogan's *Study of a Child* (1898), which are noteworthy among individual and methodical accounts of what children will do. In such books as those cited a great deal of important material has been collected and analysed, and a number of conclusions suggested which bear both on psychology and the science of education; but it must be borne in mind, as regards a great deal of the voluminous literature of the subject, that it is often more pertinent to general psychology and hygiene than to any special conclusions as to the essential nature of a child—whatever "*a* child" generically may be as the special object of a special science. The child, after all, is in a transition stage to an adult, and there is often a tendency in modern "child students" to interpret the phenomena exhibited by a particular child with a *parti pris*, or to exaggerate child-study—which is really interesting as providing the knowledge of growth towards full human equipment—as though it involved the discovery of some distinct form of animal, of separate value on its own account.

Growth.—Into the psychical characteristics and development of the child and all the interesting educational problems involved it is impossible to enter here, and reference must be made to the works cited above. But a knowledge of the more important features of normal physical development has a constant importance. Some of these, as matters of comparative physiology or pathology, are dealt with in other articles in this work. One of these chief matters of interest is weight and height, and this is naturally affected by race, nutrition and environment. But while the standard in different countries somewhat differs, the British

average for healthy children may here be followed. At birth the average weight of a baby is a little over 7 lb and the length about 20 in. The following are the averages for weight and height, taking the age in years of the child at the last birthday:—

Height, in inches.

Age.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Girls	28.7	32.5	35	38	40.5	42.8	44.5	46.6	48.7	51	53.1	55.6	57.7	59.8	60.9
Boys	29	32.5	35	38	41	44	46	47	49	51.8	53.5	55	57	59.3	62

Weight, in pounds.

Age.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Girls	19.8	25.5	30	34	39.2	41.7	47.5	52.1	55.5	62	68	76.4	87.2	96.7	102.7
Boys	20.5	26.5	31.2	35	41.2	44.4	49.7	54.9	60.4	67.5	72	76.7	82.6	92	106

See also Children, Law Relating to; Children's Courts; Children's Games; Infant; &c.

CHILDEBERT, the name of three Frankish kings.

Childebert I. (d. 558) was one of the four sons of Clovis. In the partition of his father's realm in 511 he received as his share the town of Paris, and the country to the north as far as the river Somme, and to the west as far as the English Channel, with the Armorican peninsula. In 524, after the murder of Chlodomer's children, Childebert annexed the cities of Chartres and Orleans. He took part in the various expeditions against the kingdom of Burgundy, and in 534 received as his share of the spoils of that kingdom the towns of Mâcon, Geneva and Lyons. When Vitiges, the king of the Ostrogoths, ceded Provence to the Franks in 535, the possession of Arles and Marseilles was guaranteed to Childebert by his brothers. Childebert also made a series of expeditions against the Visigoths of Spain; in 542 he took possession of Pampeluna with the help of his brother Clotaire I., and besieged Saragossa, but was forced to retreat. From this expedition he brought back to Paris a precious relic, the tunic of St Vincent, in honour of which he built at the gates of Paris the famous monastery of St Vincent, known later as St Germain-des-Prés. He died without issue in 558, and was buried in the abbey he had founded, where his tomb has been discovered.

See "Nouveaux documents sur le tombeau de Childebert à Saint-Germain-des-Prés," in the *Bulletin de la Société des Antiquaires* (1887).

Childebert II. (570-595), king of Austrasia, was a son of Sigebert. When his father was assassinated in 575, Childebert was taken from Paris by Gundobald, one of his faithful *leudes*, to Metz, where he was recognized as sovereign. He was then only five years old, and during his long minority the power was disputed between his mother Brunhilda and the nobles. Chilperic, king at Paris, and King Gontran of Burgundy, sought alliance with Childebert, who was adopted by both in turn. But after the assassination of Chilperic in 584, and the dangers occasioned to the Frankish monarchy by the expedition of Gundobald in 585, Childebert threw himself unreservedly into the arms of Gontran. By the pact of Andelot in 587 Childebert was recognized as Gontran's heir, and with his uncle's help he quelled the revolts of the nobles and succeeded in seizing the castle of Woëwre. Many attempts were made on his life by Fredegond, who was anxious to secure Gontran's inheritance for her son Clotaire II. On the death of Gontran in 592 Childebert annexed the kingdom of Burgundy, and even contemplated seizing Clotaire's estates and becoming sole king of the Franks. He died, however, in 595. Childebert II. had had relations with the Byzantine empire, and fought in 585 in the name of the emperor Maurice against the Lombards in Italy.

Childebert III. was one of the last and feeblest of the Merovingians. A son of King Theuderich III., he succeeded his brother Clovis III. in 695, and reigned until 711.

See B. Krusch, "Zur Chronologie der merowingischen Könige," in *Forschungen zur deutschen Geschichte*, xxii. 451-490.

(C. PF.)

CHILDERIC, the name of three Frankish kings.

CHILDERIC I. (c. 437-481), king of the Salian Franks, succeeded his father Merwich (Merwing) as king about. 457. With his tribe he was established around the town of Tournai, on lands which he had received as a *foederatus* of the Romans, and for some time he kept the peace with his allies. About 463, in conjunction with the Roman general Egidius, he fought against the Visigoths, who hoped to extend their dominion along the banks of the Loire; after the death of Egidius he assisted Count Paul in attempting to check an invasion of the Saxons. Paul having perished in the struggle, Childeric delivered Angers from some Saxons, followed them to the islands at the mouth of the Loire, and massacred them there. He also stopped a band of the Alamanni who wished to invade Italy. These are all the facts known about him. The stories of his expulsion by the Franks; of his stay of eight years in Thuringia with King Basin and his wife Basine; of his return when a faithful servant advised him that he could safely do so by sending to him half of a piece of gold which he had broken with him; and of the arrival at Tournai of Queen Basine, whom he married, are entirely legendary. After the fall of the Western Empire in 476 there is no doubt that Childeric regarded himself as freed from his engagements towards Rome. He died in 481 and was buried at Tournai, leaving a son Clovis (*q.v.*), afterwards king of the Franks. His tomb was discovered in 1653, when numerous precious objects, arms, jewels, coins and a ring with a figure of the king, were found.

CHILDERIC II. (c. 653-673), king of Austrasia, was a son of the Frankish king Clovis II., and in 660, although a child, was proclaimed king of Austrasia, while his brother, Clotaire III., ruled over the rest of the dominions of Clovis. After the death of Clotaire in 670 he became ruler of the three Frankish kingdoms, Austrasia, Neustria and Burgundy, but soon quarrelled with some supporters in Neustria, and was assassinated whilst hunting. He was buried at St Germain near Paris.

CHILDERIC III. (d. c. 751), king of the Franks, was the last king of the Merovingian dynasty. The throne had been vacant for seven years when the mayors of the palace, Carloman and Pippin the Short, decided in 743 to recognize Childeric as king. We cannot say whose son he was, or what bonds bound him to the Merovingian family. He took no part in public business, which was directed, as before, by the mayors of the palace. When in 747 Carloman retired into a monastery, Pippin resolved to take the royal crown for himself; taking the decisive step in 751 after having received the celebrated answer of Pope Zacharias that it were better to name king him who possessed the power than him who possessed it not. Childeric was dethroned and placed in the monastery of St Omer; his son, Theuderich, was imprisoned at Saint-Wandrille.

See W. Junghans, *Die Geschichte der fränkischen Könige Childerich und Clodovech* (Göttingen, 1857); J.J. Chiflet, *Anastasis Childerici I. Francorum regis* (Antwerp, 1655); J.B.D. Cochet, *Le Tombeau de Childeric I, roi des Francs* (Paris, 1859); and E. Lavisse, *Histoire de France*, tome ii. (Paris, 1903).

CHILDERS, HUGH CULLING EARDLEY (1827-1896), British statesman, was born in London on the 25th of June 1827. On leaving Cambridge he went out to Australia (1850), and became a member of the government of Victoria, but in 1857 returned to England as agent-general of the colony. Entering parliament in 1860 as Liberal member for Pontefract (a seat that he continued to hold till 1885), he became civil lord of the admiralty in 1864, and in 1865 financial secretary to the treasury. Childers occupied a succession of prominent posts in the various Gladstone ministries. He was first lord of the admiralty from 1868 to 1871, and as such inaugurated a policy of retrenchment. Ill-health compelled his resignation of office in 1871, but next year he returned to the ministry as chancellor of the duchy of Lancaster. From 1880 to 1882 he was secretary for war, a post he accepted somewhat unwillingly; and in that position he had to bear the responsibility for the reforms which were introduced into the war office under the parsimonious conditions which were then part of the Liberal creed. During his term of office the Egyptian War occurred, in which Childers acted with creditable energy; and also the Boer War, in which he and his colleagues showed to less advantage. From 1882 to 1885 he was chancellor of the exchequer, and the beer and spirit duty in his budget of the

latter year was the occasion of the government's fall. Defeated at the general election at Pontefract, he was returned as a Home Ruler (one of the few Liberals who adopted this policy before Mr Gladstone's conversion) in 1886 for South Edinburgh, and was home secretary in the ministry of 1886. When the first Home Rule bill was introduced he demurred privately to its financial clauses, and their withdrawal was largely due to his threat of resignation. He retired from parliament in 1892, and died on the 29th of January 1896, his last piece of work being the drafting of a report for the royal commission on Irish financial relations, of which he was chairman. Childers was a capable and industrious administrator of the old Liberal school, and he did his best, in the political conditions then prevailing, to improve the naval and military administration while he was at the admiralty and war office. His own bent was towards finance, but no striking reform is associated with his name. His most ambitious effort was his attempt to effect a conversion of consols in 1884, but the scheme proved a failure, though it paved the way for the subsequent conversion in 1888.

The *Life* (1901) of Mr Childers, by his son, throws some interesting side-lights on the inner history of more than one Gladstonian cabinet.

CHILDERS, ROBERT CAESAR (1838-1876), English Oriental scholar, son of the Rev. Charles Childers, English chaplain at Nice, was born in 1838. In 1860 he received an appointment in the civil service of Ceylon, which he retained until 1864, when he was compelled to return to England owing to ill-health. He had studied Pāli during his residence in Ceylon, under Yátrámullé Unnánsé, a learned Buddhist for whom he cherished a life-long respect, and he had gained an insight into the Sinhalese character and ways of thought. In 1869 he published the first Pāli text ever printed in England, and began to prepare a Pāli dictionary, the first volume of which was published in 1872, and the second and concluding volume in 1875. In the following year it was awarded the Volney prize by the Institute of France, as being the most important philological work of the year. He was a frequent contributor to the Journal of the Royal Asiatic Society, in which he published the *Mahā-parinibbāna Sutta*, the Pāli text giving the account of the last days of Buddha's life. In 1872 he was appointed sub-librarian at the India Office, and in the following year he became the first professor of Pāli and Buddhist literature at University College, London. He died in London on the 25th of July 1876.

CHILDREN, LAW RELATING TO. English law has always in theory given to children the same remedies as to adults for ill-usage, whether by their parents or by others, and has never recognized the *patria potestas* as known to the earlier Roman law; and while powers of discipline and chastisement have been regarded as necessarily incident to paternal authority, the father is civilly liable to his children for wrongs done to them. The only points in which infancy created a defect in civil status were that infants were subject to the restraints on complete freedom of action involved in their being in the legal custody of the father, and that it was and is lawful for parents, guardians, employers and teachers to inflict corporal punishment proportioned in amount and severity to the nature of the fault committed and the age and mental capacity of the child punished. But the court of chancery, in delegated exercise of the authority of the sovereign as *parens patriae*, always asserted the right to take from parents, and if necessary itself to assume the wardship of children where parental rights were abused or serious cruelty was inflicted, the power being vested in the High Court of Justice. Abuse of the power of correction was regarded as giving a cause of action or prosecution for assault; and if attended by fatal results rendered the parent liable to indictment for murder or manslaughter.

The conception of what constitutes cruelty to children undoubtedly changed considerably with the relaxation of the accepted standard of severity in domestic or scholastic discipline and with the growth of new ideas as to the duties of parents to children, which in their latest developments tend enormously to enlarge the parental duties without any corresponding increase of filial obligations.

Starting from the earlier conception, which limited ill-treatment legally punishable to actual

threats or blows, the common law came to recognize criminal liability in cases where persons, bound under duty or contract to supply necessaries to a child, unable by reason of its tender years to provide for itself, wilfully neglected to supply them, and thereby caused the death of the child or injury to its health, although no actual assault had been committed. Questions have from time to time arisen as to what could be regarded as necessary within this rule; and quite apart from legislation, popular opinion has influenced courts of justice in requiring more from parents and employers than used to be required. But parliament has also intervened to punish abandonment or exposure of infants of under two years, whereby their lives are endangered, or their health has been or is likely to be permanently injured (Offences against the Person Act of 1861, s. 27), and the neglect or ill-treatment of apprentices or servants (same act, s. 26, and Conspiracy and Protection of Property Act 1875, s. 6). By the Poor Law Amendment Act 1868, parents were rendered *summarily* punishable who wilfully neglected to provide adequate food, clothing, medical aid or lodging for their children under fourteen years of age in their custody, whereby the health of the child was or was likely to be seriously injured. This enactment (now superseded by later legislation) made no express exception in favour of parents who had not sufficient means to do their duty without resort to the poor law, and was construed as imposing criminal liability on parents whose peculiar religious tenets caused them advisedly to refrain from calling in a doctor to a sick child.

The chief progress in the direction of adequate protection for children prior to 1889 lay less in positive legal enactment on the subject than in the institution of an effective system of police, whereby it became possible to discover and repress cruelty punishable under the ordinary law. It is quite inaccurate to say that children had very few rights in England, or that animals were better protected. But before the constitution of the present police force, and in the absence of any proper system of public prosecution, it is undeniable that numberless cases of neglect and ill-treatment went unpunished and were treated as nobody’s business, because there was no person ready to undertake in the public interest the protection of the children of cruel or negligent parents. In 1889 a statute was passed with the special object of preventing cruelty to children. This act was superseded in 1894 by a more stringent act, which was repealed by the Prevention of Cruelty to Children Act 1904, in its turn superseded for the most part by the Children Act 1908, which introduced many new provisions in the law relating to children and specifically deals with the offence of “cruelty” to them. This offence can only be committed by a person over sixteen in respect of a child under sixteen of whom he has “custody,” “charge” or “care.” The act presumes that a child is in the custody of its parents, step-parents, or a person cohabiting with its parent, or of its guardians or persons liable by law to maintain it; that it is in the charge of a person to whom the parent has committed such charge (*e.g.* a schoolmaster), and that it is in the care of a person who has actual possession or control of it. Cruelty is defined as consisting in assault, ill-treatment (falling short of actual assault), neglect, abandonment or exposure of the child in a manner likely to cause *unnecessary* suffering or injury to health, including injury to or loss of sight, hearing or limb, or any organ of the body or any mental derangement; and the act or omission must be wilful, *i.e.* deliberate and intentional, and not merely accidental or inadvertent. The offence may be punished either summarily or on indictment, and the offender may be sent to penal servitude if it is shown that he was directly or indirectly interested in any sum of money payable on the death of the child, *e.g.* by having taken out a policy permitted under the Friendly Societies Acts. A parent or other person legally liable to maintain a child or young person will be deemed to have “neglected” him by failure to provide adequate food, clothing, medical aid, or lodging, or if in the event of inability to provide such food, &c., by failure to take steps to procure the same under acts relating to the relief of the poor.

These statutes overlap the common law and the statutes already mentioned. Their real efficacy lies in the main in the provisions which facilitate the taking of evidence of young children, in permitting poor law authorities to prosecute at the expense of the rates, and in permitting a constable on arresting the offender to take the child away from the accused, and the court of trial on conviction to transfer the custody of the child from the offender to some fit and willing person, including any society or body corporate established for the reception of poor children or for the prevention of cruelty to children. The provisions of the acts as to procedure and custody extend not only to the offence of cruelty but also to all offences involving bodily injury to a child under sixteen, such as abandonment, assault, kidnapping and illegally engaging a child in a dangerous public performance. The act of 1908 also makes an endeavour to check the heavy mortality of infants through “overlaying,”[1] enacting that where it is proved that the death of an infant under three years of age was caused by suffocation whilst the infant was in bed with some other person over the age of sixteen, and that that person was at the time of going to bed under the influence of drink, that other person shall be deemed to have neglected the child in manner likely to cause injury to its health, as mentioned above. The acts have been utilized with great zeal and on the whole with much

discretion by various philanthropic societies, whose members make it their business to discover the ill-treated and neglected children of all classes in society, and particularly by the Society for the Prevention of Cruelty to Children, which is incorporated under royal charter of the 28th of May 1895, for the purposes *inter alia* of preventing the public and private wrongs of children, and the corruption of their morals and of taking action to enforce the laws for their protection.

The act of 1908 enacted more stringent provisions against baby-farming (*q.v.*). The Infant Life Protection Act of 1897 did not apply where only one child was taken, but now by the act of 1908, where a person undertakes for reward the nursing and maintenance of one or more infants under the age of *seven* years apart from their parents or having no parents, he must give notice in writing to the local authority within forty-eight hours from the reception of the child. If an infant is already in the care of a person without reward and he undertakes to continue the nursing for reward, such undertaking is a reception of the child. The notice to the local authority must state the name, sex, date and place of birth of the infant, the name and address of the person receiving the infant and of the person from whom the infant was received. Notice must also be given of any change of address of the person having the care of the infant, or of the death of the infant, or of its removal to the care of some other person, whose name and address must also be given. It is the duty of local authorities to provide for the carrying-out in their districts of that portion of the act which refers to nursing and maintenance of infants, to appoint infants' protection visitors, to fix the number of infants which any person may retain for nursing, to remove infants improperly kept, &c. Relatives or legal guardians of an infant who undertake its nursing and maintenance, hospitals, convalescent homes, or institutions, established for the protection and care of infants, and conducted in good faith for religious and charitable purposes, as well as boarding schools at which efficient elementary education is given, are exempt from the provisions of the act.

The acts of 1904 and 1908 deal with many other offences in relation to children and young persons. The act of 1904 introduced restrictions on the employment of children which lie on the border land between cruelty and the regulation of child labour. It prohibits custodians of children from taking them, or letting them be, in the street or in public-houses to sing, play, perform or sell between 9 P.M. and 6 A.M. These provisions apply to boys under fourteen and girls under sixteen. There are further prohibitions (1) on allowing children under eleven to sing, play, perform or be exhibited for profit, or offer anything for sale in public-houses or places of public amusement at any hour without a licence from a justice, which is granted only as to children over ten and under stringent conditions; (2) on allowing children under sixteen to be trained as acrobats, contortionists, or circus performers, or for any dangerous performance; and the Children's Dangerous Performances Act 1879, as amended in 1897, makes it an offence to employ a male young person under sixteen and a female under eighteen in a dangerous public performance.

The act of 1908 renders liable to a fine not exceeding £25, or alternatively, or in addition thereto, imprisonment with or without hard labour for any term not exceeding three months, any custodian, &c., of any child or young person who allows him to be in any street, premises or place for the purpose of begging or receiving alms, or of inducing the giving of alms, whether or not there is a pretence of singing, playing, performing or offering anything for sale. An important departure in the act of 1908 was the attempt to prevent the exposure of children to the risk of burning. Any custodian, &c., of a child under seven who allows that child to be in a room Containing an open grate not sufficiently protected to guard against the risk of burning or scalding is liable on summary conviction to a fine not exceeding £10. Provision is made against allowing children between the ages of four and sixteen to be in brothels; it is also made a misdemeanour if any custodian, &c., of a girl under sixteen causes or encourages her seduction or prostitution, and any person having the custody of a young girl may be bound over to exercise proper care if it is shown to the satisfaction of a court of summary jurisdiction, on the complaint of any person, that she is exposed to such risk.

The act of 1908, following legislation in many parts of the United States and in some of the British colonies, places a penalty on selling tobacco to any person apparently under the age of sixteen, whether for his own use or not. It empowers constables and park keepers to seize tobacco in the possession of any person apparently under sixteen found smoking in any street or public place, as well as to search them; it also empowers a court, of summary jurisdiction to prevent automatic machines for the sale of tobacco being used by young persons. The act also contains useful provisions empowering the clearing of a court whilst a child or young person is giving evidence in certain cases (*e.g.* of decency or morality), and the forbidding children (other than infants in arms) being present in court during the trial of other persons; it places a penalty on pawnbrokers taking an article in pawn from children under fourteen; and on vagrants for preventing children above the age of five receiving education. It puts a penalty

on giving intoxicating liquor to any child under the age of five, except upon the orders of a duly qualified medical practitioner, or in case of sickness, or other urgent cause; also upon any holder of the licence of any licensed premises who allows a child to be at any time in the bar of the licensed premises; or upon any person who causes or attempts to cause a child to be in the bar of licensed premises other than railway refreshment rooms or premises used for any purpose to which the holding of a licence is merely auxiliary, or where the child is there simply for the purpose of passing through to some other part of the premises. It makes provision for the safety of children at entertainments, and consolidates the law relating to reformatory and industrial schools, and to juvenile offenders (see JUVENILE OFFENDERS).

In the act of 1908, "child" is denned as a person under the age of fourteen years, and "young person" as a person who is fourteen years and upwards and under the age of sixteen years. The act applies to Scotland and Ireland. In the application of the act to Ireland exception is made relative to the exclusion of children from bars of licensed premises, in the case of a child being on licensed premises where a substantial part of the business carried on is a drapery, grocery, hardware or other business wholly unconnected with the sale of intoxicating liquor, and the child is there for the purpose of purchasing goods other than intoxicating liquor.

British Possessions.—Legislation much on the lines of the acts of 1889-1908 has been passed in many British possessions, *e.g.* Tasmania (1895, 1906), Queensland (1896, 1905), Jamaica (1896), South Australia (1899, 1904), New South Wales (1892 and 1900), New Zealand (1906), Mauritius (1906), Victoria (1905,1906). In South Australia a State Children's 140
Department has been created to care for and manage the property and persons of destitute and neglected children, and the officials of the council may act in cases of cruelty to children; the legislation of Victoria and Queensland is based on that of South Australia.

See also CHILDREN'S COURTS, EDUCATION and LABOUR LEGISLATION.

(W. F. C.; T. A. I.)

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1 There has been some doubt as to whether it is more correct to say a person "*overlays*" or "*overlies*" a child, and the question came up in committee on the bill. According to Sir J.A.H. Murray (see Letter in *The Times*, 12th of May 1908) "to lie," an intransitive verb, becomes transitive when combined with a preposition, *e.g.* a nurse lies over a child or overlies a child; "to lay" is the causal derivative of "to lie," and is followed by two objects, *e.g.* to lay the table with a cloth, or to lay a cloth on the table; similarly, to overlay a surface with varnish, or to overlay a child with a blanket, or with the nurse's or mother's body. The instrument can be left unexpressed, and a person can be said to overlay a child, *i.e.* with her own body, a pillow, &c. Thus, while "overlie" covers the case where the woman herself lies over the child, "overlay" is the more general word.

CHILDRENITE, a rare mineral species; a hydrous basic aluminium iron phosphate, orthorhombic in crystallization. The ferrous oxide is in part replaced by manganous oxide and lime, and in the closely allied and isomorphous species eosphorite manganese predominates over iron. The general formula for the two species is $Al(Fe, Mn)(OH)^2PO^4 + H^2O$. Childrenite is found only as small brilliant crystals of a yellowish-brown colour, somewhat resembling chalybite in general appearance. They are usually pyramidal in habit, often having the form of double six-sided pyramids with the triangular faces deeply striated parallel to their shorter edges. Hardness 4.5-5; specific gravity 3.18-3.24. The mineral, named after the zoologist and mineralogist J.G. Children (1777-1852), secretary of the Royal Society, was detected in 1823 on specimens obtained some years previously during the cutting of a canal near Tavistock in Devonshire. It has also been found in a few copper mines in Cornwall and Devonshire.

Eosphorite occurs as crystals of prismatic habit with angles very nearly the same as those of childrenite. Unlike childrenite, it has a distinct cleavage in one direction, and often occurs in compact masses as well as in crystals. The colour is sometimes yellowish-white, but usually rose-pink, and on this account the mineral was named from ἠωσφόρος, dawn-bearer. Hardness 5; specific gravity 3.11-3.145. It was discovered in 1878 in a pegmatite-vein at Branchville, Connecticut, where it is associated with other rare manganese phosphates.

(L. J. S.)

CHILDREN'S COURTS, or JUVENILE COURTS, a special system of tribunals for dealing with juvenile offenders, first suggested in the United States. The germ of such institutions was planted in Massachusetts in 1869, when a plan was introduced at Boston of hearing charges against children separately, and apart from the ordinary business of the lesser tribunals. No great progress was made in the development of the idea in Massachusetts, as the legal authorities were not fully convinced of the utility or need for a separate court so long as the children were kept strictly apart from adults, and this could be assured by a separate session. But the system of "probation," by which children were handed over to the kindly care and guardianship of an appointed officer, and thus escaped legal repression, was created about the same time in Boston and produced excellent results. The probation officer is present at the judge's side when he decides a case, and is given charge of the offender, whom he takes by the hand, either at his parent's residence or at school, and continually supervises, having power if necessary to bring him again before the judge. The example of Massachusetts in due course influenced other countries, and especially the British colony of South Australia, where a State Children's Department was created at Adelaide in 1895, and three years later a juvenile court was opened there for the trial of persons under eighteen and was conducted with great success, though the system of probation officers was not introduced. A juvenile court was also established at Toronto (Canada) on the South Australian model.

The movement when once fully appreciated went ahead very rapidly. In the United States Illinois was the first state to call a distinct children's court into existence, and Judge Richard Tuthill was the pioneer at Chicago, where the court was established in 1899. Many states followed suit, including New York, Pennsylvania, Rhode Island, Wisconsin, Kansas, Colorado, Indiana and others, till the number rose to nineteen in 1906. In New York, where juvenile probation is supervised by the Society for the Protection of Children, there is a separate children's court with rooms attached, where the children for detention wait till they are brought in for trial. Brooklyn has also a children's court. In Pennsylvania, where the juvenile court was at first opposed as unconstitutional, the difficulty was met by first bringing the child before the magistrate in the police court, a course which (though followed by his transferring the case to the special court) perpetuated the very evils the children's court was intended to avoid; the work of probation was, however, most effectively carried out, chiefly by female officers. The Chicago Juvenile Court sits twice weekly under an especially appointed judge, and policemen act as probation officers to some extent. The court of Indianapolis, however, gained the reputation of being the most complete and perfect in the United States. It works with a large and highly efficient band of volunteer probation officers under a chief. The juvenile court of Denver, Colorado, attained remarkable results under Judge B. Lindsey, whose magnetic personality, wonderful comprehension of boy nature, and extraordinary influence over them achieved great results. The court meets once a fortnight, when fresh cases are tried and boys already on probation report themselves, often to the number of two hundred at a time. The latter appear before the judge in batches, each hands in his school report in a sealed letter, and according to its purport receives praise or blame, or he may be committed to the Detention House. An efficient court was also constituted at Baltimore, Maryland, with a judge especially chosen to preside, probation being for fixed periods, varying from three months to three years, and children being brought back to the court for parole or discharge, or, if necessary, committal to the house of one of the philanthropic societies. In Washington, D.C., the system of having no distinct court or judge, but holding a separate session, was followed, and it was found that numbers of children came to the court for help and guidance, looking upon the judge for the time being as their friend and counsellor. Probation in this instance offered peculiar difficulties on account of the colour question, two-thirds of the children having negro blood and a white boy being always preferred for a vacant situation. Throughout, the action of juvenile courts in the United States has been to bring each individual into "human touch" with kindly helpful workers striving to lead the young idea aright and train it to follow the straight path. It was the result always of the effort of private persons and not due to government initiative, indeed the advocates and champions of the system only established it by overcoming strong opposition from the authorities.

Progress in the same direction has been made in England. The home office had recommended London police magistrates to keep children's cases separate from those of adults; the same practice or something analogous obtained in many county boroughs, such as Bath, Birmingham, Bristol, Bolton, Bradford, Hull, Manchester, Walsall, Halifax and others, and the Children Act 1908 definitely established children's courts. This act enacted that courts of summary jurisdiction when hearing charges, &c., against children or young persons should, unless the child or young person is charged jointly with an adult, sit in a different building or room from that in which the ordinary sittings of the court are held, or on different days or at different times. Furthermore, provision must be made for preventing persons apparently under the age of sixteen years whilst being conveyed to or from court, or whilst

waiting before or after their attendance in court, from associating with adults, unless such adults are charged jointly with them. The act prohibits any persons other than members and officers of the court, the parties to the case, their solicitors, counsel and other persons directly concerned in the case, from being present in a juvenile court, except by leave of the court. Bona-fide press representatives are also excepted. The main object of the whole system is to keep the child, the embryotic offender who has probably erred from ignorance or the pressure of circumstances or misfortune, altogether free from the taint or contagion that attaches to criminal proceedings. The moral atmosphere of a legal tribunal is injurious to the youthful mind, and children who appear before a bench, whether as accused or as witness, gain a contemptuous familiarity with legal processes.

The most beneficial action of the children's court comes from its association with the system of personal guardianship and close supervision exercised by the probation officers, official and voluntary. Where the intervention of the newly constituted tribunal can not only save the child from evil association when first arrested, but can rescue him without condemnation and committal to prison, its functions may be relied upon to diminish crime by cutting it off at the source. Much depends upon the quality and temperament of the presiding authority. Where a judge with special aptitude can be appointed, firm, sympathetic, tactful and able to gain the confidence of those brought before him, he may do great good, by dealing with each individual and not merely with his offence, realizing that the court does not exist to condemn but to strengthen and give a fresh chance. Where the children's court is only a branch of the existing jurisdiction worked by the regular magistrate or judge fulfilling his ordinary functions and not specially chosen, the beneficial results are not so noticeable.

(A. G.)

CHILDREN'S GAMES. The study of traditional games has in recent years become an important branch of folklore research in England, and has contributed not a little towards elucidating many unrecorded facts in early history. These games may be broadly divided into two kinds—dramatic games, and games of skill and chance. These differ materially in their object. Games of skill and chance are played for the purpose of winning property from a less fortunate player. The dramatic games consist of non-singing and singing games; they are divided between boys' games and girls' games. Boys' games are mostly of a contest character, girls' of a more domestic type. The boys' dramatic games have preserved some interesting beliefs and customs, but the tendency in these games, such as "prisoner's base," has been to drop the words and tune and to preserve only that part (action) which tends best for exercise and use in school playgrounds. The girls' singing-games have not developed on these lines, and have therefore not lost so much of their early characteristics. The singing games consist of words, tune and action. The words, in verse, express ideas contained in customs not now in vogue, and they may be traced back to events taking place between men and women and between people of different villages. The tunes are simple, and the same tune is frequently used for different games. The actions are illustrative of the ideas to be expressed. The players represent various objects—animals, villages and people. The singing game is therefore not a game in the usual sense of the word. There is no element of "gambling" or playing "to win" in it—no one is richer or poorer for it; it also requires a number of children to play together. It is really a "play," and has survived because it has handed down some instances of custom and belief which were deeply rooted and which made a strong appeal to the imagination of our ancestors. The singing games represent in dramatic form the survival of those ceremonial dances common to people in early stages of development. These dances celebrated events which served to bind the people together and to give them a common interest in matters affecting their welfare. They were dramatic in character, singing and action forming a part of them, and their performers were connected by ties of place or kindred. They are probably survivals of what we might call folk drama. In these times it was held imperative to perform religious ceremonies periodically; at sowing and harvesting to ensure good crops; in the care of cattle and on occasions of marriage, birth and death. These were matters affecting the welfare of the whole community. Events were celebrated with dance, song and feasting, and no event was too trivial to be unconnected with some belief which rendered ceremony necessary.

At first these ceremonial dances had deep religious feeling for their basis, but in process of time they became purely secular and were performed at certain seasons only, because it was the custom to do so. They then became recognized as beautiful or pleasing things in the life of the people, and so continued, altering somewhat in ideas but retaining their old dramatic

forms. They were danced by old and young at festivals and holidays, these being held about the same time of year as that at which the previous religious ceremonies had been held.

Singing games are danced principally in one of two methods, “line” and “circle.” These represent two of the early forms of dramatic action. The “line” form (two lines of players standing opposite each other having a space of ground between them, advancing and retiring in turn) represents two different and opposing parties engaged in a struggle or contest. This method is used in all cases where contest is involved. The “circle” form, on the other hand, where all players join hands, represents those occasions when all the people of one place were engaged in celebrating events in which all were interested. Thus games celebrating sowing and harvest, and those associated with love and marriage, are played in this form. Both these methods allow of development. The circle varies from examples where all perform the same actions and say the same words to that where two or more players have principal parts, the others only singing or acting in dumb show, to examples where the singing has disappeared. The form or method of play and the actions constitute the oldest remaining parts of the game (the words being subject to alterations and loss through ignorance of their meaning), and it is to this form or method, the actions and the accompaniment of song, that they owe their survival, appealing as they do to the strong dramatic instinct of children and of uncultured folk.

It will be convenient to give a few instances of the best-known singing games. In “line” form, a fighting game is “We are the Rovers.” The words tell us of two opposing parties fighting for their land; both sides alternately deride one another and end by fighting until one side is victorious. Two other “line” games, “Nuts in May” and “Here come three dukes a-riding,” are also games of contest, but not for territory. These show an early custom of obtaining wives. They represent marriage by capture, and are played in “line” form because of the element of contest contained in the custom. Another form, the “arch,” is also used to indicate contest.

Circle games, on the contrary, show such customs as harvest and marriage, with love and courting, and a ceremony and sanction by assembled friends. “Oats and beans and barley” and “Sally Water” are typical of this form. The large majority of circle games deal with love or marriage and domestic life. The customs surviving in these games deal with tribal life and take us back to “foundation sacrifice,” “well worship,” “sacredness of fire,” besides marriage and funeral customs.

Details may be found in the periodical publications of the Folk-lore Society, and particularly in the following works:—A.B. Gomme’s *Traditional Games of Great Britain* (2 vols., Nutt, 1894-1898); Gomme’s *Children’s Singing Games* (Nutt, 1904.); Eckenstein’s *Comparative Studies in Nursery Rhymes* (Duckworth, 1906); Maclagan, *Games of Argyllshire*, Folk-lore Society (1900); Newell’s *Games of American Children* (Harper Bros., New York, 1884). In Mrs Gomme’s *Traditional Games*, several versions of each game, together with a short account of the suggested origin and of the custom or belief indicated, are given for each game. In vol. ii. (pp. 458-531) a memoir of the history of games is given, and the customs and beliefs which originated them, reviewing the whole subject from the anthropological point of view, and showing the place which games occupy among the evidences of early man. In Miss Eckenstein’s comparative study of nursery rhymes suggested origins are given for many of these, and an attempt made to localize certain of the customs and events. In several of the publications of the Folk-lore Society local collections of games are given, all of which may be studied with advantage. Stubbes and other early writers give many instances of boys’ games in their days, many of which still exist. Tylor and other writers on anthropology, in dealing with savage custom, confirm the views here expressed. For nursery rhymes see Halliwell, *Nursery Rhymes* (1845), and Chambers’s *Popular Rhymes* (first printed 1841, reprinted in 1870). The recently collected *Morris Dances* by Mr Cecil Sharp should also be consulted. One of the morris dances, bean-setting, evidently dealing with planting or harvest, is danced in circle form, while others indicating fighting or rivalry are danced in line form, each line dancing in circle before crossing over to the opposite, side, and thus conforming to the laws already shown to exist in the more ordinary game.

(A. B. G.*)

CHILDS, GEORGE WILLIAM (1829-1894), American publisher, was born in Baltimore, Maryland, on the 12th of May 1829. He was educated in the public schools, and after a brief term of service in the navy, he became in 1843 a clerk in a book-shop at Philadelphia. There, in 1847, he established an independent book-shop, and two years later organized the publishing house of Childs & Peterson. In 1864, with Anthony J. Drexel, he purchased the

Public Ledger, at that time a little known newspaper; he completely changed its policy and methods, and made it one of the most influential journals in the country. He died at Philadelphia on the 3rd of February 1894. Childs was widely known for his public spirit and philanthropy. In addition to numerous private benefactions in educational and charitable fields, he erected memorial windows to William Cowper and George Herbert in Westminster Abbey (1877), and to Milton in St Margaret's, Westminster (1888), a monument to Leigh Hunt at Kensal Green, a Shakespeare memorial fountain at Stratford-on-Avon (1887), and monuments to Edgar Allan Poe and to Richard A. Proctor. He gave Woodland Cemetery to the Typographical Society of Philadelphia for a printers' burial-ground, and with Anthony J. Drexel founded in 1892 a home for Union printers at Colorado Springs, Colorado.

His *Recollections* were published at Philadelphia in 1890.

CHILE, or Chili (derived, it is said, from the Quichua *chiri*, cold, or *tchili*, snow), a republic of South America, occupying the narrow western slope of the continent between Peru and its southern extremity. (For map see Argentina.) It extends from the northern boundary of the province of Tacna, about 17° 25′ S., to Cape Horn at the extreme southern point of the Fuegian archipelago in 55° 58′ 40″ S., with an extreme meridian length of 2661 m., and with a coast line considerably exceeding that figure owing to a westward curve of about 3½° and an eastward trend south of 50° S. of nearly 8°. Its mainland width ranges from about 46 to 228 m., and its area, including the islands of the southern coast, is officially computed to be 307,774 sq. m., though the Gotha computation (1904) places it at 293,062 sq. m. Chile is thus a ribbon-like strip of territory between the Andes and the Pacific, comparatively regular north of the 42nd parallel, but with an extremely ragged outline south of that line. It is bounded N. by Peru, E. by Bolivia and Argentina, S. and W. by the Pacific. Its eastern boundary lines are described under Argentina and Bolivia. The war of 1879-81 with Peru and Bolivia gave to Chile 73,993 sq. m. of territory, or one-fourth her total area. By subsequent agreements the Bolivian department of the Literal, or Atacama, and the Peruvian department of Tarapacá, were formally ceded to Chile, and the northern frontier was removed to the river Camarones, which enters the Pacific at 19° 12′ S. Under the treaty of Ancon (20th October 1883) Chile was to retain possession of the provinces of Tacna and Arica belonging to the Peruvian department of Moquegua for a period of ten years, and then submit "to popular vote whether those territories are to belong to Chile or Peru." At the expiration of the period (1893) Chile evaded compliance with the agreement, and under various pretexts retained forcible possession of the territory. This arbitrary retention of Tacna and Arica, which became the province of Tacna under Chilean administration, removed the frontier still farther north, to the river Sama, which separates that province from the remaining part of the Peruvian department of Moquegua. Starting from the mouth of that river, in 17° 57′ S., the disputed boundary follows its course in an irregular N.E. direction to its source in the Alto do Toledo range, thence S. and E. along the water parting to the Bolivian boundary line in the Cordillera Silillica.

Physiography.—For purposes of general topographical description Chile may be divided into three regions: the desert region of the north, the central agricultural region between the provinces of Coquimbo and Llanquihue, and the heavily-forested rainy region south of lat. 41° S. The desert region is an elevated arid plateau descending gradually from the Andes towards the coast, where it breaks down abruptly from elevations of 800 to 1500 ft. From the sea this plateau escarpment has the appearance of a range of flat topped hills closely following the coast line. The surface is made up of extensive plains covered with sand and deposits of alkaline salts, broken by ranges of barren hills having the appearance of spurs from the Andes, and by irregular lateral ranges in the vicinity of the main cordillera enclosing elevated saline plateaus. This region is rainless, barren and inhospitable, absolutely destitute of vegetation except in some small river valleys where irrigation is possible, and on the slopes of some of the snow-covered peaks where the water from the melting snows nourishes a scanty and coarse vegetation before it disappears in the thirsty sands. It is very rich in mineral and saline deposits, however. The eastern parts of this region lie within the higher ranges of the Andes and include a large district awarded to Chile in 1899 (see Argentina and Atacama). This arid, bleak area is apparently a continuation southward of the great Bolivian *altaplanicie*, and is known as the Puna de Atacama. Its average elevation is estimated at 11,000 to 12,000 ft. A line of volcanoes crosses it from north to south, and extensive lava beds cover a considerable part of its surface. Large shallow saline lakes are also characteristic features of this region. From 28° S. the spurs from the cordillera toward the coast are more sharply defined and enclose deeper valleys, where the cultivation of the soil becomes possible, at first through

irrigation and then with the aid of light periodical rains. The slopes of the Andes are precipitous, the general surface is rough, and in the north the higher ground and coast are still barren. Beginning with the province of Aconcagua the coast elevations crystallize into a range of mountains, the Cordillera Maritima, which follows the shore line south to the province of Llanquihue, and is continued still farther south by the mountain range of Chiloé and the islands of the western coast, which are the peaks of a submerged mountain chain. Lying between this coast range and the Andes is a broad valley, or plain, extending from the Aconcagua river south to the Gulf of Ancud, a distance slightly over 620 m. with an average width of about 60 m. It is sometimes called the "Vale of Chile," and is the richest and most thickly-populated part of the republic. It is a highly fertile region, is well watered by numerous streams from the Andes, has a moderate rainfall, and forms an agricultural and grazing region of great productiveness. It slopes toward the south, and its lower levels are filled with lakes and with depressions where lakes formerly existed. It is an alluvial plain for the greater part, but contains some sandy tracts, as in Ñuble and Arauco; in the north very little natural forest is found except in the valleys and on the slopes of the enclosing mountain ranges, but in the south, where the rainfall is heavier, the plain is well covered with forest. South of 41° S. the country is mountainous, heavily-forested and inhospitable. There are only a few scattered settlements within its borders, and a few nomadic tribes of savages eke out a miserable existence on the coast. The deeply-indented coast line is filled with islands which preserve the general outline of the continent southward to the Fuegian archipelago, the outside groups forming a continuation of the Cordillera Maritima. The heavy and continuous rainfall throughout this region, especially in the latitude of Chiloé, gives rise to a large number of rivers and lakes. Farther south this excessive precipitation is in the form of snow in the Cordilleras, forming glaciers at a comparatively low level which in places discharge into the inlets and bays of the sea. The extreme southern part of this region extends eastward to the Atlantic entrance to the Straits of Magellan, and includes the greater part of the large island of Tierra del Fuego with all the islands lying south and west of it. There are some comparatively level stretches of country immediately north of the Straits, partly forested and partly grassy plains, where sheep farming has been established with some degree of success, but the greater part of this extreme southern territory is mountainous, cold, wet and inhospitable. The perpetual snow-line here descends to 3500 to 4000 ft. above sea-level, and the forest growth does not rise above an altitude of 1000 to 1500 ft.

Mountains.

It has been officially estimated that the arable lands of Chile comprise about twenty-five millions of acres (slightly over 39,000 sq. m.), or very nearly one-eighth of its total area. The desert regions of the north include comparatively large areas of plains and gently sloping surfaces, traversed by ranges of barren hills. The remainder of the republic, probably more than three-fifths of its surface, is extremely mountainous. The western slopes of the Andes, with its spurs and lateral ranges, cover a broad zone on the eastern side of the republic, and the Cordillera Maritima covers another broad zone on its western side from about lat. 33° to the southern extremity of Chiloé, or below lat. 43°. This maritime range is traversed by several river valleys, some of which, like the Bio-Bio, are broad and have so gentle a slope as to be navigable. The Andes, however, present an unbroken barrier on the east, except at a few points in the south where the general elevation is not over 5000 to 6000 ft., and where some of the Chilean rivers, as the Palena and Las Heras, have their sources on its eastern side. From the 52nd to about the 31st parallel this great mountain system, known locally as the Cordillera de los Andes, apparently consists of a single chain, though in reality it includes short lateral ranges at several points; continuing northward several parallel ranges appear on the Argentine side and one on the Chilean side which are ultimately merged in the great Bolivian plateau. The Chilean lateral range, which extends from the 29th to the 19th parallels, traverses an elevated desert region and possesses several noteworthy peaks, among which are Cerro Bolson, 16,017 ft., and Cerro Dona Ines, 16,706 ft. It is broken to some extent in crossing the province of Antofagasta, the southern division being known as the Sierra de Huatacondo. At the southern frontier of Bolivia the main chain, which has served as the boundary line between Argentina and Chile, divides into two great ranges, the principal one continuing almost due north along the eastern side of the great Bolivian *alta-planicie*, and the other forming its western rim, where it is known as the Cordillera Silillica, and then following the trend of the coast north-westward into Peru becomes the Cordillera Occidental. The western slopes of the Andes are precipitous, with short spurs enclosing deep valleys. The whole system is volcanic, and a considerable number of volcanoes are still intermittently active, noticeably in central and southern Chile. The culminating point of the Chilean Andes is Aconcagua, which rises to a height of 23,097 ft.

In southern Chile the coast is highly mountainous, but the relation of these elevations to the Andes has not been clearly determined. The highest of these apparently detached groups are Mt. Macá (lat. 45° S.), 9711 ft., and Mt. Arenales (about 47° S. lat.), 11,286 ft. Cathedral Peak on Wellington Island rises to a height of 3838 ft. and the highest point on Taytao peninsula to 3937 ft. The coast range of central Chile has no noteworthy elevations, the culminating point in the province of Santiago being 7316 ft. Between central Chile and the northern desert region there is a highly mountainous district where distinct ranges or elongated spurs cross

the republic from the Andes to the coast, forming transverse valleys of great beauty and fertility. The most famous of these is the “Vale of Quillota” between Valparaiso and Santiago. The Chilean Andes between Tacna and Valdivia are crossed by 24 passes, the majority of them at elevations exceeding 10,000 ft. The best-known of these is the Uspallata pass between Santiago and the Argentine city of Mendoza, 12,870 ft. above sea-level. The passes of central and southern Chile are used only in the summer season, but those of northern Chile are open throughout the whole year.

The volcanic origin of the Andes and their comparatively recent elevation still subject Chile, in common with other parts of the western coast region, to frequent volcanic and seismic disturbances. In some instances since European occupation, violent earthquake shocks have resulted in considerable elevations of certain parts of the coast. After the great earthquake of 1835 Captain Robert FitzRoy (1805-1865) of H.M.S. “Beagle” found putrid mussel-shells still adhering to the rocks 10 ft. above high water on the island of Santa Maria, 30 m. from Concepción, and Charles Darwin declares, in describing that disaster, that “there can be no doubt that the land round the bay of Concepción was upraised two or three feet.” These upheavals, however, are not always permanent, the upraised land sometimes settling back to its former position. This happened on the island of Santa Maria after 1835. The existence of sea-shells at elevations of 350 to 1300 ft. in other parts of the republic shows that these forces, supplemented by a gradual uplifting of the coast, have been in operation through long periods of time and that the greater part of central and southern Chile has been raised from the sea in this way. These earthquake shocks have two distinct characteristics, a slight vibration, sometimes almost imperceptible, called a *temblor*, generally occurring at frequent intervals, and a violent horizontal or rotary vibration, or motion, also repeated at frequent intervals, called a *terremoto*, which is caused by a fracture or displacement of the earth’s strata at some particular point, and often results in considerable damage. When the earthquake occurs on the coast, or beneath the sea in its vicinity, tidal waves are sometimes formed, which cause even greater damage than the earthquake itself. Arica has been three times destroyed by tidal waves, and other small towns of the north Chilean coast have suffered similar disasters. Coquimbo was swept by a tidal wave in 1849, and Concepción and Talcahuano were similarly destroyed in 1835. The great earthquake which partially destroyed Valparaiso in 1906, however, was not followed by a tidal wave. These violent shocks are usually limited to comparatively small districts, though the vibrations may be felt at long distances from the centre of disturbance. In this respect Chile may be divided into at least four great earthquake areas, two in the desert region, the third enclosing Valparaiso, and the fourth extending from Concepción to Chiloé. A study of Chilean earthquake phenomena, however, would probably lead to a division of southern Chile into two or more distinct earthquake areas.

Coast.

The coast of Chile is fringed with an extraordinary number of islands extending from Chiloé S. to Cape Horn, the grouping of which shows that they are in part the summits of a submerged mountain chain, a continuation southward of the Cordillera Maritima. Three groups of these islands, called the Chiloé, Guaytecas and Chonos archipelagoes, lie N. of the Taytao peninsula (lat. 45° 50′ to 46° 55′ S.), and with the mainland to the E. form the province of Chiloé. The largest of these is the island of Chiloé, which is inhabited. Some of the smaller islands of these groups are also inhabited, though the excessive rainfall of these latitudes and the violent westerly storms render them highly unfavourable for human occupation. Some of the smallest islands are barren rocks, but the majority of them are covered with forests. These archipelagoes are separated from the mainland in the north by the gulfs of Chacao (or Ancud) and Corcovado, 30 to 35 m. wide, which appear to be a submerged part of the great central valley of Chile, and farther south by the narrower Moraleda channel, which terminates southward in a confusing network of passages between the mainland and the islands of the Chonos group. One of the narrow parts of the Chilean mainland is to be found opposite the upper islands of this group, where the accidental juxtaposition of Magdalena island, which indents the continent over half a degree at this point, and the basin of Lake Fontana, which gives the Argentine boundary a sharp wedge-shaped projection westward, narrows the distance between the two to about 26 m. The Taytao peninsula, incorrectly called the Tres Montes on some maps, is a westward projection of the mainland, with which it is connected by the narrow isthmus of Ofqui, over which the natives and early missionaries were accustomed to carry their boats between the Moraleda Channel and Gulf of Peñas. A short ship canal here would give an uninterrupted and protected inside passage from Chacao Channel all the way to the Straits of Magellan, a distance of over 760 m. A southern incurving projection of the outer shore-line of this peninsula is known as Tres Montes peninsula, the most southern point of which is a cape of the same name. Below the Taytao peninsula is the broad open Gulf of Peñas, which carries the coast-line eastward fully 100 m. and is noticeably free from islands. The northern entrance to Messier Channel is through this gulf. Messier, Pitt, Sarmiento and Smyth’s Channels, which form a comparatively safe and remarkably picturesque inside route for small steamers, about 338 m. in length, separate another series of archipelagoes from the mainland. These channels are in places narrow and tortuous. Among the islands which thickly fringe this part of the

coast, the largest are Azopardo (lying within Baker Inlet), Prince Henry, Campaña, Little Wellington, Great Wellington and Mornington (of the Wellington archipelago), Madre de Dios, Duke of York, Chatham, Hanover, Cambridge, Contreras, Rennell and the Queen Adelaide group of small barren rocks and islands lying immediately north of the Pacific entrance to the Straits of Magellan. The large number of English names on this coast is due to the fact that the earliest detailed survey of this region was made by English naval officers; the charts prepared from their surveys are still in use and form the basis of all subsequent maps. None of these islands is inhabited, although some of them are of large size, the largest (Great Wellington) being about 100 m. long. It has likewise been determined, since the boundary dispute with Argentina called attention to these territories and led to their careful exploration at the points in dispute, that Skyring Water, in lat. 53° S., opens westward into the Gulf of Xaultegua, which transforms Ponsonby Land and Cordoba (or Croker) peninsula into an island, to which the name of Riesco has been given. The existence of such a channel was considered probable when these inland waters were first explored in 1829 by Captain FitzRoy, but it was not discovered and surveyed until three-quarters of a century had elapsed. Belonging to the Fuegian group south of the Straits of Magellan are Desolation, Santa Ines, Clarence, Dawson, Londonderry, Hoste, Navarin and Wollaston islands, with innumerable smaller islands and rocks fringing their shores and filling the channels between them. Admirable descriptions of this inhospitable region, the farthest south of the inhabited parts of the globe, may be found in the *Narrative of the Surveying Voyages of His Majesty's Ships "Adventure" and "Beagle" between the years 1826 and 1836* (3 vols., 1839).

The western and larger part of Tierra del Fuego (*q.v.*) belongs to Chile. About 63 m. S.W. of Cape Horn, in lat. 56° 25′ S., is the Diego Ramirez group of small, rocky islands, the most southern possession of the republic. Its westernmost possessions are Sala-y-Gomez and Easter islands, the former in about 27° S., 105° W., and the latter, the easternmost inhabited Polynesian island, in 27° 6′ S., 109° 17′ W. Much nearer the Chilean coast (396 m.), lying between the 33rd and 34th parallels, are the three islands of the Juan Fernandez group, and rising apparently from the same submerged plateau about 500 m. farther north of the latter are the rocky islets of San Ambrosio and San Felix, all belonging to Chile. North of Chiloé there are few islands in close proximity to the coast. The more important of these are La Mocha, off the southern coast of Arauco, in lat. 38° 20′ S., which is 8 m. long and rises to an elevation of 1240 ft. above the sea; Santa Maria, 30 m. south-west of Concepcion, which partially encloses the Bay of Arauco and is well cultivated; and Quiriquina, lying off the port of Talcahuano in the entrance to Concepción bay. There are a few barren islands on the desert coast, the largest of which are between Coquimbo and Caldera. Since the removal of their guano deposits they have become practically worthless, except where they serve to shelter anchorages.

Harbours.

The coast of northern and central Chile is singularly deficient in good harbours. Those of the desert region are only slight indentations in a remarkably uniform coast-line, sheltered on one side by a point of land, or small island. The landings are generally dangerous because of the surf, and the anchorages are unsafe from storms on the unprotected side. Among the most frequented of these are Valparaiso, Coquimbo, Caldera, Iquique and Arica. There are some small harbours for coasting vessels of light draught along the coast of central Chile, usually at the partially obstructed mouths of the larger rivers, as San Antonio near the mouth of the Maipó, Constitución at the mouth of the Maule, and Llico on the outlet of Lake Vichuquen, but there is no harbour of importance until Conceptión (or Talcahuano) Bay is reached. There are three harbours on this bay, El Tomé, Penco and Talcahuano (*q.v.*), the last being the largest and best-protected port on the inhabited part of the Chilean coast. Immediately south of this bay is the large Bay of Arauco, into which the Bio-Bio river discharges, and on which, sheltered by the island of Santa Maria, are the ports of Coronel and Lota. The next important harbour is that of El Corral, at the mouth of the Valdivia river and 15 m. below the city of Valdivia. The Bay of San Carlos on the northern coast of Chiloé, which opens upon the narrow Chacao channel, has the port of Ancud, or San Carlos, and is rated an excellent harbour for vessels of light and medium draught. Inside the island of Chiloé the large gulfs of Chacao (or Ancud) and Corcovado are well protected from the severe westerly storms of these latitudes, but they are little used because the approach through the Chacao channel is tortuous and only 2 to 3 m. wide, and the two gulfs, though over 30 m. wide and 150 m. long, are beset with small rocky islands. At the north end of the first is the Reloncavi, a large and nearly landlocked bay, on which stands Puerto Montt, the southern terminus of the Chilean central railway. The large Gulf of Peñas, south of Taytao peninsula, is open to the westerly storms of the Pacific, but it affords entrance to several natural harbours. Among these are the Gulfs of Tres Montes and San Estevan, and Tarn Bay at the entrance to Messier Channel. The next 300 m. of the Chilean coast contain numerous bays and inlets affording safe harbours, but the mainland and islands are uninhabited and the climate inhospitable. Behind Rennell Island in lat. 52° S., however, is a succession of navigable estuaries which penetrate inland nearly to the Argentine frontier. The central part of this group of estuaries is called Worsley Sound, and the last and farthest inland of its arms is Last Hope Inlet (Ultima Esperanza), on which is situated the Chilean agricultural

colony of Puerto Consuelo. The Straits of Magellan, about 360 m. in length, lie wholly within Chilean territory. Midway of them is situated Punta Arenas, the most southern town and port of the republic.

Rivers.

Except in the extreme south the hydrography of Chile is of the simplest description, all the larger rivers having their sources in the Andes and flowing westward to the Pacific. Their courses are necessarily short, and only a few have navigable channels, the aggregate length of which is only 705 m. Nearly all rivers in the desert region are lost in the sands long before reaching the coast. Their waterless channels are interesting, however, as evidence of a time when climatological conditions on this coast were different. The principal rivers of this region are Sama (which forms the provisional boundary line with Peru), Tacna, Camarones, Loa, Copiapó, Huasco, Elqui, Limari and Choapa. The Loa is the largest, having its sources on the slopes of the Cordillera south of the Minho volcano, between 21° and 21° 30′ S. lat., and flowing south on an elevated plateau to Chiuchiu, and thence west and north in a great curve to Quillaga, whence its dry channel turns westward again and reaches the Pacific in lat. 21° 28′ S., a few miles south of the small port of Huanillos. Its total length is estimated at 250 m. The upper courses of the river are at a considerable elevation above the sea and receive a large volume of water from the Cordilleras. The water of its upper course and tributaries is sweet, and is conducted across the desert in pipes to some of the coast towns, but in its lower course, as in all the rivers of this region, it becomes brackish. The Copiapó, which once discharged into the sea, is now practically exhausted in irrigating a small fertile valley in which stands the city of that name. The Copiapó and Huasco have comparatively short courses, but they receive a considerable volume of water from the higher sierras. The latter is also used to irrigate a small, cultivated valley. The rivers of the province of Coquimbo—the Elqui or Coquimbo, Limari and Choapa—exist under less arid conditions, and like those of the province of Aconcagua—the Ligua and Aconcagua—are used to irrigate a much larger area of cultivated territory. The central agricultural provinces are traversed by several important rivers, all of them rising on the western slopes of the snow-clad Andes and breaking through the lower coast range to the Pacific after being extensively used to irrigate the great central valley of Chile. These are the Maipó (Maypó or Maipú), Rapel, Mataquito, Maule, Itata, Bio-Bio, Imperial, Tolten, Valdivia or Calle-Calle, Bueno and Maullin. With the exception of the first three, these rivers have short navigable channels, but they are open only to vessels of light draught because of sand-bars at their mouths. The largest is the Bio-Bio, which has a total length of 220 m., 100 of which are navigable. These rivers have been of great service in the agricultural development of this part of Chile, affording means of transportation where railways and highways were entirely lacking. Some of the larger tributaries of these rivers, whose economic value has been equally great, are the Mapocho, which flows through Santiago and enters the Maipó from the north; the turbulent Cachapoal, which joins the Rapel from the north; the Claro, which waters an extensive part of the province of Talca and enters the Maule from the north; the Ñuble, which rises in the higher Andes north of the peaks of Chillan and flows entirely across the province of Ñuble to join the Itata on its western frontier; the Laja, which rises in a lake of the same name near the Argentine frontier in about lat. 35° 30′ S. and flows almost due west to the Bio-Bio; and the Cautin, which rises in the north-east corner of Cautin and after a tortuous course westward nearly across that province forms the principal confluent of the Imperial. The unsettled southern regions of Chiloé (mainland) and Magallanes are traversed by a number of important rivers which have been only partially explored. They have their sources in the Andes, some of them on the eastern side of the line of highest summits. The Puelo has its origin in a lake of the same name in Argentine territory, and flows north-west through the Cordilleras into an estuary (Reloncavi Inlet) of the Gulf of Reloncavi at the northern end of the Gulf of Chacao. Its lower course is impeded in such a manner as to form three small lakes, called Superior, Inferior and Taguatagua. A large northern tributary of the Puelo, the Manso, has its sources in Lake Mascardi and other lakes and streams south-east of the Cerro Tronador, also in Argentina, and flows south-west through the Cordilleras to unite with the Puelo a few miles west of the 72nd meridian. The Reloncavi Inlet also receives the outflow of Lake Todos los Santos through a short tortuous stream called the Petrohue. The Comau Inlet and river form the boundary line between the provinces of Llanquihue and Chiloé, and traverse a densely wooded country in a north-westerly direction from the Andes to the north-eastern shore of the Gulf of Chacao. Continuing southward, the Yelcho is the next important river to traverse this region. It drains a large area of Argentine territory, where it is called the Rio Fetaleufu or Fetalauquen, its principal source being a large lake of the same name. It flows south-west through the Andes, and then north-west through Lake Yelcho to the Gulf of Corcovado. The Argentine colony of the 16th of October, settled principally by Welshmen from Chubut, is located on some of the upper tributaries of this river, in about lat. 43° S. The Palena is another river of the same character, having its source in a large frontier lake called General Paz and flowing for some distance through Argentine territory before crossing into Chile. It receives one large tributary from the south, the Roo Pico, and enters an estuary of the Gulf of Corcovado a little north of the 44th parallel. The Frias is wholly a Chilean river, draining an extensive Andean region between the 44th and 45th parallels and discharging into

the Puyuguapi channel, which separates Magdalena island from the mainland. The Aisen also has its source in Argentine territory near the 46th parallel, and drains a mountainous region as far north as the 45th parallel, receiving numerous tributaries, and discharging a large volume of water into the Moraleda channel in about lat. 45° 20′ S. The lower course of this river is essentially an inlet, and is navigable for a short distance. The next large river is the Las Heras, or Baker, through which the waters of Lakes Buenos Aires and Pueyrredon, or Cochrane, find their way to the Pacific. Both of these large lakes are crossed by the boundary line. The Las Heras discharges into Martinez Inlet, the northern part of a large estuary called Baker or Calen Inlet which penetrates the mainland about 75 m. and opens into Tarn Bay at the south-east corner of the Gulf of Peñas. Azopardo (or Merino Jarpa) island lies wholly within this great estuary, while at its mouth lies a group of smaller islands, called Baker Islands, which separate it from Messier Channel. The course of the Las Heras from Lake Buenos Aires is south and south-west, the short range of mountains in which are found the Cerros San Valentin and Arenales forcing it southward for an outlet. Baker Inlet also receives the waters of still another large Argentine-Chilean lake, San Martin, whose far-reaching fjord-like arms extend from lat. 49° 10′ to 48° 20′ S.; its north-west arm drains into the Tero, or La Pascua, river. Lake San Martin lies in a crooked deeply cut passage through the Andes, and the divide between its southern extremity (Laguna Tar) and Lake Viedma, which discharges through the Santa Cruz river into the Atlantic, is so slight as to warrant the hypothesis that this was once a strait between the two oceans. After a short north-westerly course the Toro discharges into Baker Inlet in lat. 48° 15′ S., long. 73° 24′ W. South of the Toro there are no large rivers on this coast, but the narrow fjords penetrate deeply into the mountains and bring away the drainage of their snow-capped, storm-swept elevations. A peculiar network of fjords and connecting channels terminating inland in a peculiarly shaped body of water with long, widely branching arms, called Worsley Sound, Obstruction Sound and Last Hope Inlet, covers an extensive area between the 51st and 53rd parallels, and extends nearly to the Argentine frontier. It has the characteristics of a tidewater river and drains an extensive region. The sources of the Argentine river Coile are to be found among the lakes and streams of this same region, within Chilean territory. A noteworthy peculiarity of southern Chile, from the Taytao peninsula (about 46° 50′ S. lat.) to Tierra del Fuego, is the large number of glaciers formed on the western and southern slopes of the Cordilleras and other high elevations, which discharge direct into these deeply cut estuaries. Some of the larger lakes of the Andes have glaciers discharging into them. The formation of these icy streams at comparatively low levels, with their discharge direct into tidewater estuaries, is a phenomenon not to be found elsewhere in the same latitudes.

Lakes.

The lakes of Chile are numerous and important, but they are found chiefly in the southern half of the republic. In the north the only lakes are large lagoons, or morasses, on the upper saline plateaus between the 23rd and 28th parallels. They are fed from the melting snows and periodical storms of the higher Andes, and most of them are completely dry part of the year. Their waters are saturated with saline compounds, which in some cases have considerable commercial value. In central Chile above the Bio-Bio river the lakes are small and have no special geographical interest, with the exception perhaps of the Laguna del Maule, in 36° 7′ S., and Laguna de la Laja, in 37° 20′, which lie in the Andes near the Argentine frontier and are sources of the two rivers of the same names. Below the Bio-Bio river there is a line of large picturesque lakes extending from the province of Cautin, south through that of Llanquihue, corresponding in character and position to the dry lacustrine depressions extending northward in the same valley. They lie on the eastern side near the Cordilleras, and serve the purpose of great reservoirs for the excessive precipitation of rain and snow on their western slopes. With one exception they all drain westward into the Pacific through short and partly navigable rivers, and some of the lakes are also utilized for steamship navigation. These lakes are Villarica on the southern frontier of Cautin, Rinihue and Ranco in Valdivia, and Puyehue, Rupanco, Llanquihue and Todos los Santos in Llanquihue. The largest of the number are Lakes Ranco and Llanquihue, the former with an estimated area of 200 sq. m. and the latter of 300 sq. m. Lake Todos los Santos is situated well within the Andean foothills north-east of Puerto Montt and at an elevation of 509 ft., considerably above that of the other lakes, Lake Ranco being 230 ft. above sea-level. The great Andean lakes of General Paz (near the 44th parallel), Buenos Aires (in lat. 46° 30′ S.), Pueyrredon, or Cpchrane (47° 15′ S.) and San Martin (49° S.), lie partly within Chilean territory. In the extreme south are Lagoa Blanca, a large fresh-water lake in lat. 52° 30′ S., and two large inland salt-water sounds, or lagoons, called Otway Water and Skyring Water, connected by FitzRoy Passage.

Geology.—Chile may be divided longitudinally into two regions which differ from each other in their geological structure. Along the coast lies a belt of granite and schist overlaid unconformably by Cretaceous and Tertiary deposits; inland the mountains are formed chiefly of folded Mesozoic beds, together with volcanic rocks of later date. The great longitudinal valley of Chile runs approximately, but only approximately, along the boundary between the two zones. Towards the north the coastal zone disappears beneath the sea and the Andean zone reaches to the shore. The ancient rocks which form the most characteristic feature of the

former do indeed occur upon the coast of Peru, but in the north of Chile they are found only in isolated masses standing close to the shore or, as at Mejillones, projecting into the sea. South of Antofagasta the old rocks form a nearly continuous band along the coast, extending as far as Cape Horn and Staten Island, and occupying the greater part of the islands of southern Chile. Lithologically they are crystalline schists, together with granite, diorite, gabbro and other igneous rocks. They are known to be pre-Jurassic, but whether they are Palaeozoic or Archaean is uncertain. They are strongly folded and are overlaid unconformably by Cretaceous and Tertiary deposits. In the north both the Cretaceous and Tertiary beds of this zone are limited in extent, but towards the south Mesozoic beds, which are at least in part Cretaceous, form a band of considerable width. The Tertiary beds include both marine and terrestrial deposits, and appear to be chiefly of Miocene and Pliocene age. The whole of the north part of Tierra del Fuego is occupied by plateaus of horizontal Tertiary strata.

The Chilean Andes correspond with the Western Cordillera of Bolivia and Peru, and consist almost entirely of Jurassic and Cretaceous beds, together with the products of the Tertiary eruptions. The Mesozoic beds are thrown into a series of parallel folds which run in the direction of the chain and which are generally free from any complications such as overthrusting or overfolding. The Cretaceous beds form a synclinal upon the eastern side of the chain (and, in general, beyond the Chilean boundary), while the Jurassic beds are thrown into a number of folds which form the axis and the western flank. Through the Mesozoic beds are intruded granitic and other igneous rocks of Tertiary age, and upon the folded Mesozoic foundation rise the volcanic cones of Tertiary and later date. The Trias is known only at La Ternera near Copiapó, where coal-seams with Rhaetic plants have been found; but the rest of the Mesozoic series, from the Lias to the Upper Cretaceous, appears to be represented without a break of more than local importance. The deposits are marine, consisting mainly of sandstone and limestone, together with tuffs and conglomerates of porphyry and porphyrite. These porphyritic rocks form a characteristic feature of the southern Andes, and were at one time supposed to be metamorphic; but they are certainly volcanic, and as they contain marine fossils they must have been laid down beneath the sea. They are not confined to any one horizon, but occur irregularly throughout the Jurassic and occasionally also amongst the Cretaceous strata. They form, in fact, a special facies which may frequently be traced laterally into the more normal marine deposit of the same age. The fauna of the Mesozoic beds is very rich, and includes forms which are found in northern Europe, others which occur in central Europe, and others again which are characteristic of the Mediterranean region. It lends no support to Neumayr’s theory of climatic zones. A large part of the chain is covered by the products of the great volcanoes which still form the highest summits of the Chilean and Argentine Andes. The rocks are liparites, dacites, hornblende and pyroxene andesites. The recent lavas of the still active volcanoes of the south are olivine-bearing hypersthene-andesite and basalt.[1]

Climate.—The climate of Chile varies widely, from the tropical heat and extreme arid conditions of the northern coast to the low temperatures and extreme humidity of western Tierra del Fuego and the southern coast. The high altitudes of the Andean region also introduce vertical zones of temperature, modified to some extent by the rainless plateaus of the north, and by the excessive rainfall of the south. In general terms it may be said that the extremes of temperature are not so great as in corresponding latitudes of the northern hemisphere, because of the greater expanse of water in comparison with the land areas, the summers being cooler and the winters warmer. The cold antarctic, or Humboldt, current sweeps northward along the coast and greatly modifies the heat of the arid, tropical plateaus. The climate of northern and central Chile is profoundly affected by the high mountain barrier on the eastern frontier and by the broad treeless pampas of Argentina, which raise the easterly moisture-laden winds from the Atlantic to so high an elevation that they sweep across Chile without leaving a drop of rain. At very rare intervals light rains fall in the desert regions north of Coquimbo, but these are brought by the prevailing coast winds. With this exception these regions are the most arid on the face of the globe, highly heated by a tropical sun during the day and chilled at night by the proximity of snow-covered heights and a cold ocean current. Going south the temperature slowly falls and the rainfall gradually increases, the year being divided into a short rainy season and a long, dry, cloudless season. At Copiapó, in 27° 22′ S., 1300 ft. above the sea, the mean annual temperature is 60° and the rainfall about 1 in., but at Coquimbo, in 29° 56′ S., the temperature is 59.2° and the rainfall 1½ in. At Santiago, in 33° 27′ S., 1755 ft. above the sea, the mean temperature is 54° and the annual rainfall 16½ in., though the latter varies considerably. The number of rainy days in the year averages about 21. At Talca, in 35° 36′ S. and 334 ft. above sea-level, the mean annual temperature is nearly one degree above that of Santiago, but the rainfall has increased to 19.7 in. The long dry season of this region makes irrigation necessary, and vegetation has something of a subtropical appearance, palms growing naturally as far south as 37°. The climate is healthy and agreeable, though the death-rate among the common people is abnormally high on account of personal habits and unsanitary surroundings. In southern Chile the climate undergoes a radical change—the prevailing winds becoming westerly, causing a long rainy season with a phenomenal rainfall. The plains as well as the western slopes of the Andes are

covered with forest, the rivers become torrents, and the sky is covered with heavy clouds a great part of the year. At Valdivia, in 39° 49′ S. and near the sea-level, the mean annual temperature is 52.9° and the annual rainfall 108 to 115 in., with about 150 rainy days in the year. These meteorological conditions are still more accentuated at Ancud, at the north end of the island of Chiloé, in 41° 46′ S., where the mean annual temperature is 50.7° and the annual rainfall 134 in. The equable character of the climate at this point is shown by the limited range between its summer and winter temperatures, the mean for January being 56.5° and the mean for July 45.9°. The almost continual cloudiness is undoubtedly a principal cause, not only of the low summer temperatures, but also of the comparatively high winter temperatures. Frosts are infrequent, and snow does not lie long. The climate is considered to be healthful notwithstanding the excessive humidity. The 600 m. of coast from the Chonos Archipelago south to the Fuegian islands have a climate closely approximating that of the latter. It is wet and stormy all the year through, though the rainfall is much less than that of Ancud and Valdivia. The line of perpetual snow, which is 6000 ft. above sea-level between lat. 41° and 43°, descends to 3500 (to 4000) ft. in Tierra del Fuego, affording another indication of the low maximum temperatures ruling during the summer. At the extreme south, where Chilean territory extends across to the Atlantic entrance to the Straits of Magellan, a new climatic influence is encountered in the warm equatorial current flowing down the east coast of South America, which gives to eastern Tierra del Fuego a higher temperature than that of the western shore. The Andes, although much broken in these latitudes, also exert a modifying influence on these eastern districts, sheltering them from the cold westerly storms and giving them a drier climate. This accounts for the surprising meteorological data obtained from Punta Arenas, in 53° 10′ S., where the mean annual temperature is 43.2° and the annual rainfall only 22.5 in. Other observations reduce this annual precipitation to less than 16 in. According to observations made by the Swedish Antarctic Expedition (1901-1903), at Orange Bay, Hoste Island, in lat. 55° 31′ S., long. 68° 05′ W., which is more exposed to the westerly storms, the mean temperature for 11 months was 41.98° and the total precipitation (rain and snow) 53.1 in. The mean maximum temperature was 49.24°, and the mean minimum 35.83°. The observations showed 284 days with rain or snow, of which 70 were with snow.

Flora.—The indigenous flora of Chile is less extensive and less interesting than those of Argentina and Brazil, but contains many peculiar genera and species. A classification of this flora necessitates its division into at least three general zones—the desert provinces of the north, central Chile, and the humid regions of the south. The first is an arid desert absolutely barren along part of the coast, between Tacna and Copiapó, but with a coarse scanty vegetation near the Cordilleras along watercourses and on the slopes where moisture from the melting snows above percolates through the sand. In the valleys of the Copiapó and Huasco rivers a meagre vegetation is to be found near their channels, apart from what is produced by irrigation, but the surface of the plateau and the dry river channels below the sierras are completely barren. Continuing southward into the province of Coquimbo a gradual change in the arid conditions may be observed. The higher summits of the Cordilleras afford a larger and more continuous supply of water, and so dependent are the people in the cultivated river valleys on this source of water supply that they watch for snowstorms in the Cordilleras as an indication of what the coming season is to be. The arborescent growth near the mountains is larger and more vigorous, in which are to be found the “algarrobo” (*Prosopis siliquastrum*) and “chañar” (*Gourliea chilensis*), but the only shrub to be found on the coast is a species of *Skytanthus*. Near the sierras where irrigation is possible, fruit-growing is so successful, especially the grape and fig, that the product is considered the best in Chile. In regard to the indigenous flora of this region John Ball[2] says: “The species which grow here are the more or less modified representatives of plants which at some former period existed under very different conditions of life.” Proceeding southward cacti become common, first a dwarfed species, and then a larger columnar form (*Cereus quisco*). The streams are fringed with willows; fruit trees and alfalfa fields fill the irrigated valleys, and the lower mountain slopes are better covered with a thorny arborescent growth. The divides between the streams, however, continue barren as far south as the transverse ranges of mountains across the province of Aconcagua.

To some degree the flora of central Chile is of a transition character between the northern and southern zones. It is much more than this, however, for it has a large number of genera and species peculiarly its own. A large majority of the 198 genera peculiar to the South American temperate regions belong exclusively to central Chile. This zone extends from about the 30th to the 36th parallel, perhaps a little farther south to include some characteristic types. The evergreens largely predominate here as well as in the extreme south, and on the open, sunburnt plains the vegetation takes on a subtropical aspect. One of the most characteristic trees of this zone is the *peumo* (*Cryptocarya peumus*), whose dense evergreen foliage is everywhere conspicuous. The *quillay* (*Quillaja saponaria*) is another characteristic evergreen tree of this region, whose bark possesses saponaceous properties. In earlier times the coquito palm (*Jubaea spectabilis*) was to be found throughout this part of Chile, but it has been almost completely destroyed for its saccharine sap, from which a treacle was made. One of the most striking forest trees is the *pehuen* or Chilean pine (*Araucaria imbricata*), which

often grows to a height of 100 ft. and is prized by the natives for its fruit. Three indigenous species of the beech—the *roble* (*Fagus obliqua*), *coyhue* (*F. Dombeyi*), and *rauli* (*F. procera*)—are widely diffused and highly prized for their wood, especially the first, which is misleadingly called *roble* (oak). Most of the woods used in construction and manufactures are found between the Bio-Bio river and the Taytao peninsula, among which are the *alerce* (*Fitzroya patagonica*), *ciprés* or Chiloé cypress (*Libocedrus tetragona*), the Chilean cypress (*L. Chilensis*), *lingue* (*Persea lingue*), laurel (*Laurus aromatica*), *avellano* (*Guevina avellana*), *luma* (*Myrtus luma*), *espino* (*Acacia cavenia*) and many others. Several exotic species have been introduced into this part of Chile, some of which have thriven even better than in their native habitats. Among these are the oak, elm, beech (*F. sylvatica*), walnut, chestnut, poplar, willow and eucalyptus. Through the central zone the plains are open and there are forests on the mountain slopes, but in the southern zone there are no plains, with the exception of small areas near the Straits of Magellan, and the forests are universal. In the variety, size and density of their growth these forests remind one of the tropics. They are made up, in great part, of the evergreen beech (*Fagus betuloides*), the deciduous antarctic beech (*F. antarctica*),[3] and Winter's bark (*Drimys Winteri*), intermingled with a dense undergrowth composed of a great variety of shrubs and plants, among which are *Maytenus magellanica, Arbutus rigida, Myrtus memmolaria*, two or three species of *Berberis*, wild currant (*Ribes antarctica*), a trailing blackberry, tree ferns, reed-like grasses and innumerable parasites. On the eastern side of the Cordillera, in the extreme south, the climate is drier and open, and grassy plains are found, but on the western side the dripping forests extend from an altitude of 1000 to 1500 ft. down to the level of the sea. A peculiar vegetable product of this inclement region is a small globular fungus growing on the bark of the beech, which is a staple article of food among the Fuegians—probably the only instance where a fungus is the bread of a people.

It is generally conceded that the potato originated in southern Chile, as it is found growing wild in Chiloé and neighbouring islands and on the adjacent mainland. The strawberry is also indigenous to these latitudes on both sides of the Andes, and Chile is credited with a species from which the cultivated strawberry derives some of its best qualities. Maize and quinoa (*Chenopodium quinoa*) were known in Chile before the arrival of Europeans, but it is not certain that they are indigenous. Species of the bean and pepper plant are also indigenous, and the former is said to have been cultivated by the natives. Among the many economic plants which have been introduced into Chile and have become important additions to her resources, the more prominent are wheat, barley, hemp and alfalfa (*Medicago sativa*), together with the staple European fruits, such as the apple, pear, peach, nectarine, grape, fig, olive and orange. The date-palm has also been introduced into the southern provinces of the desert region. Among the marine productions on the southern coast, a species of kelp, *Macrocystis pyrifera*, merits special mention because of its extraordinary length, its habit of clinging to the rocks in strong currents and turbulent seas, and its being a shelter for innumerable species of marine animals. Captain FitzRoy found it growing from a depth of 270 ft.

Fauna.—The fauna of Chile is comparatively poor, both in species and individuals. A great part of the northern deserts is as barren of animal life as of vegetation, and the dense humid forests of the south shelter surprisingly few species. There are no large mammals in all this extensive region except the Cetacea and a species of the *Phocidae* of southern waters. Neither are there any dangerous species of Carnivora, which are represented by the timid puma (*Felis concolor*), three species of wildcats, three of the fox, two of *Conepatus*, a weasel, sea-otter and six species of seal. The rodents are the most numerously represented order, which includes the *coypu* or nutria (*Myopotamus coypus*), the chinchilla (*Chinchilla laniger*), the tuco-tuco (*Ctenomys brasiliensis*), a rabbit, and 12 species of mice—in all some 12 genera and 25 species. The coypu, sometimes called the South American beaver, inhabits the river-banks, and is highly prized for its fur. It is also found along the river-courses of Argentina. The ruminants are represented by a few species only—the guanaco (*Auchenia huanaco*), *vicuna* (*A. vicugna*), *huemul* (*Cervus chilensis*), which appears on the Chilean escutcheon, and the *pudu* deer, a small and not very numerous species. There are two species of the Edentata, *Dasypus* and *Pichiciego*, the latter very rare, and one of the opossums. European animals, such as horses, cattle, sheep, swine and goats, have been introduced into the country and do well. Sheep-raising has also been inaugurated with some degree of success in the vicinity of the Straits of Magellan. The avifauna, with the exception of waterfowl, is also limited to comparatively few species. Birds of prey are represented by the condor, vulture, two species of the carrion-hawk (*Polyborus*), and owl. The Chilean slopes of the Andes appear to be a favourite haunt of the condor, where neighbouring stock-raisers suffer severe losses at times from its attacks. The *Insessores* are represented by a number of species. Parrots are found as far south as Tierra del Fuego, where Darwin saw them feeding on seeds of the Winter's bark. Humming-birds have a similar range on this coast, one species (*Mellisuga Kingii*) being quite numerous as far south as Tierra del Fuego. A characteristic genus is that of *Pteroptochus*, of which there are three or four species each characterized by some conspicuous peculiarity. These are *P. megapodius*, called *El Turco* by the natives, which is noticeable for its ungainly appearance and awkward gait; the *P. albicollis*, which inhabits barren hillsides and is called

tapacollo from the manner of carrying its tail turned far forward over its back; the *P. rubecula*, of Chiloé, a small timid denizen of the gloomy forest, called the *cheucau* or *chuca*, whose two or three notes are believed by the superstitious natives to be auguries of impending success or disaster; and an allied species (*Hylactes Tarnii*, King) called the *guid-guid* or barking bird, whose cry is a close imitation of the yelp of a small dog. The southern coast and its inland waters are frequented by several species of petrel, among which are the *Procellaria gigantea*, whose strength and rapacity led the Spaniards to call it *quebranta huesos* (breakbones), the *Puffinus cinereus*, which inhabits the inland channels in large flocks, and an allied species (*Puffinuria Berardii*) which inhabits the inland sounds and resembles the auk in some particulars of habit and appearance. There are numerous species in these sheltered channels, inlets and sounds of geese, ducks, swans, cormorants, ibises, bitterns, red-beaks, curlew, snipe, plover and moorhens. Conspicuous among these are the great white swan (*Cygnus anatoides*), the black-necked swan (*Anser nigricollis*), the antarctic goose (*Anas antarctica*) and the "race-horse" or "steamer duck" (*Micropterus brachypterus*).

The marine fauna is less known than the others, but it is rich in species and highly interesting in its varied forms and characteristics. The northern coast has no sheltered waters of any considerable extent, and the shore slopes abruptly to a great depth, which gives it a marine life of no special importance. In the shoal waters about Juan Fernandez are found a species of codfish (possibly *Gadus macrocephalus*), differing in some particulars from the Newfoundland cod, and a large crayfish, both of which are caught for the Valparaiso market. The sheltered waters of the broken southern coast, however, are rich in fish and molluscs, especially in mussels, limpets and barnacles, which are the principal food resource of the nomadic Indian tribes of those regions. A large species of barnacle, *Balanus psittacus*, is found in great abundance from Concepción to Puerto Montt, and is not only eaten by the natives, by whom it is called *pico*, but is also esteemed a great delicacy in the markets of Valparaiso and Santiago. Oysters of excellent flavour are found in the sheltered waters of Chiloé. The Cetacea, which frequent these southern waters, are represented by four species—two dolphins and the sperm and right whale—and the *Phocidae* by six species, one of which (*Phoca lupina*) differs but little from the common seal. Another species (*Macrorhinus leoninus*), popularly known as the sea-elephant, is provided with short tusks and a short trunk and sometimes grows to a length of 20 ft. Still another species, the sea-lion (*Otaria jubata*), furnishes the natives of Tierra del Fuego with an acceptable article of food, but like the *Phoca lupina* it is becoming scarce.

Of Reptilia Chile is singularly free, there being recorded only eleven species—five saurians, four ophidians, one frog and one toad—but a more thorough survey of the uninhabited territories of the south may increase this list. There are no alligators in the streams, and the tropical north has very few lizards. There are no poisonous snakes in the country, and, in a region so filled with lakes and rivers as the rainy south, only two species of batrachians. The insect life of these strangely associated regions is likewise greatly restricted by adverse climatic conditions, a considerable part of the northern desert being absolutely barren of animal and vegetable life, while the climate of Tierra del Fuego and the southern coast is highly unfavourable to terrestrial animal life, for which reason comparatively few species are to be found. Writing of a journey inland from Iquique, Charles Darwin says (*Journal of Researches, &c.*, p. 444): "Excepting the *Vultur aura*, ... I saw neither bird, quadruped, reptile, nor insect." Of his entomological collection in Tierra del Fuego, which was not large, the majority were of Alpine species. Moreover, he did not find a single species common to that island and Patagonia. These conditions subsist with but few modifications, if any, from the Straits northward to the 42nd parallel, the extreme humidity, abnormal rainfall and dark skies being unfavourable to the development of insect life, while the Andes interpose an impassable barrier to migration from the countries of the eastern coast. The only venomous species to be found in central Chile is that of a spider which frequents the wheat fields in harvest time.

Population.—The population of Chile is largely concentrated in the twelve agricultural provinces between and including Coquimbo and Concepción, though the next six provinces to the south, of more recent general settlement, have received some foreign immigrants, and are rapidly growing. In the desert provinces the population is limited to the mining communities, and to the ports and supply stations maintained for their support and for the transport, smelting and export of their produce. The province of Atacama has, in addition to its mining population, a considerable number of agriculturists located in a few irrigated river valleys, which class is largely increased in the adjoining province of Coquimbo. The more northern provinces, however, maintain their populations without the support of such small cultivated areas. In the southern territories unfavourable conditions of a widely different character prevail, and the population is restricted to a few small settlements and some nomadic tribes of Indians. Here, however, there are localities where settlements could be maintained by ordinary means and the population could be greatly increased. Since the census of 1895 the population of Punta Arenas has been largely increased by the discovery of gold in the vicinity. The twelve provinces first mentioned, which include the celebrated "Vale of Chile," comprise

only 17% of the area of the republic, but the census of 1895 showed that 72% of the total population was concentrated within their borders. The four desert provinces north of Coquimbo had only 8% of the total, and the seven provinces and one territory south of Concepción had 20%. According to the census of 1895 the total population was 2,712,145, to which the census officials added 10% to cover omissions. This shows an increase slightly over 7% for the preceding decennial period, the population having been returned as 2,527,320 in 1885. The census returns of 1875 and 1866 gave respectively 2,068,447 and 2,084,943, showing an actual decrease in population. During these years Chile held the anomalous position of a country spending large sums annually to secure immigrants while at the same time her own labouring classes were emigrating by thousands to the neighbouring republics to improve their condition. Writing in 1879, a correspondent of *The Times*[4] stated that this emigration then averaged 8000 a year, and in bad times had reached as many as 30,000 in one year. The condition of the Chilean labourer has been much improved since then, however, and Chile no longer suffers so serious a loss of population. In 1895, the foreigners included in the Chilean population numbered 72,812, of which 42,105 were European, 29,687 American, and 1020 Asiatic, &c. According to nationality there were 8269 Spanish, 7809 French, 7587 Italian, 7049 German, 6241 British, 1570 Swiss, 1490 Austro-Hungarian, 13,695 Peruvian, 7531 Argentine, 6654 Bolivian, 701 American (U.S.), 797 Chinese. According to residence, 1,471,792 were inhabitants of rural districts, and 1,240,353 of towns. The registration of births, marriages and deaths is compulsory since the 1st of January 1885, but the provisions of the law are frequently eluded. Notwithstanding the healthiness of the climate, the death-rate is high, especially in the large cities. In Santiago and Valparaiso the death-rate sometimes rises to 42 and 60 per 1000, and infant mortality is very high, being 73% of the births in some of the provincial towns. This unfavourable state of affairs is due to the poverty, ignorance and insanitary habits of the lower classes. The government has made repeated efforts to secure immigrants from Europe, but the lands set apart for immigrant settlers are in the forested provinces south of the Bio-Bio, where the labour and hardships involved in establishing a home are great, and the protection of the law against bandits and criminal assaults is weak. The Germans have indeed settled in many parts of these southern provinces since 1845, and by keeping together have succeeded in building up several important towns and a large number of prosperous agricultural communities. One German authority (Hüber) estimates the number of Germans in two of these provinces at 5000. The arrivals, however, have been on the whole discouragingly small, the total for the years 1901-1905 being only 14,000.

Although Chileans claim a comparatively small admixture with the native races, it is estimated that the whites and creoles of white extraction do not exceed 30 to 40% of the population, while the *mestizos* form fully 60%. This estimate is unquestionably conservative, for there has been no large influx of European blood to counterbalance the race mixtures of earlier times. The estimated number of Indians living within the boundaries of Chile is about 50,000, which presumably includes the nomadic tribes of the Fuegian archipelago, whose number probably does not reach 5000. The semi-independent Araucanians, whose territory is slowly being occupied by the whites, are concentrated in the eastern forests of Bio-Bio, Malleco and Cautin, all that remains to them of the Araucania which they so bravely and successfully defended for more than three centuries. Their number does not much exceed 40,000, which is being steadily reduced by drunkenness and epidemic diseases. A small part of these Indians live in settled communities and include some very successful stock-raisers, but the greater part live apart from civilization. There are also some remnants of tribes in the province of Chiloé, which inhabit the island of that name, the Chonos and Guaytecas archipelagoes and the adjacent mainland, who have the reputation of being good boatmen and fishermen; and there are remnants of a people called Changos, on the desert coast, and traces of Calchaqui blood in the neighbouring Andean foothills.

There is a wide difference in every respect between the upper or ruling class and the common people. The former includes the landed proprietors, professional men and a part of those engaged in commercial and industrial pursuits. These educated classes form only a small minority of the population. Many of them, especially the landed proprietors, are descendants of the original Spanish settlers and are celebrated for their politeness and hospitality. The political control of the republic was secured to them by the constitution of 1833. The common people were kept in ignorance and practically in a state of hopeless servitude. They were allowed to occupy small leaseholds on the large estates on condition of performing a certain amount of work for the landlord. Every avenue toward the betterment of their condition was practically closed. The condition of the itinerant labourers (*peons*) was still worse, the wages paid them being hardly sufficient to keep them from starvation. The Chilean *peon*, however, comes from a hardy stock, and has borne all these hardships with a fortitude and patience which go far to counterbalance his faults. Recent reforms in education,

&c., together with the growth of manufacturing industries, are slowly leading to improvements in the material condition of the common people.

The political organization of the country has not been favourable to the development of artistic or scientific tastes, though Chile has produced political leaders, statesmen and polemical writers in abundance. Historical literature has been enriched by the works of Diego Barros Arana, Benjamin Vicuña Mackenna, Miguel Luis Amunátegui, Carlos Walker Martinez, and others. One of the earliest native histories of Chile was that of Abbé J. Ignacio Molina, an English translation of which has long been a recognized authority; it is full of errors, however, and should be studied only in connexion with modern standard works. Among these must be included Claude Gay's monumental work, *Historia General de Chile*, and Sir C.R. Markham's admirable studies on special parts of the subject. In science, nearly all the important work has been done by foreigners, among whom are Charles Darwin, Claude Gay, Eduard Pöppig, Rudolph A. Philippi and Hans Steffen, who deserves special mention for his excellent geographical work in the southern Andes.

Divisions and Towns.—Chile contains 23 provinces and one territory, which are subdivided into 75 departments, 855 subdelegations and 3068 districts. The territory north of the Bio-Bio was originally divided into 13 provinces, besides which the Spaniards held Chiloé, Juan Fernandez and Valdivia, the latter being merely a military outpost. During the years which have elapsed since the War of Independence the territory south of the Bio-Bio has been effectively occupied and divided into six provinces, Chiloé and the neighbouring islands and mainland to the east became a province, and four provinces in the northern deserts were acquired from Bolivia and Peru. In addition to this, Chile claimed Patagonia and the adjacent islands, and has finally secured not only the forested strip of territory west of the Andes, but also a large piece of the Patagonian mainland, south of lat. 52° S., the larger part of Tierra del Fuego, and all the western islands. This extensive region, comprising an area of 71,127 sq. m., has been provisionally organized as the territory of Magallanes. For a list of provinces, their areas, reduced from official returns, their populations, and the names and populations of their capitals, see the bottom of this page.

Provinces.	Area.	Population. Census 1895.	Capitals.	Population.	
				Census 1895.	Est. 1902.
Tacna	9,251	24,160	Tacna	9,418	11,504
Tarapacá	18,131	89,751	Iquique	33,031	42,788
Antofagasta	46,611	44,035	Antofagasta	13,530	16,084
Atacama	30,729	59,713	Copiapo	9,301	8,991
Coquimbo	13,461	160,898	La Serena	15,712	19,536
Aconcagua	5,487	113,165	San Felipe	11,313	11,660
Valparaiso	1,953	220,756	Valparaiso	122,447	142,282
Santiago	5,665	415,636	Santiago	256,403	332,059
O'Higgins	2,342	85,277	Rancagua	6,665	7,133
Colchagua	3,856	157,566	San Fernando	7,447	8,164
Curicó	2,978	103,242	Curicó	12,669	14,340
Talca	3,840	128,961	Talca	33,232	42,766
Liná res	3,942	101,858	Liná res	7,331	7,256
Maule	2,475	119,791	Cauquenes	8,574	9,895
Nuble	3,407	152,935	Chillan	28,738	36,382
Concepción	3,252	188,190	Concepción	39,837	49,351
Arauco	2,458	59,237	Lebú	2,784	3,178
Bio-Bio	5,246	88,749	Los Angeles	7,868	7,777
Malleco	2,973	98,032	Angol	7,056	7,638
Cautin	5,832	78,221	Temuco	7,078	9,699
Valdivia	8,649	60,687	Valdivia	8,060	9,704
Llanquihue	45,515	78,315	Puerto Montt	3,480	4,140
Chiloé	8,593	77,750	Ancud	3,182	3,787
Magallanes (Ter.)	71,127	5,170	Punta Arenas	3,227	8,327
Total, official	307,774	2,712,145			
Total according to Gotha computation	293,062				
With 10% added for omissions		2,983,359			
Official estimate for 1902		3,173,783			

In addition to the provincial capitals there are few towns of importance. Among these may be mentioned:—

	Population.			Population.	
	1895.	Est. 1902.		1895.	Est. 1902.
Arica	2,853	2,824	Parral	8,586	10,219
Pisagua	3,635	4,720	Constitución	6,400	6,453
Taltal	5,834	6,574	San Carlos	7,051	6,579
Tocopilla	3,383	4,752	Coronel	4,575	5,959
Vallenar	5,052	5,199	Lota	9,797	...
Coquimbo	7,322	8,165	Talcahuano	10,431	13,499
Ovalle	5,565	5,772	El Tomé	3,977	6,189
Los Andes (Santa Rosa)	5,504	6,854	Arauco	3,008	3,334
Quillota	9,621	9,876	Cañete	2,000	2,552
Vina del Mar	10,651	...	Mulchen	4,268	4,332
Melipilla	4,286	5,023	Traiguen	5,732	7,099
Rengo	6,463	7,232	Victoria	6,989	10,002
Vichuquen	826	3,714	La Unión	2,830	3,908
Molina	3,609	3,222	Osorno	4,667	5,888
			Castro (Chiloé)	1,035	2,166

The population is not concentrated in large cities, but is well distributed through the cultivated parts of the country. The large number of small towns, important as ports, market towns, or manufacturing centres, is a natural result. Many of the foregoing towns are only villages in size, but their importance is not to be measured in this way. Arica is one of the oldest ports on the coast, and has long been a favoured port for Bolivian trade because the passes through the Cordilleras at that point are not so difficult. Moreover, the railway from Arica to La Paz will still further add to its importance, though it may not greatly increase its population. Another illustration is that of Vichuquen, province of Curicó, situated on a tide-water lake on the coast, which is the centre of a large salt-making industry. Still another instance is that of Castro, the oldest settlement and former capital of Chiloé, which after a century of decay is increasing again through the efforts to develop the industries of that island.

Communications.—Railway construction in Chile dates from 1850, when work was begun on a short line between Copiapó and the port of Caldera, in the Atacama desert region. Since then lines have been built by private companies from the coast at several points to inland mining centres. One of these, running from Antofagasta to the Caracoles district, was afterwards extended to Oruro, Bolivia, and has become a commercial route of international importance, with a total length of 574 m., 224 of which are in Chile. It should be remembered that many of these railway enterprises of the desert region originated at a time when the territory belonged to Bolivia and Peru. The first railway to be constructed in central Chile was the government line from Valparaiso to Santiago, 115 m. in length, which was opened to traffic in 1863. About the same time the government began the construction of a longitudinal trunk line running southward from Santiago midway between the Andes and the Coast range, and connecting with all the provincial capitals and prominent ports. This is the only railway "system" it is possible for Chile to have. The civil war of 1891 called attention to the need of a similar inland route through the northern provinces. A branch of the Valparaiso and Santiago line runs to Los Andes, and its extension across the Andes connects with the Argentine lines from Buenos Aires to Mendoza and the Chilean frontier—all sections together forming a transcontinental route about 850 m. in length. The Transandine section of this route crosses the Cordillera through the Uspallata pass. A further Transandine scheme provides for a line through the Pino Hachado pass (38° 30′ to 39° S.), and the Argentine Great Southern Company obtained a concession in 1909 to extend its Neuquen line to the frontier of Chile. The railways of the republic had a total mileage at the end of 1906 of 2950 m., of which 1495 m. were owned by the state, and 1455 m. belonged to private companies. The private lines are located in the northern provinces and are for the most part built and maintained for the transportation of mining products and supplies.

In addition to her railway lines Chile has about 21,000 m. of public roads of all descriptions, 135 m. of tramways, and 705 m. of navigable river channels, besides a very considerable mileage of lake and coast navigation. Telegraphic communication between all the important towns of the republic, initiated in 1855 with a line between Santiago and Valparaiso, is maintained by the state, which in 1903 owned 9306 m. of line in a total of 11,080 m. Cable communication with Europe by way of Buenos Aires was opened in 1875, and is now maintained by means of two underground cables across the Andes, 32 m. in length. A West Coast cable also connects with Europe and North American states by way of Panama. There were 15,853 m. of telephone wires in the republic in 1906, all the principal cities having an admirable service. Modern postal facilities date from 1853. The Chilean post-office is administered by a director-general at Santiago, and has a high degree of efficiency and liberality, compared with those of other South American states. The postal rates are low, and newspapers and other periodical publications circulate free, as a means of popular instruction.

The postal revenues for 1904 amounted to 2,775,730 pesos and the expenditures to 2,407,753 pesos. Chile is a member of the International Postal Union, and has arrangements with the principal commercial nations for the exchange of postal money values.

The sea has been the only means of communication with distant parts of the country, and must continue to be the chief transportation route. There are said to be 56 ports on the Chilean coast, of which only 12 are prominent in foreign trade. Many of the so-called ports are only landing-places on an open coast, others are on shallow bays and obstructed river-mouths, and some are little-known harbours among the channels and islands of the south. The prosperity of Chile is intimately connected with her ocean-going trade, and no elaborate system of national railway lines and domestic manufactures can ever change this relationship. These conditions should have developed a large merchant marine, but the Chileans are not traders and are sailors only in a military sense. In 1905 their ocean-going merchant marine consisted of only 148 vessels, of which 54 were steamers of 42,873 tons net, and 94 were sailing vessels of 39,346 tons. Nineteen of the 54 steamers belonged to a subsidized national line whose West Coast service once extended to San Francisco, California, and a large part of the others belongs to a Lota coal-mining and copper-smelting company which employs them in carrying coal to the northern ports and bringing back metallic ores for smelting. The navigable rivers and inland lakes employ a number of small steamers. The foreign commerce of the republic is carried chiefly by foreign vessels, and the coasting trade is also open to them. Three or four foreign companies maintain a regular steamship service to Valparaiso and other Chilean ports. The shipping entries at all Chilean ports during the year 1904, both national and foreign, numbered 11,756, aggregating 17,723,138 tons, and the clearances 11,689, aggregating 17,370,763 tons. Very nearly one-half this tonnage was British, a little over 18% German, and about 29% Chilean.

Commerce.—In the aggregate, the commerce of Chile is large and important; in proportion to population it is exceeded among South American states only by Argentina, Uruguay and the Guianas. Unlike those states, it depends in great part on mining and its allied occupations. The values of imports and exports (including bullion, specie and re-exports) in pesos of 18d. during the five years 1901- 1905 were as follows:—

Year.	Imports. pesos.	Exports. pesos.
1901	139,300,766	171,844,976
1902	132,428,204	185,879,965
1903	149,081,524	210,442,144
1904	164,874,928	232,493,598
1905	188,596,418	265,209,192

The principal imports comprise live animals, fish, coffee, maté (*Ilex paraguayensis*), tea, sugar, wood and its manufactures, structural iron and steel, hardware and machinery, railway and telegraph supplies, lime and cement, glass and earthenware, cotton, woollen and silk manufactures, coal, petroleum, paints, &c. Import duties are imposed at the rates of 60, 35, 15, 5 and 25%, and certain classes of merchandise are admitted free. The higher rates are designed chiefly to protect national industries, while wines, liquors, cigars and tobacco are admitted at the lowest rate. The 25% rate covers all articles not mentioned in the schedules, which number 2260 items. The duty free list includes raw cotton, certain descriptions of live animals, agricultural machinery and implements, metal wire, fire engines, structural iron and steel, and machinery in general. The tariff is nominally *ad valorem*, but as the rates are imposed on fixed official valuations it is essentially specific. The duties on imports in 1905 amounted to 91,321,860 pesos, and in 1906 to 103,507,556 pesos. The principal exports are gold, silver, copper (bars, regulus and ores), cobalt and its ores, lead and its ores, vanadium ores, manganese, coal, nitrate of soda, borate of lime, iodine, sulphur, wheat and guano. Nitrate of soda forms from 70 to 75% of the exports, and the royalty received from it is the principal source of national revenue, yielding about £4,000,000 per annum. In 1904 mineral products made up fully seven-eighths of the exports, while agricultural and pastoral products did not quite reach one-eighth.

Agriculture.—According to the census returns about one-half the population of Chile lives in rural districts, and is engaged nominally in agricultural pursuits. What may be called central Chile is singularly well adapted to agriculture. The northern part of this region has a sub-tropical climate, light rainfall and a long, dry summer, but with irrigation it produces a great variety of products. Alfalfa, or lucerne (*Medicago sativa*), is grown extensively for shipment to the mining towns of the desert provinces. There were no less than 108,384 acres devoted to it in 1904, a considerable part of which was in the irrigated river valleys of Coquimbo and Aconcagua. Considerable attention is also given to fruit cultivation in these subtropical provinces, where the orange, lemon, fig, melon, pineapple and banana are produced with much success. Some districts, especially in Coquimbo, have gained a high reputation for the

excellence of their preserved fruits. The vine is cultivated all the way from Atacama and Coquimbo, where excellent raisins are produced, south to Concepción, where some of the best wines of Chile are manufactured. In 1904 there were 93,370 acres devoted to grape production in this region, the product for that year being 30,184,704 gallons of wine and 212,366 gallons of brandy. The universal beverage of the people—*chicha*—is made from Indian corn. Although wheat is produced in the northern part of this region, it is grown with greater success in the south, where the rainfall is heavier and the average temperature is lower. There were 1,044,025 acres devoted to this cereal in 1903, which produced 17,910,614 bushels, or an average of 17 bushels (of 60 lb) to the acre. In 1904 the production was increased to 19,999,324 bushels, but in 1905 it fell off to 15,771,477 bushels. At one time Chile supplied Argentina and the entire West Coast as far north as California with wheat, but Argentina and California have become wheat producers and exporters, and Chile has been driven from all her old consuming markets. Great Britain is now her best customer, and Brazil takes a small quantity for milling mixtures. Chile has been badly handicapped by her crude methods of cultivation, but these are passing away and modern methods are taking their place. Formerly wheat was grown chiefly in the region of long rainless summers, and the ripened grain was thrown upon uncovered earth floors and threshed by horses driven about over the straw, but this antiquated process was not suited to the climate and enterprise of the more southern provinces, and the modern threshing-machine has been introduced. Barley is largely produced, chiefly for home consumption. Maize (Indian corn) is grown in every part of Chile except the rainy south where the grain cannot ripen, and is a principal article of food. The green maize furnishes two popular national dishes, *choclos* and *humitas*, which are eaten by both rich and poor. Potatoes also are widely cultivated, but the humid regions of the south, particularly from Valdivia to Chiloé, produce the greatest quantity. The total annual production exceeds three million bushels. The kidney bean (*Phaseolus vulgaris*) is another staple product in every part of the country, and is perhaps the most popular article of food among all classes of Chileans. Peas are largely cultivated south of the Maule. Walnuts have become another important product and are exported, the average annual produce being 48,000 to 50,000 bushels. The olive was introduced from Spain in colonial times and is widely distributed through the north central provinces, but its economic importance is not great. Of the European fruits introduced into the southern provinces, the apple has been the most successful. It grows with little care and yields even better than in its original home. The peach, apricot, plum, quince and cherry are also cultivated with success. Wild strawberries are found on both sides of the Andes; the cultivated varieties are unsurpassed, especially those of the province of Concepción.

The pastoral industries of Chile have been developed chiefly for the home market. The climate is admirably suited to cattle-raising, as the winters are mild and pasture is to be found throughout the whole year, but the proximity of the Argentine pampas is fatal to its profitable development. The government has been trying to promote cattle-breeding by levying duties (as high as 16 pesos a head) on cattle imported from Argentina, but with no great success. The importation, which formerly numbered about 140,000 per annum, still numbers not far from 100,000 head. There are some districts in central Chile where cattle-raising is the principal occupation, but the long dry summers limit the pasturage on the open plains and prevent the development which perhaps would otherwise result. As in Argentina, beef is generally dried in the sun to make *charqui* (jerked beef), in which form it is exported to the desert provinces. Horse and mule breeding are carried on to a limited extent, and since the opening of the far South more attention has been given to sheep. Goats and swine are raised in small numbers on the large estates, but in Chiloé swine-raising is one of the chief occupations of the people. Some attention has been given to the production of butter and cheese, but the industry has attained no great importance. A new industry which has made noteworthy progress, however, is that of bee-keeping, which is greatly favoured by the mild climate and the long season and abundance of flowers.

Manufactures.—The manufacturing interests of Chile have become influential enough to force a high tariff policy upon the country. They have been restricted principally to articles of necessity—food preparations, beverages, textiles and wearing apparel, leather and leatherwork, woodwork, pottery, chemicals, ironware, &c. In earlier days, when Chile had less competition in the production of wheat, flour mills were to be found everywhere in the wheat-producing provinces, and flour was one of the leading exports. Concepción, Talca, and other provincial capitals developed important milling industries, which were extended to all the chief towns of the newer provinces south of the Bio-Bio. There are over 500 large flour mills in Chile, the greater part of which are equipped with modern roller-process machinery. The development of the coal deposits in the provinces of Concepción and Arauco has made possible other industries besides those of smelting mineral ores, and numerous small manufacturing establishments have resulted, especially in Santiago, Valparaiso, Copiapó and other places where no permanent water power exists. Tanning leather is an important industry, especially in the south, some of the Chilean trees, notably the *algarrobilla* (*Balsamocarpon brevifolium*) and *lingue* (*Persea lingue*) being rich in tannin. To provide a market for the leather produced, factories have been established for the manufacture of boots

and shoes, harness and saddles, and under the protection of a high tariff are doing well. Brewing and distilling have made noteworthy progress, the domestic consumption of their products being very large. The breweries are generally worked by Germans and are situated chiefly in the south, though there are large establishments in Santiago and Valparaiso. Small quantities of their products are exported. Furniture and carriage factories, cooperages, and other manufactories of wood are numerous and generally prosperous. There are likewise a large number of factories for canning and preserving fruits and vegetables. Foundries and machine shops have been established, especially for the manufacture of railway material. The sugar beet has been added to the productions of Chile, and with it the manufacture on a small scale of beet sugar. There is one large refinery at Viña del Mar, however, which imports raw cane sugar from Peru for refining. The manufacture of textiles is carried on at Santiago and El Tomé, and numerous small factories are devoted to clothing of various descriptions. The great mining industries have led to a noteworthy development in the production of chemicals, and a considerable number of factories are engaged in the production of pharmaceutical preparations, perfumeries, soaps, candles, &c.

Mining.—The most important of all the national industries, however, is that of mining. In 1903 there were 11,746 registered mines, on which mining dues were paid, the aggregate produce being valued at 178,768,170 pesos. These mines gave employment to 46,592 labourers, of whom 24,445 were employed by the nitrate companies, 13,710 in various metalliferous mines, 6437 in coal mines, and 2000 in other mines. Gold is found in nearly all the provinces from Antofagasta to Concepción, and in Llanquihue, Chiloé and Magallanes territory, but the output is not large. There are a great many placer washings, among which are some extensive deposits near the Straits of Magellan. Silver is found principally on the elevated slopes and plateaus of the Andes in the desert provinces of the north. The second most important mining industry in Chile, however, is that of copper, which is found in the provinces of Antofagasta, Atacama, Coquimbo, Aconcagua, Valparaiso, Santiago, O'Higgins, Colchagua, Curicó and Talca, but the richest deposits are in the three desert provinces. Chile was once the largest producer of copper in the world, her production in 1860-1864 being rated at 60 to 67% of the total. Low prices afterwards caused a large shrinkage in the output, but she is still classed among the principal producers. Iron mining has never been developed in Chile, although extensive deposits are said to exist. Manganese ores are mined in Atacama and Coquimbo, and their export is large. The other metals reported in the official returns are lead, cobalt and vanadium, of which only small quantities are produced. Bolivian tin is exported from Chilean ports. Among the non-metallic minerals are nitrate of soda, borate of lime, coal, salt and sulphur, together with various products derived from these minerals, such as iodine, sulphuric acid, &c. Guano is classed among the mineral products and still figures as an export, though the richest Chilean deposits were exhausted long before the war with Peru. Of non-metallic products nitrate of soda is by far the most important. Extensive deposits of the salt (called *caliche* in its crude, impure state) in the provinces of Tacna, Tarapacá, Antofagasta and Atacama owe their existence to the rainless character of the climate. Those of the first-named province have been discovered since the war between Chile and Peru, and have greatly extended the prospective life of the industry. The nitrate fields, which lie between 50 and 100 m. from the coast and at elevations exceeding 2000 ft. above sea-level, have been officially estimated at 89,177 hectares (344 sq. m.) and to contain 2316 millions of metric quintals (254,760,000 short tons). The first export of nitrates was in 1830, and in 1884 it reached an aggregate of 550,000 tons, and in 1905 of 1,603,140 tons. The latter figure is apparently about the production agreed upon between the Chilean government and the nitrate companies to prevent overproduction and a resulting decline in price. Nearly all the *oficinas*, or working plants, are owned and operated by British companies, and the railways of this desolate region are generally owned by the same companies and form a part of the working plant. Borate of lime also furnishes another important export, though a less valuable one than nitrate of soda. Extensive deposits of borax and common salt have been found in the same region, which with several other products of these saline deposits, such as iodine, add considerably to its exports. The coal deposits of Chile are found chiefly in the provinces of Concepción and Arauco, the principal mines being on the coast of the Bay of Arauco at Coronel and Lota. Coal is found also in Valdivia, on the island of Chiloé, and in the vicinity of Punta Arenas on the Straits of Magellan. Sulphur is found in the volcanic regions of the north, but the principal mines are in the provinces of Talca.

The relative magnitude and value of these mineral products may be seen in the following abstract from the official returns of 1903:—

	Unit.	Quantity.	Value pesos (of 18d.).
Gold	grammes	1,424,625	1,745,115
Silver	”	39,012,382	1,284,308
Copper	kilogrs.	29,923,132	21,438,397
Lead	”	70,984	9,097

Cobalt ore	”	284,990	99,695
Lead and Vanadium ores	”	2,000	
Manganese ore	”	17,110,000	682,400
Coal	tons	827,112	8,250,720
Nitrates	metric quintals	14,449,200	140,102,012
Iodine	kilogrs.	157,444	1,687,327
Borates	”	16,878,913	2,363,048
Salt	metric quintals	162,635	324,270
Sulphur	kilogrs.	3,440,642	337,515
Sulphuric acid	”	1,600,000	176,000
Guano	metric quintals	111,335	267,466
Various	kilogrs.	200	800

Government.—Chile is a centralized republic, whose government is administered under the provisions of the constitution of 1833 and the amendments of the 9th of August 1888, the 11th of August 1890, the 20th of August 1890, the 22nd of December 1891, and the 7th of July 1892. According to this constitution the sovereignty resides in the nation, but suffrage is restricted to married citizens over twenty-one and unmarried citizens over twenty-five years of age, not in domestic service, who can read and write, and who are the owners of real estate, or who have capital invested in business or industry, or who receive salaries or incomes proportionate in value to such real estate as investment; and as 75% of the population is classed as illiterate, and a great majority of the labouring classes is landless, badly paid, and miserably poor, it is apparent that political sovereignty in Chile is the well-guarded possession of a small minority. The dominant element in this minority is the rich landholding interest, and the constitution and the laws of the first half-century were framed for the special protection of that interest.

The supreme powers of government are vested in three distinct branches—legislative, executive and judicial. The legislative power is exercised by a national congress, which consists of two chambers—-a senate of 32 members, and a chamber of deputies of 94 members. The membership of the lower house is in the proportion of one deputy for each 30,000 of the departmental population, and each fraction over 15,000; and the senate is entitled to one-third the membership of the chamber. The senators are elected by provinces and by a direct cumulative vote, and hold office for six years, one-half of the senate being renewed every three years. The deputies are elected by departments and by a direct cumulative vote, and hold office for three years. Both senators and deputies must have reached the age of thirty-six, must have a specified income, and are required to serve without salary. A permanent committee of 14 members represents the two chambers during the congressional recess and exercises certain supervisory and advisory powers in the administration of public affairs. Congress convenes each year on the 1st of June and sits until the 1st of September, but the president may prorogue an ordinary session for a period of 50 days, and with the consent of the council of state may convene it in extraordinary session. Congress has the privilege of giving or withholding its confidence in the acts of the government.

The executive is a president who is elected for a term of five years and is ineligible for the next succeeding term. He is chosen by electors, who are elected by departments in the manner prescribed for deputies and in the proportion of three electors for each deputy. These elections are held on the 25th of June in the last year of a presidential term, the electors cast their votes on the 25th of July, and the counting takes place in a joint session of the two chambers of congress on the 30th of August, congress in joint session having the power to complete the election when no candidate has been duly chosen by the electors. The formal installation of the president takes place on the 18th of September, the anniversary of the declaration of national independence. In addition to the prerogatives commonly invested in his office, the president is authorized to supervise the judiciary, to nominate candidates for the higher ecclesiastical offices, to intervene in the enforcement of ecclesiastical decrees, papal bulls, &c., to exercise supervisory police powers, and to appoint the intendants of provinces and the governors of departments, who in turn appoint the sub-delegates and inspectors of subordinate political divisions. The president, who is paid £2250 per annum, must be native-born, not less than thirty years of age, and eligible for election to the lower house. He is assisted and advised by a cabinet of six ministers whose departments are: interior, foreign affairs, worship and colonization, justice and public instruction, war and marine, finance, industry and public works. In case of a vacancy in the presidential office, the minister of interior becomes the “vice-president of the republic” and discharges the duties of the executive office until a successor can be legally elected. A council of state of 12 members, consisting of the president, 6 members appointed by congress and 5 by the president, has advisory functions, and its approval is required in many executive acts and appointments.

The provinces are administered by *intendentes*, and the departments by *gobernadores*, both appointees of the national executive. The sub-delegacies are governed by *sub-delegados* appointed by the governors, and the districts by *inspectores* appointed by the sub-delegates. Directly and indirectly; therefore, the administration of all these political divisions is in the hands of the president, who, in like manner, makes and controls the appointments of all judicial functionaries, subject, however, to receiving recommendations of candidates from the courts and to submitting appointments to the approval of the council of state. This gives the national executive absolute control of all administrative matters in every part of the republic. The police force also is a national organization under the immediate control of the minister of interior, and the public prosecutor in every department is a representative of the national government. There is no legislative body in any of these political divisions, nor any administrative official directly representing the people, with this exception: under the law of the 22nd of December 1891, municipalities, or communes, are created and invested with certain specified powers of local government affecting local police services, sanitation, local improvements, primary instruction, industrial and business regulations, &c.; they are authorized to borrow money for sanitary improvements, road-making, education, &c., and to impose certain specified taxes for their support; these municipalities elect their own *alcaldes*, or mayors, and municipal councils, the latter having legislative powers within the limits of the law mentioned.

Justice.—The judicial power consists of a Supreme Court of Justice of seven members located in the national capital, which exercises supervisory and disciplinary authority over all the law courts of the republic; six courts of appeal, in Tacna, Serena, Valparaiso, Santiago, Talca and Concepción; tribunals of first instance in the department capitals; and minor courts, or justices of the peace, in the sub-delegacies and districts. The jury system does not exist in Chile, and juries are unknown except in cases where the freedom of the press has been abused. All trials, therefore, are heard by one or more judges, and appeals may be taken from a lower to a higher court. The government is represented in each department by a public prosecutor. The police officials, who are under the direct control of the minister of interior, also exercise some degree of judicial authority. This force is essentially military in its organization, and consisted in 1901 of 500 officers, 934 non-commissioned officers and 5400 police soldiers. Small forces of local policemen are supported by various municipalities. The judges of the higher courts are appointed by the national executive, and those of the minor tribunals by the federal official governing the political division in which they are located.

Army.—For military purposes the republic is divided into five districts, the northern desert provinces forming the first, the central provinces as far south as the Bio-Bio the second and third, and the southern provinces and territory the fourth and fifth. Large sums of money have been expended in arms, equipment, guns and fortifications. The army is organized on the German model and has been trained by European officers who have been employed both for the school and regiment. Though the president and minister of war are the nominal heads of the army, its immediate direction is concentrated in a general staff comprising six service departments, at the head of which is a chief of staff. After the triumph of the revolutionists in the civil war of 1891, the army was reorganized under the direction of Colonel Emil Körner, an accomplished German officer, who subsequently served as chief of the general staff. In 1904 the permanent force consisted of 12 battalions of infantry, 6 regiments of cavalry, 4 regiments of mountain artillery, 1 regiment of horse artillery, 2 regiments of coast artillery, and 5 companies of engineers—aggregating 915 officers and 4757 men. To this nucleus were added 6160 recruits, the contingent for that year of young men twenty-one years of age compelled to serve with the colours. Under the law of the 5th of September 1900, military service is obligatory for all citizens between eighteen and forty-five years, all young men of twenty-one years being required to serve a certain period with the regular force. After this period they are transferred to the 1st reserve for 9 years, and then to the 2nd reserve. The military rifle adopted for all three branches of the service is the Mauser, 1895 model, of 7 mm. calibre, and the batteries are provided with Krupp guns of 7 and 7.5 cm. calibre. Military instruction is given in a well-organized military school at Santiago, a war academy and a school of military engineering.

Navy.—The Chilean navy is essentially British in organization and methods, and all its best fighting ships were built in British yards. In 1906 the effective fighting force consisted of 1 battle ship, 2 belted cruisers, 4 protected cruisers, 3 torpedo gunboats, 6 destroyers and 8 modern torpedo boats. In addition to these there are several inferior armed vessels of various kinds which bring the total up to 40, not including transports and other auxiliaries. The administration of the navy, under the president and minister of war and marine, is confided to a general naval staff, called the “Direccion jeneral de la Armada,” with headquarters at Valparaiso. Its duties also include the military protection of the ports, the hydrographic survey of the coast, and the lighthouse service. The *personnel* comprises about 465 officers, including those of the staff, and 4000 petty officers and men. There is a military port at Talcahuano, in Concepción Bay, strongly fortified, and provided with arsenal and repair shops, a large dry

dock and a patent slip. The naval school, which occupies one of the noteworthy edifices of Valparaiso, is attended by 90 cadets and is noted for the thoroughness of its instruction.

Education.—Under the old conservative régime very little was done for the public school outside the larger towns. As a large proportion of the labouring classes lived in the small towns and rural communities, they received comparatively little attention. The increasing influence of more liberal ideas greatly improved the situation with reference to popular education, and the government now makes vigorous efforts to bring its public school system within the reach of all. The constitution provides that free instruction must be provided for the people. School attendance is not compulsory, however, and the gain upon illiteracy (75%) appears to be very slow. The government also gives primary instruction to recruits when serving with the colours, which, with the increasing employment of the people in the towns, helps to stimulate a desire for education among the lower classes. Education in Chile is very largely under the control of the national government, the minister of justice and public instruction being charged with the direction of all public schools from the university down to the smallest and most remote primary school. The system includes the University of Chile and National Institute at Santiago, lyceums or high schools in all the provincial capitals and larger towns, normal schools at central points for the training of public school teachers, professional and industrial schools, military schools and primary schools. Instruction in all these is free, and under certain conditions text-books are supplied. In the normal schools, where the pupils are trained to enter the public service as primary teachers, not only is the tuition free, but also books, board, lodging and everything needed in their school work. The national university at Santiago comprises faculties of theology, law and political science, medicine and pharmacy, natural sciences and mathematics, and philosophy. The range of studies is wide, and the attendance large. The National Institute at Santiago is the principal high school of the secondary grade in Chile. There were 30 of these high schools for males and 12 for females in 1903, with an aggregate of 11,504 matriculated students. The normal schools for males are located at Santiago, Chillán and Valdivia; and for females at La Serena, Santiago and Concepción. The mining schools at Copiapó, La Serena and Santiago had an aggregate attendance of 180 students in 1903, and the commercial schools at Iquique and Santiago an attendance of 214. The more important agricultural schools are located at Santiago, Chillán, Concepción and Ancud, the Quinta Normal de Agricultura in the national capital having a large attendance. The School of Mechanic Arts and Trades (*Escuela de Artes y Oficios*) of Santiago has a high reputation for the practical character of its instruction, in which it is admirably seconded by a normal handicraft school (Slöyd system) and a night school of industrial drawing in the same city, and professional schools for girls in Santiago and Valparaiso, where the pupils are taught millinery, dress-making, knitting, embroidery and fancy needlework. The government also maintains schools for the blind and for the deaf and dumb. The public primary schools numbered 1961 in 1903, with 3608 teachers, 166,928 pupils enrolled, and an average attendance of 108,582. The cost of maintaining these schools was 4,146,574 pesos, or an average of £2:17:3 per pupil in attendance. In addition to the public schools there are a Roman Catholic university at Santiago, which includes law and civil engineering among its regular courses of study; numerous private schools and seminaries of the secondary grade, with a total of 11,184 students of both sexes in 1903; and 506 private primary schools, with an attendance of 29,684. The private schools usually conform to the official requirements in regard to studies and examinations, which facilitates subsequent admission to the university and the obtainment of degrees; probably they do better work than the public schools, especially in the German settlements of the southern provinces. A Consejo de Instrucción Pública (council of public instruction) of 14 members exercises a general supervision over the higher and secondary schools. There are schools of music and fine arts in Santiago. The national library at Santiago, with 116,300 volumes in 1906, and the national observatory, are both efficiently administered. At the beginning of the 20th century there were 41 public libraries in the republic, including public school collections, with an aggregate of 240,000 volumes.

Charities.—According to the returns of 1903 there were 88 hospitals in the republic, which reported 79,051 admissions during the year, and had 6215 patients under treatment at its close; 628,536 patients received gratuitous medical assistance at the public dispensaries during the year; there were 24 foundling hospitals with 5570 children; and there were 3092 persons in the various *hospicios* or asylums, and 1478 in the imbecile asylums.

Religion.—The Roman Catholic religion is declared by the constitution to be the religion of the state, and the inaugural oath of the president pledges him to protect it. A considerable part of its income is derived from a subsidy included in the annual budget, which makes it a charge upon the national treasury like any other public service. The secular supervision of this service is entrusted to a member of the president’s cabinet, known as the minister of worship and colonization. The executive and legislative powers intervene in the appointments to the higher offices of the Church. The greater part of the population remains loyal to the established faith. The law of 1865 gives the privilege of religious worship to other faiths, and the laws of 1883 made civil marriage and the civil registry of births, deaths and marriages

obligatory, and secularized the cemeteries. Under the reform of 1865 full religious freedom is practically accorded, and it is provided that the services of religious organizations other than the Roman Catholic may be held in private residences or in edifices owned by private individuals or corporations. Of the 72,812 foreigners residing in Chile in 1895, about 16,000 were described as Protestants. Notwithstanding the opposition of some political elements to the Church, the Chileans themselves may all be classed as Roman Catholics. The ecclesiastical organization includes one archbishop, who resides at Santiago, three bishops residing at La Serena, Concepción and Ancud, and two vicars residing in Antofagasta and Tarapacá. These benefices are filled by appointments from lists of three prepared by the council of state and sent to Rome by the president, and in the case of an archbishop or bishop the appointment must also receive the approval of the Senate. The Chilean clergy are drawn very largely from the higher classes, and their social standing is much better than in many South American states. The Church also possesses much property of its own, and is therefore able to maintain itself on a comparatively small subsidy from the public treasury, which was 985,910 pesos (£73,943) in 1902. The Church maintains seminaries in all cathedral towns, and these also receive a subsidy from the government.

Finance.—For a long time Chile was considered one of the poorest states of Spanish America, but the acquisition of the rich mineral-producing provinces of the north, together with the development of new silver and copper mines in Atacama and Coquimbo, largely increased her revenues and enabled her to develop other important resources. During the decade 1831-1840 the annual revenues averaged about 2,100,000 pesos (of 48d.), which in the decade 1861-1870 had increased to an average of only 8,200,000 pesos—and this during a period of considerable agricultural activity on account of wheat exports to California and Australia. After 1870 the revenues increased more rapidly owing to the development of new mining industries, the receipts in 1879 amounting to 15,300,000 pesos, and in 1882 to 28,900,000 pesos. The revenues from the captured Peruvian nitrate fields then became an important part of the national income, which ten years later (1902) reached an aggregate of 138,507,178 pesos (of i8d.), of which 105,072,832 pesos were in gold. In 1906 the receipts from all sources were estimated at 149,100,000 pesos, of which 62,200,000 pesos gold were credited to the tax on nitrate, 39,800,000 pesos gold to import duties, and 23,500,000 pesos currency to railway receipts. During these years of fiscal prosperity the country suffered much from financial crises caused by industrial stagnation, an excessive and depreciated paper currency and political disorder. To ensure an income that would meet its foreign engagements, the government collected the nitrate and iodine taxes and import duties in gold. As a considerable part of the expenditures were in gold, the practice was adopted of keeping the gold and currency accounts separate. In 1895 a conversion law was passed in which the sterling value of the peso was reduced to 18d., at which rate the outstanding paper should be redeemed. A conversion fund was also created, and, although the government afterwards authorized two more large issues, the beneficial effects of this law were so pronounced that the customs regulations were modified in 1907 to permit the payment of import duties in paper. The national revenue is derived chiefly from the nitrate taxes, customs duties, alcohol tax, and from railway, postal and telegraph receipts. There is no land tax, and licence or business taxes are levied by the municipalities for local purposes. The national expenditures are chiefly for the interest and amortization charges on the public debt, official salaries, military expenses in connexion with the army and navy, public works (including railway construction, port improvements, water and sewage works), the administration of the state railways, telegraph lines and post office, church subsidies, public instruction and foreign representation.

The ordinary and extraordinary receipts and expenditures for the five years 1899-1903, in gold and currency, in pesos of 18d., were as follows:—

	Receipts, pesos.		Expenditures, pesos.	
	Gold.	Paper.	Gold.	Paper.
1899	83,051,604	45,239.970	31,732,797	76,749,793
1900	89,869,178	46,515,102	30,564,821	82,143,742
1901	74,665,061	35,394,434	39,808,517	91,087,171
1902	105,072,832	33,434,346	45,093,278[5]	89,170,087[5]
1903	108,503,565	32,490,145	12,508,075	84,721,437

For 1906 the expenditures were fixed at 149,000,000 pesos, and the revenues were estimated to produce 149,100,000 pesos, which included 62,200,000 pesos gold from nitrate taxes, 39,800,000 pesos gold and 200,000 pesos paper from import duties, 23,500,000 pesos paper from the state railways, 2,500,000 pesos paper from postal and telegraph receipts, and 15,000,000 pesos gold from loans. How the revenues are expended is shown in the estimates for 1907, in which the total expenditures were estimated at 134,830,532 pesos paper and 58,796,780 pesos gold, the principal appropriations being 16,192,780 pesos paper and 99,733

gold for the war department, 10,460.781 paper and 6,315,731 gold for the marine department, 40,934,273 paper and 16,984,671 gold for railways, and 6,324,817 paper for public works. In addition to these the budget of 1906 provided for gold expenditures in 1907 of 7,000,000 pesos on sanitary works and 8,000,000 pesos on the Arica-La Paz railway. The custom of dividing receipts and expenditures into ordinary and extraordinary, of treating the receipts from loans as revenue, of adding six months to the fiscal year for closing up accounts, and of dividing receipts and expenditures into separate gold and currency accounts, leads to much confusion and complication in the returns, and is the cause of unavoidable discrepancies and contradictions.

In May 1906 the external debt of the republic aggregated £21,700,000, including the loans of 1905 and 1906, amounting to £5,700.000, for sanitary works and railway construction. At the same time the internal debt was 107,000,000 pesos (£8,025,000), which increases the funded indebtedness to £29,725,000. Like Brazil, Chile has been careful to preserve her foreign credit, and though an average indebtedness of about £10 per capita may seem large for a nation with so much absolute poverty among its people, the government is finding no difficulty in negotiating new loans, the mineral resources of the country and the conservative instincts of the people being considered satisfactory guarantees. According to official returns, the real-estate valuations in 1903-1904 aggregated 1,777,217,704 pesos, of which 1,020,609,215 pesos were in urban and 754,608,489 pesos in rural property. Of the total returned, 1,775,217,704 is described as taxable, and 262,626,576 pesos as non-taxable. The large and steadily increasing receipts from import duties, amounting to 91,321,860 pesos in 1905, and 103,507,556 pesos in 1906, appears to indicate an encouraging state of prosperity in the country, although an average of 34½ pesos a year (nearly £2 : 12s.), in addition to the increased prices paid for home manufactures, seems to be a very heavy indirect tax upon so poor a people.

Currency.—The monetary circulation in Chile consists almost wholly of paper currency, nominally based on a gold standard of 18d. per peso. The conversion law of 1895 made the currency convertible at this rate, although the gold peso was rated at 48d. previous to that date; but the financial crisis of 1898 caused the suspension of specie payments, and a forced issue of additional paper led to a further postponement of conversion and the prompt withdrawal of specie from circulation. The paper circulation consists of national and bank issues. The former owes its existence very largely to the war with Peru, the civil war of 1891, and the financial troubles of 1898. On the 1st of January 1890 the national issues stood at 22,487,916 pesos, and the bank issues at 16,679,790 pesos, making a total of 39,167,706 pesos currency in circulation. This total was largely increased by President Balmaceda in 1891. On the 31st of July 1898 the conversion of paper notes, under the law of 1st June 1895, was suspended, and the government issued 27,989,929 pesos to the banks of issue, which was described as a loan at 2%, and raised their outstanding circulation to 40,723,089 pesos, and at the same time issued on its own account 17,693,890 pesos and assumed responsibility for 1,193,641 pesos which had been illegally put into circulation before 1896. This gave an aggregate registered circulation of 86,045,166 pesos in 1898. In 1904 another issue of 30,000,000 pesos was authorized and the date of conversion was still further postponed, and in 1907 a more general act provided that the maximum paper circulation should not exceed 150,000,000 pesos of the value of 18d. per peso, and that new issues should be made only through the issue department and against deposits of gold, which deposits would be returned to depositors on the presentation of the currency issued. The redemption of this issue was guaranteed by a conversion fund of 100,000,000 pesos, and by an authorization to issue a loan of 50,000,000 pesos to redeem the balance, if necessary. The conversion fund under the act of 1895 stood at 77,282,257 pesos (£5,796,170) on the 31st of May 1907. There are 23 joint-stock banks of issue, with an aggregate registered capital of 40,689,665 pesos (£3,051,724). Their circulating notes are secured by deposits in the national treasury of gold, government notes and other approved securities. There is no state bank, though the Bank of Chile, with its numerous agencies and its paid-up capital of 20,000,000 pesos, may be said to fill the place of such an institution. Besides these, there are four non-issue banks, two foreign banks and their agencies, and three mortgage banks, with agencies at the important provincial centres, which loan money on real-estate security and issue interest bearing hypothecary notes to bearer. There are 8 savings banks in the republic, whose aggregate deposits on the 31st of December 1906 were 14,799,728 pesos.

The monetary unit, the gold peso, does not form a part of the actual coinage. The gold coins authorized by this law are the *condor* of 20 pesos, the *medio condor*, or *doblon*, of 10 pesos, and the *escudo* of 5 pesos. The silver coins are the *peso* of 100 centavos and its fractional parts of 20, 10 and 5 centavos. The bronze coins are of 2½, 2, 1, and ½ centavos.

The metric system of weights and measures is the legal standard in Chile, but the old Spanish standards are still widely used, especially in handling mining and farm produce. Nitrate of soda is estimated in Chilean quintals (101.41 lb) in the field, and metric quintals (220.46 lb) at the port of shipment. In silver and copper mining the *marc* (8 oz.) is commonly

used in describing the richness of the ores. Farm produce is generally sold by the *arroba* or *fanega*; the *vara* is used in lineal measurement, and the *cuadra* is used by country people in land measurement.

(A. J. L.)

History.

Chile was the recognized name of the country from the beginning of its known history. The land was originally inhabited by tribes of Indians, who, though not mere savages, were far below the level of civilization distinguishing the races of Mexico and Peru. When the country first became known to the Spaniards in the 16th century the northern tribes were found to be more civilized and much more submissive than those of the south. The difference was no doubt due to the invasion and conquest of northern Chile in the 15th century by Yupanqui, Inca of Peru, grandfather of Atahualpa, ruler of Peru at the time of its conquest by Pizarro. The dominion of the Incas in Chile was probably bounded by the Rapel river (lat. 34° 10′ S.), and, though their control of the country was slight, the Peruvian influence led to the introduction of a higher civilization, and, by weakening the power of the tribes, paved the way for the invasion of the Spaniards. Beyond the limits of the Inca conquest the Indians of Chile were distinguished by fierce independence of character and by their warlike qualities. Rude and ignorant as they were, they possessed a rough military organization; each community was led by its *ulmen* (chief), and in war the tribes fought together under an elected leader (*toqui*). The name of the Araucanians, the most powerful of the tribes, came to be applied to the whole confederation of Indians living south of the Bio-bio river.

Inca conquest.

The first Spanish invasion of Chile took place in 1535, when Diego de Almagro, the companion and rival of Pizarro in the conquest of Peru, marched into Chile in search of gold. Disappointed in his quest, and meeting with obstinate resistance from the southern tribes, he returned to Peru with his whole force in 1538. In 1540 Pizarro sent Pedro de Valdivia to make a regular conquest and settlement of Chile. Valdivia founded Santiago, the present capital of Chile, in February 1541, and proceeded to build the towns of La Serena, Conceptión, Villarica, Imperial, Valdivia and Angol, in order to secure his hold on the country. But the Indians fought desperately for their independence, and in 1553 a general rising of the tribes ended in the defeat and death of Valdivia and in the destruction of most of his settlements. This was the beginning of nearly a century of continuous warfare. As there was no gold in the country the number of settlers was small, the loose tribal organization of the natives made it impossible to inflict a vital defeat on them, and the mountainous and thickly wooded country lent itself admirably to a warfare of surprises and ambuscades. General after general and army after army were despatched from Spain and Peru; Chile was given a government independent of the viceroy of Lima; attack after attack was made on the Indians, their lands were laid waste, and the struggle was conducted with merciless ferocity: all in vain. Settlements and forts were never free from assault and were taken and retaken; if one Indian army was destroyed another took its place, if one *toqui* was killed another was chosen; when defeated, the Indians retired to their forests, marshes and hills, recruited their forces, and fell on the pursuing Spaniards. In 1612 an attempt was made by a Jesuit missionary to negotiate a peace, but not till 1640 was the desperate struggle ended by the treaty of Quillin, which left the Indians all the land south of the Bio-bio river. Up to 1800 the peace was broken by three wars, in 1655, in 1723 and in 1766, the last ended by a treaty which actually gave the Araucanians the right to have a minister at Santiago.

Spanish invasions.

It was this constant warfare with the Indians and the necessity for hard continuous work, owing to the lack of precious metals in Chile, that no doubt helped to produce in the settlers the strength and hardihood of character that distinguishes the Chileans among South American races. But not unnaturally the material condition of the country was the reverse of prosperous. The expenditure far exceeded the revenue. The Indian warfare occupied nearly the whole attention of the governors and much of the time of the settlers. By the Spanish colonial system the development of manufactures was prohibited and the trade of the colony was limited not only to Spain but to the one port of Cadiz. Till the 18th century ships were not allowed to sail round Cape Horn, so that the Chileans had to trade indirectly through Peru and the Argentine. Agriculture was the one resource of the colony, and wheat was grown for export to Peru, but the land was concentrated in the hands of a few big landowners, and the cultivation of the vine and olive was forbidden. At the end of the 17th century Santiago was a town of poor one-storeyed houses and had only 8000 inhabitants; the other towns, Valparaiso, Concepción, La Serena, were only large villages. Books were not allowed to be imported, and education was limited to such as was given here and there by priests and monks. The Indians within the

Colonial system.

limits of the Spanish colony were treated like slaves, and horribly mutilated to prevent their escape; but at the same time a gradual fusion of races was taking place, and the Chilean peasant (*peon*) of to-day is as much of Indian as of Spanish descent. The Araucanians, however, continued to preserve their independence; they jealously resented the introduction of Spanish influence, and the missionary efforts of the Jesuits met with little success.

During the 18th century the condition of the colony was improved in many ways. The Bourbon kings of Spain were more liberal in their colonial policy. Merchant-ships were allowed to sail direct to Chile, trade with France was sometimes permitted, and a large batch of hardy emigrants was sent out from the Biscay provinces of Spain. Freed from the preoccupation of the Indian wars, the governors gave more attention to the general welfare of the country: a university was started in Santiago in 1747, many towns were built about the same time, agriculture and industries were promoted and a coasting trade grew up. In 1778 Charles III. threw open all the ports of Spain to the colonies and allowed freedom of trade with France. But in general the administration of the colony was burdensome, oppressive and inefficient. The people had no voice in the government. Ruling with the help of the Royal Audience, the governor was absolute master of the country, and regulated the smallest details of life. Such time as the officials could spare from the main object of enriching themselves by extortion and corruption was given up to endless official and religious ceremonies and to petty disputes of etiquette and precedence. All the high posts and offices were filled by men sent from Spain, with the result that bitter jealousy reigned between them and the native-born colonists (*criollos*). The *criollos* as a rule filled the posts in the municipalities (*cabildos*), disposed of by sale, so that when the revolution broke out the *cabildos* naturally became the centres of the movement. As in all Spanish colonies, so in Chile, the Church played a large part in the public life. Chile was divided into the two bishoprics of Santiago and Concepción, and the Church managed to accumulate most of the wealth of the country. At the same time the monks and Jesuits did useful work in teaching industrial and agricultural arts, and in giving the people a certain degree of education; but the influence of the Church was used to bolster up the traditional narrow colonial system, and the constant quarrels between the clergy and the secular powers often threw the country into confusion.

At the opening of the 19th century Chile was a colony whose resources had hardly been touched, with a population of about 500,000 persons, of Spanish and mixed Spanish and Indian blood: a people endowed with the vigour of character bred by a mountainous country and a bracing climate and by a hard struggle for existence, but ignorant through lack of education, shut out by a narrow-minded commercial system from knowledge of the outside world, and destitute of the character-training that free institutions afford.

Struggle for independence.

The national independence of Chile dates from the second decade of the 19th century. The revolt of England’s North American colonies, and the events of the French Revolution naturally suggested the idea of a struggle for independence to the Spanish colonists, and the deposition of Ferdinand VII. by Napoleon, and the ensuing disorganization of Spain, supplied the desired opportunity. In 1809 risings took place in Venezuela, in Ecuador, in Upper Peru and in the Argentine; the revolutionary fever spread to Chile, and on the 18th of September 1810 the *cabildo* of Santiago secured the resignation of the governor and vested his powers in an elected *Junta* (board) of seven members. This event was the beginning of the independence of Chile. But it was some time before independence was fully attained. The mass of the people were ignorant, intercourse between them was slight, and there was a strong section attached to the old régime. The party determined on independence was at first small, and compelled to conceal its aims till the ground had been prepared for open decisive action. Further, there were divisions between the patriots of Santiago and those of Concepción, and bitter jealousies between the leaders, the chief of whom were Juan Martinez de Rozas, José Miguel Carrera and Bernardo O’Higgins. Owing to the apathy of the people and the enmities existing among the leaders, the Spanish forces, sent by the viceroy of Peru to crush the revolutionary movement, succeeded after two years’ indecisive fighting in completely defeating the patriots at Rancagua in 1814. For three years the Spaniards maintained their hold on Chile, ruling the country with tyrannical harshness, but in the spring of 1817 a patriot force which had been organized at Mendoza in the Argentine by José de San Martin, an Argentine officer, and by O’Higgins, crossed the Andes and overwhelmed the royalists at the battle of Chacabuco. O’Higgins was named director-general of Chile, while San Martin, realizing that the independence of each colony depended on the Spanish being expelled from the whole of South America, set about preparing an invasion of Peru. The viceroy of Lima made one more effort to uphold the power of Spain in Chile, but the army he despatched under Mariano Osorio, the victor of Rancagua, was decisively defeated at the river Maipo on the 3rd of April 1818. By this battle the independence of Chile, formally proclaimed by O’Higgins in the previous February, was finally secured.

The next few years witnessed the expulsion of the royalists from the south of Chile, the equipment of a small fleet, placed under the command of Manuel Blanco Encalada and Lord Cochrane (earl of Dundonald), and the invasion of Peru by San Martin with the help of the fleet, ending in the proclamation of Peruvian independence in 1821; though the Spanish power was not finally broken until Bolivar's victory at Ayacucho in 1824. Relieved from all fear of Spanish attacks from the north, the new republic of Chile entered upon a period of internal confusion and dissension bordering upon anarchy. As soon as the necessity for establishing a stable government arose the lack of training in self-government among the Chileans became painfully obvious. O'Higgins as director-general, rightly perhaps, considered that firm orderly government was more important than the concession of liberal institutions, but his administration roused strong hostility, and in 1823 he was compelled to resign. From that date up to 1830 there were no less than ten governments, while three different constitutions were proclaimed. The nation was divided into small mutually hostile parties; there were ecclesiastical troubles owing to the hostility of the Church to the new republic; there were Indian risings in the south and royalist revolts in the island of Chiloé; the expenditure exceeded the revenue, and the employment of the old Spanish financial expedients naturally increased the general discontent. Up to 1830 the Liberal party, which favoured a free democratic régime, held the upper hand, but in that year the Conservatives, backed by a military rising led by General Joaquin Prieto, placed themselves in power after a sanguinary battle at Lircay. Prieto was elected president in 1831, and a new constitution was drafted and promulgated in 1833, which, with some modifications, remains the constitution of Chile at the present time. This constitution invested the executive with almost dictatorial powers, and the Conservatives entered upon a long term of office.

The republic.

The aim of the Conservative policy was to secure above all a strong administration; power was concentrated in the hands of a small circle; public liberties were restricted and all opposition crushed by force. Inaugurated under General Prieto's administration (1831-1841) by his able minister Diego Portales, this policy was continued by his successors General Manuel Bulnes (1841-1851) and Manuel Montt (1851-1861), each of whom like Prieto was elected to a double term of office. In spite of the discontent of the Liberals, the Conservative ascendancy secured a long period of firm stable government, which was essential to put an end to the confusion in public life and to give time for the people to awake to a fuller realization of the duties and responsibilities of national independence. The internal peace of the country was only disturbed three times, by Liberal risings in 1835, in 1851 and in 1859, all of which were crushed, but not without severe fighting. In 1836 Chile also became involved in a war with a confederation of Peru and Bolivia, which ended in the victory of Chile and the dissolution of the confederation.

While refusing to allow the people any share in, or control over, the government, the Conservative leaders devoted themselves to improving the condition of the people and of the country, and under their firm rule Chile advanced rapidly in prosperity. The government established a department for education, a training college for teachers, and numerous schools and libraries; literary magazines were started and a school of art and an academy of music founded. By the consolidation of the foreign debt, by the regular payment of interest, by the establishment of several banks, and by the negotiation of commercial treaties, the financial position of the country was improved. Internal development was promoted by the working of the silver mines of Copiapo and the coal mines of Lota, by the building of railways and erection of telegraphs, and by the colonization of the rich Valdivia province with German settlers.

The Straits of Magellan were occupied; under an American engineer, William Wheelwright, a line of steamers was started on the coast, and, by a wise measure allowing merchandise to be landed free of duty for re-exportation, Valparaiso became a busy port and trading centre; while the demand for food-stuffs in California and Australia, following upon the rush for gold, gave a strong impetus to agriculture. A code of law was drawn up and promulgated, and the ecclesiastical system was organized under an archbishop appointed by the pope. To Montt, as minister under Bulnes and afterwards as president, must be given the main credit for the far-seeing policy which laid the foundations of the prosperity of Chile; and though the administration was in many ways harsh and narrow, firm government, rather than liberty that would have tended to anarchy, was essential for the success of the young republic.

After 1861, however, a Liberal reaction set in, aided by divisions in the Conservative party arising mainly over church questions. Montt's successors, José Joaquin Perez (1861-1871), Federico Errázuriz (1871-1876) and Anibal Pinto (1876-1881), abandoned the repressive policy of their predecessors, invited the co-operation of the Liberals, and allowed discontent to vent itself freely in popular agitation. Some democratic changes were made in the constitution, notably a law forbidding the re-election of a president, and the gradual and

peaceful transition to a Liberal policy was a proof of the progress which the nation had made in political training. Outside the movement for constitutional reform, the most important internal question was the successful Liberal attack on the privileged position and narrow views of the Church, which led to the birth of a strong ultra-montane party among the clergy. The government continued to be animated by a progressive spirit: schools, railways, telegraphs were rapidly extended; a steamship mail service to Europe was subsidized, and the stability of the government enabled it to raise new foreign loans in order to extinguish the old high interest-bearing loans and to meet the expenses of public works. In 1877 a financial crisis occurred, met by the emission of paper money, but the depression was only temporary, and the country soon rallied from the effects.

During this period there was desultory fighting with the Indians; there was a long boundary dispute with the Argentine, settled in 1880; and in 1865 Chilean sympathy with Peru in a quarrel with Spain led to a foolish war with Spain. The blockade of their ports and the bombardment of Valparaiso by a Spanish squadron impressed the Chileans with the necessity of possessing an adequate fleet to defend their long coast-line; and it was under President Errázuriz that the ships were obtained and the officers trained that did such good service in the great war with Peru. With a population of over two millions, a rapidly increasing revenue, ruled by a government that was firm and progressive and that enjoyed the confidence of all classes, Chile was well equipped for the struggle with Peru that began in 1879.

Close of the war with Peru.

The war of 1879-82 between Chile and Peru is the subject of a separate article (see Chile-Peruvian War). By the beginning of 1881 the war had reached a stage when the final struggle was close at hand. On the 13th of January of that year the Chilean forces under command of General Baquedano attacked the entrenched positions of the Peruvians at daybreak in the vicinity of Chorillos, a village some few miles from Lima, and forming the outer line of defence for the capital. After a stubborn fight the day ended in victory for the attacking forces; but the losses on both sides were great, and on the following day negotiations for peace were attempted by the representatives of the foreign powers in Lima, the object being to avoid, if possible, any further bloodshed. This attempt to end the conflict proved, however, abortive, and on the 15th of January at 2 P.M. hostilities recommenced in the neighbourhood of Miraflores. After severe fighting for some four hours the Chileans again proved victorious, and drove the Peruvians from the second line of defence back upon the city of Lima. Lima was now at the mercy of the Chileans, and on the 17th of January a division of 4000 men of all arms, under the command of General Cornelio Saavedra, was sent forward to occupy the Peruvian capital and restore order within the town limits. A portion of the Chilean forces was shortly afterwards withdrawn from Peru, and the army of occupation remaining in the conquered country was in charge of Admiral Patricio Lynch, an officer who had been specially promoted for distinguished services during the war. President Anibal Pinto of Chile now set about to find means to conclude a treaty of peace with Peru, but his efforts in this direction were frustrated by the armed resistance offered in the country districts to the Chilean authorities by the remainder of the Peruvian forces under command of General Cáceres. So matters continued— the Chileans administering on the seaboard and in the principal towns, the Peruvians maintaining a guerilla warfare in the mountainous districts of the interior. In September 1881 the term of office of president Pinto expired, and he was succeeded in the post of chief executive of Chile by President Domingo Santa Maria. Ex-President Pinto died three years later in Valparaiso, leaving a memory respected and admired by all political parties in his country. The name of Pinto will always occupy a prominent place in the annals of Chilean history, not only because the war with Peru took place during his term of office, but also on account of the fact that it was largely due to the intelligent direction of all details by the president during the struggle that the Chilean arms proved so absolutely successful by land and sea.

President Santa Maria.

Señor Domingo Santa Maria, who now acceded to the presidency of Chile, was a Liberal in politics, and had previously held various important posts under the government. Under the rule of President Montt he had been an active member of the opposition and involved in various revolutionary conspiracies; for his participation in these plots he was at one time exiled from the country, but returned and received official employment under President Perez. The principal task confronting President Santa Maria on assuming the presidency was to negotiate a treaty of peace with Peru and provide for the evacuation of the Chilean army of occupation. The presence of the Peruvian general Cáceres and his forces in the interior of Peru prevented for some two years the formation of any Peruvian national administration in Lima with which the Chilean authorities could deal. In August of 1883 the Peruvians were defeated by the forces commanded by Admiral Lynch, and a government was then organized under the leadership of General Iglesias. A provisional treaty of peace was then drawn up and signed by General

Iglesias and the Chilean representative, and this was finally ratified by the Chilean and Peruvian congresses respectively in April 1884. By the terms of this treaty Peru ceded to Chile unconditionally the province of Tarapacá, and the provinces of Tacna and Arica were placed under Chilean authority for the term of ten years, the inhabitants having then to decide by a general vote whether they remained a part of Chile or elected to belong once more to Peru. In the event of the decision being favourable to Peru a sum of 10,000,000 dollars was to be paid by Peru to Chile. On the ratification of this treaty the Chilean forces were immediately withdrawn from Lima and other points of occupation in Peruvian territory. The government of Bolivia also attempted to negotiate a treaty of peace with Chile in 1884, and for this purpose sent representatives to Santiago. No satisfactory terms, however, could be arranged, and the negotiations ended in only an armistice being agreed to, by which Chile remained in occupation of the Bolivian seaboard pending a definite settlement at some future period.

The administration of President Santa Maria met with violent opposition from the Conservatives, who included the Clerical party in their ranks, and also from a certain section of the Liberals. The dislike of the Conservatives to President Santa Maria was occasioned by his introduction of the law of civil marriage, the civil registration of births and deaths, and the freeing of the cemeteries. Hitherto no marriage was legal unless celebrated according to the rites of the Roman Catholic religion, and all registers of births and deaths were kept by the parish priests. Civil employees were now appointed under the new laws to attend to this work. Formerly the cemeteries were entirely under the control of the Church, and, with the exception of a few places specially created for the purpose, were reserved solely for the burial of Roman Catholics. Under the new regime these cemeteries were made common to the dead of all religions. Under President Perez, in 1865, a clause in the law of constitution had been introduced permitting the exercise of all creeds of religion, and this was now put into practice, all restrictions being removed. On several occasions, notably in 1882 and 1885, President Santa Maria used his influence in the elections of senators and deputies to congress for the purpose of creating a substantial majority in his favour. He was induced to take this course in consequence of the violent opposition raised in the chambers by the liberal policy he pursued in connexion with Church matters. This intervention caused great irritation amongst the Conservatives and dissentient Liberals, and the political situation on more than one occasion became so strained as to bring the country to the verge of armed revolution. No outbreak, however, took place, and in 1886 the five years of office for which President Santa Maria had been elected came to an end, and another Liberal, Señor José Manuel Balmaceda, then succeeded to power.

The election of Balmaceda was bitterly opposed by the Conservatives and dissentient Liberals, but was finally successfully carried by the official influence exercised by President Santa Maria. On assuming office President Balmaceda endeavoured to bring about a reconciliation of all sections of the Liberal party in congress and so form a solid majority to support the administration, and to this end he nominated as ministers representatives of the different political groups. Six months later the cabinet was reorganized, and two most bitter opponents to the recent election of President Balmaceda were accorded portfolios. Believing that he had now secured the support of the majority in congress on behalf of any measures he decided to put forward, the new president initiated a policy of heavy expenditure on public works, the building of schools, and the strengthening of the naval and military forces of the republic. Contracts were given out to the value of £6,000,000 for the construction of railways in the southern districts; some 10,000,000 dollars were expended in the erection of schools and colleges; three cruisers and two sea-going torpedo boats were added to the squadron; the construction of the naval port at Talcahuano was actively pushed forward; new armament was purchased for the infantry and artillery branches of the army, and heavy guns were acquired for the purpose of permanently and strongly fortifying the neighbourhoods of Valparaiso, Talcahuano and Iquique. In itself this policy was not unreasonable, and in many ways extremely beneficial for the country. Unfortunately corruption crept into the expenditure of the large sums necessary to carry out this programme. Contracts were given by favour and not by merit, and the progress made in the construction of the new public works was far from satisfactory. The opposition in congress to President Balmaceda began to increase rapidly towards the close of 1887, and further gained ground in 1888. In order to ensure a majority favourable to his views, the president threw the whole weight of his official influence into the elections for senators and deputies in 1888; but many of the members returned to the chambers through this official influence joined the opposition shortly after taking their seats. In 1889 congress became distinctly hostile to the administration of President Balmaceda, and the political situation became grave, and at times threatened to involve the country in civil war. According to usage and custom in Chile, a ministry does not remain in office unless supported by a majority in the chambers. Balmaceda now found himself in the impossible

Balmaceda elected president.

position of being unable to appoint any ministry that could control a majority in the senate and chamber of deputies and at the same time be in accordance with his own views of the administration of public affairs. At this juncture the president assumed that the constitution gave him the power of nominating and maintaining in office any ministers he might consider fitting persons for the purpose, and that congress had no right of interference in the matter. The chambers were now only waiting for a suitable opportunity to assert their authority. In 1890 it was stated that President Balmaceda had determined to nominate and cause to be elected as his successor at the expiration of his term of office in 1891 one of his own personal friends. This question of the election of another president brought matters to a head, and congress refused to vote supplies to carry on the government. To avoid trouble Balmaceda entered into a compromise with congress, and agreed to nominate a ministry to their liking on condition that the supplies for 1890 were voted. This cabinet, however, was of short duration, and resigned when the ministers understood the full amount of friction between the president and congress. Balmaceda then nominated a ministry not in accord with the views of congress under Señor Claudio Vicuña, whom it was no secret that Balmaceda intended to be his successor in the presidential chair, and, to prevent any expression of opinion upon his conduct in the matter, he refrained from summoning an extraordinary session of the legislature for the discussion of the estimates of revenue and expenditure for 1891. When the 1st of January 1891 arrived, the president published a decree in the *Diario Oficial* to the effect that the budget of 1890 would be considered the official budget for 1891. This act was illegal and beyond the attributes of the executive power. As a protest against the action of President Balmaceda, the vice-president of the senate, Señor Waldo Silva, and the president of the chamber of deputies, Señor Ramon Barros Luco, issued a proclamation appointing Captain Jorje Montt in command of the squadron, and stating that the navy could not recognize the authority of Balmaceda so long as he did not administer public affairs in accordance with the constitutional law of Chile. The majority of the members of the chambers sided with this movement, and on the 7th of January Señores Waldo Silva, Barros Luco and a number of senators and deputies embarked on board the Chilean warship “Blanco Encalada,” accompanied by the “Esmeralda” and “O’Higgins” and other vessels, sailing out of Valparaiso harbour and proceeding northwards to Tarapaca to organize armed resistance against the president (see Chilean Civil War). It was not alone this action of Balmaceda in connexion with congress that brought about the revolution. He had alienated the sympathy of the aristocratic classes of Chile by his personal vanity and ambition. The oligarchy composed of the great landowners have always been an important factor in the political life of the republic; when President Balmaceda found that he was not a *persona grata* to this circle he determined to endeavour to govern without their support, and to bring into the administration a set of men who had no traditions and with whom his personality would be all-powerful. The Clerical influence was also thrown against him in consequence of his radical ideas in respect of Church matters.

Revolution of 1891.

Immediately on the outbreak of the revolution President Balmaceda published a decree declaring Montt and his companions to be traitors, and without delay organized an army of some 40,000 men for the suppression of the insurrectionary movement. While both sides were preparing for extremities, Balmaceda administered the government under dictatorial powers with a congress of his own nomination. In June 1891 he ordered the presidential election to be held, and Señor Claudio Vicuña was duly declared chosen as president of the republic for the term commencing in September 1891. The resources of Balmaceda were running short on account of the heavy military expenses, and he determined to dispose of the reserve of silver bullion accumulated in the vaults of the Casa de Moneda in accordance with the terms of the law for the conversion of the note issue. The silver was conveyed abroad in a British man-of-war, and disposed of partly for the purchase of a fast steamer to be fitted as an auxiliary cruiser and partly in payment for other kinds of war material.

The organization of the revolutionary forces went on slowly. Much difficulty was experienced in obtaining the necessary arms and ammunition. A supply of rifles was bought in the United States, and embarked on board the “Itata,” a Chilean vessel in the service of the rebels. The United States authorities refused to allow this steamer to leave San Diego, and a guard was stationed on the ship. The “Itata,” however, slipped away and made for the Chilean coast, carrying with her the representatives of the United States. A fast cruiser was immediately sent in pursuit, but only succeeded in overhauling the rebel ship after she was at her destination. The “Itata” was then forced to return to San Diego without landing her cargo for the insurgents. The necessary arms and ammunition were arranged for in Europe; they were shipped in a British vessel, and transferred to a Chilean steamer at Fortune Bay, in Tierra del Fuego, close to the Straits of Magellan and the Falkland Islands, and thence carried to Iquique, where they were safely disembarked early in July 1891. A force of 10,000 men was now raised by the *junta* of the revolution, and preparations were rapidly pushed forward for a

move to the south with the object of attacking Valparaiso and Santiago. Early in April a portion of the revolutionary squadron, comprising the “Blanco Encalada” and other ships, was sent to the southward for reconnoitring purposes and put into the port of Caldera. During the night of the 23rd of April, and whilst the “Blanco Encalada” was lying quietly at anchor, a torpedo boat called the “Almirante Lynch,” belonging to the Balmaceda faction, steamed into the bay of Caldera and discharged a torpedo at the rebel ship. The “Blanco Encalada” sank in a few minutes and 300 of her crew perished.

In the middle of August 1891 the rebel forces were embarked at Iquique (where a provisional government under Captain Jorje Montt had been set up), numbering in all about 9000 men, and sailed for the south. On the 20th of August the congressist army was disembarked at Quinteros, about 20 m. north of Valparaiso, and marched to Concon, where the Balmacedists were entrenched. A severe fight ensued, in which the troops of President Balmaceda were defeated with heavy loss. This reverse roused the worst passions of the president, and he ordered the arrest and imprisonment of all persons suspected of sympathy with the revolutionary cause. The population generally were, however, distinctly antagonistic to Balmaceda; and this feeling had become accentuated since the 17th of August 1891, on which date he had ordered the execution of a number of youths belonging to the military college at San Lorenzo on a charge of seditious practices. The shooting of these boys created a feeling of horror throughout the country, and a sensation of uncertainty as to what measures of severity might not be practised in the future if Balmaceda won the day. After the victory at Concon the insurgent army, under command of General Campos, marched in a southerly direction towards Viña del Mar, and thence to Placilla, where the final struggle in the conflict took place. Balmaceda’s generals Barbosa and Alcérrica had here massed their troops in a strong position. The battle, on the 28th of August, resulted in victory for the rebels. Both the Balmacedist generals were killed and Valparaiso was at once occupied. Three days later the victorious insurgents entered Santiago and assumed the government of the republic. After the batile of Placilla it was clear to President Balmaceda that he could no longer hope to find a sufficient strength amongst his adherents to maintain himself in power, and in view of the rapid approach of the rebel army he abandoned his official duties to seek an asylum in the Argentine legation. The president remained concealed in this retreat until the 18th of September. On the evening of that date, when the term for which he had been elected president of the republic terminated, he committed suicide by shooting himself. The excuse for this act, put forward in letters written shortly before his end, was that he did not believe the conquerors would give him an impartial trial. The death of Balmaceda finished all cause of contention in Chile, and was the closing act of the most severe and bloodiest struggle that country had ever witnessed. In the various engagements throughout the conflict more than 10,000 lives were lost, and the joint expenditure of the two governments on military preparations and the purchase of war material exceeded £10,000,000 sterling.

Defeat and suicide of Balmaceda.

An unfortunate occurrence soon after the close of the revolution brought strained relations for a short period between the governments of the United States and Chile. A number of men of the U.S.S. “Baltimore” having been given liberty on shore, an argument arose between some of them and a group of Chilean sailors in a drinking den in Valparaiso. Words led to blows. The Americans were badly handled, one of their number being killed and others severely hurt. The United States government characterized the affair as an outrage, demanding an indemnity as satisfaction. The Chilean authorities demurred at this attitude, and attempted to argue the matter. James G. Elaine, then secretary of state, refused peremptorily to listen to any explanations. In the end Chile paid an indemnity of $75,000 as asked, but the affair left bad feeling in its train.

The close of the revolution against Balmaceda left the government of Chile in the hands of the *junta* under whose guidance the military and naval operations had been organized. Admiral Jorje Montt had been the head of this revolutionary committee, and he acted as president of the provisional government when the administration of the country changed hands after the victory of the Congressional party. An election was now immediately ordered for the choice of a president of the republic and for representatives in the senate and chamber of deputies. Admiral Montt, as head of the executive power, stanchly refused to allow official influence to be brought to bear in any way in the presidential campaign. The great majority of the voters, however, required no pressure to decide who was in their opinion the man most fitted to administer the affairs of the republic. For the first time in the history of Chile a perfectly free election was held, and Admiral Montt was duly chosen by a nearly unanimous vote to be chief magistrate for the constitutional term of five years. The senate and chamber of deputies were formally constituted in due course, and the government of the republic resumed normal conditions of existence. The new president showed admirable tact in dealing with the difficult problem he

President Jorje Montt.

was called upon to face. Party feeling still ran high between the partisans of the two sides of the recent conflict. Admiral Montt took the view that it was politic and just to let bygones be bygones, and he acted conscientiously by this principle in all administrative measures in connexion with the supporters of the late President Balmaceda. Early in 1892 an amnesty was granted to the officers of the Balmaceda régime, and they were freely permitted to return to Chile without any attempt being made to molest them. The first political act of national importance of the new government was the grant of control to the municipalities, which hitherto had possessed little power to direct local affairs, and were not even permitted to dispose of the municipal revenues to any important amount without first obtaining the consent of the central government. Almost absolute power was now given these corporations to manage their own concerns, and the organization of the police was placed in their hands; at a later period, however, it was found necessary to modify this latter condition.

President Montt next turned his attention towards the question of how best to repair the damage occasioned to the country by eight months of civil warfare. The plan of public works authorized in 1887 was reconsidered, and the construction of portions of the various undertakings recommenced. The army and navy were reorganized. Additional instructors were brought from Germany, and all arms of the military service were placed on a thoroughly efficient footing in matters of drill and discipline. Several new and powerful cruisers were added to the navy, and the internal economy of this branch of the national defence was thoroughly inspected and many defects were remedied. President Montt then took in hand the question of a reform of the currency, the abolition of inconvertible paper money, and the re-establishment of a gold basis as the monetary standard of the republic. This reform of the currency became the keynote of the president's policy during the remainder of his term of office. Great opposition was raised by the representatives of the debtor class in congress to the suppression of the inconvertible paper money, but in the end President Montt carried the day, and on the 11th of February 1895 a measure finally became law establishing a gold currency as the only legal tender in Chile. In July 1896 the Conversion Act was put in force, a dollar of 18d. being the monetary unit adopted. In 1895 relations with the neighbouring republic of Argentina began to become somewhat strained in regard to the interpretation of the treaty concerning the boundary between the two countries. The treaties of 1881, 1893 and 1895 left doubts in the minds of both Chileans and Argentines as to the position of the frontier line. On the 17th of April 1896 another protocol was drawn up, by which the contending parties agreed to submit any differences to the arbitration of Great Britain, at the instance of one or both governments. President Montt had now fulfilled his term of office, and on the 18th of September 1896 he handed over the presidential power to his successor, Señor Federico Errázuriz, who had been duly elected in the month of June previously.

The election for the position of president of the republic was closely contested in 1896 between Señor Errázuriz and Señor Reyes, and ended in the triumph of the former candidate by the narrow majority of one vote. The father of the new president had been chief magistrate of Chile from 1871 to 1876, and his administration had been one of the best the country had ever enjoyed; his son had therefore traditions to uphold in the post he was now called upon to fill. At the beginning of 1897 the public attention was absorbed by foreign political questions. The problems to be solved were the frontier difficulty with Argentina, the question of the possession of Tacna and Arica with Peru, and the necessity of fulfilling the obligation contracted with Bolivia to give that country a seaport on the Pacific coast. The treaty made in 1896 with the Argentine government, referring to the arbitration of disputed points concerning the boundary, became practically for the moment a dead letter, and both Argentines and Chileans began to talk openly of an appeal to arms to settle the matter once for all. The governments of both countries began to purchase large supplies of war material, and generally to make preparations for a possible conflict. In these circumstances no final settlement with Peru and Bolivia was possible, the authorities of those republics holding back to see the issue of the Chile-Argentine dispute, and Chile being in no position at the time to insist on any terms being arranged. So matters drifted until the beginning of 1898. In July of that year the crisis reached an acute stage. Both Chile and Argentina put forward certain pretensions to territory in the Atacama district to the north, and also to a section of Patagonia in the south. Neither side would give way, nor was any disposition exhibited to refer the matter to arbitration under the protocol of 1896. The cry of an acute financial crisis emanating from the fear of war with Argentina was now raised in Chile. The president was advised that the only way of averting the financial ruin of the banking institutions of the republic was to suspend the conversion law and lend from the national treasury inconvertible notes to the banks. Señor Errázuriz weakly gave way, and a decree was promulgated placing the currency once more on an inconvertible paper money basis until 1902. In August of 1898 the Chilean government determined to insist upon the terms of the protocol of 1896

President Errázuriz.

Crisis with Argentina.

being acted upon, and intimated to Argentina that they demanded the fulfilment of the clause relating to arbitration on disputed points. This was practically an ultimatum, and a refusal on the part of the Argentine government to comply with the terms of the 1896 agreement meant a declaration of war by Chile. For a few days the issue hung in the balance, and then the Argentine government accepted the provisions made in 1896 for arbitration. The dispute concerning the Atacama district was submitted to an arbitration tribunal, consisting of the representative of the United States in Argentina, assisted by one Argentine and one Chilean commissioner. This tribunal, after due investigation, gave their decision in April 1899, and the verdict was accepted unreservedly by both governments. The dispute regarding the Patagonian territory was submitted to the arbitration of Great Britain, and a commission—consisting of Lord Macnaghten, Sir John Ardagh and Sir T.H. Holdich—was appointed in 1899 to hear the case.

The Argentine difficulty was ended, but Chile still had to find a settlement with Peru and Bolivia. The treaty made with the former country in 1893 was not ratified, as it was thought to concede too much to Peru, and the subsequent *ad referendum* treaty was rejected on account of Peru claiming that only Peruvians, and not all residents, should have the right to vote in the plebiscite to be taken by the terms of the treaty of 1883 for the possession of Tacna and Arica. By the terms of the armistice of 1883 between Chile and Bolivia, a three years' notice had to be given by either government wishing to denounce that agreement. By the protocol of 1895 Chile agreed to give to Bolivia the port of Arica, or some other suitable position on the seaboard. On these lines a settlement was proposed. Vitor, a landing-place a little to the south of Arica, was offered by the Chilean government to Bolivia, but refused as not complying with the conditions stated in the protocol of 1895; the Bolivians furthermore preferred to wait and see if Arica was finally ceded by Peru to Chile, and if so to claim the fulfilment of the terms of the protocol.

After the accession to office of President Errázuriz there was no stability of any ministry. Political parties in congress were so evenly balanced and so subdivided into groups that a vote against the ministry was easy to obtain, and the resignation of the cabinet immediately followed in accordance with the so-called parliamentary system in vogue in Chile. The president of the republic has no power to dissolve the chambers, to endeavour to remedy the evil by one or another political party obtaining a substantial working majority, but must wait to see the results of the triennial elections. As a consequence of these conditions Conservative, Liberal and coalition ministries held office at short intervals. These unsettled political circumstances checked any continuity of policy, and tended to block the passage of all useful legislation to help forward the economic development of the country and inhabitants; on the other hand, the financial situation was better by the end of 1899 than in the previous year, since all proposals for a fresh paper issue had been vetoed; and the elections for congress and municipal office at the opening of 1900 returned a majority favourable to a stable currency policy.

In September 1900 a fresh outburst of hostile feeling against Chile was created in Argentina by a note addressed by the Chilean government to Bolivia, intimating that Chile was no longer inclined to hand over the port of Arica or any other port on the Pacific, but considered the time ripe for a final settlement of the questions connected with the Chilean occupation of Bolivian territory, which had now been outstanding for sixteen years. The foreign policy of Chile, as indicated by this note, was considered by Argentina to be grasping and unconciliatory, and there were rumours of an anti-Chilean South American federation. Chile disclaimed any aggressive intentions; but in December the Bolivian congress declined to relinquish their claim to a port, and refused to conclude a definite treaty of peace. The year closed with a frontier incident between Chile and Argentina in the disputed territory of Ultima Esperanza, where some Argentine colonists were ejected by Chilean police; but both governments signed protocols agreeing not to take aggressive action in consequence.

President Riesco.

At the opening of 1901 the country was chiefly interested in the forthcoming presidential election, for which the candidates were Don Pedro Montt (Conservative and Clerical) and Señor German Riesco (Liberal). The relations between President Errázuriz and congress became rather strained, owing to the former's inclination to retain in office a ministry on which congress had passed a vote of censure; but Errázuriz had been in ill-health for more than a year, and on the 1st of May he resigned, and died in July. At the ensuing election Riesco was elected president. The attitude of Chile towards the Pan-American Congress at Mexico became a matter of interest in the autumn, particularly in connexion with the proposal for compulsory arbitration between all American governments. The Chilean government made it quite clear that they would withdraw from the congress if this proposal was meant to be retroactive; and their unyielding attitude testified to the apprehensions felt by Chile concerning United States interference. In

October the Chilean government announced that the contemplated conversion scheme, for which gold had been accumulated, would be postponed for two years (till October 1903), the gold being held as a reserve fund pending the result of the arbitration over the Argentine frontier. This was generally considered to be a reasonable and statesmanlike course. Unfortunately, a recrudescence of the excitement over the boundary dispute was occasioned by the irritation created in Argentina by the fact that, pending a decision, Chile was constructing roads in the disputed territory. During December 1901 relations were exceedingly strained, and troops were called out on both sides. But at the end of the month it was agreed to leave the question to the British arbitrators, and the latter decided to send one of their number, Sir T.H. Holdich, to examine the territory.

Argentine boundary award.

The survey occupied some eight months, and it was not until the autumn that Sir T.H. Holdich returned to England to make his report. The difficulty of ascertaining the true line watershed had been very great, but the result was eminently successful. The award of King Edward was signed on the 20th of November 1902, and both parties to the litigation were satisfied. In order that future disputes might be amicably settled, a treaty was signed by which it was agreed that any question that might arise should be submitted to the arbitration of Great Britain or in default of that power to the Swiss Confederation. The removal of this source of irritation and the restoration of friendly relations between the two republics was a great relief to the finance of Chile. Had it not been for the political instability of the country, the effects of the diminution of expenditure on military and naval preparations would have effected a rapid improvement in its financial position. The constant change of ministry (there being no stable majority in the congress) prevented during 1903 any settled policy, or that confidence in the government which is the basis of commercial prosperity. In 1904, however, both trade and revenue showed signs of improvement, and the sale of the warships “Esmeralda” and “Chambuco” for £1,000,000 furnished a surplus, which was devoted to the improvement of the port of Valparaiso. This was the beginning of a period of steady industrial growth and development. The settlement of the long outstanding dispute with Bolivia in a treaty of peace signed on the 17th of October 1905 was very advantageous to both countries. By this treaty Bolivia ceded all claims to a seaport and strip of the coast, on condition that Chile constructed at her own charges a railway to Lapaz from the port of Arica, giving at the same time to Bolivia free transit across Chilean territory to the sea. A cash indemnity of £300,000 was also paid, and certain stipulations were made with regard to the construction of other railways giving access from Chile to the Bolivian interior.

Valparaiso earthquake.

The prosperity of Chile was to suffer a rude shock. On the 17th of August 1906 a terrible earthquake visited Valparaiso and the surrounding district. The town of Valparaiso was almost entirely destroyed, while Santiago and other towns were severely shaken and suffered much damage. It was estimated that about 3000 persons were killed, a still larger number injured, and at least 100,000 rendered homeless. The loss of property was enormous. The fire which broke out after the earthquake shock had subsided added to the horror of the catastrophe. Measures were, however, promptly taken for succouring the people, who had been driven from their homes, and the task of restoration was vigorously taken in hand. Before the end of the year the rebuilding of the city was rapidly progressing.

President Pedro Montt.

In 1906 Señor Pedro Montt was elected president and entered upon his office on the 17th of September. The personality of the president, however, had become of much less importance in modern Chile than in earlier days. Up to 1870 the government was in the hands of a small oligarchy of Santiago families, but the president enjoyed large powers of initiative. Nowadays the congress has virtually absorbed the executive power, with the result that the cabinet is often changed many times in one year. This prevents indeed any continuity of policy, for the majority in congress is perpetually fluctuating, and ministerial crises rapidly follow one another. Chile, however, except in the Balmacedist civil war, is happily distinguished by its freedom from revolution and serious political unrest. Its history in this respect is in marked contrast to that of the neighbouring South American states. The completion of the Trans-Andean railway between Valparaiso and Buenos Aires was bound to be of immense commercial and industrial value; and eventually the making of a longitudinal railway route uniting the nitrate province of the north with Santiago, and Santiago with Puerto Montt in the distant south, opened up further important prospects. Such a line of through communication, binding together the different provinces forming the long narrow strip of territory stretching along more than 2000 m. of the Pacific littoral, could only be looked forward to, both politically and economically, as an inestimable benefit to the country.

BIBLIOGRAPHY.—*General History.*—The most valuable authority is D. Barros Arana’s *Historia*

jeneral de Chile (15 vols., Santiago, 1884), from the earliest days up to 1830. Smaller handbooks covering the whole period are: A.U. Hancock, a *History of Chile* (Chicago, 1893), the only general history in English, and containing a bibliography; Gaspar Toro, *Compendio de la historia de Chile* (Santiago, 1879), a good clear abstract of Chilean history; and F. Valdes Vergara, *Historia de Chile* (Valparaiso, 1898), written primarily for schools, but containing useful sketches of leading figures in Chilean history.

Works on Special Periods.—Colonial Period: M.L. Amunátequi, *Descubri miento y conquista de Chile* (Santiago, 1885), a valuable detailed account of the Spanish conquest; by same author, *Los Precursores de la independencia de Chile* (Santiago, 1870), a clear useful description of the evils of the Spanish colonial system; Horacio Lara, *Cronica de la Araucania* (Santiago, 1889), a history of the Araucanian Indians right up to recent dates; Abbé Eyzaguirre, *Histoire du Chili* (Lille, 1855), mainly dealing with the position of the Church during the colonial period. Perez Garcia's *Historia del reino de Chile* (Santiago, 1900), an old history by a Spanish officer written about 1780, and Molina's *History of Chili* in the English translation (London, 1809), will also be found useful. Useful material for research exists in J.T. Medina's *Coleccion de documentos para la historia de Chile* (Santiago, 1888), a collection of despatches and official documents; his *Cosas de la colonia* (Santiago, 1889), an accumulation of undigested information about life in the colonial period; and *Historiadores de Chile* (21 vols., Santiago, 1861), a collection of ancient chronicles and official documents up to the early part of the 17th century.

Revolutionary Period.—A. Roldan, *Las Primeras Asambleas nacionales* (Santiago, 1890), an account of the struggles in the first national assemblies; A. Valdes, *Revolucion Chilena y campañas de la independencia* (Santiago, 1888), an account of the early fighting and rivalry of the revolutionary leaders; W. Pilling, *Emancipation of South America* (London, 1893), a translation of B. Mitre's life of San Martin, describing the fighting in the wars of independence; Lord Cochrane, *Narrative of Services in Chile, Peru and Brazil* (London, 1859), an autobiography describing the naval exploits that helped to secure the expulsion of the Spaniards; B. Vicuña Machenna, *Vida de O'Higgins* (Santiago, 1882), giving a useful account of the revolutionary struggle and the main actors; and the same author's *Historia jeneral de la republica de Chile*, a collection of essays on the early republican history by various writers.

Later History.—R. Sotomayor Valdes, *Historia de Chili, 1831-1871*, a detailed account of the period (Santiago, 1875); the same author's *Campaña del ejercito Chileno en 1837* (Santiago, 1896), describing the fighting of the first Peruvian War; B. Vicuña Machenna, *D. Diego Portales* (Valparaiso, 1863), a good account of the life and time of Portales, the famous minister of the Conservative party; P.B. Fiqueroa, *Historia de la revolution constituyente 1858-59* (Santiago, 1889), an account of the revolution at the end of Montt's presidency; F. Fonch, *Chile in der Gegenwart* (Berlin, 1870), a description of Chile at the time; *Statement on Behalf of Chile* (in the Chilean-Argentine Boundary Arbitration) (6 vols., London, 1901-1902); Sir Thomas Holdich, *Countries of the King's Award* (1904); Beltran y Rospido, *Los Pueblos hispano-americanos en el siglo XX.* (Madrid, 1904); P.F. Martin, *Through Five Republics of South America* (London, 1906); Wright, *The Republic of Chile* (London, 1905); G.F. Scott Elliot, *Chilé* (London, 1907); Sir W.M. Conway, *Aconcagua and Tierra del Fuego* (London, 1902); "Chile-Argentine Arbitration" in the *Geog. Journal* (January 1903); C.M. Pepper, *Panama to Patagonia* (London, 1907); C.E. Akers, *History of South America, 1854-1904* (London, 1904); M. Hume, *Lecture on the Republic of Chile* (London, 1902).

(E. G. J. M.; C. E. A.; G. E.)

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1 See A. Pissis, "Sur la constitution géologique de la chaîne des Andes entre le 16° et le 55° degré de latitude sud," *Ann. des mines*, ser. 7, vol. iii. (Mém.), 1873, pp. 402-426, pils. ix., x.; R.A. Philippi, *Die tertiären und quartären Versteinerungen Chiles* (Leipzig, 1887), (includes also descriptions of some Cretaceous fossils), and *Los Fósiles secondarios de Chile* (Santiago, 1899); Karl Burckhardt, "Profils géologiques transversaux de la Cordillère argentino-chilienne. Stratigraphie et tectonique," *Anales Mus. La Plata*, 1900, and "Beiträge zur Kenntnis der Jura- und Kreide-formation der Cordillere," *Palaeontographica*, vol. 1. (1903-1904) pp. 1-144, pls. i.-xvi.; see also a series of papers on South American geology by G. Steinmann and his collaborators in *Neues Jahrb, für Min.* Beil.-band viii. et seq.

2 *Notes of a Naturalist in South America*, p. 134.

3 Also classified as *Nothofagus* (Mirb.).

4 A. Gallenga, *South America* (London, 1880), p. 181.

5 The expenditures of 1902 are also given as 25,882,702 pesos gold, and 108,844,693 pesos currency.

CHILEAN CIVIL WAR (1891). The Chilean civil war grew out of political dissensions between the president of Chile, J.M. Balmaceda, and his congress (see CHILE: *History*), and began in January 1891. On the 6th, at Valparaiso, the political leaders of the Congressional party went on board the ironclad "Blanco Encalada," and Captain Jorje Montt of that vessel hoisted a broad pennant as commodore of the Congressional fleet. Preparations had long been made for the naval *pronunciamento*, and in the end but few vessels of the Chilean navy adhered to the cause of the "dictator" Balmaceda. But amongst these were two new and fast torpedo gunboats, "Almirante Condell" and "Almirante Lynch," and in European dockyards (incomplete) lay the most powerful vessel of the navy, the "Arturo Prat," and two fast cruisers. If these were secured by the Balmacedists the naval supremacy of the congress would be seriously challenged. For the present, and without prejudice to the future, command of the sea was held by Montt's squadron (January). The rank and file of the army remained faithful to the executive, and thus in the early part of the war the "Gobernistas," speaking broadly, possessed an army without a fleet, the congress a fleet without an army. Balmaceda hoped to create a navy; the congress took steps to recruit an army by taking its sympathizers on board the fleet. The first shot was fired, on the 16th of January, by the "Blanco" at the Valparaiso batteries, and landing parties from the warships engaged small parties of government troops at various places during January and February. The dictator's principal forces were stationed in and about Iquique, Coquirabo, Valparaiso, Santiago and Concepción. The troops at Iquique and Coquimbo were necessarily isolated from the rest and from each other, and military operations began, as in the campaign of 1879 in this quarter, with a naval descent upon Pisagua followed by an advance inland to Dolores. The Congressional forces failed at first to make good their footing (16th-23rd of January), but, though defeated in two or three actions, they brought off many recruits and a quantity of munitions of war. On the 26th they retook Pisagua, and on the 15th of February the Balmacedist commander, Eulojio Robles, who offered battle in the expectation of receiving reinforcements from Tacna, was completely defeated on the old battlefield of San Francisco. Robles fell back along the railway, called up troops from Iquique, and beat the invaders at Haura on the 17th, but Iquique in the meanwhile fell to the Congressional fleet on the 16th. The Pisagua line of operations was at once abandoned, and the military forces of the congress were moved by sea to Iquique, whence, under the command of Colonel Estanislao Del Canto, they started inland. The battle of Pozo Almonte, fought on the 7th of March, was desperately contested, but Del Canto was superior in numbers, and Robles was himself killed and his army dispersed. After this the other Balmacedist troops in the north gave up the struggle. Some were driven into Peru, others into Bolivia, and one column made a laborious retreat from Calama to Santiago, in the course of which it twice crossed the main chain of the Andes.

The Congressional *Junta de Gobierno* now established in Iquique prosecuted the war vigorously, and by the end of April the whole country was in the hands of the "rebels" from the Peruvian border to the outposts of the Balmacedists at Coquimbo and La Serena. The *Junta* now began the formation of a properly organized army for the next campaign, which, it was believed universally on both sides, would be directed against Coquimbo. But in a few months the arrival of the new ships from Europe would reopen the struggle for command of the sea; the *torpederas* "Condell" and "Lynch" had already weakened the Congressional squadron severely by sinking the "Blanco Encalada" in Caldera Bay (23rd of April), and the Congressional party could no longer aim at a methodical conquest of successive provinces, but was compelled to attempt to crush the dictator at a blow. Where this blow was to fall was not decided up to the last moment, but the instrument which was to deliver it was prepared with all the care possible under the circumstances. Del Canto was made commander-in-chief, and an ex-Prussian officer, Emil Körner, chief of staff. The army was organized in three brigades of all arms, at Iquique, Caldera and Vallenar. Körner superintended the training of the men, gave instruction in tactics to the officers, caused maps to be prepared, and in general took every precaution that his experience could suggest to ensure success. Del Canto was himself no mere figurehead, but a thoroughly capable leader who had distinguished himself at Tacna (1880) and Miraflores (1881), as well as in the present war. The men were enthusiastic, and the officers unusually numerous. The artillery was fair, the cavalry good, and the train and auxiliary services well organized. About one-third of the infantry were armed with the (Männlicher) magazine rifle, which now made its first appearance in war, the remainder had the Gras and other breech-loaders, which were also the armament of the dictator's infantry. Balmaceda could only wait upon events, but he prepared his forces as best he was able, and his *torpederas* constantly harried the Congressional navy. By the end of July Del Canto and Körner had done their work as well as time permitted, and early in August the troops prepared to embark, not for Coquimbo, but for Valparaiso itself.

The expedition by sea was admirably managed, and Quinteros, N. of Valparaiso and not many miles out of range of its batteries, was occupied on the 20th of August 1891. Balmaceda

was surprised, but acted promptly. The first battle was fought on the Aconcagua at Concon on the 21st. The eager infantry of the Congressional army forced the passage of the river and stormed the heights held by the Gobernistas, capturing 36 guns. The killed and wounded of the Balmacedists numbered 1600, and nearly all the prisoners, about 1500 men, enrolled themselves in the rebel army, which thus more than made good its loss of 1000 killed and wounded. The victors pressed on towards Valparaiso, but were soon brought up by the strong fortified position of the Balmacedist general Barbosa at Viña del Mar, whither Balmaceda hurried up all available troops from Valparaiso and Santiago, and even from Concepción. Del Canto and Körner now resolved on a daring step. Supplies of all kinds were brought up from Quinteros to the front, and on the 24th of August the army abandoned its line of communications and marched inland. The flank march was conducted with great skill, little opposition was encountered, and the rebels finally appeared to the south-east of Valparaiso. Here, on the 28th, took place the decisive battle of La Placilla. Concon had been perhaps little more than the destruction of an isolated corps; the second battle was a fair trial of strength, for Barbosa was well prepared, and had under his command the greater part of the existing forces of the dictator. But the splendid fighting qualities of the Congressional troops and the superior generalship of their leaders prevailed in the end over every obstacle. The government army was practically annihilated, 941 men were killed, including Barbosa and his second in command, and 2402 wounded. The Congressional army lost over 1800 men. Valparaiso was occupied the same evening and Santiago soon afterwards. There was no further fighting, for so great was the effect of the battles of Concon and La Placella that even the Coquimbo troops surrendered without firing a shot.

BIBLIOGRAPHY.—Lieut. Sears and Ensign Wells, U.S.N., *The Chilian Revolution of 1891* (Office of Naval Intelligence, Washington, 1893); *The Capture of Valparaiso, 1891* (Intelligence Department, War Office, London, 1892); Hermann Kunz, *Taktische Beispiele aus den Kriegen der neuesten Zeit; der Bürgerkrieg in Chile* (Berlin, 1901); *Revista militar de Chile* (February-March 1892); Hugo Kunz, *Der Bürgerkrieg in Chile* (Vienna, 1892); *Militär Wochenblatt* (5th supplement, 1892); Sir W. Laird Clowes, *Four Modern Naval Campaigns* (London, 1902); *Proceedings of U.S. Naval Institute* (1894) (for La Placilla); and the military and naval periodicals of 1892.

CHILE-PERUVIAN WAR (1879-1882). The proximate cause of this war was the seizure, by the authorities of Bolivia, of the effects of the Chilean Nitrate Company at Antofagasta, then part of the Bolivian province of Atacama. The first act of hostility was the despatch of 500 soldiers to protect Chilean interests at Antofagasta. This force, under Colonel Sotomayor, landed and marched inland; the only resistance encountered was at Calama on the river Loa, where a handful of newly raised militia was routed (23rd March 1879). About the same time Chilean warships occupied Cobija and Tocapilla, and Sotomayor, after his victory at Calama, marched to the latter port. Bolivia had declared war on the 1st of March, but Peru not till the 5th of April: this delay gave the Chileans time to occupy every port on the Bolivian coast. Thus the Chilean admiral was able to proceed at once to the blockade of the southern ports of Peru, and in particular Iquique, where there took place the first naval action of the war. On the 21st of April the Chilean sloop “Esmeralda” and the gunboat “Covadonga”—both small and weak ships—engaged the Peruvian heavy ironclads “Huascar” and “Independencia”; after a hot fight the “Huascar” under Miguel Grau sank the “Esmeralda” under Arturo Piat, who was killed, but Carlos Condell in the “Covadonga” manoeuvred the “Independencia” aground and shelled her into a complete wreck. The Chileans now gave up the blockade and concentrated all their efforts on the destruction of the “Huascar,” while the allies organized a field army in the neighbourhood of Tacna and a large Chilean force assembled at Antofagasta.

On the 8th of October 1879 the “Huascar” was brought to action off Angamos by the “Blanco Encalada,” and the “Almirante Cochrane.” Grau was outmatched as hopelessly and made as brave a fight as Prat at Iquique. Early in the action a shot destroyed the Peruvian’s conning tower, killing Grau and his staff, and another entered her turret, killing the flag captain and nearly all the crew of the turret guns. When the “Huascar” finally surrendered she had but one gun left in action, her fourth commander and three-quarters of her crew were killed and wounded, and the steering-gear had been shot away. The Peruvian navy had now ceased to exist. The Chileans resumed the blockade, and more active operations were soon undertaken. The whole force of the allies was about 20,000 men, scattered along the seaboard of Peru. The Chileans on the other hand had a striking force of 16,000 men in the neighbourhood of Antofagasta, and of this nearly half was embarked for Pisagua on the 26th

of October. The expeditionary force landed, in the face of considerable opposition, on the 2nd of November, and captured Pisagua. From Pisagua the Peruvians and Bolivians fell back along the railway to their reinforcements, and when some 10,000 men had been collected they moved forward to attack the Chilean position of San Francisco near Dolores station (19th November). In the end the Chileans were victorious, but their only material gain was the possession of Iquique and the retreat of the allies, who fell back inland towards Tarapacá. The tardy pursuit of the Chileans ended in the battle of Tarapacá on the 27th. In this the allies were at first surprised, but, rapidly recovering themselves, took the offensive, and after a murderous fight, in which more men were killed than were wounded, the Chileans suffered a complete defeat. For some inexplicable reason the allies made no use of their victory, continued to retreat and left the Chileans in complete possession of the Tarapacá region. With this the campaign of 1879 ended. Chile had taken possession of the Bolivian seaboard and of the Peruvian province of Tarapacá, and had destroyed the hostile navy.

The objective of the Chileans in the second campaign was the province of Tacna and the field force of the allies at Tacna and Arica. The invasion was again carried out by sea, and 12,000 Chileans were landed at Pacocha (Ylo), far to the N. of Arica. Careful preparations were made for a desert march, and on the 12th of March 1880 the advanced corps started inland for Moquegua, which was occupied on the 20th. Near Moquegua the Peruvians, some 2000 strong, took up an unusually strong position in the defile of Cuesta de los Angeles. But the great numerical superiority of the assailants enabled them to turn the flanks and press the front of the Peruvian position, and after a severe struggle the defence collapsed (March 22nd), In April the army began its advance southward from Moquegua to Tacna, while the Chilean warships engaged in a series of minor naval operations in and about the bay of Callao. Arica was also watched, and the blockade was extended north of Lima. The land campaign had ere this culminated in the battle of Tacna (May 26th), in which the Chileans attacked at first in several disconnected bodies, and suffered severely until all their forces came on the field. Then a combined advance carried all before it. The allies engaged under General Narciso Campero, the new president of Bolivia, lost nearly 3000 men, and the Chileans, commanded by Manuel Baquedano, lost 2000 out of 8500 on the field. The defeated army was completely dissolved, and it only remained for the Chileans to march on Arica from the land side. The navy co-operated with its long-range guns, on the 7th of June a general assault was made, and before nightfall the whole of the defences were in the hands of the Chileans. Their second campaign had given them entire possession of another strip of Peru (from Pisagua to Ylo), and they had shown themselves greatly superior, both in courage and leadership, to their opponents. While the army prepared for the next campaign, the Chilean navy was active; the blockade became more stringent and several fights took place, in one of which the “Covadonga” was sunk; an expeditionary force about 3000 strong, commanded by Patricio Lynch, a captain in the Chilean navy, carried out successful raids at various places on the coast and inland.

The Chilean army was reorganized during the summer, and prepared for its next operation, this time against Lima itself. General Baquedano was in command. The leading troops disembarked at Pisco on the 18th of November 1880, and the whole army was ready to move against the defences of Lima six weeks later. These defences consisted of two distinct positions, Chorrillos and Miraflores, the latter being about 4000 yds. outside Lima. The first line of defence was attacked by Baquedano on the 13th of January 1881. Reconnaissances proved that the Peruvian lines could not be turned, and the battle was a pure frontal attack. The defenders had 22,000 men in the lines, the Chileans engaged about 24,000. The battle of Chorrillos ended in the complete defeat of the Peruvians, less than a quarter of whose army rallied behind the Miraflores defences. The Chileans lost over 3000 men. Two days later took place the battle of Miraflores (January 15th). Here the defences were very strong, and the action began with a daring counter-attack by some Peruvians. Neither party had intended to fight a battle, for negotiations were in progress, but the action quickly became general. Its result was, as before, the complete dissolution of the defending army. Lima, incapable of defence, was occupied by the invaders on the 17th, and on the 18th Callao surrendered. The resistance of the Peruvians was so far broken that Chile left only a small army of occupation to deal with the remnants of their army. The last engagement took place at Caxacamara in September 1882, when the Peruvians won an unimportant success.

See T. B. M. Mason, *The War on the Pacific Coast, 1879-1881* (U.S. Office of Naval Intelligence, Washington, 1883); Captain Châteauminois (transl.), *Mémoire du Ministre de la Guerre du Chili sur la guerre Chilo-Péruvienne* (1882); Barros Arana, *Hist. de la guerre du Pacifique* (1884); Sir W. Laird Clowes, *Four Modern Naval Campaigns* (London, 1902); Anon., *Précis de la guerre du Pacifique* (Paris, 1886); Clements R. Markham, *The War between Peru and Chile*.

CHILIASM (from Gr. χιλιασμός, χίλιοι, a thousand), the belief that Christ will return to reign in the body for a thousand years, the doctrine of the Millennium (*q.v.*).

CHILLÁN, a city and the capital of the province of Ñuble, in the southern part of central Chile, 35° 56′ S., 71° 37′ W., 246 m. by rail S.S.W. of Santiago and about 56 m. direct (108 by rail) N.E. of Concepción. Pop. (1895) 28,738; (1902, official estimate) 36,382. Chillán is one of the most active commercial cities of central Chile, and is surrounded by a rich agricultural and grazing country. Chillán was founded by Ruiz de Gambôa in 1594. Its present site was chosen in 1836. The original site, known as Chillán Viejo, forms a suburb of the new city. The hot sulphur springs of Chillán, which were discovered in 1795, are about 45 m. E.S.E. They issue from the flanks of the "Volcan Viejo," about 7000 ft. above sea-level. The highest temperature of the water issuing from these springs is a little over 135°. The principal volcanoes of the Chillán group are the Nevado (9528 ft.) and the Viejo. After a repose of about two centuries the Nevado de Chillán broke out in eruption early in 1861 and caused great destruction. The eruption ceased in 1863, but broke out again in 1864.

CHILLIANWALLA, a village of British India in the Punjab, situated on the left bank of the river Jhelum, about 85 m. N.W. of Lahore. It is memorable as the scene of a battle on the 13th of January 1849, between a British force commanded by Lord Gough and the Sikh army under Sher Singh. The loss of the Sikhs was estimated at 4000, while that of the British in killed and wounded amounted to 2800, of whom nearly 1000 were Europeans and 89 were British and 43 native officers. An obelisk erected at Chillianwalla by the British government preserves the names of those who fell.

CHILLICOTHE, a city and the county-seat of Livingston county, Missouri, U.S.A., situated in the N. part of the state, on the Grand river, about 80 m. N.E. of Kansas City. Pop. (1890) 5717; (1900) 6905 (538 negroes); (1910) 6265. It is served by the Chicago, Milwaukee & St Paul, the Wabash, and the Chicago, Burlington & Quincy railways. There are various manufactures. Coal and limestone are found in the vicinity, and much live stock is raised, wool and hides being shipped from Chillicothe. Chillicothe was settled about 1830, and the town was laid out in 1837 on land granted directly by the Federal government; it was incorporated in 1855.

CHILLICOTHE, a city and the county-seat of Ross county, Ohio, U.S.A., on the W. bank of the Scioto river, on the Ohio & Erie Canal, about 50 m. S. of Columbus. Pop. (1890) 11,288; (1900) 12,976, of whom 986 were negroes, and 910 were foreign-born; (1910 census) 14,508. Chillicothe is served by the Baltimore & Ohio South-Western (which has railway shops here), and other railways. The city has two parks. There are several ancient mounds in the vicinity. Chillicothe is built on a plain about 30 ft. above the river, in the midst of a fertile agricultural region, and has a large trade in grain and coal, and in manufactures. The value of the city's factory products increased from $1,615,959 in 1900 to $3,146,890 in 1905, or 94.7%. Chillicothe was founded in 1796, and was first incorporated in 1802. In 1800-1803 it was the capital of the North-West Territory, and in 1803-1810 and 1812-1816 the capital of Ohio. Three Indian villages bore the name Chillicothe, each being in turn the chief town of the Chillicothe, one of the four tribal divisions of the Shawnee, in their retreat before the whites;

the village near what is now Oldtown in Greene county was destroyed by George Rogers Clark in 1780; that in Miami county, where Piqua is now, was destroyed by Clark in 1782; and the Indian village near the present Chillicothe was destroyed in 1787 by Kentuckians.

See Henry Howe, *Historical Collections of Ohio* (Columbus, 1891).

CHILLINGWORTH, WILLIAM (1602-1644), English divine and controversialist, was born at Oxford in October 1602. In June 1618 he became a scholar of Trinity College, Oxford, and was made a fellow of his college in June 1628. He had some reputation as a skilful disputant, excelled in mathematics, and gained some credit as a writer of verses. The marriage of Charles I. with Henrietta Maria of France had stimulated the propaganda of the Roman Catholic Church, and the Jesuits made the universities their special point of attack. One of them, "John Fisher," who had his sphere at Oxford, succeeded in making a convert of young Chillingworth, and prevailed upon him to go to the Jesuit college at Douai. Influenced, however, by his godfather, Laud, then bishop of London, he resolved to make an impartial inquiry into the claims of the two churches. After a short stay he left Douai in 1631 and returned to Oxford. On grounds of Scripture and reason he at length declared for Protestantism, and wrote in 1634, but did not publish, a confutation of the motives which had led him over to Rome. This paper was lost; the other, on the same subject, was probably written on some other occasion at the request of his friends. He would not, however, take orders. His theological sensitiveness appears in his refusal of a preferment offered to him in 1635 by Sir Thomas Coventry, lord keeper of the great seal. He was in difficulty about subscribing the Thirty-nine Articles. As he informed Gilbert Sheldon, then warden of All Souls, in a letter, he was fully resolved on two points—that to say that the Fourth Commandment is a law of God appertaining to Christians is false and unlawful, and that the damnatory clauses in the Athanasian Creed are most false, and in a high degree presumptuous and schismatical. To subscribe, therefore, he felt would be to "subscribe his own damnation." At this time his principal work was far towards completion. It was undertaken in defence of Dr Christopher Potter, provost of Queen's College in Oxford, who had for some time been carrying on a controversy with a Jesuit known as Edward Knott, but whose real name was Matthias Wilson. Potter had replied in 1633 to Knott's *Charity Mistaken* (1630), and Knott retaliated with *Mercy and Truth*. This work Chillingworth engaged to answer, and Knott, hearing of his intention and hoping to bias the public mind, hastily brought out a pamphlet tending to show that Chillingworth was a Socinian who aimed at perverting not only Catholicism but Christianity.

Laud, now archbishop of Canterbury, was not a little solicitous about Chillingworth's reply to Knott, and at his request, as "the young man had given cause why a more watchful eye should be held over him and his writings," it was examined by the vice-chancellor of Oxford and two professors of divinity, and published with their approbation in 1637, with the title *The Religion of Protestants a Safe Way to Salvation*. The main argument is a vindication of the sole authority of the Bible in spiritual matters, and of the free right of the individual conscience to interpret it. In the preface Chillingworth expresses his new view about subscription to the articles. "For the Church of England," he there says, "I am persuaded that the constant doctrine of it is so pure and orthodox, that whosoever believes it, and lives according to it, undoubtedly he shall be saved, and that there is no error in it which may necessitate or warrant any man to disturb the peace or renounce the communion of it. This, in my opinion, is all intended by subscription." His scruples having thus been overcome, he was, in the following year (1638), promoted to the chancellorship of the church of Sarum, with the prebend of Brixworth in Northamptonshire annexed to it. In the great civil struggle he used his pen against the Scots, and was in the king's army at the siege of Gloucester, inventing certain engines for assaulting the town. Shortly afterwards he accompanied Lord Hopton, general of the king's troops in the west, in his march; and, being laid up with illness at Arundel Castle, he was there taken prisoner by the parliamentary forces under Sir William Waller. As he was unable to go to London with the garrison, he was conveyed to Chichester, and died there in January 1644. His last days were harassed by the diatribes of the Puritan preacher, Francis Cheynell.

Besides his principal work, Chillingworth wrote a number of smaller anti-Jesuit papers published in the posthumous *Additional Discourses* (1687), and nine of his sermons have been preserved. In politics he was a zealous Royalist, asserting that even the unjust and tyrannous violence of princes may not be resisted, although it might be avoided in terms of the

instruction, “when they persecute you in one city, flee into another.” His writings long enjoyed a high popularity. The *Religion of Protestants* is characterized by much fairness and acuteness of argument, and was commended by Locke as a discipline of “perspicuity and the way of right reasoning.” The charge of Socinianism was frequently brought against him, but, as Tillotson thought, “for no other cause but his worthy and successful attempts to make the Christian religion reasonable.” His creed, and the whole gist of his argument, is expressed in a single sentence, “I am fully assured that God does not, and therefore that men ought not to, require any more of any man than this, to believe the Scripture to be God’s word, and to endeavour to find the true sense of it, and to live according to it.”

A *Life* by Rev. T. Birch was prefixed to the 1742 edition of Chillingworth’s *Works*.

CHILOÉ (from *Chile* and *hué*, “part of Chile”), a province of southern Chile, and also the name of a large island off the Chilean coast forming part of the province. The province, area 8593 sq. m., pop. (1895) 77,750, is composed of three groups of islands, Chiloé, Guaitecas and Chonos, and extends from the narrow strait of Chacao in 41° 40′ S. to the peninsula of Taytao, about 45° 45′ S. The population is composed mainly of Indians, distantly related to the tribes of the mainland, and mestizos. The capital of the province is Ancud or San Carlos, at the northern end of the island of Chiloé, on the sheltered bay of San Carlos, once frequented by whalers. It is the seat of a bishopric; pop. (1905) 3182. Other towns are Castro, the former capital, on the eastern shore of Chiloé, and the oldest town of the island (founded 1566), once the seat of a Jesuit mission, and Melinca on an island of the Guaitecas group.

The island of Chiloé, which lies immediately south of the province of Llanquihue, is a continuation of the western Chilean formation, the coast range appearing in the mountainous range of western Chiloé and the islands extending south along the coast. Between this coast range and the Andes, the gulfs of Chacao, or Ancud and Corcovado (average width, 30 m.) separate the island from the mainland. Chiloé has an extreme length north to south of about 118 m., and an average width of 35 to 40 m., with an area of about 4700 sq. m. There are several lakes on the island—Cucao, 12 m. long, being the largest,—and one small river, the Pudeto, in the northern part of the island, is celebrated as the scene of the last engagement in the war for independence, the Spanish retaining possession of Chiloé until 1826.

CHILON, of Sparta, son of Damagetus, one of the Seven Sages of Greece, flourished about the beginning of the 6th century B.C. In 560 (or 556) he acted as ephor, an office which he is even said to have founded. The tradition was that he died of joy on hearing that his son had gained a prize at the Olympic games. According to Chilon, the great virtue of man was prudence, or well-grounded judgment as to future events.

A collection of the sayings attributed to him will be found in F.W. Mullach, *Fragmenta Philosophorum Graecorum*, i.; see Herodotus i. 69; Diogenes Laertius i. 68; Pausanias iii. 16, x. 24.

CHILPERIC, the name of two Frankish kings.

Chilperic I. (d. 584) was one of the sons of Clotaire I. Immediately after the death of his father in 561 he endeavoured to take possession of the whole kingdom, seized the treasure amassed in the royal town of Berny and entered Paris. His brothers, however, compelled him to divide the kingdom with them, and Soissons, together with Amiens, Arras, Cambrai, Thérouanne, Tournai and Boulogne, fell to Chilperic’s share, but on the death of Charibert in 567 his estates were augmented. When his brother Sigebert married Brunhilda, Chilperic also wished to make a brilliant marriage. He had already repudiated his first wife, Audovera, and had taken as his concubine a serving-woman called Fredegond. He accordingly dismissed

Fredegond, and married Brunhilda's sister, Galswintha. But he soon tired of his new partner, and one morning Galswintha was found strangled in her bed. A few days afterwards Chilperic married Fredegond. This murder was the cause of long and bloody wars, interspersed with truces, between Chilperic and Sigebert. In 575 Sigebert was assassinated by Fredegond at the very moment when he had Chilperic at his mercy. Chilperic retrieved his position, took from Austrasia Tours and Poitiers and some places in Aquitaine, and fostered discord in the kingdom of the east during the minority of Childebert II. One day, however, while returning from the chase to the town of Chelles, Chilperic was stabbed to death.

Chilperic may be regarded as the type of Merovingian sovereigns. He was exceedingly anxious to extend the royal authority. He levied numerous imposts, and his fiscal measures provoked a great sedition at Limoges in 579. He wished to bring about the subjection of the church, and to this end sold bishoprics to the highest bidder, annulled the wills made in favour of the bishoprics and abbeys, and sought to impose upon his subjects a rationalistic conception of the Trinity. He pretended to some literary culture, and was the author of some halting verse. He even added letters to the Latin alphabet, and wished to have the MSS. rewritten with the new characters. The wresting of Tours from Austrasia and the seizure of ecclesiastical property provoked the bitter hatred of Gregory of Tours, by whom Chilperic was stigmatized as the Nero and the Herod of his time.

See Sérésia, *L'Église et l'État sous les rois francs au VIe siècle* (Ghent, 1888).

CHILPERIC II. (d. 720) was the son of Childeric II. He became king of Neustria in 715, on which occasion he changed his name from Daniel to Chilperic. At first he was a tool in the hands of Ragenfrid, the mayor of the palace. Charles Martel, however, overthrew Ragenfrid, accepted Chilperic as king of Neustria, and, on the death of Clotaire IV., set him over the whole kingdom. The young king died soon afterwards.

(C. PF.)

CHILTERN HILLS, or THE CHILTERNS, a range of chalk hills in England, extending through part of Oxfordshire, Buckinghamshire and Bedfordshire. Running from S.W. to N.E., they form a well-marked escarpment north-westward, while the south-eastern slope is long. The name of Chilterns is applied to the hills between the Thames in the neighbourhood of Goring and the headwaters of its tributary the Lea between Dunstable and Hitchin, the crest line between these points being about 55 m. in length. But these hills are part of a larger chalk system, continuing the line of the White Horse Hills from Berkshire, and themselves continued eastward by the East Anglian ridge. The greatest elevation of the Chilterns is found in the centre from Watlington to Tring, where heights from 800 to 850 ft. are frequent. Westward towards the Thames gap the elevation falls away but little, but eastward the East Anglian ridge does not often exceed 500 ft., though it continues the northward escarpment across Hertfordshire. There are several passes through the Chilterns, followed by main roads and railways converging on London, which lies in the basin of which these hills form part of the northern rim. The most remarkable passes are those near Tring, Wendover and Prince's Risborough, the floors of which are occupied by the gravels of former rivers. The Chilterns were formerly covered with a forest of beech, and there is still a local supply of this wood for the manufacture of chairs and other articles in the neighbourhood of Wycombe.

CHILTERN HUNDREDS. An old principle of English parliamentary law declared that a member of the House of Commons, once duly chosen, could not *resign* his seat. This rule was a relic of the days when the local gentry had to be compelled to serve in parliament. The only method, therefore, of avoiding the rule came to be by accepting an office of profit from the crown, a statute of 1707 enacting that every member accepting an office of profit from the crown should thereby vacate his seat, but should be capable of re-election, unless the office in question had been created since 1705, or had been otherwise declared to disqualify for a seat in parliament. Among the posts of profit held by members of the House of Commons in the first half of the 18th century are to be found the names of several crown stewardships, which apparently were not regarded as places of profit under the crown within the meaning of the

act of 1707, for no seats were vacated by appointment to them. The first instance of the acceptance of such a stewardship vacating a seat was in 1740, when the house decided that Sir W.W. Wynn, on inheriting from his father, in virtue of a royal grant, the stewardship of the lordship and manor of Bromfield and Yale, had *ipso facto* vacated his seat. On the passing of the Place Act of 1742, the idea of utilizing the appointment to certain crown stewardships (possibly suggested by Sir W.W. Wynn's case) as a pretext for enabling a member to resign his seat was carried into practice. These nominal stewardships were eight in number, but only two survived to be used in this way in contemporary practice—those of the Chilterns and Northstead; and when a member wished to vacate his seat, he was accordingly spoken of as taking the Chiltern Hundreds.

1. *Steward and Bailiff of the Chiltern Hundreds, County Bucks.*—The Chiltern Hundreds formed a bailiwick of the ordinary type. They are situated on the Chiltern Hills, and the depredations of the bandits, who found shelter within their recesses, became at an early period so alarming that a special officer, known as the steward of the Chiltern Hundreds, was appointed for the protection of the inhabitants of the neighbouring districts. It is doubtful at what date the necessity for such an appointment disappeared, but the three hundreds of Stoke, Burnham and Desborough are still distinguished by the old name. The appointment of steward was first used for parliamentary purposes in 1750, the appointment being made by the chancellor of the exchequer (and at his discretion to grant or not), and the warrant bestowing on the holder "all wages, fees, allowances and other privileges and pre-eminences." Up to the 19th century there was a nominal salary of 20s. attached to the post. It was laid down in 1846 by the chancellor of the exchequer that the Chilterns could not be granted to more than one person in the same day, but this rule has not been strictly adhered to, for on four occasions subsequent to 1850 the Chilterns were granted twice on the same day. The Chilterns might be granted to members whether they had taken the oath or not, or during a recess, though in this case a new writ could not be issued until the House met again. Each new warrant expressly revoked the grant to the last holder, the new steward retaining it in his turn until another should be appointed.

2. *Steward and Bailiff of the Manor of East Hundred, or Hendred, Berks.*—This stewardship was first used for parliamentary purposes in 1763, and was in more or less constant use until 1840, after which it disappeared. This manor comprised copyholds, the usual courts were held, and the stewardship was an actual and active office, the duties being executed by a deputy steward. The manor was sold by public auction in 1823 for £910, but in some manner the crown retained the right of appointing a steward for seventeen years after that date.

3. *Steward and Bailiff of the Manor of Northstead, Yorkshire.*—This manor was crown property before 1750, but was in lease until 1838. It has no copyhold lands, nor are there any records of manor courts. There are no traces of any profits having ever been derived from the office. It was used for parliamentary purposes in 1844 and subsequently.

4. *Steward of the Manor of Hempholme, Yorkshire.*—This manor appears to have been of the same nature as that of Northstead. It was in lease until 1835. It was first used for parliamentary purposes in 1845 and was in constant use until 1865. It was sold in 1866.

5. *Escheator of Munster.*—Escheators were officers commissioned to secure the rights of the crown over property which had legally escheated to it. In Ireland mention is made of escheators as early as 1256. In 1605 the escheatorship of Ireland was split up into four, one for each province, but the duties soon became practically nominal. The escheatorship of Munster was first used for parliamentary purposes in the Irish parliament from 1793 to 1800, and in the united parliament (24 times for Irish seats and once for a Scottish seat) from 1801 to 1820. After 1820 it was discontinued and finally abolished in 1838.

6. *Steward of the Manor of Old Shoreham, Sussex.*—This manor belonged to the duchy of Cornwall, and it is difficult to understand how it came to be regarded as a crown appointment. It was first used for parliamentary purposes in 1756, and then, occasionally, until 1799, in which year it was sold by the duchy to the duke of Norfolk.

7. *Steward of the Manor of Poynings, Sussex.*—This manor reverted to the crown on the death of Lord Montague about 1804, but was leased up to about 1835. It was only twice used for parliamentary purposes, in 1841 and 1843.

8. *Escheator of Ulster.*—This appointment was used in the united parliament three times, for Irish seats only; the last time in 1819.

See parliamentary paper—*Report from the Select Committee on House of Commons (Vacating of Seats)* (1894).

(T. A. I.)

CHILWA (incorrectly Shirwa), a shallow lake in south-east Africa, S.S.E. of Lake Nyasa, cut by 35°20′E., and lying between 15° and 15°35′S. The lake is undergoing a process of desiccation, and in some dry seasons (as in 1879 and 1903) the “open water” is reduced to a number of large pools. Formerly the lake seems to have found an outlet northwards to the Lujenda branch of the Rovuma, but with the sinking of its level it is now separated from the Lujenda by a wooded ridge some 30 to 40 ft. above the surrounding plains. There are four islands, the largest rising 500 ft. above the water. The lake was discovered by David Livingstone in 1859 and was by him called Shirwa, from a mishearing of the native name.

CHIMAERA, in Greek mythology, a fire-breathing female monster resembling a lion in the fore part, a goat in the middle, and a dragon behind (*Iliad*, vi. 179), with three heads corresponding. She devastated Caria and Lycia until she was finally slain by Bellerophon (see H.A. Fischer, *Bellerophon*, 1851). The origin of the myth was the volcanic nature of the soil of Lycia (Pliny, *Nat. Hist.* ii. 110; Servius on *Aeneid*, vi. 288), where works have been found containing representations of the Chimaera in the simple form of a lion. In modern art the Chimaera is usually represented as a lion, with a goat’s head in the middle of the back, as in the bronze Chimaera of Arezzo (5th century). The word is now used generally to denote a fantastic idea or fiction of the imagination.

CHIMAY, a town in the extreme south-east of the province of Hainaut, Belgium, dating from the 7th century. Pop. (1904) 3383. It is more commonly spoken of as being in the district *entre Sambre et Meuse*. Owing to its proximity to the French frontier it has undergone many sieges, the last of which was in 1640, when Turenne gave orders that it should be reduced to such ruin that it could never stand another. The town is chiefly famous for the castle and park that bear its name. Originally a stronghold of the Cröy family, it has passed through the D’Arenbergs to its present owners, the princes of Caraman-Chimay. The castle, which before Turenne’s order to demolish it possessed seven towers, has now only one in ruins, and a modern château was built in the Tudor style in the 18th century. This domain carried with it the right to one of the twelve peerages of Hainaut. Madame Tallien, daughter of Dr Cabarrus, the Lady of Thermidor, married as her second husband the prince de Chimay, and held her little court here down to her death in 1835. There is a memorial to her in the church, which also contains a fine monument of Phillippe de Cröy, chamberlain and comrade in arms of the emperor Charles V. John Froissart the chronicler died and was buried here. There is a statue in his honour on the Grand Place. Chimay is situated on a stream called the White Water, which in its lower course becomes the Viroin and joins the Meuse.

CHIME, (1) (Probably derived from a mistaken separation into two words, *chimbe bell*, of *chymbal* or *chymbel*, the old form of “cymbal,” Lat. *cymbalum*), a mechanical arrangement by which a set of bells in a church or other tower, or in a clock, are struck so as to produce a sequence of musical sounds or a tune. For the mechanism of such an arrangement in a clock and in a set of bells, see the articles Clock and Bell. The word is also applied to the tune thus played by the bells and also to the harmonious “fall” of verse, and so, figuratively, to any harmonious agreement of thought or action. (2) (From Mid. Eng. *chimb*, a word meaning “edge,” common in varied forms to Teutonic languages, cf. Ger. *Kimme*), the bevelled rim formed by the projecting staves at the ends of a cask.

CHIMERE (Lat. *chimera, chimaera*; O. Fr. *chamarre*, Mod. Fr. *simarre*; Ital. *zimarra*; cf. Span. *zamarra*, a sheepskin coat; possibly derived ultimately from Gr. χειμέριος, "wintry," *i.e.* a winter overcoat), in modern English use the name of a garment worn as part of the ceremonial dress of Anglican bishops. It is a long sleeveless gown of silk or satin, open down the front, gathered in at the back between the shoulders, and with slits for the arms. It is worn over the rochet (*q.v.*), and its colour is either black or scarlet (convocation robes). By a late abuse the sleeves of the rochet were, from motives of convenience, sometimes attached to the chimere. The origin of the chimere has been the subject of much debate; but the view that it is a modification of the cope (*q.v.*) is now discarded, and it is practically proved to be derived from the medieval tabard (*tabardum, taberda* or *collobium*), an upper garment worn in civil life by all classes of people both in England and abroad. It has therefore a common origin with certain academic robes (see ROBES, § *Academic dress*).

The word "chimere," which first appears in England in the 14th century, was sometimes applied not only to the tabard worn over the rochet, but to the sleeved cassock worn under it. Thus Archbishop Scrope is described as wearing when on his way to execution (1405) a blue chimere with sleeves. But the word properly applies to the sleeveless tabard which tended to supersede, from the 15th century onwards, the inconvenient *cappa clausa* (a long closed cloak with a slit in front for the arms) as the out-of-doors upper garment of bishops. These chimeres, the colours of which (murrey, scarlet, green, &c.) may possibly have denoted academical rank, were part of the civil costume of prelates. Thus in the inventory of Walter Skirlawe, bishop of Durham (1405-1406), eight chimeres of various colours are mentioned, including two for riding (*pro equitatura*). The chimere was, moreover, a cold weather garment. In summer its place was taken by the tippet.

In the Anglican form for the consecration of bishops the newly consecrated prelate, hitherto vested in rochet, is directed to put on "the rest of the episcopal habit," *i.e.* the chimere. The robe has thus become in the Church of England symbolical of the episcopal office, and is in effect a liturgical vestment. The rubric containing this direction was added to the Book of Common Prayer in 1662; and there is proof that the development of the chimere into at least a choir vestment was subsequent to the Reformation. Foxe, indeed, mentions that Hooper at his consecration wore "a long scarlet chymere down to the foot" (*Acts and Mon.*, ed. 1563, p. 1051), a source of trouble to himself and of scandal to other extreme reformers; but that this was no more than the full civil dress of a bishop is proved by the fact that Archbishop Parker at his consecration wore surplice and tippet, and only put on the chimere, when the service was over, to go away in. This civil quality of the garment still survives alongside the other; the full dress of an Anglican prelate at civil functions of importance (*e.g.* in parliament, or at court) is still rochet and chimere.

The continental equivalent of the chimere is the *zimarra* or *simarre*, which is defined by foreign ecclesiologists (Moroni, Barbier de Montault) as a kind of *soutane* (cassock), from which it is distinguished by having a small cape and short, open arms (*manches-fausses*) reaching to the middle of the upper arm and decorated with buttons. In France and Germany it is fitted more or less to the figure; in Italy it is wider and falls down straight in front. Like the *soutane*, the *zimarra* is not proper to any particular rank of clergy, but in the case of bishops and prelates it is ornamented with red buttons and bindings. It never has a train (*cauda*). It is not universally worn, *e.g.* in Germany apparently only by prelates. G. Moroni identifies the *zimarra* with the *epitogium* which Domenico Magri, in his *Hierolexicon* (ed. 1677), calls the uppermost garment of the clergy, worn over the *soutane* (*toga*) instead of the *mantellum* (*vestis suprema clericorum loco pallii*), with a cross-reference to *Tabardum*, the "usual" upper garment (*pallium usuale*); and this definition is repeated in the 8th edition of the work (1732). From this it appears that so late as the middle of the 18th century the *zimarra* was still in common use as an out-of-doors overcoat. But, according to Moroni, by the latter half of the 19th century the *zimarra*, though still worn by certain civilians (*e.g.* notaries and students), had become in Italy chiefly the domestic garment of the clergy, notably of superiors, parish priests, rectors, certain regulars, priests of congregations, bishops, prelates and cardinals. It was worn also by the Roman senators, and is still worn by university professors. A black *zimarra* lined with white, and sometimes ornamented with a white binding and gold tassels, is worn by the pope.

More analogous to the Anglican chimere in shape, though not in significance, is the purple *mantelletum* worn over the rochet by bishops, and by others authorized to wear the episcopal insignia, in presence of the pope or his legates. This symbolizes the temporary suspension of the episcopal jurisdiction (symbolized by the rochet) so long as the pope or his representative is present. Thus at the Curia cardinals and prelates wear the *mantelletum*, while the pope wears the *zimarra*, and the first act of the cardinal camerlengo after the pope's death is to expose his rochet by laying aside the *mantelletum*, the other cardinals following his example, as a symbol that during the vacancy of the papacy the pope's jurisdiction is vested in the Sacred College. On the analogy of the *mantelletum* certain Anglican prelates, American and

colonial, have from time to time appeared in purple chimeres; which, as the Rev. N.F. Robinson justly points out, is a most unhappy innovation, since it has no historical justification, and its symbolism is rather unfortunate.

AUTHORITIES.—See the *Report* of the sub-committee of Convocation on the ornaments of the church and its ministers, p. 31 (London, 1908); the Rev. N.F. Robinson, "The black chimere of Anglican Prelates: a plea for its retention and proper use," in *Transactions of the St Paul's Ecclesiological Soc.* vol. iv. pp. 181-220 (London, 1898); Herbert Druitt, *Costume on Brasses* (London, 1906); G. Moroni, *Dizionario dell' erudizione storico-ecclesiastica* (Venice, 1861), vol. 103, s.v. "Zimarra": X. Barbier de Montault, *Traité pratique de la construction, &c., des églises*, ii. 538 (Paris, 1878).

(W. A. P.)

CHIMESYAN (*Tsimshian*), a tribe of North American Indians, now some 3000 in number, living around the mouth of the Skeena river, British Columbia, and on the islands near the coast. They are a powerfully built people, who tattoo and wear labrets and rings in noses and ears. They are skilful fishermen, and live in large communal houses. They are divided into clans and distinct social orders.

CHIMKENT, a town of Asiatic Russia, in the province of Syr-darya, 70 m. by rail N.N.E. of Tashkent. Pop. (1897) 10,756, mostly Sarts. It occupies a strategical position at the west end of the valley between the Alexander range and the Ala-tau (or Talas-tau), at the meeting of commercial routes from (1) Vyernyi and Siberia beyond, from the north-east, (2) the Aral Sea and Orenburg (connected with it by rail since 1905) to the north-west, and (3) Ferghana and Bokhara to the south. The citadel, which was stormed by the Russians in 1864, stands on high ground above the town, but is now in ruins. Chimkent is visited by consumptive patients who wish to try the koumiss cure. It has cotton mills and soap-works.

CHIMNEY (through the Fr. *cheminée*, from *caminata*, sc. *camera*, a Lat. derivative of *caminus*, an oven or furnace), in architecture, that portion of a building, rising above the roof, in which are the flues conveying the smoke to the outer air. Originally the term included the fireplace as well as the chimney shaft. At Rochester Castle (1130) and Heddington, Essex, there were no external chimney shafts, and the flue was carried through the wall at some height above the fireplace. In the early examples the chimney shaft was circular, with one flue only, and was terminated with a conical cap, the smoke issuing from openings in the side, which at Sherborne Abbey (A.D. 1300) were treated decoratively. It was not till the 15th century that the smoke issued at the top, and later in the century that more than one flue was carried up in the same shaft. There are a few examples of the clustered shaft in stone, but as a rule they are contemporaneous with the general use of brick. The brick chimney shafts, of which there are fine specimens at Hampton Court, were richly decorated with chevrons and other geometrical patterns. One of the best examples is that at Thornton Castle, Gloucestershire.

In the 15th and 16th centuries in France the chimney shaft was recognized as an important architectural feature, and was of considerable elevation in consequence of the great height of the roofs. In the château of Meillant (1503) the chimney shafts are decorated with angle buttresses, niches and canopies, in the late Flamboyant style; and at Chambord and Blois they are carved with pilasters and niches with panelling above, carved with the salamander and other armorial devices. In the Roman palaces they are sometimes masked by the balustrades, and (when shown) take the form of sepulchral urns, as if to disguise their real purpose. Though not of a very architectural character, the chimneys at Venice present perhaps the greatest variety of terminations, and as a rule the smoke comes out on the sides and not

through the top.

(R. P. S.)

Factory Chimneys.—Chimneys, besides removing the products of combustion, also serve to provide the fire with the air requisite for burning the fuel. The hot air in the shaft, being lighter than the cold air outside it, tends to rise, and as it does so air flows in at the bottom to take its place. An ascending current is thus established in the chimney, its velocity, other things being equal, varying as the square root of the height of the shaft above the grate. The velocity also increases with increase of temperature in the gas column, but since the weight of each cubic foot grows less as the gases expand, the amount of smoke discharged by a chimney does not increase indefinitely with the temperature; a maximum is reached when the difference in temperature between the gases in the shaft and the outside air is about 600° F., but the rate of increase is very slow after the difference has passed about 300° F. In designing a chimney the dimensions (height and sectional area) have to be so proportioned to the amount of fuel to be burnt in the various furnaces connected with it that at the temperature employed the products of combustion are effectively removed, due allowance being made for the frictional retardation of the current against the sides of the flues and shafts and in passing through the fire. The velocity of the current in actual chimneys varies widely, from 3 or 4 to 50 or 60 ft. a second. Increased velocity, obtainable by increasing the height of the shaft, gives increased delivering capacity, but a speed of 10 or 12 ft. a second is regarded as good practice. Ordinary factory chimneys do not in general exceed 180 or 200 ft. in height, but in some cases, especially when, as in chemical works, they are employed to get rid of objectionable vapours, they have been made double that height, or even more. In section they are round, octagonal or square. The circular form offers the least resistance to wind pressure, and for a given height and sectional area requires less material to secure stability than the octagonal and still less than the square; on the other hand, there is more liability to cracking. Brick is the material commonly used, but many chimneys are now made of iron or steel. Reinforced concrete is also employed.

CHIMNEYPIECE, the term given to the projecting hood which in medieval times was built over a fireplace to catch the smoke, and at a later date to the decorative framework, often carried up to the ceiling. “Chimneypiece” or “mantelpiece” is now the general term for the jambs, mantelshelf and external accessories of a fireplace. For many centuries the chimneypiece was the most ornamental and most artistic feature of a room, but as fireplaces have become smaller, and modern methods of heating have been introduced, its artistic as well as its practical significance has grown less.

Up to the 12th century rooms were warmed entirely by a hypocaust, or with braziers, or by fires on the hearth, the smoke finding its way up to a lantern in the roof. The earliest chimneypiece known is that in the King’s House at Southampton, with Norman shafts in the joints carrying a segmental arch, which is attributed to the first half of the 12th century. At a later date, in consequence of the greater width of the fireplace, flat or segmental arches were thrown across and constructed with voussoirs, sometimes joggled, the thrust of the arch being resisted by bars of iron at the back. In domestic work of the 14th century the chimneypiece was greatly increased in order to allow of the members of the family sitting on either side of the fire on the hearth, and in these cases great beams of timber were employed to carry the hood; in such cases the fireplace was so deeply recessed as to become externally an important architectural feature, as at Haddon Hall. The largest chimneypiece existing is in the great hall of the Palais des Comtes at Poitiers, which is nearly 30 ft. wide, having two intermediate supports to carry the hood; the stone flues are carried up between the tracery of an immense window above. In the early Renaissance style, the chimneypiece of the Palais de Justice at Bruges is a magnificent example; the upper portion, carved in oak, extends the whole width of the room, with statues of nearly life size of Charles V. and others of the royal family of Spain. The most prolific modern designer of chimneypieces was J.B. Piranesi, who in 1765 published a large series, on which at a later date the Empire style in France was based. In France the finest work of the early Renaissance period is to be found in the chimneypieces, which are of infinite variety of design.

The English chimneypieces of the early 17th century, when the purer Italian style was introduced by Inigo Jones, were extremely simple in design, sometimes consisting only of the ordinary mantelpiece, with classic architraves and shelf, the upper part of the chimney breast being panelled like the rest of the room. In the latter part of the century the classic architrave was abandoned in favour of a much bolder and more effective moulding, as in the chimneypieces at Hampton Court, and the shelf was omitted.

In the 18th century the architects returned to the Inigo Jones classic type, but influenced by the French work of Louis XIV. and XV. Figure sculpture, generally represented by graceful figures on each side, which assisted to carry the shelf, was introduced, and the overmantel developed into an elaborate frame for the family portrait over the chimneypiece. Towards the close of the 18th century the designs of the brothers Adam superseded all others, and a century later they came again into fashion. The Adam mantels are in wood enriched with ornament, cast in moulds, sometimes copied from the carved wood decoration of old times.

(R. P. S.)

CHIMPANZEE (*Chimpanzi*), the vernacular name of the highest species of the man-like apes, forming the typical representatives of the genus *Anthropopithecus*. Chimpanzees, of which there appear to be at least two species, range through the tropical forest-zone of Africa from the west coast to Uganda. The typical *A. troglodytes* has been long known to European science, Dr Tyson, a celebrated surgeon and anatomist of his time, having dissected a young individual, and described it, as a pigmy or *Homo sylvestris*, in a book published in 1699. Of this baby chimpanzee the skeleton may be seen in the Natural History branch of the British Museum alongside the volume in which it is described. It was not, however, till 1788 that the chimpanzee received what is now recognized as a scientific name, having been christened in that year *Simia troglodytes* by the naturalist Johann Friedrich Gmelin. In his classification it was included in the same genus as the orang-utan; and it has recently been suggested that the name *Simia* pertains of right to the chimpanzee rather than to the orang-utan. Between the typical West African chimpanzee and the gorilla (*q.v.*) there is no difficulty in drawing a distinction; the difficulty comes in when we have to deal with the aberrant races, or species, of chimpanzee, some of which are so gorilla-like that it is by no means easy to determine to which group they really pertain. In height the adult male chimpanzee of the typical form does not exceed 5 ft., and the colour of the hair is a full black, while the skin, especially that of the face, is light-coloured; the ears are remarkably large and prominent, and the hands reach only a short distance below the knees. The head is rounded and short, without prominent beetling ridges above the eyes, or a strong crest along the middle line of the back of the skull; and the tusks of the old males are of no very great length and prominence. Moreover, there is no very marked difference in the size of the two sexes. Gentleness and docility are specially characteristic of the species, even when full-grown; while in the native state its habits are thoroughly arboreal.

In central Africa the chimpanzees assume more or less marked gorilla-like traits. The first of these aberrant types is Schweinfurth's chimpanzee (*Anthropopithecus troglodytes schweinfurthi*), which inhabits the Niam-Niam country, and, although evidently belonging to the same species as the typical race, exhibits certain gorilla-like features. These traits are still more developed in the bald chimpanzee (*A. tschego*) of Loango, the Gabun, and other regions of French Congo, which takes its English name from the sparse covering of hair on the head. The most gorilla-like of all the races is, however, the kulu-kamba chimpanzee (*A. kulu-kamba*) of du Chaillu, which inhabits central Africa. The celebrated ape "Mafuka," which lived in the Dresden zoological gardens during 1875, and came from Loango, was apparently a member of this species, although it was at one time regarded as a hybrid between a chimpanzee and a gorilla. These gorilla-like traits were still more pronounced in "Johanna," a female chimpanzee living in Barnum & Bailey's show in 1899, which has been described and figured by Dr A. Keith. The heavy ridges over the brow, originally supposed to be distinctive of the gorilla, are particularly well marked in "Johanna," and they would doubtless be still more noticeable in the male of the same race, which seems to be undoubtedly du Chaillu's kulu-kamba. Still the large size and prominence of the ears proclaim that both "Mafuka" and "Johanna" were chimpanzees and not gorillas. A gorilla-like feature in "Johanna" is, however, the presence of large folds at the sides (*ala*) of the nostrils, which are absent in the typical chimpanzee, but in the gorilla extend down to the upper lip. Chimpanzees exhibit great docility in confinement, where, however, they seldom survive for any great length of time. They likewise display a much higher degree of intelligence than any of the other man-like apes. (See PRIMATES.)

(R. L.*)

CHINA, a country of eastern Asia, the principal division of the Chinese empire. In addition

to China proper the Chinese Empire includes Manchuria, Mongolia, Tibet and Sin-kiang (East Turkestan, Kulja, Dzungaria, &c., *i.e.* all the Chinese dependencies lying between Mongolia on the north and Tibet on the south). Its most southern point is in 18° 50′ N.; its most northern in 53° 25′ N.; its most western in 74° E., and its most eastern in 135° E. It lies, however, mainly between 20° and 50° N. and 80° and 130° E. It is considerably larger than the whole of Europe. Though its area has not been exactly ascertained the various estimates closely approximate, varying between 4,277,000 and 4,300,000 sq. m. It is bounded N.W., N. and N.E. by Asiatic Russia, along a frontier extending some 6000 m.; E. by Korea and those parts of the Pacific known as the Yellow Sea and China Sea; S. and S.W. by the China Sea, French Indo-China, Upper Burma and the Himalayan states. It is narrowest in the extreme west. Chinese Turkestan along the meridian of Kashgar (76° E.) has a breadth of but 250 m. It rapidly broadens and for the greater part of its area is over 1800 m. across in a direct N. and S. line. Its greatest length is from the N.E. corner of Manchuria to the S.W. confines of Tibet, a distance of 3100 m. in a direct line. Its seaboard, about 5000 m. following the indentations of the coast, is almost, wholly in China proper, but the peninsula of Liao-tung and also the western shores of the Gulf of Liao-tung are in Manchuria.

China[1] proper or the Eighteen Provinces (*Shih-pa-shêng*) occupies the south-eastern part of the empire. It is bounded N. by Mongolia, W. by Turkestan and Tibet, S.W. by Burma, S. by Tongking and the gulf of that name, S.E. by the South China Sea, E. by the East China Sea, the Yellow Sea, Gulf of Chih-li and Manchuria. Its area is approximately 1,500,000 sq. m.

This vast country is separated from the rest of continental Asia by lofty tablelands and rugged mountain ranges, which determine the general course—west to east—of its principal rivers. On the north and west the Mongolian and Tibetan tablelands present towards China steep escarpments across which are very few passes. On the S.W. and S., on the borders of Yun-nan, high mountains and deep valleys separate China from Burma and Tongking. On the narrow N.E. frontier the transition from the Manchurian plateau to the alluvial plain of northern China is not abrupt, but, before the advent of railways, Manchuria afforded few and difficult means of access to other regions. Thus China was almost cut off from the rest of the world save by sea routes.

I. The Country

Western China consists of highlands often sparsely, and eastern China of lowlands densely peopled. Western China contains the only provinces where the population is under 100 per sq. m. From the Tibetan and Mongolian tablelands project mountain ranges which, ramifying over the western region, enclose elevated level tracts and lower basins and valleys. East of this mountainous region, which extends into central China and covers probably fully half of the kingdom, are, in the north a great alluvial plain and in the south a vast calcareous tableland traversed by hill ranges of moderate elevation (see §§ *Mountains* and *Geology*). In north-eastern China there is only one mountain system, the group of hills—-highest peak 5060 ft.—-forming the Shan-tung peninsula. This peninsula was formerly an island, but has been attached to the mainland by the growth of the alluvial plain. Besides the broad division of the country into western and eastern China it may also be considered as divided into three regions by the basins of its chief rivers, the Hwang-ho (Yellow river) in the north, the Yangtsze-kiang in the centre, and the Si-kiang (West river) in the south. In the northern provinces of Kan-suh and Shen-si the basins of the Hwang-ho and Yangtsze-kiang are separated by a mountain chain with various names— the eastern termination of the Kuen-lun range of central Asia. These mountains, in China, attain, in the Tsing-ling Shan, a maximum elevation of 13,000 ft. East of Shen-si, in Ho-nan the Fu-niu-shan continue the range, but with decreasing elevation, and beyond this the deltaic plain is entered.

The watershed between the Yangtsze-kiang and that of the Si-kiang is less clearly marked. It traverses the immense tableland which occupies a great part of the south-west provinces of Yun-nan and Kwei-chow and is continued eastward by the lower tableland of Kwang-si and the Nanshan hills (whose elevation seldom exceeds 6000 ft.). The basin of the Yangtsze-kiang forms the whole of central China. Its western border, in Sze-ch‘uen and Yun-nan, is wholly mountainous, with heights exceeding 19,000 ft. Central Sze-ch‘uen, which is shut in by these mountains on the west, by the Yun-nan and Kwei-chow plateau on the south, by the Kiu-lung range on the north, and by highlands eastward (save for the narrow valley through which the Yangtsze-kiang forces its way), is a vast red sandstone tableland of about 1600 ft. elevation. It is exceedingly fertile and supports a dense population. Eastward of Sze-ch‘uen the Yangtsze valley is studded with lakes. Finally it enters the deltaic plain. The basin of the Si-kiang fills the two southern provinces of Kwang-si and Kwang-tung and contains no very striking orographic features. It may be added that in the extreme S.W. portion of China is part of a fourth drainage area. Here the Mekong, Salween, Song-koi (Red river), &c. flow south to Indo-

China.

The Coast.—The coast-line, following all the minor indentations, is reckoned at over 4500 m.; if only the larger inlets and promontories be regarded, the coast-line is about 2150 m. in length. Its shape is that of a semicircle, with its most easterly point midway (30° N.) between its northern and southern extremities. At either end of this semicircular sweep lies a peninsula, and beyond the peninsula a gulf. In the north are the peninsula of Shan-tung and the gulf of Chih-li; in the south the Lien-chow peninsula and the gulf of Tongking. Due south of Lien-chow peninsula, separated rom it by a narrow strait, is Hai-nan, the only considerable island of China. From the northern point of the gulf of Chih-li to 30° N., where is Hang-chow bay, the shores are flat and alluvial save where the Shan-tung peninsula juts out. Along this stretch there are few good natural harbours, except at the mouths of rivers and in the Shan-tung promontory; the sea is shallow and has many shoals. The waters bordering the coast of Chih-li are partly frozen in winter; at 10 m. from the shore the water is only 20 ft. deep. The proximity of Peking gives its few ports importance; that of Taku is at the mouth of the Peiho. In Shan-tung, deeply indented on its southern coast, are the ports of Chi-fu, Wei-hai-wei and Tsing-tao (the last in Kiao-chow bay). South of Shan-tung and north of the mouth of the Yangtsze huge sandbanks border the coast, with narrow channels between them and the shore. The estuary of the Yangtsze is 60 m. across; it contains islands and sandbanks, but there is easy access to Wusung (Shanghai) and other river ports. The bay of Hangchow, as broad at its entrance as the Yangtsze estuary, forms the mouth of the Tsien-tang-kiang. The Chusan and other groups of islands lie across the entrance of the bay.

South of Hang-chow bay the character of the coast alters. In place of the alluvial plain, with flat, sandy and often marshy shores, the coast is generally hilly, often rocky and abrupt; it abounds in small indentations and possesses numerous excellent harbours; in this region are Fu-chow, Amoy, Swatow, Hongkong, Macao, Canton and other well-known ports. The whole of this coast is bordered by small islands. Formosa lies opposite the S.E. coast, the channel between it and Fu-kien province being about 100 m. wide. Formosa protects the neighbouring regions of China from the typhoons experienced farther north and farther south.

Surface.—-As already indicated, one of the most noticeable features in the surface of China is the immense deltaic plain in the north-eastern portion of the country, which, curving round the mountainous districts of Shan-tung, extends for about 700 m. in a southerly direction from the neighbourhood of Peking and varies from 150 to 500 m. in breadth. This plain is the delta of the Yellow river and, to some extent, that of the Yangtsze-kiang also. Beginning in the prefecture of Yung-p'ing Fu, in the province of Chih-li, its outer limit passes in a westerly direction as far as Ch'ang-p'ing Chow, north-west of Peking. Thence running a south-south-westerly course it passes westward of Chêng-ting Fu and Kwang-p'ing Fu till it reaches the upper waters of the Wei river in Ho-nan. From this point it turns westward and crosses the Hwang-ho or Yellow river in the prefecture of Hwai-k'ing. Leaving this river it takes a course a little to the east of south, and passing west of Ju-ning Fu, in the province of Ho-nan, it turns in a more easterly direction as far as Luchow Fu. From this prefecture an arm of the plain, in which lies the Chao Lake, stretches southward from the Hwai river to the Yangtsze-kiang, and trending eastward occupies the region between that river and Hangchow Bay. To the north of this arm rises a hilly district, in the centre of which stands Nanking. The greater part of this vast plain descends very gently towards the sea, and is generally below the level of the Yellow river, hence the disastrous inundations which so often accompany the rise of that river. Owing to the great quantity of soil which is brought down by the waters of the Yellow river, and to the absence of oceanic currents, this delta is rapidly increasing and the adjoining seas are as rapidly becoming shallower. As an instance, it is said that the town of P'utai was one Chinese mile[2] west of the seashore in the year 200 B.C., and in 1730 it was 140 m. inland, thus giving a yearly encroachment upon the sea of about 100 ft. Again, Sien-shwuy-kow on the Peiho was on the seashore in A.D. 500, and it is now about 18 m. inland.

Deltaic Plain.

Some of the ranges connected with the mountain system of central Asia which enter the western provinces of China have been mentioned above, others may be indicated here. In the eastern portion of Tibet the Kuen-lun range throws off a number of branches, which spread first of all in a south-easterly direction and eventually take a north and south course, partly in the provinces of Sze-ch'uen and Yun-nan, where they divide the beds of the rivers which flow into Siam and French Indo-China, as well as the principal northern tributaries of the Yangtsze-kiang. In the north-west, traversing the western portion of the province of Kan-suh, are parallel ranges running N.W. and S.E. and forming a prolongation of the northern Tibetan mountains. They are known as the Lung-shan, Richthofen and Nan-shan, and join on the south-east the Kuen-lun range. The Richthofen range (locally called Tien-shan, or Celestial Mountains) attains elevations of over 20,000 ft. Several of its peaks are snowclad, and there are many glaciers. Forming the northern frontier of the province of Sze-ch'uen run the Min-shan and the Kiu-lung (or Po-mêng) ranges, which, entering China in 102° E., extend in a general easterly course as far as

Mountains.

112° E. in the province of Hu-peh. These ranges have an average elevation of 8000 and 11,000 ft. respectively. In the south a number of parallel ranges spread from the Yun-nan plateau in an easterly direction as far as the province of Kwang-tung. Then turning north-eastward they run in lines often parallel with the coast, and cover large areas of the provinces of Fu-kien, Kiang-si, Cheh-kiang, Hu-nan and southern Ngan-hui, until they reach the Yangtsze-kiang; the valley of that river from the Tung-ting Lake to Chin-kiang Fu forming their northern boundary. In Fu-kien these hills attain the character of a true mountain range with heights of from 6500 to nearly 10,000 ft. Besides the chief ranges there are the Tai-hang Mountains in Shan-si, and many others, among which may be mentioned the ranges—part of the escarpment of the Mongolian plateau—which form the northern frontier of Chih-li. Here the highest peak is Ta-kuang-ting-tzu (6500 ft.), about 300 m. N.N.E. of Peking and immediately north of Wei Ch‘ang (the imperial hunting grounds).

Rivers and Canals.—The rivers of China are very numerous and there are many canals. In the north the rivers are only navigable by small craft; elsewhere they form some of the most frequented highways in the country. The two largest rivers, the Yangtsze-kiang and the Hwang-ho (Yellow river), are separately noticed. The Hwang-ho (length about 2400 m.) has only one important tributary in China, the Wei-ho, which rises in Kan-suh and flows through the centre of Shen-si. Below the confluence the Hwang-ho enters the plains. According to the Chinese records this portion of the river has changed its course nine times during 2500 years, and has emptied itself into the sea at different mouths, the most northerly of which is represented as having been in about 39° N., or in the neighbourhood of the present mouth of the Peiho, and the most southerly being that which existed before the change in 1851-1853, in 34° N. Owing to its small value as a navigable highway and to its propensity to inundate the regions in its neighbourhood, there are no considerable towns on its lower course.

The Yellow River.

The Yangtsze-kiang is the chief waterway of China. The river, flowing through the centre of the country, after a course of 2900 m., empties itself into the Yellow Sea in about 31° N. Unlike the Yellow river, the Yangtsze-kiang is dotted along its navigable portions with many rich and populous cities, among which are Nanking, An-ch‘ing (Ngank‘ing), Kiu-kiang, Hankow and I-ch‘ang. From its mouth to I-ch‘ang, about 1000 m., the river is navigable by large steamers. Above this last-named city the navigation becomes impossible for any but light native craft or foreign vessels specially constructed for the navigation, by reason of the rapids which occur at frequent intervals in the deep mountain gorges through which the river runs between Kwei-chow and I-ch‘ang. Above Kwei-chow it receives from the north many tributaries, notably the Min, which water the low table-land of central Sze-ch‘uen. The main river itself has in this province a considerable navigable stretch, while below I-ch‘ang it receives the waters of numerous navigable affluents. The Yangtsze system is thus all important in the economic and commercial development of China.

The Yangtsze-kiang.

Perhaps the most remarkable of the affluents of the Yangtsze is the Han-kiang or Han river. It rises in the Po-mêng mountains to the north of the city of Ning-kiang Chow in Shen-si. Taking a generally easterly course from its source as far as Fan-cheng, it from that point takes a more southerly direction and empties itself into the Yangtsze-kiang at Han-kow, “the mouth of the Han.” Here it is only 200 ft. wide, while higher up it widens to 2600 ft. It is navigable by steamers for 300 m. The summer high-water line is for a great part of its course, from I-ch‘eng Hien to Han-kow, above the level of its banks. Near Sien-t‘ao-chên the elevation of the plain above low water is no more than 1 ft., and in summer the river rises about 26 ft. above its lowest level. To protect themselves against inundations the natives have here, as elsewhere, thrown up high embankments on both sides of the river, but at a distance from the natural banks of about 50 to 100 ft. This intervening space is flooded every year, and by the action of the water new layers of sand and soil are deposited every summer, thus strengthening the embankments from season to season.

The Hwai-ho is a large river of east central China flowing between the Hwang-ho and the Yangtsze-kiang. The Hwai-ho and its numerous affluents (it is said to have 72 tributaries) rise in Ho-nan. The main river flows through the centre of Ngan-hui, in which province it receives from the N.W. the Sha-ho, Fei-ho and other important affluents. Formerly it received through the Sha-ho part of the waters of the Hwang-ho. The Hwai-ho flows into the Hungtso lake, through which it feeds the Grand Canal, not far from the old course of the Hwang-ho, and probably at one time joined that river not far from its mouth. It has a length of about 800 m. and is navigable from the point where it leaves the hill country of Ho-nan to Lake Hungtso. It is subject to violent floods, which inundate the surrounding country for a distance of 10 to 20 m. Many of its tributaries are also navigable for considerable distances.

Next in importance to the Yangtsze-kiang as a water highway is the Yun-ho, or, as it is generally known in Europe, the Grand Canal. This magnificent artificial river reaches from Hang-chow Fu in the province of Cheh-kiang to Tientsin in Chih-li, where it unites with the Peiho, and thus may be said to extend to Tung-chow in the

Grand Canal.

neighbourhood of Peking. According to the itineraries published by Père Gandar, the total length of the canal is 3630 *li*, or about 1200 m. A rough measurement, taking account only of the main bends of the canal, makes its length 850 m. After leaving Hang-chow the canal passes round the eastern border of the Tai-hu or Great Lake, surrounding in its course the beautiful city of Su-chow, and then trends in a generally north-westerly direction through the fertile districts of Kiang-su as far as Chin-kiang on the Yangtsze-kiang. In this, the southern section, the slope is gentle and water is plentiful (from 7 ft. at low water to 11 ft., and occasionally 13 ft. at high water). Between Su-chow and Chin-kiang the canal is often over 100 ft. wide, and its sides are in many places faced with stone. It is spanned by fine stone bridges, and near its banks are many memorial arches and lofty pagodas. In the central portion of the canal, that is between Chin-kiang and Tsing-kiang-pu, at which latter place it crosses the dry channel which marks the course of the Yellow river before 1852, the current is strong and difficult to ascend in the upward (northern) journey. This part of the canal skirts several lakes and is fed by the Hwai-ho as it issues from the Hungtso lake. The country lying west of the canal is higher than its bed; while the country east is lower than the canal. The two regions are known respectively as Shang-ho (above the river) and Ssia-ho (below the river). Waste weirs opening on the Ssia-ho (one of the great rice-producing areas of China) discharge the surplus water in flood seasons. The northern and considerably the longest section of the canal extends from the old bed of the Yellow river to Tientsin. It largely utilizes existing rivers and follows their original windings. Between Tsing-kiang-pu and the present course of the Yellow river the canal trends N.N.W., skirting the highlands of Shan-tung. In this region it passes through a series of lagoons, which in summer form one lake—Chow-yang. North of that lake on the east bank of the canal, is the city of Tsi-ning-chow. About 25 m. N. of that city the highest level of the canal is reached at the town of Nan Wang. Here the river Wen enters the canal from the east, and about 30 m. farther N. the Yellow river is reached. On the west side of the canal, at the point where the Yellow river now cuts across it, there is laid down in Chinese maps of the 18th century a dry channel which is described as being that once followed by the Yellow river, *i.e.* before it took the channel it abandoned in 1851-1853. The passage of the Yellow river to the part of the canal lying north of that stream is difficult, and can only be effected at certain levels of the river. Frequently the waters of the river are either too low or the current is too strong to permit a passage. Leaving this point the canal passes through a well-wooded and hilly country west of Tung-p'ing Chow and east of Tung-ch'ang Fu. At Lin-ching Chow it is joined at right angles by the Wei river in the midst of the city. Up to this point, *i.e.* from Tsing-kiang-pu to Lin-ching Chow, a distance of over 300 m., navigation is difficult and the water-supply often insufficient. The differences of level, 20 to 30 ft., are provided for by barrages over which the boats—having discharged their cargo—are hauled by windlasses. Below the junction with the Wei the canal borrows the channel of the river and again becomes easily navigable. Crossing the frontier into Chih-li, between Te Chow and Tsang Chow, which it passes to the west, it joins the Peiho at Tientsin, after having received the waters of the Keto river in the neighbourhood of Tsing Hien.[3]

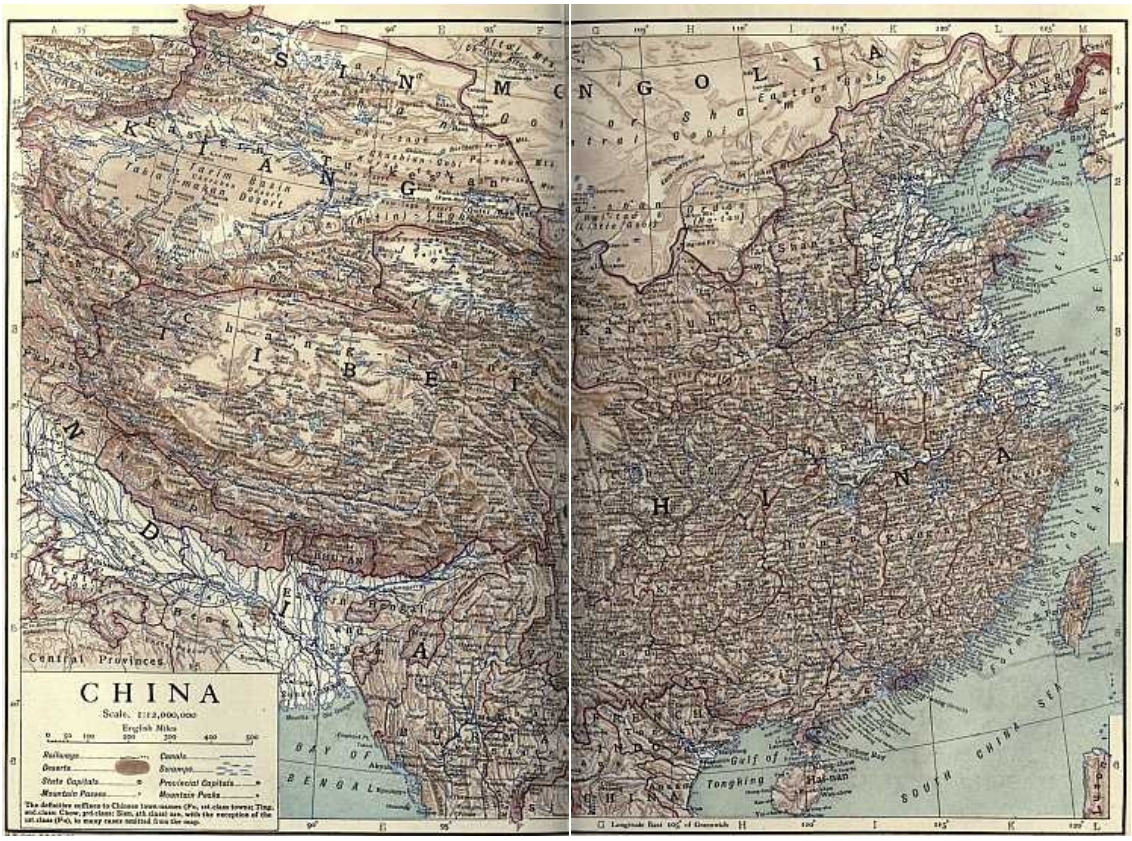
The most ancient part of the canal is the section between the Yangtsze and the Hwai-ho. This part is thought, on the strength of a passage in one of the books of Confucius, to have been built c. 486 B.C. It was repaired and enlarged in the 3rd century A.D. The southern part, between the Yangtsze and Hang-chow, was built early in the 7th century A.D. The northern part is stated to have been constructed in the three years 1280-1283. The northern portion of the canal is now of little use as a means of communication between north and south.[4] It is badly built, neglected and charged with the mud-laden waters of the Yellow river. The "tribute fleet" bearing rice to Peking still uses this route; but the rice is now largely forwarded by sea. The central and southern portions of the canal are very largely used.

The Peiho (length about 350 m.) is of importance as being the high waterway to Peking. Taking its rise in the Si-shan, or Western Mountains, beyond Peking, it passes the city of T'sung-chow, the port of Peking, and Tientsin, where it meets the waters of the Hun-ho and empties itself into the gulf of Chih-li at the village of Taku. The Peiho is navigable for small steamers as far as Tientsin during the greater part of the year, but from the end of November to the beginning of March it is frozen up.

The Si-kiang.

In the southern provinces the Si-kiang, or Western river, is the most considerable. It has a length of over 1000 m. This river takes its rise in the prefecture of Kwang-nan Fu in Yun-nan, whence it reaches the frontier of Kwang-si at a distance of about 90 li from its source. Then trending in a north-easterly direction it forms the boundary between the two provinces for about 150 li. From this point it takes a generally south-easterly course, passing the cities of Tsien Chow, Fung-e Chow, Shang-lin Hien, Lung-ngan Hien, Yung-kang Chow and Nan-ning Fu to Yung-shan Hien. Here it makes a bend to the north-east, and continues this general direction as far as Sin-chow Fu, a distance of 800 li, where it meets and joins the waters of the Kien-kiang from the north. Its course is then easterly, and after passing Wu-chow Fu it crosses the frontier into Kwang-tung. In this part of its course it flows through a gorge 3 m. long and in places but 270 yds. in width. Both above and below this gorge it is 1 m. wide. Some 30 m. above Canton it divides into two main

and several small branches. The northern branch, called Chu-kiang, or Pearl river, flows past Fat-shan and Canton and reaches the sea through the estuary called the Bocca Tigris or Bogue, at the mouth of which is the island of Hong-Kong. The southern branch, which retains the name of Si-kiang, reaches the sea west of Macao. Near the head of its delta the Si-kiang receives the Pei-kiang, a considerable river which flows through Kwang-tung in a general N. to S. direction. Like the Yangtsze-kiang the Si-kiang is known by various names in different parts of its course. From its source to Nan-ning Fu in Kwang-si it is called the Si-yang-kiang, or river of the Western Ocean; from Nan-ning Fu to Sin-chow Fu it is known as the Yu-kiang, or the Bending river; and over the remainder of its course it is recognized by the name of the Si-kiang, or Western river. The Si-kiang is navigable as far as Shao-king, 130 m., for vessels not drawing more than 15 ft. of water, and vessels of a light draught may easily reach Wu-chow Fu, in Kwang-si, which is situated 75 m. farther up. In winter the navigation is difficult above Wu-chow Fu. Above that place there is a rapid at low water, but navigation is possible to beyond Nan-ning Fu.



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Lakes.—There are numerous lakes in the central provinces of China. The largest of these is the Tung-t'ing in Hu-nan, which, according to the Chinese geographers, is upwards of 800 li, or 266 m., in circumference. In native gazetteers its various portions are known under distinct names; thus it is said to include the Ts'ing-ts'ao, or Green Grass Lake; the Ung, or Venerable Lake; the Chih-sha, or Red Sand Lake; the Hwang-yih, or Imperial Post-house Lake; the Ngan-nan, or Peaceful Southern Lake; and the Ta-tung, or Great Deep Lake. In ancient times it went by the name of the Kiu-kiang Hu, or Lake of the Nine Rivers, from the fact that nine rivers flowed into it. Its chief affluents are the Siang-kiang, which rises in the highlands in the north of Kwang-si and flows in a general N.N.E. direction, and the Yuen-kiang, which flows N. and then E. from the eastern border of Kwei-chow. The lake is connected with the Yangtsze-kiang by two canals, the Taping and the Yochow Fu. In summer it is fed by the overflow from the Yangtsze-kiang; in winter it pours its waters into that river through the Yochow Fu canal. During the winter and spring the water of the lake is so low that the shallow portions become islands, separated by rivers such as the Siang and Yuen, and numberless streams; but in summer, owing to the rise in the waters of the Yangtsze-kiang, the whole basin of the lake is filled. It is then about 75 m. long and 60 m. broad. About 180 m. E. of the Tung-t'ing lake is the Poyang lake, which occupies the low-lying part of the province of Kiang-si, and is connected with the Yangtsze by the Hu-kow canal. The Poyang lake is also subject to a wide difference between high and low water, but not quite to the same extent as the Tung-t'ing lake, and its landmarks are more distinctly defined. It is about 90 m. long by 20 broad. The T'ai lake, in the neighbourhood of Su-chow Fu, is also celebrated for its size and the beauty of its surroundings. It is about 150 m. in circumference, and is dotted over with islands, on which

are built temples for the devotees of religion, and summer-houses for the votaries of pleasure from the rich and voluptuous cities of Hang-chow and Su-chow. The boundary line between the provinces of Cheh-kiang and Kiang-su crosses its blue waters, and its shores are divided among thirteen prefectures. Besides these lakes there are, among others, two in Yun-nan, the Kun-yang-hai (Tien-chi) near Yun-nan Fu, which is 40 m. long and is connected with the Yangtsze-kiang by the Pu-to river, and the Erh-hai (Urh-hai) to the east of the city of Tali.

The Great Wall.—Along the northern provinces of Chih-li, Shan-si, Shen-si and Kan-suh, over 22° of longitude (98° to 120° E.), stretches the Great Wall of China, built to defend the country against foreign aggression. It was begun in the 3rd century B.C., was repaired in the 15th century, and in the 16th century was extended by 300 m. Following the windings the wall is 1500 m. long. Starting near the seashore[5] at Shan-hai-kwan on the gulf of Liao-tung, where the Chinese and Manchurian frontiers meet, it goes eastward past Peking (which is about 35 m. to the south) and then trends S. and E. across Shan-si to the Hwang-ho. From the neighbourhood of Peking to the Hwang-ho there is an inner and an outer wall. The outer (northern) wall passes through Kalgan, thus guarding the pass into Mongolia. A branch wall separates the greater part of the western frontier of Chih-li from Shan-si. West of the Hwang-ho the Great Wall forms the northern frontier of Shen-si, and west of Shen-si it keeps near the northern frontier of Kan-suh, following for some distance in that province the north bank of the Hwang-ho. It ends at Kiayu-kwan (98° 14′E.) just west of Su-chow. This part of the wall was built to protect the one main artery leading from central Asia to China through Kan-suh and Shen-si by the valley of the Wei-ho, tributary of the Hwang-ho. There is a branch wall in Kan-suh running west and south to protect the Tibetan frontier. The height of the wall is generally from 20 to 30 ft., and at intervals of some 200 yds. are towers about 40 ft. high. Its base is from 15 to 25 ft. thick and its summit 12 ft. wide. The wall is carried over valleys and mountains, and in places is over 4000 ft. above sea-level. Military posts are still maintained at the chief gates or passes—at Shan-hai-kwan, the Kalgan pass, the Yenmun pass (at the N. of Shan-si) and the Kaiyu pass in the extreme west, through which runs the caravan route to Barkal in Turkestan. Colonel A.W.S. Wingate, who in the opening years of the 20th century visited the Great Wall at over twenty places widely apart and gathered many descriptions of it in other places, states that its position is wrongly shown “on the maps of the day” (1907) in a number of places; while in others it had ceased to exist, “the only places where it forms a substantial boundary being in the valley bottoms, on the passes and where it crosses main routes. These remarks apply with particular force to the branch running south-west from the Nan-k‘ow pass and forming the boundary of Chih-li and Shan-si provinces.” In Colonel Wingate’s opinion the wall was originally built by degrees and in sections, not of hewn stone, but of round boulders and earth, the different sections being repaired as they fell into ruin. “Only in the valley bottoms and on the passes was it composed of masonry or brickwork. The Mings rebuilt of solid masonry all those sections through which led a likely road for invading Tatars to follow, or where it could be seen at a distance from the sky-line.” The building of the wall “was a sufficiently simple affair,” not to be compared with the task of building the pyramids of Egypt.[6]

Climate.—The climate over so vast an area as China necessarily varies greatly. The southern parts of Yun-nan, Kwang-si and Kwang-tung (including the city of Canton) lie within the tropics. The northern zone (in which lies Peking) by contrast has a climate which resembles that of northern Europe, with winters of Arctic severity. The central zone (in which Shanghai is situated) has a generally temperate climate. But over both northern and central China the influence of the great plateau of Mongolia tends to establish uniform conditions unusual in so large an area. The prevailing winds during summer—the rainy season—are south-easterly, caused by heat and the ascending current of air over the sandy deserts of central Asia, thus drawing in a current from the Pacific Ocean. In the winter the converse takes place, and the prevailing winds, descending from the Mongolian plateau, are north and north-west, and are cold and dry. From October to May the climate of central China is bracing and enjoyable. The rainfall is moderate and regular.

In northern China the inequalities both of temperature and rainfall are greater than in the central provinces. In the province of Chih-li, for example, the heat of summer is as intense as is the cold of winter. In summer the rains often render the plain swampy, while the dry persistent westerly winds of spring create dust storms (experienced in Peking from March to June). The rainfall is, however, uncertain, and thus the harvests are precarious. The provinces of Shan-tung and Shan-si are peculiarly liable to prolonged periods of drought, with consequent severe famines such as that of 1877-1878, when many millions died. In these regions the air is generally extremely dry, and the daily variations of temperature consequent on excessive radiation are much greater than farther south.

Accurate statistics both of heat and rainfall are available from a few stations only. The rainfall on the southern coasts is said to be about 100 in. yearly; at Peking the rainfall is about 24 in. a year. In the coast regions the temperatures of Peking, Shanghai and Canton may be taken as typical of those of the northern, central and southern zones. In Peking (39° N.) the

mean annual temperature is about 53° F., the mean for January 23°, for July 79°. In Shanghai (31° 11′ N.)[7] the mean annual temperature is 59°, the mean for January 36.2°, for July 80.4°. In Canton (23° 15′ N.) the mean annual temperature is 70°, the mean for January 54°, for July 82°. The range of temperature, even within the tropics, is noteworthy. At Peking and Tientsin the thermometer in winter falls sometimes to 5° below zero and rises in summer to 105° (at Taku 107° has been recorded); in Shanghai in winter the thermometer falls to 18° and in summer rises to 102°. In Canton frost is said to have been recorded, but according to the *China Sea Directory* the extreme range is from 38° to 100°.[8] The climate of Shanghai, which resembles, but is not so good as, that of the Yangtsze-kiang valley generally, is fairly healthy, but there is an almost constant excess of moisture. The summer months, July to September, are very hot, while snow usually falls in December and January.

At Canton and along the south coast the hot season corresponds with the S.W. monsoon; the cool season—mid October to end of April—with the N.E. monsoon. Farther north, at Shanghai, the S.W. monsoon is sufficiently felt to make the prevailing wind in summer southerly.

Provinces.—China proper is divided into the following provinces: Cheh-kiang, Chih-li, Fu-kien, Ngan-hui (An-hui), Ho-nan, Hu-nan, Hu-peh, Kan-suh, Kiang-si, Kiang-su, Kwang-si, Kwang-tung, Kwei-chow, Shan-si, Shan-tung, Shen-si, Sze-ch‘uen and Yun-nan. See the separate notices of each province and the article on Shêng-king, the southern province of Manchuria.

(X.)

Geology.

The Palaeozoic formations of China, excepting only the upper part of the Carboniferous system, are marine, while the Mesozoic and Tertiary deposits are estuarine and freshwater or else of terrestrial origin. From the close of the Palaeozoic period down to the present day the greater part of the empire has been dry land, and it is only in the southern portion of Tibet and in the western Tian Shan that any evidence of a Mesozoic sea has yet been found. The geological sequence may be summarized as follows:—

Archean.—Gneiss, crystalline schists, phyllites, crystalline limestones. Exposed in Liao-tung, Shan-tung, Shan-si, northern Chih-li and in the axis of the mountain ranges, *e.g.* the Kuen-lun and the ranges of southern China.

Sinian.—Sandstones, quartzites, limestones. Sometimes rests unconformably upon the folded rocks of the Archaen system; but sometimes, according to Lóczy, there is no unconformity. Covers a large area in the northern part of China proper; absent in the eastern Kuen-lun; occurs again in the ranges of S.E. China. In Liao-tung Cambrian fossils have been found near the summit of the series; they belong to the oldest fauna known upon the earth, the fauna of the *Olenellus* zone. It is, however, not improbable that in many places beds of considerably later date have been included in the Sinian system.

Ordovician.—Ordovician fossils have been found in the Lung-shan, Kiang-su (about 50 m. east of Nan-king), in the south-west of Cheh-kiang and in the south-east of Yun-nan. Ordovician beds probably occur also in the Kuen-lun. 170

Silurian.—Limestones and slates with Silurian corals and other fossils have been found in Sze-ch‘uen.

Devonian.—Found in Kan-suh and in the Tsing-ling-shan, but becomes much more important in southern China. Occurs also on the south of the Tian-shan, in the Altyn-tagh, the Nan-shan and the western Kuen-lun.

Carboniferous.—Covers a large area in northern China, in the plateau of Shen-si and Shan-si, extending westwards in tongues between the folds of the Kuen-lun. In this region it consists of a lower series of limestones and an upper series of sandstones with seams of coal, which may perhaps be in part of Permian age. This is probably the most extensive coalfield in the world.

In south China the whole series consists chiefly of limestones, and the coal seams are comparatively unimportant. Carboniferous beds are also found in the Tian-shan, the Nan-shan, Kan-suh, on the southern borders of the Gobi, &c.

Mesozoic.—Marine Triassic beds containing fossils similar to those of the German Muschelkalk have been found by Lóczy near Chung-tien, on the eastern border of the Tibetan plateau. Elsewhere, however, the Mesozoic is represented chiefly by a red sandstone, which covers the greater part of Sze-ch‘uen and fills also a number of troughs amongst the older beds of southern China. No marine fossils are found in this sandstone, but remains of plants are numerous, and these belong to the Rhaetic, Lias and Lower Oolite. No Cretaceous beds are known in China excepting in S. Tibet (on the shores of the Tengri-nor) and in the western portion of the Tian-shan.

Cainozoic and Recent.—No marine deposits of this age are known. Although the loess of the great plain and the sand of the desert are still in process of formation, the accumulation of these deposits probably began in the Tertiary period.

Volcanic Rocks.—Amongst the Archean rocks granitic and other intrusions are abundant, but of more modern volcanic activity the remains are comparatively scanty. In south China there is no evidence of Tertiary or Post-Tertiary volcanoes, but groups of volcanic cones occur in the great plain of north China. In the Liao-tung and Shan-tung peninsulas there are basaltic plateaus, and similar outpourings occur upon the borders of Mongolia. All these outbursts appear to be of Tertiary or later data.

Loess.—One of the most characteristic deposits of China is the loess, which not merely imparts to north China the physical character of the scenery, but also determines the agricultural products, the transport, and general economic life of the people of that part of the country. It is peculiar to north China and it is not found south of the Yangtsze. The loess is a solid but friable earth of brownish-yellow colour, and when triturated with water is not unlike loam, but differs from the latter by its highly porous and tubular structure. The loess soil is extremely favourable to agriculture. (See Loess and *infra, § Agriculture*.)

The loess is called by the Chinese *Hwang-t'u*, or yellow earth, and it has been suggested that the imperial title *Hwang-ti*, Yellow Emperor or Ruler of the Yellow, had its origin in the fact that the emperor is lord of the loess or yellow earth.

Structure.

Structurally, China proper may be divided into two regions, separated from each other by the folded range of the Tsing-ling-shan, which is a continuation of the folded belt of the Kuen-lun. North of this chain the Palaeozoic beds are in general nearly horizontal, and the limestones and sandstones of the Sinian and Carboniferous systems form an extensive plateau which rises abruptly from the western margin of the great plain of northern China. The plateau is deeply carved by the rivers which flow through it; and the strata are often faulted, but they are never sharply folded. South of the Tsing-ling-shan, on the other hand, the Palaeozoic beds are thrown into a series of folds running from W. 30° S. to E. 30° N., which form the hilly region of southern China. Towards Tongking these folds probably bend southwards and join the folds of Further India. Amongst these folded beds lie trough-like depressions filled with the Mesozoic red sandstone which lies unconformably upon the Palaeozoic rocks.

The present configuration of China is due, in a very considerable degree, to faulting. The abrupt eastern edge of the Shan-si plateau, where it overlooks the great plain, is a line of fault, or rather a series of step faults, with the downthrow on the east; and von Richthofen has shown reason to believe that this line of faulting is continued far to the south and to the north. He believed also that the present coast-line of China has to a large extent been determined by similar faults with their downthrow on the east.

Concerning the structure of the central Asian plateau our knowledge is still incomplete. The great mountain chains, the Kuen-lun, the Nan-shan and the Tian-shan, are belts of folding; but the Mongolian Altai is a horst—a strip of ancient rock lying between two faults and with a depressed area upon each side. In the whole of this northern region faulting, as distinct from folding, seems to have played an important part. Along the southern margin of the Tian-shan there is a remarkable trough-like depression which appears to lie between two approximately parallel faults.

(P. La.)

Fauna.

China lies within two zoological provinces or regions, its southern portion forming a part of the Oriental or Indian region and having a fauna close akin to that of the western Himalaya, Burma and Siam, whereas the districts to the north of Fu-chow and south of the Yangtsze-kiang lie within the eastern Holarctic (Palaearctic) region, or rather the southern fringe of the latter, which has been separated as the Mediterranean transitional region. Of these two divisions of the Chinese fauna, the northern one is the more interesting, since it forms the chief home of a number of peculiar generic types, and also includes types represented elsewhere at the present day (exclusive in one case of Japan) only in North America. The occurrence in China of these types common to the eastern and western hemispheres is important in regard to the former existence of a land-bridge between Eastern Asia and North America by way of Bering Strait.

Of the types peculiar to China and North America the alligator of the Yangtsze-kiang is generically identical with its Mississippi relative. The spoon-beaked sturgeon of the Yangtsze and Hwang-ho is, however, now separated, as *Psephurus*, from the closely allied American *Polyodon*. Among insectivorous mammals the Chinese and Japanese shrew-moles, respectively forming the genera *Uropsilus* and *Urotrichus*, are represented in America by *Neurotrichus*. The giant salamander of the rivers of China and Japan and the Chinese mandarin duck are by some included in the same genera as their American representatives, while by others they are

referred to genera apart. Whichever view we take does not alter their close relationship. One wapiti occurs on the Tibetan frontier, and others in Manchuria and Amurland.

As regards mammals and birds, the largest number of generic and specific types peculiar to China are met with in Sze-ch'uen. Foremost among these is the great panda (*Aeluropus melanoleucus*), representing a genus by itself, probably related to bears and to the true panda (*Aelurus*), the latter of which has a local race in Sze-ch'uen. Next come the snub-nosed monkeys (*Rhinopithecus*), of which the typical species is a native of Sze-ch'uen, while a second is found on the upper Mekong, and a third in the mountains of central China. In the Insectivora the swimming-shrew (*Nectogale*) forms another generic type peculiar to Sze-ch'uen, which is also the sole habitat of the mole-like *Scaptochirus*, of *Uropsilus*, near akin to the Japanese *Urotrichus*, of *Scaptonyx*, which connects the latter with the moles (*Talpa*), and of *Neotetracus*, a relative of the Malay rat-shrews (*Gymnura*). Here also may be mentioned the raccoon-dog, forming the subgenus *Nyctereutes*, common to China and Japan. The Himalayan black and the Malay bear have each a local race in Sze-ch'uen, where the long-haired Fontanier's cat (*Felis tristis*) and the Tibet cat (*F. scripta*) connect Indo-Malay species with the American ocelots, while the bay cat (*F. temmincki*), a Malay type, is represented by local forms in Sze-ch'uen and Fu-chow. The Amurland leopard and Manchurian tiger likewise constitute local races of their respective species.

Among ruminants, the Sze-ch'uen takin represents a genus (*Budorcas*) found elsewhere in the Mishmi Hills and Bhutan, while serows (*Nemorhaedus*) and gorals (*Urotragus*), allied to Himalayan and Burmo-Malay types, abound. The Himalayan fauna is also represented by a race of the Kashmir hangul deer. Of other deer, the original habitat of Père David's milu (*Elaphurus*), formerly kept in the Peking park, is unknown. The sika group, which is peculiar to China, Japan and Formosa, is represented by *Cervus hortulorum* in Manchuria and the smaller *C. manchuricus* and *sika* in that province and the Yangtsze valley; while musk-deer (*Moschus*) abound in Kan-suh and Sze-ch'uen. The small water-deer (*Hydropotes* or *Hydrelaphus*) of the Yangtsze valley represents a genus peculiar to the country, as do the three species of tufted deer (*Elaphodus*), whose united range extends from Sze-ch'uen to Ning-po and I-ch'ang. Muntjacs (*Cervulus*) are likewise very characteristic of the country, to which the white-tailed, plum-coloured species, like the Tenasserim *C. crinifrons*, are peculiar. The occurrence of races of the wapiti in Manchuria and Amurland has been already mentioned.

To refer in detail to the numerous forms of rodents inhabiting China is impossible here, and it must suffice to mention that the flying-squirrels (*Pteromys*) are represented by a large and handsome species in Sze-ch'uen, where is also found the largest kind of bamboo-rat (*Rhizomys*), the other species of which are natives of the western Himalaya and the Malay countries. Dwarf hamsters of the genus *Cricetulus* are natives of the northern provinces. In the extreme south, in Hai-nan, is found a gibbon ape (*Hylobates*), while langur (*Semnopithecus*) and macaque monkeys (*Macacus*) likewise occur in the south, one of the latter also inhabiting Sze-ch'uen.

To give an adequate account of Chinese ornithology would require space many times the length of this article. The gorgeous mandarin duck (*Aix galerita*) has already been mentioned among generic types common to America. In marked distinction to this is the number of species of pheasants inhabiting north-western China, whence the group ranges into the eastern Himalaya. Among Chinese species are two of the three species of blood-pheasants (*Ithagenes*), two tragopans (*Ceriornis* or *Tragopan*), a monal (*Lophophorus*), three out of the five species of *Crossoptilum*, the other two being Tibetan, two kinds of *Pucrasia*, the gorgeous golden and Amherst's pheasants alone representing the genus *Chrysolophus*, together with several species of the typical genus *Phasianus*, among which it will suffice to mention the long-tailed *P. reevesi*. The Himalayan bamboo-partridges (*Bambusicola*) have also a Chinese representative. The only other large bird that can be mentioned is the Manchurian crane, misnamed *Grus japonensis*. Pigeons include the peculiar subgenus *Dendroteron*; while among smaller birds, warblers, tits and finches, all of an Eastern Holarctic type, constitute the common element in the avifauna. Little would be gained by naming the genera, peculiar or otherwise.

China has a few peculiar types of freshwater tortoises, among which *Ocadia sinensis* represents a genus unknown elsewhere, while there is also a species of the otherwise Indian genus *Damonia*. The Chinese alligator, *Alligator sinensis*, has been already mentioned. Among lizards, the genera *Plestiodon*, *Mabuia*, *Tachydromus* and *Gecko*, of which the two latter are very characteristic of the Oriental region, range through China to Japan; and among snakes, the Malay python (*Python reticulatus*) is likewise Chinese. The giant salamander (*Cryptobranchus*, or *Megalobatrachus, maximus*) represents, as mentioned above, a type found elsewhere only in North America, while *Hynobius* and *Onychodactylus* are peculiar generic types of salamanders. Among fishes, it must suffice to refer to the spoon-beaked sturgeon (*Psephurus*) of the Yangtsze-kiang, and the numerous members of the carp family to be found in the rivers of China. From these native carp the Chinese have produced two highly

coloured breeds, the goldfish and the telescope-eyed carp.

Among the invertebrates special mention may be made of the great ailanthus silk-moth (*Attacus cynthia*) of northern China and Japan, and also of its Manchurian relative *A. pernyi*; while it may be added that the domesticated "silkworm" (*Bombyx mori*) is generally believed to be of Chinese origin, although this is not certain. Very characteristic of China is the abundance of handsomely coloured swallow-tailed butterflies of the family *Papilionidae*. The Chinese kermes (*Coccus sinensis*) is also worth mention, on account of it yielding wax. As regards land and freshwater snails, China exhibits a marked similarity to Siam and India; the two groups in which the Chinese province displays decided peculiarities of its own being *Helix* (in the wider sense) and *Clausilia*. There are, for instance, nearly half a score of subgenera of *Helix* whose headquarters are Chinese, while among these, forms with sinistral shells are relatively common. The genus *Clausilia* is remarkable on account of attaining a second centre of development in China, where its finest species, referable to several subgenera, occur. Carnivorous molluscs include a peculiar slug (*Rathouisia*) and the shelled genera *Ennea* and *Streptaxis*. In the western provinces species of *Buliminus* are abundant, and in the operculate group *Heudeia* forms a peculiar type akin to *Helicina*, but with internal foldings to the shell.

Lastly, it has to be mentioned that the waters of the Yangtsze-kiang are inhabited by a small jelly-fish, or medusa (*Limnocodium kawaii*), near akin to *L. sowerbii*, which was discovered in the hot-house tanks in the Botanical Gardens in the Regent's Park, London, but whose real home is probably the Amazon.

(R. L.*)

Flora.

The vegetation of China is extremely rich, no fewer than 9000 species of flowering plants having been already enumerated, of which nearly a half are endemic or not known to occur elsewhere. Whole provinces are as yet only partially explored; and the total flora is estimated to comprise ultimately 12,000 species. China is the continuation eastward of the great Himalayan mass, numerous chains of mountains running irregularly to the sea-board. Thousands of deep narrow valleys form isolated areas, where peculiar species have been evolved. Though the greater part of the country has long ago been cleared of its primeval forest and submitted to agriculture, there still remain some extensive forests and countless small woods in which the original flora is well preserved. Towards the north the vegetation is palaearctic, and differs little in its composition from that of Germany, Russia and Siberia. The flora of the western and central provinces is closely allied to that of the Himalayas and of Japan; while towards the south this element mingles with species derived from Indo-China, Burma and the plain of Hindostan. Above a certain elevation, decreasing with the latitude, but approximately 6000 ft. in the Yangtsze basin, there exist in districts remote from the traffic of the great rivers, extensive forests of conifers, like those of Central Europe in character, but with different species of silver fir, larch, spruce and Cembran pine. Below this altitude the woods are composed of deciduous and evergreen broad-leafed trees and shrubs, mingled together in a profusion of species. Pure broad-leafed forests of one or two species are rare, though small woods of oak, of alder and of birch are occasionally seen. There is nothing comparable to the extensive beech forests of Europe, the two species of Chinese beech being sporadic and rare trees. The heaths, *Calluna* and *Erica*, which cover great tracts of barren sandy land in Europe, are absent from China, where the Ericaceous vegetation is made up of numerous species of *Rhododendron*, which often cover vast areas on the mountain slopes. Pine forests occur at low levels, but are always small in extent.

The appearance of the vegetation is very different from that of the United States, which is comparable to China in situation and in extent. Though there are 60 species of oak in China, many with magnificent foliage and remarkable cupules, the red oaks, so characteristic of North America, with their bristle-pointed leaves, turning beautiful colours in autumn, are quite unknown. The great coniferous forest west of the Rocky Mountains has no analogue in China, the gigantic and preponderant Douglas fir being absent, while the giant *Sequoias* are represented only on a small scale by *Cryptomeria*, which attains half their height.

Certain remnants of the Miocene flora which have disappeared from Europe are still conspicuous and similar in North America and China. In both regions there are several species of *Magnolia*; one species each of *Liriodendron, Liquidambar* and *Sassafras*; and curious genera like *Nyssa, Hamamelis, Decumaria* and *Gymnocladus*. The swamps of the south-eastern states, in which still survive the once widely spread *Taxodium* or deciduous cypress, are imitated on a small scale by the marshy banks of rivers near Canton, which are clad with *Glyptostrobus*, the "water-pine" of the Chinese. *Pseudolarix, Cunninghamia* and *Keteleeria* are coniferous genera peculiar to China, which have become extinct elsewhere. The most remarkable tree in China, the only surviving link between ferns and conifers, *Ginkgo biloba*, has only been seen in temple gardens, but may occur wild in some of the unexplored provinces. Its leaves have been found in the tertiary beds of the Isle of Mull.

Most of the European genera occur in China, though there are curious exceptions like the

plane tree, and the whole family of the *Cistaceae*, which characterize the peculiar *maquis* of the Mediterranean region. The rhododendrons, of which only four species are European, have their headquarters in China, numbering 130 species, varying in size from miniature shrubs 6 in. high to tall trees. *Lysimachia, Primula, Clematis, Rubus* and *Gentiana* have each a hundred species, extraordinary variable in habit, in size and in colour of the flowers. The ferns are equally polymorphic, numbering 400 species, and including strange genera like *Archangiopteris* and *Cheiropteris*, unknown elsewhere. About 40 species of bamboos have been distinguished; the one with a square stem from Fu-kien is the most curious.

With a great wealth of beautiful flowering shrubs and herbaceous plants, the Chinese at an early period became skilled horticulturists. The emperor Wu Ti established in 111 B.C. a botanic garden at Ch'ang-an, into which rare plants were introduced from the west and south. Many garden varieties originated in China. The chrysanthemum, perhaps the most variable of cultivated flowers, is derived from two wild species (small and inconspicuous plants), and is mentioned in the ancient Chinese classics. We owe to the skill of the Chinese many kinds of roses, lilies, camellias and peonies; and have introduced from China some of the most ornamental plants in our gardens, as *Wistaria, Diervilla, Kerria, Incarvillea, Deutzia, Primula sinensis, Hemerocallis*, &c. The peach and several oranges are natives of China. The varnish tree (*Rhus vernicifera*), from which lacquer is obtained; the tallow tree (*Sapium sebiferum*); the white mulberry, on which silkworms are fed; and the tea plant were all first utilized by the Chinese. The Chinese have also numerous medicinal plants, of which ginseng and rhubarb are best known. Nearly all our vegetables and cereals have their counterpart in China, where there are numerous varieties not yet introduced into Europe, though some, like the Soy bean, are now attracting great attention.

(A. He.*)

AUTHORITIES.—L. Richard (S.J.), *Géographie de l'empire de Chine* (Shanghai, 1905)—the first systematic account of China as a whole in modern times. The work, enlarged, revised and translated into English by M. Kennelly (S.J.), was reissued in 1908 as Richard's *Comprehensive Geography of the Chinese Empire and Dependencies*. This is the standard authority for the country and gives for each section bibliographical notes. It has been used in the revision of the present article. Valuable information on northern, central and western China is furnished by Col. C.C. Manifold and Col. A.W.S. Wingate in the *Geog. Journ.* vol. xxiii. (1904) and vol. xxix. (1907). Consult also Marshall Broomhall (ed.), *The Chinese Empire: a General and Missionary Survey* (London, 1907); B. Willis, E. Blackwelder and others, *Research in China*, vol. i. part i. "Descriptive Topography and Geology," part ii. "Petrography and Zoology," and Atlas (Washington, Carnegie Institution, 1906-1907); Forbes and Hemsley, "Enumeration of Chinese Plants," in *Journ. Linnean Soc. (Bot.)*, vols. xxiii. and xxxvi.; Bretschneider, *History of European Botanical Discoveries in China*; E. Tiessen, *China das Reich der achtzehn Provinzen*, Teil i. "Die allgemeine Geographie des Landes" (Berlin, 1902); and *The China Sea Directory* (published by the British Admiralty), a valuable guide to the coasts: vol. ii. (5th ed., 1906) deals with Hong-Kong and places south thereof, vol. iii. (4th ed., 1906, supp. 1907) with the rest of the Chinese coast; vol. i. (5th ed., 1906) treats of the islands and straits in the S.W. approach to the China Sea. Much of China has not been surveyed, but considerable progress has been made since 1900. *The Atlas of the Chinese Empire* (London, 1908), a good general atlas, which, however, has no hill shading, gives maps of each province on the scale of 1:3,000,000. The preface contains a list of the best regional maps.

The Journal af the China Branch of the Royal Asiatic Society contains papers on all subjects relating to China.

II. THE PEOPLE

China is noted for the density of its population, but no accurate statistics are forthcoming. The province of Shan-tung is reputed to have a population of 680 per sq. m. The provinces of central China, in the basin of the Yangtsze-kiang—namely Sze-ch'uen, Hu-peh, Ngan-hui, Kiang-su and Cheh-kiang—contain probably a third of thes total population, the density of the people in these provinces being represented as from 490 to 310 per sq. m. Ho-nan, which belongs partly to the basin of the Hwang-ho and partly to that of the Yangtsze-kiang, as well as the S.E. coast provinces of Fu-kien and Kwang-tung, are also densely peopled, Ho-nan being credited with 520 persons per sq. m., Fu-kien with 490 and Kwang-tung with about 320.

Population.

The Chinese government prints from time to time in the *Peking Gazette* returns of the population made by the various provincial authorities. The method of numeration is to count the households, and from that to make a return of the total inhabitants of each province. There would be no great difficulty in obtaining fairly accurate returns if sufficient care were taken. It does not appear, however, that much care is taken. Mr E.H. Parker published in the *Statistical Society's Journal* for March 1899 tables translated from Chinese records, giving the population from year to year between 1651 and 1860. These tables show a gradual rise, though with many fluctuations, up till 1851, when the total population is stated to be 432

millions. From that point it decreases till 1860, when it is put down at only 261 millions. The Chinese Imperial Customs put the total population of the empire in 1906 at 438,214,000 and that of China proper at 407,253,000. It has been held by several inquirers that these figures are gross over-estimates. Mr Rockhill, American minister at Peking (1905-1909), after careful inquiry[9] concluded that the inhabitants of China proper did not exceed, in 1904, 270,000,000. Other competent authorities are inclined to accept the round figure of 400,000,000 as nearer the accurate number. Eleven cities were credited in 1908 with between 500,000 and 1,000,000 inhabitants each, and smaller cities are very numerous, but the population is predominantly rural. In addition to the Chinese the population includes a number of aboriginal races such as the Lolos (*q.v.*), the Miaotsze (*q.v.*), the Ikias of Kwei-chow and Kwang-si, the Hakka, found in the south-east provinces, and the Hoklos of Kwang-tung province.[10] The Manchus resident in China are estimated to number 4,000,000. According to the Imperial Customs authorities, the number of foreigners resident in China in 1908 was 69,852. Of these 44,143 were Japanese, 9520 Russian, 9043 British, 3637 German, 3545 American, 3353 Portuguese, 2029 French, 554 Italian and 282 Belgian.

Emigration.

The Chinese are a colonizing race, and in Manchuria, Mongolia and Turkestan they have brought several districts under cultivation. In the regions where they settle they become the dominant race—thus southern Manchuria now differs little from a province of China proper. In Indo-China, the Malay Peninsula and throughout the Far East Chinese are numerous as farmers, labourers and traders; in some places, such as Singapore, Chinese are among the principal merchants. This colonizing spirit is probably due more to the enterprise of the people than to the density of the population. There were Chinese settlements at places on the east coast of Africa before the 10th century A.D. Following the discovery of gold in California there was from 1850 onwards a large emigration of Chinese to that state and to other parts of America. But in 1879 Chinese exclusion acts were passed by the United States, an example followed by Australia, where Chinese immigration was also held to be a public danger. Canada also adopted the policy of excluding Chinese, but not before there had been a considerable immigration into British Columbia. Two factors, a racial and an economic, are at work to bring about these measures of exclusion. As indentured labourers Chinese have been employed in the West Indies, South America and other places (see COOLIE).

In addition to several million Chinese settlers in Manchuria, and smaller numbers in Mongolia, Turkestan and Tibet, it was estimated in 1908 that there were over 9,000,000 Chinese resident beyond the empire. Of these 2,250,000 were in Formosa, which for long formed a part of the empire, and over 6,000,000 in neighbouring regions of Asia and in Pacific Islands. In the West Indies (chiefly Cuba) the number of Chinese was estimated at 100,000, in South America (Brazil, Peru and Chile) at 72,000, in the United States at 150,000, in Canada at 12,000, and in Australia and New Zealand at 35,000. There are comparatively few Chinese in Japan (if Formosa be excepted) and Korea. The number is given in 1908 as 17,000 in Japan and 11,000 in Korea.

Social Life.

The awakening of the East which has followed the Russo-Japanese War of 1904-5 has affected China also. It is too soon to say how far the influx of European ideas will be able to modify the immemorial customs and traditions of perhaps the most conservative people in the world; but the process has begun, and this fact makes it difficult to give a picture of Chinese habits and customs which shall be more than historical or provisional. Moreover, the difficulty of presenting a picture which shall be true of China as a whole is enhanced by the different characteristics observable in various regions of so vast a country. The Chinese themselves, until the material superiority of Western civilization forced them to a certain degree to conform to its standards, looked down from the height of their superior culture with contempt on the “Western barbarians.” Nor was their attitude wholly without justification. Their civilization was already old at a time when Britain and Germany were peopled by half-naked barbarians, and the philosophical and ethical principles on which it was based remain, to all appearances, as firmly rooted as ever. That these principles have, on the whole, helped to create a national type of a very high order few Europeans who know the Chinese well would deny. The Chinese are naturally reserved, earnest and good-natured; for the occasional outbursts of ferocious violence, notably against foreign settlements, are no index to the national character. There is a national proverb that “the men of the Four Seas are all brothers,” and even strangers can travel through the country without meeting with rudeness, much less outrage. If the Chinese character is inferior to the European, this inferiority lies in the fact that the Chinaman’s whole philosophy of life disinclines him to change or to energetic action. He is industrious; but his industry is normally along the lines marked out by authority and tradition. He is brave; but his courage does not naturally seek an outlet in war. The jealously exclusive empire, into which in the 19th century the nations of the West forced an entrance, was organized for peace; the arts of war had been all but forgotten, and soldiers

were of all classes the most despised.

The whole social and political organization of the Chinese is based, in a far more real sense than in the West, on the family. The supreme duty is that of the child to its parent; on this the whole Chinese moral system is built up. Filial piety, according to the teaching of Confucius, is the very foundation of society; the nation itself is but one great family, and the authority of the government itself is but an extension of the paternal authority, to which all its children are bound to yield implicit obedience. The western idea of the liberty and dignity of the individual, as distinct from the community to which he belongs, is wholly alien to the Chinese mind. The political unit in China is not the individual but the family, and the father of the family is supposed to be responsible for the qualities and views of all his kin. He is rewarded for their virtues, punished for their faults; the deserts of a son ennoble the father and all his ancestors, and conversely his crimes disgrace them.

An outcome of this principle is the extraordinary importance in China of funeral rites, especially in the case of the father. The eldest son, now head of the family, or, failing him, his first-born or adopted son, fixes one of the three souls of the dead in the tablet commemorating his virtues, burns incense to his shade, and supplies him with paper money and paper representations of everything (clothes, servants, horses) that he may require in his journey to the other world. Mourning lasts for three years, during which the mourners wear white garments and abstain from meat, wine and public gatherings. Custom, too, dictates that wherever the Chinaman may die he must be brought back for burial to the place of his birth; one of the objects of the friendly societies is to provide funds to charter ships to transport home the bodies of those who have died abroad. Annually, in May, the white-clad people stream to the graves and mortuary temples with flowers, fruit and other offerings for the dead. Christian missionaries have found in this ancestor worship the most serious obstacle to the spread of a religion which teaches that the convert must, if need be, despise his father and his mother and follow Christ.

The same elaborate ceremonialism that characterizes the Chinese funeral customs is found also in their marriage rites and the rules of their social intercourse generally. Confucius is reported to have said that “all virtues have their source in etiquette,” and the due observance of the “ceremonial” (*li*) in the fulfilling of social duties is that which, in Chinese opinion, distinguishes civilized from barbarous peoples. The Board of Rites, one of the departments of the central government, exists for the purpose of giving decisions in matters of etiquette and ceremony. As to marriage, the rule that the individual counts for nothing obtains here in its fullest significance. The breeding of sons to carry on the ancestral cult is a matter of prime importance, and the marriage of a young man is arranged at the earliest possible age. The bride and bridegroom have little voice in the matter, the match being arranged by the parents of the parties; the lifting of the bride’s veil, so that the bridegroom may see her face, is the very last act of the long and complicated ceremony.

In the traditional Chinese social system four classes are distinguished: the literary, the agricultural, the artisan and the trading class. Hereditary nobility, in the European sense, scarcely exists, and the possession of an hereditary title gives in itself no special privileges. Official position is more highly esteemed than birth and the bureaucracy takes the place of the aristocracy in the west. There are, nevertheless, besides personal decorations for merit, such as the yellow jacket, five hereditary rewards for merit; these last only for a fixed number of lives. A few Chinese families, however, enjoy hereditary titles in the full sense, the chief among them being the Holy Duke of Yen (the descendant of Confucius). The Imperial Clansmen consist of those who trace their descent direct from the founder of the Manchu dynasty, and are distinguished by the privilege of wearing a yellow girdle; collateral relatives of the imperial house wear a red girdle. Twelve degrees of nobility (in a descending scale as one generation succeeds another) are conferred on the descendants of every emperor; in the thirteenth generation the descendants of emperors are merged in the general population, save that they retain the yellow girdle. The heads of eight houses, the “Iron-capped” (or helmeted) princes, maintain their titles in perpetuity by rule of primogeniture in virtue of having helped the Manchu in the conquest of China. Imperial princes apart, the highest class is that forming the civil service. (See also § *Government and Administration*.) The peasant class forms the bulk of the population. The majority of Chinese are small landowners; their standard of living is very low in comparison with European standards. This is in part due to the system of land tenure. A parent cannot, even if he wished to do so, leave all his land to one son. There must be substantially an equal division, the will of the father notwithstanding. As early marriages and large families are the rule, this process of continual division and subdivision has brought things down to the irreducible minimum in many places. Small patches of one-tenth or even one-twentieth of an acre are to be found as the estate of an individual landowner, and the vast majority of holdings run between one and three acres. With three acres a family is deemed very comfortable, and the possession of ten acres means luxury.

The only class which at all resembles the territorial magnates of other countries is the class of retired officials. The wealth of an official is not infrequently invested in land, and

consequently there are in most provinces several families with a country seat and the usual insignia of local rank and influence. On the decease of the heads or founders of such families it is considered dignified for the sons to live together, sharing the rents and profits in common. This is sometimes continued for several generations, until the country seat becomes an agglomeration of households and the family a sort of clan. A family of this kind, with literary traditions, and with the means to educate the young men, is constantly sending its scions into the public service. These in turn bring their earnings to swell the common funds, while the rank and dignity which they may earn add to the importance and standing of the group as a whole. The members of this class are usually termed the *literati* or gentry.

The complex character of the Chinese is shown in various ways. Side by side with the reverence of ancestors the law recognizes the right of the parent to sell his offspring into slavery and among the poor this is not an uncommon practice, though in comparison with the total population the number of slaves is few. The kidnapping of children for sale as slaves is carried on, but there is no slave raiding. There are more female than male slaves; the descendants of male slaves acquire freedom in the fifth generation. While every Chinese man is anxious to have male children, girls are often considered superfluous.

The position of women is one of distinct inferiority; a woman is always subject to the men of her family—before marriage to her father, during marriage to her husband, in widowhood to her son; these states being known as “the three obediences.” Sons who do not, however, honour their mothers outrage public opinion. Polygamy is tolerated, secondary wives being sometimes provided by the first wife when she is growing old. Secondary wives are subordinate to first wives. A wife may be divorced for any one of seven reasons. The sale of wives is practised, but is not recognized by law. Women of the upper classes are treated with much respect. The home of a Chinese man is often in reality ruled by his mother, or by his wife as she approaches old age, a state held in veneration. Chinese women frequently prove of excellent business capacity, and those of high rank—as the recent history of China has conspicuously proved—exercise considerable influence on public affairs.

Deforming the feet of girls by binding and stopping their growth has been common for centuries. The tottering walk of the Chinese lady resulting from this deformation of the feet is the admiration of her husband and friends. Foot-binding is practised by rich and poor in all parts of the country, but is not universal. In southern and western China Hakka women and certain others never have their feet bound. It has been noted that officials (who all serve on the itinerary system) take for secondary wives natural-footed women, who are frequently slaves.[11] Every child is one at birth, and two on what Europeans call its first birthday, the period of gestation counting as one year.

In their social intercourse the Chinese are polite and ceremonious; they do not shake hands or kiss, but prostrations (kotowing), salutations with joined hands and congratulations are common. They have no weekly day of rest, but keep many festivals, the most important being that of New Year’s Day. Debts are supposed to be paid before New Year’s Day begins and for the occasion new clothes are bought. Other notable holidays are the Festival of the First Full Moon, the Feast of Lanterns and the Festival of the Dragon Boat. A feature of the festivals is the employment of thousands of lanterns made of paper, covered with landscapes and other scenes in gorgeous colours. Of outdoor sports kite-flying is the most popular and is engaged in by adults; shuttle-cock is also a favourite game, while cards and dominoes are indoor amusements. The theatre and marionette shows are largely patronized. The habit of opium smoking is referred to elsewhere; tobacco smoking is general among both sexes.

Except in their head-dress and their shoes little distinction is made between the costumes of men and women.[12] Both sexes wear a long loose jacket or robe which fits closely round the neck and has wide sleeves, and wide short trousers. Over the robe shorter jackets—often sleeveless—are worn, according to the weather. For winter wear the jackets are wadded, and a Chinaman will speak of “a three, four or six coat cold day.” A man’s robe is generally longer than that of a woman. Petticoats are worn by ladies on ceremonial occasions and the long robe is removed when in the house. “It is considered very unwomanly not to wear trousers, and very indelicate for a man not to have skirts to his coat.” No Chinese woman ever bares any part of her body in public—even the hands are concealed in the large sleeves—and the evening dress of European ladies is considered indelicate; but Hakka women move about freely without shoes or stockings. A Chinese man will, however, in warm weather often strip naked to the waist. Coolies frequently go bare-legged; they use sandals made of rope and possess rain-coats made of palm leaves. The garments of the poorer classes are made of cotton, generally dyed blue. Wealthy people have their clothes made of silk. Skirts and jackets are elaborately embroidered. Costly furs and fur-lined clothes are much prized, and many wealthy Chinese have fine collections of furs. Certain colours may only be used with official permission as denoting a definite rank or distinction, *e.g.* the yellow jacket. The colours used harmonize—the contrasts in colour seen in the clothes of Europeans is avoided. Dark purple over blue are usual colour combinations. The mourning colour is white. Common shoes are made of cotton or silk and have thick felt soles; all officials wear boots of satin into which is thrust the pipe or

the fan—the latter carried equally by men and women. The fan is otherwise stuck at the back of the neck, or attached to the girdle, which may also hold the purse, watch, snuff-box and a pair of chop-sticks.

Formerly Chinese men let their hair grow sufficiently long to gather it in a knot at the top; on the conquest of the country by the Manchu they were compelled to adopt the queue or pigtail, which is often artificially lengthened by the employment of silk thread, usually black in colour. The front part of the head is shaved. As no Chinese dress their own hair, barbers are numerous and do a thriving trade. Women do not shave the head nor adopt the queue. Men wear in general a close-fitting cap, and the peasants large straw hats. Circular caps, larger at the crown than round the head and with an outward slope are worn in winter by mandarins, conical straw hats in summer. Women have elaborate head ornaments, decking their hair with artificial flowers, butterflies made of jade, gold pins and pearls. The faces of Chinese ladies are habitually rouged, their eyebrows painted. Pearl or bead necklaces are worn both by men and women. Officials and men of leisure let one or two finger nails grow long and protect them with a metal case.

The staple food of the majority of the Chinese in the south and central provinces is rice; in the northern provinces millet as well as rice is much eaten. In separate bowls are placed morsels of pork, fish, chicken, vegetables and other relishes. Rice-flour, bean-meal, macaroni, and shell fish are all largely used. Flour balls cooked in sugar are esteemed. Beef is never eaten, but Mahommedans eat mutton, and there is hardly any limit to the things the Chinese use as food. In Canton dogs which have been specially fed are an article of diet. Eggs are preserved for years in a solution of salt, lime and wood-ash, or in spirits made from rice. Condiments are highly prized, as are also preserved fruits. Special Chinese dishes are soups made from sea-slugs and a glutinous substance found in certain birds' nests, ducks' tongues, sharks' fins, the brains of chickens and of fish, the sinews of deer and of whales, fish with pickled fir-tree cones, and roots of the lotus lily. A kind of beer brewed from rice is a usual drink; *samshu* is a spirit distilled from the same grain and at dinners is served hot in small bowls. Excellent native wines are made. The Chinese are, however, abstemious with regard to alcoholic liquors. Water is drunk hot by the very poor, as a substitute for tea. Tea is drunk before and after meals in cups without handle or saucer; the cups are always provided with a cover. Two substantial meals are taken during the day—luncheon and dinner; the last named at varying hours from four till seven o'clock. At dinner a rich man will offer his guest twenty-four or more dishes (always a multiple of 4), four to six dishes being served at a time. Food is eaten from bowls and with chop-sticks (*q.v.*) and little porcelain spoons. Men dine by themselves when any guests are present; dinner parties are sometimes given by ladies to ladies. Chinese cookery is excellent; in the culinary art the Chinese are reputed to be second only to the French.

Ethnologically the Chinese are classed among the Mongolian races (in which division the Manchus are also included), although they present many marked contrasts to the Mongols. The Tatars, Tibetans, Burmese, Shans, Manchu and other races—including the Arab and Japanese—have mingled with the indigenous population to form the Chinese type, while aboriginal tribes still resist the pressure of absorption by the dominant race (see ante, *Population*). The Chinese are in fact ethnically a very mixed people, and the pure Mongol type is uncommon among them. Moreover, natives of different provinces still present striking contrasts one to another, and their common culture is probably the strongest national link. By some authorities it is held that the parent stock of the Chinese came from the north-west, beyond the alluvial plain; others hold that it was indigenous in eastern China. Notwithstanding the marked differences between the inhabitants of different provinces and even between those living in the same province, certain features are common to the race. "The stature is below the average and seldom exceeds 5 ft. 4 in., except in the North. The head is normally brachycephalic or round horizontally, and the forehead low and narrow. The face is round, the mouth large, and the chin small and receding. The cheek-bones are prominent, the eyes almond-shaped, oblique upwards and outwards, and the hair coarse, lank and invariably black. The beard appears late in life, and remains generally scanty. The eyebrows are straight and the iris of the eye is black. The nose is generally short, broad and flat. The hands and feet are disproportionately small, and the body early inclines to obesity. The complexion varies from an almost pale-yellow to a dark-brown, without any red or ruddy tinge. Yellow, however, predominates."[13]

A few words may be added concerning the Manchus, who are the ruling race in China. Their ethnic affinities are not precisely known, but they may be classed among the Ural-Altaic tribes, although the term Ural-Altaic (*q.v.*) denotes a linguistic rather than a racial group. By some authorities they are called Tung-tatze, *i.e.* Eastern Tatars—-the Tatars of to-day being of true Mongol descent. Manchu is the name adopted in the 13th century by one of several tribes which led a nomadic life in Manchuria and were known collectively in the 11th century as Nüchihs. Some authorities regard the Khitans (whence the European form Cathay), who in the 9th and 10th centuries dwelt in the upper Liao region, as the ancestors of this race. It was not

until the 16th century that the people became known generally as Manchus and obtained possession of the whole of the country now bearing their name (see MANCHURIA). They had then a considerable mixture of Chinese and Korean blood, but had developed a distinct nationality and kept their ancient Ural-Altaic language. In China the Manchus retained their separate nationality and semi-military organization. It was not until the early years of the 20th century that steps were officially taken to obliterate the distinction between the two races. The Manchus are a more robust race than the inhabitants of central and southern China, but resemble those of northern China save that their eyes are horizontally set. They are a lively and enterprising people, but have not in general the intellectual or business ability of the Chinese. They are courteous in their relations with strangers. The common people are frugal and industrious. The Manchu family is generally large. The women's feet are unbound; they twist their hair round a silver bangle placed cross-wise on the top of the head. The Manchus have no literature of their own, but as the language of the court Manchu has been extensively studied in China.

AUTHORITIES.—Sir John F. Davies, *China* (2 vols., London, 1857); É. Réclus, *The Universal Geography*, vol. vii. (Eng. trans. ed. by E.G. Ravenstein and A.H. Keane); É. and O. Réclus, *L'Empire du milieu* (Paris, 1902); Sir R.K. Douglas, *Society in China* (London, 1895); J. Doolittle, *Social Life of the Chinese* (2 vols., New York, 1867); H.A. Giles, *China and the Chinese* (1902); E. Bard, *Les Chinois chez eux* (Paris, 1900); A.G. Jones, *Desultory Notes on Chinese Etiquette* (Shanghai, 1906); Mrs Archibald Little, *Intimate China* (London, 1899) and *The Land of the Blue Gown* (London, 1902); E.H. Parker, *John Chinaman and a Few Others* (London, 1901); J. Dyer-Ball, *Things Chinese* (Shanghai, 1903); Cheng Kitung, *The Chinese Painted by Themselves* (Eng. trans. by J. Millington, London, 1885); L. Richard, *Comprehensive Geography of the Chinese Empire* (Shanghai, 1908).

(X.)

Religion.

The earliest traces of religious thought and practice in China point to a simple monotheism. There was a Divine Ruler of the universe, abiding on high, beyond the ken of man. This Power was not regarded as the Creator of the human race, but as a Supreme Being to whom wickedness was abhorrent and virtuous conduct a source of joy, and who dealt out rewards and punishments with unerring justice, claiming neither love nor reverence from mankind. If a man did his duty towards his neighbour, he might pass his whole time on earth oblivious of the fact that such a Power was in existence; unless perchance he wished to obtain some good or attain some end, in which case he might seek to propitiate Him by sacrifice and prayer. There was no Devil to tempt man astray, and to rejoice in his fall; neither was there any belief that righteous behaviour in this world would lead at death to absorption in the Deity. To God, understood in this sense, the people gave the name *Tien*, which in the colloquial language was used of the sky; and when, in the first stages of the written character, it became necessary to express the idea of *Tien*, they did not attempt any vague picture of the heavens, but set down the rude outline of a man. Perhaps about this period the title *Shang Ti*, or Supreme Ruler, came into vogue as synonymous with *Tien*. But although the two terms were synonyms, and both may be equally rendered by "God," there is nevertheless an important distinction to be observed, much as though *Tien* and *Shang Ti* were two Persons in one substance. *Tien* is far more an abstract Being, while *Shang Ti* partakes rather of the nature of a personal God, whose anthropomorphic nature is much more strongly accentuated. *Shang Ti* is described as walking and talking, as enjoying the flavour of sacrifices, as pleased with music and dancing in his honour, and even as taking sides in warfare; whereas *Tien* holds aloof, wrapped in an impenetrable majesty, an *ignotum pro mirifico*. So much for religion in primeval days, gathered scrap by scrap from many sources; for nothing like a history of religion is to be found in Chinese literature.

The ancient faith.

Gradually to this monotheistic conception was added a worship of the sun, moon and constellations, of the five planets, and of such noticeable individual stars as (*e.g.*) Canopus, which is now looked upon as the home of the God of Longevity. Earth, too—Mother Earth—came in for her share of worship, indicated especially by the God of the Soil, and further distributed among rivers and hills. Wind, rain, heat, cold, thunder and lightning, as each became objects of desire or aversion, were invested with the attributes of deities. The various parts of the house—door, kitchen-stove, courtyard, &c.—were also conceived of as sheltering some spirit whose influence might be benign or the reverse. The spirits of the land and of grain came to mean one's country, the commonwealth, the state; and the sacrifices of these spirits by the emperor formed a public announcement of his accession, or of his continued right to the throne. Side by side with such sacrificial rites was the worship of ancestors, stretching so far back that its origin is not discernible in such historical documents as we possess. In early times only the emperor, or the feudal nobles, or certain high officials, could

sacrifice to the spirits of nature; the common people sacrificed to their own ancestors and to the spirits of their own homes. For three days before performing such sacrifices, a strict vigil with purification was maintained; and by the expiration of that time, from sheer concentration of thought, the mourner was able to see the spirits of the departed, and at the sacrifice next day seemed to hear their movements and even the murmur of their sighs. Ancestral worship in China has always been, and still is, worship in the strict sense of the term. It is not a memorial service in simple honour of the dead; but sacrifices are offered, and the whole ceremonial is performed that the spirits of former ancestors may be induced to extend their protection to the living and secure to them as many as possible of the good things of this world.

For Confucianism, which cannot, strictly speaking, be classed as a religion, see Confucius.

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Taoism.

Around the scanty utterances of Lao Tzŭ or Lao-tsze (*q.v.*; see also § *Chinese Literature, §§ Philosophy*) an attempt was made by later writers to weave a scheme of thought which should serve to satisfy the cravings of mortals for some definite solution of the puzzle of life. Lao Tzŭ himself had enunciated a criterion which he called *Tao*, or the Way, from which is derived the word Taoism; and in his usual paradoxical style he had asserted that the secret of this Way, which was at the beginning apparently nothing more than a line of right conduct, could not possibly be imparted, even by those who understood it. His disciples, however, of later days proceeded to interpret the term in the sense of the Absolute, the First Cause, and finally as One, in whose obliterating unity all seemingly opposed conditions of time and space were indistinguishably blended. This One, the source of human life, was placed beyond the limits of the visible universe; and for human life to return thither at death and to enjoy immortality, it was only necessary to refine away all corporeal grossness by following the doctrines of Lao Tzŭ. By and by, this One came to be regarded as a fixed point of dazzling luminosity in remote ether, around which circled for ever and ever, in the supremest glory of motion, the souls of those who had left the slough of humanity behind them. These transcendental notions were entirely corrupted at a very early date by the introduction of belief in an elixir of life, and later still by the practice of alchemistic experiments. Opposed by Buddhism, which next laid a claim for a share in the profits of popular patronage, Taoism rapidly underwent a radical transformation. It became a religion, borrowing certain ceremonial, vestments, liturgies, the idea of a hell, arrangement of temples, &c., from its rival; which rival was not slow in returning the compliment. As Chu Hsi said, “Buddhism stole the best features of Taoism; Taoism stole the worst features of Buddhism. It is as though one took a jewel from the other, and the loser recouped the loss with a stone.” At the present day there is not much to choose between the two religions, which flourish peaceably together. As to their temples, priests and ceremonial, it takes an expert to distinguish one from the other.

Buddhism.

There is no trustworthy information as to the exact date at which Buddhism first reached China. It is related that the emperor Ming Ti (A.D. 58-76) had a dream in which a golden man appeared to him, and this mysterious visitant was interpreted by the emperor’s brother to be none other than Shākyamuni Buddha, the far-famed divinity of the West. This shows that Buddhism must then have been known to the Chinese, at any rate by hearsay. The earliest alleged appearance of Buddhism in China dates from 217 B.C., when certain Shamans who came to proselytize were seized and thrown into prison. They escaped through the miraculous intervention of a golden man, who came to them in the middle of the night and opened their prison doors. Hsü Kuan, a writer of the Sung dynasty, quotes in his *Tung Chai Chi* passages to support the view that Buddhism was known in China some centuries before the reign of Ming Ti; among others, the following from the *Sui Shu Ching Chi Chih*: “These Buddhist writings had long been circulated far and wide, but disappeared with the advent of the Ch‘in dynasty,” under which (see § *Chinese Literature, §§ History*) occurred the Burning of the Books. It is, however, convenient to begin with the alleged dream of Ming Ti, as it was only subsequent to that date that Buddhism became a recognized religion of the people. It is certain that in A.D. 65 a mission of eighteen members was despatched to Khotan to make inquiries on the subject, and that in 67 the mission returned, bringing Buddhist writings and images, and accompanied by an Indian priest, Kashiapmadanga, who was followed shortly afterwards by another priest, Gobharana. A temple was built for these two at Lo-yang, then the capital of China, and they settled down to the work of translating portions of the Buddhist scriptures into Chinese; but all that now remains of their work is the Sūtra of Forty-two Sections, translated by Kashiapmadanga. During the next two hundred and fifty years an unbroken line of foreign priests came to China to continue the task of translation, and to assist in spreading the faith. Such work was indeed entirely in their hands, for until the 4th century the Chinese people were prohibited from taking orders as priests; but by that date Buddhism had taken a firm hold upon the masses, and many Chinese priests were attracted towards India, despite the long and dangerous journey, partly to visit the birthplace of the creed and to see with their own eyes the scenes which had so fired their imaginations, and partly in the hope of adding to the store of books

and images already available in China (see § *Chinese Literature, §§ Geography and Travel*). Still, the train of Indian missionaries, moving in the opposite direction, did not cease. In 401, Kumarajiva, the nineteenth of the Western Patriarchs and translator of the Diamond Sūtra, finally took up his residence at the court of the soi-disant emperor, Yao Hsing. In 405 he became State Preceptor and dictated his commentaries on the sacred books of Buddhism to some eight hundred priests, besides composing a *shāstra* on Reality and Semblance. Dying in 417, his body was cremated, as is still usual with priests, but his tongue, which had done such eminent service during life, remained unharmed in the midst of the flames. In the year 520 Bōdhidharma, or Ta-mo, as he is affectionately known to the Chinese, being also called the White Buddha, reached Canton, bringing with him the sacred bowl of the Buddhist Patriarchate, of which he was the last representative in the west and the first to hold office in the east. Summoned to Nanking, he offended the emperor by asserting that real merit lay, not in works, but solely in purity and wisdom combined. He therefore retired to Lo-yang, crossing the swollen waters of the Yangtsze on a reed, a feat which has ever since had a great fascination for Chinese painters and poets. There he spent the rest of his life, teaching that religion was not to be learnt from books, but that man should seek and find the Buddha in his own heart. Thus Buddhism gradually made its way. It had to meet first of all the bitter hostility of the Taoists; and secondly, the fitful patronage and opposition of the court. Several emperors and empresses were infatuated supporters of the faith; one even went so far as to take vows and lead the life of an ascetic, further insisting that to render full obedience to the Buddhist commandment, “Thou shalt not kill,” the sacrificial animals were to be made of dough. Other emperors, instigated by Confucian advisers, went to the opposite extreme of persecution, closed all religious houses, confiscated their property, and forced the priests and nuns to return to the world. From about the 11th century onwards Buddhism has enjoyed comparative immunity from attack or restriction, and it now covers the Chinese empire from end to end. The form under which it appears in China is to some extent of local growth; that is to say, the Chinese have added and subtracted not a little to and from the parent stock. The cleavage which took place under Kanishka, ruler of the Indo-Scythian empire, about the 1st century A.D., divided Buddhism into the Mahāyāna, or Greater Vehicle, and the Hināyāna, as it is somewhat contemptuously styled, or Lesser Vehicle. The latter was the nearer of the two to the Buddhism of Shākyamuni, and exhibits rather the mystic and esoteric sides of the faith. The former, which spread northwards and on to Nepaul, Tibet, China, Mongolia and Japan, leaving southern India, Burma and Siam to its rival, began early to lean towards the deification of Buddha as a personal Saviour. New Buddhas and Bōdhisatvas were added, and new worlds were provided for them to live in; in China, especially, there was an enormous extension of the mythological element. In fact, the Mahāyāna system of Buddhism, inspired, as has been observed, by a progressive spirit, but without contradicting the inner significance of the teachings of Buddha, broadened its scope and assimilated other religio-philosophical beliefs, whenever this could be done to the advantage of those who came within its influence. Such is the form of this religion which prevails in China, of which, however, the Chinese layman understands nothing. He goes to a temple, worships the gods with prostrations, lighted candles, incense, &c., to secure his particular ends at the moment; he may even listen to a service chanted in a foreign tongue and just as incomprehensible to the priests as to himself. He pays his fees and departs, absolutely ignorant of the history or dogmas of the religion to which he looks for salvation in a future state. All such knowledge, and there is now not much of it, is confined to a few of the more cultured priests.

Mardaism.

The 7th century seems to have been notable in the religious history of China. Early in that century, Mazdaism, or the religion of Zoroaster, based upon the worship of fire, was introduced into China, and in 621 the first temple under that denomination was built at Ch‘ang-an in Shensi, then the capital. But the harvest of converts was insignificant; the religion failed to hold its ground, and in the 9th century disappeared altogether.

Mahommedanism.

Mahommedans first settled in China in the Year of the Mission, A.D. 628, under Wahb-Abi-Kabha, a maternal uncle of Mahomet, who was sent with presents to the emperor. Wahb-Abi-Kabha travelled by sea to Canton, and thence overland to Ch‘ang-an, the capital, where he was well received. The first mosque was built at Canton, where after several restorations, it still exists. Another mosque was erected in 742; but many of the Mahommedans went to China merely as traders, and afterwards returned to their own country. The true stock of the present Chinese Mahommedans was a small army of 4000 Arab soldiers sent by the caliph Abu Giafar[14] in 755 to aid in putting down a rebellion. These soldiers had permission to settle in China, where they married native wives; and four centuries later, with the conquests of Jenghiz Khan, large numbers of Arabs penetrated into the empire and swelled the Mahommedan community. Its members are now indistinguishable from the general population; they are under no civic disabilities, and are free to open mosques wherever they please, so long as, in common with Buddhists and Taoists, they exhibit the tablet of the emperor’s sovereignty in some conspicuous position.

In A.D. 631 the Nestorians sent a mission to China and introduced Christianity under the

name of the Luminous Doctrine. In 636 they were allowed to settle at Ch'ang-an; and in 638 an Imperial Decree was issued, stating that Olopun, a Nestorian priest who is casually mentioned as a Persian, had presented a form of religion which his Majesty had carefully examined and had found to be in every way satisfactory, and that it would henceforth be permissible to preach this new doctrine within the boundaries of the empire. Further, the establishment of a monastery was authorized, to be served by twenty-one priests. For more than a century after this, Nestorian Christianity seems to have flourished in China. In 781 the famous Nestorian Tablet, giving a rough outline of the object and scope of the faith, was set up at Ch'ang-an (the modern Si-gan Fu), disappearing soon afterwards in the political troubles which laid the city in ruins, to be brought to light again in 1625 by Father Semedo, S.J. The genuineness of this tablet was for many years in dispute, Voltaire, Renan, and others of lesser fame regarding it as a pious Jesuit fraud; but all doubts on the subject have now been dispelled by the exhaustive monograph of Père Havret, S.J., entitled *La Stèle de Si-ngan*. The date of the tablet seems to mark the zenith of Nestorian Christianity in China; after this date it began to decay. Marco Polo refers to it as existing in the 13th century; but then it fades out of sight, leaving scant traces in Chinese literature of ever having existed.

Nestorianism.

The Manichaeans, worshippers of the Chaldaean Mani or Manēs, who died about A.D. 274, appear to have found their way to China in the year 694. In 719 an envoy from Tokharestan reached Ch'ang-an, bringing a letter to the emperor, in which a request was made that an astronomer who accompanied the mission might be permitted to establish places of worship for persons of the Manichaean faith. Subsequently, a number of such chapels were opened at various centres; but little is known of the history of this religion, which is often confounded by Chinese writers with Mazdeism, the fate of which it seems to have shared, also disappearing about the middle of the 9th century.

Manichaeism.

By "the sect of those who take out the sinew," the Chinese refer to the Jews and their peculiar method of preparing meat in order to make it *kosher*. Wild stories have been told of their arrival in China seven centuries before the Christian era, after one of the numerous upheavals mentioned in the Old Testament; and again, of their having carried the Pentateuch to China shortly after the Babylonish captivity, and having founded a colony in Ho-nan in A.D. 72. The Jews really reached China for the first time in the year A.D. 1163, and were permitted to open a synagogue at the modern K'ai-fêng Fu in 1164. There they seem to have lived peaceably, enjoying the protection of the authorities and making some slight efforts to spread their tenets. There their descendants were found, a dwindling community, by the Jesuit Fathers of the 17th century; and there again they were visited in 1850 by a Protestant mission, which succeeded in obtaining from them Hebrew rolls of parts of the Pentateuch in the square character, with vowel points. After this, it was generally believed that the few remaining stragglers, who seemed to be entirely ignorant of everything connected with their faith, had become merged in the ordinary population. A recent traveller, however, asserts that in 1909 he found at K'ai-fêng Fu a Jewish community, the members of which keep as much as possible to themselves, worshipping in secret, and preserving their ancient ritual and formulary.

Judaism.

See H. Hackmann, *Buddhism as a Religion* (1910); H.A. Giles, *Religions of Ancient China* (1905); G. Smith, *The Jews at K'ae-fung-foo* (1851); Dabry de Thiersant, *Le Mahométisme en Chine* (1878); P. Havret. S.J., *La Stèle chrétienne de Si-ngan-fou* (1895).

(H. A. Gi.)

[Christian missions, both Roman Catholic and Protestant, are established in every province in China. Freedom to embrace the Christian faith has been guaranteed by the Chinese government since 1860, and as a rule the missionaries have free scope in teaching and preaching, though local disturbances are not infrequent. The number of members of the Roman Catholic Church in China was reckoned by the Jesuit fathers at Shanghai to be, in 1907, "about one million"; in the same year the Protestant societies reckoned in all 250,000 church members. By the Chinese, Roman Catholicism is called the "Religion of the Lord of Heaven"; Protestantism the "Religion of Jesus." For the progress and effects of Christianity in China see § *History*, and Missions, § *China*. Ed.]

Christian missions.

Education and the Press.

The educational system of China till nearly the close of the 19th century was confined in its scope to the study of Chinese classics. Elementary instruction was not provided by the state. The well-to-do engaged private tutors for their sons; the poorer boys were taught in small schools on a voluntary basis. No curriculum was compulsory, but the books used and the programme pursued followed a traditional rule. The boys (there were no schools for girls) began by memorizing the classics for four or five years. Then followed letter-writing and easy composition. This completed the education of the vast majority of the boys not intended for the public service. The chief merit of the system was that it developed the memory and the

imitative faculty. For secondary education somewhat better provision was made, practically the only method of attaining eminence in the state being through the schools (see § *Civil Service*). At prefectural cities and provincial capitals colleges were maintained at the public expense, and at these institutions a more or less thorough knowledge of the classics might be obtained. At the public examinations held periodically the exercises proposed were original poems and literary essays. Three degrees were conferred, *Siu-ts'ai* (budding talent), *Chû-jên* (promoted scholar) and *Chin-shih* (entered scholar). The last degree was given to those who passed the final examination at Peking, and the successful candidates were also called metropolitan graduates.

The first education on western lines was given by the Roman Catholic missionaries. In 1852 they founded a college for the education of native priests; they also founded and maintained many primary and some higher schools—mainly if not exclusively for the benefit of their converts. The Protestant missions followed the example of the Roman Catholics, but a new departure, which has had a wide success, was initiated by the American Protestant missionary societies in founding schools—primary and higher—and colleges in which western education was given equally to all comers, Christian or non-Christian. Universities and medical schools have also been established by the missionary societies. They also initiated a movement for the education of girls and opened special schools for their instruction.

Missionary effort apart, the first step towards western education was the establishment of two colleges in 1861, one at Peking, the other at Canton in connexion with the imperial maritime customs. These institutions were known as T'ung Wen Kwan, and were provided with a staff of foreign professors and teachers. These colleges were mainly schools of languages to enable young Chinese to qualify as interpreters in English, French, &c. Similar schools were established at Canton, Fuchow and one or two other places, with but indifferent results. A more promising plan was conceived in 1880, or thereabouts, by the then viceroy of Nanking, who sent a batch of thirty or forty students to America to receive a regular training on the understanding that on their return they would receive official appointments. The promise was not kept. A report was spread that these students were becoming too much Americanized. They were hastily recalled, and when they returned they were left in obscurity. The next step was taken by the viceroy Chang Chih-tung after the Chino-Japanese War of 1894-95. The viceroy wrote a book, *China's Only Hope*, which he circulated throughout the empire, and in which he strongly advocated a reform of the traditional educational system. His scheme was to make Chinese learning the foundation on which a western education should be imparted.[15] The book was one of the factors in the 1898 reform movement, and Chang Chih-tung's proposals were condemned when that movement was suppressed. But after the Boxer rising the Peking government adopted his views, and in 1902 regulations were issued for the reform of the old system of public instruction. A university on western lines was established in that year at Peking, the T'ung Wen Kwan at the capital being incorporated in it. The new educational movement gained enormously in strength as the result of the Russo-Japanese War, and in 1906 a new system, theoretically almost perfect, was established. The new system comprises the study of the Chinese language, literature and composition, modern sciences, history and geography, foreign languages,[16] gymnastics, drill and, in the higher grades, political economy, and civil and international law.

By 1910 primary and secondary government schools and schools for special subjects (such as agriculture and engineering) had been established in considerable numbers. In every province an Imperial University was also established. The Imperial University at Peking now teaches not only languages and Chinese subjects but also law, chemistry, mathematics, &c. A medical school was founded at Peking in 1906 through the energy of British Protestant missionaries, and is called the Union Medical College. When in 1908, the United States, finding that the indemnity for the Boxer outrages awarded her was excessive, agreed to forgo the payment of £2,500,000, China undertook to spend an equal amount in sending students to America.

The general verdict of foreign observers on the working of the new system up to 1910 was that in many instances the teaching was ineffective, but there were notable exceptions. The best teachers, next to Europeans, were foreign or mission-trained Chinese. The Japanese employed as teachers were often ignorant of Chinese and were not as a rule very successful. (See further § *History*.) A remarkable indication of the thirst for western learning and culture was the translation into Chinese and their diffusion throughout the country of numerous foreign standard and other works, including modern fiction.

The *Peking Gazette*, which is sometimes called the oldest paper in the world, is not a newspaper in the ordinary sense, but merely a court gazette for publishing imperial decrees and such public documents as the government may wish to give out. It never contains original articles nor any discussion of public affairs. The first genuine native newspaper was published at Shanghai about 1870. It was termed the *Shen Pao* or *Shanghai News*, and was a Chinese speculation under foreign protection, the first editor being an Englishman. It

Native press. was some years before it made much headway, but success came, and it was followed by various imitators, some published at Shanghai, some at other treaty ports and at Hong-Kong. In 1910 there were over 200 daily, weekly or monthly journals in China. The effect of this mass of literature on the public mind of China is of first-rate importance.

The attitude of the central government towards the native press is somewhat undefined. Official registration of a newspaper is required before postal facilities are given. There are no press laws, but as every official is a law unto himself in these matters, there is nothing to prevent him from summarily suppressing an obnoxious newspaper and putting the editor in prison. The emperor, among other reform edicts which provoked the *coup d'état* of 1898, declared that newspapers were a boon to the public and appointed one of them a government organ. The empress-dowager revoked this decree, and declared that the public discussion of affairs of state in the newspapers was an impertinence, and ought to be suppressed. Nevertheless the newspapers continued to flourish, and their outspoken criticism had a salutary effect on the public and on the government. The official classes seem to have become alarmed at the independent attitude of the newspapers, but instead of a campaign of suppression the method was adopted, about 1908, of bringing the vernacular press under official control. This was accomplished chiefly by the purchase of the newspapers by the mandarins, with the result that at the beginning of 1910 there was said to be hardly an independent native daily newspaper left in China. The use of government funds to subsidize or to purchase newspapers and thus to stifle or mislead public opinion provoked strong protests from members of the Nanking provincial council at its first sitting in the autumn of 1909. The appropriation by the Shanghai Taot'ai of moneys belonging to the Huangpu conservancy fund for subsidizing papers led to his impeachment by a censor and to the return of the moneys.[17]

(X.)

III. Economics

Agriculture and Industry.

China is pre-eminently an agricultural country. The great majority of its inhabitants are cultivators of the soil. The holdings are in general very small, and the methods of farming primitive. Water is abundant and irrigation common over large areas. Stock-raising, except in Sze-ch'uen and Kwang-tung, is only practised to a small extent; there are few large herds of cattle or flocks of sheep, nor are there any large meadows, natural or cultivated. In Sze-ch'uen yaks, sheep and goats are reared in the mountains, and buffaloes and a fine breed of ponies on the plateau. Cattle are extensively reared in the mountainous districts of Kwang-tung. The camel, horse and donkey are reared in Chih-li. Forestry is likewise neglected. While the existing forests, found mainly in high regions in the provinces of Hu-nan, Fu-kien and Kwei-chow, are disappearing and timber has to be imported, few trees are planted. This does not apply to fruit trees, which are grown in great variety, while horticulture is also a favourite pursuit.

The Chinese farmer, if his methods be primitive, is diligent and persevering. In the richer and most thickly populated districts terraces are raised on the mountain sides, and even the tops of lofty hills are cultivated. The nature of the soil and means of irrigation as well as climate are determining factors in the nature of the crops grown; rice and cotton, for example, are grown in the most northern as well as the most southern districts of China. This is, however, exceptional and each climatic region has its characteristic cultures.

Soils. The loess soil (see § *Geology*) is the chief element in determining the agricultural products of north China. Loess soil bears excellent crops, and not merely on the lower grounds, but at altitudes of 6000 and 8000 ft. Wherever loess is found the peasant can live and thrive. Only one thing is essential, and that is the annual rainfall. As, owing to the porous nature of loess, no artificial irrigation is possible, if the rain fails the crops must necessarily fail. Thus seasons of great famine alternate with seasons of great plenty. It appears, also, that the soil needs little or no manuring and very little tillage. From its extremely friable nature it is easily broken up, and thus a less amount of labour is required than in other parts. The extreme porosity of the soil probably also accounts for the length of time it will go on bearing crops without becoming exhausted. The rainfall, penetrating deeply into the soil in the absence of stratification, comes into contact with the moisture retained below, which holds in solution whatever inorganic salts the soil may contain, and thus the vegetation has an indefinite store to draw upon.[18]

There is no one dominant deposit in south China, where red sandstone and limestone formations are frequent. Cultivation here is not possible on the high elevations as in the north, but in the plains and river valleys the soil is exceedingly fertile, while the lower slopes of the mountains are also cultivated. In the north, moreover, but one crop, in general, can be raised in the year. In the centre two and sometimes three crops are raised yearly, and in the south,

especially in the lower basin of the Si-kiang, three crops are normally gathered. In the north, too, the farmer has frequently to contend with drought or with rain or floods; in the central and southern regions the weather is more settled.

Distribution of crops.

In the north of China wheat, barley, millet, buckwheat and maize are the staple crops. Beans and peas are also cultivated. Rice thrives in north-east Kan-suh, in some districts of Shan-si, in the extreme south of Shan-tung and in parts of the Wei-ho plain in Shen-si. Cotton is grown in Shen-si and Shan-tung. In Kan-suh and Shen-si two crops are raised in favoured localities, cereals in spring and cotton or rice in summer. Tobacco and the poppy are also grown in several of the northern provinces. Rhubarb and fruit trees are largely cultivated in the western part of north China.

In the central provinces tea, cotton, rice and ramie fibre are the chief crops. Tea is most largely cultivated in Ngan-hui, Kiang-si, Hu-peh, Hu-nan, Sze-ch‘uen and Yun-nan. Cotton is chiefly grown in Kiang-su, Ngan-hui and Hu-peh. The seed is sown in May and the crops gathered in September. The cotton is known as white and yellow, the white variety being the better and the most cultivated. The poppy is largely cultivated and, in connexion with the silk industry, the mulberry tree. The mulberry is found principally in the provinces of Sze-ch‘uen, Kiang-su and Cheh-kiang. The central provinces are also noted for their gum-lac, varnish and tallow trees.

The crops of the south-eastern provinces are much the same as those of the central provinces, but are predominantly rice, the sugar-cane, ground-nuts and cinnamon. Tea is the chief crop in Fu-kien. The sugar-cane is principally cultivated in Kwang-tung, Fu-kien and Sze-ch‘uen. In the south-western provinces the poppy, tea, tobacco and rice are the chief crops. Wheat, maize and barley are also largely raised.

While rice does not, unlike tea and cotton, form the principal crop of any one province it is more universally cultivated than any other plant and forms an important item in the products of all the central and southern provinces. Regarding China as a whole it forms the staple product and food of the country. Two chief varieties are grown, that suited only to low-lying regions requiring ample water and the red rice cultivated in the uplands. Next to rice the most extensively cultivated plants are tea and cotton, the sugar-cane, poppy and bamboo. Besides the infinite variety of uses to which the wood of the bamboo is applied, its tender shoots and its fruit are articles of diet.

Fruits.

Fruit is extensively cultivated throughout China. In the northern provinces the chief fruits grown are pears, plums, apples, apricots, peaches, medlars, walnuts and chestnuts, and in Kan-suh and Shan-tung the jujube (*q.v.*). Strawberries are an important crop in Kan-suh. In Shan-si, S.W. Chih-li and Shan-tung the vine is cultivated; the grapes of Shan-si are reputed to produce the best wine of China. Oranges are also grown in favoured localities in the north. The chief fruits of the central and southern provinces are the orange, lichi, mango, persimmon, banana, vine and pineapple, but the fruits of the northern regions are also grown. The coco-nut and other palms flourish on the southern coast.

The poppy.

As shown above, the poppy has been grown in almost every district of China. In 1906 it was chiefly cultivated in the following provinces: Yun-nan, Kwei-chow, Sze-ch‘uen, Kan-suh, Shen-si, Shan-si, Shan-tung, Ho-nan, Kiang-su (northern part) and Cheh-kiang. The poppy is first mentioned in Chinese literature in a book written in the first half of the 8th century A.D., and its medicinal qualities are referred to in the *Herbalist’s Treasury* of 973. It was not then nor for centuries later grown in China for the preparation of opium.[19] There is no evidence to show that the Chinese ever took opium in the shape of pills (otherwise than medicinally). The cultivation of the poppy for the manufacture of opium began in China in the 17th century, but it was not until after 1796, when the importation of foreign opium was declared illegal, that the plant was cultivated on an extensive scale. After 1906 large areas which had been devoted to the poppy were given over to other crops, in consequence of the imperial edict aimed at the suppression of opium-smoking (see § *History*).

Mining.—The mineral resources of China are great, but the government has shown a marked repugnance to allow foreigners to work mines, and the mineral wealth has been very inadequately exploited. Mining operations are controlled by the Board of Commerce. In 1907 this board drew up regulations respecting the constitution of mining and other companies. They contained many features against which foreign powers protested.

Coal.

Coal, iron, copper and tin are the principal minerals found in China; there are also extensive deposits of coal and other minerals in Manchuria. In China proper the largest coal measures are found in Shan-si, Hu-nan, Kwei-chow and Sze-ch‘uen. There are also important coalfields in Chih-li, Shan-tung, Shen-si, Ho-nan, Yun-nan, Hu-peh and Kwang-tung—and almost all of the seven other provinces have also coal measures of more or less value. The lack of transport facilities as well as the aversion from the

employment of foreign capital has greatly hindered the development of mining. Numerous small mines have been worked for a long period by the natives in the province of Hu-nan. There are two principal local fields in this province, one lying in the basin of the Lei river and yielding anthracite, and the other in the basin of the Siang river yielding bituminous coal. Both rivers drain into the Yangtsze, and there is thus an easy outlet by water to Hankow. The quality of the coal, however, is inferior, as the stratification has been much disturbed, and the coal-seams have been in consequence crushed and broken. The largest coalfield in China lies in the province of Shan-si. Coal and iron have here been worked by the natives from time immemorial, but owing to the difficulty of transport they have attained only a limited local circulation. The whole of southern Shan-si, extending over 30,000 sq. m., is one vast coalfield, and contains, according to the estimate of Baron von Richthofen, enough coal to last the world at the present rate of consumption for several thousand years. The coal-seams, which are from 20 to 36 ft. in thickness, rest conformably on a substructure of limestone. The stratification is throughout undisturbed and practically horizontal. As the limestone bed is raised some 2000 ft. above the neighbouring plain the coal-seams crop out in all directions. Mining is thus carried on by adits driven into the face of the formation, rendering the mining of the coal extremely easy. The coalfield is divided into two by a mountain range of ancient granitic formation running north-east and south-west, termed the Ho-shan. It is of anterior date to the limestone and coal formations, and has not affected the uniformity of the stratification, but it has this peculiarity, that the coal on the east side is anthracite, and that on the west side is bituminous. A concession to work coal and iron in certain specified districts in this area was granted to a British company, the Peking Syndicate, together with the right to connect the mines by railway with water navigation. The syndicate built a railway in Shan-si from P‘ingyang to Tsi-chow-fu, the centre of a vast coalfield, and connected with the main Peking-Hankow line; lines to serve coal mines have also been built in Hu-nan and other provinces. The earliest in date was that to the K‘aip‘ing collieries in the east of the province of Chih-li, the railway connecting the mines with the seaport of Taku. The coal at K‘aip‘ing is a soft bituminous coal with a large proportion of dust. The output is about 1,500,000 tons per annum. A mine has also been opened in the province of Hu-peh, about 60 m. below Hankow, and near the Yangtsze, in connexion with iron-works.

Iron.

Iron ore of various qualities is found almost as widely diffused as coal. The districts where it is most worked at present lie within the coalfield of Shan-si, viz. at Tsi-chow-fu and P‘ing-ting-chow. The ore is a mixture of clay iron ore and spathic ore, together with limonite and hematite. It is found abundantly in irregular deposits in the Coal Measures, and is easily smelted by the natives in crucibles laid in open furnaces. This region supplies nearly the whole of north China with the iron required for agricultural and domestic use. The out-turn must be very considerable, but no data are available for forming an accurate estimate. The province of Sze-ch‘uen also yields an abundance of iron ores of various kinds. They are worked by the natives in numerous places, but always on a small scale and for local consumption only. The ores occur in the Coal Measures, predominant among them being a clay iron ore. Hu-nan, Fu-kien, Cheh-kiang and Shan-tung all furnish iron ores. Iron (found in conjunction with coal) is worked in Manchuria.

Copper, tin, &c.

Copper is found chiefly in the provinces of Kwei-chow and Yun-nan, where a rich belt of copper-bearing ores runs east and west across both provinces, and including south Sze-ch‘uen. The chief centres of production are at the cities of Tung-ch‘uen-fu, Chow-t‘ung and Ning-yuen. The mines are worked as a government monopoly, private mining being nominally prohibited. The output is considerable, but no statistics are published by government. Rich veins of copper ore are also worked near Kiu-kiang. Tin is mined in Yun-nan, the headquarters of the industry being the city of Meng-tsze, which since 1909 has been connected with Hanoi by railway. This is an important industry, the value of tin exported in 1908 being £600,000. Tin is also mined in Hai-nan and lead in Yun-nan. Antimony ore is exported from Hu-nan; petroleum is found in the upper Yangtsze region. Quicksilver is obtained in Kwei-chow. Salt is obtained from brine wells in Shan-si and Sze-ch‘uen, and by evaporation from sea water. Excellent kaolin abounds in the north-eastern part of Kiang-si, and is largely used in the manufacture of porcelain.

Precious metals.

The Chinese government has opened small gold mines at Hai-nan, in which island silver is also found. A little gold-washing is done in the sandy beds of certain rivers, for instance, the Han river and the upper Yangtsze, above Su-chow (Suifu), which here goes by the name of the “Goldsand” river. The amount so extracted is extremely small and hardly pays the labour of washing, but the existence of gold grains points to a matrix higher up. The whole of south-western China has the reputation of being highly metalliferous. Gold is obtained in some quantities on the upper waters of the Amur river, on the frontier between China and Siberia. The washings are carried on by Chinese. Gold has also been found in quartz veins at P‘ing-tu, in Shan-tung, but hardly in paying quantities. There are silver mines in Yun-nan.

Manufactures.—The principal native manufactures before the competition of western nations made itself felt were—apart from the preparation of tea and other produce for the market—those of porcelain and silk. The silks and gauzes of Su-chow and Nanking in the province of Kiang-su, and those of Hang-chow in Cheh-kiang, are highly esteemed throughout China. Silk-weaving is still carried on solely in native looms and chiefly in the cities named. The greater part of the silk spun is used in China, but a considerable export trade has grown up and 27% of the world's supply of raw silk is from China. The reeling of silk cocoons by steam-machinery is supplanting native methods. There are filatures for winding silk at Shanghai, Canton, Chifu and other cities.

Silk and porcelain.

The most famous porcelain came from the province of Kiang-si, the seat of the industry being the city of King-te-chen. Imperial works were established here about the year A.D. 1000, and the finest porcelain is sent to Peking for the use of the emperor. At one time 1,000,000 work-people were said to be employed, and the kilns numbered 600. The Taiping rebels destroyed the kilns in 1850. Some of them have been rebuilt. "Activity begins to reign anew, but the porcelain turned out is far from equalling in colour and finish that of former times. At the present day King-te-chen has but 160 furnaces and employs 160,000 workmen."[20] The common rice bowls sold throughout China are manufactured here. The value of the export sales is said to be about £500,000 yearly.

The spinning and weaving of cotton on hand-looms is carried on almost universally. Besides that locally manufactured, the whole of the large import of Indian yarn is worked up into cloth by the women of the household. Four-fifths of the clothing of the lower classes is supplied by this domestic industry. Of minor industries Indian ink is manufactured in Ngan-hui and Sze-ch'uen, fans, furniture, lacquer ware and matting in Kwang-tung, dyes in Cheh-kiang and Chih-li, and varnished tiles in Hu-nan. Paper, bricks and earthenware are made in almost all the provinces.

Cotton, &c.

Of industries on a large scale—other than those indicated—the most important are cotton-spinning and weaving mills established by foreign companies at Shanghai. Permission to carry on this industry was refused to foreigners until the right was secured by the Japanese treaty following the war of 1894-95. Some native-owned mills had been working before that date, and were reported to have made large profits. Nine mills, with an aggregate of 400,000 spindles, were working in 1906, five of them under foreign management. There are also four or five mills at one or other of the ports working 80,000 spindles more. These mills are all engaged in the manufacture of yarn for the Chinese market, very little weaving being done. Chinese-grown cotton is used, the staple of which is short; only the coarser counts can be spun.

At certain large centres flour and rice mills have been erected and are superseding native methods of treating wheat and rice; at Canton there are sugar refineries. At Hanyang near Hankow are large iron-works owned by Chinese. They are supplied with ore from the mines at Ta-ye, 60 m. distant, and turn out (1909) about 300 steel rails a day.

Commerce.

The foreign trade of China is conducted through the "treaty ports," *i.e.* sea and river ports and a few inland cities which by the treaty of Nanking (1842) that of Tientsin (1860) and subsequent treaties have been thrown open to foreigners for purposes of trade. (The Nanking treaty recognized five ports only as open to foreigners—Canton,[21] Amoy, Fu-chow, Ning-po and Shanghai.) These places are as follows, treaty ports in Manchuria being included: Amoy, Antung, Canton, Chang-sha, Dairen, Chin-kiang, Chinwantao, Ch'ungk'ing, Chifu, Fu-chow, Funing (Santuao), Hang-chow, Hankow, I-ch'ang, Kang-moon, Kiao-chow, Kiu-kiang, K'iung-chow, Kow-loon, Lappa, Lung-chow, Mengtsze, Mukden, Nanking, Nanning, Ning-po, Niu-chwang, Pakhoi, Sanshui, Shanghai, Shasi, Su-chow, Swatow, Szemao, Tatungkow, Tientsin, Teng-yueh, Wen-chow, Wu-chow, Wuhu, Yo-chow.

The progress of the foreign trade of China is set out in the following table. The values are given both in currency and sterling, but it is to be remarked that during the period when silver was falling, that is, from 1875 to 1893, the silver valuation represents much more accurately variations in the volume of trade than does the gold valuation. Gold prices fell continuously during this period, while silver prices were nearly constant. Since 1893 silver prices have tended to rise, and the gold valuation is then more accurate. The conversion from silver to gold is made at the rate of exchange of the day, and therefore varies from year to year.

Table of Imports and Exports, exclusive of Bullion.

Year.	Imports.		Exports.	
	Value in Taels.	Equivalent in Sterling.	Value in Taels.	Equivalent in Sterling.

1875	66,344,000	£19,903,000	77,308,000	£23,193,000
1885	84,803,000	22,618,000	73,899,000	19,206,000
1890	113,082,000	29,213,000	96,695,000	24,980,000
1895	154,685,000	25,136,000	154,964,000	25,181,000
1898	189,991,000	28,498,000	170,743,000	25,612,000
*1904	344,060,000	49,315,000	239,486,000	34,326,000
*1905	447,100,791	67,065,118	227,888,197	34,183,229

* This marked increase is partly owing to a more complete presentation of statistics; in 1903 an additional number of vessels were placed under the control of the imperial maritime customs.

In 1907 the net imports were valued at £67,664,222 and the exports at £42,961,863. In 1908 China suffered from the general depression in trade. In that year the imports were valued at £52,600,730, the exports at £36,888,050. The distribution of the trade among the various countries of the world is shown in the table which is given below. Hong-Kong is a port for trans-shipment. The imports into China from it come originally from Great Britain, India, Germany, France, America, Australia, the Straits Settlements, &c., and the exports from China to it go ultimately to the same countries.

Imports into China. (000's omitted.)

Imports from	1875.	1880.	1885.	1890.	1895.	1905.	1908.
United Kingdom	£6340	£6382	£6396	£6,357	£5,518	£1,971	£9,647
Hong-Kong	8282	8829	9404	18,615	14,331	22,240	20,033
India	4451	6039	4306	2,661	2,753	5,220	4,066
Other British possessions	396	346	542	571	732	963	. .
United States	304	351	884	949	827	11,538	5,499
Continent of Europe (except Russia)	230	671	671	638	1,227	4,295	†3,332
Russian Empire	. .	. .	. .	231	309	302	422
Japan	746	1021	1404	1,909	2,794	9,197	7,000

Exports from China. (000's omitted.)

Exports to	1875.	1880.	1885.	1890.	1895.	1905.	1908.
United Kingdom	£8749	£8125	£5864	£3383	£1718	£2,710	£1,673
Hong-Kong	3824	4844	4232	8507	5651	12,218	12,281
India	72	323	157	273	449	408	545
Other British possessions	948	874	818	886	586	647	. .
United States	2302	2906	2213	2109	2499	4,055	3,176
Continent of Europe (except Russia)	2524	3760	1948	3004	3440	4,697	†7,128
Russian Empire	1339	1260	1293	2288	2535	1,419	1,123
Japan	586	642	398	1248	2408	5,320	4,949

† Germany, France, Belgium and Italy only.

The chief imports are cotton goods, opium, rice and sugar, metals, oil, coal and coke, woollen goods and raw cotton, and fish. Cotton goods are by far the most important of the imports. They come chiefly from the United Kingdom, which also exports to China woollen manufactures, metals and machinery. China is next to India the greatest consumer of Manchester goods. The export of plain cotton cloths to China and Hong-Kong has for some years averaged 500,000,000 yds. per annum. The only competitor which Great Britain has in this particular branch of trade is the United States of America, which has been supplying China with increasing quantities of cotton goods. The value in sterling of the total imports into China from the United Kingdom long remained nearly constant, but inasmuch as the gold prices were falling the volume of the export was in reality steadily growing. The imports into England, however, of Chinese produce have fallen off, mainly because China tea has been driven out of the English market by the growth of the India and Ceylon tea trade, and also because the bulk of the China silk is now shipped directly to Lyons and other continental ports instead of to London, as formerly was the rule. The growth of the import of Indian yarn into China has been very rapid. In 1884 the import was 35,000,000 ℔ and in 1904 it reached 217,171,066 ℔. The imports into China from all countries for 1908 were as follows:—

Opium	£4,563,000	Coal and coke	1,124,000
Cotton goods	14,786,000	Oil, kerosene	2,666,000

Raw cotton	232,000	Rice	3,543,000
Woollen goods	717,000	Sugar	3,514,000
Metals	2,956,000	Fish, &c.	1,028,000

The principal exports from China are silk and tea. These two articles, indeed, up to 1880 constituted more than 80% of the whole export. Owing, however, mainly to the fall in silver, and partly also to cheap ocean freights, it has become profitable to place on the European market a vast number of miscellaneous articles of Chinese produce which formerly found no place in the returns of trade. The silver prices in China did not change materially with the fall in silver, and Chinese produce was thus able to compete favourably with the produce of other countries. The following table shows the relative condition of the export trade in 1880 and 1908:—

Exports of	1880.	1908.
Silk	£9,750,000	£11,055,000
Tea	11,774,000	4,384,000
Miscellaneous	4,058,000	21,448,000
Total	£25,582,000	£36,888,000

In the miscellaneous class the chief items of exports in 1908 were beans and beancake, £3,142,000; raw cotton, £1,379,000; hides, £1,028,000; straw braid, £1,002,000; furs and skin rugs, £760,000; paper, £458,000; and clothing, £177,000. Sugar, tobacco, mats and matting are also exported. The export of all cereals except pulse is forbidden. Of the tea exported in 1908 the greater part went to Russia and Siberia, the United States and Great Britain. There is a regular export of gold amounting on an average to about a million sterling per annum. A part of it would seem to be the hoardings of the nation brought out by the high price of gold in terms of silver, but a part is virgin gold derived from gold workings in Manchuria on the upper waters of the Amur river.

Customs duty is levied on exports as well as imports, both being assessed at rates based on a nominal 5% ad val.

Shipping and Navigation.—Besides the over-sea trade China has a large coasting and river trade which is largely carried on by British and other foreign vessels. During the year 1908, 207,605 vessels, of 83,991,289 tons (86,600 being steamers of 77,955,525 tons), entered and cleared Chinese ports.[22] Of these 28,445 vessels of 34,405,761 tons were British; 33,539 of 11,998,588 tons, Chinese vessels of foreign type; 103,124 of 4,947,272 tons, Chinese junks; 5496 vessels of 6,585,671 tons, German; 30,708 of 18,055,138 tons, Japanese; 653 of 998,775 tons, American; 3901 of 5,071,689 tons, French; 1033 of 980,635 tons, Norwegian.

Of vessels engaged in the foreign trade only the entrances during the year numbered 38,556 of 12,187,140 tons, and the clearances 36,602 of 12,057,126 tons. The nationality of the vessels (direct foreign trade) was mainly as follows:—

Nationality 1908.	Entrances.		Clearances.	
	No.	Tons.	No.	Tons.
British	4,569	4,678,094	4,614	4,754,087
German	891	1,195,775	928	1,124,872
Norwegian	255	254,211	259	255,295
French	468	629,680	468	616,883
American	136	440,602	131	439,947
Japanese	2,187	2,587,818	2,046	2,461,132
Chinese	29,775	2,001,872	27,888	1,915,258

The tonnage of the Dutch, Austrian and Russian vessels cleared and entered was in each case between 102,000 and 127,000.

Communications.

External communication is carried on by ancient caravan routes crossing Central Asia, by the trans-Siberian railway, which is increasingly used for passenger traffic, but chiefly by steamship, the steamers being almost entirely owned by foreign companies. There is regular and rapid communication with Europe (via the Suez canal route) and with Japan and the Pacific coast of America. Other lines serve the African and the Australasian trade. The only important Chinese-owned steamers are those of the Chinese Merchants' Steam Navigation Company, which has its headquarters at Shanghai.

Internal communications are by river, canal, road and railway, the railways since the beginning of the 20th century having become a very important factor. In 1898 the Chinese

government agreed that all internal waterways should be open to foreign and native steamers, and in 1907 there were on the registers of the river ports for inland water traffic 609 steamers under the Chinese flag and 255 under foreign flags.

Railways.—A short line of railway between Shanghai and Wusung was opened in 1875. The fate of this pioneer railway may be mentioned as an introduction to what follows. The railway was really built without any regular permission from the Chinese government, but it was hoped that, once finished and working, the irregularity would be overlooked in view of the manifest benefit to the people. This might have been accomplished but for an unfortunate accident which happened on the line a few months after it was opened. A Chinaman was run over and killed, and this event, of course, intensified the official opposition, and indeed threatened to bring about a riot. The working of the line was stopped by order of the British minister, and thereupon negotiations were entered into with a view to selling the line to the Chinese government. A bargain was struck sufficiently favourable to the foreign promoters of the line, and it was further agreed that, pending payment of the instalments which were spread over a year, the line should continue to be worked by the company. The expectation was that when the officials once got the line into their own hands, and found it a paying concern, they would continue to run it in their own interest. Not so, however, did things fall out. The very day that the twelve months were up the line was closed; the engines were dismantled, the rails and sleepers were torn up, and the whole concern was shipped off to the distant island of Formosa, where carriages, axles and all the rest of the gear were dumped on the shore and left for the most part to disappear in the mud. The spacious area of the Shanghai station was cleared of its buildings, and thereon was erected a temple to the queen of heaven by way of purifying the sacred soil of China from such abomination. This put a stop for nearly twenty years to all efforts on the part of foreigners to introduce railways into China. The next step in railway construction was taken by the Chinese themselves, and on the initiative of Li Hung-chang. In 1886 a company was formed under official patronage, and it built a short line, to connect the coal-mines of K'aip'ing in Chih-li with the mouth of the Peiho river at Taku. The government next authorized the formation of a Native Merchants' Company, under official control, to build a line from Taku to Tientsin, which was opened to traffic in 1888. It was not, however, till nine years later, viz. in 1897, that the line was completed as far as Peking. A British engineer, Mr Kinder, was responsible for the construction of the railway. Meantime, however, the extension had been continued north-east along the coast as far as Shanhai-Kwan, and a farther extension subsequently connected with the treaty port of Niu-chwang. The money for these extensions was mostly found by the government, and the whole line is now known as the Imperial Northern railway. The length of the line is 600 m. Meanwhile the high officials of the empire had gradually been brought round to the idea that railway development was in itself a good thing. Chang Chih-tung, then viceroy of the Canton provinces, memorialized strongly in this sense, with the condition, however, that the railways should be built with Chinese capital and of Chinese materials. In particular, he urged the making of a line to connect Peking with Hankow for strategic purposes. The government took him at his word, and he was transferred from Canton to Hankow, with authority to proceed forthwith with his railway. True to his purpose, he at once set to work to construct iron-works at Hankow. Smelting furnaces, rolling mills, and all the machinery necessary for turning out steel rails, locomotives, &c., were erected. Several years were wasted over this preliminary work, and over £1,000,000 sterling was spent, only to find that the works after all were a practical failure. Steel rails could be made, but at a cost two or three times what they could be procured for in Europe. After the Japanese War the hope of building railways with Chinese capital was abandoned. A prominent official named Sheng Hsuan-hwai was appointed director-general of railways, and empowered to enter into negotiations with foreign financiers for the purpose of raising loans. It was still hoped that at least the main control would remain in Chinese hands, but the diplomatic pressure of France and Russia caused even that to be given up, and Great Britain insisting on equal privileges for her subjects, the future of railways in China remained in the hands of the various concessionaires. But after the defeat of Russia by Japan (1904-1905) the theory of the undivided Chinese control of railways was resuscitated. The new spirit was exemplified in the contracts for the financing and construction of three railways—the Canton-Kowloon line in 1907, and the Tientsin-Yangtsze and the Shanghai-Hangchow-Ning-po lines in 1908. In the first of these instances the railway was mortgaged as security for the loan raised for its construction, and its finance and working were to be modelled on the arrangements obtaining in the case of the Imperial Northern railway, under which the administration, while vested in the Chinese government, was supervised by a British accountant and chief engineer. In the other two instances, however, no such security was offered; the Chinese government undertook the unfettered administration of the foreign capital invested in the lines, and the Europeans connected with these works became simply Chinese employés. Moreover, in 1908 the Peking-Hankow line was redeemed from Belgian concessionaires, a 5% loan of £5,000,000 being raised for the purpose in London and Paris. In that year there was much popular outcry

The Pioneer Line destroyed.

China's first efforts.

The era of concessions.

against foreign concessionaires being allowed to carry out the terms of their contract, and the British and Chinese corporation in consequence parted with their concession for the Su-chow, Ning-po and Hang-chow railway, making instead a loan of £1,500,000 to the ministry of communications for the provinces through which the line would run. A double difficulty was encountered in the construction and management of the railways; the reconciliation of the privileges accorded to foreign syndicates and governments with the "Recovery of Rights" campaign, and the reconciliation of the claims of the central government at Peking with the demands of the provincial authorities. As to the foreigners, Great Britain, France, Germany, the United States, Russia and Japan, all had claims and concessions, many of them conflicting; while as between Peking and the provinces there was a quarrel mainly concerned with the spoils and "squeezes" to be obtained by railway construction; in some instances the provinces proved more powerful than the central government, as in the case of the Su-chow-Ning-po line, and notably in the matter of the Tientsin-Pukau (Nanking) railway. In that case the provincial authorities overrode the central government, with the result that "for wholesale jobbery, waste and mismanagement the enterprise acquired unenviable notoriety in a land where these things are generally condoned." The good record of one or two lines notwithstanding, the management of the railways under Chinese control had proved, up to 1910, inefficient and corrupt.[23] Nevertheless, so great was the economic development following the opening of the line, that in Chinese hands the Peking-Hankow railway yielded a profit.

Administration.

The main scheme of the railway systems of China is simple. It consists of lines, more or less parallel, running roughly north and south, linked by cross lines with coast ports, or abutting on navigable rivers. One great east and west line will run through central China, from Hankow to Sze-ch'uen. Connexion with Europe is afforded by the Manchuria-trans-Siberia main line, which has a general east and west direction. From Harbin on this railway a branch runs south to Mukden, which since 1908 has become an important railway centre. Thence one line goes due south to Port Arthur; another south-east to An-tung (on the Yalu) and Korea; a third south and west to Tientsin and Peking. A branch from the Mukden-Tientsin line goes round the head of the Gulf of Liao-tung and connects Niu-chwang with the Mukden-Port Arthur line. By this route it is 470 m. from Peking to Niu-chwang.

The Railway systems.

From Peking the trunk line (completed in 1905) runs south through the heart of China to Hankow on the Yangtsze-kiang. This section (754 m. long) is popularly known as "the Lu-Han line," from the first part of the names of the terminal stations. The continuation south of this line from Hankow to Canton was in 1910 under construction. Thus a great north and south connexion nearly 2000 m. long is established from Canton to Harbin. From Mukden southward the line is owned and worked by China.

A railway (German concession) starts from Kiao-chow and runs westward through Shan-tung to Chinan Fu, whence an extension farther west to join the main Lu-Han line at Cheng-ting Fu in Chih-li was undertaken. Westward from Cheng-ting Fu a line financed by the Russo-Chinese Bank runs to T'ai-yuen Fu in Shan-si.

Another main north and south railway parallel to, but east of, the Lu-Han line and following more or less the route of the Grand Canal, is designed to connect Tientsin, Su-chow (in Kiang-su), Chin-kiang, Nanking, Shanghai, Hang-chow and Ning-po. The southern section (Nanking, Shanghai, &c.) was open in 1909. This Tientsin-Ning-po railway connects at Chinan-Fu with the Shan-tung lines.

A third north and south line starts from Kiu-Kiang on the Yangtsze below Hankow and traversing the centre of Kiang-si province will join the Canton-Hankow line at Shao-Chow in Kwang-tung province. The construction of the first section, Kiu-Kiang to Nanchang (76 m.), began in 1910.

In southern China besides the main Canton to Hankow railway (under construction) a line (120 m. long) runs from Canton to Kowloon (opposite Hong-Kong), and there are local lines running inland from Swatow and Fuchow. The French completed in 1909 a trunk line (500 m. long) from Haiphong in Tong King to Yun-nan Fu, the capital of Yun-nan, some 200 m. being in Chinese territory. The French hold concessions for railways in Kwang-si and Kwang-tung. The British government has the right to extend the Burma railway system through Yun-nan and north to the Yangtsze.

There are local lines in Hu-nan and Ho-nan which connect with the trunk line from Canton to Peking. The Peking-Kalgan line (122 m. long) is a distinct undertaking. The Chinese propose to continue it another 530 m. north-westward to Urga in Mongolia, and an eventual junction with the trans-Siberian railway in the neighbourhood of Lake Baikal is contemplated. This line would greatly shorten the distance between Moscow and Peking.

In 1910 there were open for traffic in China (not reckoning the Russian and Japanese systems in Manchuria, *q.v.*) over 3000 m. of railway, and 1500 m. of trunk lines were under

construction.

China is traversed in all directions by roads. Very few are paved of metalled and nearly all are badly kept; speaking generally, the government spends nothing in keeping either the roads or canals in repair. The roads in several instances are subsidiary to the canals and navigable rivers as a means of communication. The ancient trade routes were twelve in number, viz.[24]:—

Roads, rivers, and canals.

1. The West river route (W. from Canton).
2. The Cheling Pass route (N.W. from Canton).
3. The Meiling Pass route (N. from Canton).
4. The Min river route (N.W. from Fu-chow).
5. The Lower Yangtsze route (as far W. as Hu-peh and Hu-nan).
6. The Upper Yangtsze route (from I'chang to Sze-ch'uen).
7. The Kwei-chow route.
8. The Han river route (Hankow to Shen-si).
9. The Grand Canal (already described).
10. The Shan-si route.
11. The Kiakhta route.
12. The Manchurian route.

Of the routes named, that by the West river commands the trade of Kwang-si and penetrates to Yun-nan (where it now has to meet the competition of the French railway from Tong King) and Kwei-chow. The Cheling Pass route from Canton is so named as it crosses that pass (1500 ft. high) to reach the water-ways of Hu-nan at Chen-chow on an affluent of the Siang, and thus connects with the Yangtsze. The trade of this route—whence in former times the teas of Hu-nan (Oonam) and Hu-peh (Oopaek) reached Canton—has been largely diverted via Shanghai and up the Yangtsze. The Canton-Hankow railway also supersedes it for through traffic. The route by the Meiling Pass (1000 ft. High) links Canton and Kiu-kiang. This route is used by the King-te Chen porcelain works to send, to Canton the commoner ware, there to be painted with florid and multicoloured designs. The Min river route serves mainly the province of Fu-kien. The Lower Yangtsze is a river route, now mainly served by steamers (though the salt is still carried by junks), and the Upper Yangtsze is a river route also, but much more difficult of navigation. The Kwei-chow route is up the river Yuen from Changte and the Tung-t'ing lake. The Han river route becomes beyong Sing-nagn Fu a land route over the Tsingling mountains to the capital of Shen-si, and thence on to Kan-suh, Mongolia and Siberia. The Shan-si route from Peking, wholly by road, calls for no detailed account; the Manchurian route is now adequately served by railways. There remains the important Kiakhta route. From Peking it goes to Kalgan (this section is now served by a railway), whence the main route traverses Mongolia, while branches serve Shan-si, Shen-si, Kan-suh, Turkestan, &c. By this route go the caravans bearing tea to Siberia and Russia. Other routes are from Yun-nan to Burma and from Sze-ch'uen province to Tibet.

The government maintains a number of courier roads, which, like the main trade roads, keep approximately to a straight line. These courier roads are sometimes cut in the steep sides of mountains or run through them in tunnels. They are, in the plains, 20 to 25 ft. wide and are occasionally paved. The chief courier roads starting from Peking go to Sze-chu'en, Yun-nan, Kweilin (in Kwang-si), Canton and Fu-chow. Canals are numerous, especially in the deltas of the Yangtsze and Si-kiang.

In the centre and south of China the roads are rarely more than 5 ft. broad and wheeled traffic is seldom possible. Bridges are generally of stone, sometimes of wood; large rivers are crossed by bridges of boats. In the north carts drawn by ponies, mules or oxen are employed; in the centre and south passengers travel in sedan-chairs or in wheelbarrows, or ride on ponies. Occasionally the local authorities employ the corvée system to dig out the bed of a canal, but as a rule roads are left to take care of themselves.

Posts and Telegraphs.—Every important city is now connected by telegraph with the capital, and the service is reasonably efficient. In 1907 there were 25,913 m. of telegraph lines. Connexion is also established with the British lines in Burma and the Russian lines in Siberia. The Great Northern Telegraph Company (Danish) and the Eastern Extension Telegraph Company (British) connect Shanghai by cable with Hong-Kong, Japan, Singapore and Europe. An imperial *postal service* was established in 1896 under the general control of the maritime customs.[25] By an edict of November 1906 the control of the postal services was transferred to the Board of Communication. The Post Office serves all the open ports, and every important

city in the interior. There were in 1910 some 4000 native post-offices, employing 15,000 persons, of whom about 200 only were foreigners. The treaty powers however, still maintain their separate post offices at Shanghai, and several other treaty ports for the despatch and receipt of mails from Europe. During the years 1901-1908 mail matters increased from ten millions to two hundred and fifty-two millions of items; and the 250 tons of parcels handled to 27,155 tons. In postal matters China has adopted a most progressive attitude. The imperial post conforms in all respects to the universal Postal Union regulations.

(G. J.; X.)

IV. Government and Administration

Changes in the traditional form of government in China—an autocracy based on parental rule—were initiated in 1905 when a commission was appointed to study the forms of government in other countries.[26] On the 1st of September 1906 an imperial edict was issued in which the establishment of parliamentary institutions in China was foreshadowed. In 1907 an advisory council—as a sort of stepping-stone to representative government—was established by another edict. On the 27th of August 1908 an edict announced the convocation of a parliament in the ninth year from that date. An edict of the 3rd of December 1908 reaffirmed that of the 27th of August. An edict of the 31st of October 1909 fixed the classes from which an Imperial Assembly (or Senate) was to be selected, and an edict of the 9th of May 1910 gave the names of the senators, all of whom had been nominated by the throne. The assembly as thus constituted consisted of 200 members drawn from eight classes: (1) princes and nobles of the imperial house—16 members; (2) Manchu and Chinese nobles—12 members; (3) princes and nobles of dependencies—14 members; (4) imperial clansmen other than those mentioned—6 members; (5) Peking officials—32 members; (6) eminent scholars—10 members; (7) exceptional property owners—10 members; (8) representatives of provincial assemblies—100 members. The national assembly, which was opened by the regent on the 3rd of October 1910, thus contained the elements of a two-chambered parliament. The edict summoning the assembly contained the following exhortations:—

> The members should understand that this assemblage of the senate is an unprecedented undertaking in China and will be the forerunner of the creation of a parliament. They are earnestly desired to devote to it their patriotism and sincerity, to observe proper order, and to fulfil their duties in representing public opinion. Thus it is hoped that our sincere wish to effect constitutional reforms in their proper order and to aim at success may be duly satisfied.

Concurrently with these steps towards a fundamental alteration in the method of government, changes were made in many departments of the state, and an elective element was introduced into the provincial administrations. The old conception of government with such modifications as had been made up to 1910 are set forth below.

The Chinese conception of government.

The laws of the state prescribe the government of the country to be based on the government of the family.[27] The emperor is the sole and supreme head of the state, his will being absolute alike in the highest affairs and in the humblest details of private life. The highest form of legislation was an imperial decree, whether promulgated in general terms or to meet a special case. In either form it was the law of the land, and no privilege or prescriptive right could be pleaded against it. All officers of state, all judges and magistrates, hold their offices entirely at the imperial pleasure. They can be dismissed, degraded, punished, without reason assigned and without form of trial—even without knowing by whom or of what they are accused. The monarch has an advisory council, but he is not bound by its advice, nor need he pretend that he is acting by and with its advice and concurrence. This condition of affairs dates back to a primitive state of society, which probably existed among the Chinese who first developed a civilized form of government. That this system should have been maintained in China through many centuries is a fact into the causes of which it is worth while to inquire. We find it pictured in the records which make up the *Book of History*, and we find it enforced in the writings of the great apostle of patriarchal institutions, Confucius, and in all the other works which go to make up the Confucian Canon. The reverence with which these scriptures are viewed was the principal means of perpetuating the primitive form of Chinese imperialism. The contents of their pages formed the study of every schoolboy, and supplied the themes at the competitive examinations through which every one had to pass who sought an official career. Thus the mind of the nation was constantly and almost exclusively turned towards them, and their dogmas became part and parcel of the national training. The whole theory of government is the embodiment of parental love and filial piety. As the people are the children of the emperor, so is he the *T'ien-tsze* or the Son of Heaven.

The emperor.

In practice the arbitrary power of the emperor is tempered in several ways. Firstly, although the constitution conferred this absolute and unchecked power on the emperor, it was not for his gratification but that he might exercise it for the good of his people. He rules by divine authority, and as the vicegerent of heaven upon earth. If he

rules corruptly or unjustly, heaven will send disasters and calamity on the people as a reproof; if the rule becomes tyrannical, heaven may withdraw its favour entirely, and then rebellion may be justified. The Manchu dynasty came to the throne as foreign conquerors, nevertheless they base their right to rule, not on the power of the sword, but on divine approval. On this moral ground they claim the obedience of their subjects, and submit themselves to the corresponding obligations. The emperor, unless he has gained the throne by conquest, is selected by his predecessor or by the imperial family in conclave. He is usually a son (but seldom the eldest son) of his predecessor, and need not be the child of the empress-consort,[28] though (other things being equal) a son of the empress is preferred. Failing a son another prince of the imperial house is chosen, the choice being properly among the princes of a generation below that of the preceding emperor, so that the new emperor may be adopted as the son of his predecessor, and perform for him the due ceremonies at the ancestral tablets. Apart from this ancestor-worship the emperor worships only at the Altar of Heaven, leaving Buddhism, Taoism, and any other form of worship to his subjects. The emperor's sacrifices and prayers to heaven are conducted with great parade and ceremony. The chief of these state observances is the sacrifice at the winter solstice, which is performed before sunrise on the morning of the 21st of December at the Temple of Heaven. The form of the altar is peculiar.

"It consists of a triple circular terrace, 210 ft. wide at the base, 150 in the middle, and 90 at the top.... The emperor, with his immediate suite, kneels in front of the tablet of Shang-ti (The Supreme Being, or Heaven), and faces the north. The platform is laid with marble stones, forming nine concentric circles; the inner circle consists of nine stones, cut so as to fit with close edges round the central stone, which is a perfect circle. Here the emperor kneels, and is surrounded first by the circles of the terraces and their enclosing walls, and then by the circle of the horizon. He then seems to himself and to his court to be in the centre of the universe, and turning to the north, assuming the attitude of a subject, he acknowledges in prayer and by his position that he is inferior to heaven, and to heaven alone. Round him on the pavement are the nine circles of as many heavens, consisting of nine stones, then eighteen, then twenty-seven, and so on in successive multiples of nine till the square of nine, the favourite number of Chinese philosophy, is reached in the outermost circle of eighty-one stones."

On this occasion, also, a bullock of two years old, and without blemish, is offered as a whole burnt-offering in a green porcelain furnace which stands close beside the altar. The emperor's life is largely occupied with ceremonial observances, and custom ordains that except on state occasions he should not leave the walls of the palace.

For his knowledge of public affairs the emperor is thus largely dependent upon such information as courtiers and high officers of state permit to reach him.[29] The palace eunuchs have often exercised great power, though their influence has been less under the Manchus than was the case during previous dynasties. Though in theory the throne commands the services and money of all its subjects yet the crown as such has no revenues peculiarly its own. It is dependent on contributions levied through the high officials on the several provinces, subject always to the will of the people, and without their concurrence and co-operation nothing can be done.[30] The power of the purse and the power of the sword are thus exercised mediately, and the autocratic power is in practice transferred to the general body of high functionaries, or to that clique which for the time being has the ear of the emperor, and is united enough and powerful enough to impose its will on the others.

China governed by its civil service.

The functionaries who thus really wield the supreme power are almost without exception civil officials. Naturally the court has shown an inclination to choose Manchu rather than Chinese, but of late years this preference has become less marked, and in the imperial appointments to provincial administrations the proportion of Manchus chosen was at the beginning of the 20th century not more than one-fifth of the whole number. The real reason for this change is the marked superiority of the Chinese, in whose hands the administration is stated to be safer for the Manchu dynasty. Practically all the high Chinese officials have risen through the junior ranks of the civil service, and obtained their high position as the reward—so it must be presumed—of long and distinguished public service.

Functions of the central government.

Through the weakness of some of the emperors the functions of the central government gradually came to be to check the action of the provincial governments rather than assume a direct initiative in the conduct of affairs. "The central government may be said to criticize rather than to control the action of the provincial administrations, wielding, however, at all times the power of immediate removal from his post of any official whose conduct may be found irregular or considered dangerous to the stability of the state."[31] This was written in 1877, and since then the pressure of foreign nations has compelled the central government to assume greater responsibilities, and the empire is now ruled from Peking in a much more effective manner than was the case when Lord Napier in 1834 could find no representative of the central government with whom to transact business.

If the central authorities take the initiative, and issue orders to the provincial authorities, it, however, does not follow that they will be carried out. The orders, if unwelcome, are not directly disobeyed, but rather ignored, or specious pleas are put forward, showing the difficulty or impossibility of carrying them out at that particular juncture. The central government always wields the power of removing or degrading a recalcitrant governor, and no case has been known where such an order was not promptly obeyed. But the central government, being composed of officials, stand by their order, and are extremely reluctant to issue such a command, especially at the bidding of a foreign power. Generally the opinion of the governors and viceroys has great weight with the central government.

Departments of the central administration.

Under the Ming dynasty the *Nuiko* or Grand Secretariat formed the supreme council of the empire. It is now of more honorific than actual importance. Active membership is limited to six persons, namely, four grand secretaries and two assistant grand secretaries, half of whom, according to a general rule formerly applicable to nearly all the high offices in Peking, must be Manchu and half Chinese. It constitutes the imperial chancery or court of archives, and admission to its ranks confers the highest distinction attainable by Chinese officials, though with functions that are almost purely nominal. Members of the grand secretariat are distinguished by the honorary title of *Chung-t'ang.* The most distinguished viceroys are usually advanced to the dignity of grand secretary while continuing to occupy their posts in the provinces. The best known of recent grand secretaries was Li Hung-chang.

Under the Manchu dynasty the Grand Council (*Chün Chi Ch'u*) became the actual privy council of the sovereign, in whose presence its members daily transacted the business of the state. This council is composed of a small knot of men holding various high offices in the government boards at Peking. The literal meaning of Chün Chi Ch'u is "place of plans for the army," and the institution derives its name from the practice established by the early emperors of the Manchu dynasty of treating public affairs on the footing of a military council. The usual time of transacting business is from 4 to 6 a.m. In addition to the grand council and the grand secretariat there were boards to supervise particular departments. By a decree of the 6th of November 1906 the central administration was remodelled, subsequent decrees making other changes. The administration in 1910 was carried on by the following agencies:—

A. *Councils.*—(1)The grand council. Its title was modified in 1906 and it is now known as the Grand Council of State Affairs or Privy Council. It has no special function, but deals with all matters of general administration and is presided over by the emperor (or regent). (2) The Grand Secretariat. This body gained no increase of power in 1906. (3) The advisory council or senate (*Tu Chêng Yuen*) created in 1907 and containing representatives of each province. It includes all members of the grand council and the grand secretariat and the heads of all the executive departments.[32] The members of these three bodies form advisory cabinets to the emperor.

B. *Boards.*—Besides boards concerned with the affairs of the court there were, before the pressure of foreign nations and the movement for reform caused changes to be made, six boards charged with the conduct of public affairs. They were: (1) *Li Pu*, the Board of Civil Appointments, controlling all appointments in the civil service from the rank of district magistrate upwards. (2) *Hu Pu*, the Board of Revenue, dealing with all revenues which reached the central government. (3) *Li Pu*, the Board of Ceremonies. (4) *Ping Pu*, the Board of War. It controlled the provincial forces. The Manchu forces were an independent organization attached to the palace. (5) *Hsing Pu*, the Board of Punishments. It dealt with the criminal law only, especially the punishment of officials guilty of malpractices. (6) *Kung Pu*, the Board of Works. Its work was limited to the control of the construction and repair of official residences.

As rearranged and enlarged there are now the following boards, given in order of precedence:—

1. *Wai-wu Pu.*—This was established in 1901 in succession to the *Tsung-li Yamên*,[33] which was created in 1861 after the Anglo-Chinese War in 1860 as a board for foreign affairs. Previous to that war, which established the right of foreign powers to have their representatives in Peking, all business with Western nations was transacted by provincial authorities, chiefly the viceroy at Canton. The only department at Peking which dealt specially with foreign affairs was the *Li Fan Yuen*, or board of control for the dependencies, which regulated the affairs of Mongolia, Tibet and the tributary states generally. With the advent of formally accredited ambassadors from the European powers something more than this was required, and a special board was appointed to discuss all questions with the foreign envoys. The number was originally four, with Prince Kung, a brother of the emperor Hien Fêng, at their head. It was subsequently raised to ten, another prince of the blood, Prince Ching, becoming president. The members were spoken of collectively as the prince and ministers. For a long time the board had no real power, and was looked on rather as a buffer between the foreign envoys and the real government. The importance of foreign affairs, however, especially since the Japanese War, identified the *Yamên* more with the grand council, several

of the most prominent men being members of both. At the same time that the *Tsung-li Yamên* was created, two important offices were established in the provinces for dealing with foreign commercial questions, viz. the superintendencies of trade for the northern and southern ports. The negotiations connected with the Boxer outbreak proved so conclusively that the machinery to the *Tsung-li Yamên* was of too antiquated a nature to serve the new requirements, that it was determined to abolish the *Yamên* and to substitute for it a board (*Pu*) to be styled the *Wai-wu Pu*, or "board of foreign affairs."

2. Board of Civil Appointments.

3. Board of Home Affairs.

4. Board of Finance and Paymaster General's Department.

5. Board of Ceremonies.

6. Army Board or Ministry of War (instituted 1906).[34]

7. Board of Judicature.

8. Board of Agriculture, Works and Commerce (instituted 1903).

9. Board of dependencies.

10. Board of Education (instituted 1903).

11. Board of Communications (instituted 1906).

Each board has one president and two vice-presidents, with the exception of the Wai-wu Pu, which has a comptroller-general and two presidents, and the Boards of War and Education, each of which has a comptroller-general in addition to the president. According to the decree of 1906 no distinction, in filling up the various boards, is to be made between Manchu and Chinese.

Besides the boards named there are other departments of state, some of them not limited to any one branch of the public service. The more important are those that follow:—

The Censorate (*Tu Ch'a Yuen*).—An institution peculiar to China. The constitution provides a paid body of men whose duty it is to inform the emperor of all facts affecting the welfare of the people and the conduct of government, and in particular to keep an eye on the malfeasance of his officers. These men are termed *Yü shih* (imperial recorder), generally translated censors. Their office has existed since the 3rd century B.C. The body consists of two presidents, a Chinese and a Manchu, 24 supervising censors attached to the ministries at Peking, and 56 censors, divided into fifteen divisions, each division taking a particular province or area, so as to embrace the whole eighteen provinces, besides one metropolitan division. The censors are privileged to animadvert on the conduct even of the emperor himself; to censure the manner in which all other officials perform or neglect their duties and to denounce them to the throne. They receive appeals made to the emperor, either by the people against the officials or by subordinate officials against their superiors. They exercise, in accord with the Board of Justice, an oversight over all criminal cases and give their opinion whenever the death penalty is to be pronounced. They superintend the working of the different boards and are sometimes sent to various places as imperial inspectors, hence they are called *êrh mu kuan* (the eyes and ears of the emperor). The censors exercise their office at times with great boldness;[35] their advice if unpalatable may be disregarded and the censor in question degraded. The system of the censorate lends itself to espionage and to bribery, and it is said to be more powerful for mischief than for good. With the growth in influence of the native press the institution appears to lose its *raison d'être*.

The grand court of revision (*Ta-li sze*) or Court of Cassation exercises, in conjunction with the Board of Justice and the Censorate, a general supervision over the administration of the criminal law. These bodies are styled collectively *San-fah sze* (the Three High Justices).

The Hanlin College (*Hanlin Yuen*, literally Forest of Pencils) is composed of all the literate who have passed the palace examination and obtained the title of *Hanlin* or imperial academist. It has two chancellors—a Manchu and a Chinese. Its functions are of a purely literary character and it is of importance chiefly because the heads of the college, who are presumably the most eminent scholars of the empire, have the right of advising the throne on all public affairs, and are eligible as members of the grand council or of the Wai-wu Pu. The Chinese set fire to it during the fighting in Peking in June 1900 in the hope of burning out the adjoining British legation. The whole of the library, containing some of the most valuable manuscripts in the world, was destroyed.

Each of the eighteen provinces of China proper, the three provinces of Manchuria and the province of Sin-kiang are ruled by a viceroy placed over one, two and in one instance three provinces, or by a governor over a single province either under a viceroy or depending directly on the central government, the viceroy or the governor

Provincial

government. being held responsible to the emperor for the entire administration, political, judicial, military and fiscal. The most important viceroyalties are those of Chih-li, Liang-kiang and Liang-kwang. The viceroyalty of Liang-kiang comprises the provinces of Kiang-su, Ngan-hui and Kiang-si. The viceroy resides at Nanking and hence is sometimes called the viceroy of Nanking. Similarly the viceroy of Liang-kwang (comprising the provinces of Kwang-tung and Kwang-si) through having his residence at Canton is sometimes styled the viceroy of Canton. The three provinces adjoining the metropolitan province of Chih-li—Shan-tung, Shan-si and Ho-nan—have no viceroys over them; seven provinces—including Chih-li—have no governors, the viceroy officiating as governor. In provinces where there are both a viceroy and a governor they act conjointly, but special departments are administered by the one rather than the other. The viceroy controls the military and the salt tax; the governor the civil service generally.

The viceroy or governor is assisted by various other high officials, all of whom down to the district magistrate are nominated from Peking. The chief officials are the treasurer, the judicial commissioner or provincial judge, and the commissioner of education (this last post being created in 1903). The treasurer controls the finances of the whole province, receiving the taxes and paying the salaries of the officials. The judge, the salt commissioner, and the grain collector are the only other officials whose authority extends over the whole province. Each province is subdivided into prefectures ruled by prefects, and each prefecture into districts ruled by a district magistrate, *Chih-hsien*, the official through whom the people in general receive the orders of the government. Two or more prefectures are united into a *tao* or circuit, the official at the head of which is called a *Taot'ai*. Each town and village has also its unofficial governing body of "gentry."[36] The officials appointed from Peking hold office for three years, but they may be re-appointed once, and in the case of powerful viceroys they may hold office for a prolonged period. Another rule is that no official is ever appointed to a post in the province of his birth; a rule which, however, did not apply to Manchuria. The Peking authorities take care also in making the high appointments to send men of different political parties to posts in the same province.

The edict of the 6th of November 1906 initiating changes in the central administration was accompanied by another edict outlining changes in the provincial government, and an edict of the 22nd of July 1908 ordered the election of provincial assemblies. The edict made it clear that the functions of the assemblies were to be purely consultative. The elections took place according to the regulations, the number of members allotted to each province varying from 30 (Kirin province, Manchuria, and two others) to 140 in Chih-li. The franchise was restricted, but the returns for the first elections showed nearly 1000 voters for each representative. The first meetings of the assemblies were held in October 1909.

The Civil Service.—The bureaucratic element is a vital feature in the government of China, the holding of office being almost the only road to distinction. Officials are by the Chinese called collectively *Kwan* (rulers or magistrates) but are known to foreigners as mandarins (*q.v.*). The mandarins are divided into nine degrees, distinguished by the buttons worn on the top of their caps. These are as follows:—first and highest, a plain red button; second, a flowered red button; third, a transparent blue button; fourth, an opaque blue button; fifth, an uncoloured glass button; sixth, an opaque white shell button; seventh, a plain gilt button; eighth, a gilt button with flowers in relief; ninth, a gilt button with engraved flowers. The buttons indicate simply rank, not office. The peacock feathers worn in their hats are an order granted as reward of merit, and indicate neither rank nor office. The Yellow Jacket similarly is a decoration, the most important in China.

The ranks of the civil service are recruited by means of examinations. Up to the beginning of 1906 the subjects in which candidates were examined were purely Chinese and literary with a smattering of history. In 1906 this system was modified and an official career was opened to candidates who had obtained honours in an examination in western subjects (see § *Education*). The old system is so closely identified with the life of China that some space must be devoted to a description of it.

As a general rule students preparing for the public examination read with private tutors. There were neither high schools nor universities where a regular training could be got. In most of the provincial capitals, and at some other places, there were indeed institutions termed colleges, supported to some extent from public funds, where advanced students could prosecute their studies; but before the movement initiated by the viceroy Chang Chih-tung after the China-Japan War of 1894, they hardly counted as factors in the national education. The private tutors, on the other hand, were plentiful and cheap. After a series of preliminary trials the student obtained his first qualification by examination held before the literary chancellor in the prefecture to which he belonged. This was termed the *Siuts'ai*, or licentiate's degree, and was merely a qualification to enter for the higher examinations. The number of licentiate degrees to be given was, however, strictly limited; those who failed to get in were set back to try again, which they might do as often as they pleased. There was no limit of age.

Those selected next proceeded to the great examination held at the capital of each province, once in three years, before examiners sent from Peking for the purpose. Here again the number who passed was strictly limited. Out of 10,000 or 12,000 competitors only some 300 or 350 could obtain degrees. The others, as before, must go back and try again. This degree, termed *Chü jên*, or provincial graduate, was the first substantial reward of the student's ambition, and of itself qualified for the public service, though it did not immediately nor necessarily lead to active employment. The third and final examination took place at Peking, and was open to provincial graduates from all parts of the empire. Out of 6000 competitors entering for this final test, which was held triennially, some 325 to 350 succeeded in obtaining the degree of *Chin shih*, or metropolitan graduate. These were the finally selected men who became the officials of the empire.

Several other doors were, however, open by which admission to the ranks of bureaucracy could be obtained. In the first place, to encourage scholars to persevere, a certain number of those who failed to reach the *chü jên*, or second degree, were allowed, as a reward of repeated efforts, to get into a special class from which selection for office might be made. Further, the government reserved to itself the right to nominate the sons and grandsons of distinguished deceased public servants without examination. And, lastly, by a system of "recommendation," young men from favoured institutions or men who had served as clerks in the boards, might be put on the roster for substantive appointment. The necessities of the Chinese government also from time to time compelled it to throw open a still wider door of entry into the civil service, namely, admission by purchase. During the T'aip'ing rebellion, when the government was at its wits' end for money, formal sanction was given to what had previously been only intermittently resorted to, and since then immense sums of money have been received by the sale of patents of rank, to secure either admission to office or more rapid promotion of those already employed. As a result of this policy, the country has been saddled with thousands of titular officials far in excess of the number of appointments to be given away. Deserving men were kept waiting for years, while inferior and less capable officials were pushed ahead, because they had money wherewith to bribe their way. Nevertheless the purchase system admitted into the service a number of men free from that bigoted adherence to Confucian doctrine which characterizes the literary classes, and more in touch with modern progress.

All candidates who succeed in entering the official ranks are eligible for active employment, but as the number of candidates is far in excess of the number of appointments a period of weary waiting ensues. A few of the best scholars get admitted at once into the Hanlin college or into one or other of the boards at Peking. The rest are drafted off in batches to the various provinces to await their turn for appointment as vacancies occur. During this period of waiting they are termed "expectants" and draw no regular pay. Occasional service, however, falls in their way, as when they are commissioned for special duty in outlying districts, which they perform as *Wei yuens*, or deputies of the regular officials. The period of expectancy may be abridged by recommendation or purchase, and it is generally supposed that this last lever must invariably be resorted to to secure any lucrative local appointment. A poor but promising official is often, it is said, financed by a syndicate of relations and friends, who look to recoup themselves out of the customary perquisites which attach to the post. Appointments to the junior provincial posts are usually left to the provincial government, but the central government can always interfere directly. Appointments to the lucrative posts of customs, *taot'ai*, at the treaty ports are usually made direct from Peking, and the officer selected is neither necessarily nor usually from the provincial staff. It would perhaps be safe to say that this appointment has hitherto always been the result of a pecuniary arrangement of greater or less magnitude.

During the first five years (1906-1910) of the new method, by which candidates for the civil service were required, in addition to Chinese classics, to have a knowledge of western science, great efforts were made in several provinces to train up a better class of public official. The old system of administration had many theoretical excellencies, and there had been notable instances of upright administration, but the regulation which forbade a mandarin to hold any office for more than three years made it the selfish interest of every office-holder to get as much out of the people within his jurisdiction as he possibly could in that time. This corruption in high places had a thoroughly demoralizing effect. While among the better commercial classes Chinese probity in business relations with foreigners is proverbial, the people generally set little or no value upon truth, and this has led to the use of torture in their courts of justice; for it is argued that where the value of an oath is not understood, some other means must be resorted to to extract evidence.

Bribery and torture.

Justice.—The *Chih-Hsien* or district magistrate decides ordinary police cases; he is also coroner and sheriff, he hears suits for divorce and breach of promise, and is a court of first instance in all civil cases; "the penalty for taking a case first to a higher court is fifty blows with the bamboo on the naked thigh."[37] Appeal from the *Hsien* court lies to the *Fu*, or

prefectural court, and thence cases may be taken to the provincial judge, who signs death warrants, while there are final courts of appeal at Peking. Civil cases are usually settled by trade gilds in towns and by village elders, or by arbitration in rural districts. Reference has been made to the use of torture. Flogging is the only form of torture which has been allowed under the Manchus. The obdurate witness is laid on his face, and the executioner delivers his blows on the upper part of the thighs with the concave side of a split bamboo, the sharp edges of which mutilate the sufferer terribly. The punishment is continued until the man either supplies the evidence required or becomes insensible. Punishment by bamboo was formally abolished by imperial edict in 1905, and other judicial reforms were instituted. They remained largely inoperative, and even in Shanghai, under the eyes of foreign residents, gross cases of the infliction of torture occurred in 1909.[38]

For capital offences the usual modes of inflicting the extreme penalty of the law are—in bad cases, such as parricides, "cutting to pieces," and for less aggravated crimes either strangulation or decapitation. The culprit who is condemned to be "cut to pieces" is fastened to a cross, and while thus suspended cuts are made by the executioner on the fleshy parts of the body; and he is then beheaded. Strangulation is reserved for lesser degrees of guilt, it being considered a privilege to pass out of life with a whole body. When it has been granted to a criminal of rank thus to meet his end, a silken cord is sent to him at his own home. No explanatory message is considered necessary, and he is left to consummate his own doom. Popular sentiment regards decapitation as a peculiarly disgraceful mode of death. Constant practice makes the executioners wonderfully expert in the performance of their office. No block or resting-place for the head is used. The neck is simply outstretched to its full length by the aid of an assistant, and one blow invariably leaves the body headless.

The laws are in accord with the principle which regards the family as a unit. Thus there is no bankruptcy law—if a debtor's own estate will not suffice to pay his debts the deficiency must be made good by his relatives; if a debtor absconds his immediate family are imprisoned. By analogy if one member of a party commits an offence and the guilty person cannot be detected, the whole party must suffer. Foreigners residing in China resented the application of this principle of law to themselves. As a result extra-territorial rights were sought by European powers. They were secured by Russia as early as 1689, but it was not until 1843 that any other nation acquired them. In that year Great Britain obtained the right to try British subjects by its own consuls, a right secured in more explicit terms by the United States and France in 1844. Now eighteen powers, including Japan, have consular courts for the trial of their own subjects according to the laws of their native lands. Mixed courts have also been established, that is, a defendant is tried in the court of his own nationality, the court giving its decision under the supervision of a representative of the plaintiff's nationality. In practice the Chinese have seldom sent representatives to sit on the bench of consular courts, but, as the Europeans lack confidence in the administration of Chinese justice, no suit brought by a foreigner against a Chinese is decided without the presence of an assessor of the plaintiff's nationality.

Consular jurisdiction.

Defence.—The Chinese constitution in the period before the reform edicts of 1905-1906 provided for two independent sets of military organizations—namely, the Manchu army and the several provincial armies. On the establishment of the dynasty in 1644 the victorious troops, composed mainly of Manchus, but including also Mongols and Chinese, were permanently quartered in Peking, and constituted a hereditary national army. The force was divided into eight banners, and under one or other of these all Manchus and all the descendants of the members of other nationalities were enrolled. They form the bulk of the population of the "Tatar city" of Peking. Each adult male was by birth entitled to be enrolled as a soldier, and by virtue of his enrolment had a right to draw rations—*i.e.* his allowance of the tribute rice, whether on active service or not. Detachments from one or other of the banners were stationed as garrisons in the chief provincial centres, as at Canton, Fuchow and Hang-chow, &c., and their descendants still occupy the same position. As a fighting force the Manchu garrisons both in the capital and in the provinces had long become quite effete. In the capital, however, the *élite* of the Manchu soldiery were formed into a special corps termed the Peking Field Force. Its nominal strength was 20,000, the men were armed and drilled after the European fashion, and fairly well paid. There were other corps of picked Manchus better paid and better armed than the ordinary soldier, and it was computed that in 1901 the Manchu army in or near Peking could muster 40,000, all more or less efficient.

Army.

The second organization was termed the army of the Green Standard, being the Chinese provincial forces. The nominal strength was from 20,000 to 30,000 for each province, or about 500,000 in all; the actual strength was about one-third of this. They were enrolled to keep the peace within their own province, and resembled a militia or local constabulary rather than a national army. They were generally poorly paid and equally badly drilled and armed.

The only real fighting force which China possessed at the beginning of the 20th century was made up of certain special corps which were not provided for in the constitution, and

consequently used to be termed *yung*, "braves," or irregulars, but had acquired various distinctive names. They were enlisted by provincial governors, and all had some smattering of foreign drill. They were also fairly well paid and armed. After the Chino-Japanese War of 1894-95 some of these corps were quartered near Peking and Tientsin, and came generally to be spoken of as the Army of the North.

An imperial decree issued in 1901 after the Boxer rising ordered the reorganization of the military forces of the empire, and on provincial lines something was accomplished—especially in Chih-li under Yuan Shih-k'ai, who practically created "the Army of the North." It was not, however, until after the Russo-Japanese War that determined efforts were made to organize a national army on western lines; an army which should be responsible to the central government and not dependent upon the provincial administrations. A decree of 1905 provided (on paper) for training schools for officers in each of the provinces, middle grade military schools in selected provinces, and a training college and military high school in Peking. The Army Board was reorganized and steps taken to form a general staff. Considerable progress had been made by 1910 in the evolution of a body of efficient officers. In practice the administration remained largely provincial—for instance the armament of the troops was provided by the provincial governors and was far from uniform. The scheme[39] contemplated the creation of a force about 400,000 strong in 36 divisions and in two armies, the northern and the southern. Recruitment is on the voluntary principle, except in the case of the Manchus, who apparently enter the new army instead of the "eight banners." The terms of service are three years with the colours, three in the reserve and four in the territorial army. The Japanese system of training is followed. Reservists are called out for 30 days every year and the territorialists for 30 days every other year.

Up to 1909 six divisions and one mixed brigade of the northern army had been organized in Shan-tung, Chih-li and Ho-nan; elsewhere three divisions and six mixed brigades; total strength about 60,000 with 350 guns. (These figures do not include all the provincial foreign trained troops.) The efficiency of the troops varied; the northern army was superior to the others in training and armament. About a third of the 60,000 men of the new army were in 1909 stationed in Manchuria (See also § *History*.)

An imperial edict of the 15th of September 1907 reorganized the army of the Green Standard. It was placed under the control of the minister of war and formed in battalions and squadrons. The duty of the troops in peace time remained much as previously. In war they pass under the control of regular officers, though their use outside their own provinces does not seem to be contemplated.

Navy.

The Chinese navy in 1909 consisted of the 4300 ton cruiser "Hai Chi" (two 8-in., ten 4.7-in. guns) of 24 knot original speed, three 3000 ton cruisers, "Hai Yung," "Hai Schew" and "Hai Shen" (three 6-in., eight 4-in. guns) of 19.5 knot original speed, some modern gunboats built in Japan, a few miscellaneous vessels and some old torpedo boats. With the destruction of the northern fleet by the Japanese at the capture of Wei-hai-wei in 1895, the Chinese navy may be said to have ceased to exist. Previously it consisted of two divisions, the northern and southern, of which the former was by far the more formidable. The southern was under the control of the viceroy of Nanking, and took no part in the Chino-Japanese War. While the northern fleet was grappling in a death-struggle, the southern was lying snugly in the Yangtsze waters, the viceroy of Nanking apparently thinking that as the Japanese had not attacked him there was no reason why he should risk his ships.

The New Scheme.—An edict of the 15th of July 1909 created a naval and military advisory board. Nimrod Sound, centrally situated on the coast of Cheh-kiang, was chosen as naval base, and four naval schools were ordered to be established; a navigation school at Chifu, an engineering school at Whampoa, a school for naval artificers at Fuchow, and a gunnery and musketry school at Nimrod Sound. A superior naval college was founded at Peking. The coast defences were placed under the control of the naval department, and the reorganization of the dockyards undertaken. During 1910 orders for cruisers were placed abroad.

Arsenals and Dockyards.—After the loss of Port Arthur, China possessed no dockyard which could dock vessels over 3000 tons. Many years ago the Chinese government established at Fuchow a shipbuilding yard, placing it in the hands of French engineers. Training schools both for languages and practical navigation were at the same time organized, and a training ship was procured and put under the command of a British naval officer. Some twenty-five or thirty small vessels were built in the course of as many years, but gradually the whole organization was allowed to fall into decay. Except for petty repairs this establishment was in 1909 valueless to the Chinese government. There were also small dockyards at Kiang-nan (near Shanghai), Whampoa and Taku. There are well-equipped arsenals at Shanghai and at Tientsin, but as they are both placed up shallow rivers they are useless for naval repairs. Both are capable of turning out heavy guns, and also rifles and ammunition in large quantities. There are also military arsenals at Nanking, Wuchang, Canton and Chêngtu.

Forts.—A great number of forts and batteries have been erected along the coast and at the entrance to the principal rivers. Chief among these, now that the Taku forts formerly commanding the entrance to Tientsin have been demolished, are the Kiangyin forts commanding the entrance to the Yangtsze, the Min forts at the entrance of the Fuchow river, and the Bogue forts at the entrance to the Canton river. These are supplied with heavy armament from the Krupp and Armstrong factories.

Finance.

In fiscal matters, as for many other purposes, the Chinese empire is an agglomeration of a number of quasi-independent units. Each province has a complete administrative staff, collects its own revenue, pays its own civil service, and other charges placed upon it, and out of the surplus contributes towards the expenses of the imperial government a sum which varies with the imperiousness of the needs of the latter and with its own comparative wealth or poverty. The imperial government does not collect directly any part of the revenues, unless the imperial maritime customs be excepted, though these, too, pass through the books of the provincial authorities.[40]

It has hitherto been extremely difficult to obtain anything like trustworthy figures for the whole revenue of China, for the reason that no complete statistics are published by the central government at Peking.[41] The only available data are, first, the returns published by the imperial maritime customs for the duties levied on foreign trade; and, secondly, the memorials sent to Peking by the provincial authorities on revenue matters, certain of which are published from time to time in the *Peking Gazette*. These are usually fragmentary, being merely reports which the governor has received from his subordinates, detailing, as the case may be, the yield of the land tax or the likin for his particular district, with a dissertation on the causes which have made it more or less than for the previous period. Or the return may be one detailing the expenditure of such and such a department, or reporting the transmission of a sum in reply to a requisition of the board of revenue, with a statement of the source from which it has been met. It is only by collating these returns over a long period that anything like a complete statement can be made up. And even then these returns do not represent anything like the total of taxation paid by the people, but, as far as they go, they may be taken to represent the volume of taxation on which the Peking government can draw revenue.

The following table, taken from a memorandum by Sir Robert Hart, dated the 25th of March 1901, shows the latest official estimate (up to 1910) of the revenue and expenditure of China:—

Revenue.

	Taels.[42]
Land tax	26,500,000
Provincial duties	1,600,000
Provincial receipts (various)	1,000,000
Grain commutation	3,100,000
Salt gabelle	13,500,000
Li-kin	16,000,000
Native customs	2,700,000
Maritime customs:—	
General cargo	17,000,000
Foreign opium	5,000,000
Native opium	1,800,000
Total	88,200,000

Expenditure.

	Taels.
Provincial	20,000,000
Military and naval	35,000,000
Metropolitan	10,000,000
Bannermen (Manchu “soldiers”)	1,380,000
Palace	1,100,000
Customs	3,600,000
Legations	1,000,000
River works	940,000
Railways	800,000
Loans	24,000,000
Contingent reserve	3,300,000

Total	101,120,000

A calculation of revenue from all sources published by the Shanghai *Shen Pao* in 1908, apparently derived from official sources, gave a total revenue of 105,000,000 taels, or about 15 million sterling. This sum is obviously less than the actual figures. In 1907 Mr H.B. Morse, commissioner of customs and statistical secretary in the inspectorate general of customs, drew up the following table based on the amounts presumed to be paid by the tax payer:—

	Imperial Administration.	Provincial Administration.	Local Administration.
	Taels.	Taels.	Taels.
I. Land Tax	25,887,000	67,060,000	9,315,000
II. Tribute	7,420,000	15,582,000	2,300,000
III. Native Customs	3,790,000	1,290,000	249,000
IV. Salt Gabelle	13,050,000	26,000,000	25,000,000
V. Miscellaneous	3,856,000	5,998,000	985,000
VI. Foreign Customs	31,169,000	3,942,000	1,230,000
VII. Li-kin	13,890,060	22,502,000	3,639,000
Total	99,062,000	142,374,000	42,718,000

Mr Morse adds that the grand total shown, taels 284,150,000[43] "is an obviously insufficient sum on which to maintain the fabric of government in an empire like China, but it has been reached by calculations based on a few known facts and ... is offered as throwing some light on a subject veiled in obscurity."[44]

The service of the foreign debt, together with the pressure of other needs—such as the cost of education and the army—made more manifest than previously the chaos of the Chinese fiscal system. A scheme to reform the national finances was promulgated under an edict of the 11th of January 1909, but it did not appear to be of a practical character.

Sources of Revenue. I. *Land Tax*.—In China, as in most oriental countries, the land has from time immemorial been the mainstay of the revenue. In the early years of the present dynasty there was levied along with the land tax a poll tax on all adult males, but in 1712 the two were amalgamated, and the whole burden was thrown upon land, families not possessing land being thereafter exempted from taxation. At the same time it was decreed that the amount of the land tax as then fixed should be permanent and settled for all time coming. It would appear from the records that this promise has been kept as far as the central government has been concerned. In all its many financial difficulties it does not seem ever to have tried to increase the revenue by raising the land tax. The amount of tax leviable on each plot is entered on the title deed, and, once entered, it cannot be changed.[45] The tax on almost all lands is thus stated to be so much in silver and so much in rice, wheat or whatever the principal crop may be. Except in two provinces, however, the grain tax is now commuted and paid in silver. The exceptions are Kiang-su and Cheh-kiang, which still send forward their taxes in grain. The value of the grain forwarded (generally called tribute rice) is estimated at taels 6,500,000. The total collection in silver, as reported by the responsible officials, amounts in round numbers to taels 25,000,000. The total yield of the land tax, therefore, is taels 31,500,000, or say £4,725,000. It will readily be granted that for such a large country as China this is a very insignificant one. In India the land tax yields about £20,000,000, and China has undoubtedly a larger cultivated area, a larger population, and soil that is on the whole more fertile; but it is certain that this sum by no means represents the amounts actually paid by the cultivators. It is the sum which the various magistrates and collectors have to account for and remit in hard cash. But as nothing is allowed them for the costs of collection, they add on a percentage beforehand to cover the cost. This they usually do by declaring the taxes leviable not in silver, but in copper "cash", which indeed is the only currency that circulates in country places, and by fixing the rate of exchange to suit themselves. Thus while the market rate is, say, 1500 cash to the tael, they declare by general proclamation that for tax-paying purposes cash will be received at the rate of 3500 or 4000 to the tael. Thus while the nominal land tax in silver remains the same it is in effect doubled or trebled, and, what is worse, no return is made or account required of the extra sums thus levied. Each magistrate or collector is in effect a farmer. The sum standing opposite the name of his district is the sum which he is bound to return under penalty of dismissal, but all sums which he can scrape together over and above are the perquisites of office less his necessary expenses. Custom, no doubt, sets bounds to his rapacity. If he went too far he would provoke a riot; but one may safely say there never is any reduction, what change can be effected being in the upward direction. According to the best information obtainable a moderate estimate of the sums actually paid by the cultivators would give two shillings per acre. This on an estimate of the area under cultivation should give for the eighteen provinces £19,000,000 as being actually levied, or more than four times what is returned.

2. *The Salt Duty.*—The trade in salt is a government monopoly. Only licensed merchants are allowed to deal in it, and the import of foreign salt is forbidden by the treaties. For the purpose of salt administration China is divided into seven or eight main circuits, each of which has its own sources of production. Each circuit has carefully defined boundaries, and salt produced in one circuit is not allowed to be consigned into or sold in another. There are great differences in price between the several circuits, but the consumer is not allowed to buy in the cheapest market. He can only buy from the licensed merchants in his own circuit, who in turn are debarred from procuring supplies except at the depot to which they belong. Conveyance from one circuit to another is deemed smuggling, and subjects the article to confiscation.

Duty is levied under two heads, the first being a duty proper, payable on the issue of salt from the depot, and the second being likin levied on transit or at the place of destination. The two together amount on an average to about taels 1.50 per picul of 133½ lb or 3s. 9d. per cwt. The total collection returned by the various salt collectorates amounts to taels 13,500,000 (£2,025,000) per annum. The total consumption of salt for all China is estimated at 25 million piculs, or nearly 1½ million tons, which is at the rate of 9 lb per annum per head of the population. If the above amount of taels 1.50 were uniformly levied and returned, the revenue would be 37½ million taels instead of 13½. In this calculation, however, no allowance is made for the cost of collection.

3. *Likin on General Merchandise.*—By the term likin is meant a tax on inland trade levied while in transit from one district to another. It was originally a war tax imposed as a temporary measure to meet the military expenditure required by the T'aip'ing and Mahommedan rebellions of 1850-1870. It is now one of the permanent sources of income, but at the same time it is in form as objectionable as a tax can be, and is equally obnoxious to the native and to the foreign merchant. Tolls or barriers are erected at frequent intervals along all the principal routes of trade, whether by land or water, and a small levy is made at each on every conceivable article of commerce. The individual levy is small, but over a long transit it may amount to 15 or 20%. The objectionable feature is the frequent stoppages with overhauling of cargo and consequent delays. By treaty, foreign goods may commute all transit dues for a single payment of one-half the import tariff duty, but this stipulation is but indifferently observed. It must also be remembered, per contra, that dishonest foreign merchants will take out passes to cover *native-owned* goods. The difficulty in securing due observance of treaty rights lies in the fact that the likin revenue is claimed by the provincial authorities, and the transit dues when commuted belong to the central government, so that the former are interested in opposing the commutation by every means in their power. As a further means of neutralizing the commutation they have devised a new form of impost, viz. a terminal tax which is levied on the goods after the termination of the transit. The amount and frequency of likin taxation are fixed by provincial legislation—that is, by a proclamation of the governor. The levy is authorized in general terms by an imperial decree, but all details are left to the local authorities. The yield of this tax is estimated at taels 13,000,000 (£l,950,000), a sum which probably represents one-third of what is actually paid by the merchants, the balance being costs of collection.

4. *Imperial Maritime Customs.*—The maritime customs is the one department of finance in China which is managed with probity and honesty, and this it owes to the fact that it is worked under foreign control. It collects all the duties leviable under the treaties on the foreign trade of China, and also all duties on the coasting trade so far as carried on by vessels of foreign build, whether Chinese or foreign owned. It does not control the trade in native craft, the so-called junk trade, the duties on which are still levied by the native custom-house officials. By arrangement between the British and Chinese governments the foreign customs levy at the port of entry a likin on Indian opium of taels 80 per chest, in addition to the tariff duty of taels 30. This levy frees the opium from any further duty on transit into the interior. The revenue of the maritime customs rose from taels 8,200,000 in 1865 to taels 35,111,000 in 1905.

5. *Native Customs,*—The administration of the native customs continues to be similar to what prevailed in the maritime customs before the introduction of foreign supervision. Each collector is constituted a farmer, bound to account for a fixed minimum sum, but practically at liberty to retain all he may collect over and above. If he returns more he may claim certain honorary rewards as for extra diligence, but he generally manages to make out his accounts so as to show a small surplus, and no more. Only imperfect and fragmentary returns of the native collectorates have been published, but the total revenue accruing to the Chinese government from this source did not appear up to 1900 much to exceed two million taels (£300,000). In November 1901 native customs offices within 15 m. of a treaty port were placed under the control of the maritime customs, their revenues having been hypothecated for the service of the Boxer indemnity. The result was that the amount of the native customs collected by the commissioners of customs increased from taels 2,206,000 in 1902 to taels 3,699,000 in 1906.

6. *Duty on Native Opium.*—The collection of the duty on opium is in the hands of the provincial officials, but they are required to rendera separate account of duty and likin collected on the drug, and to hold the sum at the disposal of the board of revenue at Peking.

The annual import into China of Indian opium used to amount to about 50,000 chests, the exact amount of opium imported in 1904 being 54,750 piculs, on which the Chinese government received from duty and likin combined about 5½ million taels (£825,000). The total amount of native-grown opium was estimated in 1901 at about 400,000 chests (53,000,000 lb), and if this were taxed at taels 60 per chest, which in proportion to its price was a similar rate to that levied on Indian opium, it should give a revenue of 24 million taels. Compared with this the sums actually levied, or at least returned by the local officials as levied, were insignificant. The returns gave a total levy for all the eighteen provinces of only taels 2,200,000 (£330,000). The anti-opium smoking campaign initiated by the Chinese government in 1905 affected the revenue both by the decreased importation of the drug and the decrease in the area under poppy cultivation in China. In 1908 the opium likin revenue had fallen to taels 3,800,000.

7. *Miscellaneous*.—Besides the main and regular sources of income, the provincial officials levy sums which must in the aggregate amount to a very large figure, but which hardly find a place in the returns. The principal are land transfer fees, pawnbrokers' and other licences, duties on reed flats, commutation of corvée and personal services, &c. The fee on land transfers is 3%, and it could be shown, from a calculation based on the extent and value of the arable land and the probable number of sales, that this item alone ought to yield an annual return of between one and two millions sterling. Practically the whole of this is absorbed in office expenses. Under this heading should also be included certain items which though not deemed part of the regular revenue, have been so often resorted to that they cannot be left out of account. These are the sums derived from sale of office or of brevet rank, and the subscriptions and benevolences which under one plea or another the government succeeds in levying from the wealthy. Excluding these, the government is always ready to receive subscriptions, rewarding the donor with a grant of official rank entitling him to wear the appropriate "button." The right is much sought after, and indeed there are very few Chinamen of any standing that are not thus decorated, for not only does the button confer social standing, but it gives the wearer certain very substantial advantages in case he should come into contact with the law courts. The minimum price for the lowest grade is taels 120 (£18), and more of course for higher grades. The proceeds of these sales go directly to the Peking government, and do not as a rule figure in the provincial returns. The total of the miscellaneous items accruing for the benefit of the government is estimated at taels 5,500,000.

Expenditure.—In regard to expenditure a distinction has to be drawn between that portion of the revenue which is controlled by the central government, and that controlled by the several provincial authorities. As the provinces collect the revenue, and as the authorities there are held responsible for the peace, order and good government of their respective territories, it follows that the necessary expenses of the provinces form a sort of first charge on the revenue. (As the tables given show, the provinces spend the greater part of the revenue collected.) The board of revenue at Peking, which is charged with a general supervision of finance matters all over the empire, makes up at the end of the year a general estimate of the funds that will be required for imperial purposes during the ensuing year, and apportions the amount among the several provinces and the several collectorates in each province. The estimate is submitted to the emperor, and, when sanctioned, instructions are sent to all the viceroys and governors in that sense, who, in turn, pass them on to their subordinate officers. In ordinary times these demands do not materially vary from year to year, and long practice has created a sort of equilibrium between imperial and provincial demands. The remittances to the capital are, as a rule, forwarded with reasonable regularity, mostly in the form of hard cash. There is, however, a constant pull going on between Peking and the provinces—the former always asking for more, the latter resisting and pleading impecuniosity, yet generally able to find the amounts required. The expenses which the central government has to meet are:—(1) Imperial household; (2) pay of the Manchu garrison in and about Peking; (3) costs of the civil administration in the capital; (4) cost of the army so far as the expenses are not borne by the provinces; (5) naval expenses;[46] (6) foreign loans—interest and sinking fund. To meet all these charges the Peking government for several years up to 1900 drew on the provinces for about taels 20,000,000 (£3,000,000), including the value of the tribute rice, which goes to the support of the Manchu bannermen.[47] No estimates are furnished of the sums allowed under such heading. The imperial household appears to receive in silver about taels 1,500,000 (£225,000) but it draws besides large supplies in kind from the provinces, *e.g.* silks and satins from the imperial factories at Su-chow and Hangchow, porcelain from the Kiang-si potteries, &c., the cost of which is defrayed by the provinces. The imperial government has also at its disposal the revenue of the foreign customs. Prior to the Chino-Japanese war of 1894-95 this revenue, which, after allowing for the costs of collection, amounted to about 20,000,000 taels (£3,000,000), was nominally shared with the provinces in the proportion of four-tenths and six-tenths. The whole of the customs revenue is now pledged to foreign bondholders and absorbed by the service of the several loans. Besides supplying its own wants the imperial government has to provide for outlying portions of the empire which are unable to maintain themselves—

(1) Manchuria, (2) Kan-suh and the central Asian dominion, (3) the south-western provinces of Yun-nan, Kwei-chow and Kwang-si. Manchuria, or, as it is termed, the north-east frontier defence, costs about taels 2,000,000 over and above its own resources. The central Asian territories constitute a drain on the imperial government of about taels 4,000,000 a year. This is met by subsidies from Sze-ch'uen, Shan-si, Ho-nan and other wealthy provinces. Yun-nan, Kwei-chow and Kwang-si require aids aggregating taels 2,000,000 to keep things going.

External Debt.—Prior to the war with Japan in 1894 the foreign debt of China was almost nil. A few trifling loans had been contracted at 7 and 8%, but they had been punctually paid off, and only a fraction of one remained. The expenses of the war, however, and the large indemnity of taels 230,000,000 (£34,500,000) which Japan exacted, forced China for the first time into the European market as a serious borrower. The sum of £6,635,000 was raised in 1894-1895 in four small loans at 6 or 7% interest. In 1895 a Franco-Russian loan of fr. 440,000,000 (£15,820,000) was raised in Paris. Two Anglo-German loans, each of £16,000,000 (one in 1896, the other in 1898) were raised through the Hong Kong and Shanghai Bank. The Franco-Russian loan bears 4% interest, the first Anglo-German 5%, the second 4½%. The foreign loans contracted up to 1900 amounted altogether to £54,455,000. The charges for interest and sinking fund, which amounted to over £3,000,000, were secured on the revenue of the maritime customs, and on the likin taxes of certain specified provinces. The net income from these two sources amounted to over taels 24,000,000, equivalent at existing rate of exchange to £3,400,000, which was amply sufficient.

Between 1899 and 1907 (both years inclusive) £12,200,000 was raised on loan for railway purposes. The charges on the first loan—for £2,300,000—were secured on the revenue of the Imperial Northern railway, the interest being 5%. The same interest was secured on the other loans, save one for £1,000,000 in which the Hong Kong government was concerned, which bears 4% interest.

The foreign debt also includes the indemnities exacted in 1901 by the powers for the Boxer outrages. These indemnities, secured on imperial revenue, are divided into five series amounting altogether to £67,500,000, the amount payable on these indemnities (at 4% interest) in 1907 being £2,824,425. The burden of meeting this amount was apportioned between the eighteen provinces—the sums allocated ranging from taels 2,500,000 for Kiang-su to taels 300,000 for Kwei-chow. In 1909 the grand total of China's indebtedness exceeded £140,000,000 and the interest called for the payment of £7,427,450 in gold.

Banks and Banking.—Native banks for purposes of inland exchange are to be found in most large cities. They are private banks using their own capital, and seldom receiving deposits from the public. The best known are the Shan-si banks, which have branches all over the empire. They work on a small capital, seldom over £50,000 each, and do a small but profitable business by selling their drafts on distant places. None of them issues notes, although they are not debarred from doing so by law. They lend money on personal security, but do not advance against shipments of goods. In some places there are small local banks, usually called cash shops, which issue paper notes for small sums and lend money out on personal security. The notes never reach more than a very limited local circulation, and pass current merely on the credit of the institution. There is no law regulating the formation of banks or the issue of notes. *Pawnshops* occupy a prominent position in the internal economy of China. They lend on deposit of personality at very high rates, 18 and 24%, and they receive deposits of money from the public, usually allowing 6 to 10%. They are the real banks of deposit of the country, and the better class enjoy good credit. *Foreign Banks* do a large business at Shanghai and other treaty ports, and a *Government Bank* has been established at Peking.

Currency.—In the commercial treaty between Great Britain and China of 1902 China agreed to provide a uniform national coinage. An imperial decree of October 1908 commanded the introduction of a uniform tael currency; but another decree of May 1910 established a standard currency dollar weighing 72 candareens (a candareen is the 100th part of the tael ounce) and subsidiary coins of fixed values in decimal ratio. This decree properly enforced would introduce a much needed stability into the monetary system of China.

The actual currency (1910) consists of (l) *Silver*, which may be either uncoined ingots passing current by weight, or imported coins, Mexican dollars and British dollars; and (2) *Copper* "cash," which has no fixed relation to silver. The standard is silver, the unit being the Chinese ounce or tael, containing 565 grains. The tael is not a coin, but a weight. Its value in sterling consequently fluctuates with the value of silver; in 1870 it was worth about 6s. 8d., in 1907 it was worth 3s. 3d.[48] The name given in China to uncoined silver in current use is "sycee." It is cast for convenience sake into ingots weighing one to 50 taels. Its average fineness is 916.66 per 1000. When foreign silver is imported, say into Shanghai, it can be converted into currency by a very simple process. The bars of silver are sent to a quasi-public office termed the "Kung K'u," or public valuers, and by them melted down and cast into ingots of the customary size. The fineness is estimated, and the premium or betterness, together with the exact weight, is marked in ink on each ingot. The whole process only occupies a few hours,

and the silver is then ready to be put into use. The Kung K'u is simply a local office appointed by the bankers of the place, and the weight and fineness are only good for that locality. The government takes no responsibility in the matter, but leaves merchants and bankers to adjust the currency as they please. For purposes of taxation and payment of duties there is a standard or treasury tael, which is about 10% heavier than the tael of commerce in use at Shanghai. Every large commercial centre has its own customary tael, the weight and therefore the value of which differ from that of every other. Silver dollars coined in Mexico, and British dollars coined in Bombay, also circulate freely at the open ports of trade and for some distance inland, passing at a little above their intrinsic value. Carolus dollars, introduced long ago and no longer coined, are retained in current use in several parts of the interior, chiefly the tea-growing districts. Being preferred by the people, and as the supply cannot be added to, they have reached a considerable premium above their intrinsic value. Provincial mints in Canton, Wuchang, and other places have issued silver coins of the same weight and touch as the Mexican dollar, but very few have gone into use. As they possess no privilege in debt-paying power over imported Mexican dollars there is no inducement for the people to take them up unless they can be had at a cheaper rate than the latter, and these are laid down at so small a cost above the intrinsic value that no profit is left to the mint. The coinage has in consequence been almost discontinued. Subsidiary coins, however, came largely into use, being issued by the local mints. One coin "the hundredth part of a dollar" proved very popular (the issue to the end of 1906 being computed at 12,500,000,000), but at rates corresponding closely to the intrinsic value of the metal in it. The only coin officially issued by the government—up to 1910—was the so-called copper *cash*. It is a small coin which by regulation should weigh 1/16 of a tael, and should contain 50 parts of copper, 40 of zinc, and 10 of lead or tin, and it should bear a fixed ratio to silver of 1000 cash to one tael of silver. In practice none of these conditions was observed. Being issued from a number of mints, mostly provincial, the standard was never uniform, and in many cases debased. Excessive issues lowered the value of the coins, and for many years the average exchange was 1600 or more per tael. The rise in copper led to the melting down of all the older and superior coins, and as for the same reason coining was suspended, the result was an appreciation of the "cash," so that a tael in 1909 exchanged for about 1220 cash or about 35 to a penny English. Inasmuch as the "cash" bore no fixed relation to silver, and was, moreover, of no uniform composition, it formed a sort of mongrel standard of its own, varying with the volume in circulation.

(G .J.; X.)

V. History

(A)—*European Knowledge of China up to 1615.*

China as known to the Ancients.—The spacious seat of ancient civilization which we call China has been distinguished by different appellations, according as it was reached by the southern sea-route or by the northern land-route traversing the longitude of Asia. In the former aspect the name has nearly always been some form of the name *Sin, Chin, Sinoe, China*. In the latter point of view the region in question was known to the ancients as the land of the *Seres*, to the middle ages as the empire of *Cathay*. The name of *Chin* has been supposed (doubtfully) to be derived from the dynasty of *Ts'in*, which a little more than two centuries before the Christian era enjoyed a vigorous existence, uniting all the Chinese provinces under its authority, and extending its conquests far beyond those limits to the south and the west. The mention of the *Chinas* in ancient Sanskrit literature, both in the laws of Manu and in the Mahābhārata, has often been supposed to prove the application of the name long before the predominance of the Ts'in dynasty. But the coupling of that name with the *Daradas*, still surviving as the people of Dardistan, on the Indus, suggests it as more probable that those *Chinas* were a kindred race of mountaineers, whose name as *Shinas* in fact likewise remains applied to a branch of the Dard races. Whether the *Sinim* of the prophet Isaiah should be interpreted of the Chinese is probably not susceptible of any decision; by the context it appears certainly to indicate a people of the extreme east or south. The name probably came to Europe through the Arabs, who made the *China* of the farther east into *Sîn*, and perhaps sometimes into *Thîn*. Hence the *Thîn* of the author of the *Periplus of the Erythraean Sea*, who appears to be the first extant writer to employ the name in this form (*i.e.* assuming Max Müller's view that he belongs to the 1st century); hence also the *Sinae* and *Thinae* of Ptolemy.

It has often indeed been denied that the Sinae of Ptolemy really represented the Chinese. But if we compare the statement of Marcianus of Heraclea (a mere condenser of Ptolemy), when he tells us that the "nations of the Sinae lie at the extremity of the habitable world, and adjoin the eastern Terra Incognita," with that of Cosmas, who says, in speaking of *Tzinista*, a name of which no one can question the application to China, that "beyond this there is neither habitation nor navigation"—we cannot doubt the same region to be meant by both. The fundamental error of Ptolemy's conception of the Indian Sea as a closed basin rendered it *impossible* but that he should misplace the Chinese coast. But considering that the name of *Sin* has come down among the Arabs from time immemorial as applied to the Chinese,

considering that in the work of Ptolemy this name certainly represented the farthest known East, and considering how inaccurate are Ptolemy's configurations and longitudes much nearer home, it seems almost as reasonable to deny the identity of his India with ours as to deny that his Sinae were Chinese.

If we now turn to the *Seres* we find this name mentioned by classic authors much more frequently and at an earlier date, for the passages of Eratosthenes (in Strabo), formerly supposed to speak of a parallel passing through *Thinae*—διά Θινῶν—are now known to read correctly δι᾽Αθηνῶν. The name *Seres* indeed is familiar to the Latin poets of the Augustan age, but always in a vague way, and usually with a general reference to Central Asia and the farther East. We find, however, that the first endeavours to assign more accurately the position of this people, which are those of Mela and Pliny, gravitate distinctly towards China in its northern aspect as the true ideal involved. Thus Mela describes the remotest east of Asia as occupied by the three races (proceeding from south to north), Indians, Seres and Scyths; just as in a general way we might still say that eastern Asia is occupied by the Indies, China and Tartary.

Ptolemy first uses the names of *Sera* and *Serice*, the former for the chief city, the latter for the country of the Seres, and as usual defines their position with a precision far beyond what his knowledge justified—the necessary result of his system. Yet even his definition of Serice is most consistent with the view that this name indicated the Chinese empire in its northern aspect, for he carries it eastward to the 180th degree of longitude, which is also, according to his calculation, in a lower latitude the eastern boundary of the Sinae.

Ammianus Marcellinus devotes some paragraphs to a description of the Seres and their country, one passage of which is startling at first sight in its seeming allusion to the Great Wall, and in this sense it has been rashly interpreted by Lassen and by Reinaud. But Ammianus is merely converting Ptolemy's dry tables into fine writing, and speaks only of an encircling rampart of mountains within which the spacious and happy valley of the Seres lies. It is true that Ptolemy makes his Serice extend westward to Imaus, *i.e.* to Pamir. But the Chinese empire *did* so extend at that epoch, and we find Lieut. John Wood in 1838 speaking of "*China*" as lying immediately beyond Pamir, just as the Arabs of the 8th century spoke of the country beyond the Jaxartes as "*Sin*," and as Ptolemy spoke of "*Serice*" as immediately beyond Imaus.

If we fuse into one the ancient notices of the Seres and their country, omitting anomalous statements and manifest fables, the result will be somewhat as follows: "The region of the Seres is a vast and populous country, touching on the east the ocean and the limits of the habitable world, and extending west to Imaus and the confines of Bactria. The people are civilized, mild, just and frugal, eschewing collisions with their neighbours, and even shy of close intercourse, but not averse to dispose of their own products, of which raw silk is the staple, but which included also silk-stuffs, fine furs, and iron of remarkable quality." That is manifestly a definition of the Chinese.

That Greek and Roman knowledge of the true position of so remote a nation should at best have been somewhat hazy is nothing wonderful. And it is worthy of note that the view entertained by the ancient Chinese of the Roman empire and its inhabitants, under the name of *Ta-thsin*, had some striking points of analogy to those views of the Chinese which are indicated in the classical descriptions of the Seres. There can be no mistaking the fact that in this case also the great object was within the horizon of vision, yet the details ascribed to it are often far from being true characteristics, being only the accidents of its outer borders.

The Medieval Cathay.—"Cathay" is the name by which the Chinese empire was known to medieval Europe, and it is in its original form (*Kitai*) that China is still known in Russia and to most of the nations of Central Asia. West of Russia this name has long ceased to be a geographical expression, but it is associated with a remarkable phase in the history of geography and commerce. The name first became known to Europe in the 13th century, when the vast conquests of Jenghiz Khan and his house drew a new and vivid attention to Asia. For some three centuries previously the northern provinces of China had been detached from indigenous rule, and subject to northern conquerors. The first of these foreign dynasties was of a race called *Khitán* issuing from the basin of the Sungari river, and supposed (but doubtfully) to have been of the blood of the modern Tunguses. The rule of this race endured for two centuries and originated the application of the name *Khitât* or *Khitâï* to northern China. The dynasty itself, known in Chinese history as *Liao*, or "Iron," disappeared from China 1123, but the name remained attached to the territory which they had ruled.

The Khitán were displaced by the Nüchih (*Nyûché* or *Chûrché*) race, akin to the modern Manchus. These reigned, under the title of *Kin*, or "Golden," till Jenghiz and his Mongols invaded them in turn. In 1234 the conquest of the Kin empire was completed, and the dynasty extinguished under Ogdai (Ogotai), the son and successor of Jenghiz Khan. Forty years later, in the reign of Kublai, grandson and ablest successor of Jenghiz, the Mongol rule was

extended over southern China (1276), which till then had remained under a native dynasty, the Sung, holding its royal residence in a vast and splendid city, now known as Hang-chow, but then as Ling-nan, or more commonly as *King-sze*, *i.e.* the court. The southern empire was usually called by the conquerors *Mantzi* (or as some of the old travellers write, *Mangi*), a name which western Asiatics seem to have identified with *Mâchîn* (from the Sanskrit *Mahâchîn*), one of the names by which China was known to the traders from Persian and Arabian ports.

The conquests of Jenghiz and his successors had spread not only over China and the adjoining East, but westward also over all northern Asia, Persia, Armenia, part of Asia Minor and Russia, threatening to deluge Christendom. Though the Mongol wave retired, as it seemed almost by an immediate act of Providence, when Europe lay at its feet, it had levelled or covered all political barriers from the frontier of Poland to the Yellow Sea, and when western Europe recovered from its alarm, Asia lay open, as never before or since, to the inspection of Christendom. Princes, envoys, priests—half-missionary, half-envoy—visited the court of the great khan in Mongolia; and besides these, the accidents of war, commerce or opportunity carried a variety of persons from various classes of human life into the depths of Asia. "'Tis worthy of the grateful remembrance of all Christian people," says an able missionary friar of the next age (Ricold of Monte Croce), "that just at the time when God sent forth into the Eastern parts of the world the Tatars to slay and to be slain, He also sent into the West his faithful and blessed servants, Dominic and Francis, to enlighten, instruct and build up in the faith." Whatever on the whole may be thought of the world's debt to Dominic, it is to the two mendicant orders, but especially to the Franciscans, that we owe a vast amount of information about medieval Asia, and, among other things, the first mention of *Cathay*. Among the many strangers who reached Mongolia were (1245-1247) John de Plano Carpini and (1253) William of Rubruk (Rubruquis) in French Flanders, both Franciscan friars of high intelligence, who happily have left behind them reports of their observations.

> Carpini, after mentioning the wars of Jenghiz against the *Kitai*, goes on to speak of that people as follows: "Now these *Kitai* are heathen men, and have a written character of their own... They seem, indeed, to be kindly and polished folks enough. They have no beard, and in character of countenance have a considerable resemblance to the Mongols" [are *Mongoloid*, as our ethnologists would say], "but are not so broad in the face. They have a peculiar language. Their betters as craftsmen in every art practised by man are not to be found in the whole world. Their country is very rich in corn, in wine, in gold and silver, in silk, and in every kind of produce tending to the support of mankind." The notice of Rubruk, shrewder and more graphic, runs thus: "Farther on is Great Cathay, which I take to be the country which was anciently called the Land of the Seres. For the best silk stuffs are still got from them... The sea lies between it and India. Those Cathayans are little fellows, speaking much through the nose, and, as is general with all those eastern people, their eyes are very narrow. They are first-rate artists in every kind, and their physicians have a thorough knowledge of the virtues of herbs, and an admirable skill in diagnosis by the pulse... The common money of Cathay consists of pieces of cotton-paper, about a palm in length and breadth, upon which certain lines are printed, resembling the seal of Mangu Khan. They do their writing with a pencil, such as painters paint with, and a single character of theirs comprehends several letters, so as to form a whole word."
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> Here we have not only what is probably the first European notice of paper-money, but a *partial* recognition of the peculiarity of Chinese writing, and a perception that puts to shame the perverse boggling of later critics over the identity of these Cathayans with the Seres of classic fame.

But though these travellers saw Cathayans in the bazaars in the great khan's camps, the first actual visitors of Cathay itself were the Polo family, and it is to the book of Marco Polo's recollections mainly that Cathay owed the growing familiarity of its name in Europe during the 14th and 15th centuries. It is, however, a great mistake to suppose, as has often been assumed, that the residence of the Polos in that country remained an isolated fact. They were but the pioneers of a very considerable intercourse, which endured till the decay of the Mongol dynasty in Cathay, *i.e.* for about half a century.

We have no evidence that either in the 13th or 14th century Cathayans, *i.e.* Chinese, ever reached Europe, but it is possible that some did, at least in the former century. For, during the campaigns of Hulagu in Persia (1256-1265), and the reigns of his successors, Chinese engineers were employed on the banks of the Tigris, and Chinese astrologers and physicians could be consulted at Tabriz. Many diplomatic communications passed between the Hulaguid Ilkhans and the princes of Christendom. The former, as the great khan's liegemen, still received from him their seals of state; and two of their letters which survive in the archives of France exhibit the vermilion impressions of those seals in Chinese characters—perhaps affording the earliest specimen of that character which reached western Europe.

Just as the Polos were reaching their native city (1295), after an absence of a quarter of a century, the forerunner of a new series of travellers was entering southern China by way of the Indian seas. This was John of Monte Corvino, another Franciscan who, already some fifty years of age, was plunging single-handed into that great ocean of paganism to preach the gospel according to his lights. After years of uphill and solitary toil converts began to multiply; coadjutors joined him. The Papal See became cognizant of the harvest that was being reaped in the far East. It made Friar John archbishop in Cambaluc (or Peking), with patriarchal authority, and sent him batches of suffragan bishops and preachers of his own order. The Roman Church spread; churches and Minorite houses were established at Cambaluc, at Zayton or Tsuan-chow in Fu-kien, at Yang-chow and elsewhere; and the missions flourished under the smile of the great khan, as the Jesuit missions did for a time under the Manchu emperors three centuries and a half later. Archbishop John was followed to the grave, about 1328, by mourning multitudes of pagans and Christians alike. Several of the bishops and friars who served under him have left letters or other memoranda of their experience, *e.g.* Andrew, bishop of Zayton, John of Cora, afterwards archbishop of Sultania in Persia, and Odoric of Pordenone, whose fame as a pious traveller won from the *vox populi* at his funeral a beatification which the church was fain to seal. The only ecclesiastical narrative regarding Cathay, of which we are aware, subsequent to the time of Archbishop John, is that which has been gathered from the recollections of Giovanni de' Marignolli, a Florentine Franciscan, who was sent by Pope Benedict XII. with a mission to the great khan, in return for one from that potentate which arrived at Avignon from Cathay in 1338, and who spent four years (1342-1346) at the court of Cambaluc as legate of the Holy See. These recollections are found dispersed incoherently over a chronicle of Bohemia which the traveller wrote by order of the emperor Charles IV., whose chaplain he was after his return.

But intercourse during the period in question was not confined to ecclesiastical channels. Commerce also grew up, and flourished for a time even along the vast line that stretches from Genoa and Florence to the marts of Cheh-kiang and Fu-kien. The record is very fragmentary and imperfect, but many circumstances and incidental notices show how frequently the remote East was reached by European traders in the first half of the 14th century—a state of things which it is very difficult to realize when we see how all those regions, when reopened to knowledge two centuries later, seemed to be discoveries as new as the empires which, about the same time, Cortes and Pizarro were conquering in the West.

This commercial intercourse probably began about 1310-1320. John of Monte Corvino, writing in 1305, says it was twelve years since he had heard any news from Europe; the only Western stranger who had arrived in all that time being a certain Lombard chirurgeon (probably one of the *Patarini* who got hard measure at home in those days), who had spread the most incredible blasphemies, about the Roman Curia and the order of St Francis. Yet even on his first entrance to Cathay Friar John had been accompanied by one Master Peter of Lucolongo, whom he describes as a faithful Christian man and a great merchant, and who seems to have remained many years at Peking. The letter of Andrew, bishop of Zayton (1326), quotes the opinion of Genoese merchants at that port regarding a question of exchanges. Odoric, who was in Cathay about 1323-1327, refers for confirmation of the wonders which he related of the great city of Cansay (*i.e.* King-sze, or Hang-chow) to the many persons whom he had met at Venice since his return, who had themselves been witnesses of those marvels. And Marignolli, some twenty years later, found attached to one of the convents at Zayton, in Fu-kien, a *fondaco* or factory for the accommodation of the Christian merchants.

But by far the most distinct and notable evidence of the importance and frequency of European trade with Cathay, of which silk and silk goods formed the staple, is to be found in the commercial hand-book (c. 1340) of Francesco Balducci Pegolotti, a clerk and factor of the great Florentine house of the Bardi, which was brought to the ground about that time by its dealings with Edward III. of England. This book, called by its author *Libro di divisamenti di Paesi*, is a sort of trade-guide, devoting successive chapters to the various ports and markets of his time, detailing the nature of imports and exports at each, the duties and exactions, the local customs of business, weights, measures and money. The first two chapters of this work contain instructions for the merchant proceeding to Cathay; and it is evident, from the terms used, that the road thither was not unfrequently travelled by European merchants, from whom Pegolotti had derived his information. The route which he describes lay by Azov, Astrakhan, Khiva, Otrar (on the Jaxartes), Almálik (Gulja in Ili), Kan-chow (in Kan-suh), and so to Hang-chow and Peking. Particulars are given as to the silver ingots which formed the currency of Tatary, and the paper-money of Cathay. That the ventures on this trade were not insignificant is plain from the example taken by the author to illustrate the question of expenses on the journey, which is that of a merchant investing in goods there to the amount of some £12,000 (*i.e.* in actual gold value, not as calculated by any fanciful and fallacious equation of values).

Of the same remarkable phase of history that we are here considering we have also a number of notices by Mahommedan writers. The establishment of the Mongol dynasty in

Persia, by which the great khan was acknowledged as lord paramount, led (as we have already noticed in part) to a good deal of intercourse. And some of the Persian historians, writing at Tabriz, under the patronage of the Mongol princes, have told us much about Cathay, especially Rashiduddin, the great minister and historian of the dynasty (died 1318). We have also in the book of the Moorish traveller Ibn Batuta, who visited China about 1347-1348, very many curious and in great part true notices, though it is not possible to give credence to the whole of this episode in his extensive travels.

About the time of the traveller first named the throne of the degenerate descendants of Jenghiz began to totter to its fall, and we have no knowledge of any Frank visitor to Cathay in that age later than Marignolli; missions and merchants alike disappear from the field. We hear, indeed, once and again of ecclesiastics despatched from Avignon, but they go forth into the darkness, and are heard of no more. Islam, with all its jealousy and exclusiveness, had recovered its grasp over Central Asia; the Nestorian Christianity which once had prevailed so widely was vanishing, and the new rulers of China reverted to the old national policy, and held the foreigner at arm's length. Night descended upon the farther East, covering Cathay with those cities of which the old travellers had told such marvels, Cambaluc and Cansay, Zayton and Chinkalan. And when the veil rose before the Portuguese and Spanish explorers of the 16th century, those names are heard no more. In their stead we have China, Peking, Hangchow, Chinchew, Canton. Not only were the old names forgotten, but the fact that those places had ever been known before was forgotten also. Gradually new missionaries went forth from Rome—Jesuits and Dominicans now; new converts were made, and new vicariates constituted; but the old Franciscan churches, and the Nestorianism with which they had battled, had alike been swallowed up in the ocean of pagan indifference. In time a wreck or two floated to the surface—a MS. Latin Bible or a piece of Catholic sculpture; and when the intelligent missionaries called Marco Polo to mind, and studied his story, one and another became convinced that Cathay and China were one.

But for a long time all but a sagacious few continued to regard Cathay as a region distinct from any of the new-found Indies; whilst map-makers, well on into the 17th century, continued to represent it as a great country lying entirely to the north of China, and stretching to the Arctic Sea.

It was Cathay, with its outlying island of Zipangu (Japan), that Columbus sought to reach by sailing westward, penetrated as he was by his intense conviction of the smallness of the earth, and of the vast extension of Asia eastward; and to the day of his death he was full of the imagination of the proximity of the domain of the great khan to the islands and coasts which he had discovered. And such imaginations are curiously embodied in some of the maps of the early 16th century, which intermingle on the same coast-line the new discoveries from Labrador to Brazil with the provinces and rivers of Marco Polo's Cathay.

Cathay had been the aim of the first voyage of the Cabots in 1496, and it continued to be the object of many adventurous voyages by English and Hollanders to the N.W. and N.E. till far on in the 16th century. At least one memorable land-journey also was made by Englishmen, of which the exploration of a trade-route to Cathay was a chief object—that in which Anthony Jenkinson and the two Johnsons reached Bokhara by way of Russia in 1558-1559. The country of which they collected notices at that city was still known to them only as *Cathay*, and its great capital only as *Cambaluc*.

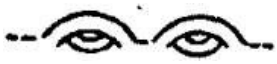
Cathay as a supposed separate entity may be considered to come to an end with the journey of Benedict Goës, the lay-Jesuit. This admirable person was, in 1603, despatched through Central Asia by his superiors in India with the specific object of determining whether the Cathay of old European writers and of modern Mahommedans was or was not a distinct region from that China of which parallel marvels had now for some time been recounted. Benedict, as one of his brethren pronounced his epitaph, "seeking Cathay found Heaven." He died at Suchow, the frontier city of China, but not before he had ascertained that China and Cathay were the same. After the publication of the narrative of his journey (in the *Expeditio Christiana apud Sinas* of Trigault, 1615) inexcusable ignorance alone could continue to distinguish between them, but such ignorance lingered many years longer.

(H. Y.)

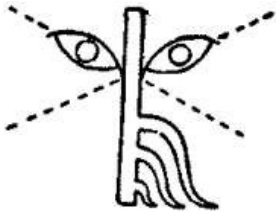
(B)—*Chinese Origins.*

Chinese literature contains no record of any kind which might justify us in assuming that the nucleus of the nation may have immigrated from some other part of the world; and the several ingenious theories pointing to Babylonia, Egypt, India, Khotan, and other seats of ancient civilization as the starting-points of ethnical wanderings must be dismissed as untenable. Whether the Chinese were seated in their later homes from times immemorial, as their own historians assume, or whether they arrived there from abroad, as some foreign scholars have pretended, cannot be proved to the satisfaction of historical critics. Indeed, anthropological arguments seem to contradict the idea of any connexion with Babylonians, Egyptians,

Assyrians, or Indians. The earliest hieroglyphics of the Chinese, ascribed by them to the Shang dynasty (second millennium B.C.), betray the Mongol character of the nation that invented them by the decided obliquity of the human eye wherever it appears in an ideograph. In a pair of eyes as shown in the most ancient pictorial or sculptural representations in the west, the four corners may be connected by a horizontal straight line; whereas lines drawn through the eyes of one of the oldest Chinese hieroglyphics cross each other at a sharp angle, as shown in the accompanying diagrams:—



Chinese.



Egyptian.

This does not seem to speak for racial consanguinity any more than the well-known curled heads and bearded faces of Assyrian sculptures as compared to the straight-haired and almost beardless Chinese. Similarities in the creation of cultural elements may, it is true, be shown to exist on either side, even at periods when mutual intercourse was probably out of the question; but this may be due to uniformity in the construction of the human brain, which leads man in different parts of the world to arrive at similar ideas under similar conditions, or to prehistoric connexions which it is as impossible for us to trace now as is the origin of mankind itself. Our standpoint as regards the origin of the Chinese race is, therefore, that of the agnostic. All we can do is to reproduce the tradition as it is found in Chinese literature. This tradition, as applying to the very earliest periods, may be nothing more than historical superstition, yet it has its historical importance. Supposing it were possible to prove that none of the persons mentioned in the Bible from Adam down to the Apostles ever lived, even the most sceptical critic would still have to admit that the history of a great portion of the human race has been materially affected by the belief in the examples of their alleged lives. Something similar may be said of the alleged earliest history of the Chinese with its model emperors and detestable tyrants, the accounts of which, whether based on reality or not, have exercised much influence on the development of the nation.

The Chinese have developed their theories of prehistoric life. Speculation as to the origin and gradual evolution of their civilization has resulted in the expression of views by authors who may have reconstructed their systems from remnants of ancestral life revealed by excavations, or from observation of neighbouring nations living in a state of barbarism. This may account for a good deal of the repetition found in the Chinese mythological and legendary narratives, the personal and chronological part of which may have been invented merely as a framework for illustrating social and cultural progress. The scene of action of all the prehistoric figures from P‘an-ku, the first human being, down to the beginning of real history has been laid in a part of the world which has never been anything but Chinese territory. P‘an-ku’s epoch, millions of years ago, was followed by ten distinct periods of sovereigns, including the “Heavenly emperors,” the “Terrestrial emperors,” and the “Human emperors,” the *Yu-ch‘au* or “Nest-builders,” and *Sui-jön*, the “Fire Producer,” the Prometheus of the Chinese, who borrowed fire from the stars for the benefit of man. Several of the characteristic phases of cultural progress and social organization have been ascribed to this mythological period. Authors of less fertile imagination refer them to later times, when the heroes of their accounts appear in shapes somewhat resembling human beings rather than as gods and demigods.

The Chinese themselves look upon Fu-hi as their first historical emperor; and they place his lifetime in the years 2852-2738 B.C. Some accounts represent him as a supernatural being; and we see him depicted as a human figure with a fish tail something like a mermaid. He is credited with having established social order among his people, who, before him, had lived like animals in the wilds. The social chaos out of which Chinese society arose is described as being characterized by the absence of family life; for “children knew only their mothers and not their fathers.” Fu-hi introduced matrimony; and in so doing he placed man as the husband at the head of the family and abolished the original matriarchate. This quite corresponds with his views on the dualism in natural philosophy, of which he is supposed to have laid the germs by the invention of the so-called *pa-kua*, eight symbols, each consisting of three parallel lines, broken or continuous. The continuous lines represented the male element in nature; the broken ones, the female. It is characteristic that the same ruler who assigned to man his position as the head of the family is also credited with the invention of that natural philosophy of the “male and female principles,” according to which all good things and qualities were held to be male, while their less sympathetic opposites were female, such as heaven and earth, sun and moon, day and night, south and north. If these traditions really represent the

oldest prehistoric creations of the popular mind, it would almost seem that the most ancient Chinese shared that naïve sentiment which caused our own forefathers to invent gender. The difference is that, with us, the conception survives merely in the language, where the article or suffixes mark gender, whereas with the Chinese, whose language does not express gender, it survives in their system of metaphysics. For all their attempts at fathoming the secrets of nature are based on the idea that male or female powers are inherent in all matter.

To the same Emperor Fu-hi are ascribed many of the elementary inventions which raise man from the life of a brute to that of a social being. He taught his people to hunt, to fish, and to keep flocks; he constructed musical instruments, and replaced a kind of knot-writing previously in use by a system of hieroglyphics. All this cannot of course be considered as history; but it shows that the authors of later centuries who credited Fu-hi with certain inventions were not quite illogical in starting from the matriarchal chaos, after which he is said to have organized society with occupations corresponding to those of a period of hunting, fishing and herding. This period was bound to be followed by a further step towards the final development of the nation's social condition; and we find it quite logically succeeded by a period of agricultural life, personified in the Emperor, Shön-nung, supposed to have lived in the twenty-eighth century B.C. His name may be freely translated as "Divine Labourer"; and to him the Chinese ascribe the invention of agricultural implements, and the discovery of the medicinal properties of numerous plants.

The third historical emperor was Huang-ti, the "Yellow emperor," according to the literal translation. Ssï-ma Ts'ién, the Herodotus of the Chinese, begins his history with him; but Fu-hi and Shön-nung are referred to in texts much older than this historian, though many details relating to their alleged reigns have been added in later times. Huang-ti extended the boundaries of the empire, described as being originally confined to a limited territory near the banks of the Yellow river and the present city of Si-an-fu. Here were the sites of cities used as capitals of the empire under various names during long periods since remote antiquity. To Huang-ti, whose reign is said to have commenced in 2704 according to one source and in 2491 according to another, are ascribed most of the cultural innovations which historians were not able otherwise to locate within historical times. Under Huang-ti we find the first mention of a nation called the Hun-yü, who occupied the north of his empire and with whom he is represented to have engaged in warfare. The Chinese identify this name with that of the Hiung-nu, their old hereditary enemy and the ancestors of Attila's Huns. Even though the details of these legendary accounts may deserve little confidence, there must have been an old tradition that a nation called the Hun-yü, occupying the northern confines of China, were the ancestors of the Hiung-nu tribes, well known in historical times, a scion of whose great khans settled in territory belonging to the king of Sogdiana during the first century B.C., levied tribute from his neighbours, the Alans, and with his small but warlike horde initiated that era of migrations which led to the overrunning of Europe with Central-Asiatic Tatars.

Fu-hi, Shön-nung and Huang-ti represent a group of rulers comprised by the Chinese under the name of *San-huang*, *i.e.* "The Three Emperors." Although we have no reason to deny their existence, the details recorded concerning them contain enough in the way of improbabilities to justify us in considering them as mythical creations. The chronology, too, is apparently quite fictitious; for the time allotted to their reigns is much too long as a term of government for a single human life, and, on the other hand, much too short, if we measure it by the cultural progress said to have been brought about in it. Fu-hi's period of hunting life must have lasted many generations before it led to the agricultural period represented by the name Shön-nung; and this period in turn could not possibly have led within a little more than one hundred years to the enormous progress ascribed to Huang-ti. Under the latter ruler a regular board of historians is said to have been organized with Ts'ang-kié as president, who is known also as Shi-huang, *i.e.* "the Emperor of Historians," the reputed inventor of hieroglyphic writing placed by some authors into the Fu-hi period and worshipped as Tz'ï-shön, *i.e.* "God of writing," to the present day. Huang-ti is supposed to have been the first builder of temples, houses and cities; to have regulated the calendar, to which he added the intercalary month; and to have devised means of traffic by cars drawn by oxen and by boats to ply on the lakes and rivers of his empire. His wife, known as "the lady of Si-ling," is credited with the invention of the several manipulations in the rearing of silkworms and the manufacture of silk. The invention of certain flutes, combined to form a kind of reed organ, led to a deeper study of music; and in order to construct these instruments with the necessary accuracy a system of weights and measures had to be devised. Huang-ti's successors, Shau-hau, Chuan-hü, and Ti-k'u, were less prominent, though each of them had their particular merits.

The Model Emperors.—Most of the stories regarding the "Three Emperors" are told in comparatively late records. The *Shu-king*, sometimes described as the "Canon of History," our oldest source of pre-Confucian history, supposed to have been edited by Confucius himself,

knows nothing of Fu-hi, Shön-nung and Huang-ti; but it begins by extolling the virtues of the emperor *Yau* and his successor *Shun*. Yau and Shun are probably the most popular names in Chinese history as taught in China. Whatever good qualities may be imagined of the rulers of a great nation have been heaped upon their heads; and the example of their lives has at all times been held up by Confucianists as the height of perfection in a sovereign's character. Yau, whose reign has been placed by the fictitious standard chronology of the Chinese in the years 2357-2258, and about 200 years later by the less extravagant "Annals of the Bamboo Books," is represented as the patron of certain astronomers who had to watch the heavenly bodies; and much has been written about the reputed astronomical knowledge of the Chinese in this remote period. Names like Deguignes, Gaubil, Biot and Schlegel are among those of the investigators. On the other side are the sceptics, who maintain that later editors interpolated statements which could have been made only with the astronomical knowledge possessed by their own contemporaries. According to an old legend, Shun banished "the four wicked ones" to distant territories. One of these bore the name *T'au-t'ié*, *i.e.* "Glutton"; called also San-miau. *T'au-t'ié* is also the name of an ornament, very common on the surface of the most ancient bronze vessels, showing the distorted face of some ravenous animal. The San-miau as a tribe are said to have been the forefathers of the Tangutans, the Tibetans and the Miau-tz'ï in the south-west of China. This legend may be interpreted as indicating that the non-Chinese races in the south-west have come to their present seats by migration from Central China in remote antiquity. During Yau's reign a catastrophe reminding one of the biblical deluge threatened the Chinese world. The emperor held his minister of works, Kun, responsible for this misfortune, probably an inundation of the Yellow river such as has been witnessed by the present generation. Its horrors are described with poetical exaggeration in the *Shu-king*. When the efforts to stop the floods had proved futile for nine years, Yau wished to abdicate, and he selected a virtuous young man of the name of Shun as his successor. Among the legends told about this second model emperor is the story that he had a board before his palace on which every subject was permitted to note whatever faults he had to find with his government, and that by means of a drum suspended at his palace gate attention might be drawn to any complaint that was to be made to him. Since Kun had not succeeded in stopping the floods, he was dismissed and his son Yü was appointed in his stead. Probably the waters began to subside of their own accord, but Yü has been praised up as the national hero who, by his engineering works, saved his people from utter destruction. His labours in this direction are described in a special section of the Confucian account known as *Yü-kung*, *i.e.* "Tribute of Yü." Yü's merit has in the sequel been exaggerated so as to credit him with more than human powers. He is supposed to have cut canals through the hills, in order to furnish outlets to the floods, and to have performed feats of engineering compared to which, according to Von Richthofen, the construction of the St Gotthard tunnel without blasting materials would be child's play, and all this within a few years.

The Hia Dynasty.—As a reward for his services Yü was selected to succeed Shun as emperor. He divided the empire into nine provinces, the description of which in the *Yü-kung* chapter of the "Canon of History" bears a suspicious resemblance to later accounts. Yü's reign has been assigned to the years 2205-2198, and the Hia Dynasty, of which he became the head, has been made to extend to the overthrow in 1766 B.C. of Kié, its eighteenth and last emperor, a cruel tyrant of the most vicious and contemptible character. Among the Hia emperors we find *Chung-k'ang* (2159-2147), whose reign has attracted the attention of European scholars by the mention of an eclipse of the sun, which his court astronomers had failed to predict. European astronomers and sinologues have brought much acumen to bear on the problem involved in the *Shu-king* account in trying to decide which of the several eclipses known to have occurred about that time was identical with the one observed in China under Chung-k'ang.

The Shang, or Yin, Dynasty.—This period, which preceded the classical Chóu dynasty, is made to extend from 1766 to 1122 B.C. We must now be prepared to see an energetic or virtuous ruler at the head of a dynasty and either a cruel tyrant or a contemptible weakling at the end of it. It seems natural that this should be so; but Chinese historians, like the writers of Roman history, have a tendency to exaggerate both good and bad qualities. Ch'öng-tang, its first sovereign, is represented as a model of goodness and of humane feeling towards his subjects. Even the animal world benefited by his kindness, inasmuch as he abolished all useless torture in the chase. His great minister I Yin, who had greatly assisted him in securing the throne, served two of his successors. P'an-köng (1401) and Wu-ting (1324) are described as good rulers among a somewhat indifferent set of monarchs. The Shang dynasty, like the Hia, came to an end through the reckless vice and cruelty of a tyrant (Chóu-sin with his consort Ta-ki). China had even in those days to maintain her position as a civilized nation by keeping at bay the barbarous nations by which she was surrounded. Chief among these were the ancestors of the Hiung-nu tribes, or Huns, on the northern and western boundaries. To fight them, to make pacts and compromises with them, and to befriend them with gifts so as to keep them out of the Imperial territories, had been the rôle of a palatinate on the western

frontier, the duchy of Chóu, while the court of China with its vicious emperor gave itself up to effeminate luxury. Chóu-sin's evil practices had aroused the indignation of the palatine, subsequently known as Wön-wang, who in vain remonstrated with the emperor's criminal treatment of his subjects. The strength and integrity of Wön-wang's character had made him the corner-stone of that important epoch; and his name is one of the best known both in history and in literature. The courage with which he spoke his mind in rebuking his unworthy liege lord caused the emperor to imprison him, his great popularity alone saving his life. During his incarceration, extending over three years, he compiled the *I-king*, or "Canon of Changes," supposed to be the oldest book of Chinese literature, and certainly the one most extensively studied by the nation. Wön-wang's son, known as Wu-wang, was destined to avenge his father and the many victims of Chóu-sin's cruelty. Under his leadership the people rose against the emperor and, with the assistance of his allies, "men of the west," possibly ancestors of the Huns, overthrew the Shang dynasty after a decisive battle, whereupon Chóu-sin committed suicide by setting fire to his palace.

Chóu Dynasty.—Wu-wang, the first emperor of the new dynasty, named after his duchy of Chóu on the western frontier, was greatly assisted in consolidating the empire by his brother, Chóu-kung, *i.e.* "Duke of Chóu." As the loyal prime-minister of Wu-wang and his successor the duke of Chóu laid the foundation of the government institutions of the dynasty, which became the prototype of most of the characteristic features in Chinese public and social life down to recent times. The brothers and adherents of the new sovereign were rewarded with fiefs which in the sequel grew into as many states. China thus developed into a confederation, resembling that of the German empire, inasmuch as a number of independent states, each having its own sovereign, were united under one liege lord, the emperor, styled "The Son of Heaven," who as high priest of the nation reigned in the name of Heaven. The emperor represented the nation in sacrificing and praying to God. His relations with his vassals and government officials, and those of the heads of the vassal states with their subjects as well as of the people among themselves were regulated by the most rigid ceremonial. The dress to be worn, the speeches to be made, and the postures to be assumed on all possible occasions, whether at court or in private life, were subject to regulations. The duke of Chóu, or whoever may have been the creator of this system, showed deep wisdom in his speculations, if he based that immutability of government which in the sequel became a Chinese characteristic, on the physical and moral immutability of individuals by depriving them of all spontaneous action in public and private life. Originally and nominally the emperor's power as the ruler over his vassals, who again ruled in his name, was unquestionable; and the first few generations of the dynasty saw no decline of the original strength of central power. A certain loyalty based on the traditional ancestral worship counteracted the desire to revolt. The rightful heir to the throne was responsible to his ancestors as his subjects were to theirs. "We have to do as our ancestors did," the people argued; "and since they obeyed the ancestors of our present sovereign, we have to be loyal to him." Interference with this time-honoured belief would have amounted to a rupture, as it were, in the nation's religious relations, and as long as the people looked upon the emperor as the Son of Heaven, his moral power would outweigh strong armies sent against him in rebellion. The time came soon enough when central power depended merely on this spontaneous loyalty.

Not all the successors of Wu-wang profited by the lessons given them by past history. Incapacity, excessive severity and undue weakness had created discontent and loosened the relations between the emperor and his vassals. Increase in the extent of the empire greatly added to this decline of central power. For the emperor's own dominion was centrally situated and surrounded by the several confederate states; its geographical position prevented it from participating in the general aggrandisement of China, and increase in territory, population and prestige had become the privilege of boundary states. Tatar tribes in the north and west and the aboriginal Man barbarians in the south were forced by warfare to yield land, or enticed to exchange it for goods, or induced to mingle with their Chinese neighbours, thus producing a mixed population combining the superior intelligence of the Chinese race with the energetic and warlike spirit of barbarians. These may be the main reasons which gradually undermined the Imperial authority and brought some of the confederate states to the front, so as to overshadow the authority of the Son of Heaven himself, whose military and financial resources were inferior to those of several of his vassals. A few out of the thirty-five sovereigns of the Chóu dynasty were distinguished by extraordinary qualities. Mu-wang of the 10th century performed journeys far beyond the western frontier of his empire, and was successful in warfare against the Dog Barbarians, described as the ancestors of the Hiung-nu, or Huns. The reign of Süan-wang (827-782 B.C.) was filled with warfare against the Tangutans and the Huns, called Hién-yün in a contemporaneous poem of the "Book of Odes"; but the most noteworthy reign in this century is that of the lascivious Yu-wang, the oppressiveness of whose government had caused a bard represented in the "Book of Odes" to complain about

the emperor's evil ways. The writer of this poem refers to certain signs showing that Heaven itself is indignant at Yu-wang's crimes. One of these signs was an eclipse of the sun which had recently occurred, the date and month being clearly stated. This date corresponds exactly with August 29, 776 B.C.; and astronomers have calculated that on that precise date an eclipse of the sun was visible in North China. This, of course, cannot be a mere accident; and since the date falls into the sixth year of Yu-wang's reign, the coincidence is bound to increase our confidence in that part of Chinese history. Our knowledge of it, however, is due to mere chance; for the record of the eclipse would probably not have been preserved until our days had it not been interpreted as a kind of *tekel upharsin* owing to the peculiarity of the political situation. It does not follow, therefore, as some foreign critics assume, that the historical period begins as late as Yu-wang's reign. China has no architectural witnesses to testify to her antiquity as Egypt has in her pyramids and temple ruins; but the sacrificial bronze vessels of the Shang and Chóu dynasties, with their characteristic ornaments and hieroglyphic inscriptions, seem to support the historical tradition inasmuch as natural development may be traced by the analysis of their artistic and paleographic phases. Counterfeiters, say a thousand years later, could not have resisted the temptation to introduce patterns and hieroglyphic shapes of later periods; and whatever bronzes have been assigned to the Shang dynasty, *i.e.* some time in the second millennium B.C., exhibit the Shang characteristics. The words occurring in their inscriptions, carefully collected, may be shown to be confined to ideas peculiar to primitive states of cultural life, not one of them pointing to an invention we may suspect to be of later origin. But, apart from this, it seems a matter of individual judgment how far back beyond that indisputable year 776 B.C. a student will date the beginning of real history.

In the 7th century central authority had declined to such an extent that the emperor was merely the nominal head of the confederation, the hegemony in the empire falling in turn to one of the five principal states, for which reason the Chinese speak of a period of the "Five Leaders." The state of Ts'i, corresponding to North Shan-tung, had begun to overshadow the other states by unprecedented success in economic enterprise, due to the prudent advice of its prime minister, the philosopher Kuan-tzï. Other states attained leadership by success in warfare. Among these leaders we see duke Mu of T'sin (659 B.C.), a state on the western boundary which was so much influenced by amalgamation with its Hunnic neighbours that the purely Chinese states regarded it as a barbarian country. The emperor was in those days a mere shadow; several of his vassals had grown strong enough to claim and be granted the title "king," and they all tried to annihilate their neighbours by ruse in diplomacy and by force of arms, without referring to their common ruler for arbitration, as they were in duty bound. In this *bellum omnium contra omnes* the state of Ts'in, in spite of repeated reverses, remained in possession of the field.

> The period of this general struggle is spoken of by Chinese historians as that of "The Contending States." Like that of the "Five Leaders" it is full of romance; and the examples of heroism, cowardice, diplomatic skill and philosophical equanimity which fill the pages of its history have become the subject of elegant literature in prose and poetry. The political development of the Chóu dynasty is the exact counterpart of that of its spiritual life as shown in the contemporaneous literature. The orthodox conservative spirit which reflects the ethical views of the emperor and his royal partisans is represented by the name Confucius (551-479 B.C.). The great sage had collected old traditions and formulated the moral principles which had been dormant in the Chinese nation for centuries. His doctrines tended to support the maintenance of central power; so did those of other members of his school, especially Mencius. Filial love showed itself as obedience to the parents in the family and as loyalty to the emperor and his government in public life. It was the highest virtue, according to the Confucian school. The history of the nation as taught in the *Shu-king* was in its early part merely an illustration of Confucianist ideas about good and bad government. The perpetual advice to rulers was: "Be like Yau, Shun and Yü, and you will be right." Confucianism was dominant during the earlier centuries of the Chóu dynasty, whose lucky star began to wane when doctrines opposed to it got the upper hand. The philosophical schools built up on the doctrines of Lau-tzï had in the course of generations become antagonistic, and found favour with those who did not endorse that loyalty to the emperor demanded by Mencius; so had other thinkers, some of whom had preached morals which were bound to break up all social relations, like the philosopher of egotism, Yang Chu, according to Mencius disloyalty personified and the very reverse of his ideal, the duke of Chóu. The egotism recommended by Yang Chu to the individual had begun to be practised on a large scale by the contending states, their governments and sovereigns, some of whom had long discarded Confucian rites under the influence of Tatar neighbours. It appears that the anti-Confucian spirit which paved the way towards the final extinction of Wu-wang's dynasty received its chief nourishment from the Tatar element in the population of the northern and western boundary states. Among these Ts'in was the most prominent. Having placed itself in the possession of the territories of nearly all of the remaining states, Ts'in made war against the last shadow emperor, Nan-wang

who had attempted to form an alliance against the powerful usurper, with the result that the western part of the Chóu dominion was lost to the aggressor.

Nan-wang died soon after (256 B.C.), and a relative whom he had appointed regent was captured in 249 B.C., when the king of Ts'in put an end to this last remnant of the once glorious Chóu dynasty by annexing its territory. The king had already secured the possession of the Nine Tripods, huge bronze vases said to have been cast by the emperor Yü as representing the nine divisions of his empire and since preseryed in the treasuries of all the various emperors as a symbol of Imperial power. With the loss of these tripods Nan-wang had forfeited the right to call himself "Son of Heaven." Another prerogative was the offering of sacrifice to Shang-ti, the Supreme Ruler, or God, with whom only the emperor was supposed to communicate. The king of Ts'in had performed the ceremony as early as 253 B.C.

(F. H.*)

(C)—*From the Ts'in Dynasty to 1875.*

After the fall of the Chóu dynasty a kind of interregnum followed during which China was practically without an emperor. This was the time when the state of Ts'in asserted itself as the leader and finally as the master of all the contending states. Its king, Chau-siang, who died in 251 B.C., though virtually emperor, abstained from adopting the imperial title. He was succeeded by his son, Hiao-wên Wang, who died after a three days' reign. Chwan-siang Wang, his son and successor, was a man of no mark. He died in 246 B.C. giving place to Shi Hwang-ti, "the first universal emperor." This sovereign was then only thirteen, but he speedily made his influence felt everywhere. He chose Hien-yang, the modern Si-gan Fu, as his capital, and built there a magnificent palace, which was the wonder and admiration of his contemporaries. He abolished the feudal system, and divided the country into provinces over whom he set officers directly responsible to himself. He constructed roads through the empire, he formed canals, and erected numerous and handsome public buildings.

Ts'in dynasty 249-210 B.C.

Shi Hwang-ti.

Having settled the internal affairs of his kingdom, he turned his attention to the enemies beyond his frontier. Chief among these were the Hiung-nu Tatars, whose attacks had for years disquieted the Chinese and neighbouring principalities. Against these foes he marched with an army of 300,000 men, exterminating those in the neighbourhood of China, and driving the rest into Mongolia. On his return from this campaign he was called upon to face a formidable rebellion in Ho-nan, which had been set on foot by the adherents of the feudal princes whom he had dispossessed. Having crushed the rebellion, he marched southwards and subdued the tribes on the south of the Nan-shan ranges, *i.e.* the inhabitants of the modern provinces of Fu-kien, Kwang-tung and Kwang-si. The limits of his empire were thus as nearly as possible those of modern China proper. One monument remains to bear witness to his energy. Finding that the northern states of Ts'in, Chao and Yen were building lines of fortification along their northern frontier for protection against the Hiung-nu, he conceived the idea of building one gigantic wall, which was to stretch across the whole northern limit of the huge empire from the sea to the farthest western corner of the modern province of Kan-suh. This work was begun under his immediate supervision in 214 B.C. His reforming zeal made him unpopular with the upper classes. Schoolmen and pedants held up to the admiration of the people the heroes of the feudal times and the advantages of the system they administered. Seeing in this propaganda danger to the state Shi Hwang-ti determined to break once and for all with the past. To this end he ordered the destruction of all books having reference to the past history of the empire, and many scholars were put to death for failing in obedience to it. (See *infra § Chinese Literature, §§ History.*) The measure was unpopular and on his death (210 B.C.) rebellion broke out. His son and successor Erh-shi, a weak and debauched youth, was murdered after having offered a feeble resistance to his enemies. His son Tsze-yung surrendered to Liu Pang, the prince of Han, one of the two generals who were the leaders of the rebellion. He afterwards fell into the hands of Hiang Yu, the other chieftain, who put him and his family and associates to death. Hiang Yu aspiring to imperial honours, war broke out between him and Liu Pang. After five years' conflict Hiang Yu was killed in a decisive battle before Wu-kiang. Liu Pang was then proclaimed emperor (206 B.C.) under the title of Kao-ti, and the new line was styled the Han dynasty.

Kao-ti established his capital at Lo-yang in Ho-nan, and afterwards removed it to Chang-an in Shen-si. Having founded his right to rebel on the oppressive nature of the laws promulgated by Shi Hwang-ti, he abolished the ordinances of Ts'in, except that referring to the destruction of the books—for, like his great predecessor, he dreaded the influence exercised by the *literati*—and he exchanged the worship of the gods of the soil of Ts'in for that of those of Han, his native state. His successor Hwei-ti (194-179 B.C.), however, gave every encouragement to literature, and appointed a commission to restore as far as possible the texts which had been destroyed by Shi Hwang-ti.

Han dynasty 206 B.C.

In this the commission was very successful. It was discovered that in many cases the law had been evaded, while in numerous instances scholars were found to write down from memory the text of books of which all copies had been destroyed, though in some cases the purity of the text is doubtful and in other cases there were undoubted forgeries. A period of repose was now enjoyed by the empire. There was peace within its borders, and its frontiers remained unchallenged, except by the Hiung-nu, who suffered many severe defeats. Thwarted in their attacks on China, these marauders attacked the kingdom of the Yueh-chi, which had grown up in the western extremity of Kan-suh, and after much fighting drove their victims along the T'ien-shan-nan-lu to the territory between Turkestan and the Caspian Sea. This position of affairs suggested to the emperor the idea of forming an offensive and defensive alliance with the Yueh-chi against the Hiung-nu. With this object the general Chang K'ien was sent as an ambassador to western Tatary. After having been twice imprisoned by the Hiung-nu he returned to China. Chang K'ien had actually reached the court of the Yueh-chi, or Indo-Scythians as they were called owing to their having become masters of India later on, and paid a visit to the kingdom of Bactria, recently conquered by the Yueh-chi. His report on the several kingdoms of western Asia opened up a new world to the Chinese, and numerous elements of culture, plants and animals were then imported for the first time from the west into China. While in Bactria Chan K'ien's attention was first drawn to the existence of India, and attempts to send expeditions, though at first fruitless, finally led to its discovery. Under 195
Wu-ti (140-86 B.C.) the power of the Hiung-nu was broken and eastern Turkestan changed into a Chinese colony, through which caravans could safely pass to bring back merchandise and art treasures from Persia and the Roman market. By the Hans the feudal system was restored in a modified form; 103 feudal principalities were created, but they were more or less under the jurisdiction of civil governors appointed to administer the thirteen *chows* (provinces) into which the country was divided. About the beginning of the Christian era Wang Mang rose in revolt against the infant successor of P'ing-ti (A.D. 1), and in A.D. 9 proclaimed himself emperor. He, however, only gained the suffrages of a portion of the nation, and before long his oppressive acts estranged his supporters. In A.D. 23 Liu Siu, one of the princes of Han, completely defeated him. His head was cut off, and his body was torn in pieces by his own soldiery.

Eastern Han dynasty, A.D. 23.

Liu Siu, was proclaimed emperor under the title of Kwang-wu-ti, reigned from A.D. 58 to 76. Having fixed on Lo-yang in Ho-nan as his capital, the line of which he was the first emperor became known as the Eastern Han dynasty. It is also known as the Later Han dynasty. During the reign of his successor Ming-ti, A.D. 65, Buddhism was introduced from India into China (see ante § *Religion*). About the same time the celebrated general Pan Ch'ao was sent on an embassy to the king of Shen-shen, a small state of Turkestan, near the modern Pidjan. Before long he added the states of Shen-shen, Khotan, Kucha and Kashgar as apanages to the Chinese crown, and for a considerable period the country enjoyed prosperity. The Han dynasty (including in the term the Eastern Han dynasty) has been considered the first national dynasty and is one of the most famous in China; nor has any ruling family been more popular. The Chinese, especially the northern Chinese, still call themselves "the sons of Han." The wealth and trade as well as the culture of the country was greatly developed, and the competitive examinations for literary degrees instituted. The homogeneity of the nation was so firmly established that subsequent dissensions and conquests could not alter fundamentally the character of the nation.

Wei dynasty.

Towards the end of the 2nd century the power of the Eastern Hans declined. In 173 a virulent pestilence, which continued for eleven years, broke out. A magical cure for this plague was said to have been discovered by a Taoist priest named Chang Chio, who in a single month won a sufficiently large following to enable him to gain possession of the northern provinces of the empire. He was, however, defeated by Ts'aou Ts'aou, another aspirant to imperial honours, whose son, Ts'aou P'ei, on the death of Hien-ti (A.D. 220), proclaimed himself emperor, adopting the title of Wei as the appellation of his dynasty. There were then, however, two other claimants to the throne, Liu Pei and Sun Ch'üan, and the three adventurers agreed to divide the empire between them. Ts'aou P'ei, under the title of Wên-ti, ruled over the kingdom of Wei (220), which occupied the whole of the central and northern portion of China. Liu Pei established the Shuh Han dynasty in the modern province of Sze-ch'uen (221), and called himself Chao-lieh-ti; and to Sun Ch'üan fell the southern provinces of the empire, from the Yangtsze-kiang southwards, including the modern Tongking, which he formed into the kingdom of Wu with Nan-king for his capital, adopting for himself the imperial style of Ta-tê (A.D. 222).

China during the period of the "Three Kingdoms" was a house divided against itself. Liu Pei, as a descendant of the house of Han, looked upon himself as the rightful sovereign of the whole empire, and he despatched an army under Chu-ko Liang to support his claims. This army was met by an Oppossing force under the Wei commander Sze-ma I, of

"Three kingdom" period.

whom Chinese historians say that "he led armies like a god," and who, by adopting a Fabian policy, completely discomfited his adversary. But the close of this campaign brought no peace to the country. Wars became chronic, and the reins of power slipped out of the hands of emperors into those of their generals. Foremost among these were the members of the Sze-ma family of Wei. Sze-ma I left a son, Sze-ma Chao, scarcely less distinguished than himself, and when Sze-ma Chao died his honours descended to Sze-ma Yen, who deposed the ruling sovereign of Wei, and proclaimed himself emperor of China (A.D. 265). His dynasty he styled the Western Tsin dynasty, and he adopted for himself the title of Wu-ti. The most noticeable event in this reign was the advent of the ambassadors of the emperor Diocletian in 284. For some years the neighbouring states appear to have transferred their allegiance from the house of Wei to that of Tsin. Wu-ti's successors proving, however, weak and incapable, the country soon fell again into disorder. The Hiung-nu renewed incursions into the empire at the beginning of the 4th century, and in the confusion which followed, an adventurer named Liu Yuen established himself (in 311) as emperor, first at P'ing-yang in Shan-si and afterwards in Lo-yang and Chang-an. The history of this period is very chaotic. Numerous states sprang into existence, some founded by the Hiung-nu and others by the Sien-pi tribe, a Tungusic clan, inhabiting a territory to the north of China, which afterwards established the Liao dynasty in China. In 419 the Eastern Tsin dynasty came to an end, and with it disappeared for nearly two hundred years all semblance of united authority. The country became divided into two parts, the north and the south. In the north four families reigned successively, two of which were of Sien-pi origin, viz. the Wei and the How Chow, the other two, the Pih Ts'i and the How Liang, being Chinese. In the south five different houses supplied rulers, who were all of Chinese descent.

Western Tsin dynasty.

This period of disorder was brought to a close by the establishment of the Suy dynasty (590). Among the officials of the ephemeral dynasty of Chow was one Yang Kien, who on his daughter becoming empress (578) was created duke of Suy. Two years later Yang Kien proclaimed himself emperor. The country, weary of contention, was glad to acknowledge his undivided authority; and during the sixteen years of his reign the internal affairs of China were comparatively peaceably administered. The emperor instituted an improved code of laws, and added 5000 volumes to the 10,000 which composed the imperial library. Abroad, his policy was equally successful. He defeated the Tatars and chastised the Koreans, who had for a long period recognized Chinese suzerainty, but were torn by civil wars and were disposed to reject her authority. After his death in 604 his second son forced the heir to the throne to strangle himself, and then seized the throne. This usurper, Yang-ti, sent expeditions against the Tatars, and himself headed an expedition against the Uighurs, while one of his generals annexed the Lu-chu Islands to the imperial crown. During his reign the volumes in the imperial library were increased to 54,000, and he spent vast sums in erecting a magnificent palace at Lo-yang, and in constructing unprofitable canals. These and other extravagances laid so heavy a burden on the country that discontent began again to prevail, and on the emperor's return from a successful expedition against the Koreans, he found the empire divided into rebellious factions. In the troubles which followed General Li Yuen became prominent. On the death of the emperor by assassination this man set Kung-ti, the rightful heir, on the throne (617) until such time as he should have matured his schemes.

Suy dynasty.

Kung-ti was poisoned in the following year and Li Yuen proclaimed himself as Kao-tsu, the first emperor of the T'ang dynasty. At this time the Turks were at the height of their power in Asia (see TURKS: *History*), and Kao-tsu was glad to purchase their alliance with money. But divisions weakened the power of the Turks, and T'ai-tsung (reigned 627-650), Kao-tsu's son and successor, regained much of the position in Central Asia which had formerly been held by China. In 640 Hami, Turfan and the rest of the Turkish territory were again included within the Chinese empire, and four military governorships were appointed in Central Asia, viz. at Kucha, Khotan, Kharastan and Kashgar. At the same time the frontier was extended as far as eastern Persia and the Caspian Sea. So great was now the fame of China, that ambassadors from Nepal, Magadha, Persia and Constantinople (643) came to pay their court to the emperor. Under T'ai-tsung there was national unity and peace, and in consequence agriculture and commerce as well as literature flourished. The emperor gave direct encouragements to the Nestorians, and gave a favourable reception to an embassy from Mahommed (see ante § *Religion*). On the accession of Kao-tsung (650) his wife, Wu How, gained supreme influence, and on the death of her husband in 683 she set aside his lawful successor, Chung-tsung, and took possession of the throne. This was the first occasion the country was ruled by a dowager empress. She governed with discretion, and her armies defeated the Khitán in the north-east and also the Tibetans, who had latterly gained possession of Kucha, Khotan and Kashgar. On her death, in 705, Chung-tsung partially left the obscurity in which he had lived during his mother's reign. But his wife, desiring to play a similar rôle to that enjoyed by her mother-in-law, poisoned him and set his son, Jui-

Tang dynasty.

tsung (710), on the throne. This monarch, who was weak and vicious, was succeeded by Yuen-tsung (713), who introduced reform into the administration and encouraged literature and learning. The king of Khokand applied for aid against the Tibetans and Arabs, and Yuen-tsung sent an army to his succour, but his general was completely defeated. During the disorder which arose in consequence of the invasion of the northern provinces by the Khitán, General An Lu-shan, an officer of Turkish descent, placed himself at the head of a revolt, and having secured Tung-kwan on the Yellow river, advanced on Chang-an. Thereupon the emperor fled, and placed his son, Su-tsung (756-762), on the throne. This sovereign, with the help of the forces of Khotan, Khokand and Bokhara, of the Uighurs and of some 4000 Arabs sent by the caliph Mansur, completely defeated An Lu-shan. During the following reigns the Tibetans made constant incursions into the western provinces of the empire, and T'ai-tsung (763-780) purchased the assistance of the Turks against those intruders by giving a Chinese princess as wife to the khan.

At this epoch the eunuchs of the palace gained an unwonted degree of power, and several of the subsequent emperors fell victims to their plots. The T'ang dynasty, which for over a hundred years had governed firmly and for the good of the nation, began to decline. The history of the 8th and 9th centuries is for the most part a monotonous record of feeble governments, oppressions and rebellions. Almost the only event worth chronicling is the iconoclastic policy of the emperor Wu-tsung (841-847). Viewing the increase of monasteries and ecclesiastical establishments as an evil, he abolished all temples, closed the monasteries and nunneries, and sent the inmates back to their families. Foreign priests were subjected to the same repressive legislation, and Christians, Buddhists and Magi were bidden to return whence they came. Buddhism again revived during the reign of the emperor I-tsung (860-874), who, having discovered a bone of Buddha, brought it to the capital in great state. By internal dissensions the empire became so weakened that the prince of Liang found no difficulty in gaining possession of the throne (907). He took the title of T'ai-tsu, being the first emperor of the Later Liang dynasty. Thus ended the T'ang dynasty, which is regarded as being the golden age of Chinese literature.

Five dynasties, viz. the Later Liang, the Later T'ang, the Later Tsin, the Later Han and the Later Chow, followed each other between the years 907 and 960. Though the monarchs of these lines nominally held sway over the empire, their real power was confined to very narrow limits. The disorders which were rife during the time when the T'ang dynasty was tottering to its fall fostered the development of independent states, and so arose Liang in Ho-nan and Shan-tung, Ki in Shen-si, Hwai-nan in Kiang-nan, Chow in Sze-ch'uen and parts of Shen-si and Hu-kwang, Wu-yuĕ in Cheh-kiang, Tsu and King-nan in Hu-kwang, Ling-nan in Kwang-tung and the Uighurs in Tangut.

Sung dynasty.

A partial end was made to this recognized disorganization when, in 960, General Chao Kw'ang-yin was proclaimed by the army emperor in succession to the youthful Kung-ti, who was compelled to abdicate. The circumstances of the time justified the change. It required a strong hand to weld the empire together again, and to resist the attacks of the Khitán Tatars, whose rule at this period extended over the whole of Manchuria and Liao-tung. Against these aggressive neighbours T'ai-tsu (*né* Chao Kw'ang-yin) directed his efforts with varying success, and he died in 976, while the war was still being waged. His son T'ai-tsung (976-997) entered on the campaign with energy, but in the end was compelled to conclude a peace with the Khitán. His successor, Chên-tsung (997-1022), paid them tribute to abstain from further incursions. Probably this tribute was not sent regularly; at all events, under Jên-tsung (1023-1064), the Khitán again threatened to invade the empire, and were only bought off by the promise of an annual tribute of taels 200,000 of silver, besides a great quantity of silken piece goods. Neither was this arrangement long binding, and so formidable were the advances made by the Tatars in the foilowing reigns, that Hwei-tsung (1101-1126) invited the Nüchih Tatars to expel the Khitán from Liao-tung. This they did, but having once possessed themselves of the country they declined to yield it to the Chinese, and the result was that a still more aggressive neighbour was established on the north-eastern frontier of China. The Nüchih or Kin, as they now styled themselves, overran the provinces of Chih-li, Shen-si, Shan-si and Ho-nan, and during the reign of Kao-tsung (1127-1163) they advanced their conquests to the line of the Yangtsze-kiang. From this time the Sung ruled only over southern China; while the Kin or "Golden" dynasty reign«d in the north. The Kin made Chung-tu, which occupied in part the site of the modern Peking, their usual residence. The Sung fixed their capital at Nanking and afterwards at Hangchow. Between them and the Kin there was almost constant war.

Mongol

During this period the Mongols began to acquire power in eastern Asia, and about the beginning of the 12th century the forces of Jenghiz Khan (*q.v.*) invaded the north-western frontier of China and the principality of Hia, which at that time consisted of the modern provinces of Shen-si and Kan-suh. To purchase the good-will of

invasion: 12th century. the Mongols the king of Hia agreed to pay them a tribute, and gave a princess in marriage to their ruler. In consequence of a dispute with the Kin emperor Wei-shao Wang, Jenghiz Khan determined to invade Liao-tung. He was aided by the followers of the Khitán leader Yeh-lü Ts'u-ts'ai, and in alliance with this general he captured Liao-yang, the capital city.

After an unsuccessful invasion of China in 1212, Jenghiz Khan renewed the attack in 1213. He divided his armies into four divisions, and made a general advance southwards. His soldiers swept over Ho-nan, Chih-li and Shan-tung, destroying upwards of ninety cities. It was their boast that a horseman might ride without stumbling over the sites where those cities had stood. Panic-stricken, the emperor moved his court from Chung-tu to K'ai-fêng Fu, much against the advice of his ministers, who foresaw the disastrous effect this retreat would have on the fortunes of Kin. The state of Sung, which up to this time had paid tribute, now declined to recognize Kin as its feudal chief, and a short time afterwards declared war against its quondam ally. Meanwhile, in 1215, Yeh-lü Ts'u-ts'ai advanced into China by the Shan-hai Kwan, and made himself master of Peking, one of the few cities in Chih-li which remained to Kin. After this victory his nobles wished him to proclaim himself emperor, but he refused, being mindful of an oath which he had sworn to Jenghiz Khan. In 1216 Tung-kwan, a mountain pass on the frontiers of Ho-nan and Shen-si, and the scene of numerous dynastic battles (as it is the only gateway between north-eastern and north-western China), was taken by the invaders. As the war dragged on the resistance offered by the Kin grew weaker and weaker. In 1220 Chi-nan Fu, the capital of Shan-tung, was taken, and five years later Jenghiz Khan marched an army westward into Hia and conquered the forces of the king. Two years later (1227) Jenghiz Khan died.

With the view to the complete conquest of China by the Mongols, Jenghiz declined to nominate either of the eldest two sons who had been born to his Chinese wives as his heir, but chose his third son Ogdai, whose mother was a Tatar. On hearing of the death of Jenghiz Khan the Kin sent an embassy to his successor desiring peace, but Ogdai told them there would be no peace for them until their dynasty should be overthrown. Hitherto the Mongols had been without any code of laws. But the consolidation of the nation by the conquests of Jenghiz Khan made it necessary to establish a recognized code of laws, and one of the first acts of Ogdai was to form such a code. With the help also of Yeh-lü Ts'u-ts'ai, he established custom-houses in Chih-li, Shan-tung, Shan-si and Liao-tung; and for this purpose divided these provinces into ten departments. Meanwhile the war with the Kin was carried on with energy. In 1230 Si-gan Fu was taken, and sixty important posts were captured. Two years later, Tu-lé, brother of Ogdai, took Fêng-siang Fu and Han-chung Fu, in the flight from which last-named place 100,000 persons are said to have perished. Following the course of the river Han in his victorious career, this general destroyed 140 towns and fortresses, and defeated the army of Kin at Mount San-fêng.

In 1232 the Mongols made an alliance with the state of Sung, by which, on condition of Sung helping to destroy Kin, Ho-nan was to be the property of Sung for ever. The effect of this coalition soon became apparent. Barely had the Kin emperor retreated from K'ai-fêng Fu to Ju-ning Fu in Ho-nan when the former place fell into the hands of the allies. Next fell Loyang, and the victorious generals then marched on to besiege Ju-ning Fu. The presence of the emperor gave energy to the defenders, and they held out until every animal in the city had been killed for food, until every old and useless person had suffered death to lessen the number of hungry mouths, until so many able-bodied men had fallen that the women manned the ramparts, and then the allies stormed the walls. The emperor burned himself to death in his palace, that his body might not fall into the hands of his enemies. For a few days the shadow of the imperial crown rested on the head of his heir Chang-lin, but in a tumult which broke out amongst his followers he lost his life, and with him ended the "Golden" dynasty.

The Kin dynasty overthrown.

Notwithstanding the treaty between Ogdai and Sung, no sooner were the spoils of Kin to be divided than war broke out again between them, in prosecuting which the Mongol armies swept over the provinces of Sze-ch'uen, Hu-kwang, Kiang-nan and Ho-nan, and were checked only when they reached the walls of Lu-chow Fu in Ngan-hui. Ogdai died in 1241, and was nominally succeeded by his grandson Cheliemên. But one of his widows, Tolickona, took possession of the throne, and after exercising rule for four years, established her son Kwei-yew as great khan. In 1248 his life was cut short, and the nobles, disregarding the claims of Cheliemên, proclaimed as emperor Mangu, the eldest son of Tu-lé. Under this monarch the war against Sung was carried on with energy, and Kublai, outstripping the bounds of Sung territory, made his way into the province of Yun-nan, at that time divided into a number of independent states, and having attached them to his brother's crown he passed on into Tibet, Tongking and Cochin-China, and thence striking northwards entered the province of Kwang-si.

On the death of Mangu in 1259 Kublai (*q.v.*) ascended the throne. Never in the history of China was the nation more illustrious, nor its power more widely felt, than under his

Kublai Khan emperior.

sovereignty. During the first twenty years of his reign Sung kept up a resistance against his authority. Their last emperor Ping-ti, seeing his cause lost, drowned himself in the sea. The Sung dynasty, which had ruled southern China 320 years, despite its misfortunes is accounted one of the great dynasties of China. During its sway arts and literature were cultivated and many eminent writers flourished. His enemies subdued, Kublai Khan in 1280 assumed complete jurisdiction as emperor of China. He took the title of Shit-su and founded what is known as the Yuen dynasty. He built a new capital close to Chung-tu, which became known as Kaanbaligh (city of the khan), in medieval European chronicles, Cambaluc, and later as Peking. At this time his authority was acknowledged "from the Frozen Sea, almost to the Straits of Malacca. With the exception of Hindustan, Arabia and the westernmost parts of Asia, all the Mongol princes as far as the Dnieper declared themselves his vassals, and brought regularly their tribute." It was during this reign that Marco Polo visited China, and he describes in glowing colours the virtues and glories of the "great khan." His rule was characterized by discretion and munificence. He undertook public works, he patronized literature, and relieved the distress of the poor, but the Chinese never forgot that he was an alien and regarded him as a barbarian. He died unregretted in 1294. His son had died during his lifetime, and after some contention his grandson Timur ascended the throne under the title of Yuen-chêng. This monarch died in 1307 after an uneventful reign, and, as he left no son, Wu-tsung, a Mongol prince, became emperor. To him succeeded Jên-tsung in 1312, who made himself conspicuous by the honour he showed to the memory of Confucius, and by distributing offices more equally between Mongols and Chinese than had hitherto been done. This act of justice gave great satisfaction to the Chinese, and his death ended a peaceful and prosperous reign in 1320. At this time there appears to have been a considerable commercial intercourse between Europe and China. But after Jên-tsung's death the dynasty fell on evil days. The Mongols in adopting Chinese civilization had lost much of their martial spirit. They were still regarded as alien by the Chinese and numerous secret societies were formed to achieve their overthrow. Jên-tsung's successors were weak and incapable rulers, and in the person of Shun-ti (1333-1368) were summed up the vices and faults of his predecessors. Revolts broke out, and finally this descendant of Jenghiz Khan was compelled to fly before Chu Yüen-chang, the son of a Chinese labouring man. Deserted by his followers, he sought refuge in Ying-chang Fu, and there the last of the Yüen dynasty died. These Mongol emperors, whatever their faults, had shown tolerance to Christian missionaries and Papal legates (see *ante* § *The Medieval Cathay*).

Chu Yüen-chang met with little opposition, more especially as his first care on becoming possessed of a district was to suppress lawlessness and to establish a settled government. In

Ming dynasty.

1355 he captured Nanking, and proclaimed himself duke of Wu, but carefully avoided adopting any of the insignia of royalty. Even when master of the empire, thirteen years later, he still professed to dislike the idea of assuming the imperial title. His scruples were overcome, and he declared himself emperor in 1368. He carried his arms into Tatary, where he subdued the last semblance of Mongol power in that direction, and then bent his steps towards Liao-tung. Here the Mongols defended themselves with the bravery of despair, but unavailingly, and the conquest of this province left Hung-wu, as the founder of the new or Ming ("Bright") dynasty styled himself, without a foe in the empire.

> All intercourse with Europe seems now to have ceased until the Portuguese arrived in the 16th century, but Hung-wu cultivated friendly relations with the neighbouring states. As a quondam Buddhist priest he lent his countenance to that religion to the exclusion of Taoism, whose priests had for centuries earned the contempt of all but the most ignorant by their pretended magical arts and their search after the philosopher's stone. Hung-wu died in 1398 and was succeeded by his grandson Kien-Wên. Aware that the appointment of this youth—his father was dead—would give offence to the young emperor's uncles, Hung-wu had dismissed them to their respective governments. However, the prince of Yen, his eldest surviving son, rose in revolt as soon as the news reached him of his nephew's accession, and after gaining several victories over the armies of Kien-wên he presented himself before the gates of Nanking, the capital. Treachery opened the gates to him, and the emperor having fled in the disguise of a monk, the victorious prince became emperor and took the title of Yung-lo (1403). At home Yung-lo devoted himself to the encouragement of literature and the fine arts, and, possibly from a knowledge that Kien-wên was among the Buddhist priests, he renewed the law prohibiting Buddhism. Abroad he swept Cochin-China and Tongking within the folds of his empire and carried his arms into Tatary, where he made new conquests of waste regions, and erected a monument of his victories. He died in 1425, and was succeeded by his son Hung-hi.
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> Hung-hi's reign was short and uneventful. He strove to promote only such mandarins as had proved themselves to be able and honest, and to further the welfare of the people. During the reign of his successor, Süen-tê (1426-1436), the empire suffered the first loss of territory since the commencement of the dynasty. Cochin-China rebelled and gained her independence. The

next emperor, Chêng-t'ung (1436), was taken prisoner by a Tatar chieftain, a descendant of the Yüen family named Yi-sien, who had invaded the northern Erovinces. Having been completely defeated by a Chinese force from Liao-tung, Yi-sien liberated his captive, who reoccupied the throne, which during his imprisonment (1450-1457) had been held by his brother King-ti. The two following reigns, those of Chêng-hwa (1465-1488) and of Hung-chi (1488-1506), were quiet and peaceful.

The most notable event in the reign of the next monarch, Chêng-te (1506-1522), was the arrival of the Portuguese at Canton (1517). From this time dates modern European intercourse with China. Chêng-te suppressed a formidable insurrection headed by the prince of Ning, but disorder caused by this civil war encouraged the foreign enemies of China. From the north came a Tatar army under Yen-ta in 1542, during the reign of Kia-tsing, which laid waste the province of Shen-si, and even threatened the capital, and a little later a Japanese fleet ravaged the littoral provinces. Ill-blood had arisen between the two peoples before this, and a Japanese colony had been driven out of Ningpo by force and not without bloodshed a few years previously. Kia-tsing (d. 1567) was not equal to such emergencies, and his son Lung-king (1567-1573)sought to placate the Tatar Yen-ta by making him a prince of the empire and giving him commercial privileges, which were supplemented by the succeeding emperor Wan-li (1573-1620) by the grant of land in Shen-si. During the reign of this sovereign, in the year 1592, the Japanese successfully invaded Korea, and Taikosarna, the regent of Japan, was on the point of proclaiming himself king of the peninsula, when a large Chinese force, answering to the invitation of the king, appeared and completely routed the Japanese army, at the same time that the Chinese fleet cut off their retreat by sea. In this extremity the Japanese sued for peace, and sent an embassy to Peking to arrange terms. But the peace was of short duration. In 1597 the Japanese again invaded Korea, defeated the Chinese army, destroyed the Chinese fleet and ravaged the coast. Suddenly, however, when in the full tide of conquest, they evacuated Korea, which again fell under the direction of China. Four years later the missionary Matteo Ricci (*q.v.*) arrived at the Chinese court; and though at first the emperor was inclined to send him out of the country, his abilities gradually won for him the esteem of the sovereign and his ministers, and he remained the scientific adviser of the court until his death in 1610.

Struggle with Japan for Korea.

About this time the Manchu Tatars, goaded into war by the injustice they were constantly receiving at the hands of the Chinese, led an army into China (in 1616) and completely defeated the force which was sent against them. Three years later they gained possession of the province of Liao-tung. These disasters overwhelmed the emperor, and he died of a broken heart in 1620.

In the same year T'ien-ming, the Manchu sovereign, having declared himself independent, moved the court to San-ku, to the east of Mukden, which, five years later, he made his capital. In 1627 Ts'ung-chêng, the last emperor of the Ming dynasty, ascended the Chinese throne. In his reign English merchants first made their appearance at Canton. The empire was now torn by internal dissensions. Rebel bands, enriched by plunder, and grown bold by success, began to assume the proportion of armies. Two rebels, Li Tsze-ch'êng and Shang K'o-hi, decided to divide the empire between them. Li besieged K'ai-fêng Fu, the capital of Ho-nan, and so long and closely did he beleaguer it that in the consequent famine human flesh was regularly sold in the markets. At length an imperial force came to raise the siege, but fearful of meeting Li's army, they cut through the dykes of the Yellow River, "China's Sorrow," and flooded the whole country, including the city. The rebels escaped to the mountains, but upwards of 200,000 inhabitants perished in the flood, and the city became a heap of ruins (1642). From K'ai-fêng Fu Li marched against the other strongholds of Ho-nan and Shen-si, and was so completely successful that he determined to attack Peking. A treacherous eunuch opened the gates to him, on being informed of which the emperor committed suicide. When the news of this disaster reached the general-commanding on the frontier of Manchu Tatary, he, in an unguarded moment, concluded a peace with the Manchus, and invited them to dispossess Li Tsze-ch'êng. The Manchus entered China, and after defeating a rebel army sent against them, they marched towards Peking. On hearing of the approach of the invaders, Li Tsze-ch'êng, after having set fire to the imperial palace, evacuated the city, but was overtaken, and his force was completely routed.

Manchu invasion: 17th century.

The Chinese now wished the Manchus to retire, but, having taken possession of Peking, they proclaimed the ninth son of T'ien-ming emperor of China under the title of Shun-chi, and adopted the name of Ta-ts'ing, or "Great Pure," for the dynasty (1644). Meanwhile the mandarins at Nanking had chosen an imperial prince to ascend the throne. At this most inopportune moment "a claimant" to the throne, in the person of a pretended son of the last emperor, appeared at court. While this contention prevailed inside Nanking the Tatar army appeared at the walls. There was no need for them to use force. The gates were thrown open, and they took

Ta-ts'ing dynasty.

possession of the city without bloodshed. Following the conciliatory policy they had everywhere pursued, they confirmed the mandarins in their offices and granted a general amnesty to all who would lay down their arms. As the Tatars entered the city the emperor left it, and after wandering about for some days in great misery, he drowned himself in the Yangtsze-kiang. Thus ended the Ming dynasty, and the empire passed again under a foreign yoke. By the Mings, who partly revived the feudal system by making large territorial grants to members of the reigning house, China was divided into fifteen provinces; the existing division into eighteen provinces was made by the Manchus.

All accounts agree in stating that the Manchu conquerors are descendants of a branch of the family which gave the Kin dynasty to the north of China; and in lieu of any authentic account of their early history, native writers have thrown a cloud of fable over their origin (see MANCHURIA). In the 16th century they were strong enough to cope with their Chinese neighbours. Doubtless the Mings tried to check their ambition by cruel reprisals, but against this must be put numerous Manchu raids into Liao-tung.

The accession to the throne of the emperor Shun-chi did not restore peace to the country. In Kiang-si, Fu-kien, Kwang-tung and Kwang-si the adherents of the Ming dynasty defended themselves vigorously but unsuccessfully against the invaders, while the pirate Chêng Chi-lung, the father of the celebrated Coxinga, kept up a predatory warfare against them on the coast. Eventually he was induced to visit Peking, where he was thrown into prison and died. Coxinga, warned by his father's example, determined to leave the mainland and to seek an empire elsewhere. His choice fell on Formosa, and having driven out the Dutch, who had established themselves in the island in 1624, he held possession until the reign of K'ang-hi, when (1682) he resigned in favour of the imperial government. Meanwhile a prince of the house of Ming was proclaimed emperor in Kwang-si, under the title of Yung-li. The Tatars having reduced Fu-kien and Kiang-si, and having taken Canton after a siege of eight months, completely routed his followers, and Yung-li was compelled to fly to Pegu. Some years later, with the help of adherents in Yun-nan and Kwei-chow, he tried to regain the throne, but his army was scattered, and he was taken prisoner and strangled. Gradually opposition to the new régime became weaker and weaker, and the shaved head with the pig-tail—the symbol of Tatar sovereignty—became more and more adopted. In 1651 died Ama Wang, the uncle of Shun-chi, who had acted as regent during his nephew's minority, and the emperor then assumed the government of the state. He appears to have taken a great interest in science, and to have patronized Adam Schaal, a German Jesuit, who was at that time resident at Peking. It was during his reign (1656) that the first Russian embassy arrived at the capital, but as the envoy declined to *kowtow* before the emperor he was sent back without having been admitted to an audience.

After an unquiet reign of seventeen years Shun-chi died (1661). and was succeeded by his son K'ang-hi. He came into collision with the Russians, who had reached the Amur regions about 1640 and had built a fort on the upper Amur; but by the Treaty of Nerchinsk, concluded in 1689 (the first treaty made between China and a European power), the dispute was settled, the Amur being taken as the frontier. K'ang-hi was indefatigable in administering the affairs of the empire, and he devoted much of his time to literary and scientific studies under the guidance of the Jesuits. The dictionary of the Chinese language, published under his superintendence, proves him to have been as great a scholar as his conquests over the Eleuths show him to have been famous as a general. During one of his hunting expeditions to Mongolia he caught a fatal cold, and he died in 1721. Under his rule Tibet was added to the empire, which extended from the Siberian frontier to Cochin-China, and from the China Sea to Turkestan. During his reign there was a great earthquake at Peking, in which 400,000 people are said to have perished.

K'ien-lung, who began to reign in 1735, was ambitious and warlike. He marched an army into Hi, which he converted into a Chinese province, and he afterwards added eastern Turkestan to the empire. Twice he invaded Burma, and once he penetrated into Cochin-China, but in neither country were his arms successful. He is accused of great cruelty towards his subjects, which they repaid by rebelling against him. During his reign the Mahommedan standard was first raised in Kan-suh. (Since the Mongol conquest in the 13th century there had been a considerable immigration of Moslems into western China; and numbers of Chinese had become converts). But the Mussulmans were unable to stand against the imperial troops; their armies were dispersed; ten thousand of them were exiled; and an order was issued that every Mahommedan in Kan-suh above the age of fifteen should be put to death (1784).

K'ien-lung wrote incessantly, both poetry and prose, collected libraries and republished works of value. His campaigns furnished him with themes for his verses, and in the Summer Palace was found a handsome manuscript copy of a laudatory poem he composed on the occasion of his war against the Gurkhas. This was one of the most successful of his military undertakings. His generals marched 70,000 men into Nepal to within 60 miles of the British frontiers, and having subjugated the Gurkhas they received the submission of the Nepalese, and acquired an additional hold over Tibet (1792). In other directions his arms were not so

successful. There is no poem commemorating the campaign against the rebellious Formosans, nor lament over the loss of 100,000 men in that island, and the last few years of his reign were disturbed by outbreaks among the Miao-tsze, hill tribes living in the mountains in the provinces of Kwei-chow and Kwang-si. In 1795, after a reign of sixty years, K'ien-lung abdicated in favour of his fifteenth son, who adopted the title of Kia-k'ing as the style of his reign. K'ien-lung died at the age of eighty-eight in 1798.

During the reign of K'ien-lung commerce between Europe and Canton—the only Chinese port then open to foreign trade—had attained important dimensions. It was mainly in the hands of the Portuguese, the British and the Dutch. The British trade was then a monopoly of the East India Company. The trade, largely in opium, tea and silk, was subject to many exactions and restrictions,[49] and many acts of gross injustice were committed on the persons of Englishmen. To obtain some redress the British government at length sent an embassy to Peking (1793) and Lord Macartney was chosen to represent George III. on the occasion. The mission was treated as showing that Great Britain was a state tributary to China, and Lord Macartney was received with every courtesy. But the concessions he sought were not accorded, and in this sense his mission was a failure.

Trade with Europe.

Kia-k'ing's reign was disturbed and disastrous. In the northern and western provinces, rebellion after rebellion broke out, due in a great measure to the carelessness, incompetency and obstinacy of the emperor, and the coasts were infested with pirates, whose number and organization enabled them for a long time to hold the imperial fleet in check. Meanwhile the condition of the foreign merchants at Canton had not improved, and to set matters on a better footing the British government despatched a second ambassador in the person of Lord Amherst to Peking in 1816. As he declined to *kowtow* before the emperor, he was not admitted to the imperial presence and the mission proved abortive. Destitute of all royal qualities, a slave to his passions, and the servant of caprice, Kia-k'ing died in 1820. The event fraught with the greatest consequences to China which occurred in his reign (though at the time it attracted little attention) was the arrival of the first Protestant missionary, Dr R. Morrison (*q.v.*), who reached Canton in 1807.

Tao-kwang (1820-1850), the new emperor, though possessed in his early years of considerable energy, had no sooner ascended the throne than he gave himself up to the pursuit of pleasure. The reforms which his first manifestoes foreshadowed never seriously occupied his attention. Insurrection occurred in Formosa, Kwang-si, Ho-nan and other parts of the empire, and the Triad Society, which had originated during the reign of K'ang-hi, again became formidable.

More important to the future of the country than the internal disturbances was the new attitude taken at this time towards China by the nations of Europe. Hitherto the European missionaries and traders in China had been dependent upon the goodwill of the Chinese. The Portuguese had been allowed to settle at Macao (*q.v.*) for some centuries; Roman Catholic missionaries since the time of Ricci had been alternately patronized and persecuted; Protestant missionaries had scarcely gained a foothold; the Europeans allowed to trade at Canton continued to suffer under vexatious regulations—the Chinese in general regarded Europeans as barbarians, "foreign devils." Of the armed strength of Europe they were ignorant. They were now to be undeceived, Great Britain being the first power to take action. The hardships inflicted on the British merchants at Canton became so unbearable that when, in 1834, the monopoly of the East India Company ceased, the British government sent Lord Napier as minister to superintend the foreign trade at that port. Lord Napier was inadequately supported, and the anxieties of his position brought on an attack of fever, from which he died at Macao after a few months' residence in China. The chief cause of complaint adduced by the mandarins was the introduction of opium by the merchants, and for years they attempted by every means in their power to put a stop to its importation. At length Captain (afterwards Admiral Sir Charles) Elliot, the superintendent of trade, in 1839 agreed that all the opium in the hands of Englishmen should be given up to the native authorities, and he exacted a pledge from the merchants that they would no longer deal in the drug. On the 3rd of April 20,283 chests of opium were handed over to the mandarins and were by them destroyed.

War with Great Britain, 1840.

The surrender of the opium led to further demands by Lin Tze-su, the Chinese imperial commissioner, demands which were considered by the British government to amount to a *casus belli*, and in 1840 war was declared. In the same year the fleet captured Chusan, and in the following year the Bogue Forts fell, in consequence of which operations the Chinese agreed to cede Hong-Kong to the victors and to pay them an indemnity of 6,000,000 dollars. As soon as this news reached Peking, Ki Shen, who had succeeded Commissioner Lin, was dismissed from his post and degraded, and Yi Shen, another Tatar, was appointed in his room. Before the new commissioner reached his post Canton had fallen into the hands of Sir Hugh

Gough, and shortly afterwards Amoy, Ning-po, Tinghai in Chusan, Chapu, Shanghai and Chin-kiang Fu shared the same fate. Nanking would also have been captured had not the imperial government, dreading the loss of the "Southern Capital," proposed terms of peace. Sir Henry Pottinger, who had succeeded Captain Elliot, concluded, in 1842, a treaty with the imperial commissioners, by which the four additional ports of Amoy, Fu-chow, Ningpo and Shanghai were declared open to foreign trade, and an indemnity of 21,000,000 dollars was to be paid to the British.

Hien-fêng emperor.

On the accession of Hien-fêng in 1850, a demand was raised for the reforms which had been hoped for under Tao-kwang, but Hien-fêng possessed in an exaggerated form the selfish and tyrannical nature of his father, together with a voluptuary's craving for every kind of sensual pleasure. For some time Kwang-si had been in a very disturbed state, and when the people found that there was no hope of relief from the oppression they endured, they proclaimed a youth, who was said to be the representative of the last emperor of the Ming dynasty, as emperor, under the title of T'ien-tê or "Heavenly Virtue." From Kwang-si the revolt spread into Hu-peh and Hu-nan, and then languished from want of a leader and a definite political cry. When, however, there appeared to be a possibility that, by force of arms and the persuasive influence of money, the imperialists would re-establish their supremacy, a leader presented himself in Kwang-si, whose energy of character, combined with great political and religious enthusiasm, speedily gained for him the suffrages of the discontented. This was Hung Siu-ts'üan. He proclaimed himself as sent by heaven to drive out the Tatars, and to restore in his own person the succession to China. At the same time, having been converted to Christianity and professing to abhor the vices and sins of the age, he called on all the virtuous of the land to extirpate rulers who were standing examples of all that was base and vile in human nature. Crowds soon flocked to his standard. T'ien-tê was deserted; and putting himself at the head of his followers (who abandoned the practice of shaving the head), Hung Siu-ts'üan marched northwards and captured Wu-ch'ang on the Yangtsze-kiang, the capital of Hu-peh. Then, moving down the river, he proceeded to the attack of Nanking. Without much difficulty Hung Siu-ts'üan in 1853 established himself within its walls, and proclaimed the inauguration of the T'ai-p'ing dynasty, of which he nominated himself the first emperor under the title of T'ien Wang or "Heavenly king." During the next few years his armies penetrated victoriously as far north as Tientsin and as far east as Chin-kiang and Su-chow, while bands of sympathizers with his cause appeared in the neighbourhood of Amoy. As if still further to aid him in his schemes, Great Britain declared war against the Tatar dynasty in 1857, in consequence of an outrage known as the "Arrow" affair (see PARKES, SIR HARRY SMITH). In December 1857 Canton was taken by the British, and a further blow was struck against the prestige of the Manchu dynasty by the determination of Lord Elgin, who had been sent as special ambassador, to go to Peking and communicate directly with the emperor. In May 1858 the Taku Forts were taken, and Lord Elgin went up the Peiho to Tientsin *en route* for the capital. At Tientsin, however, imperial commissioners persuaded him to conclude a treaty with them on the spot, which treaty it was agreed should be ratified at Peking in the following year. When, however, Sir Frederick Bruce, who had been appointed minister to the court of Peking, attempted to pass Taku to carry out this arrangement, the vessels escorting him were treacherously fired on from the forts and he was compelled to return. Thereupon Lord Elgin was again sent out with full powers, accompanied by a large force under the command of Sir Hope Grant. The French (to seek reparation for the murder of a missionary in Kwang-si) took part in the campaign, and on the 1st of August 1860 the allies landed without meeting with any opposition at Pei-tang, a village 12 m. north of Taku. A few days later the forts at that place were taken, and thence the allies marched to Peking. Finding further resistance to be hopeless, the Chinese opened negotiations, and as a guarantee of their good faith surrendered the An-ting gate of the capital to the allies. On the 24th of October 1860 the treaty of 1858 was ratified by Prince Kung and Lord Elgin, and a convention was signed under the terms of which the Chinese agreed to pay a war indemnity of 8,000,000 taels. The right of Europeans to travel in the interior was granted and freedom guaranteed to the preaching of Christianity. The customs tariff then agreed upon legalized the import of opium, though the treaty of 1858, like that of 1842, was silent on the subject.

T'ai-p'ing rebellion.

Great Britain and France were not the only powers of Europe with whom Hien-fêng was called to deal. On the northern border of the empire Russia began to exercise pressure. Russia had begun to colonize the lower Amur region, and was pressing towards the Pacific. This was a remote region, only part of the Chinese empire since the Manchu conquest, and by treaties of 1858 and 1860 China ceded to Russia all its territory north of the Amur and between the Ussuri and the Pacific (see AMUR, province). The Russians in their newly acquired land founded the port of Vladivostok (*q.v.*).

T'ung-chi

Hien-fêng died in the summer of the year 1861, leaving the throne to his son T'ung-chi (1861-1875), a child of five years old, whose mother, Tsz'e Hsi (1834-1908), had been raised from the place of favourite concubine to that of Imperial Consort. The legitimate empress, Tsz'e An, was childless, and the two dowagers became

emperor; dowager empress regent.

joint regents. The conclusion of peace with the allies was the signal for a renewal of the campaign against the T'ai-p'ings, and, benefiting by the friendly feelings of the British authorities engendered by the return of amicable relations, the Chinese government succeeded in enlisting Major Charles George Gordon (*q.v.*) of the Royal Engineers in their service. In a suprisingly short space of time this officer formed the troops, which had formerly been under the command of an American named Ward, into a formidable army, and without delay took the field against the rebels. From that day the fortunes of the T'ai-p'ings declined. They lost city after city, and, finally in July 1864, the imperialists, after an interval of twelve years, once more gained possession of Nanking. T'ien Wang committed suicide on the capture of his capital, and with him fell his cause. Those of his followers who escaped the sword dispersed throughout the country, and the T'ai-p'ings ceased to be.

With the measure of peace which was then restored to the country trade rapidly revived, except in Yun-nan, where the Mahommedan rebels, known as Panthays, under Suleiman, still kept the imperial forces at bay. Against these foes the government was careless to take active measures, until in 1872 Prince Hassan, the adopted son of Suleiman, was sent to England to gain the recognition of the queen for his father's government. This step aroused the susceptibilities of the imperial government, and a large force was despatched to the scene of the rebellion. Before the year was out the Mahommedan capital Ta-li Fu fell into the hands of the imperialists, and the followers of Suleiman were mercilessly exterminated. In February 1873 the two dowager empresses resigned their powers as regents. This long-expected time was seized upon by the foreign ministers to urge their right of audience with the emperor, and on the 29th of June 1873 tne privilege of gazing on the "sacred countenance" was accorded them.

The emperor T'ung-chi died without issue, and the succession to the throne, for the first time in the annals of the Ts'ing dynasty, passed out of the direct line. As already stated, the

Accession of Kwang-su, 1875.

first emperor of the Ts'ing dynasty, Shih-tsu Hwangti, on gaining possession of the throne on the fall of the Ming, or "Great Bright" dynasty, adopted the title of Shun-chi for his reign, which began in the year 1644. The legendary progenitor of these Manchu rulers was Aisin Gioro, whose name is said to point to the fact of his having been related to the race of Nü-chih, or Kin, *i.e.* Golden Tatars, who reigned in northern China during the 12th and 13th centuries. K'ang-hi (1661-1722) was the third son of Shun-chi; Yung-chêng (1722-1735) was the fourth son of K'ang-hi; K'ien-lung (1736-1795) was the fourth son of Yung-chêng; Kia-k'ing (1796-1820) was the fifteenth son of K'ien-lung; Tao-Kwang (1821-1850) was the second son of Kia-k'ing; Hien-fêng (1851-1861) was the fourth of the nine sons who were born to the emperor Tao-kwang; and T'ung-chi (1862-1875) was the only son of Hien-fêng. The choice now fell upon Tsai-t'ien (as he was called at birth), the infant son (born August 2, 1872) of Yi-huan, Prince Chun, the seventh son of the emperor Tao-kwang and brother of the emperor Hien-fêng; his mother was a sister of the empress Tsz'e Hsi, who, with the aid of Li Hung-chang, obtained his adoption and proclamation as emperor, under the title of Kwang-su, "Succession of Glory."

In order to prevent the confusion which would arise among the princes of the imperial house were they each to adopt an arbitrary name, the emperor K'ang-hi decreed that each of his

Imperial family nomenclature and rank.

twenty-four sons should have a *personal* name consisting of two characters, the first of which should be *Yung*, and the second should be compounded with the determinative *shih*, "to manifest," an arrangement which would, as has been remarked, find an exact parallel in a system by which the sons in an English family might be called Louis *Edward*, Louis *Edwin*, Louis *Edwy*, Louis *Edgar* and so on. This device obtained also in the next generation, all the princes of which had *Hung* for their first name, and the emperor K'ien-lung (1736-1795) extended it into a system, and directed that the succeeding generations should take the four characters *Yung*, *Mien*, *Yih* and *Tsai* respectively, as the first part of their names. Eight other characters, namely, *P'u*, *Yu*, *Hêng*, *K'i*, *Tao*, *K'ai*, *Tsêng*, *Ki*, were subsequently added, thus providing generic names for twelve generations. With the generation represented by Kwang-su the first four characters were exhausted, and any sons of the emperor Kwang-su would therefore have been called *P'u*. By the ceremonial law of the "Great Pure" dynasty, twelve degrees of rank are distributed among the princes of the imperial house, and are as follows: (1) Ho-shih Tsin Wang, prince of the first order; (2) To-lo Keun Wang, prince of the second order; (3) To-lo Beileh, prince of the third order; (4) Ku-shan Beitsze, prince of the fourth order; 5 to 8, Kung, or duke (with distinctive designations); 9 to 12, Tsiang-keun, general (with distinctive designations). The sons of emperors usually receive patents of the first or second order on their reaching manhood, and on their sons is bestowed the title of *Beileh*. A *Beileh's* sons become *Beitsze*; a Beitsze's sons become *Kung*, and so on.

(R. K. D.; X.)

(D)—*From 1875 to 1901.*

The accession to the throne of Kwang-su in January 1875 attracted little notice outside

China, as the supreme power continued to be vested in the two dowager-empresses—the empress Tsz'e An, principal wife of the emperor Hien-fêng, and the empress Tsz'e Hsi, secondary wife of the same emperor, and mother of the emperor T'ung-chi. Yet there were circumstances connected with the emperor Kwang-su's accession which might well have arrested attention. The emperor T'ung-chi, who had himself succumbed to an ominously brief and mysterious illness, left a young widow in an advanced state of pregnancy, and had she given birth to a male child her son would have been the rightful heir to the throne. But even before she sickened and died—of grief, it was officially stated, at the loss of her imperial spouse—the dowager-empresses had solved the question of the succession by placing Kwang-su on the throne, a measure which was not only in itself arbitrary, but also in direct conflict with one of the most sacred of Chinese traditions. The solemn rites of ancestor-worship, incumbent on every Chinaman, and, above all, upon the emperor, can only be properly performed by a member of a younger generation than those whom it is his duty to honour. The emperor Kwang-su, being a first cousin to the emperor T'ung-chi, was not therefore qualified to offer up the customary sacrifices before the ancestral tablets of his predecessor. The accession of an infant in the place of T'ung-Tchi achieved, however, for the time being what was doubtless the paramount object of the policy of the two empresses, namely, their undisturbed tenure of the regency, in which the junior empress Tsz'e Hsi, a woman of unquestionable ability and boundless ambition, had gradually become the predominant partner.

The two dowager-empresses.

The first question that occupied the attention of the government under the new reign was one of the gravest importance, and nearly led to a war with Great Britain. The Indian government was desirous of seeing the old trade relations between Burma and the south-west provinces, which had been interrupted by the Yun-nan rebellion, re-established, and for that purpose proposed to send a mission across the frontier into China. The Peking government assented and issued passports for the party, which was under the command of Colonel Browne. Mr A.R. Margary, a young and promising member of the China consular service, who was told off to accompany the expedition as interpreter, was treacherously murdered by Chinese at the small town of Manwyne and almost simultaneously an attack was made on the expedition by armed forces wearing Chinese uniform (January 1875). Colonel Browne with difficulty made his way back to Bhamo and the expedition was abandoned.

Murder of Mr Margary.

Tedious negotiations followed, and, more than eighteen months after the outrage, an arrangement was come to on the basis of guarantees for the future, rather than vengeance for the past. The arrangement was embodied in the Chifu convention, dated 13th September 1876. The terms of the settlement comprised (1) a mission of apology from China to the British court; (2) the promulgation throughout the length and breadth of the empire of an imperial proclamation, setting out the right of foreigners to travel under passport, and the obligation of the authorities to protect them; and (3) the payment of indemnity. Additional articles were subsequently signed in London relative to the collection of likin on Indian opium and other matters.

Chifu convention 1876.

Simultaneously with the outbreak of the Mahommedan rebellion in Yun-nan, a similar disturbance had arisen in the north-west provinces of Shen-si and Kan-suh. This was followed by a revolt of the whole of the Central Asian tribes, which for two thousand years had more or less acknowledged the imperial sway. In Kashgaria a nomad chief named Yakub Beg, otherwise known as the Atalik Ghāzi, had made himself amir, and seemed likely to establish a strong rule. The fertile province of Kulja or Ili, lying to the north of the T'ianshan range, was taken possession of by Russia in 1871 in order to put a stop to the prevailing anarchy, but with a promise that when China should have succeeded in re-establishing order in her Central Asian dominions it should be given back. The interest which was taken in the rebellion in Central Asia by the European powers, notably by the sultan of Turkey and the British government, aroused the Chinese to renewed efforts to recover their lost territories, and, as in the case of the similar crisis in Yun-nan, they undertook the task with sturdy deliberation. They borrowed money—£1,600,000—for the expenses of the expedition, this being the first appearance of China as a borrower in the foreign markets, and appointed the viceroy, Tso Tsung-t'ang, commander-in-chief. By degrees the emperor's authority was established from the confines of Kan-suh to Kashgar and Yarkand, and Chinese garrisons were stationed in touch with the Russian outpost in the region of the Pamirs (December 1877). Russia was now called upon to restore Kulja, China being in a position to maintain order. China despatched Chung-how, a Manchu of the highest rank, who had been notoriously concerned in the Tientsin massacre of 1870, to St Petersburg to negotiate a settlement. After some months of discussion a document was signed (September 1879), termed the treaty of Livadia, whereby China recovered, not indeed the

Revolt in Central Asia.

Imperial consolidation.

whole, but a considerable portion of the territory, on her paying to Russia five million roubles as the cost of occupation. The treaty was, however, received with a storm of indignation in China. Memorials poured in from all sides denouncing the treaty and its author. Foremost among these was one by Chang Chih-tung, who afterwards became the most distinguished of the viceroys, and governor-general of Hu-peh and Hu-nan provinces. Prince Chun, the emperor's father, came into prominence at this juncture as an advocate for war, and under these combined influences the unfortunate Chung-how was tried and condemned to death (3rd of March 1880). For some months warlike preparations went on, and the outbreak of hostilities was imminent. In the end, however, calmer counsels prevailed. It was decided to send the Marquis Tseng, who in the meantime had become minister in London, to Russia to negotiate. A new treaty which still left Russia in possession of part of the Ili valley was ratified on the 19th of August 1881. The Chinese government could now contemplate the almost complete recovery of the whole extensive dominions which had at any time owned the imperial sway. The regions directly administered by the officers of the emperor extended from the borders of Siberia on the north to Annam and Burma on the south, and from the Pacific Ocean on the east to Kashgar and Yarkand on the west. There was also a fringe of tributary nations which still kept up the ancient forms of allegiance, and which more or less acknowledged the dominioi of the central kingdom. The principal tributary nations then were Korea, Lu-chu, Annam, Burma and Nepal.

Korea was the first of the dependencies to come into notice. In 1866 some Roman Catholic missionaries were murdered, and about the same time an American vessel was burnt in one of the rivers and her crew murdered. China refused satisfaction; both to France and America, and suffered reprisals to be made on Korea without protest. America and Japan both desired to conclude commercial treaties for the opening up of Korea, and proposed to negotiate with China. China refused and referred them to the Korean government direct, saying she was not wont to interfere in the affairs of her vassal states. As a result Japan concluded a treaty in 1876, in which the independence of Korea was expressly recognized. This was allowed to pass without protest, but as other nations proceeded to conclude treaties on the same terms China began to perceive her mistake, and endeavoured to tack on to each a declaration by the king that he was in fact a tributary—a declaration, however, which was quietly ignored. Japan, however, was the only power with which controversy immediately arose. In 1882 a faction fight, which had long been smouldering, broke out, headed by the king's father, the Tai Won Kun, in the course of which the Japanese legation was attacked and the whole Japanese colony had to flee for their lives. China sent troops, and by adroitly kidnapping the Tai Won Kun, order was for a time restored. The Japanese legation was replaced, but under the protection of a strong body of Japanese troops. Further revolutions and riots followed, in which the troops of the two countries took sides, and there was imminent danger of war. To obviate this risk, it was agreed in 1885 between Count Ito and Li Hung-Chang that both sides should withdraw their troops, the king being advised to engage officers of a third state to put his army on such a footing as would maintain order, and each undertook to give the other notice should it be found necessary to send troops again. In this way a *modus vivendi* was established which lasted till 1894.

Korea and Japan.

We can only glance briefly at the domestic affairs of China during the period 1875-1882. The years 1877-1878 were marked by a famine in Shan-si and Shan-tung, which for duration and intensity has probably never been equalled. It was computed that 12 or 13 millions perished. It was vainly hoped that this loss of life, due mainly to defective commumcations, would induce the Chinese government to listen to proposals for railway construction. The Russian scare had, however, taught the Chinese the value of telegraphs, and in 1881 the first line was laid from Tientsin to Shanghai. Further construction was continued without intermission from this date. A beginning also was made in naval affairs. The arsenal at Fuchow was turning out small composite gunboats, a training ship was bought and put under the command of a British officer. Several armoured cruisers were ordered from England, and some progress was made with the fortifications of Port Arthur and Wei-hai-wei. Forts were also built and guns mounted at Fuchow, Shanghai, Canton and other vulnerable points. Money for these purposes was abundantly supplied by the customs duties on foreign trade, and China had learnt that at need she could borrow from the foreign banks on the security of this revenue.

Domestic affairs, 1875-1882.

In 1881 the senior regent, the empress Tsz'e An, was carried off by a sudden attack of heart disease, and the empress Tsz'e Hsi remained in undivided possession of the supreme power during the remainder of the emperor Kwang-su's minority. Li Hung-Chang, firmly established at Tientsin, within easy reach of the capital, as viceroy of the home province of Chih-li and superintendent of northern trade, enjoyed a larger share of his imperial mistress's favour than was often granted by the ruling Manchus to officials of Chinese birth, and in all the graver questions of foreign policy his advice was generally decisive.

While the dispute with Japan was still going on regarding Korea, China found herself involved in a more serious quarrel in respect of another tributary state which lay on the southern frontier. By a treaty made between France and Annam in 1874, the Red river or Songkoi, which rising in-south-western China, flows through Tongking, was opened to trade, together with the cities of Haiphong and Hanoi situated on the delta. The object of the French was to find a trade route to Yun-nan and Sze-ch'uen from a base of their own, and it was hoped the Red river would furnish such a route. Tongking at this time, however, was infested with bands of pirates and cut-throats, many of whom were Chinese rebels or ex-rebels who had been driven across the frontier by the suppression of the Yun-nan and Taiping rebellions, conspicuous among them being an organization called the Black Flags. And when in 1882 France sent troops to Tongking to restore order (the Annamese government having failed to fulfil its promises in that respect) China began to protest, claiming that Annam was a vassal state and under her protection.

Tongking and Hanoi.

France took no notice of the protest, declaring that the claim had merely an archaeological interest, and that, in any case, China in military affairs was a *quantité négligeable*. France found, however, that she had undertaken a very serious task in trying to put down the forces of disorder (see TONGKING). The Black Flags were, it was believed, being aided by money and arms from China, and as time went on, the French were more and more being confronted with regular Chinese soldiers. Several forts, well within the Tongking frontier, were known to be garrisoned by Chinese troops. Operations continued with more or less success during the winter and spring of 1883-1884. Both sides, however, were desirous of an arrangement, and in May 1884 a convention was signed between Li Hung-Chang and a Captain Fournier, who had been commissioned *ad hoc*, whereby China agreed to withdraw her garrisons and to open her frontiers to trade, France agreeing, on her part, to respect the fiction of Chinese suzerainty, and guarantee the frontier from attack by brigands. No date had been fixed in the convention for the evacuation of the Chinese garrisons, and Fournier endeavoured to supplement this by a memorandum to Li Hung-Chang, at the same time announcing the fact to his government. In pursuance of this arrangement the French troops proceeded to occupy Langson on the date fixed (21st June 1884). The Chinese commandant refused to evacuate, alleging, in a despatch which no one in the French camp was competent to translate, that he had received no orders, and begged for a short delay to enable him to communicate with his superiors. The French commandant ordered an attack, which was repulsed with severe loss. Mutual recriminations ensued. From Paris there came a demand for a huge indemnity as reparation for the insult. The Peking government offered to carry out the convention, and to pay a small indemnity for the lives lost through the misunderstanding. This was refused, and hostilities recommenced, or, as the French preferred to call them, reprisals, for the fiction was still kept up that the two countries were not at war. Under cover of this fiction the French fleet peaceably entered the harbour of Fuchow, having passed the forts at the entrance to the river without hindrance. Once inside, they attacked and destroyed the much inferior Chinese fleet which was then quietly at anchor, destroying at the same time a large part of the arsenal which adjoins the anchorage (23rd August 1884). Retracing its steps, the French fleet attacked and destroyed with impunity the forts which were built to guard the entrance to the Min river, and could offer no resistance to a force coming from the rear. After this exploit the French fleet left the mainland and continued its reprisals on the coast of Formosa. Kelung, a treaty port, was bombarded and taken, October 4th. A similar attempt, however, on the neighbouring port of Tamsui was unsuccessful, the landing party having been driven back to their ships with severe loss. The attempt was not renewed, and the fleet thereafter confined itself to a semi-blockade of the island, which was prolonged into 1885 but led to no practical results. Negotiations for peace, however, which had been for some time in progress through the mediation of Sir Robert Hart, were at this juncture happily concluded (April 1885). The terms were practically those of the Fournier convention of the year before, the demand for an indemnity having been quietly dropped.

Troubles with France.

China, on the whole, came out of the struggle with greatly increased prestige. She had tried conclusions with a first-class European power and had held her own. Incorrect conclusions as to the military strength of China were consequently drawn, not merely by the Chinese themselves—which was excusable—but by European and even British authorities, who ought to have been better informed. War vessels were ordered by China both from England and Germany, and Admiral Lang, who had withdrawn his services while the war was going on, was re-engaged together with a number of British officers and instructors. The completion of the works at Port Arthur was taken in hand, and a beginning was made in the construction of forts at Wei-hai-wei as a second naval base. A new department was created for the control of naval affairs, at the head of which was placed Prince Chun, father of the emperor, who since the downfall of Prince Kung in 1884 had been taking a more and more prominent part in public affairs.

Increased prestige of China.

From 1885 to 1894 the political history of China does not call for extended notice. Two incidents, however, must be recorded, (1) the conclusion in 1886 of a convention with Great Britain, in which the Chinese government undertook to recognize British sovereignty in Burma, and (2) the temporary occupation of Port Hamilton by the British fleet (May 1885-February 1887). In 1890 Admiral Lang resigned his command of the Chinese fleet. During a temporary absence of Lang's colleague, Admiral Ting, the Chinese second in command, claimed the right to take charge—a claim which Admiral Lang naturally resented. The question was referred to Li Hung-Chang, who decided against Lang, whereupon the latter threw up his commission. From this point the fleet on which so much depended began to deteriorate. Superior officers again began to steal the men's pays, the ships were starved, shells filled with charcoal instead of powder were supplied, accounts were cooked, and all the corruption and malfeasance that were rampant in the army crept back into the navy.

1885-1894.

The year 1894 witnessed the outbreak of the war with Japan. In the spring, complications again arose with Japan over Korea, and hostilities began in July. The story of the war is told elsewhere (see CHINO-JAPANESE WAR), and it is unnecessary here to recount the details of the decisive victory of Japan. A new power had arisen in the Far East, and when peace was signed by Li Hung-Chang at Shimonoseki on the 17th of April 1895 it meant the beginning of a new epoch. The terms included the cession of Liao-tung peninsula, then in actual occupation by the Japanese troops, the cession of Formosa, an indemnity of H. taels 200,000,000 (about £30,000,000) and various commercial privileges.

War with Japan, 1894.

The signature of this treaty brought the European powers on the scene. It had been for some time the avowed ambition of Russia to obtain an ice-free port as an outlet to her Siberian possessions—an ambition which was considered by British statesmen as not unreasonable. It did not, therefore, at all suit her purposes to see the rising power of Japan commanding the whole of the coast-line of Korea. Accordingly in the interval between the signature and the ratification of the treaty, invitations were addressed by Russia to the great powers to intervene with a view to its modification on the ground of the disturbance of the balance of power, and the menace to China which the occupation of Port Arthur by the Japanese would involve. France and Germany accepted the invitation, Great Britain declined. In the end the three powers brought such pressure to bear on Japan that she gave up the whole of her continental acquisitions, retaining only the island of Formosa. The indemnity was on the other hand increased by H. taels 30,000,000. For the time the integrity of China seemed to be preserved, and Russia, France and Germany could pose as her friends. Evidence was, however, soon forthcoming that Russia and France had not been disinterested in rescuing Chinese territory from the Japanese grasp. Russia now obtained the right to carry the Siberian railway across Chinese territory from Stryetensk to Vladivostok, thus avoiding a long détour, besides giving a grasp on northern Manchuria. France obtained, by a convention dated the 20th of June 1895, a rectification of frontier in the Mekong valley and certain railway and mining rights in Kiang-si and Yun-nan. Both powers obtained concessions of land at Hankow for the purposes of a settlement. Russia was also said to have negotiated a secret treaty, frequently described as the "Cassini Convention," but more probably signed by Li Hung-Chang at Moscow, giving her the right in certain contingencies to Port Arthur, which was to be refortified with Russian assistance. And by way of further securing her hold, Russia guaranteed a 4% loan of £15,000,000 issued in Paris to enable China to pay off the first instalment of the Japanese indemnity.

European intervention.

The convention between France and China of the 20th of June 1895 brought China into sharp conflict with Great Britain. China, having by the Burma convention of 1886 agreed to recognize British sovereignty over Burma, her quondam feudatory, also agreed to a delimitation of boundaries at the proper time. Effect was given to this last stipulation by a subsequent convention concluded in London (1st of March 1894), which traced the boundary line from the Shan states on the west as far as the Mekong river on the east. In the Mekong valley there were two semi-independent native territories over which suzerainty had been claimed in times gone by both by the kings of Ava and by the Chinese emperors. These territories were named Meng Lun and Kiang Hung—the latter lying partly on one side and partly on the other of the Mekong river, south of the point where it issues from Chinese territory. The boundary line was so drawn as to leave both these territories to China, but it was stipulated that China should not alienate any portion of these territories to any other power without the previous consent of Great Britain. Yielding to French pressure, and regardless of the undertaking she had entered into with Great Britain, China, in the convention with France in June 1895, so drew the boundary line as to cede to France that

Mekong valley dispute, 1895.

portion of the territory of Kiang Hung which lay on the left bank of the Mekong. Compensation was demanded by Great Britain from China for this breach of faith, and at the same time negotiations were entered into with France. These resulted in a joint declaration by the governments of France and Great Britain, dated the 15th of January 1896, by which it was agreed as regards boundary that the Mekong from the point of its confluence with the Nam Huk northwards as far as the Chinese frontier should be the dividing line between the possessions or spheres of influence of the two powers. It was also agreed that any commercial privileges obtained by either power in Yun-nan or Sze-ch'uen should be open to the subjects of the other. The negotiations with China resulted in a further agreement, dated the 4th of February 1897, whereby considerable modifications in favour of Great Britain were made in the Burma boundary drawn by the 1894 convention.

Kiaochow, Port Arthur, Wei-hai-wei.

While Russia and France were profiting by what they were pleased to call the generosity of China, Germany alone had so far received no reward for her share in compelling the retrocession of Liao-tung; but, in November 1897, she proceeded to help herself by seizing the Bay of Kiaochow in the province of Shan-tung. The act was done ostensibly in order to compel satisfaction for the murder of two German missionaries. A cession was ultimately made by way of a lease for a term of ninety-nine years—Germany to have full territorial jurisdiction during the continuance of the lease, with liberty to erect fortifications, build docks, and exercise all the rights of sovereignty. In December the Russian fleet was sent to winter in Port Arthur, and though this was at first described as a temporary measure, its object was speedily disclosed by a request made, in January 1898, by the Russian ambassador in London that two British cruisers, then also anchored at Port Arthur, should be withdrawn "in order to avoid friction in the Russian sphere of influence." They left shortly afterwards, and their departure in the circumstances was regarded as a blow to Great Britain's prestige in the Far East. In March the Russian government peremptorily demanded a lease of Port Arthur and the adjoining anchorage of Talienwan—a demand which China could not resist without foreign support. After an acrimonious correspondence with the Russian government Great Britain acquiesced in the *fait accompli*. The Russian occupation of Port Arthur was immediately followed by a concession to build a line of railway from that point northwards to connect with the Siberian trunk line in north Manchuria. As a counterpoise to the growth of Russian influence in the north, Great Britain obtained a lease of Wei-hai-wei, and formally took possession of it on its evacuation by the Japanese troops in May 1898.

"Open door," and "spheres of influence."

After much hesitation the Chinese government had at last resolved to permit the construction of railways with foreign capital. An influential official named Sheng Hsuan-hwai was appointed director-general of railways, and empowered to enter into negotiations with foreign capitalists for that purpose. A keen competition thereupon ensued between syndicates of different nationalities, and their claims being espoused by their various governments, an equally keen international rivalry was set up. Great Britain, though intimating her preference for the "open door" policy, meaning equal opportunity for all, yet found herself compelled to fall in with the general movement towards what became known as the "spheres of influence" policy, and claimed the Yangtsze valley as her particular sphere. This she did by the somewhat negative method of obtaining from the Chinese government a declaration that no part of the Yangtsze valley should be alienated to any foreign power. A more formal recognition of the claim, as far as railway enterprise was concerned, was embodied in an agreement (28th of April 1899) between Great Britain and Russia, and communicated to the Chinese government, whereby the Russian government agreed not to seek for any concessions within the Yangtsze valley, including all the provinces bordering on the great river, together with Cheh-kiang and Ho-nan, the British government entering into a similar undertaking in regard to the Chinese dominions north of the Great Wall.[50]

In 1899 Talienwan and Kiaochow were respectively thrown open by Russia and Germany to foreign trade, and, encouraged by these measures, the United States government initiated in September of the same year a correspondence with the great European powers and Japan, with a view to securing their definite adhesion to the "open door" policy. The British government gave an unqualified approval to the American proposal, and the replies of the other powers, though more guarded, were accepted at Washington as satisfactory. A further and more definite step towards securing the maintenance of the "open door" in China was the agreement concluded in October 1900 between the British and German governments. The signatories, by the first two articles, agreed to endeavour to keep the ports on the rivers and littoral free and open to international trade and economic activity, and to uphold this rule for all Chinese territory as far as (*wo* in the German counterpart) they could exercise influence; not to use the existing complications to obtain territorial advantages in Chinese dominions, and to seek to maintain undiminished the territorial condition of the Chinese empire. By a

third article they reserved their right to come to a preliminary understanding for the protection of their interests in China, should any other power use those complications to obtain such territorial advantages under any form whatever. On the submission of the agreement to the powers interested, Austria, France, Italy and Japan accepted its principles without express reservation—Japan first obtaining assurances that she signed on the same footing as an original signatory. The United States accepted the first two articles, but expressed no opinion on the third. Russia construed the first as limited to ports actually open in regions where the two signatories exercise “their” influence, and favourably entertained it in that sense, ignoring the reference to other forms of economic activity. She fully accepted the second, and observed that in the contingency contemplated by the third, she would modify her attitude according to circumstances.

Meanwhile, negotiations carried on by the British minister at Peking during 1898 resulted in the grant of very important privileges to foreign commerce. The payment of the second instalment of the Japanese indemnity was becoming due, and it was much discussed how and on what terms China would be able to raise the amount. The Russian government, as has been stated, had made China a loan of the sum required for the first portion of the indemnity, viz. £15,000,000, taking a charge on the customs revenue as security. The British government was urged to make a like loan of £16,000,000 both as a matter of friendship to China and as a counterpoise to the Russian influence. An arrangement was come to accordingly, on very favourable terms financially to the Chinese, but at the last moment they drew back, being overawed, as they said, by the threatening attitude of Russia. Taking advantage of the position which this refusal gave him, the British minister obtained from the Tsung-Li-Yamen, besides the declaration as to the non-alienation of the Yangtsze valley above mentioned, an undertaking to throw the whole of the inland waterways open to steam traffic. The Chinese government at the same time undertook that the post of inspector-general of customs (then held by Sir Robert Hart) should always be held by an Englishman so long as the trade of Great Britain was greater than that of any other nation. Minor concessions were also made, but the opening of the waterways was by far the greatest advance that had been made since 1860.

Of still greater importance were the railway and mining concessions granted during the same year (1898). The Chinese government had been generally disposed to railway construction since the conclusion of the Japanese War, but hoped to be able to retain the control in their own hands. The masterful methods of Russia and Germany had obliged them to surrender this control so far as concerned Manchuria and Shan-tung. In the Yangtsze valley, Sheng, the director-general of railways, had been negotiating with several competing syndicates. One of these was a Franco-Belgian syndicate, which was endeavouring to obtain the trunk line from Hankow to Peking. A British company was tendering for the same work, and as the line lay mainly within the British sphere it was considered not unreasonable to expect it should be given to the latter. At a critical moment, however, the French and Russian ministers intervened, and practically forced the Yamen to grant a contract in favour of the Franco-Belgian company. The Yamen had a few days before explicitly promised the British minister that the contract should not be ratified without his having an opportunity of seeing it. As a penalty for this breach of faith, and as a set-off to the Franco-Belgian line, the British minister required the immediate grant of all the railway concessions for which British syndicates were then negotiating, and on terms not inferior to those granted to the Belgian line. In this way all the lines in the lower Yangtsze, as also the Shan-si Mining Companies’ lines, were secured. A contract for a trunk line from Canton to Hankow was negotiated in the latter part of 1898 by an American company.

There can be little doubt that the powers, engrossed in the diplomatic conflicts of which Peking was the centre, had entirely underrated the reactionary forces gradually mustering for a struggle against the aggressive spirit of Western civilization. The lamentable consequences of administrative corruption and incompetence, and the superiority of foreign methods which had been amply illustrated by the Japanese War, had at first produced a considerable impression, not only upon the more enlightened commercial classes, but even upon many of the younger members of the official classes in China. The dowager-empress, who, in spite of the emperor Kwang-su having nominally attained his majority, had retained practical control of the supreme power until the conflict with Japan, had been held, not unjustly, to blame for the disasters of the war, and even before its conclusion the young emperor was adjured by some of the most responsible among his own subjects to shake himself free from the baneful restraint of “petticoat government,” and himself take the helm. In the following years a reform movement, undoubtedly genuine, though opinions differ as to the value of the popular support which it claimed, spread throughout the central and southern provinces of the empire. One of the most significant symptoms was the relatively large demand which suddenly arose for the translations of foreign works and similar publications in the Chinese language which philanthropic societies, such as that “for the Diffusion of Christian and General Knowledge amongst the Chinese,” had been trying for some time past to popularize, though hitherto with scant

The reform movement, 1898.

success. Chinese newspapers published in the treaty ports spread the ferment of new ideas far into the interior. Fifteen hundred young men of good family applied to enter the foreign university at Peking, and in some of the provincial towns the Chinese themselves subscribed towards the opening of foreign schools. Reform societies, which not infrequently enjoyed official countenance, sprang up in many of the large towns, and found numerous adherents amongst the younger *literati*. Early in 1898 the emperor, who had gradually emancipated himself from the dowager-empress's control, summoned several of the reform leaders to Peking, and requested their advice with regard to the progressive measures which should be introduced into the government of the empire. Chief amongst these reformers was Kang Yu-wei, a Cantonese, whose scholarly attainments, combined with novel teachings, earned for him from his followers the title of the "Modern Sage." Of his more or less active sympathizers who had subsequently to suffer with him in the cause of reform, the most prominent were Chang Yin-huan, a member of the grand council and of the Tsung-Li-Yamen, who had represented his sovereign at Queen Victoria's jubilee in 1897; Chin Pao-chen, governor of Hu-nan; Liang Chichao, the editor of the reformers' organ, *Chinese Progress*; Su Chiching, a reader of the Hanlin College, the educational stronghold of Chinese conservatism; and his son Su In-chi, also a Hanlin man, and provincial chancellor of public instruction in Hu-nan.

It soon became evident, that there was no more enthusiastic advocate of the new ideas than the emperor himself. Within a few months the vermilion pencil gave the imperial sanction to a succession of edicts which, had they been carried into effect, would have amounted to a revolution as far-reaching as that which had transformed Japan thirty years previously. The fossilized system of examinations for the public service was to be altogether superseded by a new schedule based on foreign learning, for the better promotion of which a number of temples were to be converted into schools for Western education; a state department was to be created for the translation and dissemination of the standard works of Western literature and science; even the scions of the ruling Manchu race were to be compelled to study foreign languages and travel abroad; and last, but not least, all useless offices both in Peking and in the provinces were to be abolished. A further edict was even reported to be in contemplation, doing away with the *queue* or pigtail, which, originally imposed upon the Chinese by their Manchu conquerors as a badge of subjection, had gradually become the most characteristic and most cherished feature of the national dress. But the bureaucracy of China, which had battened for centuries on corruption and ignorance, had no taste for self-sacrifice. Other vested interests felt themselves equally threatened, and behind them stood the whole latent force of popular superstition and unreasoning conservatism.

The dowager-empress saw her opportunity. The Summer Palace, to which she had retired, had been for some time the centre of resistance to the new movement, and in the middle of September 1898 a report became current that, in order to put an end to the obstruction which hampered his reform policy, the emperor intended to seize the person of the dowager-empress and have her deported into the interior. Some colour was given to this report by an official announcement that the emperor would hold a review of the foreign-drilled troops at Tientsin, and had summoned Yuan Shihkai, their general, to Peking in order to confer with him on the necessary arrangements. But the reformers had neglected to secure the goodwill of the army, which was still entirely in the hands of the reactionaries. During the night of the 20th of September the palace of the emperor was occupied by the soldiers, and on the following day Kwang-su, who was henceforth virtually a prisoner in the hands of the empress, was made to issue an edict restoring her regency. Kang Yu-wei, warned at the last moment by an urgent message from the emperor, succeeded in escaping, but many of the most prominent reformers were arrested, and six of them were promptly executed. The *Peking Gazette* announced a few days later that the emperor himself was dangerously ill, and his life might well have been despaired of had not the British minister represented in very emphatic terms the serious consequences which might ensue if anything happened to him. Drastic measures were, however, adopted to stamp out the reform movement in the provinces as well as in the capital. The reform edicts were cancelled, the reformers' associations were dissolved, their newspapers suppressed, and those who did not care to save themselves by a hasty recantation of their errors were imprisoned, proscribed or exiled. In October the reaction had already been accompanied by such a recrudescence of anti-foreign feeling that the foreign ministers at Peking had to bring up guards from the fleet for the protection of the legations, and to demand the removal from the capital of the disorderly Kan-suh soldiery which subsequently played so sinister a part in the troubles of June 1900. But the unpleasant impression produced by these incidents was in a great measure removed by the demonstrative reception which the empress Tsz'e Hsi gave on the 15th of October to the wives of the foreign representatives—an act of courtesy unprecedented in the annals of the Chinese court.

The Empress's coup d'état.

The reactionary tide continued to rise throughout the year 1899, but it did not appear

materially to affect the foreign relations of China. Towards the end of the year the brutal murder of Mr Brooks, an English missionary, in Shan-tung, had compelled attention to a popular movement which had been spreading rapidly throughout that province and the adjoining one of Chih-li with the connivance of certain high officials, if not under their direct patronage. The origin of the "Boxer" movement is obscure. Its name is derived from a literal translation of the Chinese designation, "the fist of righteous harmony." Like the kindred "Big Sword" Society, it appears to have been in the first instance merely a secret association of malcontents chiefly drawn from the lower classes. Whether the empress Tsz'e Hsi and her Manchu advisers had deliberately set themselves from the beginning to avert the danger by deflecting what might have been a revolutionary movement into anti-foreign channels, or whether with Oriental heedlessness they had allowed it to grow until they were powerless to control it, they had unquestionably resolved to take it under their protection before the foreign representatives at Peking had realized its gravity. The outrages upon native Christians and the threats against foreigners generally went on increasing. The Boxers openly displayed on their banners the device: "Exterminate the foreigners and save the dynasty," yet the representatives of the powers were unable to obtain any effective measures against the so-called "rebels," or even a definite condemnation of their methods.[51]

The Boxer movement, 1900.

Four months (January-April 1900) were spent in futile interviews with the Tsung-Li-Yamen. In May a number of Christian villages were destroyed and native converts massacred near the capital. On the 2nd of June two English missionaries, Mr Robinson and Mr Norman, were murdered at Yung Ching, 40 m. from Peking. The whole country was overrun with bands of Boxers, who tore up the railway and set fire to the stations at different points on the Peking-Tientsin line. Fortunately a mixed body of marines and bluejackets of various nationalities, numbering 18 officers and 389 men, had reached Peking on the 1st of June for the protection of the legations. The whole city was in a state of turmoil. Murder and pillage were of daily occurrence. The reactionary Prince Tuan (grandson of the emperor Tao-kwang) and the Manchus generally, together with the Kan-suh soldiery under the notorious Tung-fu-hsiang, openly sided with the Boxers. The European residents and a large number of native converts took refuge in the British legation, where preparations were hastily made in view of a threatened attack. On the 11th the chancellor of the Japanese legation, Mr Sugiyama, was murdered by Chinese soldiers. On the night of the 13th most of the foreign buildings, churches and mission houses in the eastern part of the Tatar city were pillaged and burnt, and hundreds of native Christians massacred. On the 20th of June the German minister, Baron von Ketteler, was murdered whilst on his way to the Tsung-Li-Yamen. At 4 P.M. on the afternoon of the 20th the Chinese troops opened fire upon the legations. The general direction of the defence was undertaken by Sir Claude Macdonald, the British minister.

Meanwhile Peking had been completely cut off since the 14th from all communication with the outside world, and in view of the gravity of the situation, naval and military forces were being hurried up by all the powers to the Gulf of Chih-li. On the 10th of June Admiral Sir E. Seymour had already left Tientsin with a mixed force of 2000 British, Russian, French, Germans, Austrians, Italians, Americans and Japanese, to repair the railway and restore communications with Peking. But his expedition met with unexpectedly severe resistance, and it had great difficulty in making good its retreat after suffering heavy losses. When it reached Tientsin again on the 26th of June, the British contingent of 915 men had alone lost 124 killed and wounded out of a total casualty list of 62 killed and 218 wounded. The Chinese had in the meantime made a determined attack upon the foreign settlements at Tientsin, and communication between the city and the sea being also threatened, the Taku forts at the mouth of the Pei-ho were captured by the allied admirals on the 17th. The situation at Tientsin nevertheless continued precarious, and it was not till the arrival of considerable reinforcements that the troops of the allied powers were able to assume the offensive, taking the native city by storm on July 14th, at a cost, however, of over 700 killed and wounded. Even in this emergency international jealousy had grievously delayed the necessary concentration of forces. No power was so favourably situated to take immediate action as Japan, and the British government, who had strongly urged her to act speedily and energetically, undertook at her request to sound the other powers with regard to her intervention. No definite objection was raised, but the replies of Germany and Russia barely disguised their ill-humour. Great Britain herself went so far as to offer Japan the assistance of the British treasury, in case financial difficulties stood in the way, but on the same day on which this proposal was telegraphed to Tokyo (6th of July), the Japanese government had decided to embark forthwith the two divisions which it had already mobilized. By the beginning of August one of the Indian brigades had also reached Tientsin together with smaller reinforcements sent by the other powers, and thanks chiefly to the energetic counsels of the British commander, General Sir Alfred Gaselee, a relief column,

International expedition.

numbering 20,000 men, at last set out for Peking on the 4th of August, a British naval brigade having started up river the previous afternoon. After a series of small engagements and very trying marches it arrived within striking distance of Peking on the evening of the 13th. The Russians tried to steal a march upon the allies during the night, but were checked at the walls and suffered heavy losses. The Japanese attacked another point of the walls the next morning, but met with fierce opposition, whilst the Americans were delayed by getting entangled in the Russian line of advance. The British contingent was more fortunate, and skilfully guided to an unguarded water-gate, General Gaselee and a party of Sikhs were the first to force their way through to the British legation. About 2 p.m. on the afternoon of the 14th of August, the long siege was raised.

Siege of the Peking legations.

For nearly six weeks after the first interruption of communications, no news reached the outside world from Peking except a few belated messages, smuggled through the Chinese lines by native runners, urging the imperative necessity of prompt relief. During the greater part of that period the foreign quarter was subjected to heavy rifle and artillery fire, and the continuous fighting at close quarters with the hordes of Chinese regulars, as well as Boxers, decimated the scanty ranks of the defenders. The supply of both ammunition and food was slender. But the heroism displayed by civilians and professional combatants alike was inexhaustible. In their anxiety to burn out the British legation, the Chinese did not hesitate to set fire to the adjoining buildings of the Hanlin, the ancient seat of Chinese classical learning, and the storehouse of priceless literary treasures and state archives. The *Fu*, or palace, of Prince Su, separated only by a canal from the British legation, formed the centre of the international position, and was held with indomitable valour by a small Japanese force under Colonel Sheba, assisted by a few Italian marines and volunteers of other nationalities and a number of Christian Chinese. The French legation on the extreme right, and the section of the city wall held chiefly by Germans and Americans, were also points of vital importance which had to bear the brunt of the Chinese attack.

Little is known as to what passed in the councils of the Chinese court during the siege.[52] But there is reason to believe that throughout that period grave divergences of opinion existed amongst the highest officials. The attack upon the legations appears to have received the sanction of the dowager-empress, acting upon the advice of Prince Tuan and the extreme Manchu party, at a grand council held during the night of the 18th/19th June, upon receipt of the news of the capture of the Taku forts by the international forces. The emperor himself, as well as Prince Ching and a few other influential mandarins, strongly protested against the empress's decision, but it was acclaimed by the vast majority of those present. Three members of the Tsung-Li-Yamen were publicly executed for attempting to modify the terms of an imperial edict ordering the massacre of all foreigners throughout the provinces, and most of the Manchu nobles and high officials, and the eunuchs of the palace, who played an important part in Chinese politics throughout the dowager-empress's tenure of power, were heart and soul with the Boxers. But it was noted by the defenders of the legations that Prince Ching's troops seldom took part, or only in a half-hearted way, in the fighting, which was chiefly conducted by Tung-fu-hsiang's soldiery and the Boxer levies. The modern artillery which the Chinese possessed was only spasmodically brought into play. Nor did any of the attacking parties ever show the fearlessness and determination which the Chinese had somewhat unexpectedly displayed on several occasions during the fighting at and around Tientsin. Nevertheless, the position of the defenders at the end of the first four weeks of the siege had grown well-nigh desperate. Mining and incendiarism proved far greater dangers than shot and shell. Suddenly, just when things were looking blackest, on the 17th of July the Chinese ceased firing, and a sort of informal armistice secured a period of respite for the beleaguered Europeans. The capture of the native city of Tientsin by the allied forces had shaken the self-confidence of the Chinese authorities, who had hitherto not only countenanced, but themselves directed the hostilities.[53] Desultory fighting, nevertheless, continued, and grave fears were entertained that the approach of the relief column would prove the signal for a desperate attempt to rush the legations. The attempt was made, but failed. The relief, however, came not a day too soon. Of the small band of defenders which, including civilian volunteers, had never mustered 500, 65 had been killed and 131 wounded. Ammunition and provisions were almost at an end. Even more desperate was the situation at the Pei-tang, the Roman Catholic northern cathedral and mission house, where, with the help of a small body of French and Italian marines, Mgr Favier had organized an independent centre of resistance for his community of over 3000 souls. Their rations were absolutely exhausted when, on the 15th of August, a relief party was despatched to their assistance from the legations.

Looting of

The ruin wrought in Peking during the two months' fighting was appalling. Apart from the wholesale destruction of foreign property in the Tatar city, and of Chinese as well as European buildings in the vicinity of the legations, the wealthiest part of the Chinese city had been laid in ashes. The flames from a foreign drug store

Peking. fired by the Boxers had spread to the adjoining buildings, and finally consumed the whole of the business quarter with all its invaluable stores of silks, curiosities, furs, &c. The retribution which overtook Peking after its capture by the international forces was scarcely less terrible. Looting was for some days almost universal. Order was, however, gradually restored, first in the Japanese and then in the British and American quarters, though several months elapsed before there was any real revival of native confidence.

So unexpected had been the rapid and victorious advance of the allies, that the dowager-empress with the emperor and the rest of the court did not actually leave Peking until the day after the legations had been relieved. But the northern and western portions of the Tatar city had not yet been occupied, and the fugitives made good their escape on the 15th. When the allies some days later marched through the Forbidden City, they only found a few eunuchs and subordinate officials in charge of the imperial apartments. At the end of September, Field Marshal Count von Waldersee, with a German expeditionary force of over 20,000 men, arrived to assume the supreme command conferred upon him with the more or less willing assent of the other powers.

Flight of the Chinese court.

The political task which confronted the powers after the occupation of Peking was far more arduous than the military one. The action of the Russians in Manchuria, even in a treaty port like Niu-chwang, the seizure of the railway line not only to the north of the Great Wall, but also from Shan-hai-kwan to Peking, by the Russian military authorities, and the appropriation of an extensive line of river frontage at Tientsin as a Russian "settlement," were difficult to reconcile with the pacific assurances of disinterestedness which Russia, like the rest of the powers, had officially given. Great anxiety prevailed as to the effect of the flight of the Chinese court in other parts of the empire. The anti-foreign movement had not spread much beyond the northern provinces, in which it had had the open support of the throne and of the highest provincial officials. But among British and Americans alone, over 200 defenceless foreigners, men, women and children, chiefly missionaries, had fallen victims to the treachery of high-placed mandarins like Yü Hsien, and hundreds of others had had to fly for their lives, many of them owing their escape to the courageous protection of petty officials and of the local gentry and peasantry. In the Yangtsze valley order had been maintained by the energy of the viceroys of Nanking and Wu-chang, who had acted throughout the critical period in loyal co-operation with the British consuls and naval commanders, and had courageously disregarded the imperial edicts issued during the ascendancy of the Boxers. After some hesitation, an Indian brigade, followed by French, German and Japanese contingents, had been landed at Shanghai for the protection of the settlements, and though the viceroy, Liu Kun-yi, had welcomed British support, and even invited the joint occupation of the Yangtsze forts by British and Chinese troops, the appearance of other European forces in the Yangtsze valley was viewed with great suspicion. In the south there were serious symptoms of unrest, especially after Li Hung-Chang had left Canton for the north, in obedience, as he alleged at the time, to an imperial edict which, there is reason to believe, he invented for the occasion. The Chinese court, after one or two intermediate halts, had retired to Si-gan-fu, one of the ancient capitals of the empire, situated in the inaccessible province of Shen-si, over 600 m. S.W. of Peking. The influence of the ultra-reactionaries, headed by Prince Tuan and General Tung-fu-hsiang, still dominated its councils, although credentials were sent to Prince Ching and to Li Hung-Chang, who, after waiting upon events at Shanghai, had proceeded to Peking, authorizing them to treat with the powers for the re-establishment of friendly relations.

Restoration of order.

The harmony of the powers, which had been maintained with some difficulty up to the relief of the legations, was subjected to a severe strain as soon as the basis of negotiations with the Chinese government came to be discussed. While for various reasons Russia, Japan and the United States were inclined to treat China with great indulgence, Germany insisted upon the signal punishment of the guilty officials as a *conditio sine qua non*, and in this she had the support not only of the other members of the Triple Alliance, but also of Great Britain, and to some extent even of France, who, as protector of the Roman Catholic Church in Eastern countries, could not allow the authors of the atrocities committed upon its followers to escape effectual punishment. It was not until after months of laborious negotiations that the demands to be formally made upon the Chinese government were embodied in a joint note signed by all the foreign ministers on the 20th and 21st of December 1900. The demands were substantially as follows:

Measures of reparation.

> Honourable reparation for the murder of von Ketteler and of Mr Sugiyama, to be made in a specified form, and expiatory monuments to be erected in cemeteries where foreign tombs had been desecrated. "The most severe punishment befitting their crimes" was to be inflicted on the personages designated by the decree of the 21st of September, and also upon others to

be designated later by the foreign ministers, and the official examinations were to be suspended in the cities where foreigners had been murdered or ill-treated. An equitable indemnity, guaranteed by financial measures acceptable to the powers, was to be paid to states, societies and individuals, including Chinese who had suffered because of their employment by foreigners, but not including Chinese Christians who had suffered only on account of their faith. The importation or manufacture of arms or *matériel* was to be forbidden; permanent legation guards were to be maintained at Peking, and the diplomatic quarter was to be fortified, while communication with the sea was to be secured by a foreign military occupation of the strategic points and by the demolition of the Chinese forts, including the Taku forts, between the capital and the coast. Proclamations were to be posted throughout China for two years, threatening death to the members of anti-foreign societies, and recording the punishment of the ringleaders in the late outrages: and the viceroys, governors and provincial officials were to be declared by imperial edict responsible, on pain of immediate dismissal and perpetual disability to hold office, for anti-foreign outbreaks or violations of treaty within their jurisdictions. China was to facilitate commercial relations by negotiating a revision of the commercial treaties. The Tsung-Li-Yamen was to be reformed and the ceremonial for the reception of foreign ministers modified as the powers should demand. Compliance with these terms was declared to be a condition precedent to the arrangement of a time limit to the occupation of Peking and of the provinces by foreign troops.

Under instructions from the court, the Chinese plenipotentiaries affixed their signatures on the 14th of January 1901 to a protocol, by which China pledged herself to accept these terms in principle, and the conference of ministers then proceeded to discuss the definite form in which compliance with them was to be exacted. This further stage of the negotiations proved even more laborious and protracted than the preliminary proceedings. No attempt was made to raise the question of the dowager-empress's responsibility for the anti-foreign movement, as Russia had from the first set her face against the introduction of what she euphemistically termed "the dynastic question." But even with regard to the punishment of officials whose guilt was beyond dispute, grave divergences arose between the powers. The death penalty was ultimately waived in the case even of such conspicuous offenders as Prince Tuan and Tung-fu-hsiang, but the notorious Yü Hsien and two others were decapitated by the Chinese, and three other metropolitan officials were ordered to commit suicide, whilst upon others sentences of banishment, imprisonment and degradation were passed, in accordance with a list drawn up by the foreign representatives. The question of the punishment of provincial officials responsible for the massacre of scores of defenceless men, women and children was unfortunately reserved for separate treatment, and when it came up for discussion it became impossible to preserve even the semblance of unanimity, the Russian minister at once taking issue with his colleagues, although he had originally pledged himself as formally as the others to the principle. Count Lamsdorff frankly told the British ambassador at St Petersburg that Russia took no interest in missionaries, and as the foreigners massacred in the provinces belonged mostly to that class, she declined to join in the action of the other powers.

Russia and Manchuria.

The real explanation of Russia's cynical secession from the concert of powers on this important issue must be sought in her anxiety to conciliate the Chinese in view of the separate negotiations in which she was at the same time engaged with China in respect of Manchuria. When the Boxer movement was at its height at the end of June 1900, the Chinese authorities in Manchuria had wantonly "declared war" against Russia, and for a moment a great wave of panic seems to have swept over the Russian administration, civil and military, in the adjoining provinces. The reprisals exercised by the Russians were proportionately fierce. The massacre at Blagovyeshchensk, where 5000 Chinese—men, women and children—were flung into the Amur by the Cossacks, was only one incident in the reign of terror by which the Russians sought to restore their power and their prestige. The resistance of the Chinese troops was soon overcome, and Russian forces overran the whole province, occupying even the treaty port of Niu-chwang. The Russian government officially repudiated all responsibility for the proclamations issued by General Gribsky and others, foreshadowing, if not actually proclaiming, the annexation of Chinese territory to the Russian empire. But Russia was clearly bent on seizing the opportunity for securing a permanent hold upon Manchuria. In December 1900 a preliminary agreement was made between M. Korostovetz, the Russian administrator-general, and Tseng, the Tatar general at Mukden, by which the civil and military administration of the whole province was virtually placed under Russian control. In February 1901 negotiations were opened between the Russian government and the Chinese minister at St Petersburg for the conclusion of a formal convention of a still more comprehensive character. In return for the restoration to China of a certain measure of civil authority in Manchuria, Russia was to be confirmed in the possession of exclusive military, civil and commercial rights, constituting in all but name a protectorate, and she was also to acquire preferential rights over all the outlying provinces of the Chinese empire bordering on the

Russian dominions in Asia. The clauses relating to Chinese Turkestan, Kashgar, Yarkand, Khotan and Mongolia were subsequently stated to have been dropped, but the convention nevertheless provoked considerable opposition both in foreign countries and amongst the Chinese themselves. Most of the powers, including Germany, who, however, denied that the Anglo-German agreement of the 16th of October 1900 applied to Manchuria,[54] advised the Chinese government not to pursue separate negotiations with one power whilst collective negotiations were in progress at Peking, and both Japan and Great Britain pressed for definite information at St Petersburg with regard to the precise tenor of the proposed convention. At the same time the two viceroys of the lower Yangtsze memorialized the throne in the strongest terms against the convention, and these protests were endorsed not only by the great majority of Chinese officials of high rank throughout the provinces, but by popular meetings and influential guilds and associations. Ultimately the two viceroys, Chang Chih-tung and Liu Kun-yi,[55] took the extreme step of warning the throne that they would be unable to recognize the convention, even if it were ratified, and notwithstanding the pressure exercised in favour of Russia by Li Hung-Chang, the court finally instructed the Chinese minister at St Petersburg to decline his signature. The attitude of Japan, where public feeling ran high, was equally significant, and on the 3rd of April the Russian government issued a circular note to the powers, stating that, as the generous intentions of Russia had been misconstrued, she withdrew the proposed convention.

The peace protocol, 1901.

The work of the conference at Peking, which had been temporarily disturbed by these complications, was then resumed. Friction between European troops of different nationalities and an Anglo-Russian dispute over the construction of certain roads and railway sidings at Tientsin showed that an international occupation was fraught with manifold dangers. The question of indemnities, however, gave rise to renewed friction. Each power drew up its own claim, and whilst Great Britain, the United States and Japan displayed great moderation, other powers, especially Germany and Italy, put in claims which were strangely out of proportion to the services rendered by their military and naval forces. It was at last settled that China should pay altogether an indemnity of 450 million taels, to be secured (1) on the unhypothecated balance of the customs revenue administered by the imperial maritime customs, the import duties being raised forthwith to an effective 5% basis; (2) on the revenues of the "native" customs in the treaty ports; (3) on the total revenues of the salt gabelle. Finally the peace protocol was drawn up in a form which satisfied all the powers as well as the Chinese court. The formal signature was, however, delayed at the last moment by a fresh difficulty concerning Prince Chun's penitential mission to Berlin. This prince, an amiable and enlightened youth,[56] son of the Prince Chun who was the emperor Hien-fêng's brother, and thus himself half-brother to the emperor Kwang-su, had reached Basel towards the end of August on his way to Germany, when he was suddenly informed that he and his suite would be expected to perform *kowtow* before the German emperor. The prince resented this unexpected demand, and referred home for instructions. The Chinese court appear to have remained obdurate, and the German government perceived the mistake that had been made in exacting from the Chinese prince a form of homage which Western diplomacy had for more than a century refused to yield to the Son of Heaven, on the ground that it was barbarous and degrading. The point was waived, and Prince Chun was received in solemn audience by the emperor William at Potsdam on the 4th of September. Three days later, on the 7th of September, the peace protocol was signed at Peking.

The articles recorded the steps to be taken to satisfy the demands of the powers as to commerce. Article 11 provided for the amendment of existing treaties of commerce and navigation, and for river conservancy measures at Tientsin and Shanghai. The British government appointed a special commission, with Sir J. Mackay, member of the council of India, as chief commissioner, to proceed to Shanghai to carry on the negotiations, and a commercial treaty was signed at Shanghai on the 6th of September 1902, by which existing obstacles to foreign trade, such as *likin*, &c., were removed, regulations were made for facilitating steamer navigation on inland waters, and several new ports were opened to foreign commerce.

In accordance with the terms of the protocol, all the foreign troops, except the legation guards, were withdrawn from Peking on the 17th of September, and from the rest of Chih-li, except the garrisons at the different points specified along the line of communications, by the 22nd of September. On the 7th of October it was announced that the Chinese court had left Si-gan-fu on its way back to the northern capital. A month later (7th of November) the death of Li Hung-Chang at Peking removed, if not the greatest of Chinese statesmen, at any rate the one who had enjoyed the largest share of the empress-dowager's confidence.

(V. C.)

The events connected with the Boxer rising and its suppression demonstrated even more forcibly than had the war with Japan in 1894-1895 the necessity for the adoption of Western methods in many departments of life and administration if China was to maintain the position of a great power. The necessity for a thorough reform of the administration was widely recognized in 1901, and among the progressive classes of the community much disappointment was manifested because the powers had failed to insist, in the conditions of peace, on a reorganization of the machinery of government. The Yangtsze viceroys, the viceroy at Canton, Yuan Shih-kai and other high mandarins repeatedly memorialized the throne to grant effective reforms. While at Si-gan-fu the court did in fact issue several reform decrees, but at the same time all authority remained in the hands of reactionaries. There had been an awakening in China, but another lesson—afforded a few years later by the Russo-Japanese War—was needed before the reform party was able to gain real power.

"Awakening of China."

For three or four years following the signing of the peace protocol of 1901 it seemed indeed that there would be little change in the system of government, though in some directions a return to the old state of affairs was neither possible nor desired. On the 7th of January 1902 the court returned to Peking—a step which marked the restoration, more or less, of normal conditions. The failure of the Boxer movement, in which, as has been shown, she was deeply implicated, had impressed upon the dowager empress the need for living on better terms with foreign powers, but the reform edicts issued from Si-gan-fu remained largely inoperative, though some steps were taken to promote education on Western lines, to readjust the land tax, and especially to reorganize the military forces (though on provincial rather than on a national basis). The building of railways was also pushed on, but the dowager empress was probably at heart as reactionary as she had proved in 1898. The emperor himself from his return to Peking until the day of his death appeared to have little influence on public affairs. The most disquieting feature of the situation in the years immediately following the return of the court to Peking was the continued efforts of Russia to obtain full control of Manchuria and a predominant influence in north China. The Chinese government was powerless to stem the advance of Russia, and the dowager empress herself was credited with indifference to the fate of Manchuria. It was the menace to other powers, notably Japan, involved in Russia's action which precipitated an issue in which the destinies of China were involved. Before considering the results of that struggle (the Russo-Japanese War) the chief events of the years 1902-1905 may be outlined.

The dowager empress from the day of her return from Si-gan-fu set herself to conciliate the foreign residents in Peking. Many foreign onlookers were gathered on the wall of the Tatar city to witness the return of the court, and to these the dowager empress made a deep bow twice, an apparently trivial incident which made a lasting impression. On the 1st of February following the dowager empress received the ladies of the various embassies, when she bewailed the attack on the legations, entertained her guests to tea and presented each with articles of jewelry, and from that time onward, as occasion offered, Tsz'e Hsi exchanged compliments and civilities with the foreign ladies in Peking. Moreover, Sir Robert Hart—after having been nearly forty years in China—was now presented at court, as well as Bishop Favier and others. Henceforth attacks on foreigners received no direct encouragement at court. Tung Fu-hsiang,[57] who had been banished to the remote province of Kan-suh, had at his command there his old Boxer troops, and his attitude caused anxiety at the end of 1902. He was said to have received support from Prince Tuan—who had been obliged to retire to Mongolia—but events proved that the power or the intention of these reactionaries to create trouble had been miscalculated. There were indeed serious Boxer disturbances in Sze-ch'uen in 1902, but they were put down by a new viceroy sent from Peking. Notwithstanding the murder of fifteen missionaries during 1902-1905, there was in general a marked improvement in the relations between the missionaries, the official classes and the bulk of the people, and an eagerness was shown in several provinces to take advantage of their educational work. This was specially marked in Hu-nan, a province which had been for long hostile to missionary endeavours. Illustrative of the attitude of numbers of high officials was the attendance of the viceroy of Sze-ch'uen, with the whole of his staff, at the opening in 1905 at Cheng-tu of new buildings of the Canadian Methodist Mission. This friendly attitude towards the missions was due in part to the influence of Chinese educated abroad and also, to a large extent, to the desire to take advantage of Western culture. The spread of this new spirit was coincident with an agitation for independence of foreign control and the determination of the Chinese to use modern methods to attain their ends. Thus in 1905 there was an extensive boycott of American goods throughout China, as a retaliatory measure for the exclusion of Chinese from the United States. Regarding China as a whole the attitude of the people towards Europeans

Relations with Europeans.

was held to indicate that the general view was, not that the Boxer teaching was false, but that the spirits behind Western religion were more powerful than those behind Boxer-dom. The spiritual prestige of Christianity and respect for the power of the foreigner were direct outcomes of the failure of the Boxers.[58] The British expedition to Tibet in 1904, the occupation of Lhassa in August of that year, the flight of the Dalai Lama to Mongolia, gave grave concern to the Chinese government—which showed much persistence in enforcing its suzerain rights in Tibet—but did not, apparently, cause any ill-feeling towards Great Britain among the Chinese people—who viewed with seeming equanimity the flight of the head of the Buddhist religion from the headquarters of that faith. The country generally was peaceful, a rebellion in Kwang-si—where a terrible famine occurred in 1903—being suppressed in 1904 by the forces of the viceroy at Canton.

The expiatory measures required of China in connexion with the Boxer rising were carried through. China during 1902 recovered possession of the Peking-Tientsin railway and of the city of Tientsin, which was evacuated by the foreign troops in August of that year. The foreign troops were also all withdrawn from Shanghai by January 1903. The conclusion of a new commercial treaty between Great Britain and China in September 1902 has already been recorded. The payment of the indemnity instalments occasioned some dispute owing to the fall in silver in 1902, but the rise in the value of the tael in subsequent years led China to agree to the payment of the indemnity on a gold basis. The increase in revenue was a notable feature of the maritime customs in 1903-1905. This result was in part due to the new arrangements under the commercial treaty of 1902, and in part to the opening up of the country by railways. In especial the great trunk line from Peking to Hankow was pushed on. The line, including a bridge nearly 2 m. long over the Yellow river was completed and opened for traffic in 1905. The first section of the Shanghai-Nanking railway was opened in the same year. At this time the Chinese showed a strong desire to obtain the control of the various lines. During 1905, for instance, the Canton-Hankow railway concession was repurchased by the Chinese government from an American company, while the Pekin Syndicate, a British concern, also sold their railway in Ho-nan to the Chinese government.

Commercial and railway progress.

Russia’s action regarding Manchuria overshadowed, however, all other concerns during this period. The withdrawal of the proposed Russo-Chinese agreement of 1901 has been chronicled. The Russian government had, however, no intention of abandoning its hold on Manchuria. It aimed not only at effective military control but the reservation to Russian subjects of mining, railway and commercial rights. Both the sovereignty of China and the commercial interests of other nations were menaced. This led to action by various powers. The preamble of the Anglo-Japanese treaty of the 30th of January 1902 declared the main motives of the contracting parties to be the maintenance of the independence and territorial integrity of China and Korea, and the securing of equal opportunities in those countries for the commerce and industry of all nations, *i.e.* the policy of the “open door.” Protests were lodged by Great Britain, Japan and the United States against the grant of exclusive rights to Russian subjects in Manchuria. Russia asserted her intention to respect the commercial rights of other nations, and on the 8th of April 1902 an agreement was signed at Peking which appeared to show the good faith of the Russian government, as it provided for the withdrawal of the Russian troops in Manchuria within eighteen months from that date. In accordance with this agreement the Shan-hai-kwan-Niu-chwang railway was transferred to China in October 1902 and the district between Shan-hai-kwan and the Liao river evacuated by Russia. But it soon appeared that Russia’s hold on the country had not relaxed. Advantage was taken of the terms of concession granted in August 1896 to the Russo-Chinese Bank[59] to erect towns for Russian colonists and to plant garrisons along the line of railway, and to exclude Chinese jurisdiction altogether from the railway zone. The so-called evacuation became in fact the concentration of the Russian forces along the line of railway. Moreover, the maritime customs at Niu-chwang were retained by the Russo-Chinese Bank despite protests from the Chinese imperial authorities, and a Russian civil administration was established at that port. The evacuation of southern Manchuria should have taken place in April 1903, but in that month, instead of fulfilling the conditions of the 1902 agreement, the Russian chargé d’affaires in Peking made a series of further demands upon China, including the virtual reservation of the commerce of Manchuria for Russian subjects. Though Russia officially denied to the British and American governments that she had made these demands, it was demonstrated that they had been made. The United States and Japan thereupon insisted that China should conclude with them commercial treaties throwing open Mukden and two ports on the Yalu river to foreign trade. The American treaty was signed on the 8th of October 1903—the day fixed for the complete evacuation of Manchuria by Russia—and the Japanese treaty on the day following. Both treaties provided that the ports should be opened after ratifications had been exchanged. From fear of Russia

Manchuria.

China, however, delayed the ratification of the treaties. Meantime, in August 1903, a regular through railway service between Moscow and Port Arthur was established. In the same month a Russian Viceroyalty of the Far East was created which in effect claimed Manchuria as a Russian province. In September Russia withdrew some of the demands she had made in April, but her concessions proved illusory. When the 8th of October passed and it was seen that the Russians had not withdrawn their troops[60] there issued for a time threats of war from Peking. Yuan Shih-kai, the viceroy of Chih-li, who had at his command some 65,000 troops trained by Japanese officers, pressed on the government the necessity of action. At this point Japan intervened. Her interests were vitally affected by Russia's action not only in Manchuria, but in Korea, and seeing that China was powerless the Japanese government negotiated directly with St Petersburg. In these negotiations Russia showed that she would not yield her position in either country except to force. Japan chose the issue of war and proved successful.

The Russo-Japanese War did not very greatly alter China's position in Manchuria. In the southern part of that country Japan succeeded to the special privileges Russia had wrung from China (including the lease of Port Arthur); in the north Russia remained in possession of the railway zone. For Japan's position as at once the legatee of special privileges and the champion of China's territorial integrity and "the open door" see JAPAN, § *History*. However, the attitude of Japan was more conciliatory than that of Russia had been; Mukden and other places were thrown open to foreign trade and Chinese civil administration was re-established. The important results of the war, so far as China was concerned, were not to be looked for in Manchuria, but in the new spirit generated in the Chinese. They had been deeply humiliated by the fact that in the struggle between Russia and Japan China had been treated as a negligible quantity, and that the war had been fought on Chinese territory. The lesson which the loot of Peking and the fall of the Boxers in 1900 had half taught was now thoroughly mastered; the awakening of China was complete. The war had shown that when an Eastern race adopted Western methods it was capable of defeating a European nation.

Lessons of the Russo-Japanese War.

It was fortunate that among the influential advisers of the throne at this time (1905-1908) were Prince Chun (the prince who had visited Germany in 1901), Yuan Shih-kai, the viceroy of Chih-li, and Chang Chih-tung, the viceroy of Hu-kwang (*i.e.* the provinces of Hu-peh and Hu-nan), all men of enlightened and strong character. In 1907 both the viceroys named were summoned to Peking and made members of the grand council, of which Prince Ching, a man of moderate views, was president. Yuan Shih-kai was an open advocate of a reform of the civil service, of the abolition of Manchu privileges, of education and other matters. He had specially advocated the reconstitution of the military forces of the empire, and in Chih-li in 1905 he demonstrated before a number of foreign military attachés the high efficiency attained by the forces of the metropolitan province. The success achieved by Yuan Shih-kai in this direction incited Chang Chih-tung to follow his example, while a decree from the throne called upon the princes and nobles of China to give their sons a military education. The formerly despised military profession was thus made honourable, and with salutary effects. The imperial princes sought high commands, officers were awarded ranks and dignities comparable with those of civil servants, and the pay of the troops was increased. The new foreign drilled northern army was called upon to furnish a large proportion of a force sent under Prince Su into Mongolia—a country which had been on the point of falling into the hands of Russia, but over which, as one result of the Russo-Japanese War, China recovered control. In 1906 a step was taken towards the formation of a national army by withdrawing portions of the troops from provincial control and placing them under officers responsible to the central government, which also took over the charge of the provincial arsenals. In the years which followed further evidence was given of the earnestness and success with which the military forces were being reorganized. Less attention was given to naval affairs, but in the autumn of 1909 a naval commission under Tsai Hsün, a brother of the emperor Kwang-su, was sent to Europe to report on the steps necessary for the re-establishment of a fleet. Previously (in 1907) societies had been started in several provinces to collect funds for naval purposes.

Army reform.

The most striking evidence of the change which had occurred was, however, the appointment (in 1905) of an Imperial Commission, headed by Prince Tsai Tse, to study the administrative systems of foreign countries with a view to the possible establishment of a representative government in China. The revolutionary nature of this proposal excited indignation among the adherents to the old order, and a bomb was thrown among the commissioners as they were preparing to leave Peking.[61] After visiting Japan, America and Europe the commission returned to Peking in July 1906.[62] A committee over which Prince Ching presided was appointed to study the commission's report, and on the 1st of September following an edict was issued in which the establishment of a parliamentary form of government was announced, at a date not fixed. To

A parliamentary

constitution promised.

fit the country for this new form of government (the edict went on to declare) the administration must be reformed, the laws revised, education promoted and the finances regulated. This edict, moreover, was but one of many edicts issued in 1906 and following years which showed how great a break with the past was contemplated. In November 1906 two edicts were issued with the object of reorganizing the central administrative offices. Their effect was to simplify the conduct of business, many useless posts being abolished, while an audit board was created to examine the national accounts. In November 1907 another edict was promulgated stating that for the present the formation of Houses of Lords and of Commons to determine all public questions was not practicable, but that it was proposed, as a preliminary measure, to create an Imperial Assembly. At the same time a scheme of provincial councils was ordered to be prepared. A more definite step followed in 1908 when a decree (dated the 27th of August) announced the convocation of a parliament in the ninth year from that date.

One of the changes made in the public offices brought China into conflict with Great Britain. On the 9th of May 1906 a decree appointed Chinese commissioners to control the Imperial Maritime Customs.[63] This was the only department of the government under European (British) control, and the only department also against which no charge of inefficiency or corruption could be brought. The change decreed by China was in accord with the new national sentiment, but by all the foreign powers interested it was felt that it would be a retrograde step if the customs were taken out of the control of Sir Robert Hart (*q.v.*), who had been since 1863 inspector-general of the customs. The British secretary of state for foreign affairs (Sir Edward Grey) at once protested against the decree of the 6th of May, pointing out that the continuation of the established system had been stipulated for in the loan agreements of 1896 and 1898. As a result of this and other representations the Board of Control of the Customs was late in 1906 made a department of the Board of Finance. The Chinese controllers-general continued in office, and despite the assurances given to Great Britain by China (in a note of the 6th of June 1906) that the appointment of the controllers-general was not intended to interfere with the established system of administration, the absolute authority of Sir Robert Hart was weakened.[64] Sir Robert Hart returned to England in 1908 “on leave of absence,” Sir Robert Bredon, the deputy inspector-general, being placed in charge of the service under the authority of the Board of Control, of which on the 5th of April 1910 it was announced that he had been appointed a member. This step was viewed with disfavour by the British government, for, unless Sir Robert Bredon’s post was to be merely a sinecure, it imposed two masters on the maritime customs. On the 20th of April Sir Robert Bredon severed his connexion with the Board of Control. At the same time Mr F.A. Aglen (the Commissioner of Customs at Hankow) became acting Inspector General (Sir Robert Hart being still nominally head of the service). The attempt on the part of the Chinese to control the customs was evidence of the strength of the “young China” or Recovery of Rights party—the party which aspired to break all the chains, such as extra-territoriality, which stamped the country as not the equal of the other great nations.[65]

The control of the Maritime Customs.

In the steps taken to suppress opium smoking evidence was forthcoming of the earnestness with which the governing body in China sought to better the condition of the people. Opium smoking followed, in China, the introduction of tobacco smoking, and is stated to have been introduced from Java and Formosa in the early part of the 17th century. The first edict against the habit was issued in 1729. At that time the only foreign opium introduced was by the Portuguese from Goa, who exported about 200 chests[66] a year. In 1773 English merchants in India entered into the trade, which in 1781 was taken over by the East India Company—the import in 1790 being over 4000 chests. In 1796 the importation of foreign opium was declared contraband, and between 1839 and 1860 the central government attempted, without success, to suppress the trade. It was legalized in 1858 after the second “opium war” with Great Britain. At that time the poppy was extensively grown in China, and the bulk of the opium smoked was, and continued to be, of home manufacture. But after 1860 the importation of opium from India greatly increased. Opium was also imported from Persia (chiefly to Formosa, which in 1895 passed into the possession of Japan). The total foreign import in 1863 was some 70,000 piculs,[67] in 1879 it was 102,000 piculs, but in 1905 had fallen to 56,000 piculs. The number of opium smokers in China in the early years of the 20th century was estimated at from 25 to 30 millions. The evil effects of opium smoking were fully recognized, and Chang Chih-tung, one of the most powerful of the opponents of the habit, was high in the councils of the dowager-empress. On the 20th of September 1906 an edict was issued directing that the growth, sale and consumption of opium should cease in China within ten years, and ordering the officials to take measures to execute the imperial will. The measures promulgated, in November following, made the following provisions:—

The anti-opium agitation.

(1) The cultivation of the poppy to be restricted annually by one-tenth of its existing area; (2) all persons using opium to be registered; (3) all shops selling opium to be gradually closed, and all places where opium is smoked to discontinue the practice within six months; (4) anti-opium societies to be officially encouraged, and medicines distributed to cure the opium-smoking habit; (5) all officials were requested to set an example to the people, and all officials under sixty were required to abandon opium smoking within six months or to withdraw from the service of the state.

It was estimated that the suppression of opium smoking would entail a yearly loss of revenue of over £1,600,000, a loss about equally divided between the central and provincial governments. The first step taken to enforce the edict was the closing of the opium dens in Peking on the last day of 1906.

During 1907 the opium dens in Shanghai, Canton, Fu-chow and many other large cities were closed, and restrictions on the issue of licences were introduced in the foreign settlements; even the eunuchs of the palace were prohibited from smoking opium under severe penalties. The central government continued during 1908 and 1909 to display considerable energy in the suppression of the use of opium, but the provincial authorities were not all equally energetic. It was noted in 1908 that while in some provinces—even in Yun-nan, where its importance tc trade and commerce and its use as currency seemed to render it very difficult to do anything effective—the governor and officials were whole-hearted in carrying out the imperial regulations, in other provinces—notably in Kwei-chow and in the provinces of the lower Yangtsze valley—great supineness was exhibited in dealing with the subject. Lord William Cecil, however, stated that travelling in 1909 between Peking and Hankow, through country which in 1907 he had seen covered with the poppy, he could not then see a single poppy flower, and that going up the Yangtsze he found only one small patch of poppy cultivation.[68] The Peking correspondent of *The Times*, in a journey to Turkestan in the early part of 1910, found that in Shen-si province the people's desire to suppress the opium trade was in advance of the views of the government. Every day trains of opium carts were passed travelling under official protection. But in the adjoining province of Shan-si there had been complete suppression of poppy cultivation and in Kan-suh the officials were conducting a very vigorous campaign against the growth of the poppy.[69]

In their endeavours to suppress opium smoking the Chinese government appealed to the Indian government for help, and in 1907 received a promise that India would decrease the production of opium annually by one-tenth for four years and subsequently if China did likewise. The Indian government also assented to Indian opium being taxed equally with Chinese opium, but China did not raise the duty on foreign opium. In 1908 the Indian government undertook to reduce the amount of opium exported by 5100 chests yearly. In the same year the opium dens in Hong-Kong were closed. In February 1909, on the initiative of the United States, an international conference was held at Shanghai to consider the opium trade and habit. At this conference the Chinese representative claimed that the consumption of opium had already been reduced by one-half—a claim not borne out by the ascertained facts. The conference was unable to suggest any heroic measures, but a number of proposals were agreed to (including the closing of opium dens in the foreign settlements), tending to the restriction of the opium trade. The conference also dealt with another and growing habit in China—the use of morphia.[70] Japan agreed to prohibit the export of morphia to China, a prohibition to which the other powers had previously agreed.

Education.

The attempts to reform the educational system of China on a comprehensive scale date from the year of the return of the court to Peking after the Boxer troubles. In 1902 regulations were sanctioned by the emperor which aimed at remodelling the methods of public instruction. These regulations provided among other things for the establishment at Peking of a university giving instruction in Western learning, a technical college, and a special department for training officials and teachers. A much more revolutionary step was taken in September 1905 when a decree appeared announcing as from the beginning of 1906 the abolition of the existing method of examinations. The new system was to include the study of modern sciences, history, geography and foreign languages, and in the higher grades political economy and civil and international law. Thousands of temples were converted to educational purposes. In Canton, in 1907, the old examination hall was demolished to make way for a college with every appliance on Western lines. Equal zeal was noticeable in such conservative cities as Si-gan-fu, and in remote provinces like Kan-suh. By May 1906 fifteen so-called universities had been founded. Moreover, many young Chinese went abroad to acquire education—in Japan alone in 1906 there were 13,000 students. In the same year primary schools for girls were established.[71] Perhaps the most striking evidence of the new spirit regarding education was the tenour of a communication to the throne from the head of the Confucian family. On the 31st of December 1906 an imperial edict had appeared raising Confucius to the same rank as Heaven and Earth—an action taken to indicate the desire of the government to emphasize the

value of ethical training. In thanking the throne for the honour conferred on his ancestor the head of the family urged that at the new college founded at the birth-place of Confucius the teaching should include foreign languages, physical culture, political science and military drill.[72]

While China, with the consent of the emperor and the empress-dowager, and under the guidance of Prince Ching, Yuan Shih-kai and Chang Chih-tung, was endeavouring to bring about internal reforms, her attitude to foreign powers was one of reserve and distrust. This was especially marked in the negotiations with Japan and with Russia concerning Manchuria, and was seen also in the negotiations with Great Britain concerning Tibet. It was not until April 1908, after four years' negotiations, that a convention with Great Britain respecting Tibet was signed, Chinese suzerain rights being respected. In September the Dalai Lama arrived in Peking from Mongolia and was received by the emperor, who also gave audience to a Nepalese mission.[73]

The emperor Kwang-su had witnessed, without being able to guide, the new reform movement. In August 1908 an edict was issued in his name announcing the convocation of a parliament in nine years' time. In November he died. His death occasioned no surprise, as disquieting reports about his health had been current since July, but the announcement that the dowager empress died on the 15th of November (the day after that on which the emperor was officially stated to have died) was totally unexpected. She had celebrated her birthday on the 3rd of November and appeared then to be in good health. The empress dowager had taken part in the choice of a successor to the throne, Kwang-su's valedictory edict had been drawn up under her supervision, and it is believed that the emperor died some days previous to the date officially given for his death. Kwang-su died childless and was succeeded by his infant nephew Pu-Yi (born on the 8th of February 1906), a son of Prince Chun, who was appointed regent. Prince Chun—himself then only twenty-six years old—had exercised considerable influence at court since his mission to Germany in 1901, and was one of the most enlightened of the Manchu princes. The death of the dowager empress removed a powerful obstacle to a reformed regime, and with her passed away the last prominent representative of the old era in China.

Death of the emperor and of the dowager empress.

The accession to the throne of Pu-Yi, who was given as reigning title Hsuan Tung ("promulgating universally"), was unaccompanied by disturbances, save for an outbreak at Ngan-king, easily suppressed. Prince Chun had the support of Yuan Shih-kai and Chang Chih-tung,[74] the two most prominent Chinese members of the government at Peking—and thus a division between the Manchus and Chinese was avoided. On the 2nd of December 1908 the young emperor was enthroned with the usual rites. On the day following another edict, which, it was stated, had had the approval of the late dowager empress, was issued, reaffirming that of the 27th of August regarding the grant of a parliamentary constitution in nine years' time, and urging the people to prepare themselves for the change. Other edicts sought to strengthen the position of the regent as *de facto* emperor. Yuan Shih-kai and Chang Chih-tung received the title of Grand Guardians of the Heir, and the year 1908 closed with the chief Chinese members of the government working, apparently, in complete harmony with the regent.

Accession of Hsuan Tung.

On the 1st of January 1909, however, the political situation was rudely disturbed by the dismissal from office of Yuan Shih-kai. This step led to representations by the British and American ministers to Prince Ching, the head of the foreign office, by whom assurances were given that no change of policy was contemplated by China, while the regent in a letter to President Taft reiterated the determination of his government to carry through its reform policy. The dismissal of Yuan Shih-kai was believed by the Chinese to be due to his "betrayal" of the emperor Kwang-su in the 1898 reform movement. He had nevertheless refused to go to extremes on the reactionary side, and in 1900, as governor of Shan-tung, he preserved a neutrality which greatly facilitated the relief of the Peking legations. During the last years of the life of the dowager empress it was his influence which largely reconciled her to the new reform movement. Yet Kwang-su had not forgotten the *coup d'état* of 1898, and it is alleged that he left a testament calling upon his brother the prince regent to avenge the wrongs he had suffered.[75] During the greater part of the year there was serious estrangement between China and Japan, but on the 4th of September a convention was signed which settled most of the points in dispute respecting Manchuria and Korea. In Korea the boundary was adjusted so that Chientao, a mountainous district in eastern Manchuria regarded as the ancestral home of the reigning families of China and Korea, was definitely assigned to China; while in Manchuria, both as to railways and mines, a policy of co-operation was substituted for one of opposition.[76] Although

Dismissal of Yuan Shih-kai.

Agreement with Japan.

Japan had made substantial concessions, those made by China in return provoked loud complaints from the southern provinces—the self-government society calling for the dismissal of Prince Ching. In northern Manchuria the Russian authorities had assumed territorial jurisdiction at Harbin, but on the 4th of May an agreement was signed recognizing Chinese jurisdiction.[77]

The control of railways.

The spirit typified by the cry of "China for the Chinese" was seen actively at work in the determined efforts made to exclude foreign capital from railway affairs. The completion in October 1909 of the Peking-Kalgan railway was the cause of much patriotic rejoicing. The railway, a purely Chinese undertaking, is 122 m. long and took four years to build. It traversed difficult country, piercing the Nan K'ow Pass by four tunnels, one under the Great Wall being 3580 ft. long. There was much controversy between foreign financiers, generally backed by their respective governments, as to the construction of other lines. In March 1909 the Deutschasiatische Bank secured a loan of £3,000,000 for the construction of the Canton-Hankow railway. This concession was contrary to an undertaking given in 1905 to British firms and was withdrawn, but only in return for the admittance of German capital in the Sze-ch'uen railway. After prolonged negotiations an agreement was signed in Paris on the 24th of May 1910 for a loan of £6,000,000 for the construction of the railway from Hankow to Sze-ch'uen, in which British, French, German and American interests were equally represented. In January 1910 the French line from Hanoi to Yunnan-fu was opened;[78] the railway from Shanghai to Nanking was opened for through traffic in 1909.

Provincial Assemblies constituted. A senate formed.

The progress of the anti-opium movement and the dispute over the control of the Imperial Maritime Customs have already been chronicled. A notable step was taken in 1909 by the institution of elected assemblies in each of the provinces. The franchise on which the members were elected was very limited, and the assemblies were given consultative powers only. They were opened on the 14th of October (the 1st day of the 9th moon). The businesslike manner in which these assemblies conducted their work was a matter of general comment among foreign observers in China.[79] In February 1910 decrees appeared approving schemes drawn up by the Commission for Constitutional Reforms, providing for local government in prefectures and departments and for the reform of the judiciary. This was followed on the 9th of May by another decree summoning the senate to meet for the first time on the 1st day of the 9th moon (the 3rd of October 1910). All the members of the senate were nominated, and the majority were Manchus. Neither to the provincial assemblies nor to the senate was any power of the purse given, and the drawing up of a budget was postponed until 1915.[80]

Anti-dynastic movements. Riots in Hu-nan.

The efforts of the central government to increase the efficiency of the army and to re-create a navy were continued in 1910. China was credited with the intention of spending £40,000,000 on the rehabilitation of its naval and military forces. It was estimated in March 1910 that there were about 200,000 foreign-trained men, but their independent spirit and disaffection constituted a danger to internal peace. The danger was accentuated by the mutual jealousy of the central and provincial governments. The anti-dynastic agitation, moreover, again seemed to be growing in strength. In April 1910 there was serious rioting at Changsha, Hu-nan, a town whence a few years previously had issued a quantity of anti-foreign literature of a vile kind. The immediate causes of the riots seem to have been many: rumours of the intention of the foreign powers to dismember China, the establishment of foreign firms at Changsha competing with native firms and exporting rice and salt at a time when the province was suffering from famine, and the approach of Halley's comet. Probably famine precipitated the outbreak, which was easily crushed, as was also a rising in May at Yung chow, a town in the south of Hu-nan. Much mission and mercantile property was wrecked at Changsha, but the only loss of life was the accidental drowning of three Roman Catholic priests.

The regent's policy.

An edict of the 17th of August 1910 effected considerable and unexpected changes in the personnel of the central government. Tang Shao-yi, a former lieutenant of Yuan Shih-kai, was appointed president of the Board of Communications, and to him fell the difficult task of reconciling Chinese and foreign interests in the development of the railway system. Sheng Kung-pao regarded as the chief Chinese authority on currency questions, and an advocate of the adoption of a gold standard, was attached to the Board of Finance to help in the reforms decreed by an edict of May of the same year (see ante, *Currency*). The issue of the edict was attributed to the influence with the regent of Prince Tsai-tao, who had recently returned from a tour in Europe, where he had specially studied questions of national defence. The changes made among the high

officials tended greatly to strengthen the central administration. The government had viewed with some disquiet the Russo-Japanese agreement of the 4th of July concerning Manchuria (which was generally interpreted as in fact lessening the authority of China in that country); it had become involved in another dispute with Great Britain, which regarded some of the measures taken to suppress opium smoking as a violation of the terms of the Chifu convention, and its action in Tibet had caused alarm in India. Thus the appointment to high office of men of enlightenment, pledged to a reform policy, was calculated to restore confidence in the policy of the Peking authorities. This confidence would have been greater had not the changes indicated a struggle for supreme power between the regent and the dowager empress Lung Yu, widow of Kwang-su.

The strength of the various movements at work throughout China was at this time extremely difficult to gauge; the intensity of the desire for the acquisition of Western knowledge was equalled by the desire to secure the independence of the country from foreign control. The second of these desires gave the force it possessed to the anti-dynastic movement. At the same time some of the firmest supporters of reform were found among the Manchus, nor did there seem to be any reason to doubt the intention of the regent—if he retained power—to guide the nation through the troubled period of transition into an era of constitutional government and the full development of the resources of the empire.

(X.)

BIBLIOGRAPHICAL NOTE.—Knowledge of the ancient history of China is necessarily derived from the native writers on the subject. Fortunately, the Chinese have always regarded the preservation of the national records as a matter of supreme importance. Confucius set an example in this respect, and has preserved for us in the *Spring and Autumn Annals* and the *Shu-king*, or *Book of History*, records of his country's progress during the past and then present centuries. The celebrated emperor Shih Hwang-ti, in establishing the empire, attempted to strengthen his cause by destroying all works on the national history. But so strongly was the historical sense inculcated in the people that immediately on the death of the tyrant the nation's records were again brought to light, and have been carefully preserved and edited since that time. Prof. Legge's translation of the *Spring and Autumn Annals* and the *Shu-king, or Book of History*, in the "Sacred Books of the East" series, have opened for students the stores of historical knowledge which were at the command of Confucius, and European writers on Chinese history have found in the dynastic annals a never-failing source of valuable information. It was from these works and epitomes of these that de Maillac gathered the facts for his celebrated *Histoire générale de la Chine*, and it is from similar sources that all other writers on Chinese history have drawn their inspiration.

The following works on ancient and modern Chinese history may be specially mentioned: J.A. de Moyria de Maillac, *Histoire générale de la Chine* (1777), &c.; J B. du Halde, *General History of China* (4 vols., 1736); M. de Guignes, *Voyages à Péking ...* (3 vols., 1808); D. Boulger, *A History of China* (3 vols., 1881); Valentine Chirol, *The Far Eastern Question* (1896); E.R. Huc, *The Chinese Empire* (2 vols., 1855); T.T. Meadows, *The Chinese and their Rebellions* (1856); G. Pauthier, *Histoire des relations politiques de la Chine avec les puissances occidentales depuis les temps les plus anciens jusqu'à nos jours ...* (1859); Sir George Staunton, *Notes of Proceedings and Occurrences during the British Embassy to Peking in 1816* (1824); *Chinese Expansion historically reviewed*, a paper read before the Central Asian Society by Baron Suyematsu on January 11, 1905; F. Hirth, *Ancient History of China* (New York, 1908); Prof. Herbert A. Giles's *Chinese Biographical Dictionary* (1897) is a storehouse of biographical detail and anecdote.

For Chinese relations with foreign powers see H. Cordier, *Histoire des relations de la Chine avec les puissances occidentales, 1860-1902* (3 vols., Paris, 1901-1902); *Hertslet's China Treaties. Treaties, &c., between Great Britain and China, and between China and Foreign Powers, and Orders in Council, &c., affecting British Interests in China* (3rd ed., revised by G.G.P. Hertslet and E. Parkes, London, 1908); J.O. Bland and E. Backhouse, *China under the Empress Dowager* (London, 1910). More general works are Sir R.K. Douglas, *China*, history since the time of Marco Polo (London, 1899); E.H. Parker, *China; Her History, Diplomacy and Commerce* (London, 1901); *China, Past and Present* (London, 1903); A.J. Sargent, *Anglo-Chinese Commerce and Diplomacy*—mainly in the 19th century (Oxford, 1907). For current affairs see the authorities cited in the footnotes.

PLATE I.

FIG. 1.—KU K'AI-CHIH. TOILET SCENE.
British Museum. 4th Cent. A.D.).

FIG. 6.—KIU YING. COURT LADIES.
(British Museum. 15th Cent.)

FIG. 3.—CHAO MÊNG-FU, AFTER WANG WEI (8th CENT.).
SCENE ON THE WANG CH'UAN.
(Dated 1309. British Museum.)

FIG.4.—HSÜ HSI. BIRD ON APPLE-BOUGH.
(10th Cent.)

FIG. 2.—ATTRIBUTED TO WU TAOTZÜ.
SAKYAMUNI. (8th Cent.)

FIG. 5.—CHIEN SHUN-CHU. THE
EMPEROR HUAN-YEH. (15th Cent.)

FIG. 7.—EAGLE. By LIN LIANG. (15th Cent.
British Museum.)

Figs. 2, 4, and 5 are reproduced by permission of the Kokka Company, Tokyo.

FIG. 9.—TEMPLE VASE (c. 1200 B.C.).

FIG. 10.—WINE VASE (c. 1000 B.C.).

FIG. 11—WINE VASE (c. 600 B.C.).

FIG. 12.—INLAID VESSEL
(C. 500 B.C.).

FIG. 13.—WINE VESSEL (c. 100 B.C.).

FIG. 14.—INLAID VASE (c. 200 A.D.).
In possession of C.J. Holmes.

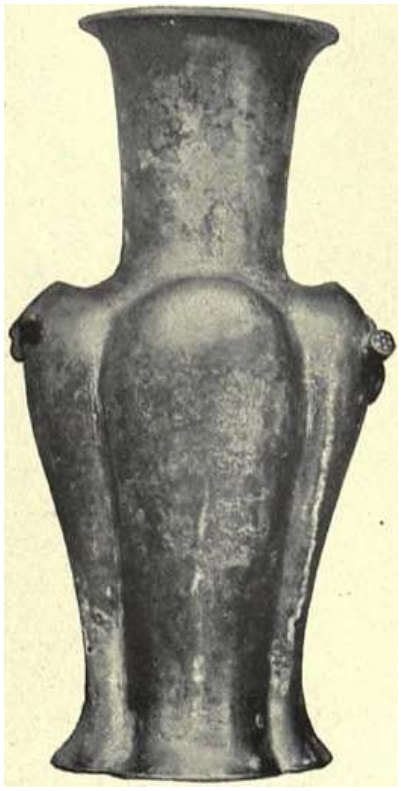


FIG. 15.—VASE (c. 1450 A.D.).

FIG. 16.—WINE VESSEL (c. 1450 A.D.).

FIG. 17.—TEMPLE VASE (c. 1700 A.D.).

Figs. 9-13 and 15-17 are from originals in the Victoria and Albert Museum, South Kensington.

VI. CHINESE ART

1. *Painting.*—Painting is the pre-eminent art of China, which can boast of a succession of great painters for at least twelve centuries. Though the Chinese have an instinctive gift for harmonious colour, their painting is above all an art of *line*. It is intimately connected with writing, itself a fine art demanding the same skill and supple power in the wielding of the brush. The most typical expression of the Chinese genius in painting is the ink sketch, such as the masters of the Sung dynasty most preferred and the Japanese from the 15th century adopted for an abiding model. Utmost vigour of stroke was here combined with utmost delicacy of modulation. Rich colour and the use of gold are an integral part of the Buddhist pictures, though in the masterpieces of the religious painters a grand rhythm of linear design gives the fundamental character. Exquisite subdued colour is also found in the “flower and bird pieces” and still-life subjects of the Sung artists, and becomes more emphatic and variegated in the decorative artists of the Ming period.

Not to represent facts, but to suggest a poetic idea (often perfumed, so to speak, with reminiscence of some actual poem), has ever been the Chinese artist’s aim. “A picture is a voiceless poem” is an old saying in China, where very frequently the artist was a literary man by profession. Oriental critics lay more stress on loftiness of sentiment and tone than on technical qualities. This idealist temper helps to explain the deliberate avoidance of all emphasis on appearances of material solidity by means of chiaroscuro, &c., and the exclusive use of the light medium of water-colour. The Chinese express actual dislike for the representation of relief. Whoever compares the painting of Europe with that of Asia (and Chinese painting is the central type for the one continent, as Italian may claim to be for the other) must first understand this contrast of aim. The limitations of the Chinese are great, but these limitations save them from mistaking advances in science for advances in art, and from petty imitation of fact. Their religious painting has great affinity with the early religious art of Italy (*e.g.* that of Siena). But the ideas of the Renaissance, its scientific curiosity, its materialism, its glorification of human personality, are wholly missing in China. For Europe, Man is ever the hero and the foreground—hence the dominant study of the nude, and the tendency to thronged compositions, with dramatic motives of effort and conflict. The Chinese artists, weak in the plastic, weak in the architectural sense, paint mostly in a lyric mood, with a contemplative ideal. Hence the value given to space in their designs, the semi-religious passion for nature, and the supremacy of landscape. Beauty is found not only in pleasant prospects, but in wild solitudes, rain, snow and storm. The life of things is contemplated and portrayed for its own sake, not for its uses in the life of men. From this point of view the body of Chinese painting is much more modern in conception than that of Western art. Landscape

was a mature and free art in China more than a thousand years ago, and her school of landscape is the loftiest yet known to the world. Nor was man ever dissociated from nature. As early as the 4th century Ku K‘ai-chih says that in painting a certain noble character he must give him a fit background of great peaks and deep ravines. Chinese painting, in sum, finely complements rather than poorly supplements that of Europe; where the latter is strong, it is weak; but in certain chosen provinces it long ago found consummate expression for thoughts and feelings scarcely yet expressed with us.

The origin of Chinese painting is lost in legend, though there is no reason to doubt its great antiquity. References in literature prove that by the 3rd century B.C. it was a developed art. To this period is ascribed the invention of the hair-brush, in the use of which as an instrument both for writing and drawing the Chinese have attained marvellous skill; the usual material for the picture being woven silk, or, less often and since the 1st century A.D., paper. In early times wood panels were employed; and large compositions were painted on walls prepared with white lime. These mural decorations have all disappeared. History and portraiture seem to have been the prevailing subjects; a secular art corresponding to the social ideals of Confucianism. Yet long before the introduction of Buddhism (A.D. 67) with its images and pictures, we find that the two great symbolic figures of the Chinese imagination, the Tiger and the Dragon—typifying the forces of Nature and the power of the Spirit—had been evolved in art; and to imaginative minds the mystic ideas of Lao Tzü and the legends of his hermit followers proved a fruitful field for artistic motives of a kind which Buddhism was still more to enrich and multiply. Early classifications rank Buddhist and Taoist subjects together as one class.

History: Early periods (to A.D. 618).

With the 2nd century A.D. we come to individual names of artists and to the beginnings of landscape. Ku K‘ai-chih (4th century) ranks as one of the greatest names of Chinese art. A painting by him now in the British Museum (Plate I. fig. 1) shows a maturity which has nothing tentative about it. The dignified and elegant types are rendered with a mastery of sensitive brush-line which is not surpassed in later art. Ku K‘ai-chih painted all kinds of subjects, but excelled in portraiture. During the next century the criticism of painting was formulated in six canons by Hsieh Ho. Rhythm, organic or structural beauty, is the supreme quality insisted on.

During the T‘ang dynasty the empire expanded to its utmost limits, stretching as far as the Persian Gulf. India was invaded; Buddhism, taught by numbers of Indian missionaries, became firmly established, and controlled the ideals and imaginations of the time. The vigorous style of a great era was impressed upon the T‘ang art, which culminated in Wu Taotzü, universally acknowledged as the greatest of all Chinese painters. It is doubtful if any of his work remains. The picture reproduced (Plate I. fig. 2) was long attributed to him, but is now thought to be of later date, like the two landscapes well known under his name in Japan. Wu Taotzü seems to have given supreme expression to the central subject of Buddhist art, the Nirvana of Buddha, who lies serenely asleep, with all creation, from saints and kings to birds and beasts, passionately bewailing him. The composition is known from Japanese copies; and it is in fact from the early religious schools of Japan that we can best conjecture the grandeur of the T‘ang style. Wu Taotzü excelled in all subjects: other masters are best known for some particular one. Han Kan was famous for his horses, the models for succeeding generations of painters, both Chinese and Japanese. A specimen of his brush is in the British Museum; and in the same collection is a long roll which gives a glimpse of the landscape of this age. It is a copy by a great master of the Yuen dynasty, Chao Mêng-fu, from a famous painting by Wang Wei, representing scenes on the Wang Ch‘uan, the latter’s home (Plate I. fig. 3 shows a fragment). With the T‘ang age landscape matured, and two schools arose, one headed by Wang Wei, the other by Li Ssü-hsün. The style of Wang Wei, who was equally famous as a poet, had a romantic idealist character—disdainful of mere fact—which in later developments created the “literary man’s picture” of the Southern school, as opposed to the vigorous naturalism of the North.

T‘ang dynasty (A.D. 618-907).

Next come five brief dynasties, memorable less for any corporate style or tradition, than for some fine painters like Hsü Hsi, famous for his flowers, and Huang Ch‘uan, a great master in a delicate style. Two pictures by him, fowls and peonies, of extraordinary beauty, are in the British Museum.

Five dynasties (A.D. 907-960).

The empire, which had been broken up, was reunited, though shorn of its outer dependencies, under the house of Sung. This was an age of culture in which the freedom of the individual was proclaimed anew; glorious in art as in poetry and philosophy; the period which for Asia stands in history as the Periclean age for Europe.

Sung dynasty (A.D. 960-

1280).

The religious paintings of Li Lung-mien, the grandest of Sung masters, if less forcible than those of T'ang, were unsurpassed in harmonious rhythm of design and colour. But the most characteristic painting of this period is in landscape and nature-subjects. With a passion unmatched in Europe till Wordsworth's day, the Sung artists portrayed their delight in mountains, mists, plunging torrents, the flight of the wild geese from the reed-beds, the moonlit reveries of sages in forest solitudes, the fisherman in his boat on lake or stream. To them also, steeped in the Zen philosophy of contemplation, a flowering branch was no mere subject for a decorative study, but a symbol of the infinite life of nature. A mere hint to the spectator's imagination is often all that they rely on; proof of the singular fulness and reality of the culture of the time. The art of suggestion has never been carried farther. Such traditional subjects as "Curfew from a Distant Temple" and "The Moon over Raging Waves" indicate the poetic atmosphere of this art. Ma Yuan, Hsia Kuei and the emperor Hwei-tsung are among the greatest landscape artists of this period. They belong to the South Sung school, which loved to paint the gorges and towering rock-pinnacles of the Yangtsze. The sterner, less romantic scenery of the Hwang-Ho inspired the Northern school, of which Kuo Hsi and Li Ch'eng were famous among many others. Muh Ki was one of the greatest masters of the ink sketch; Chao Tan Lin was famed for his tigers; Li Ti for his flowers as for his landscapes; Mao I for still-life: to name a few among a host.

Yuen dynasty (A.D. 1280-1368).

The Mongol dynasty continues in art the Sung tradition. Chao Mêng-fu, the greatest master of his time, belongs to both periods, and ranks with the highest names in Chinese painting. A landscape by him, copied from Wang Wei, has been already mentioned as in the British Museum, which also has two specimens of Yen Hui, a painter less known in his own country than in Japan. He painted especially figures of Taoist legend. The portrait by Ch'ien Shun-chü (Plate I. fig. 5) is a fine example of purity of line and lovely colour, reminding us of Greek art.

Ming dynasty (A.D. 1368-1644).

The simplicity of motive and directness of execution which had been the strength of the Sung art gradually gave way during the Ming era to complicated conceptions and elaborate effects. The high glow of life faded; the lyrical temper and impassioned work of the Sung time were replaced by love of ornament and elegance. In this respect Kiu Ying is typical of the period, with his richly coloured scenes from court life (Plate I. fig. 6). None the less, there were a number of painters who still upheld the grander style of earlier ages. The greatest of these was Lin Liang (Plate I. fig. 7), whose brush work, if somewhat coarser, is as powerful as that of the Sung masters. But though individual painters of the first rank preserved the Ming age from absolute decline, it cannot be said that any new development of importance took place in a vitalizing direction.

Tsing dynasty (from A.D. 1644).

The present dynasty prolongs the history of Ming art. The literary school of the South became more prominent, sending out offshoots in Japan. There has been no movement of national life to be reflected in art, though a great body of admirable painting has been produced, down to the present day. The four landscape masters known as the "four Wangs," Yün Shou-p'ing and Wu Li are pre-eminent names.

SOURCES AND AUTHORITIES.—While the designs on porcelain, screens, &c., have long been admired in the West, the paintings of which these are merely reproductions have been utterly ignored. Ignorance has gained authority with time, till the very existence of a great school of Chinese painting has been denied. Materials for study are scanty. Fires, wars and the recent armed ravages of Western civilization have left but little. The profound indifference of the Chinese to European admiration has prevented their collections from being known. The Japanese, always enthusiastic students and collectors of the continental art, claim (whether justly or not, is hard to ascertain) that the finest specimens are now in their country. Many of these are reproduced in the invaluable Tokyo publications, the *Kokka*, Mr Tajima's *Select Relics*, &c., with Japanese criticisms in English. Of actual paintings the British Museum possesses a fair number, and the Louvre a few, of real importance. Copies and forgeries abound.

See H.A. Giles, *Introduction to the History of Chinese Pictorial Art* (1905); F. Hirth, *Scraps from a Collector's Note-Book* (1905), (supplements Giles's work and especially valuable for the art of the Ch'ing dynasty); S.W. Bushell, *Chinese Art*, vol. ii. (1906); K. Okakura, *Ideals of the East* (1903); M. Paléologue, *L'Art chinois* (1887); W. Anderson, *Catalogue of Japanese and Chinese Paintings* (1886); Sei-ichi Taki, "Chinese Landscape Painting," *The Kokka*, Nos. 191, &c. (1906); *Chinesische Malereien aus der Sammlung Hirth* (Catalogue of an exhibition held at Dresden) (1897); W. von Seidlitz, article in *Kunstchronik* (1896-1897), No. 16.

2. *Engraving.*—According to native historians, the art of printing from wooden blocks was

invented in China in the 6th century A.D., when it was employed for the publication of texts. The earliest evidence we have for the existence of woodcuts made to reproduce pictures or drawings is a passage in a work by Chang Yen-yüan, from which it appears that these were not made before the beginning of the T‘ang dynasty, under which that author lived. The method employed was to cut the design with a knife on the plank of the wood, in the manner followed by European artists till the end of the 18th century, when engraving with a burin on boxwood ousted the older process. The Japanese borrowed the art from China; and in Japan a whole school of artists arose who worked specially for the woodcutters and adapted their designs to the limitations of the material employed. In China the art has remained merely reproductive, and its history is therefore of less interest. *Printing in colours* was known to the Chinese in the 17th century, and probably earlier. In the British Museum is a set of prints brought from the East by Kaempfer in 1693, in which eight colours and elaborate *gauffrage* are used. Some fine albums of colour prints have been issued in China, but nothing equal in beauty to the prints produced in Japan by the co-operation of woodcutter and designer. *Engraving on copper* was introduced to China by the Jesuits, and some well-known sets of prints illustrating campaigns in Mongolia were made in the 18th century. But the method has never proved congenial to the artists of the Far East.

See Sir R.K. Douglas, *Guide to the Chinese and Japanese Illustrated Books* (British Museum, 1887); W. Anderson, *Japanese Wood Engraving* (1895).

3. *Architecture*.—In architecture the Chinese genius has found but limited and uncongenial expression. A nation of painters has built picturesquely, but this picturesqueness has fought against the attainment of the finest architectural qualities. There has been little development; the arch, for instance, though known to the Chinese from very early times, has been scarcely used as a principle of design, and the cupola has been undiscovered or ignored; and though foreign architectural ideas were introduced under the influence of the Buddhist and Mahommedan religions, these were more or less assimilated and subdued to the dominant Chinese design. Ruins scarcely exist and no building earlier than the 11th century A.D. is known; but we know from records that the forms of architecture still prevalent imitate in essentials those of the 4th and 5th centuries B.C. and doubtless represent an immemorial tradition.

The grand characteristic of Chinese architecture is the pre-eminent importance of the roof. The *t‘ing* is the commonest model of building. The roof is the main feature; in fact the *t‘ing* consists of this roof, massive and immense, with recurved edges, and the numerous short columns on which the roof rests. The columns are of wood, the straight stems of the *nanmu* being specially used for this purpose. The walls are not supports, but merely fill in, with stone or brickwork, the spaces between the columns. The scheme of construction is thus curiously like that of the modern American steel-framed building, though the external form may be derived from the tent of primitive nomads. The roof, being the preponderant feature, is that on which the art of the architect has been concentrated. A double or a triple roof may be devised; the ridges and eaves may be decorated with dragons and other fantastic animals, and the eaves underlaid with carved and lacquered woodwork; the roof itself is often covered with glazed tiles of brilliant hue. In spite of efforts, sometimes desperate, to give variety and individual character by ornament and detail, the general impression is one of poverty of design. “Chinese buildings are usually one-storeyed and are developed horizontally as they are increased in size or number. The principle which determines the plan of projection is that of symmetry” (Bushell). All important buildings must face the south, and this uniform orientation increases the general architectural monotony produced by a preponderance of horizontal lines.

A special characteristic of Chinese architecture is the *pai-lou*, an archway erected only by special authority, usually to commemorate famous persons. The *pai-lou* is commonly made of wood with a tiled roof, but sometimes is built entirely of stone, as is the gateway at the avenue of the Ming tombs. A magnificent example of the *pai-lou* is that on the avenue leading to Wo Fo Ssü, the temple of the Sleeping Buddha, near Peking. This is built of marble and glazed terra-cotta. The *pai-lou*, like the Japanese *torii*, derives its origin from the *toran* of Indian *stupas*. Lofty towers called *t‘ai*, usually square and of stone, seem to have been a common type of important building in early times. They are described in old books as erected by the ancient kings and used for various purposes. The towers of the Great Wall are of the same character, and are made of stone, with arched doors and windows. Stone, though plentiful in most provinces of the empire, has been singularly little used by the Chinese, who prefer wood or brick. M. Paléologue attributes this preference of light and destructible materials to the national indifference of the Chinese to posterity and the future, their enthusiasm being wholly devoted to their ancestors and the past.

Temples are designed on the general *t‘ing* model. The Temple of Heaven is the most

imposing of the Confucian temples, conspicuous with its covering of deep-blue tiles and its triple roof. Near this is the great Altar of Heaven, consisting of three circular terraces with marble balustrades. Buddhist temples are built on the general plan of secular residences, and consist of a series of rectangular courts with the principal building in the centre, the lesser at the sides. Lama temples differ little from these except in the interior decorations and symbolism. Mahommedan mosques are far simpler and severer in internal arrangement, but outwardly these also are in the Chinese style.

The *pagoda* (Chinese *taa*), the type of Chinese architecture most familiar to the West, probably owes its peculiar form to Buddhist influence. In the pagoda alone may be found some trace of a religious imagination such as in Europe made Gothic architecture so full and splendid an expression of the aspiring spirit. The most famous pagoda was the Porcelain Tower of Nanking, destroyed by the T'aip'ing rebels in 1854. This was covered with slabs of faience coated with coloured glazes. The ordinary pagoda is built of brick on a stone foundation; it is octagonal with thirteen storeys.

No Chinese buildings show more beauty than some of the graceful stone bridges for which the neighbourhood of Peking has been famous for centuries.

See M. Paléologue, *L'Art chinois* (1887): S.W. Bushell, *Chinese Art*, vol. i. (1904); J. Fergusson, *History of Architecture*; Professor Chûta Itô, articles in *The Kokka*, Nos. 197, 198.
(L.B.)

4. *Sculpture*.—Except in the casting and decoration of bronze vessels the Chinese have not obtained distinction as sculptors. They have practised sculpture in stone from an early period, but the incised reliefs of the 2nd century B.C., a number of which are figured in Professor E. Chavannes's standard work,[81] while they display a certain spirit, lack the true plastic sense, and though the power of the Chinese draughtsmen increased rapidly under the T'ang and Sung dynasties, their work in stone showed no parallel progress. The feeling for solidity, which in Japan was a natural growth, was always somewhat exotic in China. With the impulse given to the arts by Buddhism a school of sculpture arose. The pilgrim Fa Hsien records sculpture of distinctive Chinese type in the 5th century. But Indian models dominated the art. Colossal Buddhas of stone were typical of the T'ang era. Little, however, remains of these earlier times, and such true sculpture in stone, wood or ivory as we know dates from the 14th and succeeding centuries. The well-known sculptures on the arch at Chu Yung Kuan (A.D. 1345) are Hindu in style, though not without elements of breadth and strength, which seem to promise a greater development than actually took place. The colossal figures guarding the approach to the Ming tombs (15th century) show that the national taste rapidly became conventional and petrified so far as monumental sculpture was concerned, though occasional examples of devotional or portrait sculpture on a smaller scale in wood and ivory are found, which in power, grace, sincerity and restraint can rank with the work of more gifted nations. Such pieces, however, are extremely rare, and at South Kensington the ivory "Kwanyin and Child" (274. 1898) is a solitary example. As a rule the Chinese sculptor valued his art in proportion to the technical difficulties it conquered. He thus either preferred intractable materials like jade or rock-crystal, or, if he wrought in wood, horn or ivory, sought to make his work curious or intricate rather than beautiful. There is, nevertheless, beauty of a kind in Chinese bowls of jade, and there is dignity in some of the pieces of rock-crystal, but the bulk of the carving done in wood, horn and ivory does not deserve a moment's serious thought from the aesthetic point of view. The few fine specimens may be referred to the earlier part of the Ming dynasty when Chinese art in general was sincere and simple. After the middle of the 15th century there set in the taste for profuse ornament which injured all subsequent Chinese work, and wholly ruined Chinese sculpture.

Bronzes.—In Chinese bronzes we have a more consistent and exceptional form of plastic art, which can be traced continuously for some three thousand years. These bronzes take the form of ritual or honorific vessels, and the archaic shapes used in the service of the prehistoric religion of the country are repeated and copied with slight changes in decoration or detail to the present day.

The oldest extant specimens, chiefly derived from the sack of the Summer Palace at Peking, may be referred to the Shang and Chow dynasties (1766-255 B.C.). These ancient pieces have a certain savage monumental grandeur of design, are usually covered with a rich and thick patina of red, green and brown, and are decorated with simple patterns—scrolls, zigzag lines and a form of what is known as the Greek key-pattern symbolizing respectively waves, mountains and storm clouds. The animal forms used are those of the *tao-tieh* (glutton), a fabulous monster (possibly a conventionalized tiger) representing the powers of the earth, the serpent and the bull. These two last in later pieces combine to form the dragon, representing the power of the air. In the Chow dynasty libation vessels were also made in the form of a

deer, a ram or a rhinoceros. These characteristics are shown in figures 9-17, Plate II. Fig. 9 is a temple vessel of a shape still in use, but which must date from before 1000 B.C. With this massive piece may be contrasted the flower-like wine vase shown in fig. 10, a favourite shape which is the prototype of some of the most graceful forms of Chinese porcelain and Japanese bronze. Its date is about 1000 B.C. The large wine vase shown in fig. 11 is some 400 years later. On the body appears the head of the tao-tieh, on the handles are superbly modelled serpents. The technique, which in the previous pieces was somewhat rude, has now become perfect, yet the menacing majestic feeling remains. We see it no less clearly in fig. 12, a marvellous vessel richly inlaid with gold and silver and covered with an emerald-green patina. It may date from about 500 B.C., and indicates that even in this remote epoch the Chinese were not only daring and powerful artists but also master-craftsmen in metal.

It is indeed at this period that the art reaches its climax. The monumental grandeur of the Shang specimens is often allied to clumsiness; the later work, if more elaborate, is always less powerful. Nevertheless, it is to a later period that ninety-nine out of a hundred Chinese bronzes must be referred, and the great majority belong either to the Han and succeeding dynasties (220 B.C.-A.D. 400), or to the Renaissance of the arts which culminated under the Ming dynasty a thousand years later.

The characteristics of the first of these periods is the free use of small solid figures of animals as decoration—the phoenix, the elephant, the frog, the ox, the tortoise, and occasionally men; shapes grow less austere and less significant, as a comparison between figures 11 and 13 will indicate; then towards the end of the 2nd century A.D. the influence of Buddhism is felt in the general tendency towards suavity of form (fig. 14). This vase is most delicately though sparingly inlaid with silver and a few touches of gold. Some small pieces, very richly and delicately inlaid and covered with a magnificent emerald-green patina, belonging to this period, form a connecting link between the inlaid work of the Chow dynasty and that of the Sung and Ming dynasties. The mirrors with Graeco-Bactrian designs, a conclusive proof of the external influences brought to bear upon Chinese art, are also attributed to the Han epoch.

The troubled period between A.D. 400 and A.D. 960, in spite of the interval of activity under the T‘ang dynasty, produced, it would seem, but few bronzes, and those few were of no distinct or noteworthy style. Under the Sung dynasty the arts revived, and to this time some of the most splendid specimens of inlaid work belong—pieces of workmanship and taste no less perfect than that of the Japanese, in which the gold and silver of the earlier work are occasionally reinforced with malachite and lapis-lazuli. The coming of Kublai Khan and the Yuen dynasty (1280-1367) once more brought the East into contact with the West, and to this time we may assign certain fine pieces of Persian form such as pilgrim bottles. The vessels bearing Arabic inscriptions belong to the Ming dynasty (1368-1644), with which the modern history of Chinese art begins.

The work done while the Ming dynasty was still young provides the student of Chinese art with many problems, and in one or two cases even the South Kensington authorities assign to pre-Christian times pieces that are clearly of Ming workmanship. The tendency of the period was eclectic and archaistic. The products of earlier days were reproduced with perfect technical command of materials, and with admirable taste; it is indeed by an excess of these qualities that archaistic Ming work may be distinguished from the true archaic. In fig. 15 we see how the Ming bronze worker took an earlier Buddhistic form of vase and gave it a new grace that amounted almost to artifice. A parallel might be found among the products of the so-called *art nouveau* of to-day, in which old designs are revived with just that added suavity or profusion of curvature that robs them of character. Fig. 16 again might be mistaken almost for a piece of the Chow dynasty, were not the grandeur of its form modified by just so much harmony in the curvature of the body and neck, and by just so much finish in the details as to rob the design of the old majestic vigour and to mark it as the splendid effort of an age of culture, and not the natural product of a period of strength.

It is, however, in the inlaid pieces that the difference tells most clearly. Here we find the monstrous forms of the Shang and Chow dynasties revived by men who appreciated their spirit but could not help making the revival an excuse for the display of their own superior skill. The monstrous vases and incense-burners of the past thus appear once more, but are now decorated with a delicate embroidery of inlay, are polished and finished to perfection, but lose therewith just the rudeness of edge and outline which made the older work so gravely significant. At times even some grandly planned vessel will appear with such a festoon of pretty tracery wreathed about it that the incongruity is little short of ridiculous, and we recognize we have passed the turning-point to decline.

Decline indeed came rapidly, and to the latter part of the Ming epoch we must assign those countless bronzes where dragons and flowers and the stock symbols of happiness, good luck and longevity sprawl together in interminable convolutions. When once we reach this stage of

contortion, of elaborate pierced and relief work, we come to the place in history of Chinese bronzes where serious study may cease, except in so far as the study of the symbols themselves throws light upon the history of Chinese procelain (see CERAMICS). One class of bronze alone needs a word of notice, namely, the profusely decorated pieces which have a Tibetan origin, and are obviously no older than the end of the Ming period. Of these fig. 17 will serve as a specimen, and a comparison with fig. 9 will show how the softer rounded forms and jewelled festoons of Hindu-Greek taste enervated the grand primitive force of the earlier age, and that neither the added delicacy of texture and substance nor the vastly increased dexterity of workmanship can compensate for the vanished majesty.

(C. J. H.)

VII. THE CHINESE LANGUAGE

Colloquial.—In treating of Chinese, it will be found convenient to distinguish, broadly, the spoken from the written language and to deal with each separately. This is a distinction which would be out of place if we had to do with any European, or indeed most Oriental languages. Writing, in its origin, is merely a symbolic representation of speech. But in Chinese, as we shall see, for reasons connected with the peculiar nature ot the script, the two soon began to move along independent and largely divergent lines. This division, moreover, will enable us to employ different methods of inquiry more suited to each. With regard to the colloquial, it is hardly possible to do more than consider it in the form or forms in which it exists at the present day throughout the empire of China. Although Chinese, like other living languages, must have undergone gradual changes in the past, so little can be stated with certainty about these changes that an accurate survey of its evolution is quite out of the question. Obviously a different method is required when we come to the written characters. The familiar line, "Litera scripta manet, volat irrevocabile verbum," is truer perhaps of Chinese than of any other tongue. We have hardly any clue as to how Chinese was spoken or pronounced in any given district 2000 years ago, although there are written remains dating from long before that time; and in order to gain an insight into the structure of the characters now existing, it is necessary to trace their origin and development.

The dialects.

Beginning with the colloquial, then, and taking a linguistic survey of China, we find not one spoken language but a number of dialects, all clearly of a common stock, yet differing from one another as widely as the various Romance languages in southern Europe —say, French, Italian and Spanish. Most of these dialects are found fringing the coast-line of China, and penetrating but a comparatively short way into the interior. Starting from the province of Kwang-tung in the south, where the Cantonese and farther inland the Hakka dialects are spoken, and proceeding northwards, we pass in succession the following dialects: Swatow, Amoy—these two may almost be regarded as one—Foochow, Wenchow and Ningpo. Farther north we come into the range of the great dialect popularly known as Mandarin (*Kuan hua* or "official language"), which sweeps round behind the narrow strip of coast occupied by the various dialects above-mentioned, and dominates a hinterland constituting nearly four-fifths of China proper. Mandarin, of which the dialect of Peking, the capital since 1421, is now the standard form, comprises a considerable number of sub-dialects, some of them so closely allied that the speakers of one are wholly intelligible to the speakers of another, while others (*e.g.* the vernaculars of Yangchow, Hankow or Mid-China and Ssŭ-ch'uan) may almost be considered as separate dialects. Among all these, Cantonese is supposed to approximate most nearly to the primitive language of antiquity, whereas Pekingese perhaps has receded farthest from it. But although philologically and historically speaking Cantonese and certain other dialects may be of greater interest, for all practical purposes Mandarin, in the widest sense of the term, is by far the most important. Not only can it claim to be the native speech of the majority of Chinamen, but it is the recognized vehicle of oral communication between all Chinese officials, even in cases where they come from the same part of the country and speak the same *patois*. For these reasons, all examples of phraseology in this article will be given in Pekingese.

So far, stress has been laid chiefly on the dissimilarity of the dialects. On the other hand, it must be remembered that they proceed from the same parent stem, are spoken by members of the same race, and are united by the bond of writing which is the common possession of all, and cannot be regarded as derived from one more than from another. They also share alike in the two most salient features of Chinese as a whole: (1) they are all monosyllabic, that is, each individual word consists of only one syllable; and (2) they are strikingly poor in vocables, or separate sounds for the conveyance of speech. The number of these vocables varies from between 800 and 900 in Cantonese to no more than 420 in the vernacular of Peking. This scanty number, however, is eked out by interposing an aspirate between certain initial consonants and the vowel, so that for instance *p'u* is distinguished from *pu*. The latter is pronounced with little or no emission of breath, the "p" approximating the farther north one goes (*e.g.* at Niuchwang) more closely to a "b." The aspirated *p'u* is pronounced more like our

interjection “Pooh!” To the Chinese ear, the difference between the two is very marked. It will be found, as a rule, that an Englishman imparts a slight aspirate to his p’s, t’s, k’s and ch’s, and therefore has greater difficulty with the unaspirated words in Chinese. The aspirates are better learned by the ear than by the eye, but in one way or another it is essential that they be mastered by any one who wishes to make himself intelligible to the native.

The influence of the Mongolian population, assisted by the progress of time, has slowly but surely diminished the number of vocables in Pekingese. Thus the initials *ts* and *k*, when followed by the vowel *i* (with its continental value) have gradually become softer and more assimilated to each other, and are now all pronounced *ch*. Again, all consonantal endings in *t* and *k*, such as survive in Cantonese and other dialects, have entirely disappeared from Pekingese, and *n* and *ng* are the only final consonants remaining. Vowel sounds, on the other hand, have been proportionately developed, such compounds as *ao, ia, iao, iu, ie, ua* occurring with especial frequency. (It must be understood, of course, that the above are only equivalents, not in all cases very exact, for the sounds of a non-alphabetic language.)

An immediate consequence of this paucity of vocables is that one and the same sound has to do duty for different words. Reckoning the number of words that an educated man would want to use in conversation at something over four thousand, it is obvious that there will be an average of ten meanings to each sound employed. Some sounds may have fewer meanings attached to them, but others will have many more. Thus the following represent only a fraction of the total number of words pronounced *shih* (something like the “shi” in shirt): 史 “history,” 使 “to employ,” 屍 “a corpse,” 市 “a market,” 師 “an army,” 獅 “a lion,” 恃 “to rely on,” 侍 “to wait on,” 詩 “poetry,” 時 “time,” 識 “to know,” 施 “to bestow,” 是 “to be,” 實 “solid,” 失 “to lose,” 示 “to proclaim,” 視 “to look at,” 十 “ten,” 拾 “to pick up,” 石 “stone,” 世 “generation,” 食 “to eat,” 室 “a house,” 氏 “a clan,” 始 “beginning,” 釋 “to let go,” 試 “to test,” 事 “affair,” 勢 “power,” 士 “officer,” 誓 “to swear,” 逝 “to pass away,” 適 “to happen.” It would be manifestly impossible to speak without ambiguity, or indeed to make oneself intelligible at all, unless there were some means of supplementing this deficiency of sounds. As a matter of fact, several devices are employed through the combination of which confusion is avoided. One of these devices is the coupling of words in pairs in order to express a single idea. There is a word 哥 *ko* which means “elder brother.” But in speaking, the sound *ko* alone would not always be easily understood in this sense. One must either reduplicate it and say *ko-ko*, or prefix 大 (*ta*, “great”) and say *ta-ko*. Simple reduplication is mostly confined to family appellations and such adverbial phrases as 慢慢 *man-man*, “slowly.” But there is a much larger class of pairs, in which each of the two components has the same meaning. Examples are: 恐怕 *k‘ung-p‘a*, “to be afraid,” 告訴 *kao-su*, “to tell,” 樹木 *shu-mu*, “tree,” 皮膚 *p‘i-fu*, “skin,” 滿盈 *man-ying*, “full,” 孤獨 *ku-tu*, “solitary.” Sometimes the two parts are not exactly synonymous, but together make up the sense required. Thus in 衣裳 *i-shang*, “clothes,” *i* denotes more particularly clothes worn on the upper part of the body, and *shang* those on the lower part. 鳳凰 *fêng-huang* is the name of a fabulous bird, *fêng* being the male, and *kuang* the female. In another very large class of expressions, the first word serves to limit and determine the special meaning of the second: 奶皮 “milk-skin,” “cream”; 火腿 “fire-leg,” “ham”; 燈籠 “lamp-cage,” “lantern”; 海腰 “sea-waist,” “strait.” There are, besides, a number of phrases which are harder to classify. Thus, 虎 *hu* means “tiger.” But in any case where ambiguity might arise, *lao-hu*, “old tiger,” is used instead of the monosyllable. 狐 (another *hu*) is “fox,” and 狸 *li*, an animal belonging to the smaller cat tribe. Together, *hu-li*, they form the usual term for fox. 知道 *chih tao* is literally “to know the way,” but has come to be used simply for the verb “to know.” These pairs or two-word phrases are of such frequent occurrence, that the Chinese spoken language might almost be described as bi-syllabic. Something similar is seen in the extensive use of suffixes or enclitics, attached to many of the commonest nouns. 女 *nü* is the word for “girl,” but in speech 女子 *nü-tzŭ* or 女兒 *nü-‘rh* is the form used. 子 and 兒 both mean child, and must originally have been diminutives. A fairly close parallel is afforded by the German suffix *chen*, as in *Mädchen*. The suffix 兒, it may be remarked, belongs especially to the Peking vernacular. Then, the use of so-called numeratives will often give some sort of clue as to the class of objects in which a substantive may be found. When in

pidgin English we speak of “one piecee man” or “three piecee dollar,” the word *piecee* is simply a Chinese numerative in English dress. Even in ordinary English, people do not say “four cattle” but “four *head* of cattle.” But in Chinese the use of numeratives is quite a distinctive feature of the language. The commonest of them, 個 *ko*, can be used indifferently in connexion with almost any class of things, animal, vegetable or mineral. But there are other numeratives—at least 20 or 30 in everyday use—which are strictly reserved for limited classes of things with specific attributes. 枚 *mei*, for instance, is the numerative of circular objects such as coins and rings; 顆 *k‘o* of small globular objects—pearls, grains of rice, &c.; 口 *k‘ou* classifies things which have a mouth—bags, boxes and so forth; 件 *chien* is used of all kinds of affairs; 張 *chang* of chairs and sheets of paper; 隻 *chih* (literally half a pair) is the numerative for various animals, parts of the body, articles of clothing and ships; 把 *pa* for things which are grasped by a handle, such as fans and knives.

This by no means exhausts the list of devices by which the difficulties of a monosyllabic language are successfully overcome. Mention need only be made, however, of the system of “tones,” which, as the most curious and important of all, has been kept for the last.

The tones.

The tones may be defined as regular modulations of the voice by means of which different inflections can be imparted to the same sound. They may be compared with the half-involuntary modulations which express emotional feeling in our words. To the foreign ear, a Chinese sentence spoken slowly with the tones clearly brought out has a certain sing-song effect. If we speak of the tones as a “device” adopted in order to increase the number of vocables, this must be understood rather as a convenient way of explaining their practical function than as a scientific account of their origin. It is absurd to suppose the tones were deliberately invented in order to fit each written character with a separate sound. A tone may be said to be as much an integral part of the word to which it belongs as the sound itself; like the sound, too, it is not fixed once and for all, but is in a constant, though very gradual, state of evolution. This fact is proved by the great differences of intonation in the dialects. Theoretically, four tones have been distinguished— the even, the rising, the sinking and the entering—each of which falls again into an upper and a lower series. But only the Cantonese dialect possesses all these eight varieties of tone (to which a ninth has been added), while Pekingese, with which we are especially concerned here, has no more than four: the even upper, the even lower, the rising and the sinking. The history of the tones has yet to be written, but it appears that down to the 3rd century B.C. the only tones distinguished were the 平 “even,” 上 “rising” and 入 “entering.” Between that date and the 4th century A.D. the 去 sinking tone was developed. In the 11th century the even tone was divided into upper and lower, and a little later the entering tone finally disappeared from Pekingese. The following monosyllabic dialogue gives a very fair idea of the quality of the four Pekingese tones—*1st tone*: Dead (spoken in a raised monotone, with slightly plaintive inflection); *2nd tone*: Dead? (simple query); *3rd tone*: Dead? (an incredulous query long drawn out); *4th tone*: Dead! (a sharp and decisive answer). The native learns the tones unconsciously and by ear alone. For centuries their existence was unsuspected, the first systematic classification of them being associated with the name of Shên Yo, a scholar who lived A.D. 441-513. The Emperor Wu Ti was inclined to be sceptical, and one day said to him: “Come, tell me, what are these famous four tones?” “They are 天子聖哲 whatever your Majesty pleases to make them,” replied Shên Yo, skilfully selecting for his answer four words which illustrated, and in the usual order, the four tones in question. Although no native is ever taught the tones separately, they are none the less present in the words he utters, and must be acquired consciously or unconsciously by any European who wishes to be understood. It is a mistake, however, to imagine that every single word in a sentence must necessarily be given its full tonic force. Quite a number of words, such as the enclitics mentioned above, are not intonated at all. In others the degree of emphasis depends partly on the tone itself, partly on its position in the sentence. In Pekingese the 3rd tone (which is really the second in the ordinary series, the 1st being subdivided into upper and lower) is particularly important, and next to it in this respect comes the 2nd (that is, the lower even, or 2nd division of the 1st). It may be said, roughly, that any speaker whose second and third tones are correct will at any rate be understood, even if the 1st and 4th are slurred over.

The characters.

It is chiefly, however, on its marvellous script and the rich treasures of its literature that the Chinese language depends for its unique fascination and charm. If we take a page of printed Chinese or carefully written manuscript and compare it with a page, say, of Arabic or Sanskrit, the Chinese is seen at once to possess a marked characteristic of its own. It consists of a number of wholly independent units,

each of which would fit into a small square, and is called a character. These characters are arranged in columns, beginning on the right-hand side of the page and running from top to bottom. They are *words*, inasmuch as they stand for articulate sounds expressing root-ideas, but they are unlike our words in that they are not composed of alphabetical elements or letters. Clearly, if each character were a distinct and arbitrarily constructed symbol, only those gifted with exceptional powers of memory could ever hope to read or write with fluency. This, however, is far from being the case. If we go to work synthetically and first see how the language is built up, it will soon appear that most Chinese characters are susceptible of some kind of analysis. We may accept as substantially true the account of native writers who tell us that means of communication other than oral began with the use of knotted cords, similar to the *quippus* of ancient Mexico and Peru, and that these were displaced later on by the practice of notching or scoring rude marks on wood, bamboo and stone. It is beyond question that the first four numerals, as written with simple horizontal strokes, date from this early period. Notching, however, carries us but a little way on the road to a system of writing, which in China, as elsewhere, must have sprung originally from pictures. In Chinese writing, especially, the indications of such an origin are unmistakable, a few characters, indeed, even in their present form, being perfectly recognizable as pictures of objects pure and simple. Thus, for "sun" the ancient Chinese drew a circle with a dot in it:  , now modified into  ; for "moon"  , now  ; for "God" they drew the anthropomorphic figure  , which in its modern form appears as  ; for "mountains" , now  ; for "child" , now  ; for "fish"  , now  ; for "mouth" a round hole, now  ; for "hand"  , now  ; for "well"  , now written without the dot. Hence we see that while the origin of all writing is pictographic, in Chinese alone of living languages certain pictures have survived, and still denote what they had denoted in the beginning. In the script of other countries they were gradually transformed into hieroglyphic symbols, after which they either disappeared altogether or became further conventionalized into the letters of an alphabet. These picture-characters, then, accumulated little by little, until they comprised all the common objects which could be easily and rapidly delineated—sun, moon, stars, various animals, certain parts of the body, tree, grass and so forth, to the number of two or three hundred. The next step was to a few compound pictograms which would naturally suggest themselves to primitive man:  the sun just above the horizon = "dawn";  trees side by side = "a forest"; a mouth with something solid coming out of it = "the tongue";  a mouth with vapor or breath coming out of it = "words."

Pictorial characters.

But a purely pictographic script has its limitations. The more complex natural objects hardly come within its scope; still less the whole body of abstract ideas. While writing was still in its infancy, it must have occurred to the Chinese to join together two or more pictorial characters in order that their association might suggest to the mind some third thing or idea. "Sun" and "moon" combined in this way make the character  , which means "bright"; woman and child make  "good"; "fields" and "strength" (that is, labour in the fields) produce the character  "male"; two "men" on "earth"  signifies "to sit"—before chairs were known; the "sun" seen through "trees"  designates the east;  has been explained as (1) a "pig" under a "roof," the Chinese idea, common to the Irish peasant, of home, and also (2) as "several persons" under "a roof," in the same sense; a "woman" under a "roof" makes the character  "peace"; "words" and "tongue"  naturally suggest "speech"; two hands ( , in the old form ) indicate friendship; "woman" and "birth"  = "born of a woman," means "clan-name," showing that the ancient Chinese traced through the mother and not through the father. Interesting and ingenious as many of these combinations are, it is clear that their number, too, must in any practical system of writing be severely limited. Hence it is not surprising that this class of characters, correctly called ideograms, as representing ideas and not objects, should be a comparatively small one. Up to this point there seemed to be but little chance of the written language reaching a free field for expansion. It had run so far on lines sharply distinct from those of ordinary speech. There was nothing in the character *per se* which gave the slightest clue to the sound of the word it represented. Each character, therefore, had to be learned and recognized by a separate effort of memory. The first step in a new, and, as it ultimately proved, the right direction, was the borrowing of a character already in use to represent another word identical in sound, though different in meaning. Owing to the scarcity of vocables noted above, there

Suggestive compounds.

Phonetic characters.

might be as many as ten different words in common use, each pronounced *fang*. Out of those ten only one, we will suppose, had a character assigned to it—namely 方 "square" (originally said to be a picture of two boats joined together). But among the other nine was *fang*, meaning "street" or "locality," in such common use that it became necessary to have some means of writing it. Instead of inventing an altogether new character, as they might have done, the Chinese took 方 "square" and used it also in the sense of "locality." This was a simple expedient, no doubt, but one that, applied on a large scale, could not but lead to confusion. The corresponding difficulty which presented itself in speech was overcome, as we saw, by many devices, one of which consisted in prefixing to the word in question another which served to determine its special meaning. A native does not say *fang* simply when he wishes to speak of a place, but *li-fang* "earth-place." Exactly the same device was now adopted in writing the character. To *fang* "square" was added another part meaning "earth," in order to show that the *fang* in question had to do with location on the earth's surface. The whole character thus appeared as 坊. Once this phonetic principle had been introduced, all was smooth sailing, and writing progressed by leaps and bounds. Nothing was easier now than to provide signs for the other words pronounced *fang*. "A room" was 房 door-*fang*; "to spin" was 紡 silk-*fang*; "fragrant" was 芳 herbs-*fang*; "to inquire" was 訪 words-*fang*; "an embankment," and hence "to guard against," was 防 mound-*fang*; "to hinder" was 妨 woman-*fang*. This last example may seem a little strange until we remember that man must have played the principal part in the development of writing, and that from the masculine point of view there is something essentially obstructive and unmanageable in woman's nature. It may be remarked, by the way, that the element "woman" is often the determinative in characters that stand for unamiable qualities, *e.g.* 妒 "jealous," 奸 "treacherous," 妄 "false" and 妖 "uncanny." This class of characters, which constitutes at least nine-tenths of the language, has received the convenient name of *phonograms*. It must be added that the formation of the phonogram or phonetic compound did not always proceed along such simple lines as in the examples given above, where both parts are pictorial characters, one the "phonetic," representing the sound, and the other, commonly known as the "radical," giving a clue to the sense. In the first place, most of the phonetics now existing are not simple pictograms, but themselves more or less complex characters made up in a variety of ways. On analysing, for instance, the word 遜 *hsün*, "to withdraw," we find it is composed of the phonetic 孫 combined with the radical 辶, an abbreviated form of 辵 "to walk." But 孫 *sun* means "grandson," and is itself a suggestive compound made up of the two characters 子 "a son" and 系 "connect." The former character is a simple pictogram, but the latter is again resolvable into the two elements 丿 "a down stroke to the left" and 糸 "a strand of silk," which is here understood to be the radical and appears in its ancient form as 糸, a picture of cocoons spun by the silkworm. Again, the sound is in most cases given by no means exactly by the so-called phonetic, a fact chiefly due to the pronunciation having undergone changes which the written character was incapable of recording. Thus, we have just seen that the phonetic of 遜 is not *hsün* but *sun*. There are extreme cases in which a phonetic provides hardly any clue at all as to the sound of its derivatives. The character 欠, for example, which by itself is pronounced *ch'ien*, appears in combination as the modern phonetic of 坎 *k'an*, 軟 *juan*, 飲 *yin* and 吹 *ch'ui*; though in the last instance it was not originally the phonetic but the radical of a character which was analysed as 欠 *ch'ien*, "to emit breath" from 口 "the mouth," the whole character being a suggestive compound rather than an illustration of radical and phonetic combined. In general, however, it may be said that the "final" or rhyme is pretty accurately indicated, while in not a few cases the phonetic does give the exact sound for all its derivatives. Thus, the characters in which the element 僉 enters are pronounced *chien, ch'ien, hsien* and *lien*; but 意 and its derivatives are all *i*. A considerable number of phonetics are nearly or entirely obsolete as separate characters, although their family of derivatives may be a very large one. 臤, for instance, is never seen by itself, yet 堅, 緊, and 賢 are among the most important characters in the language. Objections have been raised in some quarters to this account of the phonetic development of Chinese. It is argued that the primitives and sub-primitives, whereby is meant any character which is capable of entering into combination with another, have really had some influence on the meaning, and do not merely possess a phonetic value. But insufficient evidence has hitherto been advanced in support of this view.

The whole body of Chinese characters, then, may conveniently be divided up, for philological purposes, into pictograms, ideograms and phonograms. The first are pictures of objects, the second are composite symbols standing for abstract ideas, the third are compound characters of which the more important element simply represents a spoken sound. Of course, in a strict sense, even the first two classes do not directly represent either objects or ideas, but rather stand for sounds by which these objects and ideas have previously been expressed. It may, in fact, be said that Chinese characters are "nothing but a number of more or less ingenious devices for suggesting spoken words to a reader." This definition exposes the inaccuracy of the popular notion that Chinese is a language of ideographs, a mistake which even the compilers of the *Oxford English Dictionary* have not avoided. Considering that all the earliest characters are pictorial, and that the vast majority of the remainder are constructed on phonetic principles, it is absurd to speak of Chinese characters as "symbolizing the idea of a thing, without expressing the name of it."

The "Six Scripts."

The Chinese themselves have always been diligent students of their written language, and at a very early date (probably many centuries B.C.) evolved a sixfold classification of characters, the so-called 六書 *liu shu*, very inaccurately translated by the Six Scripts, which may be briefly noticed:—

1. 指事 *chih shih*, indicative or self-explanatory characters. This is a very small class, including only the simplest numerals and a few others such as 上 "above" and 下 "below."

2. 象形 *hsiang hsing*, pictographic characters.

3. 形聲 *hsing shêng* or 諧聲 *hsieh shêng*, phonetic compounds.

4. 會意 *hui i*, suggestive compounds based on a natural association of ideas. To this class alone can the term "ideographs" be properly applied.

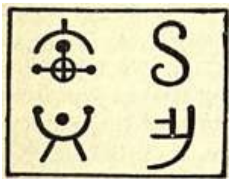
5. 轉注 *chuan chu*. The meaning of the name has been much disputed, some saying that it means "turned round"; *e.g.*  *mu* "eye" is now written 目. Others understand it as comprising a few groups of characters nearly related in sense, each character consisting of an element common to the group, together with a specific and detachable part; *e.g.* 老, 考, and 耆, all of which have the meaning "old." This class may be ignored altogether, seeing that it is concerned not with the origin of characters but only with peculiarities in their use.

6. 假借 *chia chieh*, borrowed characters, as explained above, that is, characters adopted for different words simply because of the identity of sound.

The order of this native classification is not to be taken as in any sense chronological. Roughly, it may be said that the development of writing followed the course previously traced —that is, beginning with indicative signs, and going on with pictograms and ideograms, until finally the discovery of the phonetic principle did away with all necessity for other devices in enlarging the written language. But we have no direct evidence that this was so. There can be little doubt that phonetic compounds made their appearance at a very early date, probably prior to the invention of a large number of suggestive compounds, and perhaps even before the whole existing stock of pictograms had been fashioned. It is significant that numerous words of daily occurrence, which must have had a place in the earliest stages of human thought, are expressed by phonetic characters. We can be fairly certain, at any rate, that the period of "borrowed characters" did not last very long, though it is thought that traces of it are to be seen in the habit of writing several characters, especially those for certain plants and animals, indifferently with or without their radicals. Thus 蝌蚪 "a tadpole" is frequently written 科斗, without the part meaning "insect" or "reptile."

Styles of writing.

In the very earliest inscriptions that have come down to us, the so-called 古文 *ku-wên* or "ancient figures," all the above-mentioned forms occur. None are wholly pictorial, with one or two unimportant exceptions. These early inscriptions are found on bronzes dating from the half-legendary period extending from the beginning of the Shang dynasty in the 18th century B.C., or possibly earlier, down to a point in the reign of King Hsüan of the Chou dynasty, generally fixed at 827 B.C. They have been carefully reproduced and for the most part deciphered by painstaking Chinese archaeologists, and form the subject of many voluminous works. The following may be taken as a specimen, in which it will be noticed that only the last character is unmistakably pictorial:



This is read: 申作寶鼎—"Shên made [this] precious *ting*." These ancient bronzes, which mainly take the shape of bells, cauldrons and sacrificial utensils, were until within the last decade our sole source of information concerning the origin and early history of Chinese writing. But recently a large number of inscribed bone fragments have been excavated in the north of China, providing new and unexpected matter for investigation. The inscriptions on these bones have already furnished a list of nearly 2500 separate characters, of which not more than about 600 have been so far identified. They appear to be responses given by professional soothsayers to private individuals who came to them seeking the aid of divination in the affairs of their daily life. It is difficult to fix their date with much exactitude. The script, though less archaic than that of the earlier bronzes, is nevertheless of an exceedingly free and irregular type. Judging by the style of the inscriptions alone, one would be inclined to assign them to the early years of the Chou dynasty, say 1100 B.C. But Mr L.C. Hopkins thinks that they represent a mode of writing already obsolete at the time of their production, and retained of set purpose by the diviners from obscurantist motives, much as the ancient hieroglyphics were employed by the Egyptian priesthood. He would therefore date them about 500 years later, or only half a century before the birth of Confucius. If that is so, they are merely late specimens of the "ancient figures" appearing long after the latter had made way for a new and more conventionalized form of writing. This new writing is called in Chinese 篆 *chuan*, which is commonly rendered by the word Seal, for the somewhat unscientific reason that many ages afterwards it was generally adopted for use on seals. Under the Chou dynasty, however, as well as the two succeeding it, the meaning of the word was not "seal," but "sinuous curves," as made in writing. It has accordingly been suggested that this epoch marks the first introduction into China of the brush in place of the bamboo or wooden pencil with frayed end which was used with some kind of colouring matter or varnish. There are many arguments both for and against this view; but it is unquestionable, at any rate, that the introduction of a supple implement like the brush at the very time when the forms of characters were fast becoming crystallized and fixed, would be sufficient to account for a great revolution in the style of writing. Authentic specimens of the 大篆 *ta chuan*, older or Greater Seal writing, are exceedingly rare. But it is generally believed that the inscriptions on the famous stone drums, now at Peking, date from the reign of King Hsüan, and they may therefore with practical certainty be cited as examples of the Greater Seal in its original form. These "drums" are really ten roughly chiselled mountain boulders, which were discovered in the early part of the 7th century, lying half buried in the ground near Fêng-hsiang Fu in the province of Shensi. On them are engraved ten odes, a complete ode being cut on each drum, celebrating an Imperial hunting and fishing expedition in that part of the country. A facsimile of one of these, taken from an old rubbing and reproduced in Dr Bushell's *Handbook of Chinese Art*, shows that great strides had been made in this writing towards symmetry, compactness and conventionalism. The vogue of the Greater Seal appears to have lasted until the reign of the First Emperor, 221-210 B.C. (see *History*), when a further modification took place. For many centuries China had been split up into a number of practically independent states, and this circumstance seems to have led to considerable variations in the styles of writing. Having succeeded in unifying the empire, the First Emperor proceeded, on the advice of his minister Li Ssŭ, to standardize its script by ordaining that only the style in use in his own state of Ch'in should henceforward be employed throughout China. It is clear, then, that this new style of writing was nothing more than the Greater Seal characters in the form they had assumed after several centuries of evolution, with numerous abbreviations and modifications. It was afterwards known as the 小篆 *hsiao chuan*, or Lesser Seal, and is familiar to us from the *Shuo Wen* dictionary (see *Literature*). Though a decided improvement on what had gone before, the Lesser Seal was destined to have but a short career of undisputed supremacy. Reform was in the air; and something less cumbrous was soon felt to be necessary by the clerks who had to supply the immense quantity of written reports demanded by the First Emperor. Thus it came about that a yet simpler and certainly more artistic form of writing was already in use, though not universally so, not long after the decree abolishing the Greater Seal. This 隸書 *li shu*, or "official script," as it is called, shows a great advance on the Seal character; so much so that one cannot help suspecting the traditional account of its invention. It is perhaps more likely to have been directly evolved from the Greater Seal. If the Lesser Seal was the script of the semi-barbarous state of Ch'in, we should certainly expect to find a more highly developed system of writing in some of the other states. Unlike the Seal, the *li shu* is perfectly legible to one acquainted only with the modern character, from which indeed it differs but in minor details. How long the Lesser Seal continued to exist side by side with the *li shu* is a question which cannot be answered with certainty. It was evidently quite obsolete, however, at the time of the compilation of the *Shuo Wên*, about a hundred years after the Christian era. As for the Greater Seal and still earlier forms of writing, they were not merely obsolete but had fallen into utter oblivion before the Han Dynasty was fifty years old. When a

number of classical texts were discovered bricked up in old houses about 150 B.C., the style of writing was considered so singular by the literati of the period that they refused to believe it was the ordinary ancient character at all, and nicknamed it *k'o-t'ou shu*, "tadpole character," from some fancied resemblance in shape. The theory that these tadpole characters were not Chinese but a species of cuneiform script, in which the wedges might possibly suggest tadpoles, must be dismissed as too wildly improbable for serious consideration; but we may advert for a moment to a famous inscription in which the real tadpole characters of antiquity are said to appear. This is on a stone tablet alleged to have been erected on Mount Hêng in the modern Hupeh by the legendary Emperor Yü, as a record of his labours in draining away the great flood which submerged part of China in the 23rd century B.C. After more than one fruitless search, the actual monument is said to have been discovered on a peak of the mountain in A.D. 1212, and a transcription was made, which may be seen reproduced as a curiosity in Legge's *Classics*, vol. iii. For several reasons, however, the whole affair must be regarded as a gross imposture.

Out of the "official script" two other forms were soon developed, namely the 草書 *ts'ao shu*, or "grass character," which so curtails the usual strokes as to be comparable to a species of shorthand, requiring special study, and the 行書 *hsing shu* or running hand, used in ordinary correspondence. Some form of grass character is mentioned as in use as early as 200 B.C. or thereabouts, though how nearly it approximated to the modern grass hand it is hard to say; the running hand seems to have come several centuries later. The final standardization of Chinese writing was due to the great calligraphist Wang Hsi-chih of the 4th century, who gave currency to the graceful style of character known as 楷書 *k'ai shu*, sometimes referred to as the "clerkly hand." When block-printing was invented some centuries later, the characters were cut on this model, which still survives at the present day. It is no doubt owing to the early introduction of printing that the script of China has remained practically unchanged ever since. The manuscript rolls of the T'ang and preceding dynasties, recently discovered by Dr Stein in Turkestan, furnish direct evidence of this fact, showing as they do a style of writing not only clear and legible but remarkably modern in appearance.

The whole history of Chinese writing, then, is characterized by a slow progressive development which precludes the idea of sharply-marked divisions between one period and another. The Chinese themselves, however, have canonized quite a series of alleged inventors, starting from Fu Hsi, a mythical emperor of the third millennium B.C., who is said to have developed a complete system of written characters from the markings on the back of a dragon-horse; hence, by the way, the origin of the dragon as an Imperial emblem. As a rule, the credit of the invention of the art of writing is given to Ts'ang Chieh, a being with fabulous attributes, who conceived the idea of a written language from the markings of birds' claws upon the sand. The diffusion of the Greater Seal script is traced to a work in fifteen chapters published by Shih Chou, historiographer in the reign of King Hsüan. The Lesser Seal, again, is often ascribed to Li Ssŭ himself, whereas the utmost he can have done in the matter was to urge its introduction into common use. Likewise, Ch'êng Mo, of the 3rd century B.C., is supposed to have invented the *li shu* while in prison, and one account attributes the Lesser Seal to him as well; but the fact is that the whole history of writing, as it stands in Chinese authors, is in hopeless confusion.

Grammar.—When about to embark on the study of a foreign language, the student's first thought is to provide himself with two indispensable aids—a dictionary and a grammar. The 221
Chinese have found no difficulty in producing the former (see *Literature*). Now what as to the grammar? He might reasonably expect a people so industrious in the cultivation of their language to have evolved some system of grammar which to a certain degree would help to smooth his path. And yet the contrary is the case. No set of rules governing the mutual relations of words has ever been formulated by the Chinese, apparently because the need of such rules has never been felt. The most that native writers have done is to draw a distinction between 實字 and 虛字 "full" and "empty words," respectively, the former being subdivided into 活字 "living words" or verbs, and 死字 "dead words" or noun-substantives. By "empty words" particles are meant, though sometimes the expression is loosely applied to abstract terms, including verbs. The above meagre classification is their nearest approach to a conception of grammar in our sense. This in itself does not prove that a Chinese grammar is impossible, nor that, if constructed, it might not be helpful to the student. As a matter of fact, several attempts have been made by foreigners to deduce a grammatical system which should prove as rigid and binding as those of Western languages, though it cannot be said that any as yet has stood the test of time or criticism. Other writers have gone to the other extreme, and maintained that Chinese has no grammar at all. In this dictum, exaggerated as it sounds, there is a very substantial amount of truth. Every Chinese character is an indivisible unit, representing a sound and standing for a root-idea. Being free from inflection or agglutination of any kind, it is incapable of indicating in itself either gender,

number or case, voice, mood, tense or person. Of European languages, English stands nearest to Chinese in this respect, whence it follows that the construction of a hybrid jargon like pidgin English presents fewer difficulties than would be the case, for instance, with pidgin German. For pidgin English simply consists in taking English words and treating them like Chinese characters, that is, divesting them of all troublesome inflections and reducing them to a set of root-ideas arranged in logical sequence. “You wantchee my no wantchee” is nothing more nor less than literally rendered Chinese: 你要我不要 “Do you want me or not?” But we may go further, and say that no Chinese character can be definitely regarded as being any particular part of speech or possessing any particular function absolutely, apart from the general tenor of its context. Thus, taken singly, the character 上 conveys only the general idea “above” as opposed to “below.” According to its place in the sentence and the requirements of common sense, it may be a noun meaning “upper person” (that is, a ruler); an adjective meaning “upper,” “topmost” or “best”; an adverb meaning “above”; a preposition meaning “upon”; and finally a verb meaning “to mount upon,” or “to go to.” 入 is a character that may usually be translated “to enter” as in 入門 “to enter a door”; yet in the locution 入木 “enter wood,” the verb becomes causative, and the meaning is “to put into a coffin.” It would puzzle grammarians to determine the precise grammatical function of any of the words in the following sentence, with the exception of 何 (an interrogative, by the way, which here happens to mean “why” but in other contexts is equivalent to “how,” “which” or “what”): 事何必古 “Affair why must ancient,” or in more idiomatic English, “Why necessarily stick to the ways of the ancients in such matters?” Or take a proverbial saying like 少所見多所怪, which may be correctly rendered “The less a man has seen, the more he has to wonder at.” It is one thing, however, to translate it correctly, and another to explain how this translation can be inferred from the individual words, of which the bald equivalents might be given as: “Few what see, many what Strange.” To say that “strange” is the literal equivalent of 怪 does not mean that 怪 can be definitely classed as an adjective. On the other hand, it would be dangerous even to assert that the word here plays the part of an active verb, because it would be equally permissible to translate the above “Many things are strange to one who has seen but little.”

> Chinese grammar, then, so far as it deals with the classification of separate words, may well be given up as a bad job. But there still remains the art of syntax, the due arrangement of words to form sentences according to certain established rules. Here, at any rate, we are on somewhat firmer ground; and for many years the dictum that “the whole of Chinese grammar depends upon position” was regarded as a golden key to the written language of China. It is perfectly true that there are certain positions and collocations of words which tend to recur, but when one sits down to formulate a set of hard-and-fast rules governing these positions, it is soon found to be a thankless task, for the number of qualifications and exceptions which will have to be added is so great as to render the rule itself valueless. 馬上 means “on a horse,” 上馬 “to get on a horse.” But it will not do to say that a preposition becomes a verb when placed before the substantive, as many other prepositions come before and not after the words they govern. If we meet such a phrase as 警寇, literally “warn rebels,” we must not mentally label 警 as a verb and 寇 as a substantive, and say to ourselves that in Chinese the verb is followed immediately by its object. Otherwise, we might be tempted to translate, “to warn the rebels,” whereas a little reflection would show us that the conjunction of “warning” and “rebels” naturally leads to the meaning “to warn (the populace or whoever it may be) *against* the rebels.” After all our adventurous incursions into the domain of syntax, we are soon brought back to the starting-point and are obliged to confess that each particular passage is best interpreted on its own merits, by the logic of the context and the application of common sense. There is no reason why Chinese sentences should not be dissected, by those who take pleasure in such operations, into subject, copula and predicate, but it should be early impressed upon the beginner that the profit likely to accrue to him therefrom is infinitesimal. As for fixed rules of grammatical construction, so far from being a help, he will find them a positive hindrance. It should rather be his aim to free his mind from such trammels, and to accustom himself to look upon each character as a root-idea, not a definite part of speech.

The Book Language.—Turning now to some of the more salient characteristics of the book language, with the object of explaining how it came to be so widely separated from common speech, we might reasonably suppose that in primitive times the two stood in much closer relation to each other than now. But it is certainly a striking fact that the earliest literary remains of any magnitude that have come down to us should exhibit a style very far removed from any possible colloquial idiom. The speeches of the Book of History (see *Literature*) are

more manifestly fictitious, by many degrees, than the elaborate orations in Thucydides and Livy. If we cannot believe that Socrates actually spoke the words attributed to him in the dialogues of Plato, much less can we expect to find the *ipsissima verba* of Confucius in any of his recorded sayings. In the beginning, all characters doubtless represented spoken words, but it must very soon have dawned on the practical Chinese mind that there was no need to reproduce in writing the bisyllabic compounds of common speech. *Chien* "to see," in its written form 見, could not possibly be confused with any other *chien*, and it was therefore unnecessary to go to the trouble of writing 看見 *k'an-chien* "look-see," as in colloquial. There was a wonderful outburst of literary activity in the Confucian era, when it would seem that the older and more cumbrous form of Seal character was still in vogue. If the mere manual labour of writing was so great, we cannot wonder that all superfluous particles or other words that could be dispensed with were ruthlessly cut away. So it came about that all the old classical works were composed in the tersest of language, as remote as can be imagined from the speech of the people. The passion for brevity and conciseness was pushed to an extreme, and resulted more often than not in such obscurity that detailed commentaries on the classics were found to be necessary, and have always constituted an important branch of Chinese literature. After the introduction of the improved style of script, and when the mechanical means of writing had been simplified, it may be supposed that literary diction also became freer and more expansive. This did happen to some extent, but the classics were held in such veneration as to exercise the profoundest influence over all succeeding schools of writers, and the divorce between literature and pooular speech became permanent and irreconcilable. The book language absorbed all the interest and energy of scholars, and it was inevitable that this elevation of the written should be accompanied by a corresponding degradation of the spoken word. This must largely account for the somewhat remarkable fact that the art of oratory and public speaking has never been deemed worthy of cultivation in China, while the comparatively low position occupied by the drama may also be referred to the same cause. At the same time, the term "book language," in its widest sense, covers a multitude of styles, some of which differ from each other nearly as much as from ordinary speech. The department of fiction (see *Literature*), which the lettered Chinaman affects to despise and will not readily admit within the charmed circle of "literature," really constitutes a bridge spanning the gulf between the severer classical style and the colloquial; while an elegant terseness characterises the higher-class novel, there are others in which the style is loose and shambling. Still, it remains true that no book of any first-rate literary pretensions would be easily intelligible to any class of Chinamen, educated or otherwise, if read aloud exactly as printed. The public reader of stories is obliged to translate, so to speak, into the colloquial of his audience as he goes along. There is no inherent reason why the conversation of everyday life should not be rendered into characters, as is done in foreign handbooks for teaching elementary Chinese; one can only say that the Chinese do not think it worth while. There are a few words, indeed, which, though common enough in the mouths of genteel and vulgar alike, have positively no characters to represent them. On the other hand, there is a vast store of purely book words which would never be used or understood in conversation.

The book language is not only nice in its choice of words, it also has to obey special rules of construction. Of these, perhaps the most apparent is the carefully marked antithesis between characters in different clauses of a sentence, which results in a kind of parallelism or rhythmic balance. This parallelism is a noticeable feature in ordinary poetical composition, and may be well illustrated by the following four-line stanza:

"白日依山盡 The bright sun completes its course behind the mountains;
黃河入海流 The yellow river flows away into the sea.
欲窮千里目 Would you command a prospect of a thousand *li*?
更上一層樓 Climb yet one storey higher."

In the first line of this piece, every single character is balanced by a corresponding one in the second: 白 white by 黃 yellow, 日 sun by 河 river, and so on. In the 3rd and 4th lines, where more laxity is generally allowed, every word again has its counterpart, with the sole exception of 欲 "wish" and 更 "further."

The question is often asked: What sort of instrument is Chinese for the expression of thought? As a medium for the conveyance of historical facts, subtle emotions or abstruse philosophical conceptions, can it compare with the languages of the Western world? The answers given to this question have varied considerably. But it is noteworthy that those who most depreciate the qualities of Chinese are, generally speaking, theorists rather than persons possessing a profound first-hand knowledge of the language itself. Such writers argue that want of inflection in the characters must tend to make Chinese hard and inelastic, and therefore incapable of bringing out the finer shades of thought and emotion. Answering one a

priori argument with another, one might fairly retort that, if anything, flexibility is the precise quality to be predicated of a language in which any character may, according to the requirements of the context, be interpreted either as noun, verb or adjective. But all such reasoning is somewhat futile. It will scarcely be contended that German, being highly inflected, is therefore superior in range and power to English, from which inflections have largely disappeared. Some of the early Jesuit missionaries, men of great natural ability who steeped themselves in Oriental learning, have left very different opinions on record. Chinese appeared to them as admirable for the superabundant richness of its vocabulary as for the conciseness of its literary style. And among modern scholars there is a decided tendency to accept this view as embodying a great deal more truth than the other.

Another question, much debated years ago, which time itself is now satisfactorily answering, was whether the Chinese language would be able to assimilate the vast stock of new terminology which closer contact with the West would necessarily carry with it. Two possible courses, it seemed, were open: either fresh characters would be formed on the radical-phonetic principle, or the new idea might be expressed by the conjunction of two or more characters already existing. The former expedient had been tried on a limited scale in Japan, where in the course of time new characters were formed on the same principle as of old, which were yet purely Japanese and find no place in a Chinese dictionary. But although the field for such additions was boundless, the Chinese have all along been chary of extending the language in this way, probably because these modern terms had no Chinese sound which might have suggested some particular phonetic. They have preferred to adopt the other method, of which 昇降機 (rise-descend-machine) for "lift," and 議政國會 (discuss-govern-country-assembly) for "parliament" are examples. Even a metaphysical abstraction like The Absolute has been tentatively expressed by 絕對 (exclude-opposite); but in this case an equivalent was already existing in the Chinese language.

A very drastic measure, strongly advocated in some quarters, is the entire abolition of all characters, to be replaced by their equivalent sounds in letters of the alphabet. Under this scheme 人 would figure as *jên* or *ren*, 馬 as *ma*, and so on. But the proposal has fallen extremely flat. The vocables, as we have seen, are so few in number that only the colloquial, if even that, could possibly be transcribed in this manner. Any attempt to transliterate classical Chinese would result in a mere jumble of sounds, utterly unintelligible, even with the addition of tone-marks. There is another aspect of the case. The characters are a potent bond of union between the different parts of the Empire with their various dialects. If they should ever fall into disuse, China will have taken a first and most fatal step towards internal disruption. Even the Japanese, whose language is not only free from dialects, but polysyllabic and therefore more suitable for romanization, have utterly refused to abandon the Chinese script, which in spite of certain disadvantages has hitherto triumphantly adapted itself to the needs of civilized intercourse.

See P. Premare, *Notitiae Linguae Sinicae* (1831); Ma Kien-chung, *Ma shih wên t'ung* (1899); L.C. Hopkins, *The Six Scripts* (1881) and *The Development of Chinese Writing* (1910); H.A. Giles, *A Chinese-English Dictionary* (2nd ed., 1910).

(H. A. GI.; L. GI.)

VIII. Chinese Literature

The literature of China is remarkable (1) for its antiquity, coupled with an unbroken continuity down to the present day; (2) for the variety of subjects presented, and for the exhaustive treatment which, not only each subject, but also each subdivision, each separate item, has received, as well as for the colossal scale on which so many literary monuments have been conceived and carried out; (3) for the accuracy of its historical statements, so far as it has been possible to test them; and further (4) for its ennobling standards and lofty ideals, as well as for its wholesome purity and an almost total absence of coarseness and obscenity.

No history of Chinese literature in the Chinese language has yet been produced; native scholars, however, have adopted, for bibliographical purposes, a rough division into four great classes. Under the first of these, we find the Confucian Canon, together with lexicographical, philological, and other works dealing with the elucidation of words. Under the second, histories of various kinds, officially compiled, privately written, constitutional, &c.; also biography, geography and bibliography. Under the third, philosophy, religion, *e.g.* Buddhism; the arts and sciences, *e.g.* war, law, agriculture, medicine, astronomy, painting, music and archery; also a host of general works, monographs, and treatises on a number of topics, as well as encyclopaedias. The fourth class is confined to poetry of all descriptions, poetical critiques, and works dealing with the all-important rhymes.

Poetry.—Proceeding chronologically, without reference to Chinese classification, we have to

begin, as would naturally be expected, with the last of the above four classes. Man's first literary utterances in China, as elsewhere, took the form of verse; and the earliest Chinese records in our possession are the national lyrics, the songs and ballads, chiefly of the feudal age, which reaches back to over a thousand years before Christ. Some pieces are indeed attributed to the 18th century B.C.; the latest bring us down to the 6th century B.C. Such is the collection entitled *Shih Ching* (or *She King*), popularly known as the Odes, which was brought together and edited by Confucius, 551-479 B.C., and is now included among the Sacred Books, forming as it does an important portion of the Confucian Canon. These Odes, once over three thousand in number, were reduced by Confucius to three hundred and eleven; hence they are frequently spoken of as "the Three Hundred." They treat of war and love, of eating and drinking and dancing, of the virtues and vices of rulers, and of the misery and happiness of the people. They are in rhyme. Rhyme is essential to Chinese poetry; there is no such thing as blank verse. Further, the rhymes of the Odes have always been, and are still, the only recognized rhymes which can be used by a Chinese poet, anything else being regarded as mere jingle. Poetical licence, however, is tolerated; and great masters have availed themselves freely of its aid. One curious result of this is that whereas in many instances two given words may have rhymed, as no doubt they did, in the speech of three thousand years ago, they no longer rhyme to the ear in the colloquial of to-day, although still accepted as true and proper rhymes in the composition of verse.

It is noticeable at once that the Odes are mostly written in lines of four words, examples of lines consisting of any length from a single word to eight, though such do exist, being comparatively rare. These lines of four words, generally recognized as the oldest measure in Chinese poetry, are frequently grouped as quatrains, in which the first, second and fourth lines rhyme; but very often only the second and fourth lines rhyme, and sometimes there are groups of a larger number of lines in which occasional lines are found without any rhyme at all. A few stray pieces, as old as many of those found among the Odes, have been handed down and preserved, in which the metre consists of two lines of three words followed by one line of seven words. These three lines all rhyme, but the rhyme changes with each succeeding triplet. It would be difficult to persuade the English reader that this is a very effective measure, and one in which many a gloomy or pathetic tale has been told. In order to realise how a few Chinese monosyllables in juxtaposition can stir the human heart to its lowest depths, it is necessary to devote some years to the study of the language.

At the close of the 4th century B.C., a dithyrambic measure, irregular and wild, was introduced and enjoyed considerable vogue. It has indeed been freely adopted by numerous poets from that early date down to the present day; but since the 2nd century B.C. it has been displaced from pre-eminence by the seven-word and five-word measures which are now, after much refinement, the accepted standards for Chinese poetry. The origin of the seven-word metre is lost in remote antiquity; the five-word metre was elaborated under the master-hand of Mei Shêng, who died 140 B.C. Passing over seven centuries of growth, we reach the T'ang dynasty, A.D. 618-905, the most brilliant epoch in the history of Chinese poetry. These three hundred years produced an extraordinarily large number of great poets, and an output of verse of almost incredible extent. In 1707 an anthology of the T'ang poets was published by Imperial order; it ran to nine hundred books or sections, and contained over forty-eight thousand nine hundred separate poems. A copy of this work is in the Chinese department of the University Library at Cambridge.

It was under the T'ang dynasty that a certain finality was reached in regard to the strict application of the tones to Chinese verse. For the purposes of poetry, all words in the language were ranged under one or the other of two tones, the *even* and the *oblique*, the former now including the two even tones, of which prior to the 11th century there was only one, and the latter including the rising, sinking and entering tones of ordinary speech. The incidence of these tones, which may be roughly described as sharps and flats, finally became fixed, just as the incidence of certain feet in Latin metres came to be governed by fixed rules. Thus, reading downward from right to left, as in Chinese, a five-word stanza may run:

Sharp	Flat	Flat	Sharp
sharp	flat	flat	sharp
flat	sharp	flat	sharp
°	°	°	°
flat	sharp	sharp	flat
sharp	flat	sharp	flat

A seven-word stanza may run:

Flat	Sharp	Sharp	
flat	sharp	sharp	flat
sharp	flat	flat	sharp
sharp	flat	flat	sharp

°	°	°	°
flat	sharp	flat	flat
flat	sharp	sharp	flat
sharp	flat	sharp	sharp

The above are only two metres out of many, but enough perhaps to give to any one who will read them with a pause or quasi-caesura, as marked by ° in each specimen, a fair idea of the rhythmic lilt of Chinese poetry. To the trained ear, the effect is most pleasing; and when this scansion, so to speak, is united with rhyme and choice diction, the result is a vehicle for verse, artificial no doubt, and elaborate, but admirably adapted to the genius of the Chinese language. Moreover, in the hands of the great poets this artificiality disappears altogether. Each word seems to slip naturally into its place; and so far from having been introduced by violence for the ends of prosody, it appears to be the very best word that could have been chosen, even had there been no trammels of any kind, so effectually is the art of the poet concealed by art. From the long string of names which have shed lustre upon this glorious age of Chinese poetry, it may suffice for the present purpose to mention the following, all of the very first rank.

Mêng Hao-jan, A.D. 689-740, failed to succeed at the public competitive examinations, and retired to the mountains where he led the life of a recluse. Later on, he obtained an official post; but he was of a timid disposition, and once when the emperor, attracted by his fame, came to visit him, he hid himself under the bed. His hiding-place was revealed by Wang Wei, a brother poet who was present. The latter, A.D. 699-759, in addition to being a first-rank poet, was also a landscape-painter of great distinction. He was further a firm believer in Buddhism; and after losing his wife and mother, he turned his mountain home into a Buddhist monastery. Of all poets, not one has made his name more widely known than Li Po, or Li T‘ai-po, A.D. 705-762, popularly known as the Banished Angel, so heavenly were the poems he dashed off, always under the influence of wine. He is said to have met his death, after a tipsy frolic, by leaning out of a boat to embrace the reflection of the moon. Tu Fu, A.D. 712-770, is generally ranked with Li Po, the two being jointly spoken of as the chief poets of their age. The former had indeed such a high opinion of his own poetry that he prescribed it for malarial fever. He led a chequered and wandering life, and died from the effects of eating roast beef and drinking white wine to excess, immediately after a long fast. Po Chü-i, A.D. 772-846, was a very prolific poet. He held several high official posts, but found time for a considerable output of some of the finest poetry in the language. His poems were collected by Imperial command, and engraved upon tablets of stone. In one of them he anticipates by eight centuries the famous ode by Malherbe, *À Du Perrier, sur la mort de sa fille*.

The T‘ang dynasty with all its glories had not long passed away before another imperial house arose, under which poetry flourished again in full vigour. The poets of the Sung dynasty, A.D. 960-1260, were many and varied in style; but their work, much of it of the very highest order, was becoming perhaps a trifle more formal and precise. Life seemed to be taken more seriously than under the gay and pleasure-loving T‘angs. The long list of Sung poets includes such names as Ssŭ-ma Kuang, Ou-yang Hsiu and Wang An-shih, to be mentioned by and by, the first two as historians and the last as political reformer. A still more familiar name in popular estimation is that of Su Tung-p‘o, A.D. 103-1101, partly known for his romantic career, now in court favour, now banished to the wilds, but still more renowned as a brilliant poet and writer of fascinating essays.

The Mongols, A.D. 1260-1368, who succeeded the Sungs, and the Mings who followed the Sungs and bring us down to the year 1644, helped indeed, especially the Mings, to swell the volume of Chinese verse, but without reaching the high level of the two great poetical periods above-mentioned. Then came the present dynasty of Manchu Tatars, of whom the same tale must be told, in spite of two highly-cultured emperors, K‘ang Hsi and Ch‘ien Lung, both of them poets and one of them author of a collection containing no fewer than 33,950 pieces, most of which, it must be said, are but four-line stanzas, of no literary value whatever. It may be stated in this connexion that whereas China has never produced an epic in verse, it is not true that all Chinese poems are quite short, running only to ten or a dozen lines at the most. Many pieces run to several hundred lines, though the Chinese poet does not usually affect length, one of his highest efforts being the four-line stanza, known as the “stop-short,” in which “the words stop while the sense goes on,” expanding in the mind of the reader by the suggestive art of the poet. The “stop-short” is the converse of the epigram, which ends in a satisfying turn of thought to which the rest of the composition is intended to lead up; it aims at producing an impression which, so far from being final, is merely the prelude to a long series of visions and of feelings. The last of the four lines is called the “surprise line”; but the revelation it gives is never a complete one: the words stop, but the sense goes on. Just as in the pictorial art of China, so in her poetic art is suggestiveness the great end and aim of the artist. Beginners are taught that the three canons of verse composition are lucidity, simplicity and correctness of diction. Yet some critics have boldly declared for obscurity of expression, alleging that the piquancy of a thought is enhanced by its skilful concealment. For the foreign student, it is not necessary to accentuate the obscurity and difficulty even of poems in which

the motive is simple enough. The constant introduction of classical allusions, often in the vaguest terms, and the almost unlimited licence as to the order of words, offer quite sufficient obstacles to easy and rapid comprehension. Poetry has been defined by one Chinese writer as "clothing with words the emotions which surge through the heart." The chief moods of the Chinese poet are a pure delight in the varying phenomena of nature, and a boundless sympathy with the woes and sufferings of humanity. Erotic poetry is not absent, but it is not a feature proportionate in extent to the great body of Chinese verse; it is always restrained, and never lapses from a high level of purity and decorum. In his love for hill and stream which he peoples with genii, and for tree and flower which he endows with sentient souls, the Chinese poet is perhaps seen at his very best; his views of life are somewhat too deeply tinged with melancholy, and often loaded with an overwhelming sadness "at the doubtful doom of human kind." In his lighter moods he draws inspiration, and in his darker moods consolation from the wine-cup. Hard-drinking, not to say drunkenness, seems to have been universal among Chinese poets, and a considerable amount of talent has been expended upon the glorification of wine. From Taoist, and especially from Buddhist sources, many poets have obtained glimpses to make them less forlorn; but it cannot be said that there is any definitely religious poetry in the Chinese language.

History.—One of the labours undertaken by Confucius was connected with a series of ancient documents—that is, ancient in his day—now passing under a collective title as *Shu Ching* (or *Shoo King*), and popularly known as the Canon, or Book, of History. Mere fragments as some of these documents are, it is from their pages of unknown date that we can supplement the pictures drawn for us in the Odes, of the early civilization of China. The work opens with an account of the legendary emperor Yao, who reigned 2357-2255 B.C., and was able by virtue of an elevated personality to give peace and happiness to his "black-haired" subjects. With the aid of capable astronomers, he determined the summer and winter solstices, and calculated approximately the length of the year, availing himself, as required, of the aid of an intercalary month. Finally, after a glorious reign, he ceded the throne to a man of the people, whose only claim to distinction was his unwavering practice of filial piety. Chapter ii. deals with the reign, 2255-2205 B.C., of this said man, known in history as the emperor Shun. In accordance with the monotheism of the day, he worshipped God in heaven with prayer and burnt offerings; he travelled on tours of inspection all over his then comparatively narrow empire; he established punishments, to be tempered with mercy; he appointed officials to superintend forestry, care of animals, religious observances, and music; and he organized a system of periodical examinations for public servants. Chapter iii. is devoted to details about the Great Yü, who reigned 2205-2197 B.C., having been called to the throne for his engineering success in draining the empire of a mighty inundation which early western writers sought to identify with Noah's Flood. Another interesting chapter gives various geographical details, and enumerates the articles, gold, silver, copper, iron, steel, silken fabrics, feathers, ivory, hides, &c., &c., brought in under the reign of the Great Yü, as tribute from neighbouring countries. Other chapters include royal proclamations, speeches to troops, announcements of campaigns victoriously concluded, and similar subjects. One peculiarly interesting document is the Announcement against Drunkenness, which seems to have been for so many centuries a national vice, and then to have practically disappeared as such. For the past two or three hundred years, drunkenness has always been the exception rather than the rule. The Announcement, delivered in the 12th century B.C., points out that King Wên, the founder of the Chou dynasty, had wished for wine to be used only in connexion with sacrifices, and that divine favours had always been liberally showered upon the people when such a restriction had been observed. On the other hand, indulgence in strong drink had invariably attracted divine vengeance, and the fall and disruption of states had often been traceable to that cause. Even on sacrificial occasions, drunkenness is to be condemned. "When, however, you high officials and others have done your duty in ministering to the aged and to your sovereign, you may then eat to satiety and drink to elevation." The Announcement winds up with an ancient maxim, "Do not seek to see yourself reflected in water, but in others,"—whose base actions should warn you not to commit the same; adding that those who after a due interval should be unable to give up intemperate habits would be put to death. It is worth noting, in concluding this brief notice of China's earliest records, that from first to last there is no mention whatever of any distant country from which the "black-haired people" may have originally come; no vestige of any allusion to any other form of civilization, such as that of Babylonia, with its cuneiform script and baked-clay tablets, from which an attempt has been made to derive the native-born civilization of China. A few odd coincidences sum up the chief argument in favour of this now discredited theory.

Annals of the

The next step lands us on the confines, though scarcely in the domain, of history properly so called. Among his other literary labours, Confucius undertook to produce the annals of Lu, his native state; and beginning with the year 722 B.C., he carried the record down to his death in 479, after which it was continued for a few years,

Lu state.

presumably by Tso-ch'iu Ming, the shadowy author of the famous Commentary, to which the text is so deeply indebted for vitality and illumination. The work of Confucius is known as the *Ch'un Ch'iu*, the Springs and Autumns, q.d. Annals. It consists of a varying number of brief entries under each year of the reign of each successive ruler of Lu. The feudal system, initiated more than four centuries previously, and consisting of a number of vassal states owning allegiance to a central suzerain state, had already broken hopelessly down, so far as allegiance was concerned. For some time, the object of each vassal ruler had been the aggrandizement of his own state, with a view either to independence or to the hegemony, and the result was a state of almost constant warfare. Accordingly, the entries in the *Ch'un Ch'iu* refer largely to covenants entered into between contracting rulers, official visits from one to another of these rulers, their births and deaths, marriages, invasions of territory, battles, religious ceremonies, &c., interspersed with notices of striking natural phenomena such as eclipses, comets and earthquakes, and of important national calamities, such as floods, drought and famine. For instance, Duke Wên became ruler of Lu in 625 B.C., and under his 14th year, 612 B.C., we find twelve entries, of which the following are specimens:—

2. In spring, in the first month, the men of the Chu State invaded our southern border.

3. In summer, on the I-hai day of the fifth month, P'an, Marquis of the Ch'i State, died.

5. In autumn, in the seventh month, there was a comet, which entered Pei-ton (αβγδ in Ursa Major).

9. In the ninth month, a son of the Duke of Ch'i murdered his ruler.

Entry 5 affords the earliest trustworthy instance of a comet in China. A still earlier comet is recorded in what is known as The Bamboo Annals, but the genuineness of that work is disputed.

It will be readily admitted that the *Ch'un Ch'iu*, written throughout in the same style as the quotations given, would scarcely enable one to reconstruct in any detail the age it professes to record. Happily we are in possession of the *Tso Chuan*, a so-called commentary, presumably by some one named Tso, in which the bald entries in the work of Confucius are separately enlarged upon to such an extent and with such dramatic brilliancy that our commentary reads more like a prose epic than "a treatise consisting of a systematic series of comments or annotations on the text of a literary work." Under its guidance we can follow the intrigues, the alliances, the treacheries, the ruptures of the jealous states which constituted feudal China; in its picture pages we can see, as it were with our own eyes, assassinations, battles, heroic deeds, flights, pursuits and the sufferings of the vanquished from the retribution exacted by the victors. Numerous wise and witty sayings are scattered throughout the work, many of which are in current use at the present day.

History as understood in Europe and the west began in China with the appearance of a remarkable man. Ssŭ-ma Ch'ien, who flourished 145-87 B.C., was the son of an hereditary grand astrologer, also an eager student of history and the actual planner of the great work so successfully carried out after his death. By the time he was ten years of age, Ssŭ-ma Ch'ien was already well advanced with his studies; and at twenty he set forth on a round of travel which carried him to all parts of the empire. Entering the public service, he was employed upon a mission of inspection to the newly-conquered regions of Ssŭch'uan and Yünnan; in 110 B.C. his father died, and he stepped into the post of grand astrologer. After devoting some time and energy to the reformation of the calendar, he took up the work which had been begun by his father and which was ultimately given to the world as the *Shih Chi*, or Historical Record. This was arranged under five great headings, namely, (l) Annals of Imperial Reigns, (2) Chronological Tables, (3) Monographs, (4) Annals of Vassal Princes, and (5) Biographies.

The Historical Record.

The Historical Record begins with the so-called Yellow Emperor, who is said to have come to the throne 2698 B.C. and to have reigned a hundred years. Four other emperors are given, as belonging to this period, among whom we find Yao and Shun, already mentioned. It was China's Golden Age, when rulers and ruled were virtuous alike, and all was peace and prosperity. It is discreetly handled in a few pages by Ssŭ-ma Ch'ien, who passes on to the somewhat firmer but still doubtful ground of the early dynasties. Not, however, until the Chou dynasty, 1122-255 B.C., had held sway for some three hundred years can we be said to have reached a point at which history begins to separate itself definitely from legend. In fact, it is only from the 8th century before Christ that any trustworthy record can be safely dated. With the 3rd century before Christ, we are introduced to one of the feudal princes whose military genius enabled him to destroy beyond hope of revival the feudal system which had endured for eight hundred years, and to make himself master of the whole of the China of those days. In 221 B.C. he proclaimed himself the "First Emperor," a title by which he has ever since been known. Everything, including literature, was to begin with his reign; and acting on the advice of his prime minister, he issued an order

Burning of the Books.

for the burning of all books, with the exception only of works relating to medicine, divination and agriculture. Those who wished to study law were referred for oral teaching to such as had already qualified in that profession. To carry out the scheme effectively, the First Emperor made a point of examining every day about 120 lb weight of books, in order to get rid of such as he considered to be useless; and he further appointed a number of inspectors to see that his orders were carried out. The result was that about four hundred and sixty scholars were put to death for having disobeyed the imperial command, while many others were banished for life. This incident is known as the Burning of the Books; and there is little doubt that, but for the devotion of the literati, Chinese literature would have had to make a fresh start in 212 B.C. As it was, books were bricked up in walls and otherwise widely concealed in the hope that the storm would blow over; and this was actually the case when the Ch'in (Ts'in) dynasty collapsed and the House of Han took its place in 206 B.C. The Confucian books were subsequently recovered from their hiding-places, together with many other works, the loss of which it is difficult now to contemplate. Unfortunately, however, a stimulus was provided, not for the recovery, but for the manufacture of writings, the previous existence of which could be gathered either from tradition or from notices in the various works which had survived. Forgery became the order of the day; and the modern student is confronted with a considerable volume of literature which has to be classified as genuine, doubtful, or spurious, according to the merits of each case. To the first class belongs the bulk, but not all, of the Confucian Canon; to the third must be relegated such books as the *Tao Tê Ching*, to be mentioned later on.

Ssŭ-ma Ch'ien, dying in 87 B.C., deals of course only with the opening reigns of the Han dynasty, with which he brings to a close the first great division of his history. The second division consists of chronological tables; the third, of eight monographs on the following topics: (1) Rites and Ceremonies, (2) Music, (3) Natural Philosophy, (4) The Calendar, (5) Astronomy, (6) Religion, (7) Water-ways, and (8) Commerce. On these eight a few remarks may not be out of place, (1) The Chinese seem to have been in possession, from very early ages, of a systematic code of ceremonial observances, so that it is no surprise to find the subject included, and taking an important place, in Ssŭ-ma Ch'ien's work. The *Li Chi*, or Book of Rites, which now forms part of the Confucian Canon, is however a comparatively modern compilation, dating only from the 1st century B.C. (2) The extraordinary similarities between the Chinese and Pythagorean systems of music force the conclusion that one of these must necessarily have been derived from the other. The Jesuit Fathers jumped to the conclusion that the Greeks borrowed their art from the Chinese; but it is now common knowledge that the Chinese scale did not exist in China until two centuries after its appearance in Greece. The fact is that the ancient Chinese works on music perished at the Burning of the Books; and we are told that by the middle of the 2nd century B.C. the hereditary Court music-master was altogether ignorant of his art. What we may call modern Chinese music reached China through Bactria, a Greek kingdom, founded by Diodotus in 256 B.C., with which intercourse had been established by the Chinese at an early date. (3) The term Natural Philosophy can only be applied by courtesy to this essay, which deals with twelve bamboo tubes of varying lengths, by means of which, coupled with the twenty-eight zodiacal constellations and with certain calendaric accords, divine communication is established with the influences of the five elements and the points of the compass corresponding with the eight winds. (4) In this connexion, it is worth noting that in 104 B.C. the Chinese first adopted a cycle of nineteen years, a period which exactly brings together the solar and the lunar years; and further that this very cycle is said to have been introduced by Meton, 5th century B.C., and was adopted at Athens about 330 B.C., probably reaching China, via Bactria, some two centuries afterwards. (5) This chapter deals specially with the sun, moon and five planets, which are supposed to aid in the divine government of mankind. (6) Refers to the solemn sacrifices to Heaven and Earth, as performed by the emperor upon the summit of Mt. T'ai in Shan-tung. (7) Refers to the management of the Hoang Ho, or Yellow river, so often spoken of as "China's Sorrow," and also of the numerous canals with which the empire is intersected. (8) This chapter, which treats of the circulation of money, and its function in the Chinese theory of political economy, is based upon the establishment in 110 B.C. of certain officials whose business it was to regularize commerce. It was their duty to buy up the chief necessaries of life when abundant and when prices were in consequence low, and to offer these for sale when there was a shortage and when prices would otherwise have risen unduly. Thus it was hoped that a stability in commercial transactions would be attained, to the great advantage of the people. The fourth division of the *Shih Chi* is devoted to the annals of the reigns of vassal princes, to be read in connexion with the imperial annals of the first division. The final division, which is in many ways the most interesting of all, gives biographical notices of eminent or notorious men and women, from the earliest ages downwards, and enables us to draw conclusions at which otherwise it would have been impossible to arrive. Confucius and Mencius, for instance, stand out as real personages who actually played a part in China's history; while all we can gather from the short life of Lao Tzŭ, a part of which reads like an interpolation by another hand, is that he was a more or less legendary individual, whose very existence at the date usually assigned to him, 7th and 6th centuries B.C., is altogether doubtful. Scattered among

these biographies are a few notices of frontier nations; *e.g.* of the terrible nomads known as the Hsiung-nu, whose identity with the Huns has now been placed beyond a doubt.

Ssŭ-ma Ch'ien's great work, on which he laboured for so many years and which ran to five hundred and twenty-six thousand five hundred words, has been described somewhat at length for the following reason. It has been accepted as the model for all subsequent dynastic histories, of which twenty-four have now been published, the whole being produced in 1747 in a uniform edition, bound up (in the Cambridge Library) in two hundred and nineteen large volumes. Each dynasty has found its historian in the dynasty which supplanted it; and each dynastic history is notable for the extreme fairness with which the conquerors have dealt with the vanquished, accepting without demur such records of their predecessors as were available from official sources. The T'ang dynasty, A.D. 618-906, offers in one sense a curious exception to the general rule. It possesses two histories, both included in the above series. The first of these, now known as the Old T'ang History, was ultimately set aside as inaccurate and inadequate, and a New T'ang History was compiled by Ou-yang Hsiu, a distinguished scholar, poet and statesman of the 11th century. Nevertheless, in all cases, the scheme of the dynastic history has, with certain modifications, been that which was initiated in the 1st century B.C. by Ssŭ-ma Ch'ien.

The output of history, however, does not begin and end with the voluminous records above referred to, one of which, it should be mentioned, was in great part the work of a woman.

The Mirror of History.

History has always been a favourite study with the Chinese, and innumerable histories of a non-official character, long and short, complete and partial, political and constitutional, have been showered from age to age upon the Chinese reading world. Space would fail for the mere mention of a tithe of such works; but there is one which stands out among the rest and is especially enshrined in the hearts of the Chinese people. This is the *T'ung Chien*, or Mirror of History, so called because "to view antiquity as though in a mirror is an aid in the administration of government." It was the work of a statesman of the 11th century, whose name, by a coincidence, was Ssŭ-ma Kuang. He had been forced to retire from office, and spent nearly all the last sixteen years of his life in historical research. The Mirror of History embraces a period from the 5th century B.C. down to A.D. 960. It is written in a picturesque style; but the arrangement was found to be unsuited to the systematic study of history. Accordingly, it was subjected to revision, and was to a great extent reconstructed by Chu Hsi, the famous commentator, who flourished A.D. 1130-1200, and whose work is now regarded as the standard history of China.

Biography.—In regard to biography, the student is by no means limited to the dynastic histories. Many huge biographical collections have been compiled and published by private individuals, and many lives of the same personages have often been written from different points of view. There is nothing very much by which a Chinese biography can be distinguished from biographies produced in other parts of the world. The Chinese writer always begins with the place of birth, but he is not so particular about the year, sometimes leaving that to be gathered from the date of death taken in connexion with the age which the person may have attained. Some allusion is usually made to ancestry, and the steps of an official career, upward by promotion or downward by disgrace, are also carefully noted.

Geography and Travel.—There is a considerable volume of Chinese literature which comes under this head; but if we exclude certain brief notices of foreign countries, there remains nothing in the way of general geography which had been produced prior to the arrival of the Jesuit Fathers at the close of the 16th century. Up to that period geography meant the topography of the Chinese empire; and of topographical records there is a very large and valuable collection. Every prefecture and department, some eighteen hundred in all, has each its own particular topography, compiled from records and from tradition with a fullness that leaves nothing to be desired. The buildings, bridges, monuments of archaeological interest, &c., in each district, are all carefully inserted, side by side with biographical and other local details, always of interest to residents and often to the outside public. An extensive general geography of the empire was last published in 1745; and this was followed by a chronological geography in 1794.

The Chinese have always been fond of travel, and hosts of travellers have published notices, more or less extensive, of the different parts of the empire, and even of adjacent nations,

Fa Hsien.

which they visited either as private individuals or, in the former case, as officials proceeding to distant posts. With Buddhism came the desire to see the country which was the home of the Buddha; and several important pilgrimages were undertaken with a view to bring back images and sacred writings to China. On such a journey the Buddhist priest, Fa Hsien, started in A.D. 399; and after practically walking the whole way from central China, across the desert of Gobi, on to Khoten, and across the Hindu Kush into India, he visited many of the chief cities of India, until at length reaching

Calcutta he took ship, and after a most adventurous voyage, in the course of which he remained two years in Ceylon, he finally arrived safely, in A.D. 414, with all his books, pictures, and images, at a spot on the coast of Shantung, near the modern German port of Kiao-chow.

Hsüan Tsang.

Another of these adventurous priests was Hsüan Tsang (wrongly, Yüan Chwang), who left China on a similar mission in 629, and returned in 645, bringing with him six hundred and fifty-seven Buddhist books, besides many images and pictures, and one hundred and fifty relics. He spent the rest of his life in translating, with the help of other learned priests, these books into Chinese, and completed in 648 the important record of his own travels, known as the Record of Western Countries.

Lao Tzŭ.

Philosophy.—Even the briefest *résumé* of Chinese philosophical literature must necessarily include the name of Lao Tzŭ, although his era, as seen above, and his personality are both matters of the vaguest conjecture. A number of his sayings, scattered over the works of early writers, have been pieced together, with the addition of much incomprehensible jargon, and the whole has been given to the world as the work of Lao Tzŭ himself, said to be of the 6th century B.C., under the title of the *Tao Tê Ching*. The internal evidence against this book is overwhelming; *e.g.* one quotation had been detached from the writer who preserved it, with part of that writer's text clinging to it—of course by an oversight. Further, such a treatise is never mentioned in Chinese literature until some time after the Burning of the Books, that is, about four centuries after its alleged first appearance. Still, after due expurgation, it forms an almost complete collection of such apophthegms of Lao Tzŭ as have come down to us, from which the reader can learn that the author taught the great doctrine of Inaction—Do nothing, and all things will be done. Also, that Lao Tzŭ anticipated the Christian doctrine of returning good for evil, a sentiment which was highly reprobated by the practical mind of Confucius, who declared that evil should be met by justice. Among the more picturesque of his utterances are such paradoxes as, "He who knows how to shut, uses no bolts; yet you cannot open. He who knows how to bind uses no ropes; yet you cannot untie"; "The weak overcomes the strong; the soft overcomes the hard," &c.

Chuang Tzŭ.

These, and many similar subtleties of speech, seem to have fired the imagination of Chuang Tzŭ, 4th and 3rd centuries B.C., with the result that he put much time and energy into the glorification of Lao Tzŭ and his doctrines. Possessed of a brilliant style and a master of irony, Chuang Tzŭ attacked the schools of Confucius and Mo Ti (see below) with so much dialectic skill that the ablest scholars of the age were unable to refute his destructive criticisms. His pages abound in quaint anecdotes and allegorical instances, arising as it were spontaneously out of the questions handled, and imparting a lively interest to points which might otherwise have seemed dusty and dull. He was an idealist with all the idealist's hatred of a utilitarian system, and a mystic with all the mystic's contempt for a life of mere external activity. Only thirty-three chapters of his work now remain, though so many as fifty-three are known to have been still extant in the 3rd century; and even of these, several complete chapters are spurious, while in others it is comparatively easy to detect here and there the hand of the interpolator. What remains, however, after all reductions, has been enough to secure a lasting place for Chuang Tzŭ as the most original of China's philosophical writers. His book is of course under the ban of heterodoxy, in common with all thought opposed to the Confucian teachings. His views as mystic, idealist, moralist and social reformer have no weight with the aspirant who has his way to make in official life; but they are a delight, and even a consolation, to many of the older men, who have no longer anything to gain or to lose.

Confucius.

Confucius, 551-479 B.C., who imagined that his Annals of the Lu State would give him immortality, has always been much more widely appreciated as a moralist than as an historian. His talks with his disciples and with others have been preserved for us, together with some details of his personal and private life; and the volume in which these are collected forms one of the Four Books of the Confucian Canon. Starting from the axiomatic declaration that man is born good and only becomes evil by his environment, he takes filial piety and duty to one's neighbour as his chief themes, often illustrating his arguments with almost Johnsonian emphasis. He cherished a shadowy belief in a God, but not in a future state of reward or punishment for good or evil actions in this world. He rather taught men to be virtuous for virtue's sake.

Mencius.

The discourses of Mencius, who followed Confucius after an interval of a hundred years, 372-289 B.C., form another of the Four Books, the remaining two of which are short philosophical treatises, usually ascribed to a grandson of Confucius. Mencius devoted his life to elucidating and expanding the teachings of the Master; and it is no doubt due to him that the Confucian doctrines obtained so wide a vogue. But he himself was more a politician and an economist (see below) than a simple preacher of morality; and hence it is that the Chinese people have accorded to him the

Mo Ti. title of The Second Sage. He is considered to have effectually “snuffed out” the heterodox school of Mo Ti, a philosopher of the 5th and 4th centuries B.C. who propounded a doctrine of “universal love” as the proper foundation for organized society, arguing that under such a system all the calamities that men bring upon one another would altogether disappear, and the Golden Age would be renewed. At the same time Mencius exposed the fallacies of the speculations of Yang Chu, 4th century B.C., who

Yang Chu. founded a school of ethical egoism as opposed to the exaggerated altruism of Mo Ti. According to Mencius, Yang Chu would not have parted with one hair of his body to save the whole world, whereas Mo Ti would have sacrificed all. Another early philosopher is Hsün Tzŭ, 3rd century B.C. He maintained, in opposition

Hsün Tzŭ. to Mencius, who upheld the Confucian dogma, and in conformity with Christian doctrine, that the nature of man at his birth is evil, and that this condition can only be changed by efficient moral training. Then came Yang

Yang Hsiung. Hsiung, 53-18 B.C., who propounded an ethical criterion midway between the rival positions insisted on by Mencius and Hsün Tzŭ, teaching that the nature of man at birth is neither good nor evil, but a mixture of both, and that development in either direction depends wholly upon circumstances.

There is a voluminous and interesting work, of doubtful age, which passes under the title of *Huai-nan Tzŭ*, or the Philosopher of Huai-nan. It is attributed to Liu An, prince of Huai-nan, who died 122 B.C., and who is further said to have written on alchemy; but

Huai-nan Tzŭ.] alchemy was scarcely known in China at the date of his death, being introduced about that time from Greece. The author, whoever he may have been, poses as a disciple of Lao Tzŭ; but the speculations of Lao Tzŭ, as glorified by Chuang Tzŭ, were then rapidly sinking into vulgar efforts to discover the elixir of life. It is very difficult in many cases of this kind to decide what books are, and what books are not, partial or complete forgeries. In the present instance, the aid of the *Shuo Wên*, a dictionary of the 1st century A.D. (see below), may be invoked, but not in quite so satisfactory a sense as that in which it will be seen lower down to have been applied to the *Tao Tê Ching*. The *Shuo Wên* contains a quotation said to be taken from *Huai-nan Tzŭ*; but that quotation cannot be found in the work under consideration. It may be argued that the words in question may have been taken from another work by the same author; but if so, it becomes difficult to believe that a book, more than two hundred years old, from which the author of the *Shuo Wên* quoted, should have been allowed to perish without leaving any trace behind. China has produced its Bentleys in considerable numbers; but almost all of them have given their attention to textual criticism of the Confucian Canon, and few have condescended to examine critically the works of heterodox writers. The foreign student therefore finds himself faced with many knotty points he is entirely unable to solve.

Of Wang Ch‘ung, a speculative and materialistic philosopher, A.D. 27-97, banned by the orthodox for his attacks on Confucius and Mencius, only one work has survived. it consists of eighty-four essays on such topics as the nature of things, destiny, divination,

Wang Ch‘ung. death, ghosts, poisons, miracles, criticisms of Confucius and Mencius, exaggeration, sacrifice and exorcism. According to Wang Ch‘ung, man, endowed at birth sometimes with a good and sometimes with an evil nature, is informed with a vital fluid, which resides in the blood and is nourished by eating and drinking, its two functions being to animate the body and keep in order the mind. It is the source of all sensation, passing through the blood like a wave. When it reaches the eyes, ears and mouth, the result is sight, hearing and speech respectively. Disturbance of the vital fluid leads to insanity. Without the fluid, the body cannot be maintained; without the body, the fluid loses its vitality. Therefore, argues Wang Ch‘ung, when the body perishes and the fluid loses its vitality, each being dependent on the other, there remains nothing for immortality in a life beyond the grave. Ghosts he held to be the hallucinations of disordered minds, and miracles to be natural phenomena capable of simple explanations. His indictments of Confucius and Mencius are not of a serious character; though, as regards the former, it must be borne in mind that the Chinese people will not suffer the faintest aspersion on the fair fame of their great Sage. It is related in the *Lun Yü* that Confucius paid a visit to the notoriously immoral wife of one of the feudal nobles, and that a certain disciple was “displeased” in consequence, whereupon the Master swore, saying, “If I have done any wrong, may the sky fall and crush me!” Wang Ch‘ung points out that the form of oath adopted by Confucius is unsatisfactory and fails to carry conviction. Had he said, “May I be struck dead by lightning!” his sincerity would have been more powerfully attested, because people are often struck dead by lightning; whereas the fall of the sky is too remote a contingency, such a thing never having been known to happen within the memory of man. As to Mencius, there is a passage in his works which states that a thread of predestination runs through all human life, and that those who accommodate themselves will come off better in the end than those who try to oppose; it is in fact a statement of the οὐκ ὑπὲρ μόρον principle. On this Wang Ch‘ung remarks that the will of God is consequently made to depend on human actions; and he further strengthens his objection by showing that the best men have often fared worst. For instance, Confucius never became emperor; Pi Kan, the patriot, was disembowelled; the bold and faithful disciple, Tzŭ

Lu, was chopped into small pieces.

But the tale of Chinese philosophers is a long one. It is a department of literature in which the leading scholars of all ages have mostly had something to say. The great Chu Hsi, A.D. 1130-1200, whose fame is chiefly perhaps that of a commentator and whose monument is his uniform exegesis of the Confucian Canon, was also a voluminous writer on philosophy. He took a hand in the mystery which surrounds the *I Ching* (or *Yih King*), generally known as the Book of Changes, which is held by some to be the oldest Chinese work and which forms part of the Confucian Canon. It is ascribed to King Wên, the virtual founder of the Chou dynasty, 1122-249 B.C., whose son became the first sovereign and posthumously raised his father to kingly rank. It contains a fanciful system of divination, deduced originally from eight diagrams consisting of triplet combinations of a line and a broken line, either one of which is necessarily repeated twice, and in two cases three times, in the same combination. Thus there may be three lines  , or three broken lines  , and other such combinations as  and  . Confucius declared that he would like to give another fifty years to the elucidation of this puzzling text. Shao Yung, A.D. 1011-1077, sought the key in numbers: Ch'êng I., A.D. 1033-1107, in the eternal fitness of things. "But Chu Hsi alone," says a writer of the 17th century, "was able to pierce through the meaning and appropriate the thoughts of the inspired man who composed it." No foreigner, however, has been able quite to understand what Chu Hsi did make of it, and several have gone so far as to set all native interpretations aside in favour of their own. Thus, the *I Ching* has been discovered by one to be a calendar of the lunar year; by another, to contain a system of phallic worship; and by a third, to be a vocabulary of the language of a tribe, whose very existence had to be postulated for the purpose.

Book of Changes.

Political Economy.—This department of literature has been by no means neglected by Chinese writers. So early as the 7th century B.C. we find Kuan Chung, the prime minister of the Ch'i state, devoting his attention to economic problems, and thereby making that state the wealthiest and the strongest of all the feudal kingdoms. Beginning life as a merchant, he passed into the public service, and left behind him at death a large work, parts of which, as we now possess it, may possibly have come direct from his own hand, the remainder being written up at a later date in accordance with the principles he inculcated. His ideal State was divided into twenty-one parts, fifteen of which were allotted to officials and agriculturists, and six to manufacturers and traders. His great idea was to make his own state self-contained; and accordingly he fostered agriculture in order to be independent in time of war, and manufactures in order to increase his country's wealth in time of peace. He held that a purely agricultural population would always remain poor; while a purely manufacturing population would risk having its supplies of raw material cut off in time of war. He warmly encouraged free imports as a means of enriching his countrymen, trusting to their ability, under these conditions, to hold their own against foreign competition. He protected capital, in the sense that he considered capitalists to be necessary for the development of commerce in time of peace, and for the protection of the state in time of war.

Kuan Chung.

Mencius (see above) was in favour of heavily taxing merchants who tried to engross for the purpose of regrating, that is, to buy up wholesale for the purpose of retailing at monopoly prices; he was in fact opposed to all trusts and corners in trade. He was in favour of a tax to be imposed upon such persons as were mere consumers, living upon property which had been amassed by others and doing no work themselves. No tax, however, was to be exacted from property-owners who contributed by their personal efforts to the general welfare of the community. The object of the tax was not revenue, but the prevention of idleness with its attendant evil consequences to the state.

Wang An-shih, the Reformer, or Innovator, as he has been called, flourished A.D. 1021-1086. In 1069 he was appointed state councillor, and forthwith entered upon a series of startling reforms which have given him a unique position in the annals of China. He established a state monopoly in commerce, under which the produce of a district was to be used first for the payment of taxes, then for the direct use of the district itself, and the remainder was to be purchased by the government at a cheap rate, either to be held until there was a rise in price, or to be transported to some other district in need of it. The people were to profit by fixity of prices and escape from further taxation; and the government, by the revenue accruing in the process of administration. There was also to be a system of state advances to cultivators of land; not merely to the needy, but to all alike. The loan was to be compulsory, and interest was to be paid on it at the rate of 2% per month. The soil was to be divided into equal areas and taxed according to its fertility in each case, without reference to the number of inhabitants contained in each area. All these, and other important reforms, failed to find favour with a rigidly conservative people, and Wang An-shih lived long enough to see the whole of his policy reversed.

Wang An-shih.

Military Writers.—Not much, relatively speaking, has been written by the Chinese on war in

general, strategy or tactics. There is, however, one very remarkable work which has come down to us from the 6th century B.C., as to the genuineness of which there now seems to be no reasonable doubt. A biographical notice of the author, Sun Wu, is given in the *Shih Chi* (see above), from which we learn that "he knew how to handle an army, and was finally appointed General." His work, entitled the *Art of War*, is a short treatise in thirteen chapters, under the following headings: "Laying Plans," "Waging War," "Attack by Stratagem," "Tactical Dispositions," "Energy," "Weak Points and Strong," "Manœuvring," "Variation of Tactics," "The Army on the March," "Terrain," "The Nine Situations," "The Attack by Fire," and "The Use of Spies." Although the warfare of Sun Wu's day was the warfare of bow and arrow, of armoured chariots and push of pike, certain principles inseparably associated with successful issue will be found enunciated in his work. Professor Mackail, in his *Latin Literature* (p. 86), declares that Varro's *Imagines* was "the first instance in history of the publication of an illustrated book." But reference to the Art Section of the history of the Western Han dynasty, 206 B.C.-A.D. 25, will disclose the title of fifteen or sixteen illustrated books, one of which is Sun Wu's *Art of War*.

Sun-Tzŭ.

Agriculture.—In spite of the high place accorded to agriculturists, who rank second only to officials and before artisans and traders, and in spite of the assiduity with which agriculture has been practised in all ages, securing immunity from slaughter for the ploughing ox—what agricultural literature the Chinese possess may be said to belong entirely to modern times. Ch'ên Fu of the 12th century A.D. was the author of a small work in three parts, dealing with agriculture, cattle-breeding and silkworms respectively. There is also a well-known work by an artist of the early 13th century, with forty-six woodcuts illustrating the various operations of agriculture and weaving. This book was reprinted under the emperor K'ang Hsi, 1662-1723, and new illustrations with excellent perspective were provided by Chiao Ping-chên, an artist who had adopted foreign methods as introduced by the famous Jesuit, Matteo Ricci. The standard work on agriculture, entitled *Nung Chêng Ch'üan Shu*, was compiled by Hsü Kuang-ch'i, 1562-1634, generally regarded as the only influential member of the mandarinate who has ever become a convert to Christianity. It is in sixty sections, the first three of which are devoted to classical references. Then follow two sections on the division of land, six on the processes of husbandry, none on hydraulics, four on agricultural implements, six on planting, six on rearing silkworms, four on trees, one on breeding animals, one on food and eighteen on provision against a time of scarcity.

Hsü Kuang-ch'i.

Medicine and Therapeutics.—The oldest of the innumerable medical works of all descriptions with which China has been flooded from time immemorial is a treatise which has been credited to the Yellow Emperor (see above), 2698-2598 B.C. It is entitled *Plain Questions of the Yellow Emperor*, or *Su Wên* for short, and takes the form of questions put by the emperor and answered by Earl Ch'i, a minister, who was himself author of the *Nei Ching*, a medical work no longer in existence. Without accepting the popular attribution of the *Su Wên*, it is most probable that it is a very old book, dating back to several centuries before Christ, and containing traditional lore of a still more remote period. The same may be said of certain works on cautery and acupuncture, both of which are still practised by Chinese doctors; and also of works on the pulse, the variations of which have been classified and allocated with a minuteness hardly credible. Special treatises on fevers, skin-diseases, diseases of the feet, eyes, heart, &c., are to be found in great quantities, as well as veterinary treatises on the treatment of diseases of the horse and the domestic buffalo. But in the whole range of Chinese medical literature there is nothing which can approach the *Pên Ts'ao*, or *Materia Medica*, sometimes called the Herbal, a title (*i.e. Pên Ts'ao*) which seems to have belonged to some book of the kind in pre-historic ages. The work under consideration was compiled by Li Shih-chên, who completed his task in 1578 after twenty-six years' labour. No fewer than eighteen hundred and ninety-two species of drugs, animal, vegetable and mineral, are dealt with, arranged under sixty-two classes in sixteen divisions; and eight thousand one hundred and sixty prescriptions are given in connexion with the various entries. The author professes to quote from the original *Pên Ts'ao*, above mentioned; and we obtain from his extracts an insight into some curious details. It appears that formerly the number of recognized drugs was three hundred and sixty-five in all, corresponding with the days of the year. One hundred and twenty of these were called *sovereigns* (cf. a sovereign prescription); and were regarded as entirely beneficial to health, taken in any quantity or for any time. Another similar number were called *ministers*; some of these were poisonous, and all had to be used with discretion. The remaining one hundred and twenty-five were *agents*; all very poisonous, but able to cure diseases if not taken in over-doses. The modern *Pên Ts'ao*, in its sixteen divisions, deals with drugs classed under water, fire, earth, minerals, herbs, grain, vegetables, fruit, trees, clothes and utensils, insects, fishes, crustacea, birds, beasts and man. In each case the proper name of the drug is first given, followed by its explanation, solution of doubtful points, correction of errors, means of identification by taste, use in prescriptions, &c. The work is fully illustrated, and there is an index to the various medicines, classed according to the complaints for which they are used.

Pên Ts'no.

Divination, &c.—The practice of divination is of very ancient date in China, traceable, it has been suggested, back to the Canon of Changes (see above), which is commonly used by the lettered classes for that purpose. A variety of other methods, the chief of which is astrology, have also been adopted, and have yielded a considerable bulk of literature. Even the officially-published almanacs still mark certain days as suitable for certain undertakings, while other days are marked in the opposite sense. The spirit of Zadkiel pervades the Chinese empire. In like manner, geomancy is a subject on which many volumes have been written; and the same applies to the pseudo sciences of palmistry, physiognomy, alchemy (introduced from Greek sources) and others.

Painting.—Calligraphy, in the eyes of the Chinese, is just as much a fine art as painting; the two are, in fact, considered to have come into existence together, but as might be expected the latter occupies the larger space in Chinese literature, and forms the subject of numerous extensive works. One of the most important of these is the *Hsüan Ho Hua P'u*, the author of which is unknown. It contains information concerning two hundred and thirty-one painters and the titles of six thousand one hundred and ninety-two of their pictures, all in the imperial collection during the dynastic period *Hsüan Ho*, A.D. 1119-1126, from which the title is derived. The artists are classified under one of the following ten headings, supposed to represent the line in which each particularly excelled: Religion, Human Figures, Buildings, Barbarians (including their Animals), Dragons and Fishes, Landscape, Animals, Flowers and Birds, The Bamboo, Vegetables and Fruits.

Music.—The literature of music does not go back to a remote period. The Canon of Music, which was formerly included in the Confucian Canon, has been lost for many centuries; and the works now available, exclusive of entries in the dynastic histories, are not older than the 9th century A.D., to which date may be assigned the *Chieh Ku Lu*, a treatise on the deerskin drum, said to have been introduced into China from central Asia, and evidently of Scythian origin. There are several important works of the 16th and 17th centuries, in which the history and theory of music are fully discussed, and illustrations of instruments are given, with measurements in each case, and the special notation required.

Miscellaneous.—Under this head may be grouped a vast number of works, many of them exhaustive, on such topics as archaeology, seals (engraved), numismatics, pottery, ink (the miscalled "Indian"), mirrors, precious stones, tea, wine, chess, wit and humour, even cookery, &c. There is, indeed, hardly any subject, within reasonable limits, which does not find some corner in Chinese literature.

Collections.—Reprints of miscellaneous books and pamphlets in a uniform edition, the whole forming a "library," has long been a favourite means of disseminating useful (and other) information. Of these, the *Lung Wei Pi Shu* may be taken as a specimen. In bulk it would be about the equivalent of twenty volumes, 8vo, of four hundred pages to each. Among its contents we find the following. A handbook of phraseology, with explanations; a short account of fabulous regions to the N., S., E. and W.; notes on the plants and trees of southern countries; biographical sketches of ninety-two wonderful personages; an account of the choice of an empress, with standard measurements of the height, length of limb, &c., of the ideal woman; "Pillow Notes" (a term borrowed by the Japanese), or jottings on various subjects, ranging from the Creation to an account of Fusang, a country where the trees are thousands of feet high and of vast girth, thus supporting the California, as opposed to the Mexico, identification of Fusang; critiques on the style of various poets, and on the indebtedness of each to earlier writers; a list of the most famous bronze vessels cast by early emperors, with their dimensions, inscriptions, &c.; a treatise on the bamboo; a list of famous swords, with dates of forging and inscriptions; an account of the old Mongol palace, previous to its destruction by the first Ming emperor; notes on the wild tribes of China; historical episodes; biographical notices of one hundred and four poets of the present dynasty; notes on archaeological, supernatural and other topics, first published in the 9th century; notes for bibliophiles on the care of books, and on paper, ink, pictures and bric-à-brac; a collection of famous criminal cases; night thoughts suggested by a meteor. Add to the above, numerous short stories relating to magic, dreams, bilocation, and to almost every possible phase of supernatural manifestation, and the reader will have some idea of what he may expect in an ordinary "library" of a popular character. It must always be remembered that with the Chinese, style is of paramount importance. Documents, the subject-matter of which would be recognized to be of no educative value, would still be included, if written in a pleasing style, such as might be serviceable as a model.

Lung Wei Pi Shu.

Individual Authors.—In a similar manner it has always been customary for relatives or friends, sometimes for the trade, to publish the "complete works" of important and often unimportant writers; usually, soon after death. And as literary distinction has hitherto almost invariably led to high office under the state, the collected works of the great majority of authors open with selected Memorials to the Throne and other documents of an official character. The public interest in these may have long since passed away; but they are valued

by the Chinese as models of a style to be imitated, and the foreign student occasionally comes across papers on once burning questions arising out of commercial or diplomatic intercourse with western nations. Then may follow—the order is not always the same—the prefaces which the author contributed from time to time to the literary undertakings of his friends. Preface-writing is almost a department of Chinese literature. No one ever thinks of publishing a book without getting one or more of his capable associates to provide prefaces, which are naturally of a laudatory character, and always couched in highly-polished and obscure terms, the difficulty of the text being often aggravated by a fanciful and almost illegible script. Prefaces written by emperors, many examples of which may be seen, are of course highly esteemed, and are generally printed in coloured ink. The next section may comprise biographical notices of eminent men and women, or of mere local celebrities, who happened to die in the author's day. Then will follow Records, a title which covers inscriptions carved on the walls of new buildings, or on memorial tablets, and also notes on pictures which the author may have seen, places which he may have visited, or allegorical incidents which he may have imagined. Then come disquisitions, or essays on various subjects; researches, being short articles of archaeological interest; studies or monographs; birthday congratulations to friends or to official colleagues; announcements, as to deities, a cessation of whose worship is threatened if the necessary rain or fair weather be not forthcoming; funeral orations, letters of condolence, &c. The above items will perhaps fill half a dozen volumes; the remaining volumes, running to twenty or thirty in all, as the case may be, will contain the author's poetry, together with his longer and more serious works. The essential of such a collection is, in Chinese eyes, its completeness.

Fiction.—Although novels are not regarded as an integral part of literature proper, it is generally conceded that some novels may be profitably studied, if for no other reason, from the point of view of style. With the novel, however, we are no longer on perfectly safe ground in regard to that decency which characterizes, as has been above stated, the vast mass of Chinese literature. Chinese novels range, in this sense, from the simplest and most unaffected tale of daily life, down to low—not the lowest—depths of objectionable pornography. The *San Kuo Chih*, an historical romance based upon a period of disruption at the close of the 2nd century A.D., is a delightful book, packed with episodes of battle, heroism, self-sacrifice, skilful strategy, and all that goes to make up a stirring picture of strenuous times. Its author, who might almost have been Walter Scott, cannot be named for certain; but the work itself probably belongs to the 13th century, a date at which the novel begins to make its appearance in China. Previous to that time, there had been current an immense quantity of stories of various kinds, but nothing like a novel, as we understand the term. From the 13th century onwards, the growth of the novel was continuous; and finally, in the 17th century, a point was reached which is not likely to be surpassed.The *Hung Lou Mêng*, the author of which took pains, for political reasons, to conceal his identity, is a creation of a very high order. Its plot is intricate and original, and the *dénouement* startlingly tragic. In the course of the story, the chief clue of which is love, woven in with intrigue, ambition, wealth, poverty, and other threads of human life, there occur no fewer than over four hundred characters, each one possessed of a distinctive personality drawn with marvellous skill. It contains incidents which recall the licence tolerated in Fielding; but the coarseness, like that of Fielding, is always on the surface, and devoid of the ulterior suggestiveness of the modern psychological novel. But perhaps no work of fiction has ever enjoyed such vogue among literary men as a collection of stories, some graceful, some weird, written in 1679 by P'u Sungling, a disappointed candidate at the public examinations. This collection, known as the *Liao Chai*, is exceedingly interesting to the foreign student for its sidelights on folklore and family life; to the native scholar, who professes to smile at the subject-matter as beyond the pale of genuine literature, it is simply invaluable as an expression of the most masterly style of which his language is capable.

San Kuo Chih.

Hung Lou Mêng.

Liao Chai.

Drama.—Simultaneously with the appearance of the novel, stage-plays seem to have come into existence in China. In the earliest ages there were set dances by trained performers, to the accompaniment of music and singing; and something of the kind, more or less ornate as regards the setting, has always been associated with solemn and festive occasions. But not until the days of the Mongol rule, A.D. 1260-1368, can the drama proper be said to have taken root and flourished in Chinese soil. The probability is that both the drama and the novel were introduced from Central Asia in the wake of the Mongol conquerors; the former is now specially essential to the everyday happiness of the Chinese people, who are perhaps the most confirmed playgoers in the world. There is an excellent collection of one hundred plays of the Mongol dynasty, with an illustration to each, first published in 1615; there is also a further large collection, issued in 1845, which contains a great number of plays arranged under sixty headings, according to the style and purport of each, besides many others. There is one famous play of the Mongol period which deals largely in plot and

Hsi Hsiang

Chi.

passion, and is a great favourite with the educated classes. It is entitled *Hsi Hsiang Chi*, or the Story of the Western Pavilion; and as if there was a doubt as to the reception which would be accorded to the work, a minatory sentence was inserted in the prolegomena: “If any one ventures to call this book indecent, he will certainly have his tongue torn out in hell.” So far as the written play is concerned, its language is altogether unobjectionable; on the stage, by means of gag and gesture, its presentation is often unseemly and coarse. What the Chinese playgoer delights in, as an evening’s amusement, is a succession of plays which are more of the nature of sketches, slight in construction and generally weak in plot, some of them based upon striking historical episodes, and others dealing with a single humorous incident.

Dictionaries.—The *Erh Ya*, or Nearing the Standard, is commonly classed as a dictionary, and is referred by native scholars generally to the 12th century B.C. The entries are arranged under nineteen heads, to facilitate reference, and explain a large number of words and phrases, including names of beasts, birds, plants and fishes. The work is well illustrated in the large modern edition; but the actual date of composition is an entirely open question, and the insertion of woodcuts must necessarily belong to a comparatively late age (see *Military Writers*).

With the *Shuo Wên*, or Explanation of Written Words, we begin the long list of lexicographical works which constitute such a notable feature in Chinese literature. A scholar, named Hsü Shên, who died about A.D. 120, made an effort to bring together and analyse all the characters it was possible to gather from the written language as it existed in his own day. He then proceeded to arrange these characters—about ten thousand in all—on a system which would enable a student to find a given word without having possibly to search through the whole book. To do this, he simply grouped together all such as had a common part, more or less indicative of the meaning of each, much as though an English dictionary were to consist of such groups as

Shuo Wên.

Dog-days
Dog-kennel
Dog-collar
Dog-meat
Dog-nap

and so on.

Horse-collar
Horse-flesh
Horse-back
Horse-fly
Horse-chestnut

and so on.

Hsü Shên selected five hundred and forty of these common parts, or Radicals (see *Language*), a number which, as will be seen later on, was found to be cumbrously large; and under each Radical he inserted all the characters belonging to it, but with no particular order or arrangement, so that search was still, in many cases, quite a laborious task. The explanations given were chiefly intended to establish the pictorial origin of the language; but whereas no one now disputes this as a general conclusion, the steps by which Hsü Shên attempted to prove his theory must in a large number of instances be dismissed as often inadequate and sometimes ridiculous. Nevertheless, it was a great achievement; and the *Shuo Wên* is still indispensable to the student of the particular script in vogue a century or two before Christ. It is also of value in another sense. It may be used, with discretion, in testing the genuineness of an alleged ancient document, which, if an important or well-known document before the age of Hsü Shên, would not be likely to contain characters not given in his work. Under this test the *Tao Tê Ching*, for instance, breaks down (see *Huai-nan Tzŭ*).

Passing over a long series of dictionaries and vocabularies which appeared at various dates, some constructed on Hsü Shên’s plan, with modifications and improvements, and others, known as phonetic dictionaries, arranged under the finals according to the Tones, we come to the great standard lexicon produced under the auspices, and now bearing the name of the emperor K‘ang Hsi, A.D. 1662-1723.

But before proceeding, a rough attempt may be made to exhibit in English terms the principle of the phonetic as compared with the radical dictionary described above. In the spoken language there would occur the word *light*, the opposite of dark, and this would be expressed in writing by a certain symbol. Then, when it became necessary to write down *light*, the opposite of heavy, the result

Phonetic

dictionaries. would be precisely what we see in English. But as written words increased, always with a limited number of vocables (see *Language*), this system was found to be impracticable, and Radicals were inserted as a means of distinguishing one kind of *light* from another, but without altering the original sound. Now, in the phonetic dictionary the words are no longer arranged in such groups as

Sun-light
Sun-beam
Sun-stroke
Sun-god, &c.

according to the Radicals, but in such groups as

Sun-light
Moon-light
Foot-light
Gas-light, &c.

according to the phonetics, all the above four being pronounced simply *light*, without reference to the radical portion which guides towards the limited sense of the term. So, in a phonetic dictionary, we should have such a group as

Brass-bound
Morocco-bound
Half-bound
Spell-bound
Homeward-bound
Wind-bound

and so on, all the above six being pronounced simply *bound*. To return to "K'ang Hsi," as the lexicon in question is familiarly styled, the total number of characters given therein amounts to over forty-four thousand, grouped no longer under the five hundred and forty Radicals of Hsü Shên, but under the much more manageable number of two hundred and fourteen, as already used in earlier dictionaries. Further, as the groups of characters would now be more than four times as large as in the *Shuo Wên*, they were subdivided under each Radical according to the number of strokes in the other, or phonetic part of the character. Thus, adopting letters as strokes, for the purpose of illustration, we should have "dog-nap" in the group of Radical "dog" and three strokes, while "dog-days" and "dog-meat" would both be found under Radical "dog" with four strokes, and so on. The two hundred and fourteen Radicals are themselves arranged in groups according to the number of strokes; so that it is not a very arduous task to turn up ordinary characters in a Chinese dictionary. Finally, although Chinese is a monosyllabic and non-alphabetic language, a method has been devised, and has been in use since the 3rd century A.D., by which the sound of any word can be indicated in a dictionary otherwise than by simply quoting a word of similar sound, which of course may be equally unknown to the searcher. Thus, the sound of a word pronounced *ching* can be exhibited by selecting two words, one having the initial *ch*, and the other a final *ing*. E.g. the sound *ching* is given as *chien ling*; that is *ch[ien l]ing = ching*.

K'ang Hsi.

The Concordance.—Considering the long unbroken series of years during which Chinese literature has always, in spite of many losses, been steadily gaining in bulk, it is not astonishing to find that classical, historical, mythological and other allusions to personages or events of past times have also grown out of all proportion to the brain capacity even of the most brilliant student. Designed especially to meet this difficulty, there are several well-known handbooks, elementary and advanced, which trace such allusions to their source and provide full and lucid explanations; but even the most extensive of these is on a scale incommensurate with the requirements of the scholar. Again, it is due to the emperor K'ang Hsi that we possess one of the most elaborate compilations of the kind ever planned and carried to completion. The *P'ei Wên Yün Fu*, or Concordance to Literature, is a key, not only to allusions in general, but to all phraseology, including allusions, idiomatic expressions and other obscure combinations of words, to be found in the classics, in the dynastic histories, and in all poets, historians, essayists, and writers of recognized eminence in their own lines. No attempt at explanation is given; but enough of the passage, or passages, in which the phrase occurs, is cited to enable the reader to gather the meaning required. The trouble, of course, lies with the arrangement of these phrases in a non-alphabetic language. Recourse has been had to the Rhymes and the five Tones (see *Language*); and all phrases which end with the same word form one of a number of groups which appear under the same Rhyme, the Rhymes themselves being distributed over five Tones. Thus, to find any phrase, the first point is to discover what is its normal Rhyme; the next is to ascertain the Tone of that Rhyme. Then, under this Tone-

group the Rhyme-word will be found, and under the Rhyme-word group will be found the final word of the phrase in question. It will now only remain to run through this last group of phrases, all of which have this same final word, and the search—so vast is the collection—will usually yield a satisfactory result. The *P'ei Wên Yün Fu* runs of course to many volumes; a rough estimate shows it to contain over fifteen million words.

Encyclopaedias.—In their desire to bring together condensed, yet precise, information on a large variety of subjects, the Chinese may be said to have invented the encyclopaedia. Though not the earliest work of this kind, the *T'ai P'ing Yü Lan* is the first of any great importance. It was produced towards the close of the 10th century A.D., under the direct supervision of the emperor, who is said to have examined three sections every day for about a year, the total number of sections being one thousand in all, arranged under fifty-five headings. Another similar work, dealing with topics drawn from the lighter literature of China, is the *T'ai P'ing Kuang Chi*, which was issued at about the same date as the last-mentioned. Both of these, and especially the former, have passed through several editions. They help to inaugurate the great Sung dynasty, which for three centuries to follow effected so much in the cause of literature. Other encyclopaedias, differing in scope and in plan, appeared from time to time, but it will be necessary to concentrate attention upon two only. The third emperor of the Ming dynasty, known as Yung Lo, A.D. 1403-1425, issued a commission for the production of a work on a scale which was colossal even for China. His idea was to collect together all that had ever been written in the four departments of (1) the Confucian Canon, (2) History, (3) Philosophy and (4) General Literature, including astronomy, geography, cosmogony, medicine, divination, Buddhism, Taoism, arts and handicrafts; and in 1408 such an encyclopaedia was laid before the Throne, received the imperial approval and was named *Yung Lo Ta Tien*, or The Great Standard of Yung Lo. To achieve this, 3 commissioners, with 5 directors, 20 sub-directors and a staff of 2141 assistants, had laboured for the space of five years. Its contents ran to no fewer than 22,877 separate sections, to which must be added an index filling 60 sections. Each section contained about 20 leaves, making a total of 917,480 pages for the whole work. Each page consisted of sixteen columns of characters averaging twenty-five to each column, or a total of 366,992,000 characters, to which, in order to bring the amount into terms of English words, about another third would have to be added. This extraordinary work was never printed, as the expense would have been too great, although it was actually transcribed for that purpose; and later on, two more copies were made, one of which was finally stored in Peking and the other, with the original, in Nanking. Both the Nanking copies perished at the fall of the Ming dynasty; and a similar fate overtook the Peking copy, with the exception of a few odd volumes, at the siege of the legations in 1900. The latter was bound up in 11,100 volumes, covered with yellow silk, each volume being 1 ft. 8 in. in length by 1 ft. in breadth, and averaging over ½ in. in thickness. This would perhaps be a fitting point to conclude any notice of Chinese encyclopaedias, but for the fact that the work of Yung Lo is gone while another encyclopaedia, also on a huge scale, designed and carried out sonic centuries later, is still an important work of reference.

Yuan Lo Ta Tien.

The *T'u Shu Chi Ch'êng* was planned, and to a great extent made ready, under instructions from the emperor K'ang Hsi (see above), and was finally brought out by his successor, Yung Chêng, 1723-1736. Intended to embrace all departments of knowledge, its contents were distributed over six leading categories, which for want of better equivalents may be roughly rendered by (l) Heaven, (2) Earth, (3) Man, (4) Arts and Sciences, (5) Philosophy and (6) Political Science. These were subdivided into thirty-two classes; and in the voluminous index which accompanies the work a further attempt was made to bring the searcher into still closer touch with the individual items treated. Thus, the category Heaven is subdivided into four classes, namely—again, for want of better terms—(*a*) The Sky and its Manifestations, (*b*) The Seasons, (*c*) Astronomy and Mathematics and (*d*) Natural Phenomena. Under these classes come the individual items; and here it is that the foreign student is often at a loss. For instance, class *a* includes Earth, in its cosmogonic sense, as the mother of mankind; Heaven, in its original sense of God; the Dual Principle in nature; the Sun, Moon and Stars; Wind; Clouds; Rainbow; Thunder and Lightning; Rain; Fire, &c. But Earth is itself a geographical category; and all strange phenomena relating to many of the items under class *a* are recorded under class *d*. Category No. 6, marked as Political Science, contains such classes as Ceremonial, Music and Administration of Justice, alongside of Handicrafts, making it essential to study the arrangement carefully before it is possible to consult the work with ease. Such preliminary trouble is, however, well repaid, the amount of information given on any particular subject being practically coextensive with what is known about that subject. The method of presenting such information, with variations to suit the nature of the topics handled, is to begin with historical excerpts, chronologically arranged. These are usually followed by sometimes lengthy essays dealing with the subject as a theme, taken from the writings of qualified authors, and like all the other entries, also chronologically arranged. Then come elegant extracts in prose and verse, in all of which the subject may be simply mentioned and not treated as in the essays. After these follow minor notices of incidents, historical and otherwise, and all kinds of anecdotes, derived from a great

T'u Shu.

variety of sources. Occasionally, single poetical lines are brought together, each contributing, some thought or statement germane to the subject, expressed in elegant or forcible terms; and also, wherever practicable, biographies of men and women are inserted.

Chronological and other tables are supplied where necessary, as well as a very large number of illustrations, many of these being reproductions of woodcuts from earlier works. It is said that the *T'u Shu Chi Ch'êng* was printed from movable copper type cast by the Jesuit Fathers employed by the emperor K'ang Hsi at Peking; also that only a hundred copies were struck off, the type being then destroyed. An 8vo edition of the whole encyclopaedia was issued at Shanghai in 1889; this is bound up in sixteen hundred and twenty-eight handy volumes of about two hundred pages each. A copy of the original edition stands on the shelves of the British Museum, and a translation of the Index has recently been completed.

Manuscripts and Printing.—At the conclusion of this brief survey of Chinese literature it may well be asked how such an enormous and ever-increasing mass has been handed down from generation to generation. According to the views put forth by early Chinese antiquarians, the first written records were engraved with a special knife upon bamboo slips and wooden tablets. The impracticability of such a process, as applied to books, never seems to have dawned upon those writers; and this snowball of error, started in the 7th century, long after the knife and the tablet had disappeared as implements of writing, continued to gather strength as time went on. Recent researches, however, have placed it beyond doubt that when the Chinese began to write in a literary sense, as opposed to mere scratchings on bones, they traced their characters on slips of bamboo and tablets of wood with a bamboo pencil, frayed at one end to carry the coloured liquid which stood in the place of ink. The knife was used only to erase. So things went on until about 200 B.C., when it would appear that a brush of hair was substituted for the bamboo pencil; after which, silk was called into requisition as an appropriate vehicle in connexion with the more delicate brush. But silk was expensive and difficult to handle, so that the invention of paper in A.D. 105 by a eunuch, named Ts'ai Lun, came as a great boon, although it seems clear that a certain kind of paper, made from silk floss, was in use before his date. However that may be, from the 1st century onwards the Chinese have been in possession of the same writing materials that are in use at the present day.

In A.D. 170, Ts'ai Yung, who rose subsequently to the highest offices of state, wrote out on stone in red ink the authorized text of the Five Classics, to be engraved by workmen, and thus handed down to posterity. The work covered forty-six huge tablets, of which a few fragments are said to be still in existence. A similar undertaking was carried out in 837, and the later tablets are still standing at a temple in the city of Hsi-an Fu, Shensi. With the T'ang dynasty, rubbings of famous inscriptions, wherein the germ of printing may be detected, whether for the style of the composition or for the calligraphic excellence of the script, came very much into vogue with scholars and collectors. It is also from about the same date that the idea of multiplying on paper impressions taken from wooden blocks seems to have arisen, chiefly in connexion with religious pictures and prayers. The process was not widely applied to the production of books until the 10th century, when in A.D. 932 the Confucian Canon was printed for the first time. In 981 orders were issued for the *T'ai P'ing Kuang Chi*, an encyclopaedia extending to many volumes (see above) to be cut on blocks for printing. Movable types of baked clay are said to have been invented by an alchemist, named Pi Shêng, about A.D. 1043; and under the Ming dynasty, 1368-1644, these were made first of wood, and later of copper or lead, but movable types have never gained the favour accorded to block-printing, by means of which most of China's great typographical triumphs have been achieved. The process is, and always has been, the same all over China. Two consecutive pages of a book, separated by a column containing the title, number of section, and number of leaf, are written out and pasted face downwards on a block of wood (*Lindera tzŭ-mu*, Hemsl.). This paper, where not written upon, is cut away with sharp tools, leaving the characters in relief, and of course backwards, as in the case of European type. The block is then inked, and an impression is taken off, on one side of the paper only. This sheet is then folded down the middle of the separating column above mentioned, so that the blank halves come together, leaving two pages of printed matter outside; and when enough sheets have been brought together, they are stabbed at the open ends and form a volume, to be further wrapped in paper or pasteboard, and labelled with title, &c. It is almost superfluous to say that the pages of a Chinese book must not be cut. There is nothing inside, and, moreover, the column bearing the title and leaf-number would be cut through. The Chinese newspapers of modern times are all printed from movable types, an ordinary fount consisting of about six to seven thousand characters.

See J. Legge, *The Chinese Classics* (1861-1872); A. Wylie, *Notes on Chinese Literature* (1867); E. Chavannes, *Mémoires historiques* (1895-1905); H.A. Giles, *Chuang Tzŭ* (1889), *A Chinese Biographical Dictionary* (1898), and *A History of Chinese Literature* (1901); A. Forke, *Lun-Hêng* (1907); F. Hirth, *The Ancient History of China* (1908); L. Giles, *Sun Tzŭ* (1910).

1 As to the origin of the names China and Cathay (the medieval name) see below § *History*. According to one theory the name China is of Malay origin, designating originally the region now called Indo-China, but transferred in early times to China proper. By the Chinese the country is often called *Shih-pa-shêng,* "the Eighteen Provinces," from the number of its great territorial divisions. It is also called *Chung-kwo,* "the Middle Kingdom," properly used of the central part of China, and *Hwa-kwo,* "the Flowery Kingdom."

2 A Chinese mile, *li*, or *le* = 0.36 English mile.

3 For the Grand Canal the chief authority is Dominique Gandar, S.J., "Le Canal Impérial. Étude historique et descriptive," *Variétés sinologiques* No. 4 (Shanghai, 1903); see also Stenz, "Der Kaiserkanal," in *Beiträgen zur Kolonialpolitik*, Band v. (Berlin, 1903-1904), and the works of Ney Elias, Sir J.F. Davis, A. Williamson, E.H. Parker and W.R. Carles.

4 Nevertheless there is considerable local traffic. The transit trade with Shan-tung, passing the Chin-kiang customs and using some 250 m. of the worst part of the canal, was valued in 1905 at 3,331,000 taels.

5 The portion of the wall which abutted on to the sea has been destroyed.

6 See the *Geog. Jnl.* (Feb. and March 1907). For a popular account of the wall, with numerous photographs, see *The Great Wall of China* (London, 1909), by W.E. Giel, who in 1908 followed its course from east to west. Consult also A. Williamson, *Journey in North China* (London, 1870); Martin, "La Grande Muraille de la Chine," *Revue scientifique* (1891).

7 For Shanghai the figures are compiled from twenty-six years' observations. See *China Sea Directory*, vol. iii. (4th ed., 1904) p. 660.

8 The thermometer registered 23° F. in January 1893, on the river 28 m. below Canton. This is the lowest reading known. Ibid, pp. 104-105.

9 See W.W. Rockhill, *Inquiry into the Population of China* (Washington, 1904).

10 For a bibliography of works relating to the aboriginal races of China see Richard's *Comprehensive Geography of the Chinese Empire* (1908 ed.), pp. 371-373.

11 Evidences of the social changes taking place in China are to be found in the strong movement for the education of girls, and in the formation of societies, under official patronage, to prevent the binding of women's feet.

12 It must be remembered that there is great variety in the costumes worn in the various provinces. The particulars here given are of the most general styles of dress.

13 Richard's *Comprehensive Geography*, &c. (1908 edition), pp. 340-341.

14 Otherwise Abū Ja'far Ibn Mahommed al-Mansūr (see Caliphate, C. § 2).

15 For a summary of Chang Chih-tung's treatise, see *Changing China* (1910 edition), chap. xxii.

16 It was announced in June 1910 that the throne had approved a recommendation of the Board of Education that English should be the official language for scientific and technical education, and that the study of English should be compulsory in all provincial scientific and technical schools.

17 See *The Times* of the 19th of February and the 3rd of May 1910.

18 Another peculiarity of loess in China is that it lends itself readily to the excavation of dwellings for the people. In many places whole villages live in cave dwellings dug out in the vertical wall of loess. They construct spiral staircases, selecting places where the ground is firm, and excavate endless chambers and recesses which are said to be very comfortable and salubrious.

19 See J. Edkins, *The Poppy in China*, and H.B. Morse, *The Trade and Administration of the Chinese Empire*, chap. xi.

20 Richard's *Comprehensive Geography, &c.* (1908 edition), p. 144.

21 In the 18th century foreign trade was restricted to Canton. In the 17th century, however, the Dutch traded to Formosa and Amoy, and the English to Amoy also. The Portuguese traded with Canton as early as 1517. For the early intercourse between Portugal and China see the introductory chapter in Donald Ferguson's *Letters from Portuguese Captives in Canton* (Bombay, 1902).

22 From *The Statesman's Year Book*, 1910 edition.

23 See *The Times* of the 28th of March 1910.

24 See Morse, *op. cit.* chap. x.

25 The maritime customs had established a postal service for its own convenience in 1861, and it first gave facilities to the general public in 1876. An organized service for the conveyance of government despatches has existed in China for many centuries, and the commercial classes maintain at their own expense a system ("letter hongs") for the transmission of correspondence.

26 For the causes leading to this movement and the progress of reform see § *History*.

27 For recent authoritative accounts of the government of China see H.B. Morse, *The Trade and Administration of the Chinese Empire*, chap. iii.; Richard's *Comprehensive Geography*, &c., Bk. I. § v., and *The Statesman's Year Book*.

28 The empress-consort is chosen by the emperor from a number of girls selected by his ministers from the families of Manchu nobles. From the same candidates the emperor also selects secondary-empresses (usually not more than four). Concubines, not limited in number, are chosen from the daughters of Manchu nobles and free-men. All the children are equally legitimate.

29 Recent emperors have been children at accession and have been kept in seclusion.

30 See "Democratic China" in H.A. Giles, *China and the Chinese*.

31 W.F. Mayers, *The Chinese Government* (1878).

32 This body is superseded by the Imperial Senate summoned to meet for the first time on the 3rd of October 1910.

33 Yamên is the name given to the residences of all high officials. Tsung-li Yamên = the bureau for managing each (foreign) kingdom's affairs.

34 An edict of the 15th of July 1909 created a naval and military advisory board. Up to that time the navy was controlled by the viceroys at Canton, Nanking, Fu-chow and Tientsin; the viceroys at Canton and Tientsin being ministers superintendent of the southern and northern ports respectively.

35 Thus in 1910 Prince Ching, president of the grand council, was, for the third time, impeached by censors, being denounced as an "old treacherous minister," who filled the public service with a crowd of men as unworthy as himself. The censor who made the charge was stripped of his office (see *The Times* of the 30th of March 1910).

36 For details of local government see Richard's *Comprehensive Geography*, 1908 edition, pp. 301 et seq.

37 Morse, op. cit., 1908 edition, p. 76

38 See *The Times* of the 28th of February 1910.

39 See *The Statesman's Year-Book* (1910 edition).

40 A few of the old native customs stations, which are deemed perquisites of the imperial court, may also be excepted, as, for instance, the native custom-house at Canton, Hwei Kwan on the Grand Canal, and various stations in the neighbourhood of Peking.

41 The production of a budget in 1915 was promised in one of the reform edicts of 1908.

42 In this article the tael used as a standard is the Haikwan (*i.e.* customs) tael, worth about 3s. It fluctuates with the value of silver.

43 Roughly £43,000,000.

44 *Trade and Administration of the Chinese Empire* (1910), p. 118.

45 Temporary reductions are granted in provinces affected by rebellion, drought or flood.

46 Information as to what extent the expenses of the new army and navy are met by the central government is lacking.

47 To meet the expenditure on interest and redemption of the indemnities for the Boxer outrages the Peking government required the provincial authorities to increase their annual remittances by taels 18,700,000 during the years 1902-1910.

48 It must be remembered that the Haikwan tael is here indicated.

49 See Morse's *Trade and Administration of the Chinese Empire*, chap. ix.

50 A supplementary exchange of notes of the same date excepted from the scope of this agreement the Shan-hai-kwan-Niu-chwang extension which had already been conceded to the Hongkong & Shanghai Bank.

51 The religious aspect of the Boxer movement gave it strength. Its disciples believed that the spirits which defended China were incensed by the introduction of Western methods and ideals. Many of them believed themselves to be invulnerable to any Western weapon. (See Lord W. Cecil, *Changing China*, 1910, ch. i.)

52 The diary of a Manchu noble printed in *China under the Empress Dowager* (1910) by J.O. Bland and E. Backhouse throws light on the subject. It was to Jung-Lu, father-in-law of Prince Chin, that the legations owed their escape from extermination.

53 It was at this time (July 17th) that the intense anxiety of the civilized world with regard to the fate of the besieged reached its culminating point. Circumstantial accounts of the fall of the legations and the massacre of their inmates were circulated in Shanghai and found general credence. It was not till near the end of the month that an authentic message from the American minister proved

these fears to be premature.

54 In negotiating this agreement Lord Salisbury appears to have been largely influenced by the aggressive features of Russia's action in North China, while Germany appears to have been actuated by a desire to forestall isolated action by Great Britain in the Yangtsze basin. In Germany the agreement was known as the Yangtsze Agreement. Great Britain held, however, that it applied equally to Manchuria.

55 Liu Kun-yi died in 1902. In the same year died Tao-mu, the viceroy of Canton. In these men China lost two of her most capable and enlightened officials.

56 Prince Chun was born in 1882. He was the first member of the imperial family to be sent on a foreign mission.

57 Tung Fu-hsiang died in 1908. A sum of some £80,000 belonging to him, and left in the provincial treasury, was appropriated for works of public utility (see *The Times*, April 9th, 1910).

58 Lord W. Cecil, op. cit. p. 9.

59 This institution was nominally a private concern which financed the Manchurian railway, but it acted as part of the Russian government machinery. The existence of the contract of the 27th of August 1896 was frequently denied until expressly admitted by the Russo-Chinese agreement of the 8th of April 1902.

60 On the 8th of October the Russian troops had been withdrawn from Mukden, but they reoccupied the town on the 28th of the same month, Admiral Alexeiev, the viceroy of the Far East, alleging that the inertia of the Chinese officials seriously hindered the work of extending civilization in Manchuria.

61 The form of outrage, probably the first of its kind in China, was itself a symptom of the changed times. The bomb injured Prince Tsai Tse and another commissioner, and the departure of the commission was consequently delayed some months.

62 In 1907 further commissions were appointed, on the initiative of Yuan Shih-kai, to study specifically the constitutions of Great Britain, Germany and Japan.

63 This department was organized at Shanghai in 1854. The Taiping rebels being in possession of the native city, the collection of customs dues, especially on foreign ships, was placed in the hands of foreigners. This developed into a permanent institution, the European staff being mainly British.

64 The British official view, as stated in parliament on the 27th of April 1910, was that the changes resulting from the creation of the Board of Control had, so far, been purely departmental changes of form, and that the position of the inspector-general remained unaltered.

65 See *The Times* of the 21st of April and 11th of May 1910.

66 A chest contained from 135 lb to 160 lb.

67 A picul = 133½ lb.

68 *Changing China*, p. 118.

69 See *The Times* of 7th and 8th of March and 8th of April 1910.

70 The first recorded importation of morphia into China was in 1892, and it is suggested that it was first used as an anti-opium medicine. Morphia-taking, however, speedily became a vice, and in 1902 over 195,000 oz. of morphia were imported (enough for some 300,000,000 injections). To check the evil the Chinese government during 1903 imposed a tax of about 200% *ad valorem*, with the result that the imports declared to the customs fell in 1905 to 54 oz. only. The falling off was explained "not by a diminished demand, but by smuggling" (Morse's *Trade and Administration of the Chinese Empire*, p. 351).

71 A regulation by the ministry of education, dated the 14th of January 1910, ordered that no girl should be admitted to school dressed in foreign clothes or with unnatural (*i.e.* bound) feet.

72 For the growth of the education movement see *The Times*, 4th of September 1909.

73 The Dalai Lama left Peking in December 1908 on his return to Lhassa, which he reached in November 1909. Differences had arisen between him and the Chinese government, which sought to make the spiritual as well as the temporal power of the Dalai Lama dependent on his recognition by the emperor of China. Early in 1910 the Dalai Lama, in consequence of the action of the Chinese amban in Lhassa, fled from that city and sought refuge in India.

74 Chang Chih-tung died in October 1909. He was a man of considerable ability, and one whose honesty and loyalty had never been doubted. He was noted as an opponent of opium smoking, and for over thirty years had addressed memorials to the throne against the use of the drug.

75 See *The Times* of the 7th of September 1909.

76 Proposals made early in 1910 by the American secretary of state for the neutralization of the Manchurian railway received no support.

77 By a convention signed on July 4th, 1910, Russia and Japan agreed to "maintain and respect" the

status quo in Manchuria.

78 See the *Quinzaine coloniale* of the 10th of December 1909.

79 See *The Times* of the 20th of January 1910.

80 See for the prospects of reform *The Times* of 30th May 1910.

81 *La Sculpture sur pierre en Chine ait temps des deux dynasties Han* (Paris, 1893).

CHINA, the common name for ware made of porcelain, given because it came from China, where the first vitrified, translucent, white ware was produced. The Portuguese or Italians gave it the name of "porcelain" (*q.v.*). English usage was influenced by India and the East, where the Persian *chīnī* was widely prevalent as the name of the ware. This is seen also in some of the earlier forms and pronunciations, *e.g. chiney*, *cheney*, and later *chaney* (see CERAMICS; and for "china-clay" KAOLIN).

CHINANDEGA, or CHINENDEGA, the capital of the department of Chinandega in western Nicaragua, 10 m. N.N.E. of the seaport of Corinto by the Corinto-Managua railway. Pop. (1900) about 12,000. Chinandega is the centre of a fertile corn-producing district, and has a large transit trade owing to its excellent situation on the chief Nicaraguan railway. Its manufactures include coarse cloth, pottery and Indian feather ornaments. Cotton, sugar-cane and bananas are cultivated in the neighbourhood.

CHI-NAN FU, the capital of Shan-tung, China, in 36° 40′ N., 117° 1′ E. Pop. about 100,000. It is situated in one of the earliest settled districts of the Chinese empire. The city, which lies in the valley of the present channel of the Yellow river (Hwang-Ho), and about 4 m. south of the river, is surrounded by a triple line of defence. First is the city wall, strongly built and carefully guarded, outside this a granite wall, and beyond this again a mud rampart. Three springs outside the west gate throw up streams of tepid water to a height of about 2 ft. This water, which is highly prized for its healing qualities, fills the moat and forms a fine lake in the northern quarter of the city.

Chi-nan Fu was formerly famous for its manufacture of silks and of imitation precious stones. It is now the chief commercial entrepôt of Western Shan-tung but no longer a manufacturing centre. A highway connects it with the Yellow river, and it is joined by a railway 280 m. long to Kiaochow. The city has a university for instruction on Western lines, and an efficient military school. American Presbyterians began mission work in the city in 1873; it is also the see of a Roman Catholic bishop.

CHINCHA ISLANDS, three small islands in the Pacific Ocean, about 12 m. from the coast of Peru (to which country they belong), opposite the town of Pisco, and 106 m. distant from Callao, in 13° 38′ S., 76° 28′ W. The largest of the group, known as the North Island or Isla del Norte, is only four-fifths of a mile in length, and about a third in breadth. They are of granitic formation, and rise from the sea in precipitous cliffs, worn into countless caves and hollows, which furnish convenient resting-places for the sea-fowl. Their highest points attain an elevation of 113 ft. The islands have yielded a few remains of the Chincha Indian race. They were formerly noted for vast deposits of guano, and its export was begun by the Peruvian

government in 1840. The supply, however, was exhausted in 1874. In 1853-1854 the Chincha Islands were the chief object in a contest known as the Guano War between President Echenique and General Castilla; and in April 1864 they were seized by the Spanish rear-admiral Pinzon in order to bring the Peruvian government to apologize for its treatment of Spanish immigrants.

CHINCHEW, or CHINCHU, the name usually given in English charts to an ancient and famous port of China in the province of Fu-kien, of which the Chinese name is *Ch'üanchow-fu* or *Ts'üanchow-fu*. It stands in 24° 57′ N., 118° 35′ E. The walls have a circuit of 7 or 8 m., but embrace much vacant ground. The chief exports are tea and sugar, tobacco, china-ware, nankeens, &c. There are remains of a fine mosque, founded by the Arab traders who resorted thither. The English Presbyterian Mission has had a chapel in the city since about 1862. Beyond the northern branch of the Min (several miles from the city) there is a suburb called Loyang, approached by the most celebrated bridge in China.

Ch'üanchow, owing to the obstruction of its harbour by sand banks, has been supplanted as a port by Amoy, and its trade is carried on through the port of Nganhai. It is still, however, a large and populous city. It was in the middle ages the great port of Western trade with China, and was known to the Arabs and to Europeans as *Zaitūn* or *Zayton*, the name under which it appears in Abulfeda's geography and in the Mongol history of Rashīddudīn, as well as in Ibn Batuta, Marco Polo and other medieval travellers. Some argument has been alleged against the identity of Zayton with Ch'üanchow, and in favour of its being rather Changchow (a great city 60 m. W.S.W. of Ch'üanchow), or a port on the river of Changchow near Amoy. "Port of Zayton" may have embraced the great basin called Amoy Harbour, the chief part of which lies within the *Fu* or department of Ch'üanchow; but there is hardly room for doubt that the Zayton of Marco Polo and Abulfeda was the Ch'üanchow of the Chinese. Ibn Batuta informs us that a rich silk texture made here was called *Zaitūniya*; and there can be little doubt that this is the real origin of the word "Satin," *Zettani* in medieval Italian, *Aceytuni* in Spanish.

CHINCHILLA, a small grey hopping rodent mammal (*Chinchilla lanigera*), of the approximate size of a squirrel, inhabiting the eastern slopes of the Andes in Chile and Bolivia, at altitudes between 8000 and 12,000 ft. It typifies not only the genus *Chinchilla*, but the family *Chinchillidae*, for the distinctive features of which see RODENTIA. The ordinary chinchilla is about 10 in. in length, exclusive of the long tail, and in the form of its head somewhat resembles a rabbit. It is covered with a dense soft fur ¾ in. long on the back and upwards of an inch in length on the sides, of a delicate French grey colour, darkly mottled on the upper surf ace and dusky white beneath; the ears being long, broad and thinly covered with hair. Chinchillas live in burrows, and these subterranean dwellings undermine the ground in some parts of the Chilean Andes to such an extent as to cause danger to travellers on horseback. They associate in communities, forming their burrows among loose rocks, and coming out to feed in the early morning and towards sunset. They feed chiefly on roots and grasses, in search of which they often travel considerable distances; and when eating they sit on their haunches, holding their food in their fore-paws. The Indians in hunting them employ the grison (*Galictis vittata*), a member of the weasel family, which is trained to enter the crevices of the rocks where the chinchillas lie concealed during the day. The fur (*q.v.*) of this rodent was prized by the ancient Peruvians, who made coverlets and other articles with the skin, and at the present day the skins are exported in large numbers to Europe, where they are made into muffs, tippets and trimmings. That chinchillas have not under such circumstances become rare, if not extinct, is owing to their extraordinary fecundity, the female usually producing five or six young twice a year. They are docile in disposition, and thus well fitted for domestication. The Peruvian chinchilla (*C. brevicaudata*) is larger, with relatively shorter ears and tail; while still larger species constitute the genus *Lagidium*, ranging from the Andes to Patagonia, and distinguished by having four in place of five front-toes, more pointed ears, and a somewhat differently formed skull. (See also VISCACHA).

(R. L.*)

CHINDE, a town of Portuguese East Africa, chief port for the Zambezi valley and British Central Africa, at the mouth of the Chinde branch of the Zambezi, in 18° 40′ S., 36° 30′ E. Pop. (1907) 2790, of whom 218 were Europeans. Large steamers are unable to cross the bar, over which the depth of water varies from 10 to 18 ft. Chinde owes its existence to the discovery in 1889 that the branch of the river on the banks of which it is built is navigable from the ocean (see ZAMBEZI). The Portuguese in 1891 granted on lease for 99 years an area of 5 acres—subsequently increased to 25—to the British government, on which goods in transit to British possessions could be stored duty free. This block of land is known as the British Concession, or British Chinde. The prosperity of the town largely depends on the transit trade with Nyasaland and North East Rhodesia. There is also a considerable export from Portuguese districts, sugar, cotton and ground nuts being largely cultivated in the Zambezi valley, and gold and copper mines worked.

CHINDWIN, a river of Burma, the largest tributary of the Irrawaddy, its entire course being in Burmese territory. It is called Ningthi by the Manipuris. The Chindwin is formed by the junction of the Tanai, the Tawan and the Tarôn or Turông, but it is still uncertain which is the main stream. The Tanai has hitherto been looked on as the chief source. It rises in about 25° 30′ N. and 97° E., on the Shwedaung-gyi peak of the Kumôn range, 12 m. N. of Mogaung, and flows due N. for the first part of its course until it reaches the Hukawng valley, when it turns to the W. and flows through the middle of the plain to the end of the valley proper. There it curves round to the S., passes through the Tarôn or Turông valley, takes the name of the Chindwin, and maintains a general southerly course until it enters the Irrawaddy, after flowing through the entire length of the Upper and Lower Chindwin districts, in about 21° 30′ N. and 95° 15′ E. Its extreme outlets are 22 m. apart, the interval forming a succession of long, low, partially populated islands. The most southerly mouth of the Chindwin is, according to tradition, an artificial channel, cut by one of the kings of Pagān. It was choked up for many centuries until in 1824 it was opened out by an exceptional flood. The Tanai (it is frequently called Tanaikha, but *kha* is merely the Kachin word for river), as long as it retains that name, is a swift, clear river, from 50 to 300 yds. wide and from 3 to 15 ft. deep. The river is navigated by native boats in the Hukawng valley, but launches cannot come up from the Chindwin proper because of the reefs below Taro.

The Tarôn, Turông or Towang river seems to be the real main source of the Chindwin. It flows into the Hukawng valley from the north, and has a swift current with a succession of rapids. Its sources are in the hills to the south of Sadiya, rising from 10,000 to 11,000 ft. above sea-level. It flows through a deep valley, with a general E. and W. direction, as far as its junction with the Loglai. It then turns S., and after draining an intricate system of hills, breaks into the Hukawng valley a few miles N. of Saraw, and joins or receives the Tanai about 10 m. above Kintaw village. Except the Tanai, the chief branches of the Upper Chindwin rise in mountains that are covered at least with winter snows. Below the Hukawng valley the Chindwin is interrupted at several places by falls or transverse reefs. At the village of Haksa there is a fall, which necessitates transhipment from large boats to canoes. Not far below this the Uyu river comes in on the left bank at Homalin, and from this point downwards the steamers of the Irrawaddy Flotilla Company ply for the greater part of the year. The Uyu flows through a fertile and well-cultivated valley, and during the rainy season it is navigable for a distance of 150 m. from its mouth by steamers of light draught. Ordinarily regular steam communication with Homalin ceases in the dry weather, but from Kindat, nearly 150 m. below it, there are weekly steamers all the year round. Below Kindat the only considerable affluent of the Chindwin is the Myit-tha, which receives the Chin hills drainage. The Chindwin rises considerably during the rains, but in March and April it is here and there so shallow as to make navigation difficult even for small steam launches. Whirlpools and narrows and shifting sandbanks also give some trouble, but much has been done to improve navigation since the British annexation. Kindat, the headquarters of the Upper Chindwin district, and Mônywa of the Lower, are on the banks of the river.

(J. G. SC.)

CHINDWIN, UPPER and **LOWER**, two districts in the Sagaing division of Upper Burma. Upper Chindwin has an area of 19,062 sq. m., and a population, according to the census of 1901, of 154,551. Lower Chindwin has an area of 3480 sq. m., and a population of 276,383. Upper Chindwin lies to the north of the lower district, and is bounded on the N. by the Chin, Nāga and Kachin hills; on the E. they are bounded by the Myitkyina, Katha and Shwebo districts; Lower Chindwin is bounded on the S. by the Pakôkku and Sagaing districts; and both districts are bounded on the W. by the Chin hills, and by Pakôkku on the southern stretch. The western portion of both districts is hilly, and the greater part of Upper Chindwin is of the same character. Both have valuable teak forests. The total rainfall averages in Lower Chindwin 27 and in Upper Chindwin 60 in. Coal exists in extensive fields, but these are not very accessible. Rice forms the great crop, but a certain amount of til-seed and of indigo is also cultivated. Kindat, a mere village, is the headquarters of the upper district, and Mônywa, with a population of 7869, of the lower. Both are on the Chindwin river, and are served by the steamers of the Irrawaddy Flotilla Company. Alôn, close to Mônywa, and formerly the headquarters, is the terminus of the railway from Sagaing westwards, which was opened in 1900.

CHINESE PAVILLON, Turkish Crescent, Turkish Jingle, or Jingling Johnny (Fr. *chapeau chinois*; Ger. *türkischer Halbmond, Schellenbaum*; Ital. *cappello chinese*), an instrument of percussion of indefinite sonorousness, *i.e.* not producing definite musical tones. The *chapeau chinois* was formerly an adjunct in military bands, but never in the orchestra, where an instrument of somewhat similar shape, often confused with it and known as the *Glockenspiel* (*q.v.*), is occasionally called into requisition. The Chinese pavilion consists of a pole about 6 ft. high terminating in a conical metal cap or pavilion, hung with small jingling bells and surmounted by a crescent and a star. Below this pavilion are two or more metal bands forming a fanciful double crescent or squat lyre, likewise furnished with tiny bells. The two points of the crescent are curved over, ending in fanciful animal heads from whose mouths hang low streaming tails of horse-hair. The Chinese pavilion is played by shaking or waving the pole up and down and jingling the bells, a movement which can at best be but a slow one repeated once or at most twice in a bar to punctuate the phrases and add brilliancy to the military music. The Turkish crescent or “jingling Johnny,” as it was familiarly called in the British army bands, was introduced by the Janissaries into western Europe. It has fallen into disuse now, having been replaced by the glockenspiel or steel harmonica. Edinburgh University possesses two specimens.[1] In the 18th century at Bartholomew Fair one of the chief bands hired was one well known as playing in London on winter evenings in front of the Spring-Garden coffee house and opposite Wigley’s. This band consisted of a double drum, a Dutch organ (see Barrel-organ), a tambourine, a violin, pipes and the Turkish jingle.[2]

(K. S.)

1 See Captain C.R. Day, *Descriptive Catalogue of Musical Instruments* (London, 1891), p. 233.

2 See Hone’s *Everyday Book*, i. 1248.

CHINGFORD, an urban district in the Epping parliamentary division of Essex, England, 10½ m. N. of London (Liverpool Street station) by the Great Eastern railway. Pop. (1901) 4373. It lies between the river Lea and the western outskirts of Epping Forest. The church of All Saints has Early English and Perpendicular remains. Queen Elizabeth’s or Fair Mead hunting lodge, a picturesque half-timbered building, is preserved under the Epping Forest Preservation Act. A majestic oak, one of the finest trees in the Forest, stands near it. Buckhurst Hill (an urban district; pop. 4786) lies to the N.E.

CHINGLEPUT, or CHENGALPAT, a town and district of British India, in the Madras presidency. The town, situated 36 m. by rail from Madras, had a population in 1901 of 10,551. With Chandragiri in North Arcot, Chingleput was once the capital of the Vijayanagar kings, after their overthrow by the Mussulmans at Talikota in 1565. In 1639 a chief, subject to these kings, granted to the East India Company the land on which Fort St George now stands. The fort built by the Vijayanagar kings in the 16th century was of strategic importance, owing to its swampy surroundings and the lake that flanked its side. It was taken by the French in 1751, and was retaken in 1752 by Clive, after which it proved invaluable to the British, especially when Lally in his advance on Madras left it unreduced in his rear. During the wars of the British with Hyder Ali it withstood his power, and afforded a refuge to the natives; and in 1780, after the defeat of Colonel W. Baillie, the army of Sir Hector Munro here found refuge. The town is noted for its manufacture of pottery, and carries on a trade in rice.

The DISTRICT OF CHINGLEPUT surrounds the city of Madras, stretching along the coast for about 115 m. The administrative headquarters are at Saidapet. Area, 3079 sq. m. Pop. (1901) 1,312,122, showing an increase of 9% in the decade. Salt is extensively manufactured all along the coast. Cotton and silk weaving is also largely carried on, and there are numerous indigo vats, tanneries and an English cigar factory.

CHIN HILLS, a mountainous district of Upper Burma. It lies on the border between the Lushai districts of Eastern Bengal and Assam and the plains of Burma, and has an area of 8000 sq. m. It is bounded N. by Assam and Manipur, S. by Arakan, E. by Burma, and W. by Tippera and the Chittagong hill tracts. The Chins, Lushais and Kukis are to the north-east border of India what the Pathan tribes are to the north-west frontier. In 1895 the Chin Hills were declared a part of the province of Burma, and constituted a scheduled district which is now administered by a political officer with headquarters at Falam. The tract forms a parallelogram 250 m. from N. to S. by 100 to 150 m. wide. The country consists of a much broken and contorted mass of mountains, intersected by deep valleys. The main ranges run generally N. to S., and vary in height from 5000 to 9000 ft., among the most important being the Letha or Tang, which is the watershed between the Chindwin and Manipur rivers; the Imbukklang, which divides the Sokte tribe from the Whenchs and sheds the water from its eastern slopes into Upper Burma and that from its western slopes into Arakan; and the Rong-klang, which with its prolongations is the main watershed of the southern hills, its eastern slopes draining into the Myittha and thus into the Chindwin, while the western fall drains into the Boinu river, which winding through the hills discharges itself eventually in the Bay of Bengal. The highest peak yet discovered is the Liklang, between Rawywa and Lungno, some 70 m. S. of Haka (nearly 10,000 ft.).

> It is supposed that the Kukis of Manipur, the Lushais of Bengal and Assam, and the Chins originally lived in Tibet and are of the same stock; their form of government, method of cultivation, manners and customs, beliefs and traditions all point to one origin. The slow speech, the serious manner, the respect for birth and the knowledge of pedigrees, the duty of revenge, the taste for and the treacherous method of warfare, the curse of drink, the virtue of hospitality, the clannish feeling, the vice of avarice, the filthy state of the body, mutual distrust, impatience under control, the want of power of combination and of continued effort, arrogance in victory, speedy discouragement and panic in defeat, are common traits. The Chins, Lushais and Kukis were noted for the secrecy of their plans, the suddenness of their raids, and their extraordinary speed in retreating to their fastnesses. After committing a raid they have been known to march two days and two nights consecutively without cooking a meal or sleeping, so as to escape from any parties which might follow them. The British, since the occupation of Upper Burma, have been able to penetrate the Chin-Lushai country from both sides at once. The pacification of the Chin Hills is a triumph for British administration. Roads, on which Chin coolies now readily work, have been constructed in all directions. The rivers have been bridged; the people have taken up the cultivation of English vegetables, and the indigenous districts have been largely developed. The Chin Hills had a population (1901 census) of 87,189, while the Chins in Burma totalled 179,292. The Pakôkku Chin Hills, which form a separate tract, have an area of 2260 sq. m.; pop. (1901) 13,116.
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> (J. G. SC.)

CHINKIANG, or CHEN-KIANG-FU, a treaty port of China, in the province of Kiang-su, on the Yangtsze-kiang above Shanghai, from which it is distant 160 m. It is in railway communication both with Shanghai and Nanking (40 m. distant), and being at the point where the Grand Canal running N. and S. intersects the Yangtsze, which runs E. and W., is peculiarly well situated to be a commercial entrepôt. The total value of exports and imports for 1904 was £4,632,992; estimated pop. 168,000. In the war of 1842 it yielded to the British only after a desperate resistance. It was laid waste by the T'aip'ing rebels in 1853, and was recaptured by the imperial forces in 1858.

CHINO-JAPANESE WAR (1894-95). The causes of this conflict arose out of the immemorial rivalry of China and Japan for influence in Korea. In the 16th century a prolonged war in the peninsula had ended with the failure of Japan to make good her footing on the mainland—a failure brought about largely by lack of naval resources. In more modern times (1875, 1882, 1884) Japan had repeatedly sent expeditions to Korea, and had fostered the growth of a progressive party in Seoul. The difficulties of 1884 were settled between China and Japan by the convention of Tientsin, wherein it was agreed that in the event of future intervention each should inform the other if it were decided to despatch troops to the peninsula. Nine years later the occasion arose. A serious rebellion induced the Korean government to apply for military assistance from China. Early in June 1894 a small force of Chinese troops were sent to Asan, and Japan, duly informed of this action, replied by furnishing her minister at Seoul with an escort, rapidly following up this step by the despatch of about 5000 troops under Major-General Oshima. A complicated situation thus arose. Chinese troops were present in Korea by the request of the government to put down rebellion. The Japanese controlled the capital, and declined to recognize Korea as a tributary of China. But she proposed that the two powers should unite to suppress the disturbance and to inaugurate certain specified reforms. China considered that the measures of reform must be left to Korea herself. The reply was that Japan considered the government of Korea "lacking in some of the elements which are essential to responsible independence." By the middle of July war had become inevitable unless the Peking government were willing to abandon all claims over Korea, and as Chinese troops were already in the country by invitation, it was not to be expected that the shadowy suzerainty would be abandoned.

At Seoul the issue was forced by the Japanese minister, who delivered an ultimatum to the Korean government on the 20th of July. On the 23rd the palace was forcibly occupied. Meanwhile China had despatched about 8000 troops to the Yalu river. The outbreak of war thus found the Japanese in possession of Seoul and ready to send large forces to Korea, while the Chinese occupied Asan (about 40 m. south of the capital), and had a considerable body of troops in Manchuria in addition to those despatched to the Yalu river. To Japan the command of the sea was essential for the secure transport and supply of her troops. Without it the experience of the war of the 16th century would be repeated. China, too, could only utilize overland routes to Korea by submitting to the difficulties and delays entailed. To both powers the naval question was thus important.

> By the time war was finally declared (August 1) hostilities had already begun. On the 25th of July Oshima set out from Seoul to attack the Chinese at Asan. On the 29th he won a victory at Söng-hwan, but the Chinese commander escaped with a considerable part of his forces by a detour to Ping-Yang (Phyong-Yang). Meanwhile a portion of the Japanese fleet had encountered some Chinese warships and transports off Phung-Tao, and scored an important success, sinking, amongst other vessels, the transport "Kowshing" (July 25). The loss of more than 1000 Chinese soldiers in this vessel materially lightened Oshima's task. The intention of the Chinese to crush their enemies between their forces at Asan and Ping-Yang was completely frustrated, and the Japanese obtained control of all southern Korea.
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> Reinforcements from Japan were now pouring into Korea, in spite of the fact that the rival navies had not yet tried conclusions, and General Nozu, the senior Japanese officer present, soon found himself in a position to move on Ping-Yang. Three columns converged upon the place on the 15th of September, and in spite of its strong walls carried it, though only after severe fighting.
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> Nearly all the troops on either side had been conveyed to the scene of war by sea, though the decisive contest for sea supremacy was still to be fought. The Chinese admiral Ting with the Northern Squadron (which alone took part in the war) had hitherto remained inactive in Wei-hai-wei, and on the other side Vice-Admiral Ito's fleet had not directly interfered with the

hostile transports which were reinforcing the troops on the Yalu. But two days after the battle of Ping-Yang, Ting, who had conveyed a large body of troops to the mouth of the Yalu, encountered the Japanese fleet on his return journey off Hai-Yang-Tao on the 17th of September. The heavy battleships “Chen-Yuen” and “Ting-Yuen” constituted the strongest element of the Chinese squadron, for the Japanese, superior as they were in every other factor of success, had no vessels which could compare with these in the matter of protection. Ting advanced in a long irregular line abreast; the battleships in the centre, the lighter vessels on the wings. Ito’s fast cruisers steamed in line ahead against the Chinese right wing, crushing their weaker opponents with their fire. In the end the Chinese fleet was defeated and scattered, but the two heavy battleships drew off without serious injury. This battle of the Yalu gave Japan command of the sea, but Ito continued to act with great caution. The remnants of the vanquished fleet took refuge in Port Arthur, whence after repairs Ting proceeded to Wei-hai-wei.

The victory of Ping-Yang had cleared Korea of the Chinese troops, but on the lower Yalu—their own frontier—large forces threatened a second advance. Marshal Yamagata therefore took the offensive with his 1st army, and on the 24th and 25th of October, under great difficulties—though without serious opposition from the enemy—forced the passage of the river and occupied Chiulien-cheng. Part of the Chinese force retired to the north-east, part to Feng-hwang-cheng and Hsiu-yuen (Siu-Yen). The Japanese 1st army advanced several columns towards the mountains of Manchuria to secure its conquests and prepare for a future advance. General Tachimi’s brigade occupied Feng-hwang-cheng on the 29th of October. On the 7th of November a column from the Yalu took Takushan, and a few days later a converging attack from these two places was made upon Hsiu-yuen, which was abandoned by the Chinese. Meanwhile Tachimi, skirmishing with the enemy on the Mukden and Liao-Yang roads, found the Chinese in force. A simultaneous forward move by both sides led to the action of Tsao-ho-ku (November 30), after which both sides withdrew—the Chinese to the line of the mountains covering Hai-cheng, Liao-Yang and Mukden, with the Tatar general Ikotenga’s force, 14,000 strong, on the Japanese right north-east of Feng-hwang-cheng; and the Japanese to Chiulien-cheng, Takushan and Hsiu-yuen. The difficulties of supply in the hills were almost insurmountable, and no serious advance was intended by the Japanese until January 1895, when it was to be made in co-operation with the 2nd army. This army, under Marshal Oyama, had been formed in September and at first sent to Chemulpo as a support to the forces under Yamagata; but its chief task was the siege and capture of the Chinese fortress, dockyard and arsenal of Port Arthur.

The Liao-Tong peninsula was guarded by the walled city of Kinchow and the forts of Ta-lien-wan (Dalny under the Russian régime, and Tairen under the Japanese) as well as the fortifications around Port Arthur itself. On the 24th of October the disembarkation of the 2nd army began near Pi-tsze-wo, and the successive columns of the Japanese gradually moved towards Kinchow, which was carried without difficulty on the 6th of November. Even less resistance was offered by the modern forts of Ta-lien-wan. The Japanese now held a good harbour within a few miles of the main fortress. Here they landed siege artillery, and on the 17th of November the advance was resumed. The attack was made on the 19th at dawn. Yamaji’s division (Nogi’s and Nishi’s brigades) after a trying night march assaulted and carried the western defences and moved upon the town. Hasegawa in the centre, as soon as Yamaji began to appear in rear of his opponents in the northern forts, pushed home his attack with equal success, and by 3 P.M. practically all resistance was at an end. The Japanese paid for this important success with but 423 casualties. Meanwhile the Chinese general Sung, who had marched from Hai-cheng to engage the 2nd army, appeared before Kinchow, where he received on the 22nd a severe repulse at the hands of the Japanese garrison. Marshal Oyama subsequently stationed his advanced guard towards Hai-cheng, the main body at Kinchow, and a brigade of infantry at Port Arthur. Soon after this overtures of peace were made by China; but her envoy, a foreigner unfurnished with credentials, was not received by the Tokyo government.

The Japanese 1st army (now under General Nozu) at Antung and Feng-hwang-cheng prepared, in spite of the season, to move across the mountains, and on the 3rd of December General Katsura left Antung for Hai-cheng. His line of march was by Hsi-mu-cheng, and strong flank guards followed parallel routes on either side. The march was accomplished safely and Hai-cheng occupied on the 13th of December. In the meantime Tachimi had moved northward from Feng-hwang-cheng, in order to distract the attention of the Chinese from Hai-cheng, and there were some small engagements between this force and that of Ikotenga, who ultimately retired beyond the mountains to Liao-Yang. Sung had already left Kai-ping to secure Hai-cheng when he heard of the fall of that place; his communications with Ikotenga being now severed, he swerved to the north-west and established a new base at Niu-chwang. Once on his new line Sung moved upon Hai-cheng. As it was essential that he should be prevented from joining forces with Ikotenga, General Katsura marched out of Hai-cheng to fight him. At Kang-wang-tsai (December 19th) the Chinese displayed unusual steadiness, and it cost the Japanese some 343 casualties to dislodge the enemy. The victors returned to Hai-cheng exhausted with

their efforts, but secure from attack for some time to come. The advanced troops of the 2nd army (Nogi's brigade) were now ready to advance, and only the Kai-ping garrison (left behind by Sung) barred their junction with Katsura. At Kai-ping (January 10th) the resistance of the Chinese was almost as steady as at Kang-wang-tsai, and the Japanese lost 300 killed and wounded in their successful attack. In neither of these actions was the defeated force routed, nor did it retire very far. On the 17th of January and again on the 22nd Ikotenga attacked Hai-cheng from the north, but was repulsed.

Meanwhile the 2nd army, still under Oyama, had undertaken operations against Wei-hai-wei, the second great fortress and dockyard of northern China, where Admiral Ting's squadron had been refitting since the battle of the Yalu; and it was hoped that both armies would accomplish their present tasks in time to advance in the summer against Peking itself. On the 18th of January a naval demonstration was made at Teng-chow-fu, 70 m. west of Wei-hai-wei, and on the 19th the Japanese began their disembarkation at Yung-cheng Bay, about 12 m. from Wei-hai-wei. The landing was scarcely opposed, and on the 26th the Japanese advance was begun. The south-eastern defences of Wei-hai-wei harbour were carried by the 6th division, whilst the 2nd division reached the inner waters of the bay, driving the Chinese before them. The fleet under Ito co-operated effectively. On the night of the 4th-5th of February the Chinese squadron in harbour was attacked by ten torpedo boats. Two boats were lost, but the armour-clad "Ting-Yuen" was sunk. On the following night a second attack was made, and three more vessels were sunk. On the 9th the "Ching-Yuen" was sunk by the guns in one of the captured forts. On the 12th Admiral Ting wrote to Admiral Ito offering to surrender, and then took poison, other officers following his example. Wei-hai-wei was then dismantled by the Japanese, who recovered the remnant of the Chinese squadron, including the "Chen Yuen," and the 2nd army concentrated at Port Arthur for the advance on Peking.

While this campaign was in progress the Chinese despatched a second peace mission, also with defective credentials. The Japanese declined to treat, and the mission returned to China. In February the Chinese made further unsuccessful attacks on Hai-cheng. Yamaji near Kai-ping fought a severe action on the 21st, 22nd and 23rd of February at Taping-shan against a part of Sung's army under General Ma-yu-kun. This action was fought with 2 ft. of snow on the ground, the thermometer registering zero F., and no less than 1500 cases of frost-bite were reported. It was the intention of General Nozu, after freeing the Hai-cheng garrison from Ikotenga, to seize Niu-chwang port. Two divisions converged on An-shan-chan, and the Chinese, threatened in front and flank, retired to Liao-Yang. Meanwhile two more attacks on Hai-cheng had been repulsed. The 3rd and 5th divisions then moved on Niu-chwang, and Yamaji's 1st division at Kai-ping joined in the advance. The column from An-shan-chan stormed Niu-chwang, which was obstinately defended, and cost the stormers nearly 400 men. All three divisions converged on Niu-chwang port (Ying-kow), and the final engagement took place at Tien-chwang-tai, which was captured on the 9th of March. The Chinese forces in Manchuria being thoroughly broken and dispersed, there was nothing to prevent the Japanese from proceeding to the occupation of Peking, since they could, after the break-up of the ice, land and supply large forces at Shan-hai-kwan, within 170 m. of the capital. Two more Japanese divisions were sent out, with Prince Komatsu as supreme commander. Seven divisions were at Port Arthur ready to embark, when negotiations were reopened. Li Hung-Chang proceeded to Shimonoseki, where the treaty was signed on the 17th of April 1895. An expedition was sent towards the end of March to the Pescadores, and later the Imperial Guard division was sent to Formosa.

It is impossible to estimate the Chinese losses in the war. The Japanese lost 4177 men by death in action or by sickness, and 56,862 were wounded or disabled by sickness, exclusive of the losses in the Formosa and Pescadores expeditions. Nearly two-thirds of these losses were incurred by the 1st army in the trying winter campaign in Manchuria.

The most important works dealing with the war are: Vladimir, *China-Japan War* (London, 1896); Jukichi Inouye, *The Japan-China War* (Yokohama, &c., 1896); du Boulay, *Epitome of the China-Japanese War* (London, 1896), the official publication of the British War Office; Atteridge, *Wars of the Nineties*, pp. 535-636 (London, 1899); von Kunowski and Fretzdorff, *Der japanisch-chinesische Krieg* (Leipzig, 1895); von Müller, *Der Krieg zwischen China und Japan* (Berlin, 1895); Bujac, *Précis de quelques campagnes contemporaines: II. La Guerre sino-japonaise* (Paris and Limoges).

CHINON, a town of western France, capital of an arrondissement in the department of Indre-et-Loire, on the right bank of the Vienne, 32m. S.W. of Tours on the State railway. Pop. (1906) 4071. Chinon lies at the foot of the rocky eminence which is crowned by the ruins of

the famous castle. Its narrow, winding streets contain many houses of the 15th and 16th centuries. The oldest of its churches, St Mexme, is in the Romanesque style, but only the façade and nave are left. The church of St Etienne dates from the 15th century, that of St Maurice from the 12th, 15th and 16th centuries. The castle, which has undergone considerable modern restoration, consists of three portions. That to the east, the Château de St Georges, built by Henry II. of England, has almost vanished, only the foundation of the outer wall remaining. The Château du Milieu (11th to 15th centuries) comprises the keep, the Pavilion de l'Horloge and the Grand Logis, in the principal apartment of which the first meeting between Joan of Arc and Charles VII. took place. Of the Château du Coudray, which is separated by a moat from the Château du Milieu, the chief remains are the Tour du Moulin (10th century) and two less ancient towers. A statue of Rabelais, who was born in the vicinity of the town, stands on the river-quay. Chinon has trade in wheat, brandy, red wine and plums. Basket and rope manufacture, tanning and cooperage are among its industries. Chinon (Caïno) existed before the Roman occupation of Gaul, and was from early times an important fortress. It was occupied by the Visigoths, and subsequently, after forming part of the royal domain, came to the counts of Touraine and from them to the counts of Anjou. Henry II. often resided in the castle, and died there. The place was taken by Philip Augustus in 1205 after a year's siege.

CHINOOK, a tribe of North American Indians, dwelling at the mouth of the Columbia river, Washington. They were fishermen and traders, and used huge canoes of hollowed cedar trunks. The tribe is practically extinct, but the name survives in the trade language known as "Chinook jargon." This has been analysed as composed of two-fifths Chinook, two-fifths other Indian tongues, and the rest English and Canadian French; but the proportion of English has tended to increase. The Chinookan linguistic family includes a number of separate tribes.

The name CHINOOK is also applied to a wind which blows from W. or N. over the slopes of the Rocky Mountains, where it descends as a dry wind warm in winter and cool in summer (cf. *Föhn*). It is due to a cyclone passing northward, and continues from a few hours to several days. It moderates the climate of the eastern Rockies, the snow melting quickly on account of its warmth and vanishing on account of its dryness, so that it is said to "lick up" the snow from the slopes.

See Gill, *Dictionary of Chinook Jargon* (Portland, Ore., 1891); Boas, "Chinook Texts," in *Smithsonian Report*, Bureau of Ethnology (Washington, 1894); J.C. Pilling, "Bibliography of Chinookan Languages," *Smithsonian Report*, Bureau of Ethnology (Washington, 1893); Horatio Hale, *Manual of Oregon Trade Language* (London, 1890); G.C. Shaw, *The Chinook Jargon* (Seattle, 1909); *Handbook of American Indians* (Washington, 1907).

CHINSURA, a town of British India, on the Hugli river, 24 m. above Calcutta, formerly the principal Dutch settlement in Bengal. The Dutch erected a factory here in 1656, on a healthy spot of ground, much preferable to that on which Calcutta is situated. In 1759 a British force under Colonel Forde was attacked by the garrison of Chinsura on its march to Chandernagore, but in less than half an hour the Dutch were entirely routed. In 1795, during the Napoleonic wars, the settlement was occupied by a British garrison. At the peace of 1814 it was restored to the Dutch. It was among the cessions in India made by the king of the Netherlands in 1825 in exchange for the British possessions in Sumatra. Hugli College is maintained by government; and there are a number of schools, several of which are carried on by Scottish Presbyterian missionaries. Chinsura is included in the Hugli municipality.

CHINTZ, a word derived from the Hindu *chīnt*, spotted or variegated. This name was given

to a kind of stained or painted calico produced in India. It is now applied to a highly glazed printed calico, commonly made in several colours on a light ground and used for bed hangings, covering furniture, &c.

CHIOGGIA, a town and episcopal see of Venetia, Italy, in the province of Venice, from which it is 18½ m. S. by sea. Pop. (1901) 21,384 (town), 31,218 (commune). It is inhabited mostly by fishermen, and is situated upon an island at the S. end of the lagoons. It is traversed by one main canal, La Vena. The peculiar dialect and customs of the inhabitants still survive to some extent. It is of earlier origin than Venice, and indeed is probably identical with the Roman Portus Aedro, or Ebro, though its name is derived from the Roman Fossa Claudia, a canalized estuary which with the two mouths of the Meduacus (Brenta) went to form the harbour. In 672 it entered the league of the cities of the lagoons, and recognized the authority of the doge. In 809 it was almost destroyed by Pippin, but in 1110 was made a city, remaining subject to Venice, whose fortunes it thenceforth followed. It was captured after a determined resistance by the Genoese in 1379, but recovered in 1380. Chioggia is connected by rail with Rovigo, 35 m. to the south-west.

(T. AS.)

Naval War of Chioggia (1378-80).—The naval war of 1378-1380, carried on by Venice against the Genoese and their allies, the lord of Carrara and the king of Hungary, is of exceptional interest as one in which a superior naval power, having suffered disaster in its home waters, and having been invaded, was yet able to win in the end by holding out till its squadrons in distant seas could be recalled for its defence.

When the war began in the spring of 1378, Venice was mainly concerned for the safety of its trading stations in the Levant and the Black Sea, which were exposed to the attacks of the Genoese. The more powerful of the two fleets which it sent out was despatched into the eastern Mediterranean under Carlo Zeno, the bailiff and captain of Negropont. A smaller force was sent to operate against the Genoese in the western Mediterranean, and was placed under the command of Vettor Pisani. The possessions of Venice on the mainland, which were then small, were assailed by Francesco Carrara and the Hungarians. Her only ally in the war, Bernabó Visconti of Milan, gave her little help on this side, but his mercenaries invaded the territory of Genoa. The danger on land seemed trifling to Venice so long as she could keep the sea open to her trade and press the war against the Genoese in the Levant.

During the first stage of the war the plans of the senate were carried out with general success. While Carlo Zeno harassed the Genoese stations in the Levant, Vettor Pisani brought one of their squadrons to action on the 30th of May 1378 off Punta di Anzio to the south of the Tiber, and defeated it. The battle was fought in a gale by 10 Venetian against 11 Genoese galleys. The Genoese admiral, Luigi de’ Fieschi, was taken with 5 of his galleys, and others were wrecked. Four of the squadron escaped, and steered for Famagusta in Cyprus, then held by Genoa. If Pisani had directed his course to Genoa itself, which was thrown into a panic by the defeat at Anzio, it is possible that he might have dictated peace, but he thought his squadron too weak, and preferred to follow the Genoese galleys which had fled to Famagusta. During the summer of 1378 he was employed partly in attacking the enemy in Cyprus, but mainly in taking possession of the Istrian and Dalmatian towns which supported the Hungarians from fear of the aggressive ambition of Venice. He was ordered to winter on the coast of Istria, where his crews suffered from exposure and disease. Genoa, having recovered from the panic caused by the disaster at Anzio, decided to attack Venice at home while the best of her ships were absent with Carlo Zeno. She sent a strong fleet into the Adriatic under Luciano Doria. Pisani had been reinforced early in the spring of 1378, but when he was sighted by the Genoese fleet of 25 sail off Pola in Istria on the 7th of May, he was slightly outnumbered, and his crews were still weak. The Venetian admiral would have preferred to avoid battle, and to check an attack on Venice itself, by threatening the Genoese fleet from his base on the Istrian coast. He was forced into battle by the commissioner (*proveditore*) Michael Steno, who as agent of the senate had authority over the admiral. The Venetians were defeated with the loss of all their galleys except six. Luciano Doria fell in the battle, and the Genoese, who had suffered severely, did not at once follow up their success. On the arrival of his successor, Pietro Doria, with reinforcements, they appeared off the Lido, the outer barrier of the lagoon of Venice, in July, and in August they entered on a combined naval and military attack on the city, in combination with the Carrarese and the Hungarians. The Venetians had closed the passages through the outer banks except at the southern end, at the island of Brondolo, and the town of Chioggia. The barrier here approaches close to the mainland, and the position facilitated the co-operation of the Genoese with the Carrarese and Hungarians,

but Chioggia is distant from Venice, which could only be reached along the canals across the lagoon. The Venetians had taken up the buoys which marked the fairway, and had placed a light squadron on the lagoon. The allies, after occupying the island of Brondolo, attacked, and on the 13th of August took the town of Chioggia with its garrison of 3000 men.

There appeared to be nothing to prevent the enemy from advancing to the city of Venice except the difficult navigation of the lagoon. The senate applied for peace, but when the Genoese replied that they were resolved to "bit and bridle the horses of Saint Mark" the Venetians decided to fight to the end. Vettor Pisani, who had been imprisoned after the defeat at Pola, but who possessed the confidence of the people and the affection of the sailors, was released and named commander-in-chief against the wish of the aristocracy. Under his guidance the Venetians adopted a singularly bold and ingenious policy of offensive defence. The heavy Genoese vessels were much hampered by the shallow water and intricate passages through the lagoon. By taking advantage of their embarrassment and his own local knowledge, Pisani carried out a series of movements which entirely turned the tables on the invaders. Between the 23rd and 25th of August he executed a succession of night attacks, during which he sank vessels laden with stores not only in the canals leading through the lagoon to Venice, but in the fairways leading from Chioggia to the open sea round both ends of the island of Brondolo. The Genoese were thus shut in at the very moment when they thought they were about to besiege Venice. Pisani stationed the galleys under his command in the open sea outside Brondolo, and during the rest of the year blockaded the enemy closely. The distress of the Venetians themselves was great, but the Doge Andrea Contarini and the nobles set an example by sharing the general hardships, and taking an oath not to return to Venice till they had recovered Chioggia. Carlo Zeno had long since been ordered to return, but the slowness and difficulty of communication and movement under 14th century conditions delayed his reappearance. The besiegers of Chioggia were at the end of their powers of endurance, and Pisani had been compelled to give a promise that the siege would be raised, when Zeno's fleet reached the anchorage off Brondolo on the 1st of January 1380. The attack on Chioggia was now pressed with vigour. The Genoese held out resolutely in the hope of relief from home. But the resources of Genoa had been taxed to fit out the squadrons she had already sent to sea. It was not until the 12th of May 1380 that her admiral, Matteo Maruffo, was able to reach the neighbourhood of Brondolo with a relieving force. By this time the Venetians had recovered the island, and their fleet occupied a fortified anchorage from which they refused to be drawn. Maruffo could do nothing, and on the 24th of June 1380 the defenders of Chioggia surrendered. The crisis of the war was past. Venice, being now safe at home, recovered the command of the sea, and before the close of the year was able to make peace as a conqueror.

AUTHORITIES.—S. Romanin, *Storia documentata di Venezia* (Venice, 1855); W.C. Hazlitt, *History of the Venetian Republic* (London, 1860); Horatio F. Brown, *Venice* (London, 1893).

(D. H.)

CHIOS, an island on the west coast of Asia Minor, called by the Greeks Chios (Χίος ʾσ τὴ Χίο) and by the Turks Saki Adasi; the soft pronunciation of X before ι in modern Greek, approximating to *sh*, caused Χίο to be Italianized as Scio. It forms, with the islands of Psara, Nikaria, Leros, Calymnus and Cos, a sanjak of the Archipelago vilayet. Chios is about 30 m. long from N. to S., and from 8 to 15 m. broad; pop. 64,000. It well deserves the epithet "craggy" (παιπαλόεσσα) of the Homeric hymn. Its figs were noted in ancient times, but wine and gum mastic have always been the most important products. The climate is healthy; oranges, olives and even palms grow freely. The wine grown on the N.W. coast, in the district called by Strabo Ariusia, was known as *vinum Arvisium*. Early in the 7th century B.C. Glaucus of Chios discovered the process of welding iron (κόλλησις: see J.G. Frazer's *Pausanias*, note on x. 16. 1, vol. v. pp. 313-314), and the iron stand of a large crater whose parts were all connected by this process was constructed by him, and preserved as one of the most interesting relics of antiquity at Delphi. The long line of Chian sculptors (see GREEK ART) in marble bears witness to the fame of Chian art. In literature the chief glory of Chios was the school of epic poets called Homeridae, who helped to create a received text of Homer and gave the island the reputation of being the poet's birthplace. The chief town, Chios (pop. 16,000), is on the E. coast. A theatre and a temple of Athena Poliuchus existed in the ancient city. About 6 m. N. of the city there is a curious monument of antiquity, commonly called "the school of Homer"; it is a very ancient sanctuary of Cybele, with an altar and a figure of the goddess with her two lions, cut out of the native rock on the summit of a hill. On the west coast there is a monastery of great wealth with a church founded by Constantine IX. Monomachus (1042-1054). Starting from the city and encompassing the island, one passes in

succession the promontory Posidium; Cape Phanae, the southern extremity of Chios, with a harbour and a temple of Apollo; Notium, probably the south-western point of the island; Laii, opposite the city of Chios, where the island is narrowest; the town Bolissus (now Volisso), the home of the Homerid poets; Melaena, the north-western point; the wine-growing district Ariusia; Cardamyle (now Cardhamili); the north-eastern promontory was probably named Phlium, and the mountains that cross the northern part of the island Pelinaeus or Pellenaeus.

The history of Chios is very obscure. According to Pherecydes, the original inhabitants were Leleges, while according to other accounts Thessalian Pelasgi possessed the island before it became an Ionian state. The name Aethalia, common to Chios and Lemnos in very early times, suggests the original existence of a homogeneous population in these and other neighbouring islands. Oenopion, a mythical hero, son of Dionysus or of Rhadamanthus, was an early king of Chios. His successor in the fourth generation, Hector, united the island to the Ionian confederacy (Pausan. vii. 4), though Strabo (xiv. p. 633) implies an actual conquest by Ionian settlers. The regal government was at a later time exchanged for an oligarchy or a democracy. The names of two tyrants, Amphiclus and Polytecnus, are mentioned. The products of the island were largely exported on the ships of Miletus, with which city Chios formed a close mercantile alliance in opposition to the rival league of Phocaea and Samos. Similar commercial considerations determined the Chians in their attitude towards the Persian conquerors: in 546 they submitted to Cyrus as eagerly as Phocaea resisted him; during the Ionian revolt their fleet of 100 sail joined the Milesians in offering a desperate opposition at Lade (494). The island was subsequently punished with great rigour by the Persians. The Chian ships, under the tyrant Strattis, served in the Persian fleet at Salamis. After its liberation in 479 Chios joined the Delian League and long remained a firm ally of the Athenians, who allowed it to retain full autonomy. But in 413 the island revolted, and was not recaptured. After the Peloponnesian War it took the first opportunity to renew the Athenian alliance, but in 357 again seceded. As a member of the Delian League it had regained its prosperity, being able to equip a fleet of 50 or 60 sail. Moreover, it was reputed one of the best-governed states in Greece, for although it was governed alternately by oligarchs and democrats neither party persecuted the other severely. It was not till late in the 4th century that civil dissension became a danger to the state, leaving it a prey to Idrieus, the dynast of Caria (346), and to the Persian admiral Memnon (333). During the Hellenistic age Chios maintained itself in a virtually independent position. It supported the Romans in their Eastern wars, and was made a “free and allied state.” Under Roman and Byzantine rule industry and commerce were undisturbed, its chief export at this time being the Arvisian wine, which had become very popular. After temporary occupations by the Seljuk Turks (1089-1092) and by the Venetians (1124-1125, 1172, 1204-1225), it was given in fief to the Genoese family of Zaccaria, and in 1346 passed definitely into the hands of a Genoese *maona*, or trading company, which was organized in 1362 under the name of “the Giustiniani.” This mercantile brotherhood, formerly a privileged class, alone exploited the mastic trade; at the same time the Greeks were allowed to retain their rights of self-government and continued to exercise their industries. In 1415 the Genoese became tributary to the Ottomans. In spite of occasional secessions which brought severe punishment upon the island (1453, 1479), the/# rule of the 237
Giustiniani was not abolished till 1566. Under the Ottoman government the prosperity of Chios was hardly affected. But the island underwent severe periods of suffering after its capture and reconquest from the Florentines (1595) and the Venetians (1694-1695), which greatly reduced the number of the Latins. Worst of all were the massacres of 1822, which followed upon an attack by some Greek insurgents executed against the will of the natives. In 1881 Chios was visited by a very severe earthquake in which over 5600 persons lost their lives and more than half the villages were seriously damaged. The island has now recovered its prosperity. There is a harbour at Castro, and steam flour-mills, foundries and tanneries have been established. Rich antimony and calamine mines are worked by a French undertaking, and good marble is quarried by an Italian company.

AUTHORITIES.—Strabo xiv. pp. 632 f.; Athenaeus vi. 265-266; Herodotus i. 160-165, vi. 15-31; Thucydides viii. 14-61; *Corpus Inscr. Atticarum*, iv. (2), pp. 9, 10; H. Houssaye in *Revue des deux mondes*, xlvi. (1876), pp. 1 ff.; T. Bent in *Historical Review* (1889), pp. 467-480; Fustel de Coulanges, *L'Île de Chio* (ed. Jullian, Paris, 1893); for coinage, B.V. Head, *Historia numorum* (Oxford, 1887), pp. 513-515, and NUMISMATICS: *Greek*.

(E. GR.; M. O. B. C.)

CHIPPENDALE, THOMAS (d. 1779), the most famous of English cabinetmakers. The materials for the biography of Chippendale are exceedingly scanty, but he is known to have been the son of Thomas Chippendale I., and is believed to have been the father of Thomas

Chippendale III. His father was a cabinet-maker and wood-carver of considerable repute in Worcester towards the beginning of the 18th century, and possibly he originated some of the forms which became characteristic of his son's work. Thus a set of chairs and settees was made, apparently at Worcester, for the family of Bury of Knateshill, at a period when the great cabinetmaker could have been no more than a boy, which are practically identical with much of the work that was being turned out of the family factory as late as the 'sixties of the 18th century. Side by side with the Queen Anne or early Georgian feeling of the first quarter of the 18th century we find the interlaced splats and various other details which marked the Chippendale style. By 1727 the elder Chippendale and his son had removed to London, and at the end of 1749 the younger man—his father was probably then dead—established himself in Conduit Street, Long Acre, whence in 1753 he removed to No. 60 St Martin's Lane, which with the addition of the adjoining three houses remained his factory for the rest of his life. In 1755 his workshops were burned down; in 1760 he was elected a member of the Society of Arts; in 1766 his partnership with James Ranni was dissolved by the latter's death.

It has always been exceedingly difficult to distinguish the work executed in Chippendale's factory and under his own eye from that of the many copyists and adapters who throughout the second half of the 18th century—the golden age of English furniture—plundered remorselessly. Apart from his published designs, many of which were probably never made up, we have to depend upon the very few instances in which his original accounts enable us to earmark work which was unquestionably his. For Claydon House, the seat of the Verneys in Buckinghamshire, he executed much decorative work, and the best judges are satisfied that the Chinese bedroom there was designed by him. At Harewood House, the seat of the earl of Harewood in Yorkshire, we are on firmer ground. The house was furnished between 1765 and 1771, and both Robert Adam and Chippendale were employed upon it. Indeed, there is unmistakable evidence to show that certain work, so closely characteristic of the Adams that it might have been assigned to them without hesitation, was actually produced by Chippendale. This may be another of the many indications that Chippendale was himself an imitator, or it may be that Adam, as architect, prescribed designs which Chippendale's cabinetmakers and carvers executed. Chippendale's bills for this Adam work are still preserved. Stourhead, the famous house of the Hoares in Wiltshire, contains much undoubted Chippendale furniture, which may, however, be the work of Thomas Chippendale III.; at Rowton Castle, Shropshire, Chippendale's bills as well as his works still exist.

Our other main source of information is *The Gentleman and Cabinet Maker's Director*, which was published by Thomas Chippendale in 1754. This book, the most important collection of furniture designs issued up to that time in England, contains one hundred and sixty engraved plates, and the list of subscribers indicates that the author had acquired a large and distinguished body of customers. The book is of folio size; there was a second edition in 1759, and a third in 1762.

In the rather bombastic introduction Chippendale says that he has been encouraged to produce the book "by persons of distinction and taste, who have regretted that an art capable of so much perfection and refinement should be executed with so little propriety and elegance." He has some severe remarks upon critics, from which we may assume that he had already suffered at their hands. Perhaps, indeed, Chippendale may have been hinted at in the caustic remarks of Isaac Ware, surveyor to the king, who bewailed that it was the misfortune of the world in his day "to see an unmeaning scrawl of C's inverted and looped together, taking the place of Greek and Roman elegance even in our most expensive decorations. It is called French, and let them have the praise of it! The Gothic shaft and Chinese bell are not beyond nor below it in poorness of imitation." It is the more likely that these barbs were intended for Chippendale, since he was guilty not only of many essays in Gothic, but of a vast amount of work in the Chinese fashion, as well as in the flamboyant style of Louis XV. The *Director* contains examples of each of the manners which aroused the scorn of the king's surveyor. Chippendale has even shared with Sir William Chambers the obloquy of introducing the Chinese style, but he appears to have done nothing worse than "conquer," as Alexandre Dumas used to call it, the ideas of other people. Nor would it be fair to the man who, whatever his occasional extravagances and absurdities, was yet a great designer and a great transmuter, to pretend that all his Chinese designs were contemptible. Many of them, with their geometrical lattice-work and carved tracery, are distinctly elegant and effective. Occasionally we find in one piece of furniture a combination of the three styles which Chippendale most affected at different periods—Louis XV., Chinese and Gothic—and it cannot honestly be said that the result is as incongruous as might have been expected. Some of his most elegant and attractive work is derived directly from the French, and we cannot doubt that the inspiration of his famous ribbon-backed chair came directly from some of the more artistic performances in rococo.

The primary characteristic of his work is solidity, but it is a solidity which rarely becomes heaviness. Even in his most lightsome efforts, such as the ribbon-backed chair, construction is always the first consideration. It is here perhaps that he differs most materially from his great successor Sheraton, whose ideas of construction were eccentric in the extreme. It is indeed in the chair that Chippendale is seen at his best and most characteristic. From his hand, or his pencil, we have a great variety of chairs, which, although differing extensively in detail, may be roughly arranged in three or four groups, which it would sometimes be rash to attempt to date. He introduced the cabriole leg, which, despite its antiquity, came immediately from Holland; the claw and ball foot of ancient Oriental use; the straight, square, uncompromising early Georgian leg; the carved lattice-work Chinese leg; the pseudo-Chinese leg; the fretwork leg, which was supposed to be in the best Gothic taste; the inelegant rococo leg with the curled or hoofed foot; and even occasionally the spade foot, which is supposed to be characteristic of the somewhat later style of Hepplewhite. His chair-backs were very various. His efforts in Gothic were sometimes highly successful; often they took the form of the tracery of a church window, or even of an ovalled rose window. His Chinese backs were distinctly geometrical, and from them he would seem to have derived some of the inspiration for the frets of the glazed book-cases and cabinets which were among his most agreeable work. The most attractive feature of Chippendale's most artistic chairs—those which, originally derived from Louis Quinze models, were deprived of their rococo extravagances—is the back, which, speaking generally, is the most elegant and pleasing thing that has ever been done in furniture. He took the old solid or slightly pierced back, and cut it up into a light openwork design exquisitely carved—for Chippendale was a carver before everything—in a vast variety of designs ranging from the elaborate and extremely elegant, if much criticized, ribbon back, to a comparatively plain but highly effective splat. His armchairs, however, often had solid or stuffed backs. Next to his chairs Chippendale was most successful with settees, which almost invariably took the shape of two or three conjoined chairs, the arms, backs and legs identical with those which he used for single seats. He was likewise a prolific designer and maker of book-cases, cabinets and escritoires with doors glazed with fretwork divisions. Some of those which he executed in the style which in his day passed for Gothic are exceedingly handsome and effective. We have, too, from his hand many cases for long clocks, and a great number of tables, some of them with a remarkable degree of Gallic grace. He was especially successful in designing small tables with fretwork galleries for the display of china. His mirrors, which were often in the Chinese taste or extravagantly rococo, are remarkable and characteristic. In his day the cabinetmaker still had opportunities for designing and constructing the four-post bedstead, and some of Chippendale's most graceful work was lavished upon the woodwork of the lighter, more refined and less monumental four-poster, which, thanks in some degree to his initiative, took the place of the massive Tudor and the funereally hung Jacobean bed. From an organ case to a washhand-stand, indeed, no piece of domestic furniture came amiss to this astonishing man, and if sometimes he was extravagant, grotesque or even puerile, his level of achievement is on the whole exceedingly high.

Since the revival of interest in his work he has often been criticized with considerable asperity, but not always justly. Chippendale's work has stood the supreme test of posterity more completely than that of any of his rivals or successors; and, unlike many men of genius, we know him to have been warmly appreciated in his lifetime. He was at once an artist and a prosperous man of business. His claims to distinction are summed up in the fact that his name has by general consent been attached to the most splendid period of English furniture.

Chippendale was buried on the 13th of November 1779, apparently at the church of St Martin-in-the-Fields, and administration of his intestate estate was granted to his widow Elizabeth. He left four children, Thomas Chippendale III., John, Charles and Mary. He was one of the assignees in bankruptcy of the notorious Theresa Cornelys of Soho Square, of whom we read in Casanova and other scandalous chronicles of the time. Thomas Chippendale III. succeeded to the business of his father and grandfather, and for some years the firm traded under the style of Chippendale & Haig. The factory remained in St Martin's Lane, but in 1814 an additional shop was opened at No. 57 Haymarket, whence it was in 1821 removed to 42 Jermyn Street. Like his father, Thomas Chippendale III. was a member of the Society of Arts; and he is known to have exhibited five pictures at the Royal Academy between 1784 and 1801. He died at the end of 1822 or the beginning of 1823.

(J. P. -B.)

CHIPPENHAM, a market town and municipal borough in the Chippenham parliamentary

division of Wiltshire, England, 94 m. W. of London by the Great Western railway. Pop. (1901) 5074. Chippenham is governed by a mayor, 4 aldermen and 12 councillors. Area, 361 acres. It lies in a hollow on the south side of the Upper Avon, here crossed by a picturesque stone bridge of 21 arches. St Andrew's church, originally Norman of the 12th century, has been enlarged in different styles. A paved causeway running for about 4 m. between Chippenham Cliff and Wick Hill is named after Maud Heath, said to have been a market-woman, who built it in the 15th century, and bequeathed an estate for its maintenance. After the decline of its woollen and silk trades, Chippenham became celebrated for grain and cheese markets. There are also manufactures of broadcloth, churns, condensed milk, railway-signals, guns and carriages; besides bacon-curing works, flour mills, tanneries and large stone quarries. Bowood, the seat of the marquess of Lansdowne, is 3½ m. S.E. of Chippenham. Lanhill barrow, or Hubba's Low, 2½ m. N.W., is an ancient tomb containing a *kistvaen* or sepulchral chamber of stone; it is probably British, though tradition makes it the grave of Hubba, a Danish leader.

Chippenham (*Chepeham, Chippeham*) was the site of a royal residence where in 853 Æthelwulf celebrated the marriage of his daughter Æthelswitha with Burhred, king of Mercia. The town also figured prominently in the Danish invasion of the 9th century, and in 933 was the meeting-place of the witan. In the Domesday Survey Chippenham appears as a crown manor and is not assessed in hides. The town was governed by a bailiff in the reign of Edward I., and returned two members to parliament from 1295, but it was not incorporated until 1553, when a charter from Mary established a bailiff and twelve burgesses and endowed the corporation with certain lands for the maintenance of two parliamentary burgesses and for the repair of the bridge over the Avon. In 1684 this charter was surrendered to Charles II., and in 1685 a new charter was received from James II., which was shortly abandoned in favour of the original grant. The Representation Act of 1868 reduced the number of parliamentary representatives to one, and the borough was disfranchised by the Redistribution Act of 1885. The derivation of Chippenham from *cyppan*, to buy, implies that the town possessed a market in Saxon times. When Henry VII. introduced the clothing manufacture into Wiltshire, Chippenham became an important centre of the industry, which has lapsed. A prize, however, was awarded to the town for this commodity at the Great Exhibition of 1851.

CHIPPEWA[1] **FALLS**, a city and the county-seat of Chippewa county, Wisconsin, U.S.A., on the Chippewa river, about 100 m. E. of St Paul, Minnesota, and 12 m. N.E. of Eau Claire, Wisconsin. Pop. (1890) 8670; (1900) 8094; (1910, census) 8893. It is served by the Minneapolis, St Paul & Sault Ste Marie, the Chicago & North-Western, and the Chicago, Milwaukee & St Paul railways, and by the electric line to Eau Claire. The first settlement on the site was made in 1837; and the city was chartered in 1870.

1 For the Chippewa Indians see Ojibway, of which the word is a popular adaptation.

CHIPPING CAMPDEN, a market town in the northern parliamentary division of Gloucestershire, England, on the Oxford and Worcester line of the Great Western railway. Pop. (1901) 1542. It is picturesquely situated towards the north of the Cotteswold hill-district. The many interesting ancient houses afford evidence of the former greater importance of the town. The church of St James is mainly Perpendicular, and contains a number of brasses of the 15th and 16th centuries and several notable monumental tombs. A ruined manor house of the 16th century and some almshouses complete, with the church, a picturesque group of buildings; and Campden House, also of the 16th century, deserves notice.

Apart from a medieval tradition preserved by Robert de Brunne that it was the meeting-place of a conference of Saxon kings, the earliest record of Campden (*Campedene*) is in Domesday Book, when Earl Hugh is said to hold it, and to have there fifty villeins. The number shows that a large village was attached to the manor, which in 1173 passed to Hugh de Gondeville, and about 1204 to Ralph, earl of Chester. The borough must have grown up

during the 12th century, for both these lords granted the burgesses charters which are known from a confirmation of 1247, granting that they and all who should come to the market of Campedene should be quit of toll, and that if any free burgess of Campedene should come into the lord's amerciament he should be quit for 12d. unless he should shed blood or do felony. Probably Earl Ralph also granted the town a portman-mote, for the account of a skirmish in 1273 between the men of the town and the county mentions a bailiff and implies the existence of some sort of municipal government. In 1605 Campedene was incorporated, but it never returned representatives to parliament. Camden speaks of the town as a market famous for stockings, a relic of that medieval importance as a mart for wool that had given the town the name of Chipping.

CHIPPING NORTON, a market town and municipal borough in the Banbury parliamentary division of Oxfordshire, England, 26 m. N.W. of Oxford by a branch of the Great Western railway. Pop. (1901) 3780. It lies on the steep flank of a hill, and consists mainly of one very wide street. The church of St Mary the Virgin, standing on the lower part of the slope, is a fine building of the Decorated and Perpendicular periods, the hexagonal porch and the clerestory being good examples of the later style. The town has woollen and glove factories, breweries and an agricultural trade. It is governed by a mayor, 4 aldermen and 12 councillors. Area, 2456 acres. Chipping Norton (*Chepyngnorton*) was probably of some importance in Saxon times. At the Domesday Survey it was held in chief by Ernulf de Hesding; it was assessed at fifteen hides, and comprised three mills. It returned two members to parliament as a borough in 1302 and 1304-1305, but was not represented after this date, and was not considered to be a borough in 1316. The first and only charter of incorporation was granted by James I., in 1608; it established a common council consisting of 2 bailiffs and 12 burgesses; a common clerk, 2 justices of the peace, and 2 serjeants-at-mace; and a court of record every Monday. In 1205 William Fitz-Alan was granted a four days' fair at the feast of the Invention of the Cross; and in 1276 Roger, earl of March, was granted a four days' fair at the feast of St Barnabas. In the reign of Henry VI. the market was held on Wednesday, and a fair was held at the Translation of St Thomas Becket. These continued to be held in the reign of James I., who annulled the former two fairs, and granted fairs at the feasts of St Mark, St Matthew, St Bartholomew, and SS. Simon and Jude.

CHIQUITOS (Span, "very small"), a group of tribes in the province of Santa Cruz de la Sierra, Bolivia, and between the head waters of the rivers Mamoré and Itenez. When their country was first invaded they fled into the forests, and the Spaniards, coming upon their huts, the doorways of which are built excessively low, supposed them to be dwarfs: hence the name. They are in fact well formed and powerful, of middle height and of an olive complexion. They are an agricultural people, but made a gallant resistance to the Spaniards for nearly two centuries. In 1691, however, they made the Jesuit missionaries welcome, and rapidly became civilized. The Chiquito language was adopted as the means of communication among the converts, who soon numbered 50,000, representing nearly fifty tribes. Upon the expulsion of the Jesuits in 1767 the Chiquitos became decadent, and now number short of 20,000. Their houses, regularly ranged in streets, are built of adobes thatched with coarse grass. They manufacture copper boilers for making sugar and understand several trades, weave ponchos and hammocks and make straw hats. They are fond of singing and dancing, and are a gentle-mannered and hospitable folk. The group is now divided into forty tribes.

CHIROMANCY (from Gr. χείρ, hand, and μαντεία, divination), the art of telling the character or fortune of persons by studying the lines of the palms of the hands (see Palmistry).

CHIRON, or CHEIRON, in Greek mythology, one of the Centaurs, the son of Cronus and Philyra, a sea nymph. He dwelt at the foot of Mount Pelion, and was famous for his wisdom and knowledge of the healing art. He offers a remarkable contrast to the other Centaurs in manners and character. Many of the most celebrated heroes of Greece were brought up and instructed by him (Apollodorus iii. 10. 13). Accidentally pierced by a poisoned arrow shot by Heracles, he renounced his immortality in favour of Prometheus, and was placed by Zeus among the stars as the constellation *Sagittarius* (Apollodorus ii. 5; Ovid, *Fasti*, v. 414). In a Pompeian wall-painting he is shown teaching Achilles to play the lyre.

See articles in Pauly-Wissowa's *Realencyclopädie* and W.H. Roscher's *Lexikon der Mythologie*; W. Mannhardt, *Wald- und Feldkulte* (1904).

CHIROPODIST (an invented word from Gr. χείρ, hand, and ποῦς, foot), properly one who treats the ailments of the hands and feet, or is consulted as to keeping them in good condition; the use of the word is now restricted, however, to the care of the toes, "manicurist" having been invented for the corresponding attentions to the fingers. The word was first introduced in 1785, by a "corncutter" in Davies Street, London.

CHIROPTERA (Greek for "hand-wings"), an order of mammals containing the bats, all of which are unique in the class in possessing the power of true flight, and have their fore-limbs specially modified for this purpose.

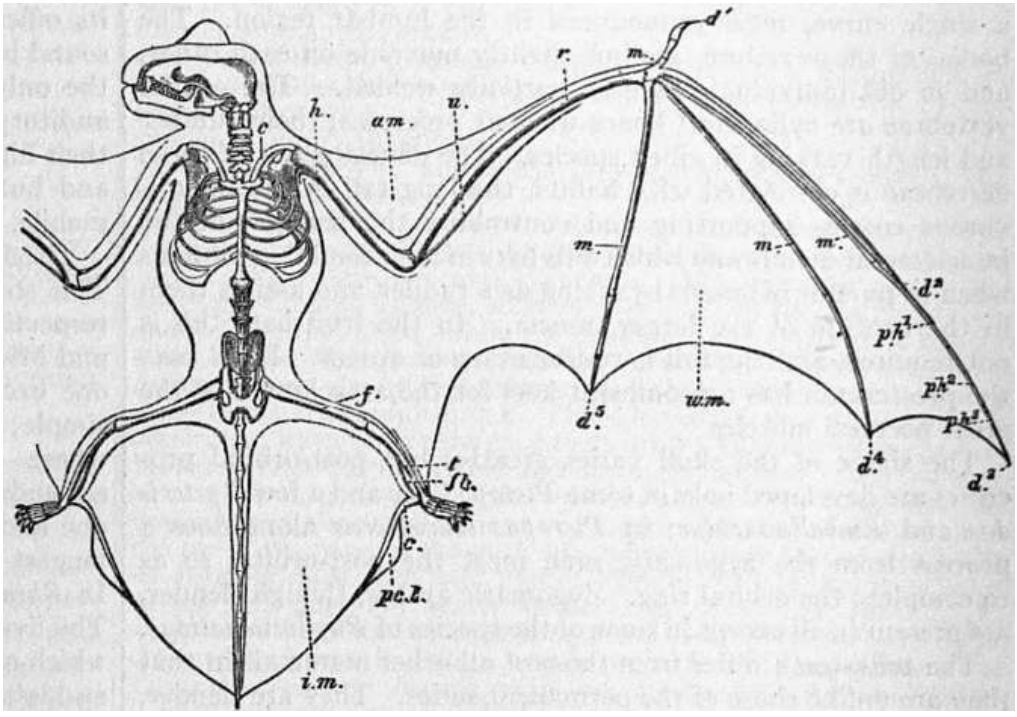


FIG. 1.—Skeleton and Wing-Membranes of the Noctule Bat (*Pipistrellus noctula*). × 1/3

c, Clavicle.
h, Humerus.
r, Radius.
u, Ulna.
d^1, First digit.
d^2, d^3, d^4, d^5, Other digits of the fore-limb supporting wm, the wing-membrane.
m, m, Metacarpal bones.
ph^1, First phalanx.
ph^2, Second phalanx.
ph^3, Third phalanx.
am, Antebrachial membrane.
f, Femur.
t, Tibia.
fb, Fibula.
c, Calcar supporting im, the interfemoral membrane.
pcb, Post-calcaneal lobe.

The mammals comprised in this order are at once distinguished by the possession of true wings; this peculiarity being accompanied by other modifications of bodily structure having relation to aerial locomotion. Thus, in direct contrast to all other mammals, in which locomotion is chiefly effected by action from behind, and the hind-limbs consequently greatly preponderate in size over the fore, in the Chiroptera the fore-limbs, being the agents in propelling the body forward during flight, immensely exceed the short and weak hinder extremities. The thorax, giving origin to the great muscles which sustain flight, and containing the proportionately large lungs and heart, is remarkably capacious; and the ribs are flattened and close together; while the shoulder-girdle is greatly developed in comparison with the weak pelvis. The fore-arm (fig. 1) consists of a rudimentary ulna, a long curved radius, and a carpus of six bones supporting a thumb and four elongated fingers, between which, the sides of the body, and the hinder extremities a thin expansion of skin, the wing-membrane, is spread. The knee is directed backwards, owing to the rotation of the hind-limb, outwards by the wing-membrane; an elongated cartilaginous process (the calcar), rarely rudimentary or absent, arising from the inner side of the ankle-joint, is directed inwards, and supports part of the posterior margin of an accessory membrane of flight, extending from the tail or posterior extremity of the body to the hind-limbs, and known as the interfemoral membrane. The penis is pendent; the testes are abdominal or inguinal; the teats, usually two in number, thoracic; the uterus is simple or with more or less long cornua; the placenta discoidal and deciduate; and the smooth cerebral hemispheres do not extend backwards over the cerebellum. The teeth comprise incisors, canines, premolars and molars; and the dental formula never exceeds i. 2/3, c. 1/1, p. 3/8, m. 3/3; total 38. Despite the forward position of the teats, which is merely an adaptive feature, bats are evidently mammals of low organization, and are most nearly related to the Insectivora.

In consequence of the backward direction of the knee, a bat, when placed on the ground, rests on all fours, having the knees directed upwards, while the foot is rotated forwards and inwards on the ankle. Walking is thus a kind of shuffle; but, notwithstanding a general belief, bats can take wing from the walking posture.

The bones of the skeleton are characterized by their slenderness and the great size of the medullary canals in those of the extremities. The vertebral column is short, and the vertebrae differ but slightly in number and form throughout the group. The general number of dorso-lumbar vertebrae is 17, whereof 12 are dorsal; the cervical vertebrae are broad, but short. Except in fruit-bats (*Pteropodidae*), the vertebrae, from the third cervical backwards, are devoid of spinous processes. From the first dorsal to the last lumbar the vertebral column forms a single curve, most pronounced in the lumbar region. The bodies of the vertebrae are but slightly movable on each other, and in old individuals become partially welded. The caudal vertebrae are cylindrical bones without processes; their number and length varying in allied species. The development of these vertebrae is correlated with habits, the long tail in the insectivorous species supporting and controlling the position of the interfemoral membrane which aids bats in their doubling motions when in pursuit of insects by acting as a rudder, and assists them in the capture of the larger insects. In the fruit-bats this is not required, and the tail is rudimentary or absent. In all bats the presternum has a prominent keel for the attachment of the great pectoral muscles.

The shape of the skull varies greatly; but post-orbital processes are developed only in some *Pteropodidae* and a few *Nycteridae* and *Emballonuridae*; in *Pteropus leucopterus* alone does a process from the zygomatic arch meet the post-orbital so as to complete the orbital ring. Zygomatic arches, though slender, are present in all except in some of the species of *Phyllostomatidae*.

The milk-teeth differ from those of all other mammals in that they are unlike those of the permanent series. They are slender, with pointed recurved cusps, and are soon shed, but exist for a short time with the permanent teeth. In the *Rhinolophidae* the milk-teeth are absorbed before birth. The permanent teeth exhibit great variety, sometimes even in the same family, as in *Phyllostomatidae*, whilst in other families, as *Rhinolophidae*, the resemblance between the dentition of species differing in many respects is remarkable. In all they are provided with well-developed roots, and their crowns are acutely tuberculate, with more or less well-defined W-shaped cusps, in the insectivorous species, or variously hollowed out or longitudinally grooved in the frugivorous kinds.

The shoulder-girdle varies but slightly, the clavicle being long, strong and curved; and the scapula large, oval and triangular, with a long curved coracoid process. The humerus, though long, is scarcely two-thirds the length of the radius; and the rudimentary ulna is welded with the radius. A sesamoid bone exists in the tendon of the triceps muscle. The upper row of the

carpus consists of the united scaphoid, lunar and cuneiform bones.

The “hand” has five digits, the first, fourth and fifth of which consist each of a metacarpal and two phalanges; but in the second and third the number of phalanges is different in certain families. The first digit terminates in a claw, most developed in the frugivorous species, in most of which the second digit is also clawed, although in other bats this and the remaining digits are unarmed.

In the weak pelvis the ilia are long and narrow, while in most species the pubes of opposite sides are loosely united in front in males, and widely separated in females; in the *Rhinolophidae* alone they form a symphysis. Only in the *Molossinae* is there a well-developed fibula; in the rest this bone is either very slender or cartilaginous and ligamentous in its upper third, or reduced to a small bony process above the heel, or absent. The foot consists of a short tarsus, and of slender, laterally compressed toes, with much-curved claws.

Although the brain is of a low type, probably no animals possess so delicate a sense of touch as Chiroptera. In ordinary bats tactile organs exist, not only in the bristles on the sides of the muzzle, but in the sensitive structures forming the wing-membranes and ears, while in many species leaf-like expansions surrounding the nasal apertures or extending backwards behind them are added. These nose-leaves are made up partly of the extended and thickened integument of the nostrils, and partly of the glandular eminences occupying the sides of the muzzle, in which in other bats the sensitive bristles are implanted.

In no mammals are the ears so developed or so variable in form; in most insectivorous species they are longer than the head, while in the long-eared bat their length nearly equals that of the head and body. The form is characteristic in each of the families; in most the “earlet,” or tragus, is large, in some cases extending nearly to the outer margin of the conch; its office appears to be to intensify and prolong the waves of sound by producing undulations in them. In the *Rhinolophidae*, the only family of insectivorous bats wanting the tragus, the auditory bullae reach their greatest size, and the nasal appendages their highest development. In frugivorous bats the ear is simple and but slightly variable. In all bats the ears are extremely mobile, each independently at will.

The oesophagus is narrow, especially in blood-sucking vampires. The stomach presents two types of structure, corresponding respectively to the two divisions of the order, Megachiroptera and Microchiroptera; in the former the pyloric extremity is, with one exception, elongated and folded upon itself, in the latter simple; an exceptional type is met with in the blood-suckers, where the cardiac extremity is elongated, forming a long appendage. The intestine is comparatively short, varying from one and a half to four times the length of the head and body; longest in the frugivorous, shortest in the insectivorous species. In *Rhinopoma* and *Megaderma* a small caecum has been found. The liver is characterized by the great size of the left lateral lobe, which occasionally equals half that of the whole organ; the right and left lateral fissures are usually very deep; in Megachiroptera the spigelian lobe is, with one exception, ill defined or absent, and the caudate is generally large; but in Microchiroptera the former lobe is large, while the caudate is small. The gall-bladder is generally well developed.

In most species the hyoids are simple, consisting of a chain of slender, long, cylindrical bones connecting the basi-hyoid with the skull, while the pharynx is short, and the larynx shallow with feebly developed vocal cords, and guarded by a short pointed epiglottis. In the African epauletted bats, *Epomophorus*, the pharynx is long and capacious, the aperture of the larynx far removed from the fauces, and, opposite to it, opens a canal, leading from the nasal chambers, and extending along the back of the pharynx; the laryngeal cavity is spacious and its walls are ossified; the hyoids are unconnected, except by muscle with the skull; while the cerato-hyals and epi-hyals are cartilaginous and expanded, entering into the formation of the walls of the pharynx, and (in males of some species) supporting the orifices of a pair of air-sacs communicating with the pharynx (fig. 2).

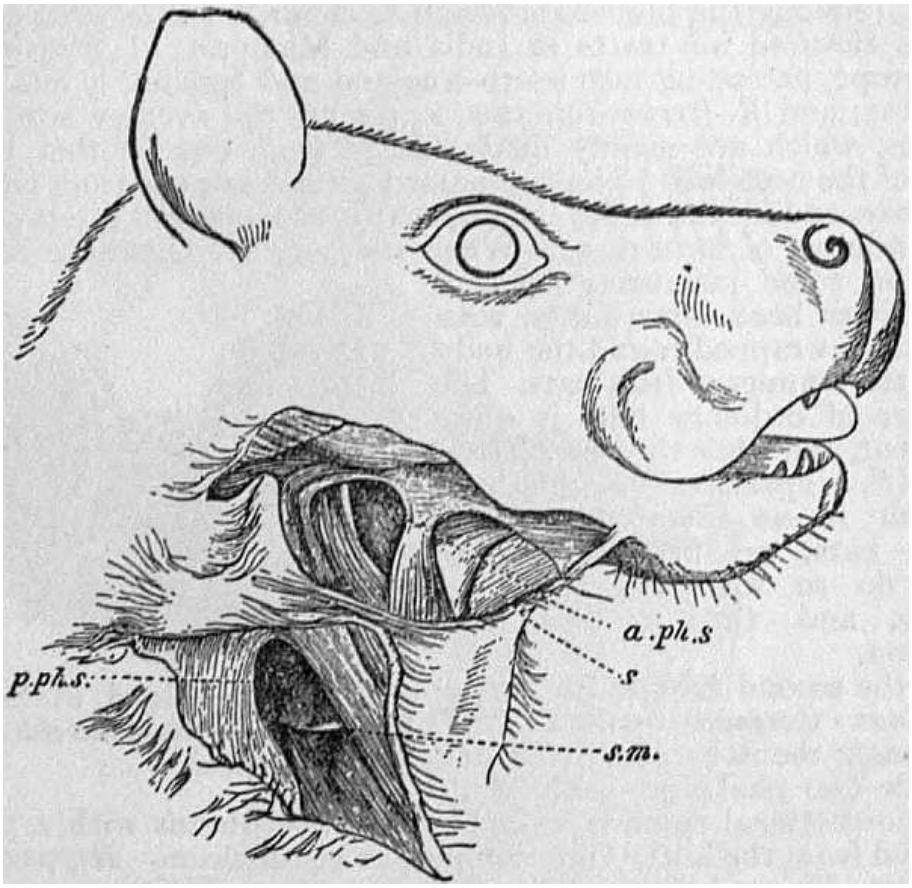


FIG. 2.—Head and Neck of *Epomophorus franqueti* (adult male). From Dobson. The anterior (*a.ph.s*) and posterior (*p.ph.s*) pharyngeal sacs are opened from without, the dotted lines indicating the points where they communicate with the pharynx; *s*, thin membranous partition in middle line between the anterior pharyngeal sacs of opposite sides; *s.m*, sterno-mastoid muscle separating the anterior from the posterior sac.

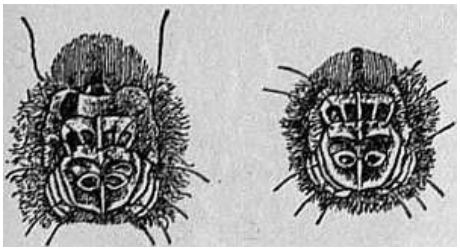


FIG. 3.—Frontal Sac and Nose-Leaf in Male and Female Masked Bat (*Phyllorhina larvata*). From Dobson.

The extent and shape of the wings generally depend on the form of the bones of the fore-limbs, and on the presence or absence of the tail. The wings consist of an "antebrachial membrane," which extends from the point of the shoulder along the humerus and more or less of the fore-arm to the base of the thumb, the metacarpal bone of which is partially or wholly included in it; the "wing-membrane" spread out between the elongated fingers, and extending along the sides of the body to the posterior extremities, generally reaching to the feet; and the "interfemoral membrane," the most variable of all, which is supported between the extremity of the body, the legs and the calcar (fig. 1). The antebrachial and wing membranes are most developed in species fitted only for aerial locomotion which when at rest hang with the body enveloped in the wings; but in the *Emballonuridae*, and also in the *Molossinae*, which are the best fitted for terrestrial progression, the antebrachial membrane is reduced to a small size, and not developed along the fore-arm, leaving the thumb quite free, while the wing-membrane is narrow and folded in repose under the forearm. The relative development of the interfemoral membrane has been referred to in connexion with the caudal vertebrae. Its small size in the frugivorous and blood-sucking species, which do not require it, is easily understood. Scent-glands and pouches opening on the surface of the skin are developed in many species, but in most cases more so in males than in females (fig. 3). As rule, bats produce only a single offspring at a birth, which for some time is carried about by the female parent clinging to the fur of her breast; but certain North American bats commonly give birth to three or four young ones at a time, which are carried about in the same manner.

Bats are divisible into two suborders, Megachiroptera and Microchiroptera.

Megachiroptera.

The first of these comprises the fruit-eating species, which are generally of large size, with

the crowns of the cheek-teeth smooth and marked with a longitudinal groove. The bony palate is continued behind the last molar, narrowing slowly backwards; there are three phalanges in the index finger, the third phalange being terminated generally by a claw; the sides of the ear form a ring at the base; the tail, when present, is inferior to (not contained in) the interfemoral membrane; the pyloric extremity of the stomach is generally much elongated; and the spigelian lobe of the liver is ill-defined or absent, while the caudate is well developed. This group is limited to the tropical and sub-tropical parts of the Eastern Hemisphere.

Fruit-eating bats.

All the members of this suborder are included in the single family *Pteropodidae*, the first representatives of which are the African epauletted bats, forming the genus *Epomophorus*. In this the dental formula is *i.* 2/2 (or ½), *c.* 1/1, *p.* 2/3, *m.* ½. Tail short or absent, when present free from the interfemoral membrane; second finger with a claw; premaxillae united in front. The species are strictly limited to Africa south of the Sahara, and are distinguished by the large and long head, expansible and often folded lips, and the white tufts of hair on the margins of the ears. The males are provided with glandular pouches, situated in the skin of the side of the neck near the point of the shoulder, which are rudimentary or absent in females. In the males they are lined with glandular membrane, from which long coarse yellowish hairs project to form conspicuous epaulet-like tufts on the shoulders. The males often have a pair of air-sacs extending outwards on each side from the pharynx beneath the integument of the neck, in the position shown in fig. 2. These bats appear to live principally on figs, the juicy contents of which their voluminous lips and capacious mouths enable them to swallow without loss. The huge and ugly West African hammer-headed bat, *Hypsignathus monstrosus*, represents an allied genus distinguished by the absence of shoulder-pouches, and the presence of leaf-like expansions of skin on the front of the muzzle, and of distinct cusps on the outer sides of the cheek-teeth. The great majority of the bats of this group, commonly known as “flying-foxes,” are included in the typical genus *Pteropus*, of which the dental formula is *i.* 2/2, *c.* 1/1, *p.* 3/3, *m.* 2/3. All are of large size, and the absence of a tail, the long pointed muzzle, and the woolly fur covering the neck render their recognition easy. One of the species, *P. edulis*, inhabiting Java, measures 5 ft. across the fully extended wings, and is the largest member of the order.

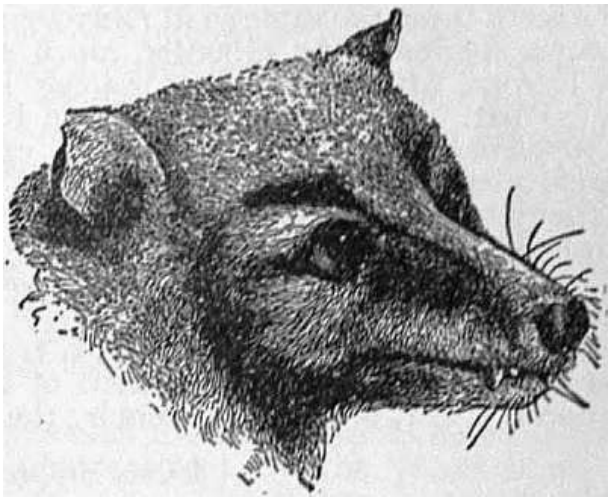


FIG. 4.—Head of a Flying-Fox or Fruit-Bat (*Pteropus personatus*). From Gray.

The range of the genus extends from Madagascar through the Seychelles to India, Ceylon, Burma, the Malay Archipelago, Japan, New Guinea, Australia and Polynesia. Although two species inhabit the Comoro Islands, scarcely 200 m. from the mainland, not one is found in Africa; while the common Indian species is closely allied to the Madagascar flying-fox. The Malay Archipelago and Australia form the headquarters of these bats, which in some places occur in countless multitudes. The colonies exhale a strong musky odour, and when awake the occupants utter a loud incessant chatter. Wallace’s fruit-bat of Celebes and Macassar has been made the type of a separate genus, as *Styloctenium wallacei*. In *Roussettus* (or *Cynonycteris*) the dentition is as in *Pteropus*, but the tail is short, and the fur of the nape of the neck not different from that of the back: its distribution accords with that of *Pteropus*, except that it includes Africa and does not reach farther east than New Ireland. *R. aegyptiacus* inhabits the chambers of the Great Pyramid and other deserted buildings in Egypt, and is probably the species figured in Egyptian frescoes. *Boneia*, with two species, from Celebes, differs in having only two upper incisors. *Harpyionycteris* and *Scotonycteris*, respectively from the Philippines and West Africa, are represented by a single species each; but of *Cynopterus*, which is mainly confined to the Indo-Malay countries, there are some half-score different kinds. The dentition is *i.* 2/(2 or 1), *c.* 1/1, *p.* 3/3, *m.* 3/3, the muzzle is shorter than in *Roussettus*, with the upper lip grooved in front as in *Pteropus*, while the tail and fur resemble those of the former genus. These bats are extremely voracious, a specimen of the Indian *C. marginatus* having eaten a banana twice its own weight in three hours. Among several Austro-Malay genera, such as *Ptenochirus* and *Balionycteris*, the tube-nosed bats of the genus *Gelasinus* (or *Harpyia*) are remarkable for the conformation of the nostrils (fig. 5). *Cephalotes*, with one species, ranging from Celebes to the Solomon group, has the dentition *i.* 1/1, *c.* 1/1, *p.* 2/3, *m.* 2/3, premaxillae not united in front, nostrils simple, muzzle short, index finger without a claw, tail short. As in *Gelasinus*, the wing-membrane arises from the middle line of

the back, to which it is attached by a longitudinal thin process of skin; the wings are naked, but the back covered with hair. *Leipenyx* is an allied West African genus with one species.

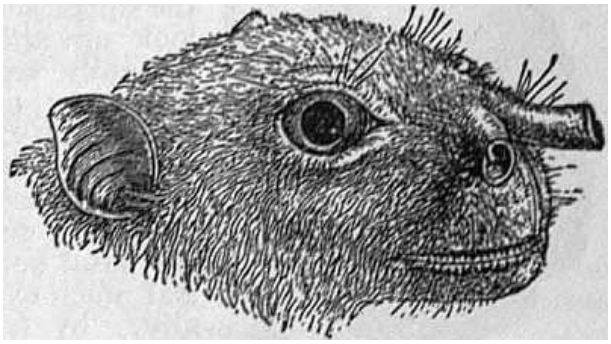


FIG. 5.—Head of Papuan Tube-Nosed Bat (*Gelasinus major*). From G.E. Dobson.

The foregoing belong to the typical subfamily *Pteropodinae*, while the remainder represent a second group, *Carponycterinae* (or *Macroglossinae*), characterized by having the facial part of the skull produced, the molar teeth narrow, and scarcely raised above the gum, and the tongue exceedingly long, attenuated in the anterior third, and armed with long recurved papillae near the tip. The single representative of the first genus, *Notopteris macdonaldi*, inhabiting Fiji, New Guinea and the New Hebrides, is distinguished from other bats of this family by the length of its tail, which is nearly as long as the forearm. The dentition is *i.* 2/1, *c.* 1/1, *p.* 2/3, *m.* 2/2, while the index finger has no claw, and the wings arise from the spine. *Eonycteris*, with the dentition *i.* 2/2, *c.* 1/1, *p.* 3/3, *m.* 2/3, is also represented by a single species, *E. spelaea*, from Tenasserim, Burma, and the Malay Peninsula and Islands, which has somewhat the appearance of a *Roussettus*, but the absence of a claw in the index finger and the presence of the characteristic tongue and teeth at once distinguish it. *Carponycteris* (*Macroglossus*) and *Melonycteris*, the former with several and the latter with a single species, are closely allied Indo-Malay and Papuan genera, the index finger in both having a claw, but the number of the teeth being the same as in *Eonycteris*. *C. minimus* is the smallest known species of the suborder, much smaller than the serotine bat of Europe, with the fore-arm scarcely longer than that of the long-eared bat. It is nearly as common in certain parts of Burma as *Cynopterus marginatus*, and extends eastwards through the Malay Archipelago as far as New Ireland, where it is associated with *Melonycteris melanops*, distinguished by its larger size and the total absence of the tail. An allied small *Carpopycteris* inhabits India. *Trygenycteris* (*Megaloglossus*) *woermanni*, of West Africa, is the only member of the group occurring west of the Himalaya. *Callinycteris* of Celebes, with the dentition *i.* 2/2, *c.* 1/1, *p.* 2/2, *m.* 3/3, has a short tail and no index-claws, while *Nesonycteris* of the Solomons, with the dentition *i.* 2/1, *c.* 1/1, *p.* 3/3, *m.* 3/3, differs by the absence of the tail.

Microchiroptera.

The second and larger suborder, the Microchiroptera, includes all the insectivorous species, the majority of which are of relatively small size as compared with the Megachiroptera. In these bats, with a few specialized exceptions, the crowns of the cheek-teeth are surmounted by sharp cusps, divided by transverse grooves. In the skull the bony palate narrows abruptly and is not continued backwards laterally behind the last molar; there is one rudimentary phalange (rarely two or none) in the index finger, which is never terminated by a claw; the outer and inner sides of the ear commence interiorly from separate points of origin; the tail, when present, is contained in the interfemoral membrane, or appears on its upper surface; the stomach, except in the blood-sucking group, is simple; and the spigelian lobe of the liver large, and the caudate generally small.

Insect-eating bats.

The bats included in this suborder are so numerous in genera (to say nothing of species) that only some of the more important types can be mentioned.

Brief references have already been made to the manner in which in many or most of these bats the tail aids in the capture of prey. From the observations of C. Oldham, it appears that these bats, when walking, carry the tail downwards and forwards, so that the membrane connecting this organ with the hind-legs forms a kind of pouch or bag. If a large insect be encountered the bat seizes it with a snatch, and slightly spreading its folded wings and pressing them on the ground in order to steady itself, brings its feet forwards so as to increase the capacity of the tail-pouch, into which, by bending its neck and thrusting its head beneath the body, it pushes the insect. Although the latter, especially if large, will often struggle violently, when once in the pouch it but rarely escapes, from which it is subsequently extracted and devoured. It is assumed that the same method of capture is employed when on the wing; and a naturalist who has observed the long-eared bat picking moths off willows states that the bat always hovers when taking off the moth, and bends up the tail so as to form a receptacle for the insect as it drops.

In the *Rhinolophidae*, Horse-shoe and Leaf-nosed bats of the Old World, the nose-leaf is

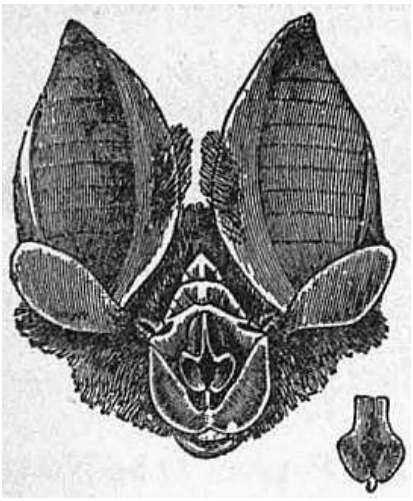


FIG. 6.—Head of Mitred Horseshoe Bat (*Rhinolophus mitratus*). From Dobson.

developed and surrounds the nasal apertures, which are situated in a depression on the upper surface of the muzzle so as to look upwards; the ears are large and generally separate, without trace of a tragus or earlet; the premaxillae are rudimentary, suspended from the nasal cartilages, and support a single pair of small incisors; the molars have acute **W**-shaped cusps; the skull is large, and the nasal bones which support the nose-leaf much expanded vertically and laterally. In females a pair of teat-like appendages are found in front of the pubis; and the long tail extends to the margin of the interfemoral membrane. The middle finger has two phalanges, but the index is rudimentary. The fibula is rudimentary.

The *Rhinolophidae* are the most highly organized of insectivorous bats, in which the osseous and cutaneous systems reach the fullest development. Compared with theirs, the bones of the extremities and the wings of other bats appear coarsely formed, and their teeth seem less perfectly fitted to crush the hard bodies of insects. The complicated nasal appendages reach their highest development, and the differences in their form afford characters in the discrimination of the species, which resemble one another closely in dentition and the colour of the fur.

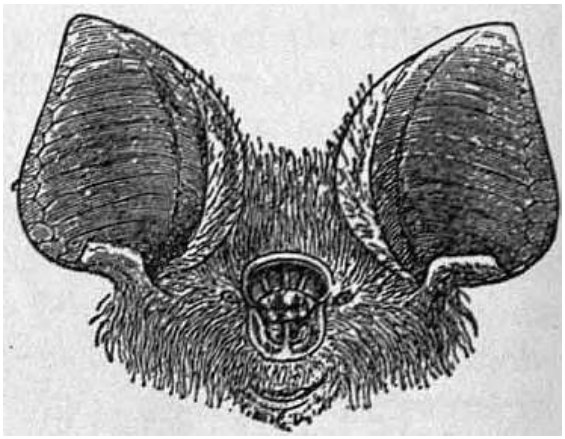


FIG. 7.—Head of Squirrel Leaf-Bat (*Phyllorhina calcarata*). From Dobson.

In the first subfamily, *Rhinolophinae*, the first toe has two, and the other toes three phalanges each; and the ilio-pectineal spine is not connected by bone with the antero-inferior surface of the ilium. In the horseshoe bats, *Rhinolophus*, the dentition is i. 1/2, c. 1/1, p. 2/3, m. 3/8, the nose-leaf has a central process behind and between the nasal orifices, with the posterior extremity lanceolate, and the antitragus large. Among the numerous forms *R. luctus* is the largest, and inhabits elevated hill-tracts in India and Malaysia; *R. hipposiderus* of Europe, extending into south England and Ireland, is one of the smallest; and *R. ferrum-equinum* represents the average size of the species, which are mainly distinguished from one another by the form of the nose-leaf. The last-named species extends from England to Japan, and southward to the Cape of Good Hope, but is represented by a number of local races. When sleeping, the horseshoe bats, at least in some instances, suspend themselves head downwards, with the wings wrapped round the body after the manner of fruit bats. The posture of ordinary bats is quite different, and while the lesser horseshoe (*R. hipposiderus*) alights from the air in an inverted position, other bats, on first coming to rest, do so with the head upwards, and then reverse their position.

In the second subfamily, *Hippo-siderinae* (formerly called *Phyllorhinae*), the toes are equal and include two phalanges each, while the ilio-pectineal spine is united by a bony isthmus with a process derived from the antero-inferior surface of the ilium. *Hipposiderus, Clöeotis, Rhinonycteris, Triaenops, Anthops* and *Coelops* represent this subfamily. *Hipposiderus* (*Phyllorhina*), with many species, ranging over Asia, Africa and Australasia, and the

dental formula i. 1/2, c. 1/1, p. 2/2, or 1/2, m. 3/3, differs from *Rhinolophus* in the form of the nose-leaf, which is not lanceolate behind (fig. 6), and is unprovided with a central process covering the nostrils; the largest species, *H. armiger*, appears to be the most northerly, having been taken at Amoy in China, and in the Himalaya at an elevation of 5500 ft. Many are provided with a frontal sac behind the nose-leaf, rudimentary in females (see fig. 7), which can be everted at pleasure; the sides of this sac secrete a waxy substance, and its extremity supports a tuft of straight hairs. *Rhinonycteris*, represented by *R. aurantia* from Australia, and *Triaenops*. by *T. persicus* from Persia and other species from Africa and Madagascar, are closely allied genera. *Triaenops* (fig. 8) is characterized by the remarkable form of its nasal appendages and ears, and the presence of a bony projection from the upper extremity of the second phalange of the fourth finger. *Coelops* (*C. Frithi*), from the Bengal Sanderbans, Java and Siam is distinguished by the peculiar form of its nose-leaf and the length of the metacarpal bone of the index finger, as well as by the shortness of the calcar and interfemoral membrane. *Clöeotis* is represented by a single East African species, and *Anthops* by one from the Solomon Islands characterized by the nose-leaf covering the whole front of the face.

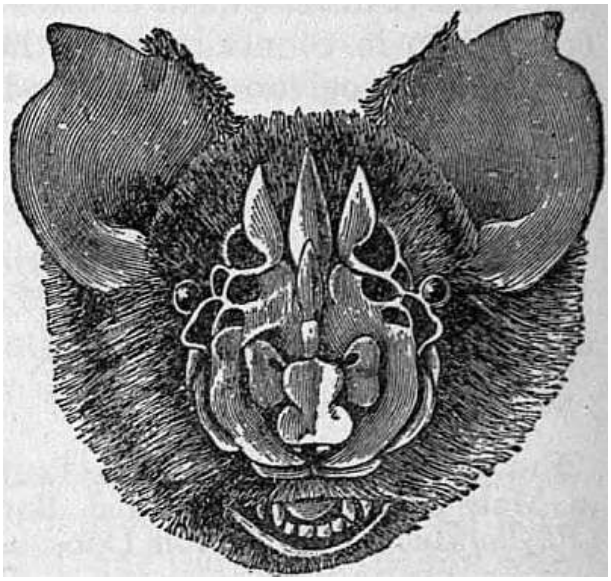


FIG. 8.—Head of Persian Leaf-Bat. (*Triaenops persicus*). From Dobson.

The next family, *Nycteridae*, which is also Old World, is a small one, nearly allied to the last, in which it is included by Prof. Max Weber as a subfamily under the name of *Myadermatinae*. It differs by the presence of a small tragus in the ears, which are united at their bases; and by the nasal chamber not being inflated. The premaxillae are either small and separated in front, or rudimentary; and the first phalange of the middle finger when in repose is laid back on the metacarpus. There are only pectoral teats.

False vampires.

Of the two genera, *Megaderma*, as represented by the five species of false vampires, is distinguished by the absence of ossified premaxillae and upper incisors (i. 0/2, p. (2 or 1)/2), the cylindrical narrow muzzle surmounted by an erect nose-leaf the base of which conceals the nasal orifices, the immense joined ears with large bifid tragus, and the great extent of the interfemoral membrane, in the base of which the short tail is concealed. *M. gigas* (fig. 9), from central Queensland, is the largest species of the genus, and of the suborder. *M. lyra*, common in India (fore-arm 2.7 in.), has been caught in the act of sucking the blood, while flying, from a small bat which it afterwards devoured. The range of the genus includes Africa, the Indo-Malay countries and Australasia. *Nycteris*, which is common to Africa and the Malay Peninsula and Islands, has ossified premaxillae and upper incisors (*i.* 2/3, *p.* 1/2), and a long tail; but lacks a nose-leaf. As in *Megaderma*, the frontal bones are deeply hollowed and expanded laterally, the muzzle presents a similar cylindrical form, and the lower jaw also projects; but, instead of a nose-leaf, the face is marked by a deep longitudinal sharp-edged groove extending from the nostrils to the band connecting the base of the large ears; the sides of this depression being margined as far back as the eyes by small horizontal cutaneous appendages. With the exception of *N. javanica*, the species are limited to Africa.

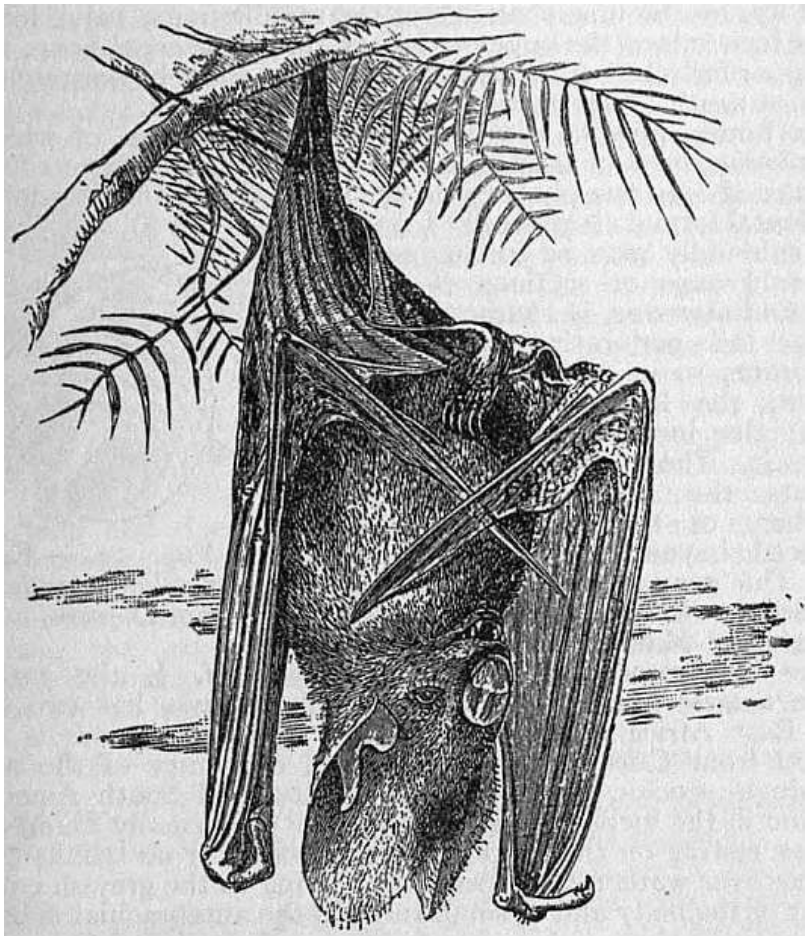


FIG. 9.—The False Vampire (*Megaderma gigas*). From Dobson.

According to the classification followed by Dr G.E. Dobson, the extensive family of New World bats known as *Phyllostomatidae* was widely sundered from the two preceding groups; but in Prof. Max Weber's system they are placed next one another—an arrangement which has the great advantage of bringing together all the bats furnished with nose-leaves. It is indeed probable that the vampires, as the members of the present family may be collectively termed, are the New World representatives of the Old World *Rhinolophidae* and *Nycteridae*.

Vampires.

The *Phyllostomatidae* are characterized by the presence of a nose-leaf, or of lappets on the chin, but the nostrils are not directed upwards. The ethmoturbinal bones of the nasal cavity form simple plates (much as in the two preceding families). The premaxillae are always well developed, with their palatal portions forming a suture and denning the boundaries of distinct palatine foramina (in place of being rudimentary, as in *Nycteridae* and *Rhinolophidae*). The large ears have a tragus. The middle finger has three phalanges, and the index one. There is an incomplete fibula. The tail may be either long or short. Generally the dentition is *i.* 2/2, *c.* 1/1, *p.* 2/3, *m.* 3/3.

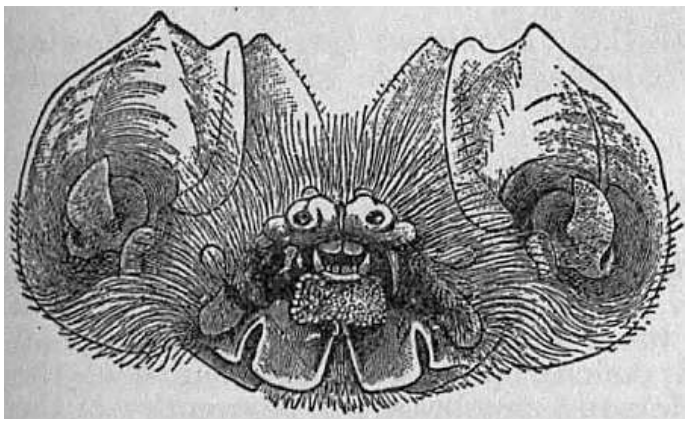


FIG. 10.—Head of Blainville's Vampire (*Mormops blainvillei*). From Dobson.

All the bats of this family may be readily recognized by the presence of a well-developed third phalange in the middle finger, associated either with a distinct nose-leaf, or with central upper incisors, or with both. Unlike the *Rhinolophidae*, their eyes are generally large and the tragus is well developed, maintaining almost the same form throughout the species, however much the other parts of the body may vary. Their fur is of a dull colour, and the face and back are often marked with white streaks. A few species, probably all those with the tail and interfemoral membrane well developed, feed principally on insects, while the greater number of the species

of the groups *Vampyreae* and *Glossophageae* appear to live on a mixed diet of insects and fruits, and the *Desmodonteae*, of which two species are known, are true blood-suckers, and have their teeth and intestinal tract specially modified in accordance with their habits. The group is practically limited to the tropical and subtropical parts of Central and South America, although one species of *Otopterus* reaches California. In the first subfamily, *Mormopsinae* (*Lobostominae*), the nostrils open by simple apertures at the extremity of the muzzle in front, not margined by a distinct nose-leaf; while, in compensation, the chin is furnished with expanded leaf-like appendages. The tail is short. It includes two genera. In *Chilonycteris* the crown of the head is moderately elevated above the face-line, and the basi-cranial axis is almost in the same plane as the facial, while in *Mormops* (fig. 10) the crown of the head is greatly elevated above the face-line, and the basi-cranial axis is nearly at right angles to the facial; *i.* 2/2, *p.* 2/3, in both genera. As regards the species of *Chilonycteris*, the most striking feature is the occurrence of a rufous and a dark brown phase in each. In some the two phases are very marked, but in others they are connected by intermediate shades. Here may be mentioned the two species of tropical American hare-lipped bats, forming the genus *Noctilio*, which presents characters common to this and the following family, to which latter it is often referred. The typical *N. leporinus* is a bat of curious aspect, with strangely folded lips, erect skin-processes on the chin, and enormous feet and claws. The two middle incisors are close together, and so large as to conceal the small outer ones, while in the lower jaw there are but two small incisors; the premolars numbering 1/2. These bats live near the coast, and feed on small crabs and fishes.

Most of the remaining members of the family are included in the subfamily *Phyllostomatinae*, characterized by the presence of a distinct nose-leaf and the warty chin. The clitoris is imperforate, whereas it is perforated in the *Mormopsinae*. The incisors are generally 2/2 (occasionally 2/1), and the molars well developed. The subfamily is divided into a number of groups or sections. The first of them, the *Vampyreae*, is characterized as follows: Muzzle long and narrow in front, the distance between the eyes generally less than (rarely equal to) that from the eye to the extremity of the muzzle; nose-leaf horseshoe-shaped in front, lanceolate behind; interfemoral membrane well developed; tail generally distinct, rarely absent; inner margin of the lips not fringed; *i.* 2/2 or 2/1, *p.* 2/2 or 2/3; molars with **W**-shaped cusps, usually well developed.

Nearly all the *Vampyreae* appear to be insectivorous, so that the term cannot be considered indicative of habits; but a few, if not all, probably supplement their insect diet with fruit. *Vampyrus spectrum* (the largest bat in the New World) is said to be wholly frugivorous, and *Otopterus waterhousei* appears to prey occasionally on smaller bats. The genera may be arranged in two subgroups according as the tail is produced to the margin of the interfemoral membrane or perforates it to appear on its upper surface. In the first division are included three genera, *Lonchorhina*, *Otopterus* (or *Macrotus*) and *Dolichophyllum* (or *Macrophyllum*), the first represented by *L. aurita*, characterized by an extraordinary long nose-leaf, and peculiarly large ears and tragus. In the second subsection are included *Vampyrus*, *Chrotopterus*, *Tonatia* (*Lophostoma*) *Micronycteris*, *Glyphonycteris*, *Trachyops*, *Phylloderma*, *Phyllostoma*, *Anthorhina* (*Tylostoma*), *Mimon*, *Hemiderma* (*Carollia*) and *Rhinophylla*; all, with the exception of the last, distinguished chiefly by the form of the skull and the presence or absence of the second lower premolar. *Phyllostoma hastatum*, next in point of size to *Vampyrus spectrum*, is a well-known species in South America; *P. elongatum* (fig. 11) differs in its smaller size and larger nose-leaf. *Hemiderma brevicauda*, a small species, closely resembles *Glossophaga soricina*, and forms a connecting link between this and the next group. *Rhinophylla pumilio* is the smallest species of the family; further distinguished by the absence of a tail, the narrowness of its molars, which do not form **W**-shaped cusps, and the small size of the last upper molar, characters connecting it and the group with the *Stenodermateae*. Both in *Hemiderma* and *Rhinophylla* the zygomatic arch is incomplete.

The next subsection, *Glossophageae*, presents the following distinctive features: Muzzle long and narrow; tongue long and extensible, attenuated towards the tip, and beset with long filiform recurved papillae; lower lip with a wide groove above, and in front margined by small warts; nose-leaf small; tail short or none; *i.* 2/2, *p.* 2/3 or 3/3 or 2/2, *m.* 3/3 or 2/3 or 2/2; teeth narrow; molars with narrow **W**-shaped cusps, sometimes indistinct or absent; lower incisors small or deciduous. The species included in this group represent some ten genera, distinguished principally by differences in the form and number of the teeth, and the presence or absence of the

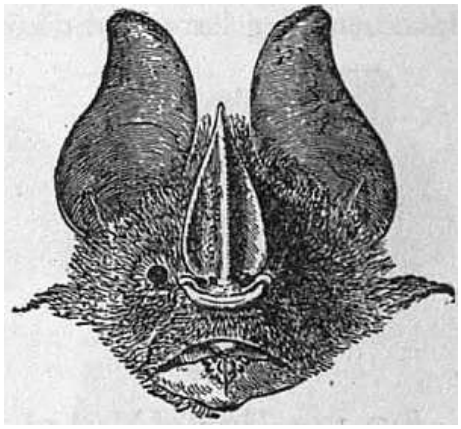


FIG. 11.—Head of Lesser Javelin

zygomatic, arch of the skull. In *Glossophaga* and *Phyllonycteris* the upper incisors form a continuous row between the canines. In *Monophyllus* and *Leptonycteris* (*Ischnoglossa*) they are separated into pairs by a narrow interval in front; while in *Lonchoglossa*, *Glossonycteris* and *Choeronycteris* they are widely separated and placed in pairs near the canines. In the first four of these genera the lower incisors are present (at least to a certain age), in the last three they are deciduous even in youth. The zygomatic arch is wanting in *Phyllonycteris*, *Glossonycteris* and *Choeronycteris*. The typical species is *Glossophaga soricina*, which, as already mentioned, closely resembles *Hemiderma brevicauda*, both in form and dentition. Its long brush-tipped tongue (which it possesses in common with other species of the group) is used to lick out the pulpy contents of fruits having hard rinds. The food of the species of this group appears to consist of both fruit and insects, and the long tongue may be used for extracting the latter from the deep corollas of flowers. Other genera are *Lonchophylla*, *Rhithronycteris*, *Hylonycteris* and *Lychonycteris*, each with a single species (in 1904).

Vampire (*Phyllostoma elongatura*).

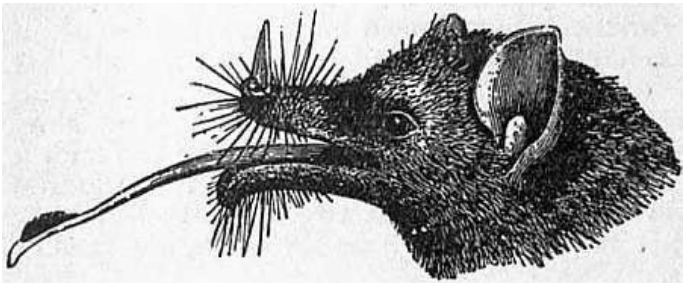


FIG. 12.—Head of Long-tongued Vampire (*Choeronycteris mexicana*), showing brush-tipped tongue. From Dobson.

The third group, *Stenodermateae*, presents the following characteristics:—Muzzle very short and generally broad in front, the distance between the eyes nearly always exceeding (rarely equalling) the distance from the eye to the extremity of the muzzle; nose-leaf short, horseshoe-shaped in front, lanceolate behind (except in *Brachyphylla* and *Centurio*); interfemoral membrane concave behind; tail none; inner margin of the lips fringed with conical papillae; *i.* 2/2 or 2/1, *p.* 2/2, *m.* 3/3 or 2/3 or 2/2; cheek-teeth broad (except in *Sturnira*), molars with concave or flat crowns margined externally by raised cutting-edges. Although the *Stenodermateae* are generally easily distinguished from the *Vampyreae* by the shortness and breadth of the muzzle and the form of the cheek-teeth, certain species of the latter resemble the former in external appearance, agreeing almost absolutely in the form of the nose-leaf, the ears and the tragus, and the warts on the chin. These resemblances show that, while the form of the teeth and jaws has become modified to suit the food, the external characters have remained much the same, and indicate the common origin of the two sections. The food of these bats appears to be wholly or in great part fruit. The species are divided into some eleven genera, mostly distinguished by the form of the skull and teeth. *Artibeus* includes the frugivorous *A. perspicillatus*. *Stenoderma achradophilum*, found in Jamaica and Cuba, with the last, from which it is scarcely distinguishable externally except by its much smaller size, differs in the absence of the horizontal plate of the premaxillae on the palate. *Sturnira lilium*, while agreeing with these in the form of the nose-leaf and ears, differs from all the species of the family in its longitudinally-grooved molars, which resemble those of the *Pteropodidae* more closely than those of any other bats; and the presence of tufts of long differently-coloured hairs over glands in the sides of the neck is another character in common with that group. *Centurio senex* (fig. 13) is the type of a small genus distinguished from *Stenoderma* and other genera of this group by the absence of a distinct nose-leaf. Some naturalists make this genus the type of a distinct subgroup, *Centurioneae*. Up to 1904 the genera, exclusive of *Centurio*, included in the *Stenodermateae* were *Artibeus* (with several sub-genera), *Vampyrops* (also with subgenera), *Mesophylla*, *Chiroderma*, *Stenoderma* (with 3 subgenera), *Ectophylla*, *Ametrida* (with 2 sub-genera), *Pygoderma*, *Sturnira* and *Brachyphylla*.

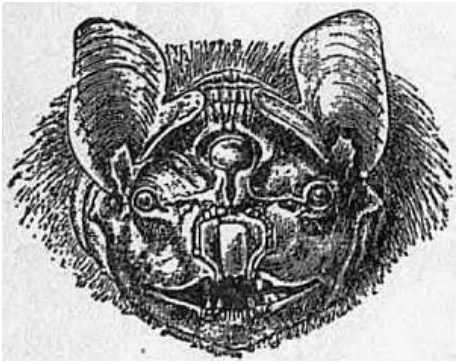


FIG. 13.—Head of Masked Vampire (*Centurio senex*). From Dobson.

The third subfamily, *Desmodontieae*, is represented only by the blood-sucking bats, and distinguished by having *i.* ½, of which the upper pair are cutting, the rudimentary molars, the very short interfemoral membrane, and the blood-sucking habit. They are further characterized as follows: Muzzle short and conical; nose-leaf distinct; *p.* 2/3, *m.* 1/1 or 0/0; upper incisors occupying the whole space between the canines; premolars narrow, with sharp-edged longitudinal crowns; molars rudimentary or absent; stomach elongated, and intestiniform. There are two genera, *Desmodus*, without calcar or molars, and *Diphylla*, with a short calcar and a single rudimentary molar on each side—restricted to

Central and South America. *Desmodus rufus*, the commoner species, is a little larger than the noctule bat, and abundant in certain parts of South America, where it is troublesome owing to its attacks upon domestic animals, sucking their blood and leaving them weakened from repeated bleedings. (See VAMPIRE.)

The fourth family of bats, unlike any of the three previous ones, has a cosmopolitan distribution. These free-tailed bats, as they are conveniently called, constituting the family *Emballonuridae*, present the following distinctive features. The nostrils are of normal form and without a nose-leaf. The premaxillae have their palatal portion imperfectly developed, and united by a slender process with the maxillae. The ears are large, with a small tragus. The middle finger has two phalanges, and the index generally a single one. The fibula is incomplete. The tail is generally short, and always partly free from the interfemoral membrane. There is generally only a single pair of upper incisors, separated by gaps from the canines, and from one another in the middle line.

Free-tailed bats.

The distinctive feature of these bats is the free tail-tip, which pierces the interfemoral membrane to appear on its upper surface, and may project beyond its margin. As a rule, these bats may also be recognized by the peculiar form of the muzzle, which is obliquely truncated, the nostrils projecting more or less in front beyond the lower lip, by the first phalange of the middle finger being folded in repose forwards on the upper surface of the metacarpal bone, and by the upper incisors. Although cosmopolitan, these bats rarely extend north or south of the thirtieth parallels of latitude.

The family may be divided into two subfamilies, of which the *Emballonurinae* is characterized by the incomplete premaxillae, the presence of only one phalange in the index finger, and the short tail. The dental formula is generally *i.* 1/3 (sometimes 2/3 or 1/2), *c.* 1/1, *p.* 2/3, *m.* 3/3. This subfamily may be further subdivided into subgroups or sections of which the first, *Embalionurae*, is characterized by the slender tail perforating the interfemoral membrane, so as to appear on its upper surface; the legs long, with a slender fibula; the incisors weak; and the premolars 2/2. The typical genus *Emballonura* presents the following features: *i.* 2/3, extremity of the muzzle more or less produced beyond the lower lip, forehead flat. The genus contains several species, inhabiting islands from Madagascar through the Malay Archipelago and Siam to the Navigator Islands. *Coleura*, with *i.* 1/3, the extremity of the muzzle broad, and the forehead concave, has two species from East Africa and the Seychelles. *Rhynchonycteris* is distinguished from *Coleura* by the produced extremity of the muzzle. The single species, *R. naso*, from Central and South America, is common in the vicinity of streams, where it is usually found during the day resting on the vertical faces of rocks, or on trunks of trees growing over water; it escapes notice owing to the greyish colour of the fur of the body and of small tufts on the antebrachial membrane counterfeiting the weathered surfaces of rocks and bark. As evening approaches it appears on the wing, flying close to the water. *Saccopteryx* has *i.* 1/3 and the antibrachial membrane with a pouch opening on its upper surface; it contains several species from Central and South America. This sac is developed only in the male and in the female is rudimentary. In adult males a valvular longitudinal opening occupies the upper surface of the membrane leading into a small pouch, the interior of which is lined with a glandular membrane secreting an unctuous reddish substance with a strong ammoniacal odour. Allied genera are the tropical American *Peropteryx* and the Brazilian *Cormura*. The various species of tomb-bats (*Taphozous*) inhabit the tropical and subtropical parts of all the eastern hemisphere except Polynesia, and are distinguished by the cartilaginous premaxillaries, the deciduous pair of upper incisors, and the presence of only two pairs of lower incisors. Most of the species have a glandular sac (fig. 15) between the angles of the lower jaw, more developed in males than in females, in some species absent in the latter. An open throat-sac is wanting in *T. melanopogon*, but about its position are the openings of small pores, the secretion from which probably causes the hairs to grow long, forming the black beard found in many males. The three tropical American white bats, *Diclidurus*, with *i.* 1/3, *c.* 1/1, *p.* 3/2, *m.* 3/3, resemble *Taphozous* in the form of the head and ears, but, besides other characters, differ from all other bats in possessing a pouch, opening off the centre of the interior surface of the interfemoral membrane; the extremity of the tail enters this, and perforates its base.

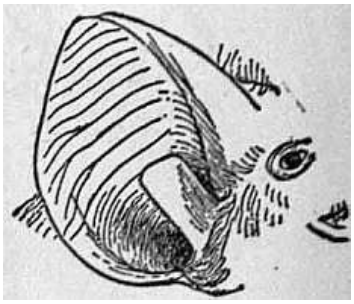


FIG. 14.—Ear of *Emballonura raffrayana*. From Dobson.

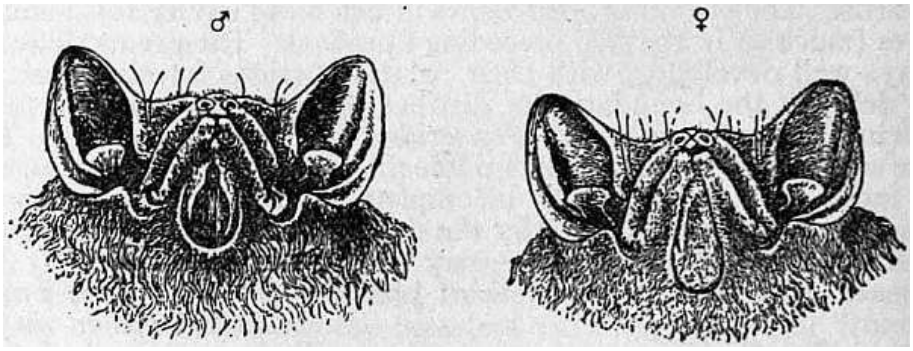


FIG. 15.—Heads of Tomb-Bat (*Taphozous longimanus*), showing relative development of throat-sacs in male and female. From Dobson.

The second subfamily of the *Emballonuridae*, *Rhinopomatinae*, is represented only by the genus *Rhinopoma*, with several species ranging from Egypt through Arabia to India, Burma and Sumatra. The premaxillae (fig. 16) are complete; the index finger has two phalanges; the tail is very long and mouselike; and the dental formula *i.* 1/2, *c.* 1/1, *p.* 1/2, *m.* 2/3. Dr G.E. Dobson has remarked that these mouse-tailed bats might be elevated to the rank of a family, for it is difficult to determine their affinities, a kind of cross relationship attaching them to the *Nycteridae* on the one hand and to the *Emballonuridae* on the other. These bats, distinguished from all other Microchiroptera by the presence of two phalanges in the index finger and the long and slender tail projecting far beyond the narrow interfemoral membrane, inhabit the subterranean tombs in Egypt and deserted buildings generally from north-east Africa to Burma and Sumatra.

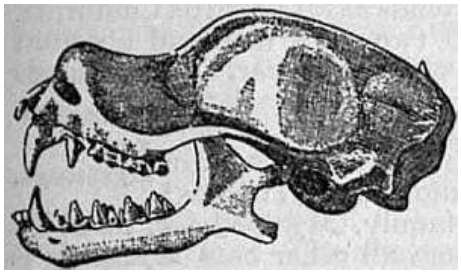


FIG. 16.—Skull of Mouse-tailed Bat (*Rhinopoma microphyllum*). ×2. (From Dobson.)

Typical bats.

The last group, according to the system adopted by Prof. Max Weber, is that of the *Vespertilionidae*, which includes such typical bats as the pipistrelle, the noctule, and the long-eared species. By Mr G.S. Miller[1] the first section of the family—*Natalinae*—is regarded as of family rank, while the last section, or *Molossinae*, is included by Dr G.E. Dobson in the *Emballonuridae*, from the typical forms of which its members differ widely in tail-structure. In this extended sense the family, which has a cosmopolitan distribution, may be defined as follows:—The nostrils are normal and without a nose-leaf. The ethmoturbinal bones of the nasal chamber are involuted. The palatine processes of the premaxillae do not form a suture. The ear is mostly large, with a tragus. The middle finger (except in *Thyroptera*) has two phalanges. The fibula is usually rudimentary. The tail is long and does not perforate the interfemoral membrane. The incisors are generally 2/3 or 1/2, but may be reduced to 1/1 in the *Molossinae*.

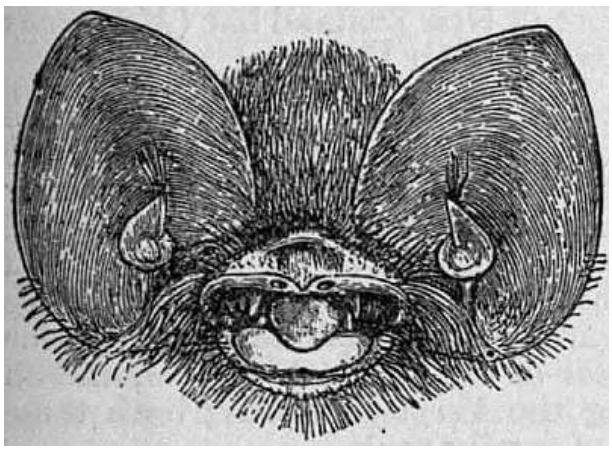


FIG. 17.—Head of *Chilonatalus micropus*. ×2. (From Dobson.)

In the first subfamily, *Natalinae*, which is exclusively tropical American, the other upper incisors are separated from one another and from the canines; palatine processes of the premaxillae are at least partially developed; and the dental formula is *i.* 2/3, *c.* 1/1, *p.* (2 or 3)/3, *m.* 3/3. In general appearance these bats recall the more typical *Vespertilionidae*, although the form of the muzzle is suggestive of the *Mormopsinae* among the *Phyllostomatidae*. Again, while the form of the skull is vespertilione, the relation of the vomer to the front end of the premaxillae is of the phyllostomine type. The molars and incisors are likewise vespertilione, whereas the premolars are as distinctly phyllostomine. Finally, while the third, or middle, finger normally has two phalanges, as in typical *Vespertilionidae*, the second of these is elongated and in *Thyroptera* divided into two, as in *Phyllostomatidae*.

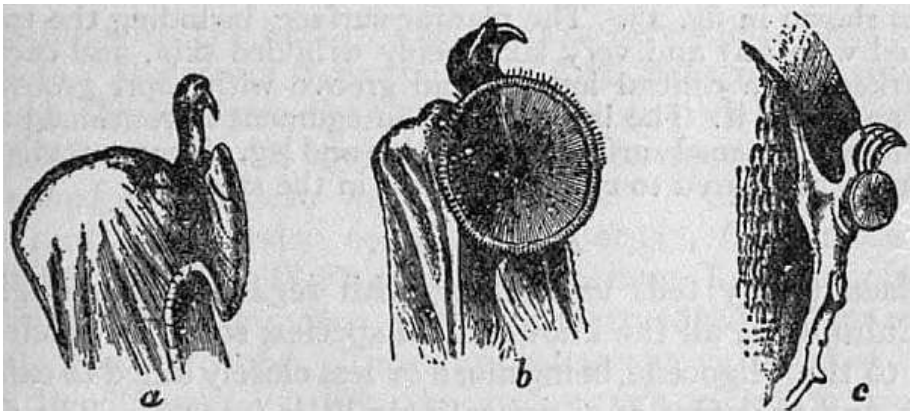


FIG. 18.—Suctorial Disks in *Thyroptera tricolor*, *a*, side, and *b*, concave surface, of thumb disk; *c*, foot with disk, and calcar with projections (all much enlarged). (From Dobson.)

The first two genera, *Furipterus* and *Amorphochilus*, each have a single species, the latter being distinguished from the former by the wide separation of the nostrils and the backward prolongation of the palate. In both the crown of the head is elevated, the thumb and first phalange of the middle finger are very short, and the premolars are 2/3. The same elevation of the crown characterizes the genera *Natalus* and *Chilonatalus* (fig. 17), in which the premolars are 3/3: in general appearance these bats are very like the Old World vespertilionine genus *Cerivoula*, except for the short triangular tragus. Lastly, *Thyroptera* includes two species distinguished by an additional phalange in the middle finger and by accessory clinging-organs attached to the extremities. In *Thyroptera tricolor, i.* 2/3, *p.* 3/3, from Brazil, these have the appearance of small, circular, stalked, hollow disks (fig. 18), resembling miniature sucking-cups of cuttle-fishes, and are attached to the inferior surfaces of the thumbs and the soles of the feet. By their aid the bat is able to maintain its hold when creeping over smooth vertical surfaces.

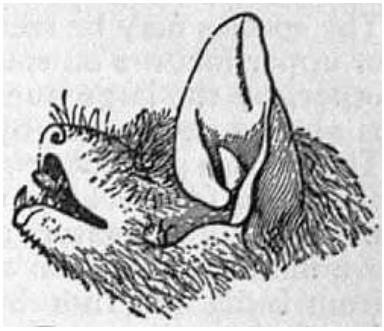


FIG. 19.—Head of *Scotophilus emarginatus*. (From Dobson.)

The second or typical subfamily, *Vespertilioninae*, includes all the remaining members of the family with the exception of the aberrant *Molossinae*. The upper incisors are in proximity to the canines; the premaxillae widely separated; the ears medium or large; the dental formula is *i.* 2/3 (or 1/3), *c.* 1/1, *p.* 3/3 (2/3, 2/2, or 1/2), *m.* 3/3; and the fibula very small and imperfect. All the members of this large cosmopolitan group are closely allied, and differ chiefly by external characters. They may be divided into subgroups. In the first of these, the *Plecoteae*, of which the long-eared bat (*Plecotus auritus*) is the type, the crown of the head is but slightly raised above the face-line, the upper incisors are close to the canines, and the nostrils are margined behind by grooves an the upper surface of the muzzle, or by rudimentary nose-leaves; the ears being generally very large and united. Of the six genera, *Plecotus*, with *i.* 2/3, *p.* 2/3, has three species:—one the long-eared European bat referred to above; *P. macrotis*, restricted to North America, is distinguished by the great size of the glandular prominences of the sides of the muzzle, which meet in the centre above and behind the nostrils; the third species being also American. The second, *Barbastella*, with *i.* 2/3, *p.* 2/2, distinguished by its dentition and by the outer margin of the ear being carried forwards above the mouth and in front of the eye, includes the European barbastelle bat, *B. barbastellus*, and *B. darjelingensis* from the Himalaya. *Otonycteris*, *i.* 1/3, *pm.*, 1/2, connecting this group with the *Vespertilioneae*, is represented by *O. hemprichii*, from North Africa and the Himalaya, and an Arabian species. The next two genera are distinguished by the presence of a rudimentary nose-leaf: *Nyctophilus*, *i.* 1/3, *p.* 1/2, with three species from Australasia; and *Antrozous*, *i.* 1/2, *p.* 1/2, distinguished from all the other members of the subfamily by having but two lower incisors, and from other *Plecoteae* by the separate ears; the two species inhabit California. The sixth genus, *Euderma*, is also represented by a Californian species.

The second group *Vespertilioneae*, with about thirteen genera, includes the great majority of the species; and a large number of these

may be classed under *Vespertilio*, which is divisible into subgenera, differing from one another in the number of premolars, and often ranked as separate genera. One group is represented by *V.* (*Histiolus*) *magellanicus*, a species remarkable for its extreme southern range, its relatives being also South American. A second group, with *p.* 1/2, includes the British serotine, *V.* (*Eptesicus*) *serotinus*, of Europe and northern Asia, and represented in North America by the closely allied *V.* (*E.*) *fuscus*. In the typical group, which includes the Old World *V. murinus*, one species, *V. borealis*, ranges to the Arctic circle. The European noctule, *V.* (*Pierygistes*) *noctula*, and Leisler's bat, *V.* (*P.*) *leisleri*, represent another group; and the common pipistrelle, *V.* (*Pipistrellus*) *pipistrellus*, yet another, with *p.* 2/2. The only other group that need be mentioned is one represented by the North American *V.* (*Lasionycteris*) *noctivagans*, with *p.* 2/3. The African *Läephotes*, the Chinese *Ia*, and the Papuan *Philetor* are allied genera, each with a single species. *Chalinolobus* and *Glauconycteris* have the same general dental character as *Vespertilio*, but are distinguished by the presence of a lobe projecting from the lower lip near the gape; the former, with *p.* 2/2, is represented by five Australasian species, one of which extends into New Zealand; while the latter, with *p.* 1/2, is African. The species of *Glauconycteris* are noticeable for their peculiarly thin membranes traversed by distinct reticulations and parallel lines. *Scotophilus*, with *i.* 1/3, *p.* 1/2, includes several species, restricted to the tropical and subtropical regions of the eastern hemisphere, though widely distributed within these limits. These bats, though approaching certain species of *Vespertilio* in many points, are distinguished by the single (in place of two) pair of unicuspidate upper incisors separated by a wide space and placed close to the canines, by the small transverse first lower premolar crushed in between the canine and second premolar, and, generally, by their conical, nearly naked, muzzles and thick leathery membranes. *S. temmincki* is the commonest bat in India, and appears often before the sun has touched the horizon. *S. gigas*, from equatorial Africa, is the largest species. *Nycticejus*, with the same dental formula as *Scotophilus*, is distinguished, by the first lower premolar not being crushed in between the adjoining teeth, and the comparatively greater size of the last upper molar. It includes only the North American *N. humeralis* (*crepuscularis*), a bat scarcely larger than the pipistrelle. The hairy-membraned bats of the genus *Lasiurus* (*Atalapha*), with *i.* 1/3, *p.* 2/2 or 1/2, are also limited to the New World, and generally characterized by the interfemoral membrane being more or less covered with hair and by the peculiar form of the tragus, which is expanded above and abruptly curved inwards. In those species which have two upper premolars the first is extremely small and internal to the tooth-row. The genus, which is divided into *Lasiurus* proper and *Dasypterus*, is further characterized by the presence of four teats in the female, and by the general production of three or four offspring at a birth. *Rhogëessa* and *Tomopeas* are allied tropical American types. *Murina*, with the subgenus *Harpiocephalus*, has *i.* 2/3, *p.* 2/2, and includes several small bats distinguished by the prominent tube-like nostrils and hairy interfemoral membrane. *M. suilla*, from Java, the Malay and neighbouring islands, is a well-known species, and the closely allied *M. hilgendorfi* is from Japan. The remaining species are from the Himalaya, Tibet and Ceylon; and apparently restricted to the hill-tracts of the countries in which they are found. Next to *Vespertilio* the genus *Myotis* (divisible into several subgenera), with *i.* 2/3, *p.* 3/3, includes the largest number of species, and has rather a wider geographical distribution in both hemispheres, one species being recorded from the Navigator Islands. The species may be recognized by the peculiar character of the pairs of upper incisors on each side, the cusps of which diverge from each other, by the large number of premolars, of which the second upper is always small, and by the oval elongated ear and narrow tragus. The British *M. bechsteini* and *M. nattereri* are examples of this group. *Cerivoula* (*Kerivoula*), which also has *p.* 3/3, is distinguished by the parallel upper incisors and the large second upper premolar. There are numerous African and Indo-Malayan species, of which *C. picta*, from India and Indo-Malay, is characterized by its brilliant orange fur, and membranes variegated with orange and black. The genus includes delicately formed insectivorous, tropical, forest-haunting bats, whose colouring approximates them to the ripe bananas among which they often pass the daytime.

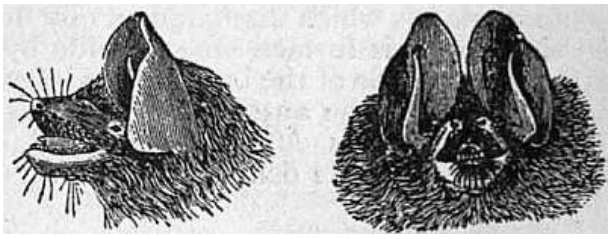


FIG. 19.—Head of *Cerivoula hardwickei*. (From Dobson.)

Another subgroup, *Miniopterеae*, is represented solely by the genus *Miniopterus*, with *i.* 2/3, *p.* 2/3. The incisors are separated from one another in front and from the canines; the first phalange of the middle finger is very short, the crown of the head elevated, and the tail long. The genus is represented by some half-dozen Old World species, among which the typical *M. schreibersi* ranges from Europe, southern Asia, and Africa to Japan and Australasia.

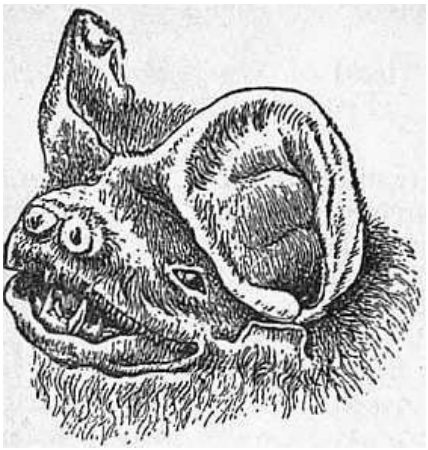


FIG. 21.—Head of Mastiff-bat (*Molossus glaucinus*). (From Dobson.)

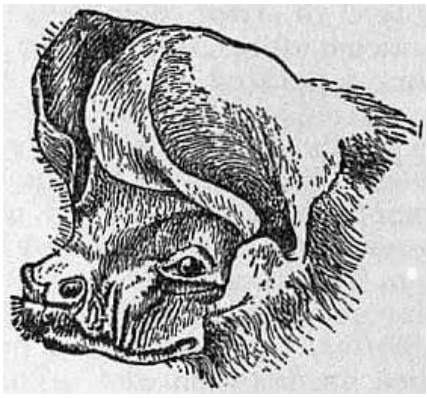


FIG. 22.—Head of *Nyctinomops macrotis*. (From Dobson.)

The last subfamily is that of the *Molossinae*, included by Dobson in the family *Emballonuridae*. In this group the premaxillae are in contact or but very slightly separated; the ears are large, with the tragus small; the dental formula is *i.* 1/1 (1/2 or 1/3), *c.* 1/1, *p.* 1/2 (2/2), *m.* 3/3; and the fibula is strongly developed. In their blunt muzzles and many other features these bats undoubtedly resemble the *Emballonuridae*, from the typical members of which they differ by the production of the thick tail far beyond the margin of the interfemoral membrane. They are further characterized by their broad and stout feet, in which the first, and in most cases also the fifth, toe is thicker than the rest, and furnished with long bent hairs; and by the presence of callosities at the base of the thumbs, and a single pair of large upper incisors occupying the centre of the space between the canines. The feet are free from the wing-membrane, which folds up under the fore-arm and legs; the interfemoral membrane is retractile, being movable backwards and forwards along the tail; this power of varying its superficial extent confers on these bats great dexterity in changing the direction of flight. All are able to walk or crawl well, and spend much of their time on trees. The genus *Chiromeles*, with *i.* 1/1, *c.* 1/1, *p.* 1/2, *m.* 3/3, the first hind-toe much larger than and separate from the others, and the widely sundered ears, is represented by *C. torquata*, a large bat of peculiar aspect, inhabiting the Indo-Malay countries. This species is nearly naked, a collar only of thinly spread hairs half surrounding the neck, and is remarkable for its enormous throat-sac and nursing-pouches. The former consists of a semicircular fold of skin forming a pouch round the neck beneath, concealing the orifices of subcutaneous pectoral glands which discharge an oily fluid of offensive smell. The nursing-pouch is formed on each side by an extension of a fold of skin from the side of the body to the inferior surfaces of the humerus and femur. In the anterior part of this pouch the teat is placed. The typical genus *Molossus* (fig. 21) includes the mastiff-bats, characterized by the dental formula *i.* 1/1 or 1/2, *p.* 1/2 or 2/2; and by the upper incisors being close together in front. The genus is restricted to the tropical and subtropical regions of the New World. *M. obscurus*, a small species common in tropical America, inhabits the hollow trunks of palms and other trees and the roofs of houses. The males and females live apart (as is the case in most if not all bats). In West Africa the mastiff-bats are represented by *Eomops*, with one species; while *Nyctinomops* includes a number of tropical American species more nearly related to the next genus, in which some of them (fig. 22) were formerly included. The widely spread *Nyctinomus*, with *i.* 1/3 or 1/2, *p.* 2/2 or 1/2, and the upper incisors separate in front, includes numerous species inhabiting the tropical and subtropical parts of both hemispheres. The lips of the bats of this genus are even more expansible than in *Molossus*, in many of the species (fig. 22) showing vertical wrinkles. *N. toeniotis* (or *cestonii*), one of the largest species, alone extends into Europe, as far north as Switzerland. *N. johorensis*, from the Malay Peninsula, is remarkable for the extraordinary form of its ears. *N. brasiliensis* is common in tropical America, and extends as far north as California.

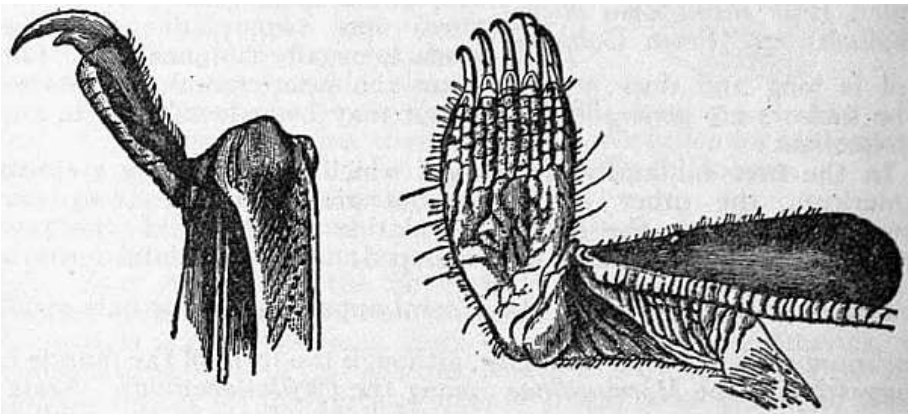


FIG. 23.—Thumb and leg and foot of New Zealand bat (*Mystacops tuberculatus*), enlarged. (From Dobson.)

Here may be conveniently noticed two very rare and aberrant bats, *Myzopoda* (or *Myxopoda*) *aurita* of Madagascar, and *Mystacops* (or *Mystacina*) *tuberculatas* of New Zealand, the latter of which is believed to be well-nigh, if not entirely, exterminated.

Myzopoda and Mystacops.

Their systematic position and affinities are somewhat uncertain; but in the opinion of O. Thomas[2] the former should typify a separate family, *Myzopodidae*, in which the latter may also find a place. From all other bats *Myzopoda* is distinguished by the presence of a peculiar mushroom-shaped organ at the base of the large ear, and by the union of the tragus with the latter, on the inner base of which it forms a small projection. There are three phalanges in the middle finger; and the whole inferior surface of the thumb supports a large sessile horseshoe-shaped adhesive pad, with the circular margin directed forwards and notched along its edge, while a smaller pad occupies part of the sole of the hind-foot. Mr Thomas regards this bat as related on the one hand to the subfamily *Mormopsinae* of the *Phyllostomatidae*, and on the other to the *Natalinae* among the *Vespertilionidae*; both these groups being regarded by him as of family rank.

Mystacops resembles *Myzopoda* in having three phalanges to the middle finger, but differs in that the tail perforates the interfemoral membrane to appear on its upper surface in the manner characteristic of the *Emballonuridae*. The greater part of the wing-membrane is exceedingly thin, but a narrow portion along the fore-arm, the sides of the body, and the legs, is thick and leathery, and beneath this thickened portion the wings are folded. Other peculiarities of structure are found in the form of the claws of the thumbs and toes, each of which has a small heel projecting from its concave surface near the base, also in the sole of the foot and inferior surface of the leg, as shown in fig. 23. The plantar surface, including the toes, is covered with soft and very lax, deeply wrinkled skin, and each toe is marked by a central longitudinal groove with short grooves at right angles to it. The lax wrinkled integument is continued along the inferior flattened surface of the ankle and leg. These peculiarities appear to be related to climbing habits in the species.

Extinct Bats.

Palaeontology tells us nothing with regard to the origin of the Chiroptera, all the known fossil species, some of which date back to the Oligocene, being more or less closely allied to existing types, and therefore of comparatively little interest. The origin of the order from primitive insectivorous mammals must have taken place at least as early as the Lower Eocene. It is, however, noteworthy that several of the earlier extinct species appear to be related to the *Rhinolophidae*, which is the most generalized family of the order. Remains of *Pteropodidae* belonging to existing genera occur in the caves of tropical countries in the eastern hemisphere; and the skeleton of an extinct generic type, *Archaeopteropus*, has been obtained from the Miocene lignite of Italy, which indicates a form to a certain extent transitional in character between typical fruit-bats and the insectivorous bats. The tail, for instance, which in most modern fruit-bats is rudimentary, with only three or four vertebrae, in the fossil has eight complete vertebrae; while the teeth of the extinct form are distinctly cusped. Whether, however, the tail is longer than in the existing *Notopteris* of Fiji and New Guinea, or whether the molars are more distinctly cusped than is the case with the Solomon Island *Pteropus* (*Pteralopex*), is not stated. Still, the fact that the Miocene fruit-bat does show certain signs of approximation to the insectivorous (and more generalized) section of the order is of interest. Of the Oligocene forms, *Pseudorhinolophus* of Europe is apparently a member of the *Rhinolophidae*; but the affinities of *Alastor* and *Vespertiliavus*, which are likewise European, are more doubtful, although the latter may be related to *Taphozous*. The

North American *Vespertilio* (*Vesperugo*) *anemophilus* and the European *V. aquensis* and *V. parisiensis* are, on the other hand, members of the *Vespertilionidae*, the last being apparently allied to the serotine (*V. serotinus*).

AUTHORITIES.—The above article is based to some extent on the article in the 9th edition of this work by G.E. Dobson, whose British Museum "Catalogue" is, however, now obsolete. Professor H. Winge's "Jordfundae og nulevende Flagermus (Chiroptera)," published in *E. Mus. Lundi* (Copenhagen, 1892), contains much valuable information; and for *Pteropodidae* Dr P. Matschie's *Megachiroptera* (Berlin, 1899), should be consulted. For the rest the student must refer to namerous papers by G.M. Allen, K. Andersen, F.A. Jentink, G.S. Miller, T.S. Palmer, A.G. Rehn, O. Thomas and others, in various English and American zoological serials, all of which are quoted in the volumes of the *Zoological Record*.

(R. L.*)

1 *Bull. Amer. Mus. Nat. Hist.* vol. xii. (1899).

2 *Proc. Zool. Soc.* (London, 1904), vol. ii.

CHIRU, a graceful Tibetan antelope (*Pantholops Hodgsoni*), of which the bucks are armed with long, slender and heavily-ridged horns of an altogether peculiar type, while the does are hornless. Possibly this handsome antelope may be the original of the mythical unicorn, a single buck when seen in profile looking exactly as if it had but one long straight horn. Although far from uncommon, chiru are very wary, and consequently difficult to approach. They are generally found in small parties, although occasionally in herds. They inhabit the desolate plateau of Tibet, at elevations of between 13,000 and 18,000 ft., and, like all Tibetan animals, have a firm thick coat, formed in this instance of close woolly hair of a grey fawn-colour. The most peculiar feature about the chiru is, however, its swollen, puffy nose, which is probably connected with breathing a highly rarefied atmosphere. A second antelope inhabiting the same country as the chiru is the goa (*Gazella picticaudata*), a member of the gazelle group characterized by the peculiar form of the horns of the bucks and certain features of coloration, whereby it is markedly distinguished from all its kindred save one or two other central Asian species. The chiru, which belongs to the typical or antilopine section of antelopes, is probably allied to the saiga.

(R. L.*)

CHIRURGEON, one whose profession it is to cure disease by operating with the hand. The word in its original form is now obsolete. It derives from the Mid. Eng. *cirurgien* or *sirurgien*, through the Fr. from the Gr. χειρουργός, one who operates with the hand (from χείρ, hand, ἔργον, work); from the early form is derived the modern word "surgeon." "Chirurgeon" is a 16th century reversion to the Greek origin. (See Surgery.)

CHISEL (from the O. Fr. *cisel*, modern *ciseau*, Late Lat. *cisellum*, a cutting tool, from *caedere*, to cut), a sharp-edged tool for cutting metal, wood or stone. There are numerous varieties of chisels used in different trades; the carpenter's chisel is wooden-handled with a straight edge, transverse to the axis and bevelled on one side; stone masons' chisels are bevelled on both sides, and others have oblique, concave or convex edges. A chisel with a semicircular blade is called a "gouge." The tool is worked either by hand-pressure or by blows from a hammer or mallet. The "cold chisel" has a steel edge, highly tempered to cut unheated metal. (See Tool.)

CHISLEHURST, an urban district in the Sevenoaks parliamentary division of Kent, England, 11-1/4 m. S.E. of London, by the South-Eastern & Chatham railway. Pop. (1901) 7429. It is situated 300 ft. above sea-level, on a common of furze and heather in the midst of picturesque country. The church of St Nicholas (Perpendicular with Early English portions, but much restored) has a tomb of the Walsingham family, who had a lease of the manor from Elizabeth; Sir Francis Walsingham, the statesman, being born here in 1536. Another statesman of the same age, Sir Nicholas Bacon, was born here in 1510. Near the church is an ancient cockpit. The mortuary chapel attached to the Roman Catholic church of St Mary was built to receive the body of Napoleon III., who died at Camden Place in 1873; and that of his son was brought hither in 1879. Both were afterwards removed to the memorial chapel at Farnborough in Hampshire. Camden Place was built by William Camden, the antiquary, in 1609, and in 1765 gave the title of Baron Camden to Lord Chancellor Pratt. The house was the residence not only of Napoleon III., but of the empress Eugénie and of the prince imperial, who is commemorated by a memorial cross on Chislehurst Common. The house and grounds are now occupied by a golf club. There are many villa residences in the neighbourhood of Chislehurst.

CHISWICK, an urban district in the Ealing parliamentary division of Middlesex, England, suburban to London, on the Thames, 7½ m. W. by S. of St Paul’s cathedral. Pop. (1901) 29,809. The locality is largely residential, but there are breweries, and the marine engineering works of Messrs Thornycroft on the river. Chiswick House, a seat of the duke of Devonshire, is surrounded by beautiful grounds; here died Fox (1806) and Canning (1827). The gardens near belonged till 1903 to the Royal Horticultural Society. The church of St Nicholas has ancient portions, and in the churchyard is the tomb of William Hogarth the painter, with commemorative lines by David Garrick. Hogarth’s house is close at hand. Chiswick Hall, no longer extant, was formerly a country seat for the masters and sanatorium for the scholars of Westminster school. Here in 1811 the Chiswick Press was founded by Charles Whittingham the elder, an eminent printer (d. 1840).

CHITA, a town of east Siberia, capital of Transbaikalia, on the Siberian railway, 500 m. E. of Irkutsk, on the Chita river, half a mile above its confluence with the Ingoda. Pop. (1883) 12,600; (1897) 11,480. The Imperial Russian Geographical Society has a museum here. Several of the palace revolutionaries, known as Decembrists, were banished to this place from St Petersburg in consequence of the conspiracy of December 1825. The inhabitants support themselves by agriculture and by trade in furs, cattle, hides and tallow bought from the Buriats, and in manufactured wares imported from Russia and west Siberia.

CHITALDRUG, a district and town in the native state of Mysore, India. The district has an area of 4022 sq. m. and a population (1901) of 498,795. It is distinguished by its low rainfall and arid soil. It lies within the valley of the Vedavati or Hagari river, mostly dry in the hot season. Several parallel chains of hills, reaching an extreme height of 3800 ft., cross the district; otherwise it is a plain. The chief crops are cotton and flax; the chief manufactures are blankets and cotton cloth. The west of the district is served by the Southern Mahratta railway. The largest town in the district is Davangere (pop. 10,402). The town of CHITALDRUG, which is the district headquarters (pop. 1901, 5792), was formerly a military cantonment, but this was abandoned on account of its unhealthiness. It has massive fortifications erected under Hyder Ali and Tippoo Sahib towards the close of the 18th century; and near it on the west are remains of a city of the 2nd century A.D.

CHITON, the name[1] given to fairly common littoral animals of rather small size which belong to the phylum Mollusca, and, in the possession of a radula in the buccal cavity, resemble more especially the Gastropoda. Their most important characteristic in comparison with the latter is that they are, both in external and internal structure, bilaterally symmetrical. The dorsal integument or mantle bears, not a simple shell, but eight calcareous plates in longitudinal series articulating with each other. The ventral surface forms a flat creeping "foot," and between mantle and foot is a pallial groove in which there is on each side a series of gills. Originally the Chitons were placed with the limpets, *Patella*, in Cuvier's *Cyclobranchia*, an order of the Gastropoda. In 1876 H. von Jhering demonstrated the affinities of *Neomenia* and *Chaetoderma*, vermiform animals destitute of shell, with the Chitons, and placed them all in a division of worms which he named Amphineura. The discovery by A.A.W. Hubrecht in 1881 of a typical molluscan radula and odontophore in a new genus *Proneomenia*, allied to *Neomenia*, showed that the whole group belonged to the Mollusca. E. Ray Lankester (*Ency. Brit.*, 9th ed., 1883) placed them under the name Isopleura as a subclass of Gastropoda. Paul Pelseneer (1906) raised the group to the rank of a class of Mollusca, under von Jhering's name Amphineura. 248

The Amphineura are divided into two orders: (1) the Polyplacophora, or Chitons; (2) the Aplacophora, or forms without shells, *Neomenia*, *Chaetoderma* and their allies.

Order I.—Polyplacophora

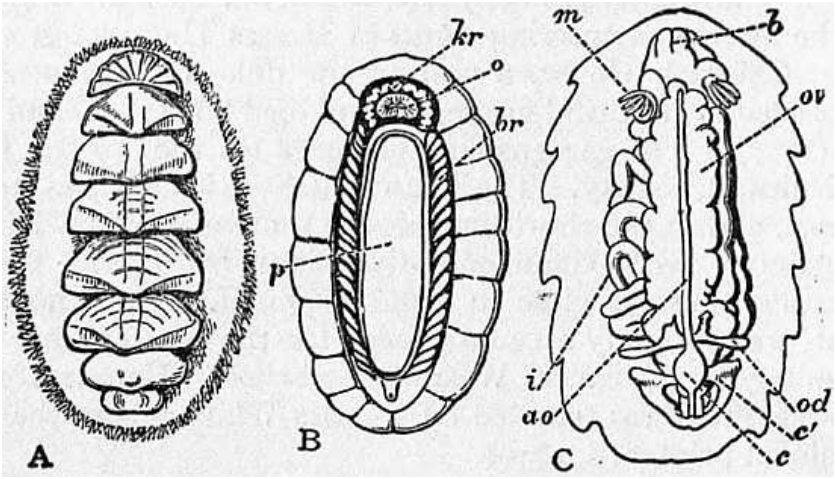


Fig. 1.—Three views of Chiton.

A. Dorsal view of *Chiton Wosnessenksii*, Midd., showing the eight shells. (After Middendorf.)

B. View from the pedal surface of a species of Chiton from the Indian Ocean, *p*, foot; *o*, mouth (at the other end of the foot is seen the anus raised on a papilla); *kr*, oral fringe; *br*, the numerous ctenidia (branchial plumes); spreading beyond these, and all round the animal, is the mantle-skirt. (After Cuvier.)

C. The same species of Chiton, with the shells removed and the dorsal integument reflected, *b*, buccal mass; *m*, retractor muscles of the buccal mass; *ov*, ovary; *od*, oviduct; *i*, coils of intestines; *ao*, aorta; *c'*, left auricle; *c*, ventricle.

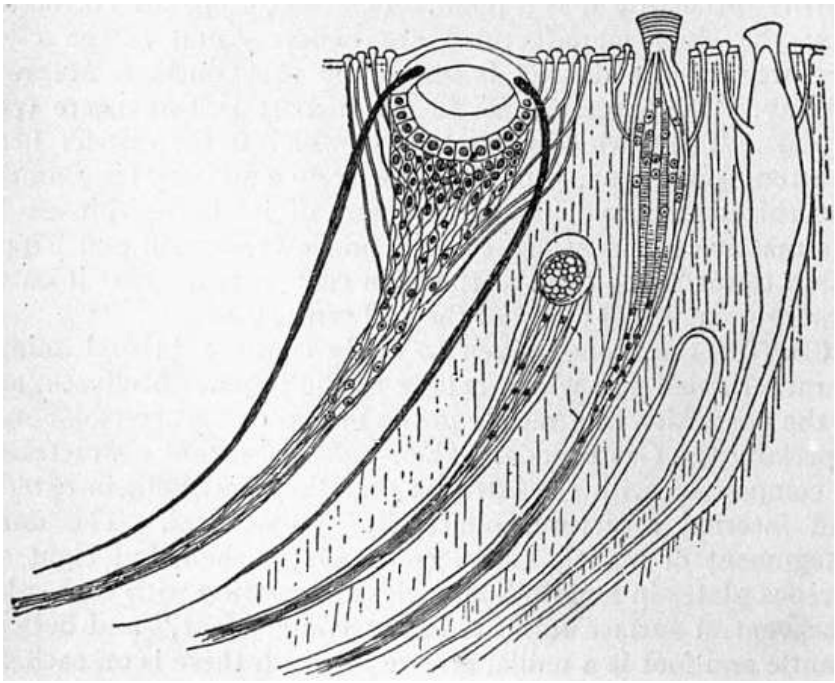
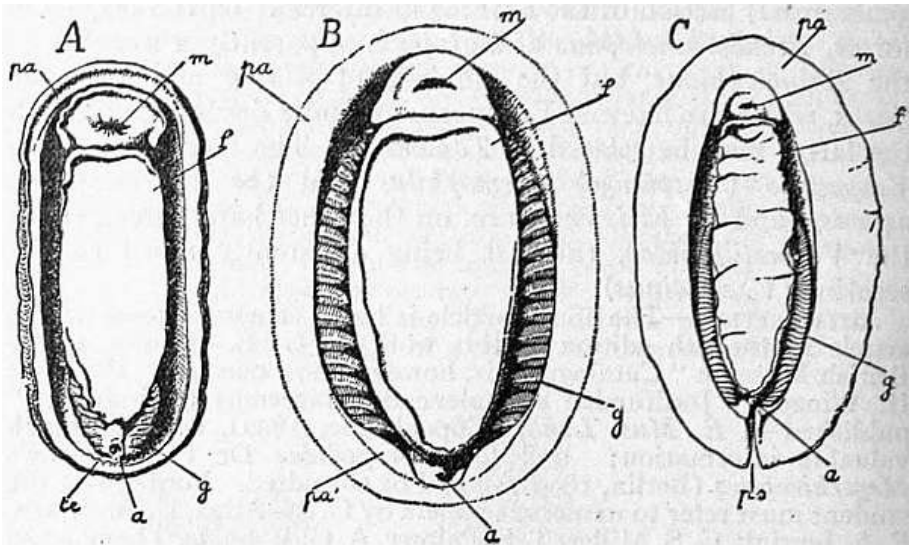


FIG. 2.—Pallial eye and aesthetes of *Acanthopleura spiniger* (Moseley).

Each of the eight valves of the shell is made up of two distinct calcareous layers: (a) an outer or upper called the tegmentum, which is visible externally; (b) a deeper layer called articulamentum which is porcellaneous, quite compact, and entirely covered by the tegmentum. In the lower forms the two layers are coextensive and have smooth edges, but in the higher forms the articulamentum projects laterally beyond and beneath the tegmentum into the substance of the mantle. These projections are termed insertion plates; they are usually slit or notched to form teeth, the edges of which may be smooth and sharp, or may be crenulated. The anterior margin of each valve except the first is provided with two projections called sutural laminae which underlie the posterior margin of the preceding valve.



From Lankester, *Treatise on Zoology*.

FIG. 3.—Ventral aspect of three species of Polyplacophora showing position of gills.

A. *Lepidopleurus benthus*.

B. *Boreochiton cinereus*.

C. *Schizochiton incisus*. *a*, anus; *f*, foot; *g*, gills; *m*, mouth; *pa*, mantle; *pa'*, anal lobe of mantle; *ps*, pallial slit; *te*, pallial tentacles.

The tegmentum is formed by the fold of mantle covering the edge of the articulamentum, and extends over the latter from the sides. It is the first part of the shell formed in development. The tegmentum is much reduced in *Acanthochiton*, and absent in the adult

Cryptochiton. The tegmentum is pierced by numerous vertical ramified canals which contain epithelial papillae of the epidermis. These papillae form pallial sense-organs, containing nerve-end bulbs, covered by a dome of cuticle, and innervated from the pallial nerve-cords. They are termed according to their size, micraesthetes and megalaesthetes. In the common species of *Chiton* and many others of the family *Chitonidae* the megalaesthetes are developed into definite eyes, the most complicated of which have retina, pigment within the eye, cornea and crystalline lens (intra-pigmental eyes) (fig. 2). The eyes are arranged in rows running diagonally from the median anterior beak of each valve to its lateral borders There may be only one such row on either side, or many rows. In some species the total number present amounts to thousands.

Branchiae.—The series of gills may extend the whole length of the body in the pallial groove, or may be confined to the posterior end. Each gill has the structure of a typical molluscan ctenidium, consisting of an axis bearing an anterior and posterior row of filaments or lamellae. The gills are thus metamerically repeated; there may be from four to eighty pairs, but there is often a numerical asymmetry on the two sides. The largest pair of branchiae is placed immediately behind the renal openings and corresponds to the single pair of other molluscs, the organs being repeated anteriorly only (Metamacrobranchs) or anteriorly and posteriorly (Mesomacrobranchs).

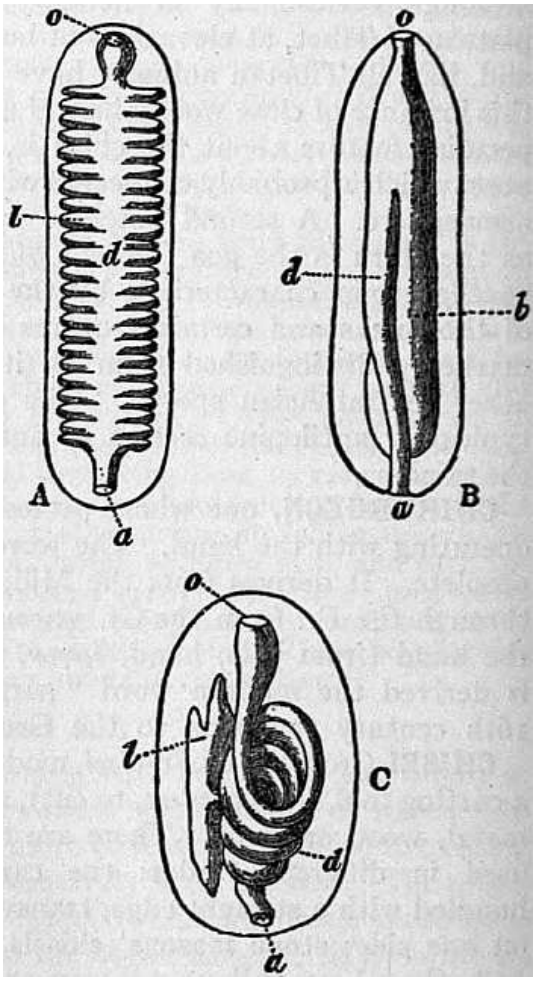


FIG. 4.—Diagrams of the alimentary canal of Amphineura (from Hubrecht).
A. Neomenia and Proneomenia.
B. Chaetoderma.
C. Chiton.
o, Mouth.
a, Anus.
d, Alimentary canal.
l, Liver (digestive gland).

Intestine.—The digestive tube in the Polyplacophora, which are herbivorous, is longer than the body, and thrown into a few coils, the anus being median and posterior. The mouth leads into the buccal cavity, on the ventral side of which opens the radular caecum. Each transverse row of teeth of the radula contains 17 teeth, one of which is median, while the second and the fifth on each side are enlarged. Two pairs of glands open into the buccal cavity, and at the junction of pharynx and oesophagus is another pair called the sugar glands. The stomach is surrounded by the liver or digestive gland, consisting of two lobes which are symmetrical in the young animals, but in the adult the right lobe is anterior and smaller.

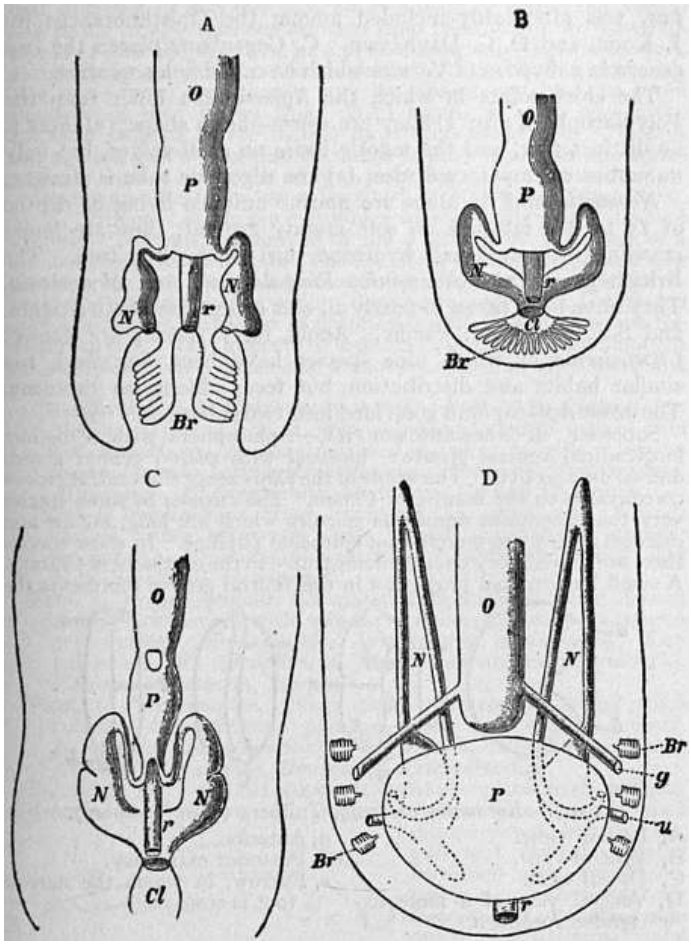


FIG. 5.—Diagrams of the excretory and reproductive organs of Amphineura (after Hubrecht).

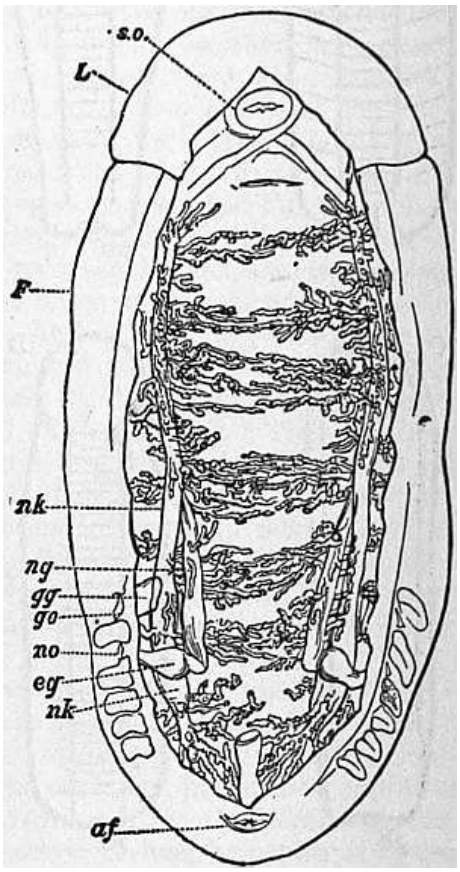
A, Chaetoderma.
B, Neomenia.
C, Proneomenia.
D, Chiton.
O, Ovary.
P, Pericardium.
N, Nephridium.
u, External aperture of nephridium.
g, External aperture of the genital duct of Chiton.
r, Rectum.
Cl, Cloacal or pallial chamber of Neomeniae and Chaetoderma.
Br, Ctenidia (branchial plumes).

Coelom, Gonads and Excretory Organs.—As in other molluscs the coelom is represented by a large pericardial cavity, situated above the intestine posteriorly, and a generative sac which is single and median and situated in front of the pericardium, except in the *Nuttalochiton hyadesi*, where the gonads are in a similar position, but are paired. The excretory organs are coelomoducts with an internal ciliated opening into the pericardium and an opening to the exterior. Both the openings are close together, the external opening being just in front of the principal gill near the posterior end of the body. The renal tube is doubled on itself, its middle part where the bend occurs being situated more or less anteriorly. The excretory surface is increased by numerous ramified caeca which extend beneath the body wall laterally and ventrally, and open into the tube (fig. 6). The sexes are distinct, and the ovary is frequently greenish in colour, the testis red. The gonad is transversely wrinkled and lies between the aorta and the intestine, extending from the pericardium to the anterior end of the body. A simple gonaduct on each side arises from the gonad near its posterior end and passes first forwards, then backwards, and lastly outwards to the external opening in the pallial groove, anterior to the renal aperture. There may be from one to nine gills between the genital and renal pores.

Heart and Vascular System.—The heart is enclosed in the pericardium, and consists of a median elongated ventricle and a pair of lateral auricles, so that the structure somewhat resembles that in the Lamellibranchiata. The openings of the auricles into the ventricle vary in different forms. In many of the lower forms (*Lepidopleuridae, Mopalidae, Ischnochitonidae*) the opening on each side is single and anterior. In the true *Chitonidae* there are generally two apertures on each side, and in two species three or four, another instance of the tendency to metameric repetition in the group. The auricles are connected with one another posteriorly behind the ventricle. The ventricle leads into a single anterior median aorta. As in other molluscs, the arteries do not extend far, but lead into inter-visceral blood-spaces. The venous blood is conducted from the tissues to a large sinus on either side above the pallial groove,

and from this sinus passes to the gills by an afferent vessel in each gill on the internal or pedal margin of the axis. The oxygenated blood is carried from each gill by an efferent vessel on the external or pallial side of the axis to another longitudinal vessel which leads to the auricle on each side.

Nervous System.—There are no well-marked specialized ganglia in the central nervous system, nerve-cells being distributed uniformly along the cords. There are two pairs of longitudinal cords, a pedal pair situated ventrally and united beneath the intestine by numerous commissures, and a pallial pair situated laterally and continuous with one another above the rectum (fig. 7). The four cords are all connected anteriorly with the cerebral commissure which lies above the buccal mass anteriorly. From the points where the cords meet the cerebral commissure, arise on each an anterior labial commissure and a stomatogastric commissure. The letter bears two ganglion swellings, the buccal ganglia. The labial commissure gives off a subradular commissure which also bears two ganglia, these being in close relation to a special sense-organ called the subradular organ, an epithelial projection with nerve-endings, lying in front of the radula and probably gustatory in function. One osphradium or branchial olfactory organ is usually present on each side, on either side of the anus on the inner wall of the mantle, near the base of the last gill. In *Lepidopleuridae* an osphradium occurs at the base of each gill. The sense organs of the shell-valves have already been described.



After Haller (*Arbeiten zool. Instit.*), Vienna, 1882.

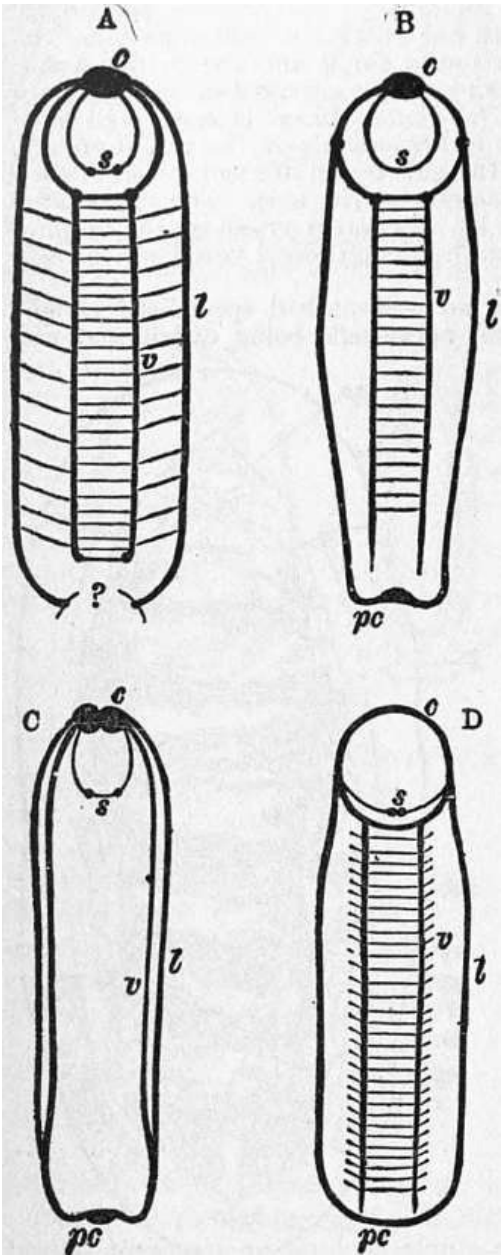
FIG. 6.—Dissection of the renal organs (nephridia) of *Chiton siculus.*

F, Foot.
L, Edge of the mantle not removed in the front part of the specimen.
s.o., Oesophagus.
af, Anus.
gg, Genital duct.
go, External opening of the same.
eg, Stem of the nephridium leading to no, its external aperture.
nk, Reflected portion of the nephridial stem.
ng, Fine caeca of the nephridium, which are seen ramifying transversely over the whole inner surface of the pedal muscular mass.

Development.—The eggs may be laid separately invested by a chitinous envelope, or as in *Ischnochiton magdalenensis* they may form strings containing nearly 200,000 eggs, or the ova may be retained in the pallial groove and undergo development there, as in *Chiton polii* and *Hemiarthrum setulosum*. One species *Callistochiton viviparus* is viviparous and its ova develop without a larval stage in the maternal oviduct. Segmentation is total and at first regular, and is followed by invagination, the blastopore passing to the position of the future mouth. By the development of a ciliated ring just in front of the mouth the embryo becomes a trochosphere. In the centre of the praeoral lobe is a tuft of cilia. Just behind the ciliated ring is a pair of larval eyes which disappear in the adult; these correspond to the cephalic eyes of Lamellibranchs. An ectodemic invagination forms a large mucous gland on the foot, which is more or less atrophied in adult life. The gonads originate by proliferation of the anterior wall of the pericardium. The shell-valves arise as transverse thickenings of the dorsal cuticle behind the ciliated ring, the tegmentum being the first part formed.

Classification.

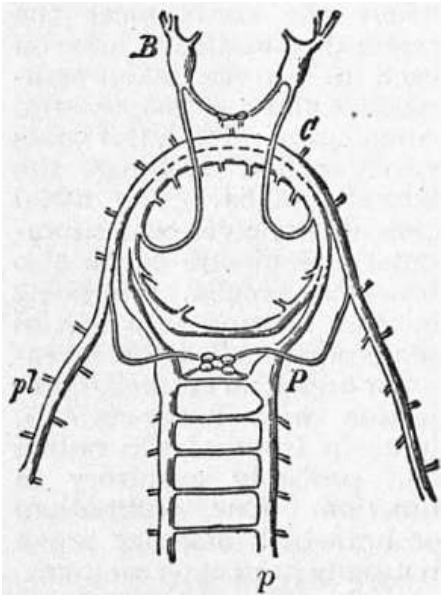
Suborder I. EOPLACOPHORA, Pilsbry.—Tegmentum coextensive with articulamentum, or the latter projecting in smooth unslit plates.



After Hubrecht, loc. cit.

FIG. 7.—Diagrams of the nervous system of Amphineura.

A, Proneomenia.
B, Neomenia.
C, Chaetoderma.
D, Chiton.
c, Cerebral ganglia.
s, Sublingual ganglia.
v, Pedal (ventral) nerve-cord.
l, Visceral (lateral) nerve-cord.
pc. Post-anal junction of the visceral nerve-cords.



From Gegenbaur, *Elements of Comp. Anatomy.*

FIG. 8.—Anterior part of the nervous system of *Chiton cinereus*, in more detail.

B, Buccal ganglia (concerned with the odontophore).
C, Cerebral nerve-mass.
P, Pedal ganglion and commencement of pedal nerve-cord.
pl, Visceral nerve-cord. The sublingual ganglia are not lettered.

Fam. 1. *Lepidopleuridae.*—Terminal margins of end valves never elevated; form oval or oblong. *Lepidopleurus cancellatus*, Sow. North Atlantic and Mediterranean; various abyssal species. *Hanleya hanleyi*, Bean, north Atlantic. *Hemiarthrum Microplax*. The extinct *Gryptochitonidae*, Pilsbry, with other Palaeozoic genera, narrow and elongated in form with terminal margins of end valves elevated, belong to this group.

Suborder II. MESOPLACOPHORA, Pilsbry.—Insertion plates well developed and slit.

Fam. 2. *Ischnochitonidae.*—All the valves with slits, and the inner layer well covered by the outer.

Subfam. 1. *Ischnochitoninae.*—No shell-eyes: sutural laminae separated; slits in the valves 1-7 do not correspond with the ribs of the tegmentum. *Ischnochiton, Trachydermon, Chaetopleura, Stenoplax, Stenoradsia*.

Subfam. 2. *Callochitoninae.* With shell-eyes and united sutural laminae. *Callochiton laevis*, North Atlantic and Mediterranean.

Subfam. 3. *Callistoplacinae.* No shell-eyes, slits in the valves 1-7 corresponding with the ribs of the tegmentum. *Callistochiton* (viviparous). *Nuttalochiton.*

Fam. 3. *Mopaliidae.* Each intermediate valve with a single slit; girdle hairy. *Mopalia, Placiphorella, Plaxiphora, Placophoropsis.*

Fam. 4. *Acanthochitonidae.* Valves immersed in the girdle, with small tegmentum. *Acanthochiton* (A. *fascicularis*, North Atlantic and Mediterranean). *Spongiochiton, Katharina, Amicula, Cryptochiton* (*C. stelleri*, arctic).

Fam. 5. *Cryptoplacidae.* Vermiform, with thick girdle and small valves; insertion and sutural plates strongly drawn forward, sharp and smooth. *Cryptoplax, Choneplax.*

Suborder III. TELEOPLACOPHORA, Pilsbry.—All the valves, or at least the seven anterior, with insertion plates cut into teeth by slits.

Fam. 6. *Chitonidae.* Characters of the suborder.

Subfam. 1. *Chitoninae.* No extra-pigmental eyes; insertion plates with pectinations between the fissures. *Chiton, Eudoxochiton, Trachyodon, Radsia.*

Subfam. 2. *Toniciinae.* Extra-pigmental shell-eyes. *Tonicia, Acanthopleura, Enoplochiton, Onithochiton, Schizochiton, Lorica, Loricella, Liolophura.*

Order 2.—APLACOPHORA, von Jhering.

Chaetoderma was first described by S. Lovén, in 1841, and was for a long time believed to be a Gephyrean worm. *Neomenia*, mentioned first by Michael Sars in 1868 under the name *Solenopus*, was afterwards included among the Opisthobranchs by J. Koren and D.C. Danielssen. C. Gegenbaur placed the two genera in a division of Vermes which he called Solenogastres.

The chief points in which the Aplacophora differ from the Polyplacophora are: (1) they are worm-like in shape; (2) there is no distinct foot, and the mantle bears no shell-valves, but only numerous calcareous spicules; (3) the digestive tube is straight.

Neomenia and its allies are marine animals living at depths of 15 to 800 fathoms on soft muddy ground; they are found crawling on corals and hydrozoa, on which they feed. The British genera are: *Neomenia, Rhopalomenia* and *Myzomenia*. They have been taken in nearly all seas except the South Atlantic and S.E. and N.W. Pacific. About forty species are known. *Chaetoderma*, of which nine species have been described, has similar habits and distribution, but feeds chiefly on Protozoa. The order Aplacophora is divided into two suborders.

Suborder I. NEOMENIOMORPHA.—Aplacophora with a distinct longitudinal ventral groove; bisexual with paired genital glands and no distinct liver. The whole of the skin except the ventral groove corresponds to the mantle of *Chiton*. The cuticle, in some species very thick, contains numerous spicules which are long, hollow and calcified; they are secreted by epithelial papillae. In some species there are also sensory papillae comparable to the aesthetes of Chitons. A small longitudinal projection in the ventral groove represents the foot. Into the groove open mucous glands, a large one anteriorly and another opening into a posteriorly cloacal, branchial cavity.

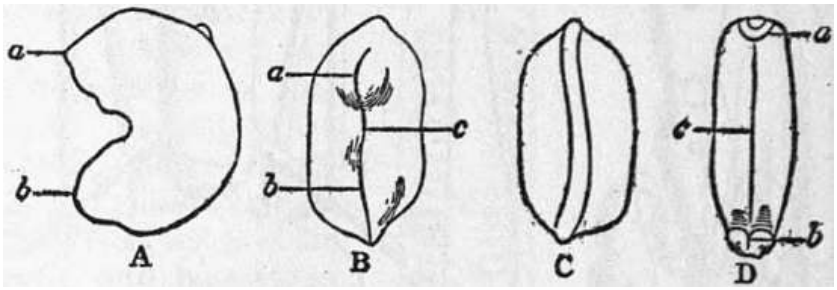


FIG. 9.—*Neomenia carinata*, Tullberg (after Tullberg).

A, Lateral view.
B, Ventral view.
C, Dorsal view.
D, Ventral view of a more extended specimen.
a, Anterior.
b, Posterior extremity.
c, Furrow, in which the narrow foot is concealed.

Branchiae.—In *Neomeniidae* and most of the *Parameniidae* there is a circlet of gills on the inner walls of the cloacal chamber. These gills are simple folds or laminae of the body wall. In other species they are absent.

Intestine.—-The mouth opens into a muscular pharynx lined by a thick cuticle. Into the pharyngeal cavity open salivary glands and radular sac. The former are paired and ventral, and open on a subradular prominence. In some species there is a second dorsal pair. *Neomenia* and other genera have no salivary glands.

The radula when present comprises several transverse rows of teeth, and each transverse row may have several teeth (polystichous), two teeth (distichous), or one tooth (monostichous). It is a curious fact that in the original type *Neomenia* the radula is entirely absent, as it likewise is in several genera of *Proneomeniidae*. The oesophagus is short and leads into a long, straight stomach, provided with numerous symmetrical lateral caeca. The stomach opens into a short straight rectum which opens into the branchial chamber.

Coelom, Gonads and Excretory Organs.—The coelom differs from that of the Chitons in the fact that the cavities of the genital organs are continuous with it, and in the fact that there is only one pair of coelomoducts resembling the renal organs of Chitons, but serving also as genital ducts. The gonads are paired and hermaphrodite, they form a pair of anterior prolongations of the pericardium, extending nearly to the anterior end of the body. Ova are developed on the median, spermatozoa on the outer wall of each genital tube. The pericardium is ciliated internally on its dorsal and lateral walls. The urino-genital tubes arise from the posterior angles of the pericardium, pass first forwards, then backwards, and unite to open by a common opening into the cloaca below the anus except in *Strophomenia*, where the openings are separate. Usually each tube is provided with caecal appendages on its proximal portion, and these serve as vesiculae seminales, while the distal portion is enlarged and glandular and secretes the egg-shell.

Heart and Vascular System.—There is a heart in the pericardium consisting of a median ventricle attached, except in *Neomenia*, to the dorsal wall of the pericardium, and in *Neomenia* a pair of auricular ducts returning blood from the gills to the ventricle. The aorta is not independent as in Chitons, but is a sinus like the other channels of the circulation. A single median ventral sinus passes backwards to the gills or cloaca. The blood is coloured red by haemoglobin in blood corpuscles.

Nervous System.—Ganglionic enlargements are more conspicuous than in the Chitons. In front of the buccal mass is a median cerebral ganglion. From this pass off two pairs of cords, the pleural and pedal, in *Proneomenia* separate from their origin, in *Neomenia* united at first and diverging at a pleural ganglion. The pedal cords anteriorly form a pair of pedal ganglia united by a thick commissure. The supra-rectal commissure may be present and bear an ovoid ganglion; or may be wanting. With regard to sense organs the epithelial papillae of the mantle have been mentioned. There is also in some genera a median retractile sensory papilla on the dorsal posterior surface above the rectum, not covered by the cuticle.

Development has only been described in *Myzomenia banyulensis*, by G. Pruvot. It closely resembles in the early stages that of Chitons. The external surface of the trochosphere is formed of a number of ciliated test-cells. The ectoderm behind the ciliated ring develops spicules, and the post-oral region of the larva elongates. Later the ciliated ring or velum disappears and seven imbricated calcareous plates, made up of flattened spicules, are formed on the dorsal surface. This appears to indicate that the Neomeniomorpha are descended from *Chiton*-like ancestors, and that they have lost their shell valves.

Classification of the Neomeniomorpha.—Fam. 1. *Lepidomeniidae.* Slender, tapering behind, with subventral cloacal orifice; thin cuticle without papillae; flattened spicules; no gills. *Lepidomenia, Ismenia, Ichthyodes, Stylomenia, Dondersia, Nematomenia, Myzomenia, M. banyulensis*, Mediterranean and Plymouth.

Fam. 2. *Neomeniidae.* Short, truncate in front and behind; cloacal orifice transverse; gills present; rather thin cuticle; no radula. *Neomenia* (*N. carinata*, N. Atlantic and N. and N.W. Scotland), *Hemimenia*.

Fam. 3. *Proneomeniidae.* Elongated, cylindrical, rounded at both ends; thick cuticle with acicular spicules; radula polystichous or wanting. *Proneomenia, Amphimenia, Echinomenia, Rhopalomenia* (*R. aglaopheniae*, Mediterranean and Plymouth), *Notomenia, Pruvotia, Strophomenia*.

Fam. 4. *Parameniidae.* Short and truncated in front; thick cuticle, often without papillae; gills and radula present. *Paramenia, Macellomenia, Pararhopalia, Dinomenia, Cyclomenia, Proparamenia, Uncimenia, Kruppomenia.*

Suborder II. Chaetodermomorpha.—

FIG. 10.—*Chaetoderma nitidulum*, Lovén (after Graff). The cephalic enlargement is to the left, the anal chamber (reduced pallial chamber, containing the concealed pair of ctenidia) to the right.

Aplacophora without distinct ventral groove, with single median unisexual gonad, with differentiated hepatic sac, and with cloacal chamber furnished with two bipectinate gills. There are only two genera in this suborder: *Chaetoderma*, and *Limifossor* from Alaska. The characters therefore are very uniform. The body is worm-like and cylindrical, the posterior half a little thicker than the anterior; the posterior extremity forms the enlarged funnel-like branchial or cloacal chamber. The anterior extremity is also somewhat enlarged. The whole surface is uniformly covered with short compressed calcareous spicula embedded in the cuticle.

Branchiae.—The single pair of branchiae are placed symmetrically right and left of the anus, and each has the structure of a ctenidium bearing a row of lamellae on each side as in the Polyplacophora.

Intestine.—The mouth is anterior, terminal and crescentic, and beneath it is a rounded ventral shield. On the floor of the pharynx or buccal mass is a rudimentary radula, which in many species consists of a single large tooth, bearing two small teeth or a row of teeth. In other species the radula is more of the usual type consisting of several transverse rows of two or three teeth each. Two pairs of salivary glands open into the buccal cavity. The digestive tube is straight and simple, wider in its anterior part, into which opens the duct of the hepatic caecum (fig. 4, B). The latter extends backwards on the ventral side of the intestine.

Coelom, Gonads and Excretory Organs.—These are closely similar in their relations to those of the Neomeniomorpha. The chief difference is that the gonad or generative portion of the coelom is single and median, opening into the pericardium by a single posterior aperture. The excretory organs or coelomoducts arise from the posterior corners of the pericardium, run forwards and then backwards to open by separate apertures lateral to the gills (fig. 5, A). There are no accessory generative organs.

The heart and vascular system are similar to those of the Neomeniomorpha, the only important differences being that the ventricle is nearly free in the pericardial cavity, and that the latter is traversed by the retractor muscles of the gills.

Nervous System.—There are two closely connected cerebral ganglia, from which arise the usual two pairs of nerve cords. Pallial and pedal on each side are closer together than in the other groups, and posteriorly they unite into a supra-rectal cord provided with a median ganglionic enlargement (fig. 7, C). A small stomatogastric commissure bearing two small ganglia arises from the cerebral ganglia and surrounds the oesophagus.

The development is at present entirely unknown.

General Remarks on the Amphineura.

The most important theoretical question concerning the Amphineura is how far do they represent the original condition of the ancestral mollusc? That is to say, we have to inquire which of their structural features is primitive and which modified. Their bilateral symmetry is obviously to be regarded as primitive, and the nervous system shows an original condition from which that of the asymmetrical twisted Gastropods can be derived. But in many other features both external and internal the three principal divisions differ so much from one another that we have to consider in the case of each organ-system which condition is the more primitive. According to Paul Pelseneer the Polyplacophora are the most archaic, the Aplacophora being specialized in (1) the great reduction of the foot, (2) the disappearance of the shell (*Cryploplax* among the Polyplacophora showing both reductions in progress), (3) the disappearance of the radula. But it is a widely recognized principle of morphology that a much modified animal is by no means modified to the same degree in all its organs. A form which is primitive on the whole may show a more advanced stage of evolution in some particular system of organs than another animal which is on the whole more highly developed and specialized. Thus the independent metamerism of certain organs in the Chitons is not primitive but acquired within the group: *e.g.* the shell valves and the ctenidia. And although embryology seems to prove that the Neomeniomorphs are derived from forms with a series of shell-valves, nevertheless it seems probable that the calcareous spicules which alone are present in adult Aplacophora preceded the solid shell in evolution.

It is held by some morphologists that the mollusc body is unsegmented, and therefore is to be compared to a single segment of a Chaetopod or Arthropod. In this case there should be only one pair of coelomoducts in the adult, the pair of true nephridia which should also occur

being represented by the larval nephridia. There should also be only a single coelom, or a pair of lateral coelomic cavities. On this view then the Aplacophora are more primitive than the Polyplacophora in the relations of coelom, gonad and coelomoducts; and the genital ducts of the Chitons have arisen either by metameric repetition within the group, or by the gradual loss of an original connexion between the generative sac and the renal tube, as in Lamellibranchs and Gastropods, the generative sac acquiring a separate duct and opening to the exterior on each side.

LITERATURE.—A. Sedgwick, "On certain Points in the Anatomy of Chiton," *Proc. R. Soc. Lond.* xxxiii., 1881; J. Blumrich, "Das Integument der Chitonen," *Zeitsch. f. wiss. Zool.* lii., 1891; A.C. Haddon, "Report on the Polyplacophora," *Challenger Reports. Zool.* pt. xliii., 1886; H.N. Moseley, "On the presence of Eyes in the Shells of certain Chitonidae, and on the structure of these Organs," *Quart. Journ. Mic. Sci.* new ser. xxv., 1885; A.A.W. Hubrecht, "Proneomenia Sluiteri," *Nied. Arch. f. Zool.* Suppl. 1., 1881; A. Kowalewsky and A.F. Marion, "Contr. à l'histoire des Solenogastres ou Aplacophores," *Ann. Mus. Marseille, Zool.* iii., 1887; A. Kowalewsky, "Sur le genre Chaetoderma," *Arch. de zool. expér.* (3) ix., 1901; P. Pelseneer, "Mollusca," *Treatise on Zoology*, edited by E. Ray Lankester, pt. v., 1906; E. Ray Lankester, "Mollusca," in the 9th ed. of this Encyclopaedia, to which this article is much indebted.

(J. T. C.)

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1 The Gr. χιτών was a garment in the shape of a loose tunic, varying at different periods: see COSTUME: *Greek*.

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