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Grasshopper to Greek Language

Articles in This Slice

GRASSHOPPER (Fr. *sauterelle*, Ital. *grillo*, Ger. *Grashüpfer*, *Heuschrecke*, Swed. *Gräshoppa*), names applied to orthopterous 377
insects belonging to the families *Locustidae* and *Acridiidae*. They are especially remarkable for their saltatory powers, due to the great development of the hind legs, which are much longer than the others and have stout and powerful thighs, and also for their stridulation, which is not always an attribute of the male only. The distinctions between the two families may be briefly stated as follows:—The *Locustidae* have very long thread-like antennae, four-jointed tarsi, a long ovipositor, the auditory organs on the tibiae of the first leg and the stridulatory organ in the wings; the *Acridiidae* have short stout antennae, three-jointed tarsi, a short ovipositor, the auditory organs on the first abdominal segment, and the stridulatory organ between the posterior leg and the wing. The term "grasshopper" is almost synonymous with Locust (*q.v.*). Under both "grasshopper" and "locust" are included members of both families above noticed, but the majority belong to the *Acridiidae* in both cases. In Britain the term is chiefly applicable to the large green grasshopper (*Locusta* or *Phasgonura viridissima*) common in most parts of the south of England, and to smaller and much better-known species of the genera *Stenobothrus*, *Gomphocerus* and *Tettix*, the latter remarkable for the great extension of the pronotum, which often reaches beyond the extremity of the body. All are vegetable feeders, and, as in all orthopterous insects, have an incomplete metamorphosis, so that their destructive powers are continuous from the moment of emergence from the egg till death. The migratory locust (*Pachytylus cinerascens*) may be considered only an exaggerated grasshopper, and the Rocky Mountain locust (*Caloptenus spretus*) is still more entitled to the name. In Britain the species are not of sufficient size, nor of sufficient numerical importance, to do any great damage. The colours of many of them assimilate greatly to those of their habitats; the green of the *Locusta viridissima* is wonderfully similar to that of the herbage amongst which it lives, and those species that frequent more arid spots are protected in the same manner. Yet many species have brilliantly coloured under-wings (though scarcely so in English forms), and during flight are almost as conspicuous as butterflies. Those that belong to the *Acridiidae* mostly lay their eggs in more or less cylindrical masses, surrounded by a glutinous secretion, in the ground. Some of the *Locustidae* also lay their eggs in the ground, but others deposit them in fissures in trees and low plants, in which the female is aided by a long flattened ovipositor, or process at the extremity of the abdomen, whereas in the *Acridiidae* there is only an apparatus of valves. The 378
stridulation or "song" in the latter is produced by friction of the hind legs against portions of the wings or wing-covers. To a practised ear it is perhaps possible to distinguish the "song" of even closely allied species, and some are said to produce a sound differing by day and night.

GRASS OF PARNASSUS, in botany, a small herbaceous plant known as *Parnassia palustris* (natural order *Saxifragaceae*), found on wet moors and bogs in Britain but less common in the south. The white regular flower is rendered very attractive by a circlet of scales, opposite the petals, each of which bears a fringe of delicate filaments ending in a yellow knob. These glisten in the sunshine and look like a drop of honey. Honey is secreted by the base of each of the scales.

Grass of Parnassus (*Parnassia palustris*). 1, one of the gland-bearing scales enlarged.

GRATE (from Lat. *crates*, a hurdle), the iron or steel receptacle for a domestic fire. When coal replaced logs and irons were found

to be unsuitable for burning the comparatively small lumps, and for this reason and on account of the more concentrated heat of coal it became necessary to confine the area of the fire. Thus a basket or cage came into use, which, as knowledge of the scientific principles of heating increased, was succeeded by the small grate of iron and fire-brick set close into the wall which has since been in ordinary use in England. In the early part of the 19th century polished steel grates were extensively used, but the labour and difficulty of keeping them bright were considerable, and they were gradually replaced by grates with a polished black surface which could be quickly renewed by an application of black-lead. The most frequent form of the 18th-century grate was rather high from the hearth, with a small hob on each side. The brothers Adam designed many exceedingly elegant grates in the shape of movable baskets ornamented with the paterae and acanthus leaves, the swags and festoons characteristic of their manner. The modern dog-grate is a somewhat similar basket supported upon dogs or andirons, fixed or movable. In the closing years of the 19th century a "well-grate" was invented, in which the fire burns upon the hearth, combustion being aided by an air-chamber below.

GRATIAN (Flavius Gratianus Augustus), Roman emperor 375-383, son of Valentinian I. by Severa, was born at Sirmium in Pannonia, on the 18th of April (or 23rd of May) 359. On the 24th of August 367 he received from his father the title of Augustus. On the death of Valentinian (17th of November 375) the troops in Pannonia proclaimed his infant son (by a second wife Justina) emperor under the title of Valentinian II. (*q.v.*). Gratian acquiesced in their choice; reserving for himself the administration of the Gallic provinces, he handed over Italy, Illyria and Africa to Valentinian and his mother, who fixed their residence at Milan. The division, however, was merely nominal, and the real authority remained in the hands of Gratian. The eastern portion of the empire was under the rule of his uncle Valens. In May 378 Gratian completely defeated the Lentienses, the southernmost branch of the Alamanni, at Argentaria, near the site of the modern Colmar. When Valens met his death fighting against the Goths near Adrianople on the 9th of August in the same year, the government of the eastern empire devolved upon Gratian, but feeling himself unable to resist unaided the incursions of the barbarians, he ceded it to Theodosius (January 379). With Theodosius he cleared the Balkans of barbarians. For some years Gratian governed the empire with energy and success, but gradually he sank into indolence, occupied himself chiefly with the pleasures of the chase, and became a tool in the hands of the Frankish general Merobaudes and bishop Ambrose. By taking into his personal service a body of Alani, and appearing in public in the dress of a Scythian warrior, he aroused the contempt and resentment of his Roman troops. A Roman named Maximus took advantage of this feeling to raise the standard of revolt in Britain and invaded Gaul with a large army, upon which Gratian, who was then in Paris, being deserted by his troops, fled to Lyons, where, through the treachery of the governor, he was delivered over to one of the rebel generals and assassinated on the 25th of August 383.

The reign of Gratian forms an important epoch in ecclesiastical history, since during that period orthodox Christianity for the first time became dominant throughout the empire. In dealing with pagans and heretics Gratian, who during his later years was greatly influenced by Ambrose, bishop of Milan, exhibited severity and injustice at variance with his usual character. He prohibited heathen worship at Rome; refused to wear the insignia of the pontifex maximus as unbefitting a Christian; removed the altar of Victory from the senate-house at Rome, in spite of the remonstrance of the pagan members of the senate, and confiscated its revenues; forbade legacies of real property to the Vestals; and abolished other privileges belonging to them and to the pontiffs. For his treatment of heretics see the church histories of the period.

Authorities.—Ammianus Marcellinus xxvii.-xxxi.; Aurelius Victor, *Epit.* 47; Zosimus iv. vi.; Ausonius (Gratian's tutor), especially the *Gratiarum actio pro consulatu*; Symmachus x. epp. 2 and 61; Ambrose, *De fide*, prolegomena to *Epistolae* 11, 17, 21, *Consolatio de obitu Valentiniani*; H. Richter, *Das weströmische Reich, besonders unter den Kaisern Gratian, Valentinian II. und Maximus* (1865); A. de Broglie, *L'Église et l'empire romain au IV^e^ siècle* (4th ed., 1882); H. Schiller, *Geschichte der römischen Kaiserzeit*, iii., iv. 31-33; Gibbon, *Decline and Fall*, ch. 27; R. Gumpoltsberger, *Kaiser Gratian* (Vienna, 1879); T. Hodgkin, *Italy and her Invaders* (Oxford, 1892), vol. i.; Tillemont, *Hist. des empereurs*, v.; J. Wordsworth in Smith's *Dictionary of Christian Biography*.

(J. H. F.)

GRATIANUS, FRANCISCUS, compiler of the *Concordia discordantium canonum* or *Decretum Gratiani*, and founder of the science of canon law, was born about the end of the 11th century at Chiusi in Tuscany or, according to another account, at Carraria near Orvieto. In early life he appears to have been received into the Camaldulian monastery of Classe near Ravenna, whence he afterwards removed to that of San Felice in Bologna, where he spent many years in the preparation of the *Concordia*. The precise date of this work cannot be ascertained, but it contains references to the decisions of the Lateran council of 1139, and there is fair authority for believing that it was completed while Pope Alexander III. was still simply professor of theology at Bologna,—in other words, prior to 1150. The labours of Gratian are said to have been rewarded with the bishopric of Chiusi, but if so he appears never to have been consecrated; at least his name is not in any authentic list of those who have occupied that see. The year of his death is unknown.

For some account of the *Decretum Gratiani* and its history see Canon Law. The best edition is that of Friedberg (*Corpus juris canonici*, Leipzig, 1879). Compare Schultze, *Zur Geschichte der Litteratur über das Decret Gratians* (1870), *Die Glosse zum Decret Gratians* (1872), and *Geschichte der Quellen und Litteratur des kanonischen Rechts* (3 vols., Stuttgart, 1875).

GRATRY, AUGUSTE JOSEPH ALPHONSE (1805-1872), French author and theologian, was born at Lille on the 10th of March 1805. He was educated at the École Polytechnique, Paris, and, after a period of mental struggle which he has described in *Souvenirs de ma jeunesse*, he was ordained priest in 1832. After a stay at Strassburg as professor of the Petit Séminaire, he was appointed director of the Collège Stanislas in Paris in 1842 and, in 1847, chaplain of the École Normale Supérieure. He became vicar-general of Orleans in 1861, professor of ethics at the Sorbonne in 1862, and, on the death of Barante, a member of the French Academy in 1867, where he occupied the seat formerly held by Voltaire. Together with M. Pététot, *curé* of Saint Roch, he reconstituted the Oratory of the Immaculate Conception, a society of priests mainly devoted to education. Gratry was one of the principal opponents of the definition of the dogma of papal infallibility, but in this respect he submitted to the authority of the Vatican Council. He died at Montreux in Switzerland on the 6th of February 1872.

His chief works are: *De la connaissance de Dieu*, opposing Positivism (1855); *La Logique* (1856); *Les Sources, conseils pour la conduite de l'esprit* (1861-1862); *La Philosophie du credo* (1861); *Commentaire sur l'évangile de Saint Matthieu* (1863); *Jésus-Christ, lettres à M. Renan* (1864); *Les Sophistes et la critique* (in controversy with E. Vacherot) (1864); *La Morale et la loi de l'histoire*, setting forth his social views (1868); *Mgr. l'évêque d'Orléans et Mgr. l'archevêque de Malines* (1869), containing a clear exposition of the historical arguments against the doctrine of papal infallibility. There is a selection of Gratry's writings and appreciation of his style by the Abbé Pichot, in *Pages choisies des Grands Écrivains* series, published by Armand-Colin (1897). See also the critical study by the oratorian A. Chauvin, *L'Abbé Gratry* (1901); *Le Père Gratry* (1900), and *Les Derniers Jours du Père Gratry et son testament spirituel*, (1872), by Cardinal Adolphe Perraud, Gratry's friend and disciple.

GRATTAN, HENRY (1746-1820), Irish statesman, son of James Grattan, for many years recorder of Dublin, was born in Dublin on the 3rd of July 1746. He early gave evidence of exceptional gifts both of intellect and character. At Trinity College, Dublin, where he had a distinguished career, he began a lifelong devotion to classical literature and especially to the great orators of antiquity. He was called to the Irish bar in 1772, but never seriously practised the law. Like Flood, with whom he was on terms of friendship, he cultivated his natural genius for eloquence by study of good models, including Bolingbroke and Junius. A visit to the English House of Lords excited boundless admiration for Lord Chatham, of whose style of oratory Grattan contributed an interesting description to *Baratariana* (see FLOOD, HENRY). The influence of Flood did much to give direction to Grattan's political aims; and it was through no design on Grattan's part that when Lord Charlemont brought him into the Irish parliament in 1775, in the very session in which Flood damaged his popularity by accepting office, Grattan quickly superseded his friend in the leadership of the national party. Grattan was well qualified for it. His oratorical powers were unsurpassed among his contemporaries. He conspicuously lacked, indeed, the grace of gesture which he so much admired in Chatham; he had not the sustained dignity of Pitt; his powers of close reasoning were inferior to those of Fox and Flood. But his speeches were packed with epigram, and expressed with rare felicity of phrase; his terse and telling sentences were richer in profound aphorisms and maxims of political philosophy than those of any other statesman save Burke; he possessed the orator's incomparable gift of conveying his own enthusiasm to his audience and convincing them of the loftiness of his aims.

The principal object of the national party was to set the Irish parliament free from constitutional bondage to the English privy council. By virtue of Poyning's Act, a celebrated statute of Henry VII., all proposed Irish legislation had to be submitted to the English privy council for its approval under the great seal of England before being passed by the Irish parliament. A bill so approved might be accepted or rejected, but not amended. More recent English acts had further emphasized the complete dependence of the Irish parliament, and the appellate jurisdiction of the Irish House of Lords had also been annulled. Moreover, the English Houses claimed and exercised the power to legislate directly for Ireland without even the nominal concurrence of the parliament in Dublin. This was the constitution which Molyneux and Swift had denounced, which Flood had attacked, and which Grattan was to destroy. The menacing attitude of the Volunteer Convention at Dungannon greatly influenced the decision of the government in 1782 to resist the agitation no longer. It was through ranks of volunteers drawn up outside the parliament house in Dublin that Grattan passed on the 16th of April 1782, amidst unparalleled popular enthusiasm, to move a declaration of the independence of the Irish parliament. "I found Ireland on her knees," Grattan exclaimed, "I watched over her with a paternal solicitude; I have traced her progress from injuries to arms, and from arms to liberty. Spirit of Swift, spirit of Molyneux, your genius has prevailed! Ireland is now a nation!" After a month of negotiation the claims of Ireland were conceded. The gratitude of his countrymen to Grattan found expression in a parliamentary grant of £100,000, which had to be reduced by one half before he would consent to accept it.

One of the first acts of "Grattan's parliament" was to prove its loyalty to England by passing a vote for the support of 20,000 sailors for the navy. Grattan himself never failed in loyalty to the crown and the English connexion. He was, however, anxious for moderate parliamentary reform, and, unlike Flood, he favoured Catholic emancipation. It was, indeed, evident that without reform the Irish House of Commons would not be able to make much use of its newly won independence. Though now free from constitutional control it was no less subject than before to the influence of corruption, which the English government had wielded through the Irish borough owners, known as the "undertakers," or more directly through the great executive officers. "Grattan's parliament" had no control over the Irish executive. The lord lieutenant and his chief secretary continued to be appointed by the English ministers; their tenure of office depended on the vicissitudes of English, not Irish, party politics; the royal prerogative was exercised in Ireland on the advice of English ministers. The House of Commons was in no sense representative of the Irish people. The great majority of the people were excluded as Roman Catholics from the franchise; two-thirds of the members of the House of Commons were returned by small boroughs at the absolute disposal of single patrons, whose support was bought by a lavish distribution of peerages and pensions. It was to give stability and true independence to the new constitution that Grattan pressed for reform. Having quarrelled with Flood over "simple repeal" Grattan also differed from him on the question of maintaining the Volunteer Convention. He opposed the policy of protective duties, but supported Pitt's famous commercial propositions in 1785 for establishing free trade between Great Britain and Ireland, which, however, had to be abandoned owing to the hostility of the English mercantile classes. In general Grattan supported the government for a time after 1782, and in particular spoke and voted for the stringent coercive legislation rendered necessary by the Whiteboy outrages in 1785; but as the years passed without Pitt's personal favour towards parliamentary reform bearing fruit in legislation, he gravitated towards the opposition, agitated for commutation of tithes in Ireland, and supported the Whigs on the regency question in 1788. In 1792 he succeeded in carrying an Act conferring the franchise on the Roman Catholics; in 1794 in conjunction with William Ponsonby he introduced a reform bill which was even less democratic than Flood's bill of 1783. He was as anxious as Flood had been to retain the legislative power in the hands of men of property, for "he had through the whole of his life a strong conviction that while Ireland could best be governed by Irish hands, democracy in Ireland would inevitably turn to plunder and anarchy."[1] At the same time he desired to admit the Roman Catholic gentry of property to membership of the House of Commons, a proposal that was the logical corollary of the Relief Act of 1792. The defeat of Grattan's mild proposals helped to promote more extreme opinions, which, under French revolutionary influence, were now becoming heard in Ireland.

The Catholic question had rapidly become of the first importance, and when a powerful section of the Whigs joined Pitt's ministry in 1794, and it became known that the lord-lieutenancy was to go to Lord Fitzwilliam, who shared Grattan's views, expectations were raised that the question was about to be settled in a manner satisfactory to the Irish Catholics. Such seems to have been Pitt's intention, though there has been much controversy as to how far Lord Fitzwilliam (*q.v.*) had been authorized to pledge the government. After taking Grattan into his confidence, it was arranged that the latter should bring in a Roman Catholic emancipation bill, and that it should then receive government support. But finally it appeared that the viceroy had either misunderstood or exceeded his instructions; and on the 19th of February 1795 Fitzwilliam was recalled. In the outburst of indignation, followed by increasing disaffection in Ireland, which this event produced, Grattan acted with conspicuous moderation and loyalty, which won for him warm acknowledgments from a member of the English cabinet.[2] That cabinet, however, doubtless influenced by the wishes of the king, was now determined firmly to resist the Catholic demands, with the result that the country rapidly drifted towards rebellion. Grattan warned the government in a series of masterly speeches of the lawless condition to which Ireland had been driven. But he could now count on no more than some forty followers in the House of Commons, and his words were unheeded. He retired from parliament in May 1797, and departed from his customary moderation by attacking the government in an inflammatory "Letter to the citizens of Dublin."

At this time religious animosity had almost died out in Ireland, and men of different faiths were ready to combine for common political objects. Thus the Presbyterians of the north, who were mainly republican in sentiment, combined with a section of the Roman Catholics to form the organization of the United Irishmen, to promote revolutionary ideas imported from France; and a party prepared to welcome a French invasion soon came into existence. Thus stimulated, the increasing disaffection culminated in the rebellion of 1798, which was sternly and cruelly repressed. No sooner was this effected than the project of a legislative union between the British and Irish parliaments, which had been from time to time discussed since the beginning of the 18th century, was taken up in earnest by Pitt's government. Grattan from the first denounced the scheme with implacable hostility. There was, however, much to be said in its favour. The constitution of Grattan's parliament offered no security, as the differences over the regency question had made evident that in matters of imperial interest the policy of the Irish parliament and that of Great Britain would be in agreement; and at a moment when England was engaged in a life and death struggle with France it was impossible for the ministry to ignore the danger, which had so recently been emphasized by the fact that the independent constitution of 1782 had offered no safeguard against armed revolt. The rebellion put an end to the growing reconciliation between Roman Catholics and Protestants; religious passions were now violently inflamed, and the Orangemen and Catholics divided the island into two hostile factions. It is a curious circumstance, in view of the subsequent history of Irish politics, that it was from the Protestant Established Church, and particularly from the Orangemen, that the bitterest opposition to the union proceeded; and that the proposal found support chiefly among the Roman Catholic clergy and especially the bishops, while in no part of Ireland was it received with more favour than in the city of Cork. This attitude of the Catholics was caused by Pitt's encouragement of the expectation that Catholic emancipation, the commutation of tithes, and the endowment of the Catholic priesthood, would accompany or quickly follow the passing of the measure.

When in 1799 the government brought forward their bill it was defeated in the Irish House of Commons. Grattan was still in retirement. His popularity had temporarily declined, and the fact that his proposals for parliamentary reform and Catholic emancipation had become the watchwords of the rebellious United Irishmen had brought upon him the bitter hostility of the governing classes. He was dismissed from the privy council; his portrait was removed from the hall of Trinity College; the Merchant Guild of Dublin struck his name off their rolls. But the threatened destruction of the constitution of 1782 quickly restored its author to his former place in the affections of the Irish people. The parliamentary recess had been effectually employed by the government in securing by lavish corruption a majority in favour of their policy. On the 15th of January 1800 the Irish parliament met for its last session; on the same day Grattan secured by purchase a seat for Wicklow; and at a late hour, while the debate was proceeding, he appeared to take his seat. "There was a moment's pause, an electric thrill passed through the House, and a long wild cheer burst from the galleries."[3] Enfeebled by illness, Grattan's strength gave way when he rose to speak, and he obtained leave to address the House sitting. Nevertheless his speech was a superb effort of oratory; for more than two hours he kept his audience spellbound by a flood of epigram, of sustained reasoning, of eloquent appeal. After prolonged debates Grattan, on the 26th of May, spoke finally against the committal of the bill, ending with an impassioned peroration in which he declared, "I will remain anchored here with fidelity to the fortunes of my country, faithful to her freedom, faithful to her fall."[4] These were the last words spoken by Grattan in the Irish parliament.

The bill establishing the union was carried through its final stages by substantial majorities. The people remained listless, giving no indications of any eager dislike of the government policy. "There were absolutely none of the signs which are invariably found when a nation struggles passionately against what it deems an impending tyranny, or rallies around some institution which it really loves."[5] One of Grattan's main grounds of opposition to the union had been his dread of seeing the political leadership in Ireland pass out of the hands of the landed gentry; and he prophesied that the time would come when Ireland would send to the united parliament "a hundred of the greatest rascals in the kingdom."[6] Like Flood before him, Grattan had no leaning towards democracy; and he anticipated that by the removal of the centre of political interest from Ireland the evil of absenteeism would be intensified.

For the next five years Grattan took no active part in public affairs; it was not till 1805 that he became a member of the parliament of the United Kingdom. He modestly took his seat on one of the back benches, till Fox brought him forward to a seat near his own, exclaiming, "This is no place for the Irish Demosthenes!" His first speech was on the Catholic question, and though some doubt had been felt lest Grattan, like Flood, should belie at Westminster the reputation made in Dublin, all agreed with the description of his speech by the Annual Register as "one of the most brilliant and eloquent ever pronounced within the walls of parliament." When Fox and Grenville came into power in 1806 Grattan was offered, but refused to accept, an office in the 381
government. In the following year he showed the strength of his judgment and character by supporting, in spite of consequent unpopularity in Ireland, a measure for increasing the powers of the executive to deal with Irish disorder. Roman Catholic emancipation, which he continued to advocate with unflagging energy though now advanced in age, became complicated after 1808 by the question whether a veto on the appointment of Roman Catholic bishops should rest with the crown. Grattan supported the veto, but a more extreme Catholic party was now arising in Ireland under the leadership of Daniel O'Connell, and Grattan's influence gradually declined. He seldom spoke in parliament after 1810, the most notable exception being in 1815, when he separated himself from the Whigs and supported the final struggle against Napoleon. His last speech of all, in 1819, contained a passage referring to the union he had so passionately resisted, which exhibits the statesmanship and at the same time the equable quality of Grattan's character. His sentiments with regard to the policy of the union remained, he said, unchanged; but "the marriage having taken place it is now the duty, as it ought to be the inclination, of every individual to render it as fruitful, as profitable and as advantageous as possible." In the following summer, after crossing from Ireland to London when out of health to bring forward the Catholic question once more, he became seriously ill. On his death-bed he spoke generously of Castlereagh, and with warm eulogy of his former rival, Flood. He died on the 6th of June 1820, and was buried in Westminster Abbey close to the tombs of Pitt and Fox. His statue is in the outer lobby of the Houses of Parliament at Westminster. Grattan had married in 1782 Henrietta Fitzgerald, a lady descended from the ancient family of Desmond, by whom he had two sons and two daughters.

The most searching scrutiny of his private life only increases the respect due to the memory of Grattan as a statesman and the greatest of Irish orators. His patriotism was untainted by self-seeking; he was courageous in risking his popularity for what his sound judgment showed him to be the right course. As Sydney Smith said with truth of Grattan soon after his death: "No government ever dismayed him. The world could not bribe him. He thought only of Ireland; lived for no other object; dedicated to her his beautiful fancy, his elegant wit, his manly courage, and all the splendour of his astonishing eloquence."[7]

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(R. J. M.)

1 W. E. H. Lecky, *Leaders of Public Opinion in Ireland*, i. 127 (enlarged edition, 2 vols., 1903).

2 *Ibid.* i. 204.

3 *Ibid.* i. 241.

4 *Grattan's Speeches*, iv. 23.

5 W. E. H. Lecky, *History of England in the Eighteenth Century*, viii. 491. Cf. *Cornwallis Correspondence*, iii. 250.

6 W. E. H. Lecky, *Leaders of Public Opinion in Ireland*, i. 270.

7 Sydney Smith's *Works*, ii. 166-167.

GRATTIUS [FALISCUS], Roman poet, of the age of Augustus, author of a poem on hunting (*Cynegetica*), of which 541 hexameters remain. He was possibly a native of Falerii. The only reference to him in any ancient writer is incidental (Ovid, *Ex Ponto*, iv. 16. 33). He describes various kinds of game, methods of hunting, the best breeds of horses and dogs.

There are editions by R. Stern (1832); E. Bährens in *Poëtae Latini Minores* (i., 1879) and G. G. Curcio in *Poeti Latini Minori* (i., 1902), with bibliography; see also H. Schenkl, *Zur Kritik des G.* (1898). There is a translation by Christopher Wase (1654).

GRAUDENZ (Polish *Grudziadz*), a town in the kingdom of Prussia, province of West Prussia, on the right bank of the Vistula, 18 m. S.S.W. of Marienwerder and 37 m. by rail N.N.E. of Thorn. Pop. (1885) 17,336, (1905) 35,988. It has two Protestant and three Roman Catholic churches, and a synagogue. It is a place of considerable manufacturing activity. The town possesses a museum and a monument to Guillaume René Courbière (1733-1811), the defender of the town in 1807. It has fine promenades along the bank of the Vistula. Graudenz is an important place in the German system of fortifications, and has a garrison of considerable size.

Graudenz was founded about 1250, and received civic rights in 1291. At the peace of Thorn in 1466 it came under the lordship of Poland. From 1665 to 1759 it was held by Sweden, and in 1772 it came into the possession of Prussia. The fortress of Graudenz, which since 1873 has been used as a barracks and a military depot and prison, is situated on a steep eminence about 1½ m. north of the town and outside its limits. It was completed by Frederick the Great in 1776, and was rendered famous through its defence by Courbière against the French in 1807.

GRAUN, CARL HEINRICH (1701-1759), German musical composer, the youngest of three brothers, all more or less musical, was born on the 7th of May 1701 at Wahrenbrück in Saxony. His father held a small government post and he gave his children a careful education. Graun's beautiful soprano voice secured him an appointment in the choir at Dresden. At an early age he composed a number of sacred cantatas and other pieces for the church service. He completed his studies under Johann Christoph Schmidt (1664-1728), and profited much by the Italian operas which were performed at Dresden under the composer Lotti. After his voice had changed to a tenor, he made his début at the opera of Brunswick, in a work by Schürmann, an inferior composer of the day; but not being satisfied with the arias assigned him he re-wrote them, so much to the satisfaction of the court that he was commissioned to write an opera for the next season. This work, *Polydorus* (1726), and five other operas written for Brunswick, spread his fame all over Germany. Other works, mostly of a sacred character, including two settings of the *Passion*, also belong to the Brunswick period. Frederick the Great, at that time crown prince of Prussia, heard the singer in Brunswick in 1735, and immediately engaged him for his private chapel at Rheinsberg. There Graun remained for five years, and wrote a number of cantatas, mostly to words written by Frederick himself in French, and translated into Italian by Boltarelli. On his accession to the throne in 1740, Frederick sent Graun to Italy to engage singers for a new opera to be established at Berlin. Graun remained a year on his travels, earning universal applause as a singer in the chief cities of Italy. After his return to Berlin he was appointed conductor of the royal orchestra (*Kapellmeister*) with a salary of 2000 thalers (£300). In this capacity he wrote twenty-eight operas, all to Italian words, of which the last, *Merope* (1756), is perhaps the most perfect. It is probable that Graun was subjected to considerable humiliation from the arbitrary caprices of his royal master, who was never tired of praising the operas of Hasse and abusing those of his *Kapellmeister*. In his oratorio *The Death of Jesus* Graun shows his skill as a contrapuntist, and his originality of melodious invention. In the Italian operas he imitates the florid style of his time, but even in these the recitatives occasionally show considerable dramatic power. Graun died on the 8th of August 1759, at Berlin, in the same house in which, thirty-two years later, Meyerbeer was born.

GRAVAMEN. (from Lat. *gravare*, to weigh down; *gravis*, heavy), a complaint or grievance, the ground of a legal action, and particularly the more serious part of a charge against an accused person. In English the term is used chiefly in ecclesiastical cases, being the technical designation of a memorial presented from the Lower to the Upper House of Convocation, setting forth grievances to be redressed, or calling attention to breaches in church discipline.

GRAVE. (1) (From a common Teutonic verb, meaning "to dig"; in O. Eng. *grafan*; cf. Dutch *graven*, Ger. *graben*), a place dug out of the earth in which a dead body is laid for burial, and hence any place of burial, not necessarily an excavation (see Funeral Rites and Burial). The verb "to grave," meaning properly to dig, is particularly used of the making of incisions in a hard surface (see Engraving). (2) A title, now obsolete, of a local administrative official for a township in certain parts of Yorkshire and Lincolnshire; it also sometimes appears in the form "grieve," which in Scotland and Northumberland is used for sheriff (*q.v.*), and also for a bailiff or under-steward. The origin of the word is obscure, but it is probably connected with the German *graf*, count, and thus appears as the second part of many Teutonic titles, such as landgrave, burgrave and margrave. "Grieve," on the other hand, seems to be the northern representative of O.E. *gerefa*, reeve; cf. "sheriff" and "count." (3) (From the Lat. *gravis*, heavy), weighty, serious, particularly with the idea of dangerous, as applied to diseases and the like, of character or temperament as opposed to gay. It is also applied to sound, low or deep, and is thus opposed to "acute." In music the term is adopted from the French and Italian, and applied to a movement which is solemn or slow. (4) To clean a ship's bottom in a specially constructed dock, called a "graving dock." The origin of the word is obscure; according to the *New English Dictionary* there is no foundation for the connexion with "greaves" or "graves," the refuse of tallow, in candle or soap-making, supposed to be used in "graving" a ship. It may be connected with an O. Fr. *grave*, mod. *grève*, shore.

GRAVEL, or Pebble Beds, the name given to deposits of rounded, subangular, water-worn stones, mingled with finer material such as sand and clay. The word "gravel" is adapted from the O. Fr. *gravele*, mod. *gravelle*, dim. of *grave*, coarse sand, sea-shore, Mod. Fr. *grève*. The deposits are produced by the attrition of rock fragments by moving water, the waves and tides of the sea and the flow of rivers. Extensive beds of gravel are forming at the present time on many parts of the British coasts where suitable rocks are exposed to the attack of the atmosphere and of the sea waves during storms. The flint gravels of the coast of the Channel, Norfolk, &c., are excellent examples. When the sea is rough the lesser stones are washed up and down the beach by each wave, and in this way are rounded, worn down and finally reduced to sand. These gravels are constantly in movement, being urged forward by the shore currents especially during storms. Large banks of gravel may be swept away in a single night, and in this way the coast is laid bare to the erosive action of the sea. Moreover, the movement of the gravel itself wears down the subjacent rocks. Hence in many places barriers have been erected to prevent the drift of the pebbles and preserve the land, while often it has been found necessary to protect the shores by masonry or cement work. Where the pebbles are swept along to a projecting cape they may be carried onwards and form a long spit or submarine bank, which is constantly reduced in size by the currents and tides which flow across it (*e.g.* Spurn Head at the mouth of the Humber). The Chesil Bank is the best instance in Britain of a great accumulation of pebbles

constantly urged forward by storms in a definite direction. In the shallower parts of the North Sea considerable areas are covered with coarse sand and pebbles. In deeper water, however, as in the Atlantic, beyond the 100 fathom line pebbles are very rare, and those which are found are mostly erratics carried southward by floating icebergs, or volcanic rocks ejected by submarine volcanoes.

In many parts of Britain, Scandinavia and North America there are marine gravels, in every essential resembling those of the sea-shore, at levels considerably above high tide. These gravels often lie In flat-topped terraces which may be traced for great distances along the coast. They are indications that the sea at one time stood higher than it does at present, and are known to geologists as "raised beaches." In Scotland such beaches are known 25, 50 and 100 ft. above the present shores. In exposed situations they have old shore cliffs behind them; although their deposits are mainly gravelly there is much fine sand and silt in the raised beaches of sheltered estuaries and near river mouths.

River gravels occur most commonly in the middle and upper parts of streams where the currents in times of flood are strong enough to transport fairly large stones. In deltas and the lower portions of large rivers gravel deposits are comparatively rare and indicate periods when the volume of the stream was temporarily greatly increased. In the higher torrents also, gravels are rare because transport is so effective that no considerable accumulations can form. In most countries where the drainage is of a mature type, river gravels occur in the lower parts of the courses of the rivers as banks or terraces which lie some distance above the stream level. Individual terraces usually do not persist for a long space but are represented by a series of benches at about the same altitude. These were once continuous, and have been separated by the stream cutting away the intervening portions as it deepened and broadened its channel. Terraces of this kind often occur in successive series at different heights, and the highest are the oldest because they were laid down at a time when the stream flowed at their level and mark the various stages by which the valley has been eroded. While marine terraces are nearly always horizontal, stream terraces slope downwards along the course of the river.

The extensive deposits of river gravels in many parts of England, France, Switzerland, North America, &c., would indicate that at some former time the rivers flowed in greater volume than at the present day. This is believed to be connected with the glacial epoch and the augmentation of the streams during those periods when the ice was melting away. Many changes in drainage have taken place since then; consequently wide sheets of glacial and fluvio-glacial gravel lie spread out where at present there is no stream. Often they are commingled with sand, and where there were temporary post-glacial lakes deposits of silt, brick clay and mud have been formed. These may be compared to the similar deposits now forming in Greenland, Spitzbergen and other countries which are at present in a glacial condition.

As a rule gravels consist mainly of the harder kinds of stone because these alone can resist attrition. Thus the gravels formed from chalk consist almost entirely of flint, which is so hard that the chalk is ground to powder and washed away, while the flint remains little affected. Other hard rocks such as chert, quartzite, felsite, granite, sandstone and volcanic rocks very frequently are largely represented in gravels, while coal, limestone and shale are far less common. The size of the pebbles varies from a fraction of an inch to several feet; it depends partly on the fissility of the original rocks and partly on the strength of the currents of water; coarse gravels indicate the action of powerful eroding agents. In the Tertiary systems gravels occur on many horizons, *e.g.* the Woolwich and Reading beds, Oldhaven beds and Bagshot beds of the Eocene of the London basin. They do not essentially differ from recent gravel deposits. But in course of time the action of percolating water assisted by pressure tends to convert gravels into firm masses of conglomerate by depositing carbonate of lime, silica and other substances in their interstices. Gravels are not usually so fossiliferous as finer deposits of the same age, partly because their porous texture enables organic remains to be dissolved away by water, and partly because shells and other fossils are comparatively fragile and would be broken up during the accumulation of the pebbles. The rock fragments in conglomerates, however, sometimes contain fossils which have not been found elsewhere.

(J. S. F.)

GRAVELINES (Flem. *Gravelinghe*), a fortified seaport town of northern France, in the department of Nord and arrondissement of Dunkirk, 15 m. S.W. of Dunkirk on the railway to Calais. Pop. (1906) town, 1858; commune, 6284. Gravelines is situated on the Aa, 1¼ m. from its mouth in the North Sea. It is surrounded by a double circuit of ramparts and by a tidal moat. The river is canalized and opens out beneath the fortifications into a floating basin. The situation of the port is one of the best in France on the North Sea, though its trade has suffered owing to the nearness of Calais and Dunkirk and the silting up of the channel to the sea. It is a centre for the cod and herring fisheries. Imports consist chiefly of timber from Northern Europe and coal from England, to which eggs and fruit are exported. Gravelines has paper-manufactories, sugar-works, fish-curing works, salt-refineries, chicory-roasting factories, a cannery for preserved peas and other vegetables and an important timber-yard. The harbour is accessible to vessels drawing 18 ft. at high tides. The greater part of the population of the commune of Gravelines dwells in the maritime quarter of Petit-Fort-Philippe at the mouth of the Aa, and in the village of Les Huttes (to the east of the town), which is inhabited by the fisher-folk.

The canalization of the Aa by a count of Flanders about the middle of the 12th century led to the foundation of Gravelines (*gravelinghe*, meaning "count's canal."). In 1558 it was the scene of the signal victory of the Spaniards under the count of Egmont over the French. It finally passed from the Spaniards to the French by the treaty of the Pyrenees in 1659.

GRAVELOTTE, a village of Lorraine between Metz and the French frontier, famous as the scene of the battle of the 18th of August 1870 between the Germans under King William of Prussia and the French under Marshal Bazaine (see Metz and Franco-German War). The battlefield extends from the woods which border the Moselle above Metz to Roncourt, near the river Orne. Other villages which played an important part in the battle of Gravelotte were Saint Privat, Amanweiler or Amanvillers and Sainte-Marie-aux-Chênes, all lying to the N. of Gravelotte.

GRAVES, ALFRED PERCEVAL (1846-), Irish writer, was born in Dublin, the son of the bishop of Limerick. He was educated at Windermere College, and took high honours at Dublin University. In 1869 he entered the Civil Service as clerk in the Home Office, where he remained until he became in 1874 an inspector of schools. He was a constant contributor of prose and verse to the *Spectator*, *The Athenaeum*, *John Bull*, and *Punch*, and took a leading part in the revival of Irish letters. He was for several years president of the Irish Literary Society, and is the author of the famous ballad of "Father O'Flynn" and many other songs and ballads. In collaboration with Sir C. V. Stanford he published *Songs of Old Ireland* (1882), *Irish Songs and Ballads* (1893), the airs of which are taken from the Petrie MSS.; the airs of his *Irish Folk-Songs* (1897) were arranged by Charles Wood, with whom he also collaborated in *Songs of Erin* (1901).

His brother, Charles L. Graves (b. 1856), educated at Marlborough and at Christ Church, Oxford, also became well known as a journalist, author of two volumes of parodies, *The Hawarden Horace* (1894) and *More Hawarden Horace* (1896), and of skits in prose and verse. An admirable musical critic, his *Life and Letters of Sir George Grove* (1903) is a model biography.

GRAVESEND, a municipal and parliamentary borough, river-port and market town of Kent, England, on the right bank of the Thames opposite Tilbury Fort, 22 m. E. by S. of London by the South-Eastern & Chatham railway. Pop. (1901) 27,196. It extends about 2 m. along the river bank, occupying a slight acclivity which reaches its summit at Windmill Hill, whence extensive views are obtained of the river, with its windings and shipping. The older and lower part of the town is irregularly built, with narrow and inconvenient streets, but the upper and newer portion contains several handsome streets and terraces. Among several piers are the town pier, erected in 1832, and the terrace pier, built in 1845, at a time when local river-traffic by steamboat was specially prosperous. Gravesend is a favourite resort of the inhabitants of London, both for excursions and as a summer residence; it is also a favourite yachting centre. The principal buildings are the town-hall, the parish church of Gravesend, erected on the site of an ancient building destroyed by fire in 1727; Milton parish church, a Decorated and Perpendicular building erected in the time of Edward II.; and the county courts. Milton Mount College is a large institution for the daughters of Congregational ministers. East of the town are the earthworks designed to assist Tilbury Fort in obstructing the passage up river of an enemy's force. They were originally constructed on Vauban's system in the reign of Charles II. Rosherville Gardens, a popular resort, are in the western suburb of Rosherville, a residential quarter named after James Rosher, an owner of lime works. They were founded in 1843 by George Jones. Gravesend, which is within the Port of London, has some import trade in coal and timber, and fishing, especially of shrimps, is carried on extensively. The principal other industries are boat-building, ironfounding, brewing and soap-boiling. Fruit and vegetables are largely grown in the neighbourhood for the London market. Since 1867 Gravesend has returned a member to parliament, the borough including Northfleet to the west. The town is governed by a mayor, 6 aldermen and 18 councillors. Area, 1259 acres.

In the Domesday Survey "Gravesham" is entered among the bishop of Bayeux's lands, and a "hythe" or landing-place is mentioned. In 1401 Henry IV. granted the men of Gravesend the sole right of conveying in their own vessels all persons travelling between London and Gravesend, and this right was confirmed by Edward IV. in 1462. In 1562 the town was granted a charter of incorporation by Elizabeth, which vested the government in 2 portreeves and 12 jurats, but by a later charter of 1568 one portreeve was substituted for the two. Charles I. incorporated the town anew under the title of the mayor, jurats and inhabitants of Gravesend, and a further charter of liberties was granted by James II. in 1687. A Thursday market and fair on the 13th of October were granted to the men of Gravesend by Edward III. in 1367; Elizabeth's charters gave them a Wednesday market and fairs on the 24th of June and the 13th of October, with a court of pie-powder; by the charter of Charles I. Thursday and Saturday were made the market days, and these were changed again to Wednesday and Saturday by a charter of 1694, which also granted a fair on the 23rd of April; the fairs on these dates have died out, but the Saturday market is still held.

From the beginning of the 17th century Gravesend was the chief station for East Indiamen; most of the ships outward bound from London stopped here to victual. A customs house was built in 1782. Queen Elizabeth established Gravesend as the point where the corporation of London should welcome in state eminent foreign visitors arriving by water. State processions by water from Gravesend to London had previously taken place, as in 1522, when Henry VIII. escorted the emperor Charles V. A similar practice was maintained until modern times; as when, on the 7th of March 1863, the princess Alexandra was received here by the prince of Wales (King Edward VII.) three days before their marriage. Gravesend parish church contains memorials to "Princess" Pocahontas, who died when preparing to return home from a visit to England in 1617, and was buried in the old church. A memorial pulpit from the state of Indiana, U.S.A., made of Virginian wood, was provided in 1904, and a fund was raised for a stained-glass window by ladies of the state of Virginia.

GRAVINA, GIOVANNI VINCENZO (1664-1718), Italian littérateur and jurisconsult, was born at Roggiano, a small town near Cosenza, in Calabria, on the 20th of January 1664. He was descended from a distinguished family, and under the direction of his maternal uncle, Gregorio Caloprese, who possessed some reputation as a poet and philosopher, received a learned education, after which he studied at Naples civil and canon law. In 1689 he came to Rome, where in 1695 he united with several others of literary tastes in forming the Academy of Arcadians. A schism occurred in the academy in 1711, and Gravina and his followers founded in opposition to it the Academy of Quirina. From Innocent XII. Gravina received the offer of various ecclesiastical honours, but declined them from a disinclination to enter the clerical profession. In 1699 he was appointed to the chair of civil law in the college of La Sapienza, and in 1703 he was transferred to the chair of canon law. He died at Rome on the 6th of January 1718. He was the adoptive father of Metastasio.

Gravina is the author of a number of works of great erudition, the principal being his *Origines juris civilis*, completed in 3 vols. (1713) and his *De Romano imperio* (1712). A French translation of the former appeared in 1775, of which a second edition was published in 1822. His collected works were published at Leipzig in 1737, and at Naples, with notes by Mascovius, in 1756.

GRAVINA, a town and episcopal see of Apulia, Italy, in the province of Bari, from which it is 63 m. S.W. by rail (29 m. direct), 1148 ft. above sea-level. Pop. (1901) 18,197. The town is probably of medieval origin, though some conjecture that it occupies the site of the ancient Blera, a post station on the Via Appia. The cathedral is a basilica of the 15th century. The town is surrounded with walls and towers, and a castle of the emperor Frederick II. rises above the town, which later belonged to the Orsini, dukes of Gravina; just outside it are dwellings and a church (S. Michele) all hewn in the rock, and now abandoned.

Prehistoric remains in the district (remains of ancient settlements, *tumuli*, &c.) are described by V. di Cicco in *Notizie degli scavi* (1901), p. 217.

GRAVITATION (from Lat. *gravis*, heavy), in physical science, that mutual action between masses of matter by virtue of which every such mass tends toward every other with a force varying directly as the product of the masses and inversely as the square of their distances apart. Although the law was first clearly and rigorously formulated by Sir Isaac Newton, the fact of the action indicated by it was more or less clearly seen by others. Even Ptolemy had a vague conception of a force tending toward the centre of the earth which not only kept bodies upon its surface, but in some way upheld the order of the universe. John Kepler inferred that the planets move in their orbits under some influence or force exerted by the sun; but the laws of motion were not then sufficiently developed, nor were Kepler's ideas of force sufficiently clear, to admit of a precise statement of the nature of the force. C. Huygens and R. Hooke, contemporaries of Newton, saw that Kepler's third law implied a force tending toward the sun which, acting on the several planets, varied inversely as the square of the distance. But two requirements necessary to generalize the theory were still wanting. One was to show that the law of the inverse square not only represented Kepler's third law, but his first two laws also. The other was to show that the gravitation of the earth, following one and the same law with that of the sun,

extended to the moon. Newton's researches showed that the attraction of the earth on the moon was the same as that for bodies at the earth's surface, only reduced in the inverse square of the moon's distance from the earth's centre. He also showed that the total gravitation of the earth, assumed as spherical, on external bodies, would be the same as if the earth's mass were concentrated in the centre. This led at once to the statement of the law in its most general form.

The law of gravitation is unique among the laws of nature, not only in its wide generality, taking the whole universe in its scope, but in the fact that, so far as yet known, it is absolutely unmodified by any condition or cause whatever. All other forms of action between masses of matter, vary with circumstances. The mutual action of electrified bodies, for example, is affected by their relative or absolute motion. But no conditions to which matter has ever been subjected, or under which it has ever been observed, have been found to influence its gravitation in the slightest degree. We might conceive the rapid motions of the heavenly bodies to result in some change either in the direction or amount of their gravitation towards each other at each moment; but such is not the case, even in the most rapidly moving bodies of the solar system. The question has also been raised whether the action of gravitation is absolutely instantaneous. If not, the action would not be exactly in the line adjoining the two bodies at the instant, but would be affected by the motion of the line joining them during the time required by the force to pass from one body to the other. The result of this would be seen in the motions of the planets around the sun; but the most refined observations show no such effect. It is also conceivable that bodies might gravitate differently at different temperatures. But the most careful researches have failed to show any apparent modification produced in this way except what might be attributed to the surrounding conditions. The most recent and exhaustive experiment was that of J. H. Poynting and P. Phillips (*Proc. Roy. Soc.*, 76A, p. 445). The result was that the change, if any, was less than $\frac{1}{10}$ of the force for one degree change of temperature, a result too minute to be established by any measures.

Another cause which might be supposed to modify the action of gravitation between two bodies would be the interposition of masses of matter between them, a cause which materially modifies the action of electrified bodies. The question whether this cause modifies gravitation admits of an easy test from observation. If it did, then a portion of the earth's mass or of that of any other planet turned away from the sun would not be subjected to the same action of the sun as if directly exposed to that action. Great masses, as those of the great planets, would not be attracted with a force proportional to the mass because of the hindrance or other effect of the interposed portions. But not the slightest modification due to this cause is shown. The general conclusion from everything we see is that a mass of matter in Australia attracts a mass in London precisely as it would if the earth were not interposed between the two masses.

We must therefore regard the law in question as the broadest and most fundamental one which nature makes known to us.

It is not yet experimentally proved that variation as the inverse square is absolutely true at all distances. Astronomical observations extend over too brief a period of time to show any attraction between different stars except those in each other's neighbourhood. But this proves nothing because, in the case of distances so great, centuries or even thousands of years of accurate observation will be required to show any action. On the other hand the enigmatical motion of the perihelion of Mercury has not yet found any plausible explanation except on the hypothesis that the gravitation of the sun diminishes at a rate slightly greater than that of the inverse square—the most simple modification being to suppose that instead of the exponent of the distance being exactly −2, it is −2.000 000 161 2.

The argument is extremely simple in form. It is certain that, in the general average, year after year, the force with which Mercury is drawn toward the sun does vary from the exact inverse square of its distance from the sun. The most plausible explanation of this is that one or more masses of matter move around the sun, whose action, whether they are inside or outside the orbit of Mercury, would produce the required modification in the force. From an investigation of all the observations upon Mercury and the other three interior planets, Simon Newcomb found it almost out of the question that any such mass of matter could exist without changing either the figure of the sun itself or the motion of the planes of the orbits of either Mercury or Venus. The qualification "almost" is necessary because so complex a system of actions comes into play, and accurate observations have extended through so short a period, that the proof cannot be regarded as absolute. But the fact that careful and repeated search for a mass of matter sufficient to produce the desired effect has been in vain, affords additional evidence of its non-existence. The most obvious test of the reality of the required modifications would be afforded by two other bodies, the motions of whose pericentres should be similarly affected. These are Mars and the moon. Newcomb found an excess of motions in the perihelion of Mars amounting to about 5″ per century. But the combination of observations and theory on which this is based is not sufficient fully to establish so slight a motion. In the case of the motion of the moon around the earth, assuming the gravitation of the latter to be subject to the modification in question, the annual motion of the moon's perigee should be greater by 1.5″ than the theoretical motion. E. W. Brown is the first investigator to determine the theoretical motions with this degree of precision; and he finds that there is no such divergence between the actual and the computed motion. There is therefore as yet no ground for regarding any deviation from the law of inverse square as more than a possibility.

(S. N.)

Gravitation Constant and Mean Density of the Earth

The law of gravitation states that two masses M_1 and M_2, distant d from each other, are pulled together each with a force G. M_1M_2/d^2, where G is a constant for all kinds of matter—the *gravitation constant*. The acceleration of M_2 towards M_1 or the force exerted on it by M_1 per unit of its mass is therefore GM_1/d^2. Astronomical observations of the accelerations of different planets towards the sun, or of different satellites towards the same primary, give us the most accurate confirmation of the distance part of the law. By comparing accelerations towards different bodies we obtain the ratios of the masses of those different bodies and, in so far as the ratios are consistent, we obtain confirmation of the mass part. But we only obtain the ratios of the masses to the mass of some one member of the system, say the earth. We do not find the mass in terms of grammes or pounds. In fact, astronomy gives us the product GM, but neither G nor M. For example, the acceleration of the earth towards the sun is about 0.6 cm/sec.^{2} at a distance from it about 15×10^{12} cm. The acceleration of the moon towards the earth is about 0.27 cm/sec.^{2} at a distance from it about 4×10^{10} cm. If S is the mass of the sun and E the mass of the earth we have $0.6 = GS/(15 \times 10^{12})^2$ and $0.27 = GE/(4 \times 10^{10})^2$ giving us GS and GE, and the ratio S/E = 300,000 roughly; but we do not obtain either S or E in grammes, and we do not find G.

The aim of the experiments to be described here may be regarded either as the determination of the mass of the earth in grammes, most conveniently expressed by its mass ÷ its volume, that is by its "mean density" Δ, or the determination of the "gravitation constant" G. Corresponding to these two aspects of the problem there are two modes of attack. Suppose that a body of mass m is suspended at the earth's surface where it is pulled with a force w vertically downwards by the earth—its weight. At the same time let it be pulled with a force p by a measurable mass M which may be a mountain, or some measurable part of the earth's surface layers, or an artificially prepared mass brought near m, and let the pull of M be the same as if it were concentrated at a distance d. The earth pull may be regarded as the same as if the earth were all concentrated at its centre, distant R.

Then

$$w = G \cdot \tfrac{4}{3}\pi R^3 \Delta m/R^2 = G \cdot \tfrac{4}{3}\pi R \Delta m, \tag{1}$$

and

$$p = GMm/d^2. \tag{2}$$

By division

$$\Delta = \frac{3M}{4\pi R d^2} \cdot \frac{w}{p}.$$

If then we can arrange to observe w/p we obtain Δ, the mean density of the earth.

But the same observations give us G also. For, putting m = w/g in (2), we get

$$G = \frac{d^2}{M} \cdot \frac{p}{w} \cdot g.$$

In the second mode of attack the pull p between two artificially prepared measured masses M_1, M_2 is determined when they are a distance d apart, and since $p = G \cdot M_1 M_2 / d^2$ we get at once $G = pd^2/M_1M_2$. But we can also deduce Δ. For putting w = mg in (1) we get

$$\Delta = \tfrac{3}{4} \frac{g}{G} \cdot \frac{1}{\pi R}.$$

Experiments of the first class in which the pull of a known mass is compared with the pull of the earth maybe termed experiments on the mean density of the earth, while experiments of the second class in which the pull between two known masses is directly measured may be termed experiments on the gravitation constant.

We shall, however, adopt a slightly different classification for the purpose of describing methods of experiment, viz:—

1. Comparison of the earth pull on a body with the pull of a natural mass as in the Schiehallion experiment.
2. Determination of the attraction between two artificial masses as in Cavendish's experiment.
3. Comparison of the earth pull on a body with the pull of an artificial mass as in experiments with the common balance.

It is interesting to note that the possibility of gravitation experiments of this kind was first considered by Newton, and in both of the forms (1) and (2). In the *System of the World* (3rd ed., 1737, p. 40) he calculates that the deviation by a hemispherical mountain, of the earth's density and with radius 3 m., on a plumb-line at its side will be less than 2 minutes. He also calculates (though with an error in his arithmetic) the acceleration towards each other of two spheres each a foot in diameter and of the earth's density, and comes to the conclusion that in either case the effect is too small for measurement. In the *Principia*, bk. iii., prop. x., he makes a celebrated estimate that the earth's mean density is five or six times that of water. Adopting this estimate, the deviation by an actual mountain or the attraction of two terrestrial spheres would be of the orders calculated, and regarded by Newton as immeasurably small.

Whatever method is adopted the force to be measured is very minute. This may be realized if we here anticipate the results of the experiments, which show that in round numbers Δ = 5.5 and G = 1/15,000,000 when the masses are in grammes and the distances in centimetres.

Newton's mountain, which would probably have density about Δ/2 would deviate the plumb-line not much more than half a minute. Two spheres 30 cm. in diameter (about 1 ft.) and of density 11 (about that of lead) just not touching would pull each other with a force rather less than 2 dynes, and their acceleration would be such that they would move into contact if starting 1 cm. apart in rather over 400 seconds.

From these examples it will be realized that in gravitation experiments extraordinary precautions must be adopted to eliminate disturbing forces which may easily rise to be comparable with the forces to be measured. We shall not attempt to give an account of these precautions, but only seek to set forth the general principles of the different experiments which have been made.

I. *Comparison of the Earth Pull with that of a Natural Mass.*

Bouguer's Experiments.—The earliest experiments were made by Pierre Bouguer about 1740, and they are recorded in his *Figure de la terre* (1749). They were of two kinds. In the first he determined the length of the seconds pendulum, and thence g at different levels. Thus at Quito, which may be regarded as on a table-land 1466 toises (a toise is about 6.4 ft.) above sea-level, the seconds pendulum was less by 1/1331 than on the Isle of Inca at sea-level. But if there were no matter above the sea-level, the inverse square law would make the pendulum less by 1/1118 at the higher level. The value of g then at the higher level was greater than could be accounted for by the attraction of an earth ending at sea-level by the difference 1/1118 − 1/1331 = 1/6983, and this was put down to the attraction of the plateau 1466 toises high; or the attraction of the whole earth was 6983 times the attraction of the plateau. Using the rule, now known as "Young's rule," for the attraction of the plateau, Bouguer found that the density of the earth was 4.7 times that of the plateau, a result certainly much too large.

In the second kind of experiment he attempted to measure the horizontal pull of Chimborazo, a mountain about 20,000 ft. high, by the deflection of a plumb-line at a station on its south side. Fig. 1 shows the principle of the method. Suppose that two stations are fixed, one on the side of the mountain due south of the summit, and the other on the same latitude but some distance westward, away from the influence of the mountain. Suppose that at the second station a star is observed to pass the meridian, for simplicity we will say directly overhead, then a plumb-line will hang down exactly parallel to the observing telescope. If the mountain were away it would also hang parallel to the telescope at the first station when directed to the same star. But the mountain pulls the plumb-line towards it and the star appears to the north of the zenith and evidently mountain pull/earth pull = tangent of angle of displacement of zenith.

Bouguer observed the meridian altitude of several stars at the two stations. There was still some deflection at the second station, a deflection which he estimated as 1/14 that at the first station, and he found on allowing for this that his observations gave a deflection of 8 seconds at the first station. From the form and size of the mountain he found that if its density were that of the earth the deflection should be 103 seconds, or the earth was nearly 13 times as dense as the mountain, a result several times too large. But the work was carried on under enormous difficulties owing to the severity of the weather, and no exactness could be expected. The importance of the experiment lay in its proof that the method was possible.

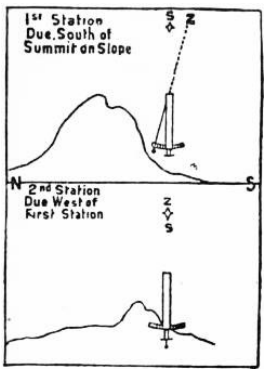

Fig. 1.—Bouguer's Plumb-line Experiment on the attraction of Chimborazo.

Maskelyne's Experiment.—In 1774 Nevil Maskelyne (*Phil. Trans.*, 1775, p. 495) made an experiment on the deflection of the plumb-line by Schiehallion, a mountain in Perthshire, which has a short ridge nearly east and west, and sides sloping steeply on the north and south. He selected two stations on the same meridian, one on the north, the other on the south slope, and by means of a zenith sector, a telescope provided with a plumb-bob, he determined at each station the meridian zenith distances of a number of stars. From a survey of the district made in the years 1774-1776 the geographical difference of latitude between the two stations was found to be 42.94 seconds, and this would have been the difference in the meridian zenith difference of the same star at the two stations had the mountain been away. But at the north station the plumb-bob was pulled south and the zenith was deflected northwards, while at the south station the effect was reversed. Hence the angle between the zeniths, or the angle between the zenith distances of the same star at the two stations was greater than the geographical 42.94 seconds. The mean of the observations gave a difference of 54.2 seconds, or the double deflection of the plumb-line was 54.2 − 42.94, say 11.26 seconds.

The computation of the attraction of the mountain on the supposition that its density was that of the earth was made by Charles Hutton from the results of the survey (*Phil. Trans.*, 1778, p. 689), a computation carried out by ingenious and important methods. He found that the deflection should have been greater in the ratio 17804 : 9933 say 9 : 5, whence the density of the earth comes out at 9/5 that of the mountain. Hutton took the density of the mountain at 2.5, giving the mean density of the earth 4.5. A revision of the density of the mountain from a careful survey of the rocks composing it was made by John Playfair many years later (*Phil. Trans.*, 1811, p. 347), and the density of the earth was given as lying between 4.5588 and 4.867.

Other experiments have been made on the attraction of mountains by Francesco Carlini (*Milano Effem. Ast.*, 1824, p. 28) on Mt.

Blanc in 1821, using the pendulum method after the manner of Bouguer, by Colonel Sir Henry James and Captain A. R. Clarke (*Phil. Trans.*, 1856, p. 591), using the plumb-line deflection at Arthur's Seat, by T. C. Mendenhall (*Amer. Jour. of Sci.* xxi. p. 99), using the pendulum method on Fujiyama in Japan, and by E. D. Preston (*U.S. Coast and Geod. Survey Rep.*, 1893, p. 513) in Hawaii, using both methods.

Airy's Experiment.—In 1854 Sir G. B. Airy (*Phil. Trans.* 1856, p. 297) carried out at Harton pit near South Shields an experiment which he had attempted many years before in conjunction with W. Whewell and R. Sheepshanks at Dolcoath. This consisted in comparing gravity at the top and at the bottom of a mine by the swings of the same pendulum, and thence finding the ratio of the pull of the intervening strata to the pull of the whole earth. The principle of the method may be understood by assuming that the earth consists of concentric spherical shells each homogeneous, the last of thickness h equal to the depth of the mine. Let the radius of the earth to the bottom of the mine be R, and the mean density up to that point be Δ. This will not differ appreciably from the mean density of the whole. Let the density of the strata of depth h be δ. Denoting the values of gravity above and below by g_a and g_b we have

$$g_b = G \cdot \tfrac{4}{3} \frac{\pi R^3 \Delta}{R^2} = G \cdot \tfrac{4}{3}\pi R \Delta,$$

and

$$g_a = G \cdot \tfrac{4}{3} \frac{\pi R^3 \Delta}{(R + h)^2} + G \cdot 4\pi h \delta$$

(since the attraction of a shell h thick on a point just outside it is $G \cdot 4\pi(R + h)^2 h\delta/(R + h)^2 = G \cdot 4\pi h\delta$).

Therefore

$$g_a = G \cdot \tfrac{4}{3}\pi R \Delta \left(1 - \frac{2h}{R} + \frac{3h}{R} \frac{\delta}{\Delta} \right) \text{ nearly,}$$

whence

$$\frac{g_a}{g_b} = 1 - \frac{2h}{R} + \frac{3h}{R} \frac{\delta}{\Delta},$$

and

$$\frac{\Delta}{\delta} = \frac{3h}{R} \Big/ \left(-1 + \frac{2h}{R} + \frac{g_a}{g_b} \right).$$

Stations were chosen in the same vertical, one near the pit bank, another 1250 ft. below in a disused working, and a "comparison" clock was fixed at each station. A third clock was placed at the upper station connected by an electric circuit to the lower station. It gave an electric signal every 15 seconds by which the rates of the two comparison clocks could be accurately compared. Two "invariable" seconds pendulums were swung, one in front of the upper and the other in front of the lower comparison clock after the manner of Kater, and these invariables were interchanged at intervals. From continuous observations extending over three weeks and after applying various corrections Airy obtained $g_b/g_a = 1.00005185$. Making corrections for the irregularity of the neighbouring strata he found $\Delta/\delta = 2.6266$. W. H. Miller made a careful determination of δ from specimens of the strata, finding it 2.5. The final result taking into account the ellipticity and rotation of the earth is $\Delta = 6.565$.

Von Sterneck's Experiments.—(*Mitth. des K.U.K. Mil. Geog. Inst. zu Wien*, ii, 1882, p. 77; 1883, p. 59; vi., 1886, p. 97). R. von Sterneck repeated the mine experiment in 1882-1883 at the Adalbert shaft at Pribram in Bohemia and in 1885 at the Abraham shaft near Freiberg. He used two invariable half-seconds pendulums, one swung at the surface, the other below at the same time. The two were at intervals interchanged. Von Sterneck introduced a most important improvement by comparing the swings of the two invariables with the same clock which by an electric circuit gave a signal at each station each second. This eliminated clock rates. His method, of which it is not necessary to give the details here, began a new era in the determinations of local variations of gravity. The values which von Sterneck obtained for Δ were not consistent, but increased with the depth of the second station. This was probably due to local irregularities in the strata which could not be directly detected.

All the experiments to determine Δ by the attraction of natural masses are open to the serious objection that we cannot determine the distribution of density in the neighbourhood with any approach to accuracy. The experiments with artificial masses next to be described give much more consistent results, and the experiments with natural masses are now only of use in showing the existence of irregularities in the earth's superficial strata when they give results deviating largely from the accepted value.

II. *Determination of the Attraction between two Artificial Masses.*

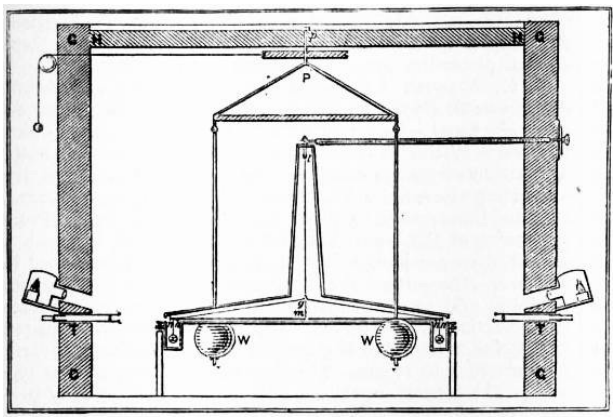

Fig. 2.—Cavendish's Apparatus.
h h, torsion rod hung by wire *l g*,; *x, x*, attracted balls hung from its ends; *WW*, attracting masses.

Cavendish's Experiment (*Phil. Trans.*, 1798, p. 469).—This celebrated experiment was planned by the Rev. John Michell. He completed an apparatus for it but did not live to begin work with it. After Michell's death the apparatus came into the possession of Henry Cavendish, who largely reconstructed it, but still adhered to Michell's plan, and in 1797-1798 he carried out the experiment. The essential feature of it consisted in the determination of the attraction of a lead sphere 12 in. in diameter on another lead sphere 2 in. in diameter, the distance between the centres being about 9 in., by means of a torsion balance. Fig. 2 shows how the experiment was carried out. A torsion rod *hh* 6 ft. long, tied from its ends to a vertical piece *mg*, was hung by a wire *lg*. From its ends depended two lead balls xx each 2 in. in diameter. The position of the rod was determined by a scale fixed near the end of the arm, the arm itself carrying a vernier moving along the scale. This was lighted by a lamp and viewed by a telescope T from the outside of the room containing the apparatus. The torsion balance was enclosed in a case and outside this two lead spheres WW each 12 in. in diameter hung from an arm which could turn round an axis P*p* in the line of *gl*. Suppose that first the spheres are placed so that one is just in front of the right-hand ball *x* and the other is just behind the left-hand ball *x*. The two will conspire to pull the balls so that the right end of the rod moves forward. Now let the big spheres be moved round so that one is in front of the

left ball and the other behind the right ball. The pulls are reversed and the right end moves backward. The angle between its two positions is (if we neglect cross attractions of right sphere on left ball and left sphere on right ball) four times as great as the deflection of the rod due to approach of one sphere to one ball.

The principle of the experiment may be set forth thus. Let 2a be the length of the torsion rod, m the mass of a ball, M the mass of a large sphere, d the distance between the centres, supposed the same on each side. Let θ be the angle through which the rod moves round when the spheres WW are moved from the first to the second of the positions described above. Let μ be the couple required to twist the rod through 1 radian. Then $\mu\theta = 4GMma/d^2$. But μ can be found from the time of vibration of the torsion system when we know its moment of inertia I, and this can be determined. If T is the period $\mu = 4\pi^2 I/T^2$, whence $G = \pi^2 d^2 I\theta/T^2 Mma$, or putting the result in terms of the mean density of the earth Δ it is easy to show that, if L, the length of the seconds pendulum, is put for g/π^2, and C for 2πR, the earth's circumference, then

$$\Delta = \tfrac{3}{2} \frac{L}{C} \cdot \frac{Mma}{d^2 I} \cdot \frac{T^2}{\theta}.$$

The original account by Cavendish is still well worth studying on account of the excellence of his methods. His work was undoubtedly very accurate for a pioneer experiment and has only really been improved upon within the last generation. Making various corrections of which it is not necessary to give a description, the result obtained (after correcting a mistake first pointed out by F. Baily) is Δ = 5.448. In seeking the origin of the disturbed motion of the torsion rod Cavendish made a very important observation. He found that when the masses were left in one position for a time the attracted balls crept now in one direction, now in another, as if the attraction were varying. Ultimately he found that this was due to convection currents in the case containing the torsion rod, currents produced by temperature inequalities. When a large sphere was heated the ball near it tended to approach and when it was cooled the ball tended to recede. Convection currents constitute the chief disturbance and the chief source of error in all attempts to measure small forces in air at ordinary pressure.

Reich's Experiments (*Versuche über die mittlere Dichtigkeit der Erde mittelst der Drehwage*, Freiberg, 1838; "Neue Versuche mit der Drehwage," *Leipzig Abh. Math. Phys.* i., 1852, p. 383).—In 1838 F. Reich published an account of a repetition of the Cavendish experiment carried out on the same general lines, though with somewhat smaller apparatus. The chief differences consisted in the methods of measuring the times of vibration and the deflection, and the changes were hardly improvements. His result after revision was Δ = 5.49. In 1852 he published an account of further work giving as result Δ = 5.58. It is noteworthy that in his second paper he gives an account of experiments suggested by J. D. Forbes in which the deflection was not observed directly, but was deduced from observations of the time of vibration when the attracting masses were in different positions.

Let T_1 be the time of vibration when the masses are in one of the usual attracting positions. Let d be the distance between the centres of attracting mass and attracted ball, and δ the distance through which the ball is pulled. If a is the half length of the torsion rod and θ the deflection, $\delta = a\theta$. Now let the attracting masses be put one at each end of the torsion rod with their centres in the line through the centres of the balls and d from them, and let T_2 be the time of vibration. Then it is easy to show that

$$\delta/d = a\theta/d = (T_1 - T_2) / (T_1 + T_2).$$

This gives a value of θ which may be used in the formula. The experiments by this method were not consistent, and the mean result was Δ = 6.25.

Baily's Experiment (*Memoirs of the Royal Astron. Soc.* xiv.).—In 1841-1842 Francis Baily made a long series of determinations by Cavendish's method and with apparatus nearly of the same dimensions. The attracting masses were 12-in. lead spheres and as attracted balls he used various masses, lead, zinc, glass, ivory, platinum, hollow brass, and finally the torsion rod alone without balls. The suspension was also varied, sometimes consisting of a single wire, sometimes being bifilar. There were systematic errors running through Baily's work, which it is impossible now wholly to explain. These made the resulting value of Δ show a variation with the nature of the attracted masses and a variation with the temperature. His final result Δ = 5.6747 is not of value compared with later results.

Cornu and Baille's Experiment (*Comptes rendus*, lxxvi., 1873, p. 954; lxxxvi., 1878, pp. 571, 699, 1001; xcvi., 1883, p. 1493).—In 1870 MM. A. Cornu and J. Baille commenced an experiment by the Cavendish method which was never definitely completed, though valuable studies of the behaviour of the torsion apparatus were made. They purposely departed from the dimensions previously used. The torsion balls were of copper about 100 gm. each, the rod was 50 cm. long, and the suspending wire was 4 metres long. On each side of each ball was a hollow iron sphere. Two of these were filled with mercury weighing 12 kgm., the two spheres of mercury constituting the attracting masses. When the position of a mass was to be changed the mercury was pumped from the sphere on one side to that on the other side of a ball. To avoid counting time a method of electric registration on a chronograph was adopted. A provisional result was Δ = 5.56.

Boys's Experiment (*Phil. Trans.*, A., 1895, pt. i., p. 1).—Professor C. V. Boys having found that it is possible to draw quartz fibres of practically any degree of fineness, of great strength and true in their elasticity, determined to repeat the Cavendish experiment, using his newly invented fibres for the suspension of the torsion rod. He began by an inquiry as to the best dimensions for the apparatus. He saw that if the period of vibration is kept constant, that is, if the moment of inertia I is kept proportional to the torsion couple per radian μ, then the deflection remains the same however the linear dimensions are altered so long as they are all altered in the same proportion. Hence we are driven to conclude that the dimensions should be reduced until further reduction would make the linear quantities too small to be measured with exactness, for reduction in the apparatus enables variations in temperature and the consequent air disturbances to be reduced, and the experiment in other ways becomes more manageable. Professor Boys took as the exactness to be sought for 1 in 10,000. He further saw that reduction in length of the torsion rod with given balls is an advantage. For if the rod be halved the moment of inertia is one-fourth, and if the suspending fibre is made finer so that the torsion couple per radian is also one-fourth the time remains the same. But the moment of the attracting force is halved only, so that the deflection against one-fourth torsion is doubled. In Cavendish's arrangement there would be an early limit to the advantage in reduction of rod in that the mass opposite one ball would begin seriously to attract the other ball. But Boys avoided this difficulty by suspending the balls from the ends of the torsion rod at different levels and by placing the attracting masses at these different levels. Fig. 3 represents diagrammatically a vertical section of the arrangement used on a scale of about 1/10. The torsion rod was a small rectangular mirror about 2.4 cm. wide hung by a quartz fibre about 43 cm. long. From the sides of this mirror the balls were hung by quartz fibres at levels differing by 15 cm. The balls were of gold either about 5 mm. in diameter and weighing about 1.3 gm. or about 6.5 mm. in diameter and weighing 2.65 gm. The attracting masses were lead spheres, about 10 cm. in diameter and weighing about 7.4 kgm. each. These were suspended from the top of the case which could be rotated round the central tube, and they were arranged so that the radius to the centre from the axis of the torsion system made 65° with the torsion rod, the position in which the moment of the attraction was a maximum. The torsion rod mirror reflected a distant scale by which the deflection could be read. The time of vibration was recorded on a chronograph. The result of the experiment, probably the best yet made, was Δ = 5.527; $G = 6.658 \times 10^{-8}$.

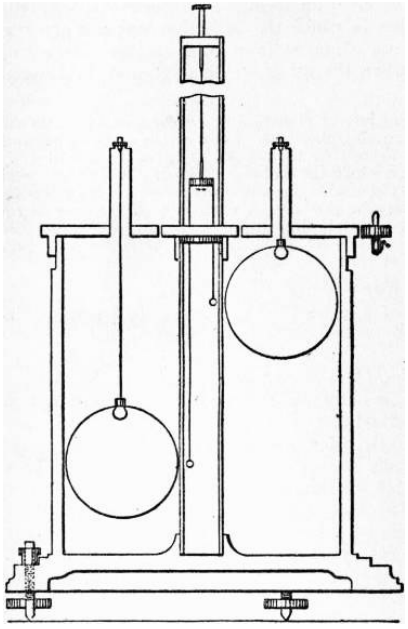

Fig. 3.—Diagram of a Section of Professor Boys's Apparatus.

Braun's Experiment (*Denkschr. Akad. Wiss. Wien, math.- naturw. Cl.* 64, p. 187, 1896).—In 1896 Dr K. Braun, S.J., gave an

account of a very careful and excellent repetition of the Cavendish experiment with apparatus much smaller than was used in the older experiments, yet much larger than that used by Boys. A notable feature of the work consisted in the suspension of the torsion apparatus in a receiver exhausted to about 4 mm. of mercury, a pressure at which convection currents almost disappear while "radiometer" forces have hardly begun. For other ingenious arrangements the original paper or a short abstract in *Nature*, lvi., 1897, p. 127, may be consulted. The attracted balls weighed 54 gm. each and were 25 cm. apart. The attracting masses were spheres of mercury each weighing 9 kgm. and brought into position outside the receiver. Braun used both the deflection method and the time of vibration method suggested to Reich by Forbes. The methods gave almost identical results and his final values are to three decimal places the same as those obtained by Boys.

G. K. Burgess's Experiment (*Thèses présentées à la faculté des sciences de Paris pour obtenir le titre de docteur de l'université de Paris*, 1901).—This was a Cavendish experiment in which the torsion system was buoyed up by a float in a mercury bath. The attracted masses could thus be made large, and yet the suspending wire could be kept fine. The torsion beam was 12 cm. long, and the attracted balls were lead spheres each 2 kgm. From the centre of the beam depended a vertical steel rod with a varnished copper hollow float at its end, entirely immersed in mercury. The surface of the mercury was covered with dilute sulphuric acid to remove irregularities due to varying surface tension acting on the steel rod. The size of the float was adjusted so that the torsion fibre of quartz 35 cm. long had only to carry a weight of 5 to 10 gm. The time of vibration was over one hour. The torsion couple per radian was determined by preliminary experiments. The attracting masses were each 10 kgm. turning in a circle 18 cm. in diameter. The results gave $\Delta = 5.55$ and $G = 6.64 \times 10^{-8}$.

Eötvos's Experiment (*Ann. der Physik und Chemie*, 1896, 59, P. 354).—In the course of investigations on local variations of gravity by means of the torsion balance, R. Eötvos devised a method for determining G somewhat like the vibration method used by Reich and Braun. Two pillars were built up of lead blocks 30 cm. square in cross section, 60 cm. high and 30 cm. apart. A torsion rod somewhat less than 30 cm. long with small weights at the ends was enclosed in a double-walled brass case of as little depth as possible, a device which secured great steadiness through freedom from convection currents. The suspension was a platinum wire about 150 cm. long. The torsion rod was first set in the line joining the centres of the pillars and its time of vibration was taken. Then it was set with its length perpendicular to the line joining the centres and the time again taken. From these times Eötvos was able to deduce $G = 6.65 \times 10^{-8}$ whence $\Delta = 5.53$. This is only a provisional value. The experiment was only as it were a by-product in the course of exceedingly ingenious work on the local variation in gravity for which the original paper should be consulted.

Wilsing's Experiment (*Publ. des astrophysikalischen Observ. zu Potsdam*, 1887, No. 22, vol. vi. pt. ii.; pt. iii. p. 133).—We may perhaps class with the Cavendish type an experiment made by J. Wilsing, in which a vertical "double pendulum" was used in place of a horizontal torsion system. Two weights each 540 gm. were fixed at the ends of a rod 1 metre long. A knife edge was fixed on the rod just above its centre of gravity, and this was supported so that the rod could vibrate about a vertical position. Two attracting masses, cast-iron cylinders each 325 kgm., were placed, say, one in front of the top weight on the pendulum and the other behind the bottom weight, and the position of the rod was observed in the usual mirror and scale way. Then the front attracting mass was dropped to the level of the lower weight and the back mass was raised to that of the upper weight, and the consequent deflection of the rod was observed. By taking the time of vibration of the pendulum first as used in the deflection experiment and then when a small weight was removed from the upper end a known distance from the knife edge, the restoring couple per radian deflection could be found. The final result gave $\Delta = 5.579$.

J. Joly's suggested Experiment (*Nature* xli., 1890, p. 256).—Joly has suggested that G might be determined by hanging a simple pendulum in a vacuum, and vibrating outside the case two massive pendulums each with the same time of swing as the simple pendulum. The simple pendulum would be set swinging by the varying attraction and from its amplitude after a known number of swings of the outside pendulums G could be found.

III. *Comparison of the Earth Pull on a body with the Pull of an Artificial Mass by Means of the Common Balance.*

The principle of the method is as follows:—Suppose a sphere of mass m and weight w to be hung by a wire from one arm of a balance. Let the mass of the earth be E and its radius be R. Then $w = GEm/R^2$. Now introduce beneath m a sphere of mass M and let d be the distance of its centre from that of m. Its pull increases the apparent weight of m say by δw. Then $\delta w = GMm/d^2$. Dividing we obtain $\delta w/w = MR^2/Ed^2$, whence $E = MR^2w/d^2\delta w$; and since $g = GE/R^2$, G can be found when E is known.

Von Jolly's Experiment (*Abhand. der k. bayer. Akad. der Wiss.* 2 Cl. xiii. Bd. 1 Abt. p. 157, and xiv. Bd. 2 Abt. p. 3).—In the first of these papers Ph. von Jolly described an experiment in which he sought to determine the decrease in weight with increase of height from the earth's surface, an experiment suggested by Bacon (*Nov. Org.* Bk. 2, §36), in the form of comparison of rates of two clocks at different levels, one driven by a spring, the other by weights. The experiment in the form carried out by von Jolly was attempted by H. Power, R. Hooke, and others in the early days of the Royal Society (Mackenzie, *The Laws of Gravitation*). Von Jolly fixed a balance at the top of his laboratory and from each pan depended a wire supporting another pan 5 metres below. Two 1-kgm. weights were first balanced in the upper pans and then one was moved from an upper to the lower pan on the same side. A gain of 1.5 mgm. was observed after correction for greater weight of air displaced at the lower level. The inverse square law would give a slightly greater gain and the deficiency was ascribed to the configuration of the land near the laboratory. In the second paper a second experiment was described in which a balance was fixed at the top of a tower and provided as before with one pair of pans just below the arms and a second pair hung from these by wires 21 metres below. Four glass globes were prepared equal in weight and volume. Two of these were filled each with 5 kgm. of mercury and then all were sealed up. The two heavy globes were then placed in the upper pans and the two light ones in the lower. The two on one side were now interchanged and a gain in weight of about 31.7 mgm. was observed. Air corrections were eliminated by the use of the globes of equal volume. Then a lead sphere about 1 metre radius was built up of blocks under one of the lower pans and the experiment was repeated. Through the attraction of the lead sphere on the mass of mercury when below the gain was greater by 0.589 mgm. This result gave $\Delta = 5.692$.

Experiment of Richarz and Krigar-Menzel (*Anhang zu den Abhand. der k. preuss. Akad. der Wiss. zu Berlin*, 1898).—In 1884 A. König and F. Richarz proposed a similar experiment which was ultimately carried out by Richarz and O. Krigar-Menzel. In this experiment a balance was supported somewhat more than 2 metres above the floor and with scale pans above and below as in von Jolly's experiment. Weights each 1 kgm. were placed, say, in the top right pan and the bottom left pan. Then they were shifted to the bottom right and the top left, the result being, after corrections for change in density of air displaced through pressure and temperature changes, a gain in weight of 1.2453 mgm. on the right due to change in level of 2.2628 metres. Then a rectangular column of lead 210 cm. square cross section and 200 cm. high was built up under the balance between the pairs of pans. The column was perforated with two vertical tunnels for the passage of the wires supporting the lower pans. On repeating the weighings there was now a decrease on the right when a kgm. was moved on that side from top to bottom while another was moved on the left from bottom to top. This decrease was 0.1211 mgm. showing a total change due to the lead mass of 1.2453 + 0.1211 = 1.3664 mgm. and this is obviously four times the attraction of the lead mass on one kgm. The changes in the positions of the weights were made automatically. The results gave $\Delta = 5.05$ and $G = 6.685 \times 10^{-8}$.

Poynting's Experiment (*Phil. Trans.*, vol. 182, A, 1891, P. 565).—In 1878 J. H. Poynting published an account of a preliminary experiment which he had made to show that the common balance was available for gravitational work. The experiment was on the same lines as that of von Jolly but on a much smaller scale. In 1891 he gave an account of the full experiment carried out with a larger balance and with much greater care. The balance had a 4-ft. beam. The scale pans were removed, and from the two arms were hung lead spheres each weighing about 20 kgm. at a level about 120 cm. below the beam. The balance was supported in a case above a horizontal turn-table with axis vertically below the central knife edge, and on this turn-table was a lead sphere weighing 150 kgm.—the attracting mass. The centre of this sphere was 30 cm. below the level of the centres of the hanging weights. The turn-table could be rotated between stops so that the attracting mass was first immediately below the hanging weight on one side, and then immediately under that on the other side. On the same turn-table but at double the distance from the centre was a second sphere of half the weight introduced merely to balance the larger sphere and keep the centre of gravity at the centre of the turn-table. Before the introduction of this sphere errors were introduced through the tilting of the floor of the balance room when the turn-table was rotated. Corrections of course had to be made for the attraction of this second sphere. The removal of the

large mass from left to right made an increase in weight on that side of about 1 mgm. determined by riders in a special way described in the paper. To eliminate the attraction on the beam and the rods supporting the hanging weights another experiment was made in which these weights were moved up the rods through 30 cm. and on now moving the attracting sphere from left to right the gain on the right was only about ½ mgm. The difference, ⅘ mgm., was due entirely to change in distance of the attracted masses. After all corrections the results gave $\Delta = 5.493$ and $G = 6.698 \times 10^{-8}$.

Final Remarks.—The earlier methods in which natural masses were used have disadvantages, as already pointed out, which render them now quite valueless. Of later methods the Cavendish appears to possess advantages over the common balance method in that it is more easy to ward off temperature variations, and so avoid convection currents, and probably more easy to determine the actual value of the attracting force. For the present the values determined by Boys and Braun may be accepted as having the greatest weight and we therefore take

Mean density of the earth $\Delta = 5.527$
Constant of gravitation $G = 6.658 \times 10^{-8}$.

Probably $\Delta = 5.53$ and $G = 6.66 \times 10^{-8}$ are correct to 1 in 500.

AUTHORITIES.—J. H. Poynting, *The Mean Density of the Earth* (1894), gives an account of all work up to the date of publication with a bibliography; A. Stanley Mackenzie, *The Laws of Gravitation* (1899), gives annotated extracts from various papers, some historical notes and a bibliography. *A Bibliography of Geodesy, Appendix 8, Report for 1902 of the U.S. Coast and Geodetic Survey* includes a very complete bibliography of gravitational work.

(J. H. P.)

GRAVY, a word usually confined to the natural juices which come from meat during cooking. In early uses (in the *New English Dictionary* the quotations date from the end of the 14th to the beginning of the 16th centuries) it meant a sauce of broth flavoured with spices and almonds. The more modern usage seems to date from the end of the 16th century. The word is obscure in origin. It has been connected with “graves” or “greaves,” the refuse of tallow in the manufacture of soap or candles. The more probable derivation is from the French. In Old French the word is almost certainly *grané*, and is derived from *grain*, “something used in cooking.” The word was early read and spelled with a *u* or *v* instead of *n*, and the corruption was adopted in English.

GRAY, ASA (1810-1888), American botanist, was born at Paris, Oneida county, N.Y., on the 18th of November 1810. He was the son of a farmer, and received no formal education except at the Fairfield (N.Y.) academy and the Fairfield medical school. From Dr James Hadley, the professor of chemistry and *materia medica* he obtained his first instruction in science (1825-1826). In the spring of 1827 he first began to collect and identify plants. His formal education, such as it was, ended in February 1831, when he took the degree of M.D. His first contribution to descriptive botany appeared in 1835, and thereafter an uninterrupted series of contributions to systematic botany flowed from his pen for fifty-three years. In 1836 his first botanical text-book appeared under the title *Elements of Botany*, followed in 1839 by his *Botanical Text-Book for Colleges, Schools, and Private Students* which developed into his *Structural Botany.* He published later *First Lessons in Botany and Vegetable Physiology* (1857); *How Plants Grow* (1858); *Field, Forest, and Garden* Botany (1869); *How Plants Behave* (1872). These books served the purpose of developing popular interest in botanical studies. His most important work, however, was his *Manual of the Botany of the Northern United States*, the first edition of which appeared in 1847. This manual has passed through a large number of editions, is clear, accurate and compact to an extraordinary degree, and within its geographical limits is an indispensable book for the student of American botany.

Throughout his life Gray was a diligent writer of reviews of books on natural history subjects. Often these reviews were elaborate essays, for which the books served merely as texts; often they were clear and just summaries of extensive works; sometimes they were sharply critical, though never ill-natured or unfair; always they were interesting, lively and of literary as well as scientific excellence. The greater part of Gray’s strictly scientific labour was devoted to a *Flora* of North America, the plan of which originated with his early teacher and associate, John Torrey of New York. The second volume of Torrey and Gray’s *Flora* was completed in 1843; but for forty years thereafter Gray gave up a large part of his time to the preparation of his *Synoptical Flora* (1878). He lived at the period when the flora of North America was being discovered, described and systematized; and his enthusiastic labours in this fresh field placed him at the head of American botanists and on a level with the most famous botanists of the world. In 1856 he published a paper on the distribution of plants under the title *Statistics of the Flora of the Northern United States*; and this paper was followed in 1859 by a memoir on the botany of Japan and its relations to that of North America, a paper of which Sir J. D. Hooker said that “in point of originality and far-reaching results [it] was its author’s *opus magnum*.” It was Gray’s study of plant distribution which led to his intimate correspondence with Charles Darwin during the years in which Darwin was elaborating the doctrines that later became known as Darwinism. From 1855 to 1875 Gray was both a keen critic and a sympathetic exponent of the Darwinian principles. His religious views were those of the Evangelical bodies in the Protestant Church; so that, when Darwinism was attacked as equivalent to atheism, he was in position to answer effectively the unfounded allegation that it was fatal to the doctrine of design. He taught that “the most puzzling things of all to the old-school teleologists are the *principia* of the Darwinian.” He openly avowed his conviction that the present species are not special creations, but rather derived from previously existing species; and he made his avowal with frank courage, when this truth was scarcely recognized by any naturalists, and when to the clerical mind evolution meant atheism.

In 1842 Gray accepted the Fisher professorship of natural history in Harvard University. On his accession to this chair the university had no herbarium, no botanical library, few plants of any value, and but a small garden, which for lack of money had never been well stocked or well arranged. He soon brought together, chiefly by widespread exchanges, a valuable herbarium and library, and arranged the garden; and thereafter the development of these botanical resources was part of his regular labours. The herbarium soon became the largest and most valuable in America, and on account of the numerous type specimens it contains it is likely to remain a collection of national importance. Nothing of what Gray did for the botanical department of the university has been lost; on the contrary, his labours were so well directed that everything he originated and developed has been enlarged, improved and placed on stable foundations. He himself made large contributions to the establishment by giving it all his own specimens, many books and no little money, and by his will he gave it the royalties on his books. During his long connexion with the university he brought up two generations of botanists and he always took a strong personal interest in the researches and the personal prospects of the young men who had studied under him. His scientific life was mainly spent in the herbarium and garden in Cambridge; but his labours there were relieved by numerous journeys to different parts of the United States and to Europe, all of which contributed to his work on the Synoptical Flora. He lived to a good age—long enough, indeed, to receive from learned societies at home and abroad abundant evidence of their profound respect for his attainments and services. He died at Cambridge, Mass., on the 30th of January 1888.

His *Letters* (1893) were edited by his wife; and his *Scientific Papers* (1888) by C. S. Sargent.

(C. W. E.)

GRAY, DAVID (1838-1861), Scottish poet, the son of a hand-loom weaver, was born at Merkland, near Glasgow, on the 29th of January 1838. His parents resolved to educate him for the church, and through their self-denial and his own exertions as a pupil teacher and private tutor he was able to complete a course of four sessions at the university of Glasgow. He began to write poetry for *The Glasgow Citizen* and began his idyll on the Luggie, the little stream that ran through Merkland. His most intimate companion at this time was Robert Buchanan, the poet; and in May 1860 the two agreed to proceed to London, with the idea of finding literary employment. Shortly after his arrival in London Gray introduced himself to Monckton Milnes, afterwards Lord Houghton, with whom he had previously corresponded. Lord Houghton tried to persuade him to return to Scotland, but Gray insisted on staying in London. He was unsuccessful in his efforts to place Gray's poem, "The Luggie," in *The Cornhill Magazine*, but gave him some light literary work. He also showed him great kindness when a cold which had seized him assumed the serious form of consumption, and sent him to Torquay; but as the disease made rapid progress, an irresistible longing seized Gray to return to Merkland, where he arrived in January 1861, and died on the 3rd of December following, having the day before had the gratification of seeing a printed specimen copy of his poem "The Luggie," published eventually by the exertions of Sydney Dobell. He was buried in the Auld Aisle Churchyard, Kirkintilloch, where in 1865 a monument was erected by "friends far and near" to his memory.

"The Luggie," the principal poem of Gray, is a kind of reverie in which the scenes and events of his childhood and his early aspirations are mingled with the music of the stream which he celebrates. The series of sonnets, "In the Shadows," was composed during the latter part of his illness. Most of his poems necessarily bear traces of immaturity, and lines may frequently be found in them which are mere echoes from Thomson, Wordsworth or Tennyson, but they possess, nevertheless, distinct individuality, and show a real appreciation of natural beauty.

The Luggie and other Poems, with an introduction by R. Monckton Milnes, and a brief memoir by James Hedderwick, was published in 1862; and a new and enlarged edition of Gray's *Poetical Works*, edited by Henry Glassford Bell, appeared in 1874. See also *David Gray and other Essays*, by Robert Buchanan (1868), and the same writer's poem on David Gray, in *Idyls and Legends of Inverburn*.

GRAY, ELISHA (1835-1901), American electrician, was born in Barnesville, Belmont county, Ohio, on the 2nd of August 1835. He worked as a carpenter and in a machine shop, reading in physical science at the same time, and for five years studied at Oberlin College, where he taught for a time. He then investigated the subject of telegraphy, and in 1867 patented a telegraphic switch and annunciator. Experimenting in the transmittal of electro-tones and of musical tones by wire, he utilized in 1874 animal tissues in his receivers, and filed, on the 14th of February 1876, a caveat for the invention of a telephone, only a few hours after the filing of an application for a patent by Alexander Graham Bell. (See Telephone.) The caveat was disregarded; letters patent No. 174,465 were granted to Bell, whose priority of invention was upheld in 1888 by the United States Supreme Court (see *Molecular Telephone Co.* v. *American Bell Telephone Co.*, 126 U.S. 1). Gray's experiments won for him high praise and the decoration of the Legion of Honour at the Paris Exposition of 1878. He was for a time a manufacturer of electrical apparatus, particularly of his own inventions; and was chief electrical expert of the Western Electric Company of Chicago. At the Columbian Exposition of 1893 Gray was chairman of the International Congress of Electricians. He died at Newtonville, Massachusetts, on the 21st of January 1901. Among his later inventions were appliances for multiplex telegraphy and the telautograph, a machine for the electric transmission of handwriting. He experimented in the submarine use of electric bells for signalling.

Gray wrote, besides scientific addresses and many monographs, *Telegraphy and Telephony* (1878) and *Electricity and Magnetism* (1900).

GRAY, HENRY PETERS (1819-1877). American portrait and genre painter, was born in New York on the 23rd of June 1819. He was a pupil of Daniel Huntington there, and subsequently studied in Rome and Florence. Elected a member of the National Academy of Design in 1842, he succeeded Huntington as president in 1870, holding the position until 1871. The later years of his life were devoted to portrait work. He was strongly influenced by the old Italian masters, painting in mellow colour with a classical tendency. One of his notable canvases was an allegorical composition called "The Birth of our Flag" (1875). He died in New York City on the 12th of November 1877.

GRAY, HORACE (1828-1902), American jurist, was born in Boston, Massachusetts, on the 24th of March 1828. He graduated at Harvard in 1845; was admitted to the bar in 1851, and in 1854-1861 was reporter to the Supreme Court of Massachusetts. He practised law, first in partnership with Ebenezer Rockwood Hoar, and later with Wilder Dwight (1823-1862) and Charles F. Blake; was appointed associate justice of the state Supreme Court on the 23rd of August 1864, becoming chief-justice on the 5th of September 1873; and was associate justice of the Supreme Court of the United States from December 1881 to August 1902, resigning only a few weeks before his death at Nahant, Mass., on the 15th of September 1902. Gray had a fine sense of the dignity of the bench, and a taste for historical study. His judgments were unmistakably clear and contained the essence of earlier opinions. A great case lawyer, he was a much greater judge, the variety of his knowledge and his contributions to admiralty and prize law and to testamentary law being particularly striking; in constitutional law he was a "loose" rather than a "strict" constructionist.

See Francis C. Lowell, "Horace Gray," in *Proceedings of the American Academy*, vol. 39, pp. 627-637 (Boston, 1904).

GRAY, JOHN DE (d. 1214), bishop of Norwich, entered Prince John's service, and at his accession (1199) was rapidly promoted in the church till he became bishop of Norwich in September 1200. King John's attempt to force him into the primacy in 1205 started the king's long and fatal quarrel with Pope Innocent III. De Gray was a hard-working royal official, in finance, in justice, in action, using his position to enrich himself and his family. In 1209 he went to Ireland to govern it as justiciar. He adopted a forward policy, attempting to extend the English frontier northward and westward, and fought a number of campaigns on the Shannon and in Fermanagh. But in 1212 he suffered a great defeat. He assimilated the coinage of Ireland to that of England, and tried to effect a similar reform in Irish law. De Gray was a good financier, and could always raise money: this probably explains the favour he enjoyed from King John. In 1213 he is found with 500 knights at the great muster at Barham Downs, when Philip Augustus was threatening to invade England. After John's reconciliation with Innocent he was one of those exempted from the general pardon, and was forced to go in person to Rome to obtain it. At Rome he so completely gained over Innocent that the pope sent him back with papal letters recommending his election to the bishopric of Durham (1213); but he died at St Jean d'Audely in Poitou on his homeward journey (October 1214).

GRAY, JOHN EDWARD (1800-1875), English naturalist, born at Walsall, Staffordshire, in 1800, was the eldest of the three sons of S. F. Gray, of that town, druggist and writer on botany, and author of the *Supplement to the Pharmacopoeia*, &c., his grandfather being S. F. Gray, who translated the *Philosophia Botanica* of Linnaeus for the *Introduction to Botany* of James Lee (1715-1795). Gray studied at St Bartholomew's and other hospitals for the medical profession, but at an early age was attracted to the pursuit of botany. He assisted his father by collecting notes on botany and comparative anatomy and zoology in Sir Joseph Banks's library at the British Museum, aided by Dr W. E. Leach, assistant keeper, and the systematic synopsis of the *Natural Arrangement of British Plants*, 2 vols., 1821, was prepared by him, his father writing the preface and introduction only. In consequence of his application for membership of the Linnaean Society being rejected in 1822, he turned to the study of zoology, writing on zoophytes, shells, *Mollusca* and *Papilionidae*, still aided by Dr Leach at the British Museum. In December 1824 he obtained the post of assistant in that institution; and from that date to December 1839, when J. G. Children retired from the keepership, he had so zealously applied himself to the study, classification and improvement of the national collection of zoology that he was selected as the fittest person to be entrusted with its charge. Immediately on his appointment as keeper, he took in hand the revision of the systematic arrangement of the collections; scientific catalogues followed in rapid succession; the department was raised in importance; its poverty as well as its wealth became known, and whilst increased grants, donations and exchanges made good many deficiencies, great numbers of students, foreign as well as English, availed themselves of its resources to enlarge the knowledge of zoology in all its branches. In spite of numerous obstacles, he worked up the department, within a few years of his appointment as keeper, to such a state of excellence as to make it the rival of the cabinets of Leiden, Paris and Berlin; and later on it was raised under his management to the dignity of the largest and most complete zoological collection in the world. Although seized with paralysis in 1870, he continued to discharge the functions of keeper of zoology, and to contribute papers to the *Annals of Natural History*, his favourite journal, and to the transactions of a few of the learned societies; but at Christmas 1874, having completed half a century of official work, he resigned office, and died in London on the 7th of March 1875.

Gray was an exceedingly voluminous writer, and his interests were not confined to natural history only, for he took an active part in questions of public importance of his day, such as slave emancipation, prison discipline, abolition of imprisonment for debt, sanitary and municipal organizations, the decimal system, public education, extension of the opening of museums, &c. He began to publish in 1820, and continued till the year of his death.

The titles of the books, memoirs and miscellaneous papers written by him, accompanied by a few notes, fill a privately printed list of 56 octavo pages with 1162 entries.

GRAY, PATRICK GRAY, 6TH BARON (d. 1612), was descended from Sir Andrew Gray (*c.* 1390-1469) of Broxmouth and Foulis, who was created a Scottish peer as Lord Gray, probably in 1445. Andrew was a leading figure in Scottish politics during the reigns of James I. and his two successors, and visited England as a hostage, a diplomatist and a pilgrim. The 2nd Lord Gray was his grandson 392
Andrew (d. 1514), and the 4th lord was the latter's grandson Patrick (d. 1582), a participant in Scottish politics during the stormy time of Mary, queen of Scots. Patrick's son, Patrick, the 5th lord (d. 1609), married Barbara, daughter of William, 2nd Lord Ruthven, and their son Patrick, known as the "Master of Gray," is the subject of this article. Educated at Glasgow University and brought up as a Protestant, young Patrick was married early in life to Elizabeth Lyon, daughter of Lord Glamis, whom he repudiated almost directly; and afterwards went to France, where he joined the friends of Mary, queen of Scots, became a Roman Catholic, and assisted the French policy of the Guises in Scotland. He returned and took up his residence again in Scotland in 1583, and immediately began a career of treachery and intrigue, gaining James's favour by disclosing to him his mother's secrets, and acting in agreement with James Stewart, earl of Arran, in order to keep Mary a prisoner in England. In 1584 he was sent as ambassador to England, to effect a treaty between James and Elizabeth and to exclude Mary. His ambition incited him at the same time to promote a plot to secure the downfall of Arran. This was supported by Elizabeth, and was finally accomplished by letting loose the lords banished from Scotland for their participation in the rebellion called the Raid of Ruthven, who, joining Gray, took possession of the king's person at Stirling in 1585, the league with England being ratified by the parliament in December. Gray now became the intermediary between the English government and James on the great question of Mary's execution, and in 1587 he was despatched on an embassy to Elizabeth, ostensibly to save Mary's life. Gray had, however, previously advised her secret assassination and had endeavoured to overcome all James's scruples; and though he does not appear to have carried treachery so far as to advise her death on this occasion, no representations made by him could have had any force or weight. The execution of Mary caused his own downfall and loss of political power in Scotland; and after his return he was imprisoned on charges of plots against Protestantism, of endeavouring to prevent the king's marriage, and of having been bribed to consent to Mary's death. He pleaded guilty of sedition and of having obstructed the king's marriage, and was declared a traitor; but his life was spared by James and he was banished from the country, but permitted to return in 1589, when he was restored to his office of master of the wardrobe to which he had been appointed in 1585. His further career was marked by lawlessness and misconduct. In 1592, together with the 5th Lord Bothwell, he made an unsuccessful attempt to seize the king at Falkland, and the same year earned considerable discredit by bringing groundless accusations against the Presbyterian minister, Robert Bruce; while after the king's accession to the English throne he was frequently summoned before the authorities on account of his conduct. Notwithstanding, he never lost James's favour. In 1609 he succeeded his father as 6th Baron Gray, and died in 1612.

Gray was an intimate friend of Sir Philip Sidney, but, if one of the ablest, handsomest and most fascinating, he was beyond doubt one of the most unscrupulous men of his day. He married as his second wife in 1585 Mary Stewart, daughter of Robert, earl of Orkney, and had by her, besides six daughters, a son, Andrew (d. 1663), who succeeded him as 7th Baron Gray. Andrew, who served for a long time in the French army, was a supporter, although not a very prominent one, of Charles I. and afterwards of Charles II. He was succeeded as 8th Lord Gray by Patrick (d. 1711), a son of his daughter Anne, and Patrick's successor was his kinsman and son-in-law John (d. 1724). On the extinction of John's direct line in 1878 the title of Lord Gray, passed to George Stuart, earl of Moray. In 1606 Gray had been ranked sixth among the Scottish baronies.

BIBLIOGRAPHY.—Article in *Dict. of Nat. Biog.*, and authorities there quoted; Gray's relation concerning the surprise at Stirling (*Bannatyne Club Publns.* i. 131, 1827); Andrew Lang, *History of Scotland*, vol. ii. (1902); Peter Gray, *The Descent and Kinship of Patrick, Master of Gray* (1903); *Gray Papers* (Bannatyne Club, 1835); *Hist. MSS. Comm., Marq. of Salisbury's MSS.*

GRAY, ROBERT (1809-1872), first bishop of Cape Town and metropolitan of South Africa, was born at Bishop Wearmouth, Durham, and was the son of Robert Gray, bishop of Bristol. He was educated at Eton and Oxford, and took orders in 1833. After holding the livings of Whitworth, Durham, 1834-1845, and Stockton-on-Tees, 1845-1847, he was consecrated bishop of Cape Town in 1847; the bishopric having been endowed through the liberality of Miss (afterwards Baroness) Burdett-Coutts. Until 1853 he was a suffragan of Canterbury, but in that year he formally resigned his see and was reappointed by letters patent metropolitan of South Africa in view of the contemplated establishment of the suffragan dioceses of Graham's Town and Natal. In that capacity his coercive jurisdiction was twice called in question, and in each case the judicial committee of the privy council decided against him.

The best-known case is that of Bishop Colenso, whom Gray deposed and excommunicated in 1863. The spiritual validity of the sentence was upheld by the convocation of Canterbury and the Pan-Anglican synod of 1867, but legally Colenso remained bishop of Natal. The privy council decisions declared, in effect, that the Anglican body in South Africa was on the footing of a voluntary religious society. Gray, accepting this position, obtained its recognition by the mother church as the Church of the Province of South Africa, in full communion with the Church of England. The first provincial synod was held in 1870. During his episcopate Bishop Gray effected a much-needed organization of the South African church, to which he added five new bishoprics, all carved out of the original diocese of Cape Town. It was also chiefly owing to his suggestions that the universities' mission to Central Africa was founded.

GRAY, SIR THOMAS (d. *c.* 1369), English chronicler, was a son of Sir Thomas Gray, who was taken prisoner by the Scots at Bannockburn and who died about 1344. The younger Thomas was present at the battle of Neville's Cross in 1346; in 1355, whilst acting as warden of Norham Castle, he was made a prisoner, and during his captivity in Edinburgh Castle he devoted his time to studying the English chroniclers, Gildas, Bede, Ranulf Higdon and others. Released in 1357 he was appointed warden of the east marches towards Scotland in 1367, and he died about 1369. Gray's work, the *Scalacronica* (so called, perhaps, from the scaling-ladder in the crest of the Grays), is a chronicle of English history from the earliest times to about the year 1362. It is, however, only valuable for the reigns of Edward I. and Edward II. and part of that of Edward III., being especially so for the account of the wars between England and Scotland, in which the author's father and the author himself took part. Writing in Norman-French, Gray tells of Wallace and Bruce, of the fights at Bannockburn, Byland and Dupplin, and makes some mention of the troubles in England during the reign of Edward II. He also narrates the course of the war in France between 1355 and 1361; possibly he was present during some of these campaigns.

The *Scalacronica* was summarized by John Leland in the 16th century; the part dealing with the period from 1066 to the end, together with the prologue, was edited for the Maitland Club by J. Stevenson (1836); and the part from 1274 to 1362 was translated into English by Sir Herbert Maxwell (Glasgow, 1907). In the extant manuscript, which is in Corpus Christi College, Cambridge, there is a gap extending from about 1340 to 1355, and Gray's account of this period is only known from Leland's summary.

GRAY, THOMAS (1716-1771), English poet, the fifth and sole surviving child of Philip and Dorothy Gray, was born in London on the 26th of December 1716. His mother's maiden name was Antrobus, and in partnership with her sister Mary she kept a millinery shop in Cornhill. This and the house connected with it were the property of Philip Gray, a money-scrivener, who married Dorothy in 1706 and lived with her in the house, the sisters renting the shop from him and supporting themselves by its profits. Philip Gray had impaired the fortune which he inherited from his father, a wealthy London merchant; yet he was sufficiently well-to-do, and at the close of his life was building a house upon some property of his own at Wanstead. But he was selfish and brutal, and in 1735 his wife took some abortive steps to obtain a separation from him. At this date she had given birth to twelve children, of whom Thomas was the only survivor. He owed his life as well as his education to this "careful, tender mother," as he calls her. The child was suffocating when she opened one of his veins with her own hand. He went at her expense to Eton in 1727, and was confided to the care of her brother, William Antrobus, one of the assistant-masters, during some part at least of his school-life.

At Eton Gray's closest friends were Horace Walpole, Richard West (son of the lord chancellor of Ireland and grandson of the famous Bishop Burnet), and Thomas Ashton, afterwards fellow of Eton. This little coterie was dubbed "the Quadruple Alliance"; its members were studious and literary, and took little part in the amusements of their fellows. In 1734 Gray matriculated at Peterhouse, Cambridge, of which his uncle, Robert Antrobus, had been a fellow. At Cambridge he had once more the companionship of Walpole and Ashton who were at King's, but West went to Christchurch, Oxford. Gray made at this time the firmest and most constant friendship of his life with Thomas Wharton (not the poet Warton) of Pembroke College. He was maintained by his mother, and his straitened means were eked out by certain small exhibitions from his college. His conspicuous abilities and known devotion to study perhaps atoned in the eyes of the authorities for his indifference to the regular routine of study; for mathematics in particular he had an aversion which was the one exception to his almost limitless curiosity in other directions. During his first Cambridge period he learnt Italian "like any dragon," and made translations from Guarini, Dante and Tasso, some of which have been preserved. In September 1738 he is in the agony of leaving college, nor can we trace his movements with any certainty for a while, though it may be conjectured that he spent much time with Horace Walpole, and made in his company some fashionable acquaintances in London. On the 29th of March 1739, he started with Walpole for a long continental tour, for the expenses of which it is probable that his father, for once, came in some measure to his assistance. In Paris, Gray visited the great with his friend, studied the picture-galleries, went to tragedies, comedies, operas and cultivated there that taste for the French classical dramatists, especially Racine, whom he afterwards tried to imitate in the fragmentary "Agrippina." It is characteristic of him that he travels through France with Caesar constantly in his hands, ever noting and transcribing. In the same way, in crossing the Alps and in Piedmont, he has "Livy in the chaise with him and Silius Italicus too." In Italy he made a long sojourn, principally at Florence, where Walpole's lifelong correspondent, Horace Mann, was British envoy, and received and treated the travellers most hospitably. But Rome and Naples are also described in Gray's letters, sometimes vividly, always amusingly, and in his notes are almost catalogued. Herculaneum, an object of intense interest to the young poet and antiquary, had been discovered the year before. At length in April 1741 Gray and Walpole set out northwards for Reggio. Here they quarrelled. Gray, "never a boy," was a student, and at times retiring; Walpole, in his way a student too, was at this time a very social being, somewhat too frivolous, and, what was worse, too patronizing. He good-humouredly said at a later date, "Gray loves to find fault," and this fault-finding was expressed, no doubt with exaggeration, in a letter to Ashton, who violated Gray's confidence. The rupture followed, and with two friends, John Chute of the Vyne, Hampshire, and the young Francis Whithed, Gray went to Venice to see the doge wed the Adriatic on Ascension Day. Thence he returned home attended only by a *laquais de voyage*, visiting once more the Grande Chartreuse where he left in the album of the brotherhood those beautiful alcaics, *O Tu severa Religio loci*, which reveal his characteristic melancholy (enhanced by solitude and estrangement) and that sense of the glory as distinct from the horror of mountain scenery to which perhaps he was the first of Englishmen to give adequate expression. On the 18th of September 1741 we find him in London, astonishing the street boys with his deep ruffles, large bag-wig and long sword, and "mortified" under the hands of the English barber. On the 6th of November his father died; Philip Gray had, it is evident, been less savage and niggardly at last to those who were dependent upon him, and his death left his wife and son some measure of assured peace and comfort.

London was Gray's headquarters for more than a year, with occasional visits to Stoke Poges, to which his mother and Mary Antrobus had retired from business to live with their sister, Mrs Rogers. At Stoke he heard of the death of West, to whom he had sent the "Ode on Spring," which was returned to him unopened. It was an unexpected blow, shocking in all its circumstances, especially if we believe the story that his friend's frail life was brought to a close by the discovery that the mother whom he tenderly loved had been an unfaithful wife, and, as some say, poisoned her husband. About this tragedy Gray preserved a mournful silence, broken only by the pathetic sonnet, and some Latin lines, in which he laments his loss. The year 1742, was, for him, fruitful in poetic effort, of which, however, much was incomplete. The "Agrippina," the *De principiis Cogitandi*, the splenetic "Hymn to Ignorance" in which he contemplates his return to the university, remain fragments; but besides the two poems already mentioned, the "Ode on a Distant Prospect of Eton College" and the "Hymn to Adversity," perhaps the most faultless of his poems, were written before the close of the summer. After hesitating between Trinity Hall and Peterhouse, he returned to the latter, probably as a fellow-commoner. He had hitherto neglected to read for a degree; he proceeded to that of LL.B. in 1744. In 1745 a reconciliation with Walpole, long desired probably on both sides, was effected through the kind offices of Chute's sister. In 1746 he spent his time

between Cambridge, Stoke and London; was much with Walpole; graphically describes the trial of the Scottish rebel lords, and studied Greek with avidity; but "the muse," which by this time perhaps had stimulated him to begin the "Elegy," "has gone, and left him in much worse company." In town he finds his friends Chute and Whithed returned to England, and "flaunts about" in public places with them. The year 1747 produced only the ode on Walpole's cat, and we gather that he is mainly engaged in reading with a very critical eye, and interesting himself more in the troubles of Pembroke College, in which he almost seems to live, than in the affairs of Peterhouse. In this year also be made the acquaintance of Mason, his future biographer. In 1748 he first came before the public, but anonymously, in Dodsley's *Miscellany*, in which appeared the Eton ode, the ode on spring, and that on the cat. In the same year he sent to Wharton the beginning of the didactic poem, "The Alliance of Education and Government," which remains a fragment. His aunt, Mary Antrobus, died in 1749.

There is little to break the monotony of his days till 1750, when from Stoke he sent Walpole "a thing to which he had at last put an end." The "thing" was the "Elegy." It was shown about in manuscript by his admiring friend; it was impudently pirated, and Gray had it printed by Dodsley in self-defence. Even thus it had "a pinch or two in its cradle," of which it long bore the marks. The publication led to the one incident in Gray's life which has a touch of romance. At Stokehouse had come to live the widowed Lady Cobham, who learnt that the author of the "Elegy" was her neighbour. At her instance, Lady Schaub, her visitor, and Miss Speed, her protégée, paid him a call; the poet was out, and his quiet mother and aunts were somewhat flustered at the apparition of these women of fashion, whose acquaintance Gray had already made in town. Hence the humorous "Long Story." A platonic affection sprang up between Gray and Miss Speed; rumour, upon the death of Lady Cobham, said that they were to be married, but the lady escaped this mild destiny to become the Baroness de la Peyrière, afterwards Countess Viry, and a dangerous political *intriguante*.

In 1753 all Gray's completed poems, except the sonnet on the death of West, were published by Dodsley in a handsome volume illustrated by Richard Bentley, the son of the celebrated master of Trinity. To these designs we owe the verses to the artist which were posthumously published from a MS. torn at the end. In the same year Gray's mother died and was buried in the churchyard at Stoke Poges, the scene of the "Elegy," in the same grave with Mary Antrobus. A visit to his friend Dr Wharton at Durham later in the year revives his earlier impressions of that bolder scenery which is henceforth to be in the main the framework of his muse. Already in 1752 he had almost completed "The Progress of Poesy," in which, and in "The Bard," the imagery is largely furnished forth by mountain and torrent. The latter poem long held fire; Gray was stimulated to finish it by hearing the blind Welsh harper Parry at Cambridge. Both odes were the first-fruits of the press which Walpole had set up at Strawberry Hill, and were printed together there in 1757. They are genuinely Pindaric, that is, with corresponding strophes, antistrophes and epodes. As the Greek motto prefixed to them implies, they were vocal to the intelligent only; and these at first were few. But the odes, if they did not attain the popularity of the "Elegy," marked an epoch in the history of English poetry, and the influence of "The Bard" may be traced even in that great but very fruitful imposture, the pseudo-Ossian of Macpherson. Gray yields to the impulse of the Romantic movement; he has long been an admirer of ballad poetry; before he wrote "The Bard" he had begun to study Scandinavian literature, and the two "Norse Odes," written in 1761, were in style and metrical form strangely anticipative of Coleridge and Scott. Meanwhile his Cambridge life had been vexed by the freaks of the fellow-commoners of Peterhouse, a peculiarly riotous set. He had suffered great inconvenience for a time by the burning of his property in Cornhill, and so nervous was he on the subject of fire that he had provided himself with a rope-ladder by which he might descend from his college window. Under this window a hunting-party of these rude lads raised in the early morning the cry of fire; the poet's night-capped head appeared and was at once withdrawn. This, or little more than this, was the simple fact out of which arose the legend still current at Cambridge. The servile authorities of Peterhouse treated Gray's complaints with scant respect, and he migrated to Pembroke College. "I left my lodgings," he said, "because the rooms were noisy, and the people of the house dirty." 394

In 1758 died Mrs Rogers, and Gray describes himself as employed at Stoke in "dividing nothing" between himself and the surviving aunt, Mrs Oliffe, whom he calls "the spawn of Cerberus and the Dragon of Wantley." In 1759 he availed himself of the MS. treasures of the British Museum, then for the first time open to the public, made a very long sojourn in town, and in 1761 witnessed the coronation of George III., of which to his friend Brown of Pembroke he wrote a very vivacious account. In his last years he revealed a craving for a life less sedentary than heretofore. He visited various picturesque districts of Great Britain, exploring great houses and ruined abbeys; he was the pioneer of the modern tourist, noting and describing in the spirit now of the poet, now of the art-critic, now of the antiquary. In 1762 he travelled in Yorkshire and Derbyshire; in 1764 in the Lowlands of Scotland, and thence went to Southampton and its neighbourhood. In 1765 he revisits Scotland; he is the guest of Lord Strathmore at Glamis; and revels in "those monstrous creatures of God," the Highland mountains. His most notable achievement in this direction was his journey among the English lakes, of which he wrote an interesting account to Wharton; and even in 1770, the year before his death, he visited with his young friend Norton Nicholls "five of the most beautiful counties of the kingdom," and descended the Wye for 40 m. In all these quests he displays a physical energy which surprises and even perplexes us. His true academic status was worthily secured in 1768, when the duke of Grafton offered him the professorship of modern history which in 1762 he had vainly endeavoured to obtain from Bute. He wrote in 1769 the "Installation Ode" upon the appointment of Grafton as chancellor of the university. It was almost the only instance in which he successfully executed a task, not, in the strictest sense, self-imposed; the great founders of the university are tactfully memorized and pass before us in a kind of heraldic splendour. He bore with indifference the taunts to which, from Junius and others, he was exposed for this tribute to his patron. He was contemplating a journey to Switzerland to visit his youthful friend de Bonstetten when, in the summer of 1771, he was conscious of a great decline in his physical powers. He was seized with a sudden illness when dining in his college hall, and died of gout in the stomach on the 30th of July 1771. His last moments were attended by his cousin Mary Antrobus, postmistress through his influence at Cambridge and daughter of his Eton tutor; and he was laid beside his beloved mother in the churchyard of Stoke Poges.

Owing to his shyness and reserve he had few intimate friends, but to these his loss was irreparable; for to them he revealed himself either in boyish levity and banter, or wise and sympathetic counsel and tender and yet manly consolation; to them he imparted his quiet but keen observation of passing events or the stores of his extensive reading in literature ancient, medieval or modern; and with Proteus-like variety he writes at one time as a speculative philosopher, at another as a critic in art or music, at another as a meteorologist and nature-lover. His friendship with the young, after his migration to Pembroke College, is a noteworthy trait in his character. With Lord Strathmore and the Lyons and with William Palgrave he conversed as an elder brother, and Norton Nicholls of Trinity Hall lost in him a second father, who had taught him to think and feel. The brilliant young foreigner, de Bonstetten, looked back after a long and chequered career with remembrance still vivid to the days in which the poet so soon to die taught him to read Shakespeare and Milton in the monastic gloom of Cambridge. With the elderly "Levites" of the place he was less in sympathy; they dreaded his sarcastic vein; they were conscious that he laughed at them, and in the polemics of the university he was somewhat of a free lance, fighting for his own hand. Lampoons of his were privately circulated with effect, and that he could be the fiercest of satirists the "Cambridge Courtship" on the candidature of Lord Sandwich for the office of high steward, and the verses on Lord Holland's mimic ruins at Westgate, sufficiently prove. The faculty which he displayed in humour and satire was denied to his more serious muse; there all was the fruit of long delay; of that higher inspiration he had a thin but very precious vein, and the sublimity which he undoubtedly attained was reached by an effort of which captious and even sympathetic criticism can discover the traces. In his own time he was regarded as an innovator, for like Collins he revived the poetic diction of the past, and the adverse judgments of Johnson and others upon his work are in fact a defence of the current literary traditions. Few men have published so little to so much effect; few have attained to fame with so little ambition. His favourite maxim was "to be employed is to be happy," but he was always employed in the first instance for the satisfaction of his own soul, and to this end and no other he made himself one of the best Greek scholars at Cambridge in the interval between Bentley and Porson. His genius was receptive rather than creative, and it is to be regretted that he lacked energy to achieve that history of English poetry which he once projected, and for which he possessed far more knowledge and insight than the poet Thomas Warton, to whom he resigned the task. He had a fine taste in music, painting and architecture; and his correspondence includes a wide survey of such European literature as was accessible to him, with criticisms, sometimes indeed a little limited and insular, yet of a singularly fresh and modern cast. In person he was below the middle height, but well-made, and his face, in which the primness of his features was redeemed by his flashing eyes, was the index of his character. There was a touch of affectation in his demeanour, and he was sometimes reticent and secretive even to his best friends. He was a refined Epicurean in his habits, and a deist rather than a Christian in his religious beliefs; but his friend, Mrs Bonfoy, had "taught him to pray" and he was keenly alive to the dangers of a flippant scepticism. In a beautiful alcaic stanza he pronounces the man supremely happy who in the depths of the heart is conscious of the "fount of tears," and his characteristic melancholy, except in the few hours when it was indeed black, 395

was not a pitiable state; rather, it was one secret of the charm both of the man and of the poet.

A very complete bibliography of Gray will be found in Dr. Bradshaw's edition of the poems in the Aldine series. Dodsley published ten of the poems, exclusive of the "Long Story," in 1768. Mason's *Life of Gray* (1778) included the poems and some hitherto unpublished fragments, with a selection from his letters, much garbled. Mathias in 1814 reprinted Mason's edition and added much from Gray's MS. commentaries together with some more of his translations. The most exhaustive edition of Gray's writings was achieved by the Rev. John Mitford, who first did justice to the correspondence with Wharton and Norton Nicholls (5 vols., Pickering, 1836-1843; correspondence of Gray and Mason, Bentley, 1853); see also the edition of the works by Edmund Gosse (4 vols., 1884); the Life by the same in Eng. Men of Letters (2nd ed., 1889); some further relics are given in *Gray and His Friends* by D. C. Tovey (Cambridge, 1890); and a new edition of the letters copiously annotated by D. C. Tovey is in the Standard Library (1900-1907). Nicholl's *Illustrations*, vol. vi. p. 805, quoted by Professor Kittredge in the *Nation*, Sept. 12th, 1900, gives the true story of Gray's migration to Pembroke College. Matthew Arnold's essay on Gray in Ward's *English Poets* is one of the minor classics of literary criticism.

(D. C. To.)

GRAY (or Grey), **WALTER DE** (d. 1255), English prelate and statesman, was a nephew of John de Gray, bishop of Norwich, and was educated at Oxford. He owed his early and rapid preferment in church and state to the favour of King John, becoming the king's chancellor in 1205, and being chosen bishop of Lichfield in 1210. He was, however, not allowed to keep this bishopric, but he became bishop of Worcester in 1214, resigning his office as chancellor in the same year. Gray was with John when the king signed Magna Carta in June 1215; soon after this event he left England on the king's business, and it was during his absence that he was forced into the archbishopric of York, owing his election to the good offices of John and of Pope Innocent III. He took a leading part in public affairs during the minority of Henry III., and was regarded with much favour by this king, who employed him on important errands to foreign potentates, and left him as guardian of England when he went to France in 1242. Afterwards the archbishop seems to have been less favourably disposed towards Henry, and for a time he absented himself from public business; however, in 1255, he visited London to attend a meeting of parliament, and died at Fulham on the 1st of May 1255. Gray was always anxious to assert his archiepiscopal authority over Scotland, and to maintain it against the archbishop of Canterbury, but in neither case was he very successful. He built the south transept of the minster at York and bought for his see the village, afterwards called Bishopthorpe, which is still the residence of the archbishop of York. He was also generous to the church at Ripon. Gray was regarded by his contemporaries as an avaricious, but patriotic man.

GRAY, a town of eastern France, capital of an arrondissement in the department of Haute-Saône, situated on the declivity of a hill on the left bank of the Saône, 36 m. S.W. of Vesoul by the Eastern railway. Pop. (1906) 5742. The streets of the town are narrow and steep, but it possesses broad and beautiful quays and has a busy port. Three bridges, one dating from the 18th century, unite it to suburbs on the right bank of the river, on which is the railway-station from which lines branch off to Auxonne, Dijon, Besançon and Culmont-Chalindrey. The principal buildings are the Gothic church, restored in the style of the Renaissance but with a modern portal, and the hôtel de ville, built by the Spaniards in 1568. The latter building has a handsome façade decorated with columns of red granite. Gray is the seat of a subprefect and has tribunals of first instance and of commerce, a chamber of commerce, a communal college and a small museum. It has large flour-mills; among the other industries is the manufacture of machinery and iron goods. There is also a considerable transit traffic in goods from the south of France and the colonies, and trade in iron, corn, provisions, vegetables, wine, wood, &c., much of which is carried by river. Gray was founded in the 7th century. Its fortifications were destroyed by Louis XIV. During the Franco-German War General von Werder concentrated his army corps in the town and held it for a month, making it the *point d'appui* of movements towards Dijon and Langres, as well as towards Besançon.

Gray gave its name to the distinguished English family of de Gray, Gray or Grey, Anschitel de Gray being mentioned as an Oxfordshire tenant in Domesday.

GRAYLING (*Thymallus*), fishes belonging to the family *Salmonidae*. The best known are the "poisson bleu" of the Canadian voyageurs, and the European species, *Thymallus vulgaris* (the *Asch* or *Äsche* of Germany, *ombre* of France, and *temola* of Upper Italy). This latter species is esteemed on account of its agreeable colours (especially of the dorsal fin), its well-flavoured flesh, and the sport it affords to anglers. The grayling differ from the genus *Salmo* in the smaller mouth with comparatively feeble dentition, in the larger scales, and especially in the much greater development of the dorsal fin, which contains 20 to 24 rays. These beautiful fishes, of which five or six species are known, inhabit the fresh waters of Europe, Siberia and the northern parts of North America. The European species, *T. vulgaris* or *vexillifer*, attains, though rarely, a length of 2 ft. The colours during life are remarkably changeable and iridescent; small dark spots are sometimes present on the body; the very high dorsal fin is beautifully marked with purplish bands and ocelli. In England and Scotland the grayling appears to have had originally a rather irregular distribution, but it has now been introduced into a great number of rivers; it is not found in Ireland. It is more generally distributed in Scandinavia and Russia, and the mountain streams of central Europe southwards to the Alpine water of Upper Italy. Specimens attaining to a weight of 4 lb are very scarce.

GRAYS THURROCK, or Grays, an urban district in the south-eastern parliamentary division of Essex, England, on the Thames, 20 m. E. by S. from London by the London, Tilbury & Southend railway. Pop. (1901) 13,834. The church of St Peter and St Paul, wholly rebuilt, retains some Norman work. The town takes its name from a family of Gray who held the manor for three centuries from 1149. There are an endowed and two training ship schools. Roman remains have been found in the vicinity; and the geological formations exhibiting the process of silting up of a former river channel are exposed in the quarries, and contain large mammalian remains. The town has trade in bricks, lime and cement.

GRAZ [Gratz], the capital of the Austrian duchy and crownland of Styria, 140 m. S.W. of Vienna by rail. Pop. (1900) 138,370. It is picturesquely situated on both banks of the Mur, just where this river enters a broad and fertile valley, and the beauty of its

position has given rise to the punning French description, *La Ville des grâces sur la rivière de l'amour*. The main town lies on the left bank of the river at the foot of the Schlossberg (1545 ft.) which dominates the town. The beautiful valley traversed by the Mur, known as the Grazer Feld and bounded by the Wildonerberge, extends to the south; to the S.W. rise the Bacher Gebirge and the Koralpen; to the N. the Schöckel (4745 ft.), and to the N.W. the Alps of Upper Styria. On the Schlossberg, which can be ascended by a cable tramway, beautiful parks have been laid out, and on its top is the bell-tower, 60 ft. high, and the quaint clock-tower, 52 ft. high, which bears a gigantic clock-dial. At the foot of the Schlossberg is the Stadt-Park.

Among the numerous churches of the city the most important is the cathedral of St Aegidius, a Gothic building erected by the emperor Frederick III. in 1450-1462 on the site of a previous church mentioned as early as 1157. It has been several times modified and redecorated, more particularly in 1718. The present copper spire dates from 1663. The interior is richly adorned with stained-glass windows of modern date, costly shrines, paintings and tombs. In the immediate neighbourhood of the cathedral is the mausoleum church erected by the emperor Ferdinand II. Worthy of mention also are the parish church, a Late Gothic building, finished in 1520, and restored in 1875, which possesses an altar piece by Tintoretto; the Augustinian church, appropriated to the service of the university since 1827; the small Leech Kirche, an interesting building in Early Gothic style, dating from the 13th century, and the Herz Jesu-Kirche, a building in Early Gothic style, finished in 1891, with a tower 360 ft. high. Of the secular buildings the most important is the Landhaus, where the local diet holds its sittings, erected in the 16th century in the Renaissance style. It possesses an interesting portal and a beautiful arcaded court, and amongst the curiosities preserved here is the Styrian hat. In its neighbourhood is the Zeughaus or arsenal, built in 1644, which contains a very rich collection of weapons of the 15th-17th centuries, and which is maintained exactly in the same condition as it was 250 years ago. The town hall, built in 1807, and rebuilt in 1892 in the German Renaissance style, and the imperial castle, dating from the 11th century, now used as government offices, are also worth notice.

At the head of the educational institutions is the university founded in 1586 by the Austrian archduke Charles Francis, and restored in 1817 after an interruption of 45 years. It is now housed in a magnificent building, finished in 1895, and is endowed with numerous scientific laboratories and a rich library. It had in 1901 a teaching staff of 161 professors and lecturers, and 1652 students, including many Italians from the Küstenland and Dalmatia. The Joanneum Museum, founded in 1811 by the archduke John Baptist, has become very rich in many departments, and an additional huge building in the rococo style was erected in 1895 for its accommodation. The technical college, founded in 1814 by the archduke John Baptist, had in 1901 about 400 pupils.

An active trade, fostered by abundant railway communications, is combined with manufactures of iron and steel wares, paper, chemicals, vinegar, physical and optical instruments, besides artistic printing and lithography. The extensive workshops of the Southern railway are at Graz, and since the opening of the railway to the rich coal-fields of Köflach the number of industrial establishments has greatly increased.

Amongst the numerous interesting places in the neighbourhood are: the Hilmteich, with the Hilmwarte, about 100 ft. high; and the Rosenberg (1570 ft.), whence the ascent of the Platte (2136 ft.) with extensive view is made. At the foot of the Rosenberg is Maria Grün, with a large sanatorium. All these places are situated to the N. of Graz. On the left bank of the Mur is the pilgrimage church of Maria Trost, built in 1714; on the right bank is the castle of Eggenberg, built in the 17th century. To the S.W. is the Buchkogel (2150 ft.), with a magnificent view, and a little farther south is the watering-place of Tobelbad.

History.—Graz may possibly have been a Roman site, but the first mention of it under its present name is in a document of A.D. 881, after which it became the residence of the rulers of the surrounding district, known later as Styria. Its privileges were confirmed by King Rudolph I. in 1281. Surrounded with walls and fosses in 1435, it was able in 1481 to defend itself against the Hungarians under Matthias Corvinus, and in 1529 and 1532 the Turks attacked it with as little success. As early as 1530 the Lutheran doctrine was preached in Graz by Seifried and Jacob von Eggenberg, and in 1540 Eggenberg founded the Paradies or Lutheran school, in which Kepler afterwards taught. But the archduke Charles burned 20,000 Protestant books in the square of the present lunatic asylum, and succeeded by his oppressive measures in bringing the city again under the authority of Rome. From the earlier part of the 15th century Graz was the residence of one branch of the family of Habsburg, a branch which succeeded to the imperial throne in 1619 in the person of Ferdinand II. New fortifications were constructed in the end of the 16th century by Franz von Poppendorf, and in 1644 the town afforded an asylum to the family of Ferdinand III. The French were in possession of the place in 1797 and again in 1805; and in 1809 Marshal Macdonald having, in accordance with the terms of the peace of Vienna, entered the citadel which he had vainly besieged, blew it all up with the exception of the bell-tower and the citizens' or clock tower. It benefited greatly during the 19th century from the care of the archduke John and received extended civic privileges in 1860.

See Ilwof and Peters, *Graz, Geschichte und Topographie der Stadt* (Graz, 1875); G. Fels, *Graz und seine Umgebung* (Graz, 1898); L. Mayer, *Die Stadt der Grazien* (Graz, 1897), and Hofrichter, *Rückblicke in die Vergangenheit von Graz* (Graz, 1885).

GRAZZINI, ANTONIO FRANCESCO (1503-1583), Italian author, was born at Florence on the 22nd of March 1503, of good family both by his father's and mother's side. Of his youth and education all record appears to be lost, but he probably began early to practise as an apothecary. In 1540 he was one of the founders of the Academy of the Humid (degli Umidi) afterwards called "della Fiorentina," and later took a prominent part in the establishment of the more famous Accademia della Crusca. In both societies he was known as *Il Lasca* or *Leuciscus*, and this pseudonym is still frequently substituted for his proper name. His temper was what the French happily call a difficult one, and his life was consequently enlivened or disturbed by various literary quarrels. His Humid brethren went so far as to expel him for a time from the society—the chief ground of offence being apparently his ruthless criticism of the "Arameans," a party of the academicians who maintained that the Florentine or Tuscan tongue was derived from the Hebrew, the Chaldee, or some other branch of the Semitic. He was readmitted in 1566, when his friend Salviati was "consul" of the academy. His death took place on the 18th of February 1583. Il Lasca ranks as one of the great masters of Tuscan prose. His style is copious and flexible; abundantly idiomatic, but without any affectation of being so, it carries with it the force and freshness of popular speech, while it lacks not at the same time a flavour of academic culture. His principal works are *Le Cene* (1756), a collection of stories in the manner of Boccaccio, and a number of prose comedies, *La Gelosia* (1568), *La Spiritata* (1561), *I Parentadi*, *La Arenga*, *La Sibilla*, *La Pinzochera*, *L' Arzigogolo*. The stories, though of no special merit as far as the plots are concerned, are told with verve and interest. A number of miscellaneous poems, a few letters and *Four Orations to the Cross* complete the list of Grazzini's extant works.

He also edited the works of Berni, and collected *Tutti i trionfi, larri, mascherate, e canti carnascialaschi, andati per Firenze dal tempo del magnifico Lorenzo de' Medici fino all' anno 1559*. In 1868 Adamo Rossi published in his *Ricerche per le biblioteche di Perugia* three "novelle" by Grazzini, from a MS. of the 16th century in the "Comunale" of Perugia: and in 1870 a small collection of those poems which have been left unpublished by previous editors appeared at Poggibonsi, *Alcune Poesie inedite*. See Pietro Fanfani's "Vita del Lasca," prefixed to his edition of the *Opere di A. Grazzini* (Florence, 1857).

GREAT AWAKENING, the name given to a remarkable religious revival centring in New England in 1740-1743, but covering all the American colonies in 1740-1750. The word "awakening" in this sense was frequently (and possibly first) used by Jonathan Edwards at the time of the Northampton revival of 1734-1735, which spread through the Connecticut Valley and prepared the way for the work in Rhode Island, Massachusetts and Connecticut (1740-1741) of George Whitefield, who had previously been preaching in the South, especially at Savannah, Georgia. He, his immediate follower, Gilbert Tennent (1703-1764), other clergymen, such as

James Davenport, and many untrained laymen who took up the work, agreed in the emotional and dramatic character of their preaching, in rousing their hearers to a high pitch of excitement, often amounting to frenzy, in the undue stress they put upon "bodily effects" (the physical manifestations of an abnormal psychic state) as proofs of conversion, and in their unrestrained attacks upon the many clergymen who did not join them and whom they called "dead men," unconverted, unregenerate and careless of the spiritual condition of their parishes. Jonathan Edwards, Benjamin Colman (1675-1747), and Joseph Bellamy, recognized the viciousness of so extreme a position. Edwards personally reprimanded Whitefield for presuming to say of any one that he was unconverted, and in his *Thoughts Concerning the Present Revival of Religion* devoted much space to "showing what things are to be corrected, or avoided, in promoting this work." Edwards' famous sermon at Enfield in 1741 so affected his audience that they cried and groaned aloud, and he found it necessary to bid them be still that he might go on; but Davenport and many itinerants provoked 397
and invited shouting and even writhing, and other physical manifestations. At its May session in 1742 the General Court of Massachusetts forbade itinerant preaching save with full consent from the resident pastor; in May 1743 the annual ministerial convention, by a small plurality, declared against "several errors in doctrine and disorders in practice which have of late obtained in various parts of the land," against lay preachers and disorderly revival meetings; in the same year Charles Chauncy, who disapproved of the revival, published *Seasonable Thoughts on the State of Religion in New England*; and in 1744-1745 Whitefield, upon his second tour in New England, found that the faculties of Harvard and Yale had officially "testified" and "declared" against him and that most pulpits were closed to him. Some separatist churches were formed as a result of the Awakening; these either died out or became Baptist congregations. To the reaction against the gross methods of the revival has been ascribed the religious apathy of New England during the last years of the 18th century; but the martial and political excitement, beginning with King George's War (*i.e.* the American part of the War of the Austrian Succession) and running through the American War of Independence and the founding of the American government, must be reckoned at the least as contributing causes.

See Joseph Tracy, *The Great Awakening* (Boston, 1842); Samuel P. Hayes, "An Historical Study of the Edwardean Revivals," in *The American Journal of Psychology*, vol. 13 (Worcester, Mass., 1902); and Frederick M. Davenport, *Primitive Traits in Religious Revivals* (New York, 1905), especially chapter viii. pp. 94-131.

(R. We.)

GREAT BARRIER REEF, a vast coral reef extending for 1200 m. along the north-east coast of Australia (*q.v.*). The channel within it is protected from heavy seas by the reef, and is a valuable route of communication for coasting steamers. The reef itself is also traversed by a number of navigable passages.

GREAT BARRINGTON, a township of Berkshire county, Massachusetts, U.S.A., on the Housatonic river, in the Berkshire hills, about 25 m. S.W. of Pittsfield. Pop. (1890) 4612; (1900) 5854, of whom 1187 were foreign-born; (1910 census) 5926. Its area is about 45 sq. m. The township is traversed by a branch of the New York, New Haven & Hartford railroad, and the Berkshire Street railway (controlled by the N.Y., N.H. & H.) has its southern terminus here. Within the township are three villages—Great Barrington (the most important), Housatonic and Van Deusenville; the first two are about 5 m. apart. The village of Great Barrington, among the hills, is well known as a summer resort. The Congregational church with its magnificent organ (3954 pipes) is worthy of mention. There is a public library in the village of Great Barrington and another in the village of Housatonic. Monument Mt. (1710 ft.), partly in Stockbridge, commands a fine view of the Berkshires and the Housatonic Valley. The Sedgwick School (for boys) was removed from Hartford, Connecticut, to Great Barrington in 1869. There are various manufactures, including cotton-goods (in the village of Housatonic), and electric meters, paper, knit goods and counterpanes (in the village of Great Barrington); and marble and blue stone are quarried here; but the township is primarily given over to farming. The fair of the Housatonic Agricultural Society is held here annually during September; and the district court of South Berkshire sits here. The township was incorporated in 1761, having been, since 1743, the "North Parish of Sheffield"; the township of Sheffield, earlier known as the "Lower Housatonic Plantation" was incorporated in 1733. Great Barrington was named in honour of John Shute (1678-1734), Viscount Barrington of Ardglass (the adjective "Great" being added to distinguish it from another township of the same name). In 1761-1787 it was the shire-town. Great Barrington was a centre of the disaffection during Shays's rebellion, and on the 12th of September 1786 a riot here prevented the sitting of court. Samuel Hopkins, one of the most eminent of American theologians, was pastor here in 1743-1769; General Joseph Dwight (1703-1765), a merchant, lawyer and brigadier-general of Massachusetts militia, who took part in the Louisburg expedition in 1745 and later in the French and Indian War, lived here from 1758 until his death; and William Cullen Bryant lived here as a lawyer and town clerk in 1816-1825.

See C. J. Taylor, *History of Great Barrington* (Great Barrington, 1882).

GREAT BASIN, an area in the western Cordilleran region of the United States of America, about 200,000 sq. m. in extent, characterized by wholly interior drainage, a peculiar mountain system and extreme aridity. Its form is approximately that of an isosceles triangle, with the sharp angle extending into Lower California, W. of the Colorado river; the northern edge being formed by the divide of the drainage basin of the Columbia river, the eastern by that of the Colorado, the western by the central part of the Sierra Nevada crest, and by other high mountains. The N. boundary and much of the E. is not conspicuously uplifted, being plateau, rather than mountain. The W. half of Utah, the S.W. corner of Wyoming, the S.E. corner of Idaho, a large area in S.E. Oregon, much of S. California, a strip along the E. border of the last-named state, and almost the whole of Nevada are embraced within the limits of the Great Basin.

The Great Basin is not, as its name implies, a topographic cup. Its surface is of varied character, with many independent closed basins draining into lakes or "playas," none of which, however, has outlet to the sea. The mountain chains, which from their peculiar geologic character are known as of the "Basin Range type" (not exactly conterminous in distribution with the Basin), are echeloned in short ranges running from N. to S. Many of them are fault block mountains, the crust having been broken and the blocks tilted so that there is a steep face on one side and a gentle slope on the other. This is the Basin Range type of mountain. These mountains are among the most recent in the continent, and some of them, at least, are still growing. In numerous instances clear evidence of recent movements along the fault planes has been discovered; and frequent earthquakes testify with equal force to the present uplift of the mountain blocks. The valleys between the tilted mountain blocks are smooth and often trough-like, and are often the sites of shallow salt lakes or playas. By the rain wash and wind action detritus from the mountains is carried to these valley floors, raising their level, and often burying low mountain spurs, so as to cause neighbouring valleys to coalesce. The plateau "lowlands" in the centre of the Basin are approximately 5000 ft. in altitude. Southward the altitude falls, Death valley and Coahuila valley being in part below the level of the sea. The whole Basin is marked by three features of elevation—the Utah basin, the Nevada basin and, between them, the Nevada plateau.

Over the lowlands of the Basin, taken generally, there is an average precipitation of perhaps 6-7 in., while in the Oregon region it is twice as great, and in the southern parts even less. The mountains receive somewhat more. The annual evaporation from water surfaces is from 60 to 150 in. (60 to 80 on the Great Salt Lake). The reason for the arid climate differs in different sections. In the

north it is due to the fact that the winds from the Pacific lose most of their moisture, especially in winter, on the western slopes of the Sierra Nevada; in the south it is due to the fact that the region lies in a zone of calms, and light, variable winds. Precipitation is largely confined to local showers, often of such violence as to warrant the name “cloud bursts,” commonly applied to the heavy down-pours of this desert region. It is these heavy rains, of brief duration, when great volumes of water rapidly run off from the barren slopes, that cause the deep channels, or arroyas, which cross the desert. Permanent streams are rare. Many mountains are quite without perennial streams, and some lack even springs. Few of the mountain creeks succeed in reaching the arid plains, and those that do quickly disappear by evaporation or by seepage into the gravels. In the N.W. there are many permanent lakes without outlet fed by the mountain streams; others, snow fed, occur among the Sierra Nevada; and some in the larger mountain masses of the middle region. Almost all are saline. The largest of all, Great Salt Lake, is maintained by the waters of the Wasatch and associated plateaus. No lakes occur south of Owens in the W. and Sevier in the E. (39°); evaporation below these limits is supreme. Most of the small closed basins, however, contain “playas,” or alkali mud flats, that are overflowed when the tributary streams are supplied with storm water.

Save where irrigation has reclaimed small areas, the whole region is a vast desert, though locally only some of the interior plains are known as “deserts.” Such are the Great Salt Lake and Carson deserts in the north, the Mohave and Colorado and Amargosa (Death Valley) deserts of the south-west. Straggling forests, mainly of conifers, characterize the high plateaus of central Utah. The lowlands and the lower mountains, especially southward, are generally treeless. Cottonwoods line the streams, salt-loving vegetation margins the bare playas, low bushes and scattered bunch-grass grow over the lowlands, especially in the north. Gray desert plants, notably cactuses and other thorny plants, partly replace in the south the bushes of the north. Except on the scattered oases, where irrigation from springs and mountain streams has reclaimed small patches, the desert is barren and forbidding in the extreme. There are broad plains covered with salt and alkali, and others supporting only scattered bunch grass, sage bush, cactus and other arid land plants. There are stony wastes, or alluvial fans, where mountain streams emerge upon the plains, in time of flood, bringing detritus in their torrential courses from the mountain canyons and depositing it along the mountain base. The barrenness extends into the mountains themselves, where there are bare rock cliffs, stony slopes and a general absence of vegetation. With increasing altitude vegetation becomes more varied and abundant, until the tree limit is reached; then follows a forest belt, which in the highest mountains is limited above by cold as it is below by aridity.

The successive explorations of B. L. E. Bonneville, J. C. Frémont and Howard Stansbury (1806-1863) furnished a general knowledge of the hydrographic features and geological lacustrine history of the Great Basin, and this knowledge was rounded out by the field work of the U.S. Geological Survey from 1879 to 1883, under the direction of Grove Karl Gilbert. The mountains are composed in great part of Paleozoic strata, often modified by vulcanism and greatly denuded and sculptured by wind and water erosion. The climate in late geologic time was very different from that which prevails to-day. In the Pleistocene period many large lakes were formed within the Great Basin; especially, by the fusion of small catchment basins, two great confluent bodies of water—Lake Lahontan (in the Nevada basin) and Lake Bonneville (in the Utah basin). The latter, the remnants of which are represented to-day by Great Salt, Sevier and Utah Lakes, had a drainage basin of some 54,000 sq. m.

See G. K. Gilbert in Wheeler Survey, *U.S. Geographical Survey West of the Hundredth Meridian*, vol. iii.; Clarence King and others in the *Report of the Fortieth Parallel Survey* (U.S. Geol. Exploration of the Fortieth Parallel); G. K. Gilbert’s *Lake Bonneville* (U.S. Geological Survey, *Monographs*, No. 1, 1890), also I. C. Russell’s *Lake Lahontan* (Same, No. 11, 1885), with references to other publications of the Survey. For reference to later geological literature, and discussion of the Basin Ranges, see J. E. Spurr, *Bull. Geol. Soc. Amer.* vol. 12, 1901, p. 217; and G. D. Louderback, same, vol. 15, 1904, p. 280; also general bibliographies issued by the U.S. Geol. Survey (*e.g. Bull.* 301, 372 and 409).

GREAT BEAR LAKE, an extensive sheet of fresh water in the north-west of Canada, between 65° and 67° N., and 117° and 123° W. It is of very irregular shape, has an estimated area of 11,200 sq. m., a depth of 270 ft., and is upwards of 200 ft. above the sea. It is 175 m. in length, and from 25 to 45 in breadth, though the greatest distance between its northern and southern arms is about 180 m. The Great Bear river discharges its waters into the Mackenzie river. It is full of fish, and the neighbouring country, though barren and uncultivated, contains quantities of game.

GREAT CIRCLE. The circle in which a sphere is cut by a plane is called a “great circle,” when the cutting plane passes through the centre of sphere. Treating the earth as a sphere, the meridians of longitude are all great circles. Of the parallels of latitude, the equator only is a great circle. The shortest line joining any two points is an arc of a great circle. For “great circle sailing” see Navigation.

GREAT FALLS, a city and the county-seat of Cascade county, Montana, U.S.A., 99 m. (by rail) N.E. of Helena, on the S. bank of the Missouri river, opposite the mouth of the Sun river, at an altitude of about 3300 ft. It is 10 m. above the Great Falls of the Missouri, from which it derives its name. Pop. (1890) 3979; (1900) 14,930, of whom 4692 were foreign-born; (1910 census) 13,948. It has an area of about 8 sq. m. It is served by the Great Northern and the Billings & Northern (Chicago, Burlington & Quincy system) railways. The city has a splendid park system of seven parks (about 530 acres) with 15 m. of boulevards.[1] Among the principal buildings are a city hall, court house, high school, commercial college, Carnegie library, the Columbus Hospital and Training School for Nurses (under the supervision of the Sisters of Charity), and the Montana Deaconess hospital. There is a Federal land office in the city. Great Falls lies in the midst of a region exceptionally rich in minerals—copper, gold, silver, lead, iron, gypsum, limestone, sapphires and bituminous coal being mined in the neighbourhood. Much grain is grown in the vicinity, and the city is an important shipping point for wool, live-stock and cereals. Near Great Falls the Missouri river, within 7½ m., contracts from a width of about 900 to 300 yds. and falls more than 500 ft., the principal falls being the Black Eagle Falls (50 ft.), from which power is derived for the city’s street railway and lighting plant, the beautiful Rainbow Falls (48 ft.) and Great Falls (92 ft.). Giant Spring Fall, about 20 ft. high, is a cascade formed by a spring on the bank of the river near Rainbow Falls. The river furnishes very valuable water-power, partly utilized by large manufacturing establishments, including flour mills, plaster mills, breweries, iron works, mining machinery shops, and smelting and reduction works. The Boston & Montana copper smelter is one of the largest in the world; it has a chimney stack 506 ft. high, and in 1908 employed 1200 men in the smelter and 2500 in its mining department. Great Falls ranked second (to Anaconda) among the cities of the state in the value of the factory product of 1905, which was $13,291,979, showing an increase of 42.4% since 1900. The city owns and operates its water-supply system. Great Falls was settled in 1884, and was chartered as a city in 1888.

1 Great Falls was a pioneer among the cities of the state in the development of a park system. When the city was first settled its site was a “barren tract of sand, thinly covered with buffalo-grass and patches of sage brush.” The first settler, Paris Gibson, of Minneapolis, began the planting of trees, which, though not indigenous, grew well. The city’s sidewalks are bordered by strips of lawn, in which there is a row of trees, and the city maintains a large nursery where trees are grown for this purpose. A general state law (1901) placing the parking of cities

on a sound financial basis is due very largely to the impulse furnished by Great Falls. See an article, “Great Falls, the Pioneer Park City of Montana,” by C. H. Forbes-Lindsay, in the *Craftsman* for November 1908.

GREAT HARWOOD, an urban district in the Darwen parliamentary division of Lancashire, England, 4½ m. N.E. of Blackburn, on the Lancashire and Yorkshire railway. Pop. (1901) 12,015. It is of modern growth, a township of cotton operatives, with large collieries in the vicinity. An agricultural society is also maintained.

GREATHEAD, JAMES HENRY (1844-1896), British engineer, was born at Grahamstown, Cape Colony, on the 6th of August 1844. He migrated to England in 1859, and in 1864 was a pupil of P. W. Barlow, from whom he became acquainted with the shield system of tunnelling with which his name is especially associated. Barlow, indeed, had a strong belief in the shield, and was the author of a scheme for facilitating the traffic of London by the construction of underground railways running in cast-iron tubes constructed by its aid. To show what the method could do, it was resolved to make a subway under the Thames near the Tower, but the troubles encountered by Sir M. I. Brunel in the Thames Tunnel, where also a shield was employed, made engineers hesitate to undertake the subway, even though it was of very much smaller dimensions (6 ft. 7 in. internal diameter) than the tunnel. At this juncture Greathead came forward and offered to take up the contract; and he successfully carried it through in 1869 without finding any necessity to resort to the use of compressed air, which Barlow in 1867 had suggested might be employed in water-bearing strata. After this he began to practise on his own account, and mainly divided his time between railway construction and taking out patents for improvements in his shield, and for other inventions such as the “Ejector” fire-hydrant. Early in the ‘eighties he began to work in conjunction with a company whose aim was to introduce into London from America the Hallidie system of cable traction, and in 1884 an act of Parliament was obtained authorizing what is now the City & South London Railway—a tube-railway to be worked by cables. This was begun in 1886, and the tunnels were driven by means of the Greathead shield, compressed air being used at those points where water-bearing gravel was encountered. During the progress of the works electrical traction became so far developed as to be superior to cables; the idea of using the latter was therefore abandoned, and when the railway was opened in 1890 it was as an electrical one. Greathead was engaged in two other important underground lines in London—the Waterloo & City and the Central London. He lived to see the tunnels of the former completed under the Thames, but the latter was scarcely begun at the time of his death, which happened at Streatham, in the south of London, on the 21st of October 1896.

GREAT LAKES OF NORTH AMERICA, THE. The connected string of five fresh-water inland seas, Lakes Superior, Michigan, Huron, Erie and Ontario, lying in the interior of North America, between the Dominion of Canada on the north and the United States of America on the south, and forming the head-waters of the St Lawrence river system, are collectively and generally known as “The Great Lakes.” From the head of lake Superior these lakes are navigable to Buffalo, at the foot of lake Erie, a distance of 1023 m., for vessels having a draught of 20 ft.; from Buffalo to Kingston, 191 m. farther, the draught is limited, by the depth in the Welland canal, to 14 ft.; lake Superior, the largest and most westerly of the lakes, empties, through the river St Mary, 55 m. long, into lake Huron. From Point Iroquois, which may be considered the foot of the lake, to Sault Ste Marie, St Mary’s Falls, St Mary’s Rapids or the Soo, as it is variously called, a distance of 14 m., there is a single channel, which has been dredged by the United States government, at points which required deepening, to give a minimum width of 800 ft. and a depth of 23 ft. at mean stage water. Below the Sault, the river, on its course to lake Huron, expands into several lakes, and is divided by islands into numerous contracted passages. There are two navigated channels; the older one, following the international boundary-line by way of lake George, has a width of 150 to 300 ft., and a depth of 17 ft.; it is buoyed but not lighted, and is not capable of navigation by modern large freighters; the other, some 12 m. shorter, an artificial channel dredged by the United States government in their own territory, has a minimum width of 300 ft. and depth of 20 ft. It is elaborately lighted throughout its length. A third channel, west of all the islands, was designed for steamers bound down, the older channel being reserved for upbound boats.

Between lake Superior and lake Huron there is a fall of 20 ft. of which the Sault, in a distance of ½ m., absorbs from 18 to 19½ ft., the height varying as the lakes change in level. The enormous growth of inter-lake freight traffic has justified the construction of three separate locks, each overcoming the rapids by a single lift—two side by side on the United States and one on the Canadian side of the river. These locks, the largest in the world, are all open to Canadian and United States vessels alike, and are operated free from all taxes or tolls on shipping. The Canadian ship canal, opened to traffic on the 9th of September 1895, was constructed through St Mary Island, on the north side of the rapids, by the Canadian government, at a cost of $3,684,227, to facilitate traffic and to secure to Canadian vessels an entrance to lake Superior without entering United States territory. The canal is 5967 ft. long between the extremities of the entrance piers, has one lock 900 ft. long and 60 ft. wide, with a depth on the sills at the lowest known water-level of 20½ ft. The approaches to the canal are dredged to 18 ft. deep, and are well buoyed and lighted. On the United States side of the river the length of the canal is 1⅔ m., the channel outside the locks having a width varying from 108 to 600 ft. and depth of 25 ft. The locks of 1855 were closed in 1886, to give place to the Poe lock. The Weitzel lock, opened to navigation on the 1st of September 1881, was built south of the old locks, the approach being through the old canal. Its chamber is 515 ft. long between lock gates, and 80 ft. wide, narrowing to 60 ft. at the gates. The length of the masonry walls is 717 ft., height 39½ ft., with 17 ft. over mitre sills at mean stage of water. The Poe lock, built because the Weitzel lock, large and fully equipped as it is, was insufficient for the rapidly growing traffic, was opened on the 3rd of August 1896. Its length between gates is 800 ft.; width 100 ft.; length of masonry walls 1100 ft.; height 43½ to 45 ft., with 22 ft. on the mitre sill at mean stage.

The expenditure by the United States government on the canal, with its several locks, and on improving the channel through the river, aggregated fourteen million dollars up to the end of 1906.[1] Plans were prepared in 1907 for a third United States lock with a separate canal approach.

The canals are closed every winter, the average date of opening up to 1893 being the 1st of May, and of closing the 1st of December. The pressure of business since that time, aided possibly by some slight climatic modification, has extended the season, so that the average date of opening is now ten days earlier and of closing twelve days later. The earliest opening was in 1902 on the 1st of April, and the latest closing in 1904 on the 20th of December.

The table below gives the average yearly commerce for periods of five years, and serves to show the rapid increase in freight growth.

Statement of the commerce through the several Sault Ste Marie canals, averaged for every five years.[2]

Years.	Passages.	Registered Tonnage.	Passengers.	Coal. Net Tons.	Flour. Barrels.	Wheat. Bushels.	Other. Grains. Bushels	General Merchandise. Net Tons.	Salt. Barrels.	Iron Ore. Net Tons.	Lumber. M. ft. B.M.	T Fre Net

1855-1859*	387	192,207	6,206	4,672	19,555	None.	34,612	2,249	1,248	27,206	320	
1880-1884	4,457	2,267,166	34,607	463,431	681,726	5,435,601	936,346	81,966	107,225	867,999	79,144	2,1
1885-1889	7,908	4,901,105	29,434	1,398,441	1,838,325	18,438,085	1,213,815	74,447	175,725	2,497,403	197,605	5,4
1890-1894	11,965	9,912,589	24,609	2,678,805	5,764,766	34,875,971	1,738,706	87,540	231,178	4,939,909	510,482	10,6
1895-1899	18,352	18,451,447	40,289	3,270,842	8,319,699	57,227,269	23,349,134	164,426	282,156	10,728,075	832,968	19,3
1900-1904	19,374	26,199,795	54,093	5,457,019	7,021,839	56,269,265	26,760,533	646,277	407,263	20,020,487	999,944	31,2
1906 alone	22,155	41,098,324	63,033	8,739,630	6,495,350	84,271,358	54,343,155	1,134,851	468,162	35,357,042	900,631	51,7

* The first five years of operation.

Around the canals have grown up two thriving towns, one on the Michigan, the other on the Ontario side of the river, with manufactories driven by water-power derived from the Sault. The outlet of lake Michigan, the only lake of the series lying wholly in United States territory, is at the Strait of Mackinac, near the point where the river St Mary reaches lake Huron. With lake Michigan are connected the Chicago Sanitary and Ship canal, the Illinois and Michigan, and the Illinois and Mississippi canals, for which see Illinois. With lake Huron is always included Georgian Bay as well as the channel north of Manitoulin Island. As it is principally navigated as a connecting waterway between lakes Superior and Michigan and lake Erie it has no notable harbours on it. It empties into lake Erie through the river St Clair, lake St Clair and the river Detroit. On these connecting waters are several important manufacturing and shipping towns, and through this chain passes nearly all the traffic of the lakes, both that to and from lake Michigan ports, and also that of lake Superior. The tonnage of a single short season of navigation exceeds in the aggregate 60,000,000 tons. Extensive dredging and embankment works have been carried on by the United States government in lake St Clair and the river Detroit, and a 20-ft. channel now exists, which is being constantly improved. Lake St Clair is nearly circular, 25 m. in diameter, with the north-east quadrant filled by the delta of the river St Clair. It has a very flat bottom with a general depth of only 21 ft., shoaling very gradually, usually to reed beds that line the low swampy shores. To enter the lake from river St Clair two channels have been provided, with retaining walls of cribwork, one for upward, the other for downward bound vessels. Much dredging has also been necessary at the outlet of the lake into river Detroit. A critical point in that river is at Limekiln crossing, a cut dredged through limestone rock above the Canadian town of Amherstburg. The normal depth here before improvement was 12½-15 ft.; by a project of 1902 a channel 600 ft. wide and 21 ft. deep was planned; there are separate channels for up- and down-bound vessels. To prevent vessels from crowding together in the cut, the Canadian government maintains a patrol service here, while the United States government maintains a similar patrol in the St Mary channel. 400

The Grand Trunk railway opened in 1891 a single track tunnel under the river St Clair, from Sarnia to Port Huron. It is 6026 ft. long, a cylinder 20 ft. in diameter, lined with cast iron in flanged sections. A second tunnel was undertaken between Detroit and Windsor, under the river Detroit.

From Buffalo, at the foot of lake Erie, the river Niagara runs northwards 36 m. into lake Ontario. To overcome the difference of 327 ft. in level between lakes Erie and Ontario, the Welland canal, accommodating vessels of 255 ft. in length, with a draught of 14 ft., was built, and is maintained by Canada. The Murray canal extends from Presqu'ile Bay, on the north shore of lake Ontario, a distance of 6½ m., to the headquarters of the Bay of Quinte. Trent canal is a term applied to a series of water stretches in the interior of Ontario which are ultimately designed to connect lake Huron and lake Ontario. At Peterboro a hydraulic balance-lock with a lift of 65 ft., 140 ft. in length and 33 ft. clear in width, allowing a draught of 8 ft., has been constructed. The ordinary locks are 134 by 33 ft. with a draught of 6 ft. When the whole route of 200 m. is completed, there will not be more than 15 m. of actual canal, the remaining portion of the waterway being through lakes and rivers. For the Erie canal, between that lake and the Hudson river, see Erie and New York.

The population of the states and provinces bordering on the Great Lakes is estimated to be over 35,000,000. In Pennsylvania and Ohio, south of lake Erie, there are large coal-fields. Surrounding lake Michigan and west of lake Superior are vast grain-growing plains, and the prairies of the Canadian north-west are rapidly increasing the area and quantity of wheat grown; while both north and south of lake Superior are the most extensive iron mines in the world, from which 35 million tons of ore were shipped in 1906. The natural highway for the shipment of all these products is the Great Lakes, and over them coal is distributed westwards and grain and iron ore are concentrated eastwards. The great quantity of coarse freights, that could only be profitably carried long distances by water, has revolutionized the type of vessel used for its transportation, making large steamers imperative, consolidating interests and cheapening methods. It is usual for the vessels in the grain trade and in the iron-ore trade to make their up trips empty; but in consequence of the admirable facilities provided at terminal points, they make very fast time, and carry freight very cheaply. The cost of freight per ton-mile fell from 23/100 cent in 1887 to 8/100 cent in 1898; since then the rate has slightly risen, but keeps well below 1/10 cent per ton-mile.

The traffic on the lakes may be divided into three classes, passenger, package freight and bulk freight. Of passenger boats the largest are 380 ft. long by 44 ft. beam, having a speed of over 20 m. an hour, making the round trip between Buffalo and Chicago 1800 m., or Buffalo and Duluth 2000 m., every week. They carry no freight. The Canadian Pacific railway runs a line of fine Tyne-built passenger and freight steamers between Owen Sound and Fort William, and these two lines equal in accommodation transatlantic passenger steamers. On lake Michigan many fine passenger boats run out of Chicago, and on lake Ontario there are several large and fast Canadian steamers on routes radiating from Toronto. The package freight business, that is, the transportation of goods in enclosed parcels, is principally local; all the through business of this description is controlled by lines run by the great trunk railways, and is done in boats limited in beam to 50 ft. to admit them through bridges over the rivers at Chicago and Buffalo. By far the greatest number of vessels on the lakes are bulk freighters, and the conditions of the service have developed a special type of vessel. Originally sailing vessels were largely used, but these have practically disappeared, giving place to steamers, which have grown steadily in size with every increase in available draught. In 1894 there was no vessel on the lakes with a capacity of over 5000 tons; in 1906 there were 254 vessels of a greater capacity, 12 of them carrying over 12,000 tons each. For a few years following 1890 many large barges were built, carrying up to 8000 tons each, intended to be towed by a steamer. It was found, however, that the time lost by one boat of the pair having to wait for the other made the plan unprofitable and no more were built. Following 1888 some 40 whale-back steamers and barges, having oval cross-sections without frames or decks, were built, but experience failed to demonstrate any advantage in the type, and their construction has ceased. The modern bulk freighter is a vessel 600 ft. long, 58 ft. beam, capable of carrying 14,000 tons on 20 ft. draught, built with a midship section practically rectangular, the coefficient frequently as high as .98, with about two-thirds of the entire length absolutely straight, giving a block coefficient up to .87. The triple-expansion machinery and boilers, designed to drive the boat at a speed of 12 m. an hour, are in the extreme stern, and the pilot house and quarters in the extreme bow, leaving all the cargo space together. Hatches are spaced at multiples of 12 ft. throughout the length and are made as wide as possible athwartships to facilitate loading and unloading. The vessels are built on girder frames and fitted with double bottoms for strength and water ballast. This type of vessel can be loaded in a few minutes, and unloaded by self-filling grab buckets up to ten tons capacity, worked hydraulically, in six or eight hours. The bulk freight generally follows certain well-defined routes; iron ore is shipped east from ports on both sides of lake Superior and on the west side of lake Michigan to rail shipping points on the south shore of lake Erie. Wheat and other grains from Duluth find their way to Buffalo, as do wheat, corn (maize) and other grains from Chicago. Wheat from the Canadian north-west is distributed from Fort William and Port Arthur to railway terminals on Georgian Bay, to Buffalo, and to Port Colborne for trans-shipment to canal barges for Montreal, and coal is distributed from lake Erie to all western points. The large shipping trade is assisted by both governments by a system of aids to navigation that mark every channel and danger. There are also life-saving stations at all dangerous points.

The Great Lakes never freeze over completely, but the harbours and often the connecting rivers are closed by ice. The navigable season at the Sault is about 7½ months; in lake Erie it is somewhat longer. The season of navigation has been slightly lengthened since 1905, by using powerful tugs as ice-breakers in the spring and autumn, the Canadian government undertaking the service at Canadian terminal ports, chiefly at Fort William and Port Arthur, the most northerly ports, where the season is naturally shortest, and the Lake Carriers' Association, a federation of the freighting steamship owners, acting in the river St Mary. Car ferries run through the winter across lake Michigan and the Strait of Mackinac, across the rivers St Clair and Detroit, and across the middle of lakes Erie and Ontario. The largest of these steamers is 350 ft. long by 56 ft. wide, draught 14 ft., horse power 3500, speed 13 knots. She carries on four tracks 30 freight cars, with 1350 tons of freight. Certain passenger steamers run on lake Michigan, from 401

Chicago north, all the winter.

The level of the lakes varies gradually, and is affected by the general character of the season, and not by individual rainfalls. The variations of level of the several lakes do not necessarily synchronize. There is an annual fluctuation of about 1 ft. in the upper lakes, and in some seasons over 2 ft. in the lower lakes; the lowest point being at the end of winter and the highest in midsummer. In lake Michigan the level has ranged from a maximum in the years 1859, 1876 and 1886, to a minimum nearly 5 ft. lower in 1896. In lake Ontario there is a range of 5½ ft. between the maximum of May 1870 and the minimum of November 1895. In consequence of the shallowness of lake Erie, its level is seriously disturbed by a persistent storm; a westerly gale lowers the water at its upper end exceptionally as much as 7 ft., seriously interfering with the navigation of the river Detroit, while an easterly gale produces a similar effect at Buffalo. (For physiographical details see articles on the several lakes, and United States.)

There is geological evidence to show that the whole basin of the lakes has in recent geological times gradually changed in level, rising to the north and subsiding southwards; and it is claimed that the movement is still in gradual progress, the rate assigned being .42 ft. per 100 m. per century. The maintenance of the level of the Great Lakes is a matter of great importance to the large freight boats, which always load to the limit of depth at critical points in the dredged channels or in the harbours. Fears have been entertained that the water power canals at Sault Ste Marie, the drainage canal at Chicago and the dredged channel in the river Detroit will permanently lower the levels respectively of lake Superior and of the Michigan-Huron-Erie group. An international deep-waterway commission exists for the consideration of this question, and army engineers appointed by the United States government have worked on the problem.[3] Wing dams in the rivers St Mary and Niagara, to retard the discharges, have been proposed as remedial measures. The Great Lakes are practically tideless, though some observers claim to find true tidal pulsations, said to amount to 3½ in. at spring tide at Chicago. Secondary undulations of a few minutes in period, ranging from 1 to 4 in., are well marked.

The Great Lakes are well stocked with fish of commercial value. These are largely gathered from the fishermen by steam tenders, and taken fresh or in frozen condition to railway distributing points. In lakes Superior and Huron salmon-trout (*Salvelinus namaycush*, Walb) are commercially most important. They ordinarily range from 10 to 50 lb in weight, and are often larger. In Georgian Bay the catches of whitefish (*Coregonus clupeiformis*, Mitchill) are enormous. In lake Erie whitefish, lesser whitefish, erroneously called lake-herring (*C. artedi*, Le Sueur), and sturgeon (*Acipenser rubicundus*, Le Sueur) are the most common. There is good angling at numerous points on the lakes and their feeders. The river Nipigon, on the north shore of lake Superior, is famous as a stream abounding in speckled trout (*Salvelinus fontinalis*, Mitchill) of unusual size. Black bass (*Micropterus*) are found from Georgian Bay to Montreal, and the maskinonge (*Esox nobilior*, Le Sueur), plentiful in the same waters, is a very game fish that often attains a weight of 70 lb.

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(W. P. A.)

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GREAT MOTHER OF THE GODS, the ancient Oriental-Greek-Roman deity commonly known as Cybele (*q.v.*) in Greek and Latin literature from the time of Pindar. She was also known under many other names, some of which were derived from famous places of worship: as Dindymene from Mt. Dindymon, Mater Idaea from Mt. Ida, Sipylene from Mt. Sipylus, Agdistis from Mt. Agdistis or Agdus, Mater Phrygia from the greatest stronghold of her cult; while others were reflections of her character as a great nature goddess: *e.g.* Mountain Mother, Great Mother of the Gods, Mother of all Gods and all Men. As the great Mother deity whose worship extended throughout Asia Minor she was known as Mā or Ammas. Cybele is her favourite name in ancient and modern literature, while Great Mother of the Gods, or Great Idaean Mother of the Gods (*Mater Deum Magna, Mater Deum Magna Idaea*), the most frequently recurring epigraphical title, was her ordinary official designation.

The legends agree in locating the rise of the worship of the Great Mother in Asia Minor, in the region of loosely defined geographical limits which comprised the Phrygian empire of prehistoric times, and was more extensive than the Roman province of Phrygia (Diod. Sic. iii. 58; Paus. vii. 17; Arnob. v. 5; Firm. Mat. *De error.*, 3; Ovid, *Fasti*, iv. 223 ff.; Sallust. Phil. *De diis et mundo*, 4; Jul. *Or.* v. 165 ff.). Her best-known early seats of worship were Mt. Ida, Mt. Sipylus, Cyzicus, Sardis and Pessinus, the last-named city, in Galatia near the borders of Roman Phrygia, finally becoming the strongest centre of the cult. She was known to the Romans and Greeks as essentially Phrygian, and all Phrygia was spoken of as sacred to her (Schol. Apollon. Rhod. *Argonautica*, i. 1126). It is probable, however, that the Phrygian race, which invaded Asia Minor from the north in the 9th century B.C., found a great nature goddess already universally worshipped there, and blended her with a deity of their own. The Asiatic-Phrygian worship thus evolved was further modified by contact with the Syrians and Phoenicians, so that it acquired strong Semitic characteristics. The Great Mother known to the Greeks and Romans was thus merely the Phrygian form of the nature deity of all Asia Minor.

From Asia Minor the cult of the Great Mother spread first to Greek territory. It found its way into Thrace at an early date, was known in Boeotia by Pindar in the 6th century, and entered Attica near the beginning of the 4th century (Grant Showerman, *The Great Mother of the Gods*, *Bulletin of the University of Wisconsin*, No. 43, Madison, 1901). At Peiraeus, where it probably arrived by way of the Aegean islands, it existed privately in a fully developed state, that is, accompanied by the worship of Attis, at the beginning of the 4th century, and publicly two centuries later (D. Comparetti, *Annales*, 1862, pp. 23 ff.). The Greeks from the first saw in the Great Mother a resemblance to their own Rhea, and finally identified the two completely, though the Asiatic peculiarities of the cult were never universally popular with them (Showerman, p. 294). In her less Asiatic aspect, *i.e.* without Attis, she was sometimes identified with Gaia and Demeter. It was in this phase that she was worshipped in the Metroön at Athens. In reality, the Mother Goddess appears under three aspects: Rhea, the Homeric and Hesiodic goddess of Cretan origin; the Phrygian Mother, with Attis; and the Greek Great Mother, a modified form of the Phrygian Mother, to be explained as the original goddess of the Phrygians of Europe, communicated to the Greek stock before the Phrygian invasion of Asia Minor and consequent mingling with Asiatic stocks (cf. Showerman, p. 252).

In 204 B.C., in obedience to the Sibylline prophecy which said that whenever an enemy from abroad should make war on Italy he could be expelled and conquered if the Idaean Mother were brought to Rome from Pessinus, the cult of the Great Mother, together with her sacred symbol, a small meteoric stone reputed to have fallen from the heavens, was transferred to Rome and established in a temple on the Palatine (Livy xxix. 10-14). Her identification by the Romans with Maia, Ops, Rhea, Tellus and Ceres contributed to the establishment of her worship on a firm footing. By the end of the Republic it had attained prominence, and under the Empire it became one of the three most important cults in the Roman world, the other two being those of Mithras and Isis. Epigraphic and numismatic evidence prove it to have penetrated from Rome as a centre to the remotest provinces (Showerman, pp. 291-293). During the brief revival of paganism under Eugenius in A.D. 394, occurred the last appearance of the cult in history. Besides the temple on the Palatine, there existed minor shrines of the Great Mother near the present church of St Peter, on the Sacra Via on the north slope of the Palatine, near the junction of the Almo and the Tiber, south of the city (*ibid.* 311-314).

In all her aspects, Roman, Greek and Oriental, the Great Mother was characterized by essentially the same qualities. Most prominent among them was her universal motherhood. She was the great parent of gods and men, as well as of the lower orders of

creation. “The winds, the sea, the earth and the snowy seat of Olympus are hers, and when from her mountains she ascends into the great heavens, the son of Cronus himself gives way before her” (Apollon. Rhod. *Argonautica*, i. 1098). She was known as the All-begetter, the All-nourisher, the Mother of all the Blest. She was the great, fruitful, kindly earth itself. Especial emphasis was placed upon her maternity over wild nature. She was called the Mountain Mother; her sanctuaries were almost invariably upon mountains, and frequently in caves, the name Cybele itself being by some derived from the latter; lions were her faithful companions. Her universal power over the natural world finds beautiful expression in Apollonius Rhodius, *Argonautica*, i. 1140 ff. She was also a chaste and beautiful deity. Her especial affinity with wild nature was manifested by the orgiastic character of her worship. Her attendants, the Corybantes, were wild, half demonic beings. Her priests, the Galli, were eunuchs attired in female garb, with long hair fragrant with ointment. Together with priestesses, they celebrated her rites with flutes, horns, castanets, cymbals and tambourines, madly yelling and dancing until their frenzied excitement found its culmination in self-scourging, self-laceration or exhaustion. Self-emasculation sometimes accompanied this delirium of worship on the part of candidates for the priesthood (Showerman, pp. 234-239). The *Attis* of Catullus (lxiii.) is a brilliant treatment of such an episode.

Though her cult sometimes existed by itself, in its fully developed state the worship of the Great Mother was accompanied by that of Attis (*q.v.*). The cult of Attis never existed independently. Like Adonis and Aphrodite, Baal and Astarte, &c., the two formed a duality representing the relations of Mother Nature to the fruits of the earth. There is no positive evidence to prove the existence of the cult publicly in this phase in Greece before the 2nd century B.C., nor in Rome before the Empire, though it may have existed in private (Showerman, “Was Attis at Rome under the Republic?” in *Transactions of the American Philological Association*, vol. 31, 1900, pp. 46-59; Cumont, s.v. “Attis,” De Ruggiero’s *Dizionario epigrafico* and Pauly-Wissowa’s *Realencyclopädie*, Supplement; Hepding, *Attis, seine Mythen und seine Kult*, Giessen, 1903, p. 142).

The philosophers of the late Roman Empire interpreted the Attis legend as symbolizing the relations of Mother Earth to her children the fruits. Porphyrius says that Attis signified the flowers of spring time, and was cut off in youth because the flower falls before the fruit (Augustine, *De civ. Dei*, vii. 25). Maternus (*De error*. 3) interprets the love of the Great Mother for Attis as the love of the earth for her fruits; his emasculation as the cutting of the fruits; his death as their preservation; and his resurrection as the sowing of the seed again.

At Rome the immediate direction of the cult of the Great Mother devolved upon the high priest, *Archigallus*, called Attis, a high priestess, *Sacerdos Maxima*, and its support was derived, at least in part, from a popular contribution, the *stips*. Besides other priests, priestesses and minor officials, such as musicians, curator, &c., there were certain colleges connected with the administration of the cult, called *cannophori* (reed-bearers) and *dendrophori* (branch-bearers). The Quindecimvirs exercised a general supervision over this cult, as over all other authorized cults, and it was, at least originally, under the special patronage of a club or sodality (Showerman, pp. 269-276). Roman citizens were at first forbidden to take part in its ceremonies, and the ban was not removed until the time of the Empire.

The main public event in the worship of the Great Mother was the annual festival, which took place originally on the 4th of April, and was followed on the 5th by the Megalesia, games instituted in her honour on the introduction of the cult. Under the Empire, from Claudius on, the Megalesia lasted six days, April 4-10, and the original one day of the religious festival became an annual cycle of festivals extending from the 15th to the 27th of March, in the following order. (1) The 15th of March, *Canna intrat*—the sacrifice of a six-year-old bull in behalf of the mountain fields, the high priest, a priestess and the *cannophori* officiating, the last named carrying reeds in procession in commemoration of the exposure of the infant Attis on the reedy banks of the stream Gallus in Phrygia. (This may have been originally a phallic procession. Cf. Showerman, *American Journal of Philol.* xxvii. 1; *Classical Journal* i. 4.) (2) The 22nd of March, *Arbor intrat*—the bearing in procession of the sacred pine, emblem of Attis’ self-mutilation, death and immortality, to the temple on the Palatine, the symbol of the Mother’s cave, by the *dendrophori*, a gild of workmen who made the Mother, among other deities, a patron. (3) The 24th of March, *Dies sanguinis*—a day of mourning, fasting and abstinence, especially sexual, commemorating the sorrow of the Mother for Attis, her abstinence from food and her chastity. The frenzied dance and self-laceration of the priests in commemoration of Attis’ deed, and the submission to the act of consecration by candidates for the priesthood, was a special feature of the day. The *taurobolium* (*q.v.*) was often performed on this day, on which probably took place the initiation of mystics. (4) The 25th of March, *Hilaria*—one of the great festal days of Rome, celebrated by all the people. All mourning was put off, and good cheer reigned in token of the return of the sun and spring, which was symbolized by the renewal of Attis’ life. (5) The 26th of March, *Requietio*—a day of rest and quiet. (6) The 27th of March, *Lavatio*—the crowning ceremony of the cycle. The silver statue of the goddess, with the sacred meteoric stone, the *Acus*, set in its head, was borne in gorgeous procession and bathed in the Almo, the remainder of the day being given up to rejoicing and entertainment, especially dramatic representation of the legend of the deities of the day. Other ceremonies, not necessarily connected with the annual festival, were the *taurobolium* (*q.v.*), the sacrifice of a bull, and the *criobolium* (*q.v.*), the sacrifice of a ram, the latter being the analogue of the former, instituted for the purpose of giving Attis special recognition. The baptism of blood, which was the feature of these ceremonies, was regarded as purifying and regenerating (Showerman, *Great Mother*, pp. 277-284).

The Great Mother figures in the art of all periods both in Asia and Europe, but is especially prominent in the art of the Empire. No work of the first class, however, was inspired by her. She appears on coins, in painting and in all forms of sculpture, usually with mural crown and veil, well draped, seated on a throne, and accompanied by two lions. Other attributes which often appear are the patera, tympanum, cymbals, sceptre, garlands and fruits. Attis and his attributes, the pine, Phrygian cap, pedum, syrinx and torch, also appear. The Cybele of Formia, now at Copenhagen, is one of the most famous representations of the goddess. The Niobe of Mt. Sipylus is really the Mother. In literature she is the subject of frequent mention, but no work of importance, with the exception of Catullus lxiii., is due to her inspiration. Her importance in the history of religion is very great. Together with Isis and Mithras, she was a great enemy, and yet a great aid to Christianity. The gorgeous rites of her worship, its mystic doctrine of communion with the divine through enthusiasm, its promise of regeneration through baptism of blood in the taurobolium, were features which attracted the masses of the people and made it a strong rival of Christianity; and its resemblance to the new religion, however superficial, made it, in spite of the scandalous practices which grew up around it, a stepping-stone to Christianity when the tide set in against paganism.

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(G. SN.)

GREAT REBELLION (1642-52), a generic name for the civil wars in England and Scotland, which began with the raising of King Charles I.’s standard at Nottingham on the 22nd of August 1642, and ended with the surrender of Dunottar Castle to the Parliament’s troops in May 1652. It is usual to classify these wars into the First Civil War of 1642-46, and the Second Civil War of 1648-52. During most of this time another civil war was raging in Ireland. Its incidents had little or no connexion with those of the Great Rebellion, but its results influenced the struggle in England to a considerable extent.

1. *First Civil War* (*1642-46*).—It is impossible rightly to understand the events of this most national of all English wars without some knowledge of the motive forces on both sides. On the side of the king were enlisted the deep-seated loyalty which was the result of two centuries of effective royal protection, the pure cavalier spirit foreshadowing the courtier era of Charles II., but still strongly tinged with the old feudal indiscipline, the militarism of an expert soldier nobility, well represented by Prince Rupert, and lastly a widespread distrust of extreme Puritanism, which appeared unreasonable to Lord Falkland and other philosophic statesmen and intolerable to every other class of Royalists. The foot of the Royal armies was animated in the main by the first and last of these motives; in the eyes of the sturdy rustics who followed their squires to the war the enemy were rebels and fanatics. To the cavalry,

which was composed largely of the higher social orders, the rebels were, in addition, bourgeois, while the soldiers of fortune from the German wars felt all the regular's contempt for citizen militia. Thus in the first episodes of the First Civil War moral superiority tended to be on the side of the king. On the other side, the causes of the quarrel were primarily and apparently political, ultimately and really religious, and thus the elements of resistance in the Parliament and the nation were at first confused, and, later, strong and direct. Democracy, moderate republicanism and the simple desire for constitutional guarantees could hardly make head of themselves against the various forces of royalism, for the most moderate men of either party were sufficiently in sympathy to admit compromise. But the backbone of resistance was the Puritan element, and this waging war at first with the rest on the political issue soon (as the Royalists anticipated) brought the religious issue to the front. The Presbyterian system, even more rigid than that of Laud and the bishops—whom no man on either side supported save Charles himself—was destined to be supplanted by the Independents and their ideal of free conscience, but for a generation before the war broke out it had disciplined and trained the middle classes of the nation (who furnished the bulk of the rebel infantry, and later of the cavalry also) to centre their whole will-power on the attainment of their ideals. The ideals changed during the struggle, but not the capacity for striving for them, and the men capable of the effort finally came to the front and imposed their ideals on the rest by the force of their trained wills.

Material force was throughout on the side of the Parliamentary party. They controlled the navy, the nucleus of an army which was in process of being organized for the Irish war, and nearly all the financial resources of the country. They had the sympathies of most of the large towns, where the trained bands, drilled once a month, provided cadres for new regiments. Further, by recognizing the inevitable, they gained a start in war preparations which they never lost. The earls of Warwick, Essex and Manchester and other nobles and gentry of their party possessed great wealth and territorial influence. Charles, on the other hand, although he could, by means of the "press" and the lords-lieutenant, raise men without authority from Parliament, could not raise taxes to support them, and was dependent on the financial support of his chief adherents, such as the earls of Newcastle and Derby. Both parties raised men when and where they could, each claiming that the law was on its side—for England was already a law-abiding nation—and acting in virtue of legal instruments. These were, on the side of the Parliament, its own recent "Militia Ordinance"; on that of the king, the old-fashioned "Commissions of Array." In Cornwall the Royalist leader, Sir Ralph Hopton, indicted the enemy before the grand jury of the county as disturbers of the peace, and had the *posse comitatus* called out to expel them. The local forces in fact were everywhere employed by whichever side could, by producing valid written authority, induce them to assemble.

2. *The Royalist and Parliamentarian Armies.*—This thread of local feeling and respect for the laws runs through the earlier operations of both sides almost irrespective of the main principles at stake. Many a promising scheme failed because of the reluctance of the militiamen to serve beyond the limits of their own county, and, as the offensive lay with the king, his cause naturally suffered far more therefrom than that of the enemy. But the real spirit of the struggle was very different. Anything which tended to prolong the struggle, or seemed like want of energy and avoidance of a decision, was bitterly resented by the men of both sides, who had their hearts in the quarrel and had not as yet learned by the severe lesson of Edgehill that raw armies cannot bring wars to a speedy issue. In France and Germany the prolongation of a war meant continued employment for the soldiers, but in England "we never encamped or entrenched ... or lay fenced with rivers or defiles. Here were no leaguers in the field, as at the story of Nuremberg,[1] neither had our soldiers any tents or what they call heavy baggage. 'Twas the general maxim of the war—Where is the enemy? Let us go and fight them. Or ... if the enemy was coming ... Why, what should be done! Draw out into the fields and fight them." This passage from the *Memoirs of a Cavalier*, ascribed to Defoe, though not contemporary evidence, is an admirable summary of the character of the Civil War. Even when in the end a regular professional army is evolved—exactly as in the case of Napoleon's army—the original decision-compelling spirit permeated the whole organization. From the first the professional soldiers of fortune, be their advice good or bad, are looked upon with suspicion, and nearly all those Englishmen who loved war for its own sake were too closely concerned for the welfare of their country to attempt the methods of the Thirty Years' War in England. The formal organization of both armies was based on the Swedish model, which had become the pattern of Europe after the victories of Gustavus Adolphus, and gave better scope for the *moral* of the individual than the old-fashioned Spanish and Dutch formations in which the man in the ranks was a highly finished automaton.

3. *Campaign of 1642.*—When the king raised his standard at Nottingham on the 22nd of August 1642, war was already in progress on a small scale in many districts, each side endeavouring to secure, or to deny to the enemy, fortified country-houses, territory, and above all arms and money. Peace negotiations went on in the midst of these minor events until there came from the Parliament an ultimatum so aggressive as to fix the warlike purpose of the still vacillating court at Nottingham, and, in the country at large, to convert many thousands of waverers to active Royalism. Ere long Charles—who had hitherto had less than 1500 men—was at the head of an army which, though very deficient in arms and equipment, was not greatly inferior in numbers or enthusiasm to that of the Parliament. The latter (20,000 strong exclusive of detachments) was organized during July, August and September about London, and moved thence to Northampton under the command of Robert, earl of Essex.

At this moment the military situation was as follows. Lord Hertford in south Wales, Sir Ralph Hopton in Cornwall, and the young earl of Derby in Lancashire, and small parties in almost every county of the west and the midlands, were in arms for the king. North of the Tees, the earl of Newcastle, a great territorial magnate, was raising troops and supplies for the king, while Queen Henrietta Maria was busy in Holland arranging for the importation of war material and money. In Yorkshire opinion was divided, the royal cause being strongest in York and the North Riding, that of the Parliamentary party in the clothing towns of the West Riding and also in the important seaport of Hull. The Yorkshire gentry made an attempt to neutralize the county, but a local struggle soon began, and Newcastle thereupon prepared to invade Yorkshire. The whole of the south and east as well as parts of the midlands and the west and the important towns of Bristol and Gloucester were on the side of the Parliament. A small Royalist force was compelled to evacuate Oxford on the 10th of September.

On the 13th of September the main campaign opened. The king—in order to find recruits amongst his sympathizers and arms in the armouries of the Derbyshire and Staffordshire trained bands, and also to be in touch with his disciplined regiments in Ireland by way of Chester—moved westward to Shrewsbury, Essex following suit by marching from Northampton to Worcester. Near the last-named town a sharp cavalry engagement (Powick Bridge) took place on the 23rd between the advanced cavalry of Essex's army and a force under Prince Rupert which was engaged in protecting the retirement of the Oxford detachment. The result of the fight was the instantaneous overthrow of the rebel cavalry, and this gave the Royalist troopers a confidence in themselves and in their brilliant leader which was not destined to be shaken until they met Cromwell's Ironsides. Rupert soon withdrew to Shrewsbury, where he found many Royalist officers eager to attack Essex's new position at Worcester. But the road to London now lay open and it was decided to take it. The intention was not to avoid a battle, for the Royalist generals desired to fight Essex before he grew too strong, and the temper of both sides made it impossible to postpone the decision; in Clarendon's words, "it was considered more counsellable to march towards London, it being morally sure that the earl of Essex would put himself in their way," and accordingly the army left Shrewsbury on the 12th of October, gaining two days' start of the enemy, and moved south-east via Bridgnorth, Birmingham and Kenilworth. This had the desired effect. Parliament, alarmed for its own safety, sent repeated orders to Essex to find the king and bring him to battle. Alarm gave place to determination when it was discovered that Charles was enlisting papists and seeking foreign aid. The militia of the home counties was called out, a second army under the earl of Warwick was formed round the nucleus of the London trained bands, and Essex, straining every nerve to regain touch with the enemy, reached Kineton, where he was only 7 m. from the king's headquarters at Edgecote, on the 22nd.

4. *Battle of Edgehill.*—Rupert promptly reported the enemy's presence, and his confidence dominated the irresolution of the king and the caution of Lord Lindsey, the nominal commander-in-chief. Both sides had marched widely dispersed in order to live, and the rapidity with which, having the clearer purpose, the Royalists drew together helped considerably to neutralize Essex's superior numbers. During the morning of the 23rd the Royalists formed in battle order on the brow of Edgehill facing towards Kineton. Essex, experienced soldier as he was, had distrusted his own raw army too much to force a decision earlier in the month, when the king was weak; he now found Charles in a strong position with an equal force to his own 14,000, and some of his regiments were still some miles distant. But he advanced beyond Kineton, and the enemy promptly left their strong position and came down to the foot of the hill, for, situated as they were, they had either to fight wherever they could induce the enemy to engage, or to starve in the midst of hostile garrisons. Rupert was on the right of the king's army with the greater part of the horse, Lord Lindsey and Sir Jacob Astley in the centre with the foot, Lord Wilmot (with whom rode the earl of Forth, the principal military adviser of the king) with a smaller body of cavalry on the left. In rear of the centre were the king and a small reserve. Essex's order was similar. Rupert

charged as soon as his wing was deployed, and before the infantry of either side was ready. Taking ground to his right front and then wheeling inwards at full speed he instantly rode down the Parliamentary horse opposed to him. Some infantry regiments of Essex's left centre shared the same fate as their cavalry. On the other wing Forth and Wilmot likewise swept away all that they could see of the enemy's cavalry, and the undisciplined Royalists of both wings pursued the fugitives in wild disorder up to Kineton, where they were severely handled by John Hampden's infantry brigade (which was escorting the artillery and baggage of Essex's army). Rupert brought back only a few rallied squadrons to the battlefield, and in the meantime affairs there had gone badly for the king. The right and centre of the Parliamentary foot (the left having been brought to a halt by Rupert's charge) advanced with great resolution, and being at least as ardent as, and much better armed than, Lindsey's men, engaged them fiercely and slowly gained ground. Only the best regiments on either side, however, maintained their order, and the decision of the infantry battle was achieved mainly by a few Parliamentary squadrons. One regiment of Essex's right wing only had been the target of Wilmot's charge, the other two had been at the moment invisible, and, as every Royalist troop on the ground, even the king's guards, had joined in the mad ride to Kineton, these, Essex's life-guard, and some troops that had rallied from the effect of Rupert's charge—amongst them Captain Oliver Cromwell's—were the only cavalry still present. All these joined with decisive effect in the attack on the left of the royal infantry. The king's line was steadily rolled up from left to right, the Parliamentary troopers captured his guns and regiment after the regiment broke up. Charles himself stood calmly in the thick of the fight, but he had not the skill to direct it. The royal standard was taken and retaken, Lindsey and Sir Edmund Verney, the standard-bearer, being killed. By the time that Rupert returned both sides were incapable of further effort and disillusioned as to the prospect of ending the war at a blow.

On the 24th Essex retired, leaving Charles to claim the victory and to reap its results. Banbury and Oxford were reoccupied by the Royalists, and by the 28th Charles was marching down the Thames valley on London. Negotiations were reopened, and a peace party rapidly formed itself in London and Westminster. Yet field fortifications sprang up around London, and when Rupert stormed and sacked Brentford on the 12th of November the trained bands moved out at once and took up a position at Turnham Green, barring the king's advance. Hampden, with something of the fire and energy of his cousin Cromwell, urged Essex to turn both flanks of the Royal army via Acton and Kingston, but experienced professional soldiers urged him not to trust the London men to hold their ground while the rest manœuvred. Hampden's advice was undoubtedly premature. A Sedan or Worcester was not within the power of the Parliamentarians of 1642, for, in Napoleon's words, "one only manœuvres around a fixed point," and the city levies at that time were certainly not, *vis-à-vis* Rupert's cavalry, a fixed point. As a matter of fact, after a slight cannonade at Turnham Green on the 13th, Essex's two-to-one numerical superiority of itself compelled the king to retire to Reading. Turnham Green has justly been called the Valmy of the English Civil War. Like Valmy, without being a battle, it was a victory, and the tide of invasion came thus far, ebbed, and never returned.

5. *The Winter of 1642-43.*—In the winter, while Essex lay inactive at Windsor, Charles by degrees consolidated his position in the region of Oxford. The city was fortified as a reduit for the whole area, and Reading, Wallingford, Abingdon, Brill, Banbury and Marlborough constituted a complete defensive ring which was developed by the creation of smaller posts from time to time. In the north and west, winter campaigns were actively carried on. "It is summer in Yorkshire, summer in Devon, and cold winter at Windsor," said one of Essex's critics. At the beginning of December Newcastle crossed the Tees, defeated Hotham, the Parliamentary commander in the North Riding, then joining hands with the hard-pressed Royalists at York, established himself between that city and Pontefract. Lord Fairfax and his son Sir Thomas, who commanded for the Parliament in Yorkshire, had to retire to the district between Hull and Selby, and Newcastle was free to turn his attention to the Puritan "clothing towns" of the West Riding—Leeds, Halifax and Bradford. The townsmen, however, showed a determined front, the younger Fairfax with a picked body of cavalry rode through Newcastle's lines into the West Riding to help them, and about the end of January 1643 the earl gave up the attempt to reduce the towns. He continued his march southward, however, and gained ground for the king as far as Newark, so as to be in touch with the Royalists of Nottinghamshire, Derbyshire and Leicestershire (who, especially about Newark and Ashby-de-la-Zouch, were strong enough to neutralize the local forces of the Parliament), and to prepare the way for the further advance of the army of the north when the queen's convoy should arrive from over-seas.

In the west Sir Ralph Hopton and his friends, having obtained a true bill from the grand jury against the Parliamentary disturbers of the peace, placed themselves at the head of the county militia and drove the rebels from Cornwall, after which they raised a small force for general service and invaded Devonshire (November 1642). Subsequently a Parliamentary army under the earl of Stamford was withdrawn from south Wales to engage Hopton, who had to retire into Cornwall. There, however, the Royalist general was free to employ the militia again, and thus reinforced he won a victory over a part of Stamford's forces at Bradock Down near Liskeard (January 19, 1643) and resumed the offensive. About the same time Hertford, no longer opposed by Stamford, brought over the South Wales Royalists to Oxford, and the fortified area around that place was widened by the capture of Cirencester on the 2nd of February. Gloucester and Bristol were now the only important garrisons of the Roundheads in the west. In the midlands, in spite of a Parliamentary victory won by Sir William Brereton at Nantwich on the 28th of January, the Royalists of Shropshire, Staffordshire and Leicestershire soon extended their influence through Ashby-de-la-Zouch into Nottinghamshire and joined hands with their friends at Newark. Further, around Chester a new Royalist army was being formed under Lord Byron, and all the efforts of Brereton and of Sir John Gell, the leading supporter of the Parliament in Derbyshire, were required to hold their own, even before Newcastle's army was added to the list of their enemies. Lord Brooke, who commanded for the Parliament in Warwickshire and Staffordshire and was looked on by many as Essex's eventual successor, was killed in besieging Lichfield cathedral on the 2nd of March, and, though the cathedral soon capitulated, Gell and Brereton were severely handled in the indecisive battle of Hopton Heath near Stafford on the 19th of March, and Prince Rupert, after an abortive raid on Bristol (March 7), marched rapidly northward, storming Birmingham en route, and recaptured Lichfield cathedral. He was, however, soon recalled to Oxford to take part in the main campaign. The position of affairs for the Parliament was perhaps at its worst in January. The Royalist successes of November and December, the ever-present dread of foreign intervention, and the burden of new taxation which the Parliament now found itself compelled to impose, disheartened its supporters. Disorders broke out in London, and, while the more determined of the rebels began thus early to think of calling in the military assistance of the Scots, the majority were for peace on any conditions. But soon the position improved somewhat; Stamford in the west and Brereton and Gell in the midlands, though hard pressed, were at any rate in arms and undefeated, Newcastle had failed to conquer the West Riding, and Sir William Waller, who had cleared Hampshire and Wiltshire of "malignants," entered Gloucestershire early in March, destroyed a small Royalist force at Highnam (March 24), and secured Bristol and Gloucester for the Parliament. Finally, some of Charles's own intrigues opportunely coming to light, the waverers, seeing the impossibility of plain dealing with the court, rallied again to the party of resistance, and the series of negotiations called by the name of the Treaty of Oxford closed in April with no more result than those which had preceded Edgehill and Turnham Green. About this time too, following and improving upon the example of Newcastle in the north, Parliament ordered the formation of the celebrated "associations" or groups of counties banded together by mutual consent for defence. The most powerful and best organized of these was that of the eastern counties (headquarters Cambridge), where the danger of attack from the north was near enough to induce great energy in the preparations for meeting it, and at the same time too distant effectively to interfere with these preparations. Above all, the Eastern Association was from the first guided and inspired by Colonel Cromwell.

6. *The Plan of Campaign, 1643.*—The king's plan of operations for the next campaign, which was perhaps inspired from abroad, was more elaborate than the simple "point" of 1642. The king's army, based on the fortified area around Oxford, was counted sufficient to use up Essex's forces. On either hand, therefore, in Yorkshire and in the west, the Royalist armies were to fight their way inwards towards London, after which all three armies, converging on that place in due season, were to cut off its supplies and its sea-borne revenue and to starve the rebellion into surrender. The condition of this threefold advance was of course that the enemy should not be able to defeat the armies in detail, *i.e.* that he should be fixed and held in the Thames valley; this secured, there was no purely military objection against operating in separate armies from the circumference towards the centre. It was on the rock of local feeling that the king's plan came to grief. Even after the arrival of the queen and her convoy, Newcastle had to allow her to proceed with a small force, and to remain behind with the main body, because of Lancashire and the West Riding, and above all because the port of Hull, in the hands of the Fairfaxes, constituted a menace that the Royalists of the East Riding refused to ignore. Hopton's advance too, undertaken without the Cornish levies, was checked in the action of Sourton Down (Dartmoor) on the 25th of April, and on the same day Waller captured Hereford. Essex had already left Windsor to undertake the siege of Reading, the most important point in the circle of fortresses round Oxford, which after a vain attempt at relief surrendered to him on the 26th of April. Thus the opening operations were unfavourable, not indeed so far as to require the scheme to be abandoned, but at least delaying the development until the campaigning season was far advanced.

7. *Victories of Hopton.*—But affairs improved in May. The queen's long-expected convoy arrived at Woodstock on the 13th. The earl of Stamford's army, which had again entered Cornwall, was attacked in its selected position at Stratton and practically annihilated by Hopton (May 16). This brilliant victory was due above all to Sir Bevil Grenville and the lithe Cornishmen, who, though but 2400 against 5400 and destitute of artillery, stormed "Stamford Hill," killed 300 of the enemy, and captured 1700 more with all their guns, colours and baggage. Devon was at once overrun by the victors. Essex's army, for want of material resources, had had to be content with the capture of Reading, and a Royalist force under Hertford and Prince Maurice (Rupert's brother) moved out as far as Salisbury to hold out a hand to their friends in Devonshire, while Waller, the only Parliamentary commander left in the field in the west, had to abandon his conquests in the Severn valley to oppose the further progress of his intimate friend and present enemy, Hopton. Early in June Hertford and Hopton united at Chard and rapidly moved, with some cavalry skirmishing, towards Bath, where Waller's army lay. Avoiding the barrier of the Mendips, they moved round via Frome to the Avon. But Waller, thus cut off from London and threatened with investment, acted with great skill, and some days of manœuvres and skirmishing followed, after which Hertford and Hopton found themselves on the north side of Bath facing Waller's entrenched position on the top of Lansdown Hill. This position the Royalists stormed on the 5th of July. The battle of Lansdown was a second Stratton for the 406
Cornishmen, but this time the enemy was of different quality and far differently led, and they had to mourn the loss of Sir Bevil Grenville and the greater part of their whole force. At dusk both sides stood on the flat summit of the hill, still firing into one another with such energy as was not yet expended, and in the night Waller drew off his men into Bath. "We were glad they were gone," wrote a Royalist officer, "for if they had not, I know who had within the hour." Next day Hopton was severely injured by the explosion of a wagon containing the reserve ammunition, and the Royalists, finding their victory profitless, moved eastward to Devizes, closely followed by the enemy. On the 10th of July Sir William Waller took post on Roundway Down, overlooking Devizes, and captured a Royalist ammunition column from Oxford. On the 11th he came down and invested Hopton's foot in Devizes itself, while the Royalist cavalry, Hertford and Maurice with them, rode away towards Salisbury. But although the siege was pressed with such vigour that an assault was fixed for the evening of the 13th, the Cornishmen, Hopton directing the defence from his bed, held out stubbornly, and on the afternoon of July 13th Prince Maurice's horsemen appeared on Roundway Down, having ridden to Oxford, picked up reinforcements there, and returned at full speed to save their comrades. Waller's army tried its best, but some of its elements were of doubtful quality and the ground was all in Maurice's favour. The battle did not last long. The combined attack of the Oxford force from Roundway and of Hopton's men from the town practically annihilated Waller's army. Very soon afterwards Rupert came up with fresh Royalist forces, and the combined armies moved westward. Bristol, the second port of the kingdom, was their objective, and in four days from the opening of the siege it was in their hands (July 26), Waller with the beaten remnant of his army at Bath being powerless to intervene. The effect of this blow was felt even in Dorsetshire. Within three weeks of the surrender Prince Maurice with a body of fast-moving cavalry overran that county almost unopposed.

8. *Adwalton Moor.*—Newcastle meanwhile had resumed operations against the clothing towns, this time with success. The Fairfaxes had been fighting in the West Riding since January with such troops from the Hull region as they had been able to bring across Newcastle's lines. They and the townsmen together were too weak for Newcastle's increasing forces, and an attempt was made to relieve them by bringing up the Parliament's forces in Nottinghamshire, Derbyshire, Lincolnshire and the Eastern Association. But local interests prevailed again, in spite of Cromwell's presence, and after assembling at Nottingham, the midland rebels quietly dispersed to their several counties (June 2). The Fairfaxes were left to their fate, and about the same time Hull itself narrowly escaped capture by the queen's forces through the treachery of Sir John Hotham, the governor, and his son, the commander of the Lincolnshire Parliamentarians. The latter had been placed under arrest at the instance of Cromwell and of Colonel Hutchinson, the governor of Nottingham Castle; he escaped to Hull, but both father and son were seized by the citizens and afterwards executed. More serious than an isolated act of treachery was the far-reaching Royalist plot that had been detected in Parliament itself, for complicity in which Lord Conway, Edmund Waller the poet, and several members of both Houses were arrested. The safety of Hull was of no avail for the West Riding towns, and the Fairfaxes underwent a decisive defeat at Adwalton (Atherton) Moor near Bradford on the 30th of June. After this, by way of Lincolnshire, they escaped to Hull and reorganized the defence of that place. The West Riding perforce submitted.

The queen herself with a second convoy and a small army under Henry (Lord) Jermyn soon moved via Newark, Ashby-de-la-Zouch, Lichfield and other Royalist garrisons to Oxford, where she joined her husband on the 14th of July. But Newcastle (now a marquis) was not yet ready for his part in the programme. The Yorkshire troops would not march on London while the enemy was master of Hull, and by this time there was a solid barrier between the royal army of the north and the capital. Roundway Down and Adwalton Moor were not after all destined to be fatal, though peace riots in London, dissensions in the Houses, and quarrels amongst the generals were their immediate consequences. A new factor had arisen in the war—the Eastern Association.

9. *Cromwell and the Eastern Association.*—This had already intervened to help in the siege of Reading and had sent troops to the abortive gathering at Nottingham, besides clearing its own ground of "malignants." From the first Cromwell was the dominant influence. Fresh from Edgehill, he had told Hampden, "You must get men of a spirit that is likely to go as far as gentlemen will go," not "old decayed serving-men, tapsters and such kind of fellows to encounter gentlemen that have honour and courage and resolution in them," and in January 1643 he had gone to his own county to "raise such men as had the fear of God before them and made some conscience of what they did." These men, once found, were willing, for the cause, to submit to a rigorous training and an iron discipline such as other troops, fighting for honour only or for profit only, could not be brought to endure.[2] The result was soon apparent. As early as the 13th of May, Cromwell's regiment of horse—recruited from the horse-loving yeomen of the eastern counties—demonstrated its superiority in the field in a skirmish near Grantham, and in the irregular fighting in Lincolnshire during June and July (which was on the whole unfavourable to the Parliament), as previously in pacifying the Eastern Association itself, these Puritan troopers distinguished themselves by long and rapid marches that may bear comparison with almost any in the history of the mounted arm. When Cromwell's second opportunity came at Gainsborough on the 28th of July, the "Lincolneer" horse who were under his orders were fired by the example of Cromwell's own regiment, and Cromwell, directing the whole with skill, and above all with energy, utterly routed the Royalist horse and killed their general, Charles Cavendish.

In the meantime the army of Essex had been inactive. After the fall of Reading a serious epidemic of sickness had reduced it to impotence. On the 18th of June the Parliamentary cavalry was routed and John Hampden mortally wounded at Chalgrove Field near Chiselhampton, and when at last Essex, having obtained the desired reinforcements, moved against Oxford from the Aylesbury side, he found his men demoralized by inaction, and before the menace of Rupert's cavalry, to which he had nothing to oppose, he withdrew to Bedfordshire (July). He made no attempt to intercept the march of the queen's convoys, he had permitted the Oxford army, which he should have held fast, to intervene effectually in the midlands, the west, and the south-west, and Waller might well complain that Essex, who still held Reading and the Chilterns, had given him neither active nor passive support in the critical days preceding Roundway Down. Still only a few voices were raised to demand his removal, and he was shortly to have an opportunity of proving his skill and devotion in a great campaign and a great battle. The centre and the right of the three Royalist armies had for a moment (Roundway to Bristol) united to crush Waller, but their concentration was short-lived. Plymouth was to Hopton's men what Hull was to Newcastle's—they would not march on London until the menace to their homes was removed. Further, there were dissensions among the generals which Charles was too weak to crush, and consequently the original plan reappears—the main Royalist army to operate in the centre, Hopton's (now Maurice's) on the right, Newcastle on the left towards London. While waiting for the fall of Hull and Plymouth, Charles naturally decided to make the best use of his time by reducing Gloucester, the one great fortress of the Parliament in the west.

10. *Siege and Relief of Gloucester.*—This decision quickly brought on a crisis. While the earl of Manchester (with Cromwell as his lieutenant-general) was appointed to head the forces of the Eastern Association against Newcastle, and Waller was given a new 407
army wherewith again to engage Hopton and Maurice, the task of saving Gloucester from the king's army fell to Essex, who was heavily reinforced and drew his army together for action in the last days of August. Resort was had to the press-gang to fill the ranks, recruiting for Waller's new army was stopped, and London sent six regiments of trained bands to the front, closing the shops so that every man should be free to take his part in what was thought to be the supreme trial of strength.

On the 26th, all being ready, Essex started. Through Aylesbury and round the north side of Oxford to Stow-on-the-Wold the army moved resolutely, not deterred by want of food and rest, or by the attacks of Rupert's and Wilmot's horse on its flank. On the 5th of September, just as Gloucester was at the end of its resources, the siege was suddenly raised and the Royalists drew off to

Painswick, for Essex had reached Cheltenham and the danger was over. Then, the field armies being again face to face and free to move, there followed a series of skilful manœuvres in the Severn and Avon valleys, at the end of which the Parliamentary army gained a long start on its homeward road via Cricklade, Hungerford and Reading. But the Royalist cavalry under Rupert, followed rapidly by Charles and the main body from Evesham, strained every nerve to head off Essex at Newbury, and after a sharp skirmish on Aldbourne Chase on the 18th of September succeeded in doing so. On the 19th the whole Royal army was drawn up, facing west, with its right on Newbury and its left on Enborne Heath. Essex's men knew that evening that they would have to break through by force—there was no suggestion of surrender.

11. *First Battle of Newbury, September 20, 1643.*—The ground was densely intersected by hedges except in front of the Royalists' left centre (Newbury Wash) and left (Enborne Heath), and, practically, Essex's army was never formed in line of battle, for each unit was thrown into the fight as it came up its own road or lane. On the left wing, in spite of the Royalist counter-strokes, the attack had the best of it, capturing field after field, and thus gradually gaining ground to the front. Here Lord Falkland was killed. On the Reading road itself Essex did not succeed in deploying on to the open ground on Newbury Wash, but victoriously repelled the royal horse when it charged up to the lanes and hedges held by his foot. On the extreme right of the Parliamentary army, which stood in the open ground of Enborne Heath, took place a famous incident. Here two of the London regiments, fresh to war as they were, were exposed to a trial as severe as that which broke down the veteran Spanish infantry at Rocroi in this same year. Rupert and the Royalist horse again and again charged up to the squares of pikes, and between each charge his guns tried to disorder the Londoners, but it was not until the advance of the royal infantry that the trained bands retired, slowly and in magnificent order, to the edge of the heath. The result of it all was that Essex's army had fought its hardest and failed to break the opposing line. But the Royalists had suffered so heavily, and above all the valour displayed by the rebels had so profoundly impressed them, that they were glad to give up the disputed road and withdraw into Newbury. Essex thereupon pursued his march, Reading was reached on the 22nd after a small rearguard skirmish at Aldermaston, and so ended one of the most dramatic episodes of English history.

12. *Hull and Winceby.*—Meanwhile the siege of Hull had commenced. The Eastern Association forces under Manchester promptly moved up into Lincolnshire, the foot besieging Lynn (which surrendered on the 16th of September) while the horse rode into the northern part of the county to give a hand to the Fairfaxes. Fortunately the sea communications of Hull were open. On the 18th of September part of the cavalry in Hull was ferried over to Barton, and the rest under Sir Thomas Fairfax went by sea to Saltfleet a few days later, the whole joining Cromwell near Spilsby. In return the old Lord Fairfax, who remained in Hull, received infantry reinforcements and a quantity of ammunition and stores from the Eastern Association. On the 11th of October Cromwell and Fairfax together won a brilliant cavalry action at Winceby, driving the Royalist horse in confusion before them to Newark, and on the same day Newcastle's army around Hull, which had suffered terribly from the hardships of continuous siege work, was attacked by the garrison and so severely handled that next day the siege was given up. Later, Manchester retook Lincoln and Gainsborough, and thus Lincolnshire, which had been almost entirely in Newcastle's hands before he was compelled to undertake the siege of Hull, was added in fact as well as in name to the Eastern Association.

Elsewhere, in the reaction after the crisis of Newbury, the war languished. The city regiments went home, leaving Essex too weak to hold Reading, which the Royalists reoccupied on the 3rd of October. At this the Londoners offered to serve again, and actually took part in a minor campaign around Newport Pagnell, which town Rupert attempted to fortify as a menace to the Eastern Association and its communications with London. Essex was successful in preventing this, but his London regiments again went home, and Sir William Waller's new army in Hampshire failed lamentably in an attempt on Basing House (November 7), the London trained bands deserting *en bloc*. Shortly afterwards Arundel surrendered to a force under Sir Ralph, now Lord Hopton (December 9).

13. *The "Irish Cessation" and the Solemn League and Covenant.*—Politically, these months were the turning-point of the war. In Ireland, the king's lieutenant, by order of his master, made a truce with the Irish rebels (Sept. 15). Charles's chief object was to set free his army to fight in England, but it was believed universally that Irish regiments—in plain words, papists in arms—would shortly follow. Under these circumstances his act united against him nearly every class in Protestant England, above all brought into the English quarrel the armed strength of Presbyterian Scotland. Yet Charles, still trusting to intrigue and diplomacy to keep Scotland in check, deliberately rejected the advice of Montrose, his greatest and most faithful lieutenant, who wished to give the Scots employment for their army at home. Only ten days after the "Irish cessation," the Parliament at Westminster swore to the Solemn League and Covenant, and the die was cast. It is true that even a semblance of Presbyterian theocracy put the "Independents" on their guard and definitely raised the question of freedom of conscience, and that secret negotiations were opened between the Independents and Charles on that basis, but they soon discovered that the king was merely using them as instruments to bring about the betrayal of Aylesbury and other small rebel posts. All parties found it convenient to interpret the Covenant liberally for the present, and at the beginning of 1644 the Parliamentary party showed so united a front that even Pym's death (December 8, 1643) hardly affected its resolution to continue the struggle.

The troops from Ireland, thus obtained at the cost of an enormous political blunder, proved to be untrustworthy after all. Those serving in Hopton's army were "mutinous and shrewdly infected with the rebellious humour of England." When Waller's Londoners surprised[3] and routed a Royalist detachment at Alton (December 13, 1643), half the prisoners took the Covenant. Hopton had to retire, and on the 6th of January 1644 Waller recaptured Arundel. Byron's Cheshire army was in no better case. Newcastle's retreat from Hull and the loss of Gainsborough had completely changed the situation in the midlands, Brereton was joined by the younger Fairfax from Lincolnshire, and the Royalists were severely defeated for a second time at Nantwich (January 25). As at Alton, the majority of the prisoners (amongst them Colonel George Monk) took the Covenant and entered the Parliamentary army. In Lancashire, as in Cheshire, Staffordshire, Nottinghamshire and Lincolnshire, the cause of the Parliament was in the ascendant. Resistance revived in the West Riding towns, Lord Fairfax was again in the field in the East Riding, and even Newark was closely besieged by Sir John Meldrum. More important news came in from the north. The advanced guard of the Scottish army had passed the Tweed on the 19th of January, and the marquis of Newcastle with the remnant of his army would soon be attacked in front and rear at once.

14. *Newark and Cheriton* (*March 1644*).—As in 1643, Rupert was soon on his way to the north to retrieve the fortunes of his side. Moving by the Welsh border, and gathering up garrisons and recruits snowball-wise as he marched, he went first to Cheshire to give a hand to Byron, and then, with the utmost speed, he made for Newark. On the 20th of March 1644 he bivouacked at Bingham, and on the 21st he not only relieved Newark but routed the besiegers' cavalry. On the 22nd Meldrum's position was so hopeless that he capitulated on terms. But, brilliant soldier as he was, the prince was unable to do more than raid a few Parliamentary posts around Lincoln, after which he had to return his borrowed forces to their various garrisons and go back to Wales—laden indeed with captured pikes and muskets—to raise a permanent field army. But Rupert could not be in all places at once. Newcastle was clamorous for aid. In Lancashire, only the countess of Derby, in Lathom House, held out for the king, and her husband pressed Rupert to go to her relief. Once, too, the prince was ordered back to Oxford to furnish a travelling escort for the queen, who shortly after this gave birth to her youngest child and returned to France. The order was countermanded within a few hours, it is true, but Charles had good reason for avoiding detachments from his own army. On the 29th of March, Hopton had undergone a severe defeat at Cheriton near New Alresford. In the preliminary manœuvres and in the opening stages of the battle the advantage lay with the Royalists, and the earl of Forth, who was present, was satisfied with what had been achieved and tried to break off the action. But Royalist indiscipline ruined everything. A young cavalry colonel charged in defiance of orders, a fresh engagement opened, and at the last moment Waller snatched a victory out of defeat. Worse than this was the news from Yorkshire and Scotland. Charles had at last assented to Montrose's plan and promised him the title of marquis, but the first attempt to raise the Royalist standard in Scotland gave no omen of its later triumphs. In Yorkshire Sir Thomas Fairfax, advancing from Lancashire through the West Riding, joined his father. Selby was stormed on the 11th of April, and thereupon Newcastle, who had been manœuvring against the Scots in Durham, hastily drew back, sent his cavalry away, and shut himself up with his foot in York. Two days later the Scottish general, Alexander Leslie, Lord Leven, joined the Fairfaxes and prepared to invest that city.

15. *Plans of Campaign for 1644.*—The original plan of the Parliamentary "Committee of Both Kingdoms," which directed the military and civil policy of the allies after the fashion of a modern cabinet, was to combine Essex's and Manchester's armies in an attack upon the king's army, Aylesbury being appointed as the place of concentration. Waller's troops were to continue to drive back Hopton and to reconquer the west, Fairfax and the Scots to invest Newcastle's army, while in the midlands Brereton and the

Lincolnshire rebels could be counted upon to neutralize, the one Byron, the others the Newark Royalists. But Waller, once more deserted by his trained bands, was unable to profit by his victory of Cheriton, and retired to Farnham. Manchester, too, was delayed because the Eastern Association was still suffering from the effects of Rupert's Newark exploit—Lincoln, abandoned by the rebels on that occasion, was not reoccupied till the 6th of May. Moreover, Essex found himself compelled to defend his conduct and motives to the Committee of Both Kingdoms, and as usual was straitened for men and money. But though there were grave elements of weakness on the other side, the Royalists considered their own position to be hopeless. Prince Maurice was engaged in the fruitless siege of Lyme Regis, Gloucester was again a centre of activity and counterbalanced Newark, and the situation in the north was practically desperate. Rupert himself came to Oxford (April 25) to urge that his new army should be kept free to march to aid Newcastle, who was now threatened—owing to the abandonment of the enemy's original plan—by Manchester as well as Fairfax and Leven. There was no further talk of the concentric advance of three armies on London. The fiery prince and the methodical earl of Brentford (Forth) were at one at least in recommending that the Oxford area with its own garrison and a mobile force in addition should be the pivot of the field armies' operations. Rupert, needing above all adequate time for the development of the northern offensive, was not in favour of abandoning any of the barriers to Essex's advance. Brentford, on the other hand, thought it advisable to contract the lines of defence, and Charles, as usual undecided, agreed to Rupert's scheme and executed Brentford's. Reading, therefore, was dismantled early in May, and Abingdon given up shortly afterwards.

16. *Cropredy Bridge.*—It was now possible for the enemy to approach Oxford, and Abingdon was no sooner evacuated than (May 26) Waller's and Essex's armies united there—still, unfortunately for their cause, under separate commanders. From Abingdon Essex moved direct on Oxford, Waller towards Wantage, where he could give a hand to Massey, the energetic governor of Gloucester. Affairs seemed so bad in the west (Maurice with a whole army was still vainly besieging the single line of low breastworks that constituted the fortress of Lyme) that the king despatched Hopton to take charge of Bristol. Nor were things much better at Oxford; the barriers of time and space and the supply area had been deliberately given up to the enemy, and Charles was practically forced to undertake extensive field operations with no hope of success save in consequence of the enemy's mistakes. The enemy, as it happened, did not disappoint him. The king, probably advised by Brentford, conducted a skilful war of manœuvre in the area defined by Stourbridge, Gloucester, Abingdon and Northampton, at the end of which Essex, leaving Waller to the secondary work, as he conceived it, of keeping the king away from Oxford and reducing that fortress, marched off into the west with most of the general service troops to repeat at Lyme Regis his Gloucester exploit of 1643. At one moment, indeed, Charles (then in Bewdley) rose to the idea of marching north to join Rupert and Newcastle, but he soon made up his mind to return to Oxford. From Bewdley, therefore, he moved to Buckingham—the distant threat on London producing another evanescent citizen army drawn from six counties under Major-General Browne—and Waller followed him closely. When the king turned upon Browne's motley host, Waller appeared in time to avert disaster, and the two armies worked away to the upper Cherwell. Brentford and Waller were excellent strategists of the 17th century type, and neither would fight a pitched battle without every chance in his favour. Eventually on the 29th of June the Royalists were successful in a series of minor fights about Cropredy Bridge, and the result was, in accordance with continental custom, admitted to be an important victory, though Waller's main army drew off unharmed. In the meantime, Essex had relieved Lyme (June 15) and occupied Weymouth, and was preparing to go farther. The two rebel armies were now indeed separate. Waller had been left to do as best he could, and a worse fate was soon to overtake the cautious earl.

17. *Campaign of Marston Moor.*—During these manœuvres the northern campaign had been fought to an issue. Rupert's courage and energy were more likely to command success in the English Civil War than all the conscientious caution of an Essex or a Brentford. On the 16th of May he left Shrewsbury to fight his way through hostile country to Lancashire, where he hoped to re-establish the Derby influence and raise new forces. Stockport was plundered on the 25th, the besiegers of Lathom House utterly defeated at Bolton on the 28th. Soon afterwards he received a large reinforcement under General Goring, which included 5000 of Newcastle's cavalry. The capture of the almost defenceless town of Liverpool—undertaken as usual to allay local fears—did not delay Rupert more than three or four days, and he then turned towards the Yorkshire border with greatly augmented forces. On the 14th of June he received a despatch from the king, the gist of which was that there was a time-limit imposed on the northern enterprise. If York were lost or did not need his help, Rupert was to make all haste southward via Worcester. "If York be relieved and you beat the rebels' armies of both kingdoms, then, but otherways not, I may possibly make a shift upon the defensive to spin out time until you come to assist me."

Charles did manage to "spin out time." But it was of capital importance that Rupert had to do his work upon York and the allied army in the shortest possible time, and that, according to the despatch, there were only two ways of saving the royal cause, "having relieved York by beating the Scots," or marching with all speed to Worcester. Rupert's duty, interpreted through the medium of his temperament, was clear enough. Newcastle still held out, his men having been encouraged by a small success on the 17th of June, and Rupert reached Knaresborough on the 30th. At once Leven, Fairfax and Manchester broke up the siege of York and moved out to meet him. But the prince, moving still at high speed, rode round their right flank via Boroughbridge and Thornton Bridge and entered York on the north side. Newcastle tried to dissuade Rupert from fighting, but his record as a general was scarcely convincing as to the value of his advice. Rupert curtly replied that he had orders to fight, and the Royalists moved out towards Marston Moor (*q.v.*) on the morning of July 2, 1644. The Parliamentary commanders, fearing a fresh manœuvre, had already begun to retire towards Tadcaster, but as soon as it became evident that a battle was impending they turned back. The battle of Marston Moor began about four in the afternoon. It was the first real trial of strength between the best elements on either side, and it ended before night with the complete victory of the Parliamentary armies. The Royalist cause in the north collapsed once for all, Newcastle fled to the continent, and only Rupert, resolute as ever, extricated 6000 cavalry from the *débâcle* and rode away whence he had come, still the dominant figure of the war.

18. *Independency.*—The victory gave the Parliament entire control of the north, but it did not lead to the definitive solution of the political problem, and in fact, on the question of Charles's place in a new Constitution, the victorious generals quarrelled even before York had surrendered. Within three weeks of the battle the great army was broken up. The Yorkshire troops proceeded to conquer the isolated Royalist posts in their county, the Scots marched off to besiege Newcastle-on-Tyne and to hold in check a nascent Royalist army in Westmorland. Rupert in Lancashire they neglected entirely. Manchester and Cromwell, already estranged, marched away into the Eastern Association. There, for want of an enemy to fight, their army was forced to be idle, and Cromwell and the ever-growing Independent element quickly came to suspect their commander of lukewarmness in the cause. Waller's army, too, was spiritless and immobile. On the 2nd of July, despairing of the existing military system, he made to the Committee of Both Kingdoms the first suggestion of the New Model,—"My lords," he wrote, "till you have an army merely your own, that you may command, it is ... impossible to do anything of importance." Browne's trained band army was perhaps the most ill-behaved of all—once the soldiers attempted to murder their own general. Parliament in alarm set about the formation of a new general service force (July 12), but meantime both Waller's and Browne's armies (at Abingdon and Reading respectively) ignominiously collapsed by mutiny and desertion. It was evident that the people at large, with their respect for the law and their anxiety for their own homes, were tired of the war. Only those men—such as Cromwell—who has set their hearts on fighting out the quarrel of conscience, kept steadfastly to their purpose. Cromwell himself had already decided that the king himself must be deprived of his authority, and his supporters were equally convinced. But they were relatively few. Even the Eastern Association trained bands had joined in the disaffection in Waller's army, and that unfortunate general's suggestion of a professional army, with all its dangers, indicated the only means of enforcing a peace such as Cromwell and his friends desired. There was this important difference, however, between Waller's idea and Cromwell's achievement—that the professional soldiers of the New Model were disciplined, led, and in all things inspired by "godly" officers. Godliness, devotion to the cause, and efficiency were indeed the only criteria Cromwell applied in choosing officers. Long before this he had warned the Scottish major-general Lawrence Crawford that the precise colour of a man's religious opinions mattered nothing compared with his devotion to them, and had told the committee of Suffolk, "I had rather have a plain russet-coated captain that knows what he fights for and loves what he knows than that which you call a 'gentleman' and is nothing else. I honour a gentleman that is so indeed ... but seeing it was necessary the work must go on, better plain men than none." If "men of honour and birth" possessed the essentials of godliness, devotion, and capacity, Cromwell preferred them, and as a fact only seven out of thirty-seven of the superior officers of the original New Model were not of gentle birth.

19. *Lostwithiel.*—But all this was as yet in the future. Essex's military promenade in the west of England was the subject of immediate interest. At first successful, this general penetrated to Plymouth, whence, securely based as he thought, he could overrun Devon. Unfortunately for him he was persuaded to overrun Cornwall as well. At once the Cornishmen rose, as they had

risen under Hopton, and the king was soon on the march from the Oxford region, disregarding the armed mobs under Waller and Browne. Their state reflected the general languishing of the war spirit on both sides, not on one only, as Charles discovered when he learned that Lord Wilmot, the lieutenant-general of his horse, was in correspondence with Essex. Wilmot was of course placed under arrest, and was replaced by the dissolute General Goring. But it was unpleasantly evident that even gay cavaliers of the type of Wilmot had lost the ideals for which they fought, and had come to believe that the realm would never be at peace while Charles was king. Henceforward it will be found that the Royalist foot, now a thoroughly professional force, is superior in quality to the once superb cavalry, and that not merely because its opportunities for plunder, &c., are more limited. Materially, however, the immediate victory was undeniably with the Royalists. After a brief period of manœuvre, the Parliamentary army, now far from Plymouth found itself surrounded and starving at Lostwithiel, on the Fowey river, without hope of assistance. The horse cut its way out through the investing circle of posts, Essex himself escaped by sea, but Major-General Skippon, his second in command, had to surrender with the whole of the foot on the 2nd of September. The officers and men were allowed to go free to Portsmouth, but their arms, guns and munitions were the spoil of the victors. There was now no trustworthy field force in arms for the Parliament south of the Humber, for even the Eastern Association army was distracted by its religious differences, which had now at last come definitely to the front and absorbed the political dispute in a wider issue. Cromwell already proposed to abolish the peerage, the members of which were inclined to make a hollow peace, and had ceased to pay the least respect to his general, Manchester, whose scheme for the solution of the quarrel was an impossible combination of Charles and Presbyterianism. Manchester for his part sank into a state of mere obstinacy, refusing to move against Rupert, even to besiege Newark, and actually threatened to hang Colonel Lilburne for capturing a Royalist castle without orders.

20. *Operations of Essex's, Waller's and Manchester's Armies.*—After the success of Lostwithiel there was little to detain Charles's main army in the extreme west, and meanwhile Banbury, a most important point in the Oxford circle, and Basing House (near Basingstoke) were in danger of capture. Waller, who had organized a small force of reliable troops, had already sent cavalry into Dorsetshire with the idea of assisting Essex, and he now came himself with reinforcements to prevent, so far as lay in his power, the king's return to the Thames valley. Charles was accompanied of course only by his permanent forces and by parts of Prince Maurice's and Hopton's armies—the Cornish levies had as usual scattered as soon as the war receded from their borders. Manchester slowly advanced to Reading, Essex gradually reorganized his broken army at Portsmouth, while Waller, far out to the west at Shaftesbury, endeavored to gain the necessary time and space for a general concentration in Wiltshire, where Charles would be far from Oxford and Basing and, in addition, outnumbered by two to one. But the work of rearming Essex's troops proceeded slowly for want of money, and Manchester peevishly refused to be hurried either by his more vigorous subordinates or by the Committee of Both Kingdoms, saying that the army of the Eastern Association was for the guard of its own employers and not for general service. He pleaded the renewed activity of the Newark Royalists as his excuse, forgetting that Newark would have been in his hands ere this had he chosen to move thither instead of lying idle for two months. As to the higher command, things had come to such a pass that, when the three armies at last united, a council of war, consisting of three army commanders, several senior officers, and two civilian delegates from the Committee, was constituted. When the vote of the majority had determined what was to be done, Essex, as lord general of the Parliament's first army, was to issue the necessary orders for the whole. Under such conditions it was not likely that Waller's hopes of a great battle at Shaftesbury would be realized. On the 8th of October he fell back, the royal army following him step by step and finally reaching Whitchurch on the 20th of October. Manchester arrived at Basingstoke on the 17th, Waller on the 19th, and Essex on the 21st. Charles had found that he could not relieve Basing (a mile or two from Basingstoke) without risking a battle with the enemy between himself and Oxford;[4] he therefore took the Newbury road and relieved Donnington Castle near Newbury on the 22nd. Three days later Banbury too was relieved by a force which could now be spared from the Oxford garrison. But for once the council of war on the other side was for fighting a battle, and the Parliamentary armies, their spirits revived by the prospect of action and by the news of the fall of Newcastle and the defeat of a sally from Newark, marched briskly. On the 26th they appeared north of Newbury on the Oxford road. Like Essex in 1643, Charles found himself headed off from the shelter of friendly fortresses, but beyond this fact there is little similarity between the two battles of Newbury, for the Royalists in the first case merely drew a barrier across Essex's path. On the present occasion the eager Parliamentarians made no attempt to force the king to attack them; they were well content to attack him in his chosen position themselves, especially as he was better off for supplies and quarters than they.

21. *Second Newbury.*—The second battle of Newbury is remarkable as being the first great manœuvre-battle (as distinct from "pitched" battle) of the Civil War. A preliminary reconnaissance by the Parliamentary leaders (Essex was not present, owing to illness) established the fact that the king's infantry held a strong line of defence behind the Lambourn brook from Shaw (inclusive) to Donnington (exclusive), Shaw House and adjacent buildings being held as an advanced post. In rear of the centre, in open ground just north of Newbury, lay the bulk of the royal cavalry. In the left rear of the main line, and separated from it by more than a thousand yards, lay Prince Maurice's corps at Speen, advanced troops on the high ground west of that village, but Donnington Castle, under its energetic governor Sir John Boys, formed a strong post covering this gap with artillery fire. The Parliamentary leaders had no intention of flinging their men away in a frontal attack on the line of the Lambourn, and a flank attack from the east side could hardly succeed owing to the obstacle presented by the confluence of the Lambourn and the Kennet, hence they decided on a wide turning movement via Chieveley, Winterbourne and Wickham Heath, against Prince Maurice's position—a decision which, daring and energetic as it was, led only to a modified success, for reasons which will appear. The flank march, out of range of the castle, was conducted with punctuality and precision. The troops composing it were drawn from all three armies and led by the best fighting generals, Waller, Cromwell, and Essex's subordinates Balfour and Skippon. Manchester at Clay Hill was to stand fast until the turning movement had developed, and to make a vigorous holding attack on Shaw House as soon as Waller's guns were heard at Speen. But there was no commander-in-chief to co-ordinate the movements of the two widely separated corps, and consequently no co-operation. Waller's attack was not unexpected, and Prince Maurice had made ready to meet him. Yet the first rush of the rebels carried the entrenchments of Speen Hill, and Speen itself, though stoutly defended, fell into their hands within an hour, Essex's infantry recapturing here some of the guns they had had to surrender at Lostwithiel. But meantime Manchester, in spite of the entreaties of his staff, had not stirred from Clay Hill. He had made one false attack already early in the morning, and been severely handled, and he was aware of his own deficiencies as a general. A year before this he would have asked for and acted upon the advice of a capable soldier, such as Cromwell or Crawford, but now his mind was warped by a desire for peace on any terms, and he sought only to avoid defeat pending a happy solution of the quarrel. Those who sought to gain peace through victory were meanwhile driving Maurice back from hedge to hedge towards the open ground at Newbury, but every attempt to emerge from the lanes and fields was repulsed by the royal cavalry, and indeed by every available man and horse, for Charles's officers had gauged Manchester's intentions, and almost stripped the front of its defenders to stop Waller's advance. Nightfall put an end to the struggle around Newbury, and then—too late—Manchester ordered the attack on Shaw House. It failed completely in spite of the gallantry of his men, and darkness being then complete it was not renewed. In its general course the battle closely resembled that of Freiburg (*q.v.*), fought the same year on the Rhine. But, if Waller's part in the battle corresponded in a measure to Turenne's, Manchester was unequal to playing the part of Condé, and consequently the results, in the case of the French won by three days' hard fighting, and even then comparatively small, were in the case of the English practically nil. During the night the royal army quietly marched away through the gap between Waller's and Manchester's troops. The heavy artillery and stores were left in Donnington Castle, Charles himself with a small escort rode off to the north-west to meet Rupert, and the main body gained Wallingford unmolested. An attempt at pursuit was made by Waller and Cromwell with all the cavalry they could lay hands on, but it was unsupported, for the council of war had decided to content itself with besieging Donnington Castle. A little later, after a brief and half-hearted attempt to move towards Oxford, it referred to the Committee for further instructions. Within the month Charles, having joined Rupert at Oxford and made him general of the Royalist forces vice Brentford, reappeared in the neighbourhood of Newbury. Donnington Castle was again relieved (November 9) under the eyes of the Parliamentary army, which was in such a miserable condition that even Cromwell was against fighting, and some manœuvres followed, in the course of which Charles relieved Basing House and the Parliamentary armies fell back, not in the best order, to Reading. The season for field warfare was now far spent, and the royal army retired to enjoy good quarters and plentiful supplies around Oxford.

22. *The Self-denying Ordinance.*—On the other side, the dissensions between the generals had become flagrant and public, and it was no longer possible for the Houses of Parliament to ignore the fact that the army must be radically reformed. Cromwell and Waller from their places in parliament attacked Manchester's conduct, and their attack ultimately became, so far as Cromwell was concerned, an attack on the Lords, most of whom held the same views as Manchester, and on the Scots, who attempted to bring

Cromwell to trial as an “incendiary.” At the crisis of their bitter controversy Cromwell suddenly proposed to stifle all animosities by the resignation of all officers who were members of either House, a proposal which affected himself not less than Essex and Manchester. The first “self-denying ordinance” was moved on the 9th of December, and provided that “no member of either house shall have or execute any office or command ...,” &c. This was not accepted by the Lords, and in the end a second “self-denying ordinance” was agreed to (April 3, 1645), whereby all the persons concerned were to resign, but without prejudice to their reappointment. Simultaneously with this, the formation of the New Model was at last definitely taken into consideration. The last exploit of Sir William Waller, who was not re-employed after the passing of the ordinance, was the relief of Taunton, then besieged by General Goring’s army. Cromwell served as his lieutenant-general on this occasion, and we have Waller’s own testimony that he was in all things a wise, capable and respectful subordinate. Under a leader of the stamp of Waller, Cromwell was well satisfied to obey, knowing the cause to be in good hands.

23. *Decline of the Royalist Cause.*—A raid of Goring’s horse from the west into Surrey and an unsuccessful attack on General Browne at Abingdon were the chief enterprises undertaken on the side of the Royalists during the early winter. It was no longer “summer in Devon, summer in Yorkshire” as in January 1643. An ever-growing section of Royalists, amongst whom Rupert himself was soon to be numbered, were for peace; many scores of loyalist gentlemen, impoverished by the loss of three years’ rents of their estates and hopeless of ultimate victory, were making their way to Westminster to give in their submission to the Parliament and to pay their fines. In such circumstances the old decision-seeking strategy was impossible. The new plan, suggested probably by Rupert, had already been tried with strategical success in the summer campaign of 1644. As we have seen, it consisted essentially in using Oxford as the centre of a circle and striking out radially at any favourable target—“manœuvring about a fixed point,” as Napoleon called it. It was significant of the decline of the Royalist cause that the “fixed point” had been in 1643 the king’s field army, based indeed on its great entrenched camp, Banbury-Cirencester-Reading-Oxford, but free to move and to hold the enemy wherever met, while now it was the entrenched camp itself, weakened by the loss or abandonment of its outer posts, and without the power of binding the enemy if they chose to ignore its existence, that conditioned the scope and duration of the single remaining field army’s enterprises.

24. *The New Model Ordinance.*—For the present, however, Charles’s cause was crumbling more from internal weakness than from the blows of the enemy. Fresh negotiations for peace which opened on the 29th of January at Uxbridge (by the name of which place they are known to history) occupied the attention of the Scots and their Presbyterian friends, the rise of Independency and of Cromwell was a further distraction, and over the new army and the Self-denying Ordinance the Lords and Commons were seriously at variance. But in February a fresh mutiny in Waller’s command struck alarm into the hearts of the disputants. The “treaty” of Uxbridge came to the same end as the treaty of Oxford in 1643, and a settlement as to army reform was achieved on the 15th of February. Though it was only on the 25th of March that the second and modified form of the ordinance was agreed to by both Houses, Sir Thomas Fairfax and Philip Skippon (who were not members of parliament) had been approved as lord general and major-general (of the infantry) respectively of the new army as early as the 21st of January. The post of lieutenant-general and cavalry commander was for the moment left vacant, but there was little doubt as to who would eventually occupy it.

25. *Victories of Montrose.*—In Scotland, meanwhile, Montrose was winning victories which amazed the people of the two kingdoms. Montrose’s royalism differed from that of Englishmen of the 17th century less than from that of their forefathers under Henry VIII. and Elizabeth. To him the king was the protector of his people against Presbyterian theocracy, scarcely less offensive to him than the Inquisition itself, and the feudal oppression of the great nobles. Little as this ideal corresponded to the Charles of reality, it inspired in Montrose not merely romantic heroism but a force of leadership which was sufficient to carry to victory the nobles and gentry, the wild Highlanders and the experienced professional soldiers who at various times and places constituted his little armies. His first unsuccessful enterprise has been mentioned above. It seemed, in the early stages of his second attempt (August 1644), as if failure were again inevitable, for the gentry of the northern Lowlands were overawed by the prevailing party and resented the leadership of a lesser noble, even though he were the king’s lieutenant over all Scotland. Disappointed of support where he most expected it, Montrose then turned to the Highlands. At Blair Athol he gathered his first army of Royalist clansmen, and good fortune gave him also a nucleus of trained troops. A force of disciplined experienced soldiers (chiefly Irish Macdonalds and commanded by Alastair of that name) had been sent over from Ireland earlier in the year, and, after ravaging the glens of their hereditary enemies the Campbells, had attempted without success, now here, now there, to gather the other clans in the king’s name. Their hand was against every man’s, and when he finally arrived in Badenoch, Alastair Macdonald was glad to protect himself by submitting to the authority of the king’s lieutenant.

There were three hostile armies to be dealt with, besides—ultimately—the main covenanting army far away in England. The duke of Argyll, the head of the Campbells, had an army of his own clan and of Lowland Covenanter levies, Lord Elcho with another Lowland army lay near Perth, and Lord Balfour of Burleigh was collecting a third (also composed of Lowlanders) at Aberdeen. Montrose turned upon Elcho first, and found him at Tippermuir near Perth on the 1st of September 1644. The Royalists were about 3000 strong and entirely foot, only Montrose himself and two others being mounted, while Elcho had about 7000 of all arms. But Elcho’s townsmen found that pike and musket were clumsy weapons in inexperienced hands, and, like Mackay’s regulars at Killiecrankie fifty years later, they wholly failed to stop the rush of the Highland swordsmen. Many hundreds were killed in the pursuit, and Montrose slept in Perth that night, having thus accounted for one of his enemies. Balfour of Burleigh was to be his next victim, and he started for Aberdeen on the 4th. As he marched, his Highlanders slipped away to place their booty in security. But the Macdonald regulars remained with him, and as he passed along the coast some of the gentry came in, though the great western clan of the Gordons was at present too far divided in sentiment to take his part. Lord Lewis Gordon and some Gordon horse were even in Balfour’s army. On the other hand, the earl of Airlie brought in forty-four horsemen, and Montrose was thus able to constitute two wings of cavalry on the day of battle. The Covenanters were about 2500 strong and drawn up on a slope above the How Burn[5] just outside Aberdeen (September 13, 1644). Montrose, after clearing away the enemy’s skirmishers, drew up his army in front of the opposing line, the foot in the centre, the forty-four mounted men, with musketeers to support them, on either flank. The hostile left-wing cavalry charged piecemeal, and some bodies of troops did not engage at all. On the other wing, however, Montrose was for a moment hard pressed by a force of the enemy that attempted to work round to his rear. But he brought over the small band of mounted men that constituted his right wing cavalry, and also some musketeers from the centre, and destroyed the assailants, and when the ill-led left wing of the Covenanters charged again, during the absence of the cavalry, they were mown down by the close-range volleys of Macdonald’s musketeers. Shortly afterwards the centre of Balfour’s army yielded to pressure and fled in disorder. Aberdeen was sacked by order of Montrose, whose drummer had been murdered while delivering a message under a flag of truce to the magistrates.

26. *Inverlochy.*—Only Argyll now remained to be dealt with. The Campbells were fighting men from birth, like Montrose’s own men, and had few townsmen serving with them. Still there were enough of the latter and of the impedimenta of regular warfare with him to prevent Argyll from overtaking his agile enemy, and ultimately after a “hide-and-seek” in the districts of Rothiemurchus, Blair Athol, Banchory and Strathbogie, Montrose stood to fight at Fyvie Castle, repulsed Argyll’s attack on that place and slipped away again to Rothiemurchus. There he was joined by Camerons and Macdonalds from all quarters for a grand raid on the Campbell country; he himself wished to march into the Lowlands, well knowing that he could not achieve the decision in the Grampians, but he had to bow, not for the first time nor the last, to local importunity. The raid was duly executed, and the Campbells’ boast, “It’s a far cry to Loch Awe,” availed them little. In December and January the Campbell lands were thoroughly and mercilessly devastated, and Montrose then retired slowly to Loch Ness, where the bulk of his army as usual dispersed to store away its plunder. Argyll, with such Highland and Lowland forces as he could collect after the disaster, followed Montrose towards Lochaber, while the Seaforths and other northern clans marched to Loch Ness. Caught between them, Montrose attacked the nearest. The Royalists crossed the hills into Glen Roy, worked thence along the northern face of Ben Nevis, and descended like an avalanche upon Argyll’s forces at Inverlochy (February 2, 1645). As usual, the Lowland regiments gave way at once—Montrose had managed in all this to keep with him a few cavalry—and it was then the turn of the Campbells. Argyll escaped in a boat, but his clan, as a fighting force, was practically annihilated, and Montrose, having won four victories in these six winter months, rested his men and exultingly promised Charles that he would come to his assistance with a brave army before the end of the summer.

27. *Organization of the New Model Army.*—To return to the New Model. Its first necessity was regular pay; its first duty to serve wherever it might be sent. Of the three armies that had fought at Newbury only one, Essex’s, was in a true sense a general service

force, and only one, Manchester's, was paid with any regularity. Waller's army was no better paid than Essex's and no more free from local ties than Manchester's. It was therefore broken up early in April, and only 600 of its infantry passed into the New Model. Essex's men, on the other hand, wanted but regular pay and strict officers to make them excellent soldiers, and their own major-general, Skippon, managed by tact and his personal popularity to persuade the bulk of the men to rejoin. Manchester's army, in which Cromwell had been the guiding influence from first to last, was naturally the backbone of the New Model. Early in April Essex, Manchester, and Waller resigned their commissions, and such of their forces as were not embodied in the new army were sent to do local duties, for minor armies were still maintained, General Poyntz's in the north midlands, General Massey's in the Severn valley, a large force in the Eastern Association, General Browne's in Buckinghamshire, &c., besides the Scots in the north.

The New Model originally consisted of 14,400 foot and 7700 horse and dragoons. Of the infantry only 6000 came from the combined armies, the rest being new recruits furnished by the press.[6] Thus there was considerable trouble during the first months of Fairfax's command, and discipline had to be enforced with unusual sternness. As for the enemy, Oxford was openly contemptuous of "the rebels' new brutish general" and his men, who seemed hardly likely to succeed where Essex and Waller had failed. But the effect of the Parliament's having "an army all its own" was soon to be apparent.

28. *First Operations of 1645.*—On the Royalist side the campaign of 1645 opened in the west, whither the young prince of Wales (Charles II.) was sent with Hyde (later earl of Clarendon), Hopton and others as his advisers. General (Lord) Goring, however, now in command of the Royalist field forces in this quarter, was truculent, insubordinate and dissolute, though on the rare occasions when he did his duty he displayed a certain degree of skill and leadership, and the influence of the prince's counsellors was but small. As usual, operations began with the sieges necessary to conciliate local feeling. Plymouth and Lyme were blocked up, and Taunton again invested. The reinforcement thrown into the last place by Waller and Cromwell was dismissed by Blake (then a colonel in command of the fortress and afterwards the great admiral of the Commonwealth), and after many adventures rejoined Waller and Cromwell. The latter generals, who had not yet laid down their commissions, then engaged Goring for some weeks, but neither side having infantry or artillery, and both finding subsistence difficult in February and March and in country that had been fought over for two years past, no results were to be expected. Taunton still remained unrelieved, and Goring's horse still rode all over Dorsetshire when the New Model at last took the field.

29. *Rupert's Northern March.*—In the midlands and Lancashire the Royalist horse, as ill-behaved even as Goring's men, were directly responsible for the ignominious failure with which the king's main army began its year's work. Prince Maurice was joined at Ludlow by Rupert and part of his Oxford army early in March, and the brothers drove off Brereton from the siege of Beeston Castle and relieved the pressure on Lord Byron in Cheshire. So great was the danger of Rupert's again invading Lancashire and Yorkshire that all available forces in the north, English and Scots, were ordered to march against him. But at this moment the prince was called back to clear his line of retreat on Oxford. The Herefordshire and Worcestershire peasantry, weary of military exactions, were in arms, and though they would not join the Parliament, and for the most part dispersed after stating their grievances, the main enterprise was wrecked. This was but one of many ill-armed crowds—"Clubmen" as they were called—that assembled to enforce peace on both parties. A few regular soldiers were sufficient to disperse them in all cases, but their attempt to establish a third party in England was morally as significant as it was materially futile. The Royalists were now fighting with the courage of despair, those who still fought against Charles did so with the full determination to ensure the triumph of their cause, and with the conviction that the only possible way was the annihilation of the enemy's armed forces, but the majority were so weary of the war that the earl of Manchester's Presbyterian royalism—which had contributed so materially to the prolongation of the struggle—would probably have been accepted by four-fifths of all England as the basis of a peace. It was, in fact, in the face of almost universal opposition that Fairfax and Cromwell and their friends at Westminster guided the cause of their weaker comrades to complete victory.

30. *Cromwell's Raid.*—Having without difficulty rid himself of the Clubmen, Rupert was eager to resume his march into the north. It is unlikely that he wished to join Montrose, though Charles himself favoured that plan, but he certainly intended to fight the Scottish army, more especially as after Inverlochy it had been called upon to detach a large force to deal with Montrose. But this time there was no Royalist army in the north to provide infantry and guns for a pitched battle, and Rupert had perforce to wait near Hereford till the main body, and in particular the artillery train, could come from Oxford and join him. It was on the march of the artillery train to Hereford that the first operations of the New Model centred. The infantry was not yet ready to move, in spite of all Fairfax's and Skippon's efforts, and it became necessary to send the cavalry by itself to prevent Rupert from gaining a start. Cromwell, then under Waller's command, had come to Windsor to resign his commission as required by the Self-denying Ordinance. Instead, he was placed at the head of a brigade of his own old soldiers, with orders to stop the march of the artillery train. On the 23rd of April he started from Watlington north-westward. At dawn on the 24th he routed a detachment of Royalist horse at Islip. On the same day, though he had no guns and only a few firearms in the whole force, he terrified the governor of Bletchingdon House into surrender. Riding thence to Witney, Cromwell won another cavalry fight at Bampton-in-the-Bush on the 27th, and attacked Faringdon House, though without success, on the 29th. Thence he marched at leisure to Newbury. He had done his work thoroughly. He had demoralized the Royalist cavalry, and, above all, had carried off every horse on the countryside. To all Rupert's entreaties Charles could only reply that the guns could not be moved till the 7th of May, and he even summoned Goring's cavalry from the west to make good his losses.

31. *Civilian Strategy.*—Cromwell's success thus forced the king to concentrate his various armies in the neighbourhood of Oxford, and the New Model had, so Fairfax and Cromwell hoped, found its target. But the Committee of Both Kingdoms on the one side, and Charles, Rupert and Goring on the other, held different views. On the 1st of May Fairfax, having been ordered to relieve Taunton, set out from Windsor for the long march to that place; meeting Cromwell at Newbury on the 2nd, he directed the lieutenant-general to watch the movements of the king's army, and himself marched on to Blandford, which he reached on the 7th of May. Thus Fairfax and the main army of the Parliament were marching away in the west while Cromwell's detachment was left, as Waller had been left the previous year, to hold the king as best he could. On the very evening that Cromwell's raid ended, the leading troops of Goring's command destroyed part of Cromwell's own regiment near Faringdon, and on the 3rd Rupert and Maurice appeared with a force of all arms at Burford. Yet the Committee of Both Kingdoms, though aware on the 29th of Goring's move, only made up its mind to stop Fairfax on the 3rd, and did not send off orders till the 5th. These orders were to the effect that a detachment was to be sent to the relief of Taunton, and that the main army was to return. Fairfax gladly obeyed, even though a siege of Oxford and not the enemy's field army was the objective assigned him. But long before he came up to the Thames valley the situation was again changed. Rupert, now in possession of the guns and their teams, urged upon his uncle the resumption of the northern enterprise, calculating that with Fairfax in Somersetshire, Oxford was safe. Charles accordingly marched out of Oxford on the 7th towards Stow-on-the-Wold, on the very day, as it chanced, that Fairfax began his return march from Blandford. But Goring and most of the other generals were for a march into the west, in the hope of dealing with Fairfax as they had dealt with Essex in 1644. The armies therefore parted as Essex and Waller had parted at the same place in 1644, Rupert and the king to march northward, Goring to return to his independent command in the west. Rupert, not unnaturally wishing to keep his influence with the king and his authority as general of the king's army unimpaired by Goring's notorious indiscipline, made no attempt to prevent the separation, which in the event proved wholly unprofitable. The flying column from Blandford relieved Taunton long before Goring's return to the west, and Colonel Weldon and Colonel Graves, its commanders, set him at defiance even in the open country. As for Fairfax, he was out of Goring's reach preparing for the siege of Oxford.

32. *Charles in the Midlands.*—On the other side also the generals were working by data that had ceased to have any value. Fairfax's siege of Oxford, ordered by the Committee on the 10th of May, and persisted in after it was known that the king was on the move, was the second great blunder of the year and was hardly redeemed, as a military measure, by the visionary scheme of assembling the Scots, the Yorkshiremen, and the midland forces to oppose the king. It is hard to understand how, having created a new model army "all its own" for general service, the Parliament at once tied it down to a local enterprise, and trusted an improvised army of local troops to fight the enemy's main army. In reality the Committee seems to have been misled by false information to the effect that Goring and the governor of Oxford were about to declare for the Parliament, but had they not despatched Fairfax to the relief of Taunton in the first instance the necessity for such intrigues would not have arisen. However, Fairfax obeyed orders, invested Oxford, and, so far as he was able without a proper siege train, besieged it for two weeks, while Charles and Rupert ranged the midlands unopposed. At the end of that time came news so alarming that the Committee hastily

abdicated their control over military operations and gave Fairfax a free hand. “Black Tom” gladly and instantly abandoned the siege and marched northward to give battle to the king.

Meanwhile Charles and Rupert were moving northward. On the 11th of May they reached Droitwich, whence after two days’ rest they marched against Brereton. The latter hurriedly raised the sieges he had on hand, and called upon Yorkshire and the Scottish army there for aid. But only the old Lord Fairfax and the Yorkshiremen responded. Leven had just heard of new victories won by Montrose, and could do no more than draw his army and his guns over the Pennine chain into Westmorland in the hope of being in time to bar the king’s march on Scotland via Carlisle.

33. *Dundee.*—After the destruction of the Campbells at Inverlochy, Montrose had cleared away the rest of his enemies without difficulty. He now gained a respectable force of cavalry by the adhesion of Lord Gordon and many of his clan, and this reinforcement was the more necessary as detachments from Leven’s army under Baillie and Hurry—disciplined infantry and cavalry—were on the march to meet him. The Royalists marched by Elgin and through the Gordon country to Aberdeen, and thence across the Esk to Coupar-Angus, where Baillie and Hurry were encountered. A war of manœuvre followed, in which they thwarted every effort of the Royalists to break through into the Lowlands, but in the end retired into Fife. Montrose thereupon marched into the hills with the intention of reaching the upper Forth and thence the Lowlands, for he did not disguise from himself the fact that there, and not in the Highlands, would the quarrel be decided, and was sanguine—over-sanguine, as the event proved—as to the support he would obtain from those who hated the kirk and its system. But he had called to his aid the semi-barbarous Highlanders, and however much the Lowlands resented a Presbyterian inquisition, they hated and feared the Highland clans beyond all else. He was equally disappointed in his own army. For a war of positions the Highlanders had neither aptitude nor inclination, and at Dunkeld the greater part of them went home. If the small remnant was to be kept to its duty, plunder must be found, and the best objective was the town of Dundee. With a small force of 750 foot and horse Montrose brilliantly surprised that place on the 4th of April, but Baillie and Hurry were not far distant, and before Montrose’s men had time to plunder the prize they were collected to face the enemy. His retreat from Dundee was considered a model operation by foreign students of the art of war (then almost as numerous as now), and what surprised them most was that Montrose could rally his men after a sack had begun. The retreat itself was remarkable enough. Baillie moved parallel to Montrose on his left flank towards Arbroath, constantly heading him off from the hills and attempting to pin him against the sea. Montrose, however, halted in the dark so as to let Baillie get ahead of him and then turned sharply back, crossed Baillie’s track, and made for the hills. Baillie soon realized what had happened and turned back also, but an hour too late. By the 6th the Royalists were again safe in the broken country of the Esk valley. But Montrose cherished no illusions as to joining the king at once; all he could do, he now wrote, was to neutralize as many of the enemy’s forces as possible.

34. *Auldearn.*—For a time he wandered in the Highlands seeking recruits. But soon he learned that Baillie and Hurry had divided their forces, the former remaining about Perth and Stirling to observe him, the latter going north to suppress the Gordons. Strategy and policy combined to make Hurry the objective of the next expedition. But the soldier of fortune who commanded the Covenanters at Aberdeen was no mean antagonist. Marching at once with a large army (formed on the nucleus of his own trained troops and for the rest composed of clansmen and volunteers) Hurry advanced to Elgin, took contact with Montrose there, and, gradually and skilfully retiring, drew him into the hostile country round Inverness. Montrose fell into the trap, and Hurry took his measures to surprise him at Auldearn so successfully that (May 9) Montrose, even though the indiscipline of some of Hurry’s young soldiers during the night march gave him the alarm, had barely time to form up before the enemy was upon him. But the best strategy is of no avail when the battle it produces goes against the strategist, and Montrose’s tactical skill was never more conspicuous than at Auldearn. Alastair Macdonald with most of the Royalist infantry and the Royal standard was posted to the right (north) of the village to draw upon himself the weight of Hurry’s attack; only enough men were posted in the village itself to show that it was occupied, and on the south side, out of sight, was Montrose himself with a body of foot and all the Gordon horse. It was the prototype, on a small scale, of Austerlitz. Macdonald resisted sturdily while Montrose edged away from the scene of action, and at the right moment and not before, though Macdonald had been driven back on the village and was fighting for life amongst the gardens and enclosures, Montrose let loose Lord Gordon’s cavalry. These, abandoning for once the pistol tactics of their time, charged home with the sword. The enemy’s right wing cavalry was scattered in an instant, the nearest infantry was promptly ridden down, and soon Hurry’s army had ceased to exist.

35. *Campaign of Naseby.*—If the news of Auldearn brought Leven to the region of Carlisle, it had little effect on his English allies. Fairfax was not yet released from the siege of Oxford, in spite of the protests of the Scottish representatives in London. Massey, the active and successful governor of Gloucester, was placed in command of a field force on the 25th of May, but he was to lead it against, not the king, but Goring. At that moment the military situation once more changed abruptly. Charles, instead of continuing his march on to Lancashire, turned due eastward towards Derbyshire. The alarm at Westminster when this new development was reported was such that Cromwell, in spite of the Self-Denying Ordinance, was sent to raise an army for the defence of the Eastern Association. Yet the Royalists had no intentions in that direction. Conflicting reports as to the condition of Oxford reached the royal headquarters in the last week of May, and the eastward march was made chiefly to “spin out time” until it could be known whether it would be necessary to return to Oxford, or whether it was still possible to fight Leven in Yorkshire—his move into Westmorland was not yet known—and invade Scotland by the easy east coast route.

Goring’s return to the west had already been countermanded and he had been directed to march to Harborough, while the South Wales Royalists were also called in towards Leicester. Later orders (May 26) directed him to Newbury, whence he was to feel the strength of the enemy’s positions around Oxford. It is hardly necessary to say that Goring found good military reasons for continuing his independent operations, and marched off towards Taunton regardless of the order. He redressed the balance there for the moment by overawing Massey’s weak force, and his purse profited considerably by fresh opportunities for extortion, but he and his men were not at Naseby. Meanwhile the king, at the geographical centre of England, found an important and wealthy town at his mercy. Rupert, always for action, took the opportunity, and Leicester was stormed and thoroughly pillaged on the night of the 30th-31st of May. There was the usual panic at Westminster, but, unfortunately for Charles, it resulted in Fairfax being directed to abandon the siege of Oxford and given *carte blanche* to bring the Royal army to battle wherever it was met. On his side the king had, after the capture of Leicester, accepted the advice of those who feared for the safety of Oxford—Rupert, though commander-in-chief, was unable to insist on the northern enterprise—and had marched to Daventry, where he halted to throw supplies into Oxford. Thus Fairfax in his turn was free to move, thanks to the insubordination of Goring, who would neither relieve Oxford nor join the king for an attack on the New Model. The Parliamentary general moved from Oxford towards Northampton so as to cover the Eastern Association. On the 12th of June the two armies were only a few miles apart, Fairfax at Kislingbury, Charles at Daventry, and, though the Royalists turned northward again on the 13th to resume the Yorkshire project under the very eyes of the enemy, Fairfax followed close. On the night of the 13th Charles slept at Lubenham, Fairfax at Guilsborough. Cromwell, just appointed lieutenant-general of the New Model, had ridden into camp on the morning of the 13th with fresh cavalry from the eastern counties, Colonel Rossiter came up with more from Lincolnshire on the morning of the battle, and it was with an incontestable superiority of numbers and an overwhelming moral advantage that Fairfax fought at Naseby (*q.v.*) on the 14th of June. The result of the battle, this time a decisive battle, was the annihilation of the Royal army. Part of the cavalry escaped, a small fraction of it in tolerable order, but the guns and the baggage train were taken, and, above all, the splendid Royal infantry were killed or taken prisoners to a man.

36. *Effects of Naseby.*—After Naseby, though the war dragged on for another year, the king never succeeded in raising an army as good as, or even more numerous than, that which Fairfax’s army had so heavily outnumbered on the 14th of June. That the fruits of the victory could not be gathered in a few weeks was due to a variety of hindrances rather than to direct opposition—to the absence of rapid means of communication, the paucity of the forces engaged on both sides relatively to the total numbers under arms, and from time to time to the political exigencies of the growing quarrel between Presbyterians and Independents. As to the latter, within a few days of Naseby, the Scots rejoiced that the “back of the malignants was broken,” and demanded reinforcements as a precaution against “the insolence of others,” *i.e.* Cromwell and the Independents—“to whom alone the Lord has given the victory of that day.” Leven had by now returned to Yorkshire, and a fortnight after Naseby, after a long and honourable defence by Sir Thomas Glemham, Carlisle fell to David Leslie’s besieging corps. Leicester was reoccupied by Fairfax on the 18th, and on the 20th Leven’s army, moving slowly southward, reached Mansfield. This move was undertaken largely for political reasons, *i.e.* to restore the Presbyterian balance as against the victorious New Model. Fairfax’s army was intended by its founders to be a specifically English army, and Cromwell for one would have employed it against the Scots almost as readily as against malignants.

But for the moment the advance of the northern army was of the highest military importance, for Fairfax was thereby set free from the necessity of undertaking sieges. Moreover, the publication of the king's papers taken at Naseby gave Fairfax's troops a measure of official and popular support which a month before they could not have been said to possess, for it was now obvious that they represented the armed force of England against the Irish, Danes, French, Lorrainers, &c., whom Charles had for three years been endeavouring to let loose on English soil. Even the Presbyterians abandoned for the time any attempt to negotiate with the king, and advocated a vigorous prosecution of the war.

37. *Fairfax's Western Campaign.*—This, in the hands of Fairfax and Cromwell, was likely to be effective. While the king and Rupert, with the remnant of their cavalry, hurried into South Wales to join Sir Charles Gerard's troops and to raise fresh infantry, Fairfax decided that Goring's was the most important Royalist army in the field, and turned to the west, reaching Lechlade on the 26th, less than a fortnight after the battle of Naseby. One last attempt was made to dictate the plan of campaign from Westminster, but the Committee refused to pass on the directions of the Houses, and he remained free to deal with Goring as he desired. Time pressed; Charles in Monmouthshire and Rupert at Bristol were well placed for a junction with Goring, which would have given them a united army 15,000 strong. Taunton, in spite of Massey's efforts to keep the field, was again besieged, and in Wilts and Dorset numerous bands of Clubmen were on foot which the king's officers were doing their best to turn into troops for their master. But the process of collecting a fresh royal army was slow, and Goring and his subordinate, Sir Richard Grenville, were alienating the king's most devoted adherents by their rapacity, cruelty and debauchery. Moreover, Goring had no desire to lose the independent command he had extorted at Stow-on-the-Wold in May. Still, it was clear that he must be disposed of as quickly as possible, and 415
Fairfax requested the Houses to take other measures against the king (June 26). This they did by paying up the arrears due to Leven's army and bringing it to the Severn valley. On the 8th of July Leven reached Alcester, bringing with him a Parliamentarian force from Derbyshire under Sir John Gell. The design was to besiege Hereford.

38. *Langport.*—By that time Fairfax and Goring were at close quarters. The Royalist general's line of defence faced west along the Yeo and the Parrett between Yeovil and Bridgwater, and thus barred the direct route to Taunton. Fairfax, however, marched from Lechlade via Marlborough and Blandford—hindered only by Clubmen—to the friendly posts of Dorchester and Lyme, and with these as his centre of operations he was able to turn the headwaters of Goring's river-line via Beaminster and Crewkerne. The Royalists at once abandoned the south and west side of the rivers—the siege of Taunton had already been given up—and passed over to the north and east bank. Bridgwater was the right of this second line as it had been the left of the first; the new left was at Ilchester. Goring could thus remain in touch with Charles in south Wales through Bristol, and the siege of Taunton having been given up there was no longer any incentive for remaining on the wrong side of the water-line. But his army was thoroughly demoralized by its own licence and indiscipline, and the swift, handy and resolute regiments of the New Model made short work of its strong positions. On the 7th of July, demonstrating against the points of passage between Ilchester and Langport, Fairfax secretly occupied Yeovil. The post at that place, which had been the right of Goring's first position, had, perhaps rightly, been withdrawn to Ilchester when the second position was taken up, and Fairfax repaired the bridge without interruption. Goring showed himself unequal to the new situation. He might, if sober, make a good plan when the enemy was not present to disturb him, and he certainly led cavalry charges with boldness and skill. But of strategy in front of the enemy he was incapable. On the news from Yeovil he abandoned the line of the Yeo as far as Langport without striking a blow, and Fairfax, having nothing to gain by continuing his détour through Yeovil, came back and quietly crossed at Long Sutton, west of Ilchester (July 9). Goring had by now formed a new plan. A strong rearguard was posted at Langport and on high ground east and north-east of it to hold Fairfax, and he himself with the cavalry rode off early on the 8th to try and surprise Taunton. This place was no longer protected by Massey's little army, which Fairfax had called up to assist his own. But Fairfax, who was not yet across Long Sutton bridge, heard of Goring's raid in good time, and sent Massey after him with a body of horse. Massey surprised a large party of the Royalists at Ilminster on the 9th, wounded Goring himself, and pursued the fugitives up to the south-eastern edge of Langport. On the 10th Fairfax's advanced guard, led by Major Bethel of Cromwell's own regiment, brilliantly stormed the position of Goring's rearguard east of Langport, and the cavalry of the New Model, led by Cromwell himself, swept in pursuit right up to the gates of Bridgwater, where Goring's army, dismayed and on the point of collapse, was more or less rallied. Thence Goring himself retired to Barnstaple. His army, under the regimental officers, defended itself in Bridgwater resolutely till the 23rd of July, when it capitulated. The fall of Bridgwater gave Fairfax complete control of Somerset and Dorset from Lyme to the Bristol channel. Even in the unlikely event of Goring's raising a fresh army, he would now have to break through towards Bristol by open force, and a battle between Goring and Fairfax could only have one result. Thus Charles had perforce to give up his intention of joining Goring—his recruiting operations in south Wales had not been so successful as he hoped, owing to the apathy of the people and the vigour of the local Parliamentary leaders—and to resume the northern enterprise begun in the spring.

39. *Schemes of Lord Digby.*—This time Rupert would not be with him. The prince, now despairing of success and hoping only for a peace on the best terms procurable, listlessly returned to his governorship of Bristol and prepared to meet Fairfax's impending attack. The influence of Rupert was supplanted by that of Lord Digby. As sanguine as Charles and far more energetic, he was for the rest of the campaign the guiding spirit of the Royalists, but being a civilian he proved incapable of judging the military factors in the situation from a military standpoint, and not only did he offend the officers by constituting himself a sort of confidential military secretary to the king, but he was distrusted by all sections of Royalists for his reckless optimism. The resumption of the northern enterprise, opposed by Rupert and directly inspired by Digby, led to nothing. Charles marched by Bridgnorth, Lichfield and Ashbourne to Doncaster, where on the 18th of August he was met by great numbers of Yorkshire gentlemen with promises of fresh recruits. For a moment the outlook was bright, for the Derbyshire men with Gell were far away at Worcester with Leven, the Yorkshire Parliamentarians engaged in besieging Scarborough Castle, Pontefract and other posts. But two days later he heard that David Leslie with the cavalry of Leven's army was coming up behind him, and that, the Yorkshire sieges being now ended, Major-General Poyntz's force lay in his front. It was now impossible to wait for the new levies, and reluctantly the king turned back to Oxford, raiding Huntingdonshire and other parts of the hated Eastern Association *en route*.

40. *Montrose's Last Victories.*—David Leslie did not pursue him. Montrose, though the king did not yet know it, had won two more battles, and was practically master of all Scotland. After Auldearn he had turned to meet Baillie's army in Strathspey, and by superior mobility and skill forced that commander to keep at a respectful distance. He then turned upon a new army which Lindsay, titular earl of Crawford, was forming in Forfarshire, but that commander betook himself to a safe distance, and Montrose withdrew into the Highlands to find recruits (June). The victors of Auldearn had mostly dispersed on the usual errand, and he was now deserted by most of the Gordons, who were recalled by the chief of their clan, the marquess of Huntly, in spite of the indignant remonstrances of Huntly's heir, Lord Gordon, who was Montrose's warmest admirer. Baillie now approached again, but he was weakened by having to find trained troops to stiffen Lindsay's levies, and a strong force of the Gordons had now been persuaded to rejoin Montrose. The two armies met in battle near Alford on the Don; little can be said of the engagement save that Montrose had to fight cautiously and tentatively as at Aberdeen, not in the decision-forcing spirit of Auldearn, and that in the end Baillie's cavalry gave way and his infantry was cut down as it stood. Lord Gordon was amongst the Royalist dead (July 2). The plunder was put away in the glens before any attempt was made to go forward, and thus the Covenanters had leisure to form a numerous, if not very coherent, army on the nucleus of Lindsay's troops. Baillie, much against his will, was continued in the command, with a council of war (chiefly of nobles whom Montrose had already defeated, such as Argyll, Elcho and Balfour) to direct his every movement. Montrose, when rejoined by the Highlanders, moved to meet him, and in the last week of July and the early part of August there were manœuvres and minor engagements round Perth. About the 7th of August Montrose suddenly slipped away into the Lowlands, heading for Glasgow. Thereupon another Covenanting army began to assemble in Clydesdale. But it was clear that Montrose could beat mere levies, and Baillie, though without authority and despairing of success, hurried after him. Montrose then, having drawn Baillie's Fifeshire militia far enough from home to ensure their being discontented, turned upon them on the 14th of August near Kilsyth. Baillie protested against fighting, but his aristocratic masters of the council of war decided to cut off Montrose from the hills by turning his left wing. The Royalist general seized the opportunity, and his advance caught them in the very act of making a flank march (August 15). The head of the Covenanters' column was met and stopped by the furious attack of the Gordon infantry, and Alastair Macdonald led the men of his own name and the Macleans against its flank. A breach was made in the centre of Baillie's army at the first rush, and then Montrose sent in the Gordon and Ogilvy horse. The leading half of the column was 416
surrounded, broken up and annihilated. The rear half, seeing the fate of its comrades, took to flight, but in vain, for the Highlanders pursued *à outrance*. Only about one hundred Covenanting infantry out of six thousand escaped. Montrose was now indeed the king's lieutenant in all Scotland.

41. *Fall of Bristol.*—But Charles was in no case to resume his northern march. Fairfax and the New Model, after reducing Bridgwater, had turned back to clear away the Dorsetshire Clubmen and to besiege Sherborne Castle. On the completion of this task, it had been decided to besiege Bristol, and on the 23rd of August—while the king's army was still in Huntingdon, and Goring was trying to raise a new army to replace the one he had lost at Langport and Bridgwater—the city was invested. In these urgent circumstances Charles left Oxford for the west only a day or two after he had come in from the Eastern Association raid. Calculating that Rupert could hold out longest, he first moved to the relief of Worcester, around which place Leven's Scots, no longer having Leslie's cavalry with them to find supplies, were more occupied with plundering their immediate neighbourhood for food than with the siege works. Worcester was relieved on the 1st of September by the king. David Leslie with all his cavalry was already on the march to meet Montrose, and Leven had no alternative but to draw off his infantry without fighting. Charles entered Worcester on the 8th, but he found that he could no longer expect recruits from South Wales. Worse was to come. A few hours later, on the night of the 9th-10th, Fairfax's army stormed Bristol. Rupert had long realized the hopelessness of further fighting—the very summons to surrender sent in by Fairfax placed the fate of Bristol on the political issue,—the lines of defence around the place were too extensive for his small force, and on the 11th he surrendered on terms. He was escorted to Oxford with his men, conversing as he rode with the officers of the escort about peace and the future of his adopted country. Charles, almost stunned by the suddenness of the catastrophe, dismissed his nephew from all his offices and ordered him to leave England, and for almost the last time called upon Goring to rejoin the main army—if a tiny force of raw infantry and disheartened cavalry can be so called—in the neighbourhood of Raglan. But before Goring could be brought to withdraw his objections Charles had again turned northward towards Montrose. A weary march through the Welsh hills brought the Royal army on the 22nd of September to the neighbourhood of Chester. Charles himself with one body entered the city, which was partially invested by the Parliamentarian colonel Michael Jones, and the rest under Sir Marmaduke Langdale was sent to take Jones's lines in reverse. But at the opportune moment Poyntz's forces, which had followed the king's movements since he left Doncaster in the middle of August, appeared in rear of Langdale, and defeated him in the battle of Rowton Heath (September 24), while at the same time a sortie of the king's troops from Chester was repulsed by Jones. Thereupon the Royal army withdrew to Denbigh, and Chester, the only important seaport remaining to connect Charles with Ireland, was again besieged.

42. *Philiphaugh.*—Nor was Montrose's position, even after Kilsyth, encouraging, in spite of the persistent rumours of fighting in Westmorland that reached Charles and Digby. Glasgow and Edinburgh were indeed occupied, and a parliament summoned in the king's name. But Montrose had now to choose between Highlanders and Lowlanders. The former, strictly kept away from all that was worth plundering, rapidly vanished, even Alastair Macdonald going with the rest. Without the Macdonalds and the Gordons, Montrose's military and political resettlement of Scotland could only be shadowy, and when he demanded support from the sturdy middle classes of the Lowlands, it was not forgotten that he had led Highlanders to the sack of Lowland towns. Thus his new supporters could only come from amongst the discontented and undisciplined Border lords and gentry, and long before these moved to join him the romantic conquest of Scotland was over. On the 6th of September David Leslie had recrossed the frontier with his cavalry and some infantry he had picked up on the way through northern England. Early on the morning of the 13th he surprised Montrose at Philiphaugh near Selkirk. The king's lieutenant had only 650 men against 4000, and the battle did not last long. Montrose escaped with a few of his principal adherents, but his little army was annihilated. Of the veteran Macdonald infantry, 500 strong that morning, 250 were killed in the battle and the remainder put to death after accepting quarter. The Irish, even when they bore a Scottish name, were, by Scotsmen even more than Englishmen, regarded as beasts to be knocked on the head. After Naseby the Irishwomen found in the king's camp were branded by order of Fairfax; after Philiphaugh more than 300 women, wives or followers of Macdonald's men, were butchered. Montrose's Highlanders at their worst were no more cruel than the sober soldiers of the kirk.

43. *Digby's Northern Expedition.*—Charles received the news of Philiphaugh on the 28th of September, and gave orders that the west should be abandoned, the prince of Wales should be sent to France, and Goring should bring up what forces he could to the Oxford region. On the 4th of October Charles himself reached Newark (whither he had marched from Denbigh after revictualling Chester and suffering the defeat of Rowton Heath). The intention to go to Montrose was of course given up, at any rate for the present, and he was merely waiting for Goring and the Royalist militia of the west—each in its own way a broken reed to lean upon. A hollow reconciliation was patched up between Charles and Rupert, and the court remained at Newark for over a month. Before it set out to return to Oxford another Royalist force had been destroyed. On the 14th of October, receiving information that Montrose had raised a new army, the king permitted Langdale's northern troops to make a fresh attempt to reach Scotland. At Langdale's request Digby was appointed to command in this enterprise, and, civilian though he was, and disastrous though his influence had been to the discipline of the army, he led it boldly and skilfully. His immediate opponent was Poyntz, who had followed the king step by step from Doncaster to Chester and back to Welbeck, and he succeeded on the 15th in surprising Poyntz's entire force of foot at Sherburn. Poyntz's cavalry were soon after this reported approaching from the south, and Digby hoped to trap them also. At first all went well and body after body of the rebels was routed. But by a singular mischance the Royalist main body mistook the Parliamentary squadrons in flight through Sherburn for friends, and believing all was lost took to flight also. Thus Digby's cavalry fled as fast as Poyntz's and in the same direction, and the latter, coming to their senses first, drove the Royalist horse in wild confusion as far as Skipton. Lord Digby was still sanguine, and from Skipton he actually penetrated as far as Dumfries. But whether Montrose's new army was or was not in the Lowlands, it was certain that Leven and Leslie were on the Border, and the mad adventure soon came to an end. Digby, with the mere handful of men remaining to him, was driven back into Cumberland, and on the 24th of October, his army having entirely disappeared, he took ship with his officers for the Isle of Man. Poyntz had not followed him beyond Skipton, and was now watching the king from Nottingham, while Rossiter with the Lincoln troops was posted at Grantham. The king's chances of escaping from Newark were becoming smaller day by day, and they were not improved by a violent dispute between him and Rupert, Maurice, Lord Gerard and Sir Richard Willis, at the end of which these officers and many others rode away to ask the Parliament for leave to go over-seas. The pretext of the quarrel mattered little, the distinction between the views of Charles and Digby on the one hand and Rupert and his friends on the other was fundamental—to the latter peace had become a political as well as a military necessity. Meanwhile south Wales, with the single exception of Raglan Castle, had been overrun by the Parliamentarians. Everywhere the Royalist posts were falling. The New Model, no longer fearing Goring, had divided, Fairfax reducing the garrisons of Dorset and Devon, Cromwell those of Hampshire. Amongst the latter was the famous Basing House, which was stormed at dawn on the 14th of October and burnt to the ground. Cromwell, his work finished, returned to headquarters, and the army wintered in the neighbourhood of Crediton.

44. *End of the First War.*—The military events of 1646 call for no comment. The only field army remaining to the king was Goring's, and though Hopton, who sorrowfully accepted the command after Goring's departure, tried at the last moment to revive the memories and the local patriotism of 1643, it was of no use to fight against the New Model with the armed rabble that Goring turned over to him. Dartmouth surrendered on January 18, Hopton was defeated at Torrington on February 16, and surrendered the remnant of his worthless army on March 14. Exeter fell on April 13. Elsewhere, Hereford was taken on December 17, 1645, and the last battle of the war was fought and lost at Stow-on-the-Wold by Lord Astley on March 21, 1646. Newark and Oxford fell respectively on May 6 and June 24. On August 31 Montrose escaped from the Highlands. On the 19th of the same month Raglan Castle surrendered, and the last Royalist post of all, Harlech Castle, maintained the useless struggle until March 13, 1647. Charles himself, after leaving Newark in November 1645, had spent the winter in and around Oxford, whence, after an adventurous journey, he came to the camp of the Scottish army at Southwell on May 5, 1646.

45. *Second Civil War* (*1648-52*).—The close of the First Civil War left England and Scotland in the hands potentially of any one of the four parties or any combination of two or more that should prove strong enough to dominate the rest. Armed political Royalism was indeed at an end, but Charles, though practically a prisoner, considered himself and was, almost to the last, considered by the rest as necessary to ensure the success of whichever amongst the other three parties could come to terms with him. Thus he passed successively into the hands of the Scots, the Parliament and the New Model, trying to reverse the verdict of arms by coquetting with each in turn. The Presbyterians and the Scots, after Cornet Joyce of Fairfax's horse seized upon the person of the king for the army (June 3, 1647), began at once to prepare for a fresh civil war, this time against Independency, as embodied in the New Model—henceforward called the Army—and after making use of its sword, its opponents attempted to disband it, to send it on foreign service, to cut off its arrears of pay, with the result that it was exasperated beyond control, and, remembering not merely its grievances but also the principle for which it had fought, soon became the most powerful political party in the realm. From 1646 to 1648 the breach between army and parliament widened day by day until finally the Presbyterian party, combined with the Scots

and the remaining Royalists, felt itself strong enough to begin a second civil war.

46. *The English War.*—In February 1648 Colonel Poyer, the Parliamentary governor of Pembroke Castle, refused to hand over his command to one of Fairfax's officers, and he was soon joined by some hundreds of officers and men, who mutinied, ostensibly for arrears of pay, but really with political objects. At the end of March, encouraged by minor successes, Poyer openly declared for the king. Disbanded soldiers continued to join him in April, all South Wales revolted, and eventually he was joined by Major-General Laugharne, his district commander, and Colonel Powel. In April also news came that the Scots were arming and that Berwick and Carlisle had been seized by the English Royalists. Cromwell was at once sent off at the head of a strong detachment to deal with Laugharne and Poyer. But before he arrived Laugharne had been severely defeated by Colonel Horton at St Fagans (May 8). The English Presbyterians found it difficult to reconcile their principles with their allies when it appeared that the prisoners taken at St Fagans bore "We long to see our King" on their hats; very soon in fact the English war became almost purely a Royalist revolt, and the war in the north an attempt to enforce a mixture of Royalism and Presbyterianism on Englishmen by means of a Scottish army. The former were disturbers of the peace and no more. Nearly all the Royalists who had fought in the First Civil War had given their parole not to bear arms against the Parliament, and many honourable Royalists, foremost amongst them the old Lord Astley, who had fought the last battle for the king in 1646, refused to break their word by taking any part in the second war. Those who did so, and by implication those who abetted them in doing so, were likely to be treated with the utmost rigour if captured, for the army was in a less placable mood in 1648 than in 1645, and had already determined to "call Charles Stuart, that man of blood, to an account for the blood he had shed." On the 21st of May Kent rose in revolt in the king's name. A few days later a most serious blow to the Independents was struck by the defection of the navy, from command of which they had removed Vice-Admiral Batten, as being a Presbyterian. Though a former lord high admiral, the earl of Warwick, also a Presbyterian, was brought back to the service, it was not long before the navy made a purely Royalist declaration and placed itself under the command of the prince of Wales. But Fairfax had a clearer view and a clearer purpose than the distracted Parliament. He moved quickly into Kent, and on the evening of June 1 stormed Maidstone by open force, after which the local levies dispersed to their homes, and the more determined Royalists, after a futile attempt to induce the City of London to declare for them, fled into Essex. In Cornwall, Northamptonshire, North Wales and Lincolnshire the revolt collapsed as easily. Only in South Wales, Essex and the north of England was there serious fighting. In the first of these districts Cromwell rapidly reduced all the fortresses except Pembroke, where Laugharne, Poyer and Powel held out with the desperate courage of deserters. In the north, Pontefract was surprised by the Royalists, and shortly afterwards Scarborough Castle declared for the king. Fairfax, after his success at Maidstone and the pacification of Kent, turned northward to reduce Essex, where, under their ardent, experienced and popular leader Sir Charles Lucas, the Royalists were in arms in great numbers. He soon drove the enemy into Colchester, but the first attack on the town was repulsed and he had to settle down to a long and wearisome siege *en règle*. A Surrey rising, remembered only for the death of the young and gallant Lord Francis Villiers in a skirmish at Kingston (July 7), collapsed almost as soon as it had gathered force, and its leaders, the duke of Buckingham and the earl of Holland, escaped, after another attempt to induce London to declare for them, to St Albans and St Neots, where Holland was taken prisoner. Buckingham escaped over-seas.

47. *Lambert in the North.*—By the 10th of July therefore the military situation was well defined. Cromwell held Pembroke, Fairfax Colchester, Lambert Pontefract under siege; elsewhere all serious local risings had collapsed, and the Scottish army had crossed the Border. It is on the adventures of the latter that the interest of the war centres. It was by no means the veteran army of Leven, which had long been disbanded. For the most part it consisted of raw levies, and as the kirk had refused to sanction the enterprise of the Scottish parliament, David Leslie and thousands of experienced officers and men declined to serve. The duke of Hamilton proved to be a poor substitute for Leslie; his army, too, was so ill provided that as soon as England was invaded it began to plunder the countryside for the bare means of sustenance. Major-General Lambert, a brilliant young general of twenty-nine, was more than equal to the situation. He had already left the sieges of Pontefract and Scarborough to Colonel Rossiter, and hurried into Cumberland to deal with the English Royalists under Sir Marmaduke Langdale. With his cavalry he got into touch with the enemy about Carlisle and slowly fell back, fighting small rearguard actions to annoy the enemy and gain time, to Bowes and Barnard Castle. Langdale did not follow him into the mountains, but occupied himself in gathering recruits and supplies of material and food for the Scots. Lambert, reinforced from the midlands, reappeared early in June and drove him back to Carlisle with his work half finished. About the same time the local horse of Durham and Northumberland were put into the field by Sir A. Hesilrige, governor of Newcastle, and under the command of Colonel Robert Lilburne won a considerable success (June 30) at the river Coquet. This reverse, coupled with the existence of Langdale's force on the Cumberland side, practically compelled Hamilton to choose the west coast route for his advance, and his army began slowly to move down the long *couloir* between the mountains and the sea. The campaign which followed is one of the most brilliant in English history.

48. *Campaign of Preston.*—On the 8th of July the Scots, with Langdale as advanced guard, were about Carlisle, and reinforcements from Ulster were expected daily. Lambert's horse were at Penrith, Hexham and Newcastle, too weak to fight and having only skilful leading and rapidity of movement to enable them to gain time. Far away to the south Cromwell was still tied down before Pembroke, Fairfax before Colchester. Elsewhere the rebellion, which had been put down by rapidity of action rather than sheer weight of numbers, smouldered, and Prince Charles and the fleet cruised along the Essex coast. Cromwell and Lambert, however, understood each other perfectly, while the Scottish commanders quarrelled with Langdale and each other. Appleby Castle surrendered to the Scots on the 31st of July, whereat Lambert, who was still hanging on to the flank of the Scottish advance, fell back from Barnard Castle to Richmond so as to close Wensleydale against any attempt of the invaders to march on Pontefract. All the restless energy of Langdale's horse was unable to dislodge him from the passes or to find out what was behind that impenetrable cavalry screen. The crisis was now at hand. Cromwell had received the surrender of Pembroke on the 11th, and had marched off, with his men unpaid, ragged and shoeless, at full speed through the midlands. Rains and storms delayed his march, but he knew that Hamilton in the broken ground of Westmorland was still worse off. Shoes from Northampton and stockings from Coventry met him at Nottingham, and, gathering up the local levies as he went, he made for Doncaster, where he arrived on the 8th of August, having gained six days in advance of the time he had allowed himself for the march. He then called up artillery from Hull, exchanged his local levies for the regulars who were besieging Pontefract, and set off to meet Lambert. On the 12th he was at Wetherby, Lambert with horse and foot at Otley, Langdale at Skipton and Gargrave, Hamilton at Lancaster, and Sir George Monro with the Scots from Ulster and the Carlisle Royalists (organized as a separate command owing to friction between Monro and the generals of the main army) at Hornby. On the 13th, while Cromwell was marching to join Lambert at Otley, the Scottish leaders were still disputing as to whether they should make for Pontefract or continue through Lancashire so as to join Lord Byron and the Cheshire Royalists.

49. *Preston Fight.*—On the 14th Cromwell and Lambert were at Skipton, on the 15th at Gisburn, and on the 16th they marched down the valley of the Ribble towards Preston with full knowledge of the enemy's dispositions and full determination to attack him. They had with them horse and foot not only of the army, but also of the militia of Yorkshire, Durham, Northumberland and Lancashire, and withal were heavily outnumbered, having only 8600 men against perhaps 20,000 of Hamilton's command. But the latter were scattered for convenience of supply along the road from Lancaster, through Preston, towards Wigan, Langdale's corps having thus become the left flank guard instead of the advanced guard. Langdale called in his advanced parties, perhaps with a view to resuming the duties of advanced guard, on the night of the 13th, and collected them near Longridge. It is not clear whether he reported Cromwell's advance, but, if he did, Hamilton ignored the report, for on the 17th Monro was half a day's march to the north, Langdale east of Preston, and the main army strung out on the Wigan road, Major-General Baillie with a body of foot, the rear of the column, being still in Preston. Hamilton, yielding to the importunity of his lieutenant-general, the earl of Callendar, sent Baillie across the Ribble to follow the main body just as Langdale, with 3000 foot and 500 horse only, met the first shock of Cromwell's attack on Preston Moor. Hamilton, like Charles at Edgehill, passively shared in, without directing, the battle, and, though Langdale's men fought magnificently, they were after four hours' struggle driven to the Ribble. Baillie attempted to cover the Ribble and Darwen bridges on the Wigan road, but Cromwell had forced his way across both before nightfall. Pursuit was at once undertaken, and not relaxed until Hamilton had been driven through Wigan and Winwick to Uttoxeter and Ashbourne. There, pressed furiously in rear by Cromwell's horse and held up in front by the militia of the midlands, the remnant of the Scottish army laid down its arms on the 25th of August. Various attempts were made to raise the Royalist standard in Wales and elsewhere, but Preston was the death-blow. On the 28th of August, starving and hopeless of relief, the Colchester Royalists surrendered to Lord Fairfax. The victors in the Second Civil War were not merciful to those who had brought war into the land again. On the evening of the surrender of Colchester, Sir Charles Lucas and Sir George Lisle were shot. Laugharne, Poyer and Powel were sentenced to

death, but Poyer alone was executed on the 25th of April 1649, being the victim selected by lot. Of five prominent Royalist peers who had fallen into the hands of the Parliament, three, the duke of Hamilton, the earl of Holland, and Lord Capel, one of the Colchester prisoners and a man of high character, were beheaded at Westminster on the 9th of March. Above all, after long hesitations, even after renewal of negotiations, the army and the Independents "purged" the House of their ill-wishers, and created a court for the trial and sentence of the king. The more resolute of the judges nerved the rest to sign the death-warrant, and Charles was beheaded at Whitehall on the 30th of January.

50. *Cromwell in Ireland.*—The campaign of Preston was undertaken under the direction of the Scottish parliament, not the kirk, and it needed the execution of the king to bring about a union of all Scottish parties against the English Independents. Even so, Charles II. in exile had to submit to long negotiations and hard conditions before he was allowed to put himself at the head of the Scottish armies. The marquis of Huntly was executed for taking up arms for the king on the 22nd of March 1649. Montrose, under Charles's directions, made a last attempt to rally the Scottish Royalists early in 1650. But Charles merely used Montrose as a threat to obtain better conditions for himself from the Covenanters, and when the noblest of all the Royalists was defeated (Carbisdale, April 27), delivered up to his pursuers (May 4), and executed (May 21, 1650), he was not ashamed to give way to the demands of the Covenanters, and to place himself at the head of Montrose's executioners. His father, whatever his faults, had at least chosen to die for an ideal, the Church of England. Charles II. now proposed to regain the throne by allowing Scotland to impose Presbyterianism on England, and dismissed all the faithful Cavaliers who had followed him to exile. Meanwhile, Ireland, in which a fresh war, with openly anti-English and anti-Protestant objects, had broken out in 1648, was thoroughly reduced to order by Cromwell, who beat down all resistance by his skill, and even more by his ruthless severity, in a brief campaign of nine months (battle of Rathmines near Dublin, won by Colonel Michael Jones, August 2, 1649; storming of Drogheda, September 11, and of Wexford, October 11, by Cromwell; capture of Kilkenny, March 28, 1650, and of Clonmel, May 10). Cromwell returned to England at the end of May 1650, and on June 26 Fairfax, who had been anxious and uneasy since the execution of the king, resigned the command-in-chief of the army to his lieutenant-general. The pretext, rather than the reason, of Fairfax's resignation was his unwillingness to lead an English army to reduce Scotland.

51. *The Invasion of Scotland.*—This important step had been resolved upon as soon as it was clear that Charles II. would come to terms with the Covenanters. From this point the Second Civil War becomes a war of England against Scotland. Here at least the Independents carried the whole of England with them. No Englishman cared to accept a settlement at the hands of a victorious foreign army, and on the 28th of June, five days after Charles II. had sworn to the Covenant, the new lord-general was on his way to the Border to take command of the English army. About the same time a new militia act was passed that was destined to give full and decisive effect to the national spirit of England in the great final campaign of the war. Meanwhile the motto *frappez fort, frappez vite* was carried out at once by the regular forces. On the 19th of July 1650 Cromwell made the final arrangements at Berwick-on-Tweed. Major-General Harrison, a gallant soldier and an extreme Independent, was to command the regular and auxiliary forces left in England, and to secure the Commonwealth against Royalists and Presbyterians. Cromwell took with him Fleetwood as lieutenant-general and Lambert as major-general, and his forces numbered about 10,000 foot and 5000 horse. His opponent David Leslie (his comrade of Marston Moor) had a much larger force, but its degree of training was inferior, it was more than tainted by the political dissensions of the people at large, and it was, in great part at any rate, raised by forced enlistment. On the 22nd of July Cromwell crossed the Tweed. He marched on Edinburgh by the sea coast, through Dunbar, Haddington and Musselburgh, living almost entirely on supplies landed by the fleet which accompanied him—for the country itself was incapable of supporting even a small army—and on the 29th he found Leslie's army drawn up and entrenched in a position extending from Leith to Edinburgh.

52. *Operations around Edinburgh.*—The same day a sharp but indecisive fight took place on the lower slopes of Arthur's Seat, after which Cromwell, having felt the strength of Leslie's line, drew back to Musselburgh. Leslie's horse followed him up sharply, and another action was fought, after which the Scots assaulted Musselburgh without success. Militarily Leslie had the best of it in these affairs, but it was precisely this moment that the kirk party chose to institute a searching three days' examination of the political and religious sentiments of his army. The result was that the army was "purged" of 80 officers and 3000 soldiers as it lay within musket shot of the enemy. Cromwell was more concerned, however, with the supply question than with the distracted army of the Scots. On the 6th of August he had to fall back as far as Dunbar to enable the fleet to land supplies in safety, the port of Musselburgh being unsafe in the violent and stormy weather which prevailed. He soon returned to Musselburgh and prepared to force Leslie to battle. In preparation for an extended manœuvre three days' rations were served out. Tents were also issued, perhaps for the first time in the civil wars, for it was a regular professional army, which had to be cared for, made comfortable and economized, that was now carrying on the work of the volunteers of the first war. Even after Cromwell started on his manœuvre, the Scottish army was still in the midst of its political troubles, and, certain though he was that nothing but victory in the field would give an assured peace, he was obliged to intervene in the confused negotiations of the various Scottish parties. At last, however, Charles II. made a show of agreeing to the demands of his strange supporters, and Leslie was free to move. Cromwell had now entered the hill country, with a view to occupying Queensferry and thus blocking up Edinburgh. Leslie had the shorter road and barred the way at Corstorphine Hill (August 21). Cromwell, though now far from his base, manœuvred again to his right, Leslie meeting him once more at Gogar (August 27). The Scottish lines at that point were strong enough to dismay even Cromwell, and the manœuvre on Queensferry was at last given up. It had cost the English army severe losses in sick, and much suffering in the autumn nights on the bleak hillsides.

53. *Dunbar.*—On the 28th Cromwell fell back on Musselburgh, and on the 31st, after embarking his non-effective men, to Dunbar. Leslie followed him up, and wished to fight a battle at Dunbar on Sunday, the 1st of September. But again the kirk intervened, this time to forbid Leslie to break the Sabbath, and the unfortunate Scottish commander could only establish himself on Doon Hill (see Dunbar) and send a force to Cockburnspath to bar the Berwick road. He had now 23,000 men to Cromwell's 11,000, and proposed, *faute de mieux*, to starve Cromwell into surrender. But the English army was composed of "ragged soldiers with bright muskets," and had a great captain of undisputed authority at their head. Leslie's, on the other hand, had lost such discipline as it had ever possessed, and was now, under outside influences, thoroughly disintegrated. Cromwell wrote home, indeed, that he was "upon an engagement very difficult," but, desperate as his position seemed, he felt the pulse of his opponent and steadily refused to take his army away by sea. He had not to wait long. It was now the turn of Leslie's men on the hillside to endure patiently privation and exposure, and after one night's bivouac, Leslie, too readily inferring that the enemy was about to escape by sea, came down to fight. The battle of Dunbar (*q.v.*) opened in the early morning of the 3rd of September. It was the most brilliant of all Oliver's victories. Before the sun was high in the heavens the Scottish army had ceased to exist.

54. *Royalism in Scotland.*—After Dunbar it was easy for the victorious army to overrun southern Scotland, more especially as the dissensions of the enemy were embittered by the defeat of which they had been the prime cause. The kirk indeed put Dunbar to the account of its own remissness in not purging their army more thoroughly, but, as Cromwell wrote on the 4th of September, the kirk had "done its do." "I believe their king will set up on his own score," he continued, and indeed, now that the army of the kirk was destroyed and they themselves were secure behind the Forth and based on the friendly Highlands, Charles and the Cavaliers were in a position not only to defy Cromwell, but also to force the Scottish national spirit of resistance to the invader into a purely Royalist channel. Cromwell had only received a few drafts and reinforcements from England, and for the present he could but block up Edinburgh Castle (which surrendered on Christmas eve), and try to bring up adequate forces and material for the siege of Stirling—an attempt which was frustrated by the badness of the roads and the violence of the weather. The rest of the early winter of 1650 was thus occupied in semi-military, semi-political operations between detachments of the English army and certain armed forces of the kirk party which still maintained a precarious existence in the western Lowlands, and in police work against the moss-troopers of the Border counties. Early in February 1651, still in the midst of terrible weather, Cromwell made another resolute but futile attempt to reach Stirling. This time he himself fell sick, and his losses had to be made good by drafts of recruits from England, many of whom came most unwillingly to serve in the cold wet bivouacs that the newspapers had graphically reported.[7]

55. *The English Militia.*—About this time there occurred in England two events which had a most important bearing on the campaign. The first was the detection of a widespread Royalist-Presbyterian conspiracy—how widespread no one knew, for those of its promoters who were captured and executed certainly formed but a small fraction of the whole number. Harrison was ordered to Lancashire in April to watch the north Welsh, Isle of Man and Border Royalists, and military precautions were taken in various

parts of England. The second was the revival of the militia. Since 1644 there had been no general employment of local forces, the quarrel having fallen into the hands of the regular armies by force of circumstances. The New Model, though a national army, resembled Wellington's Peninsular army more than the soldiers of the French Revolution and the American Civil War. It was now engaged in prosecuting a war of aggression against the hereditary foe over the Border—strictly the task of a professional army with a national basis. The militia was indeed raw and untrained. Some of the Essex men "fell flat on their faces on the sound of a cannon." In the north of England Harrison complained to Cromwell of the "badness" of his men, and the lord general sympathized, having "had much such stuff" sent him to make good the losses in trained men. Even he for a moment lost touch with the spirit of the people. His recruits were unwilling drafts for foreign service, but in England the new levies were trusted to defend their homes, and the militia was soon triumphantly to justify its existence on the day of Worcester.

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56. *Inverkeithing.*—While David Leslie organized and drilled the king's new army beyond the Forth, Cromwell was, slowly and with frequent relapses, recovering from his illness. The English army marched to Glasgow in April, then returned to Edinburgh. The motives of the march and that of the return are alike obscure, but it may be conjectured that, the forces in England under Harrison having now assembled in Lancashire, the Edinburgh-Newcastle-York road had to be covered by the main army. Be this as it may, Cromwell's health again broke down and his life was despaired of. Only late in June were operations actively resumed between Stirling and Linlithgow. At first Cromwell sought without success to bring Leslie to battle, but he stormed Callendar House near Falkirk on July 13, and on the 16th of July he began the execution of a brilliant and successful manœuvre. A force from Queensferry, covered by the English fleet, was thrown across the Firth of Forth to Northferry. Lambert followed with reinforcements, and defeated a detachment of Leslie's army at Inverkeithing on the 20th. Leslie drew back at once, but managed to find a fresh strong position in front of Stirling, whence he defied Cromwell again. At this juncture Cromwell prepared to pass his whole army across the firth. His contemplated manœuvre of course gave up to the enemy all the roads into England, and before undertaking it the lord general held a consultation with Harrison, as the result of which that officer took over the direct defence of the whole Border. But his mind was made up even before this, for on the day he met Harrison at Linlithgow three-quarters of his whole army had already crossed into Fife. Burntisland, surrendered to Lambert on the 29th, gave Cromwell a good harbour upon which to base his subsequent movements. On the 30th of July the English marched upon Perth, and the investment of this place, the key to Leslie's supply area, forced the crisis at once. Whether Leslie would have preferred to manœuvre Cromwell from his vantage-ground or not is immaterial; the young king and the now predominant Royalist element at headquarters seized the long-awaited opportunity at once, and on the 31st, leaving Cromwell to his own devices, the Royal army marched southward to raise the Royal standard in England.

57. *The Third Scottish Invasion of England.*—Then began the last and most thrilling campaign of the Great Rebellion. Charles II. expected complete success. In Scotland, *vis-à-vis* the extreme Covenanters, he was a king on conditions, and he was glad enough to find himself in England with some thirty solidly organized regiments under Royalist officers and with no regular army in front of him. He hoped, too, to rally not merely the old faithful Royalists, but also the overwhelming numerical strength of the English Presbyterians to his standard. His army was kept well in hand, no excesses were allowed, and in a week the Royalists covered 150 m.—in marked contrast to the duke of Hamilton's ill-fated expedition of 1648. On the 8th of August the troops were given a well-earned rest between Penrith and Kendal.

But the Royalists were mistaken in supposing that the enemy was taken aback by their new move. Everything had been foreseen both by Cromwell and by the Council of State in Westminster. The latter had called out the greater part of the militia on the 7th. Lieutenant-General Fleetwood began to draw together the midland contingents at Banbury, the London trained bands turned out for field service no fewer than 14,000 strong. Every suspected Royalist was closely watched, and the magazines of arms in the country-houses of the gentry were for the most part removed into the strong places. On his part Cromwell had quietly made his preparations. Perth passed into his hands on the 2nd of August, and he brought back his army to Leith by the 5th. Thence he despatched Lambert with a cavalry corps to harass the invaders. Harrison was already at Newcastle picking the best of the county mounted troops to add to his own regulars. On the 9th Charles was at Kendal, Lambert hovering in his rear, and Harrison marching swiftly to bar his way at the Mersey. Fairfax emerged for a moment from his retirement to organize the Yorkshire levies, and the best of these as well as of the Lancashire, Cheshire and Staffordshire militias were directed upon Warrington, which point Harrison reached on the 15th, a few hours in front of Charles's advanced guard. Lambert too, slipping round the left flank of the enemy, joined Harrison, and the English fell back (16th), slowly and without letting themselves be drawn into a fight, along the London road.

58. *Campaign of Worcester.*—Cromwell meanwhile, leaving Monk with the least efficient regiments to carry on the war in Scotland, had reached the Tyne in seven days, and thence, marching 20 m. a day in extreme heat—with the country people carrying their arms and equipment—the regulars entered Ferrybridge on the 19th, at which date Lambert, Harrison and the north-western militia were about Congleton.[8] It seemed probable that a great battle would take place between Lichfield and Coventry about the 25th or 26th of August, and that Cromwell, Harrison, Lambert and Fleetwood would all take part in it. But the scene and the date of the *denouement* were changed by the enemy's movements. Shortly after leaving Warrington the young king had resolved to abandon the direct march on London and to make for the Severn valley, where his father had found the most constant and the most numerous adherents in the first war, and which had been the centre of gravity of the English Royalist movement of 1648. Sir Edward Massey, formerly the Parliamentary governor of Gloucester, was now with Charles, and it was hoped that he would induce his fellow-Presbyterians to take arms. The military quality of the Welsh border Royalists was well proved, that of the Gloucestershire Presbyterians not less so, and, based on Gloucester and Worcester as his father had been based on Oxford, Charles II. hoped, not unnaturally, to deal with an Independent minority more effectually than Charles I. had done with a Parliamentary majority of the people of England. But even the pure Royalism which now ruled in the invading army could not alter the fact that it was a Scottish army, and it was not an Independent faction but all England that took arms against it. Charles arrived at Worcester on the 22nd of August, and spent five days in resting the troops, preparing for further operations, and gathering and arming the few recruits who came in. It is unnecessary to argue that the delay was fatal; it was a necessity of the case foreseen and accepted when the march to Worcester had been decided upon, and had the other course, that of marching on London via Lichfield, been taken the battle would have been fought three days earlier with the same result. As affairs turned out Cromwell merely shifted the area of his concentration two marches to the south-west, to Evesham. Early on the 28th Lambert surprised the passage of the Severn at Upton, 6 m. below Worcester, and in the action which followed Massey was severely wounded. Fleetwood followed Lambert. The enemy was now only 16,000 strong and disheartened by the apathy with which they had been received in districts formerly all their own. Cromwell, for the first and last time in his military career, had a two-to-one numerical superiority.

59. *The "Crowning Mercy."*—He took his measures deliberately. Lilburne from Lancashire and Major Mercer with the Worcestershire horse were to secure Bewdley Bridge on the enemy's line of retreat. Lambert and Fleetwood were to force their way across the Teme (a little river on which Rupert had won his first victory in 1642) and attack St John's, the western suburb of Worcester. Cromwell himself and the main army were to attack the town itself. On the 3rd of September, the anniversary of Dunbar, the programme was carried out exactly. Fleetwood forced the passage of the Teme, and the bridging train (which had been carefully organized for the purpose) bridged both the Teme and the Severn. Then Cromwell on the left bank and Fleetwood on the right swept in a semicircle 4 m. long up to Worcester. Every hedgerow was contested by the stubborn Royalists, but Fleetwood's men would not be denied, and Cromwell's extreme right on the eastern side of the town repelled, after three hours' hard fighting, the last desperate attempt of the Royalists to break out. It was indeed, as a German critic[9] has pointed out, the prototype of Sedan. Everywhere the defences were stormed as darkness came on, regulars and militia fighting with equal gallantry, and the few thousands of the Royalists who escaped during the night were easily captured by Lilburne and Mercer, or by the militia which watched every road in Yorkshire and Lancashire. Even the country people brought in scores of prisoners, for officers and men alike, stunned by the suddenness of the disaster, offered no resistance. Charles escaped after many adventures, but he was one of the few men in his army who regained a place of safety. The Parliamentary militia were sent home within a week. Cromwell, who had ridiculed "such stuff" six months ago, knew them better now. "Your new raised forces," he wrote to the House, "did perform singular good service, for which they deserve a very high estimation and acknowledgment." Worcester resembled Sedan in much more than outward form. Both were fought by "nations in arms," by citizen soldiers who had their hearts in the struggle, and could be trusted not only to fight their hardest but to march their best. Only with such troops would a general dare to place a deep river between the two halves of his army or to send away detachments beforehand to reap the fruits of victory, in certain anticipation of

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winning the victory with the remainder. The sense of duty, which the raw militia possessed in so high a degree, ensured the arrival and the action of every column at the appointed time and place. The result was, in brief, one of those rare victories in which a pursuit is superfluous—a "crowning mercy," as Cromwell called it. There is little of note in the closing operations. Monk had completed his task by May 1652; and Scotland, which had twice attempted to impose its will on England, found itself reduced to the position of an English province under martial law. The details of its subjection are uninteresting after the tremendous climax of Worcester.

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(C. F. A.)

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1 Gustavus Adolphus before the battle of the Alte Veste (see THIRTY YEARS' WAR).

2 "Making not money but that which they took to be the public felicity to be their end they were the more engaged to be valiant" (Baxter).

3 For the third time within the year the London trained bands turned out in force. It was characteristic of the early years of the war that imminent danger alone called forth the devotion of the citizen soldier. If he was employed in ordinary times (*e.g.* at Basing House) he would neither fight nor march with spirit.

4 Charles's policy was still, as before Marston Moor, to "spin out time" until Rupert came back from the north.

5 The ground has been entirely built over for many years.

6 The Puritans had by now disappeared almost entirely from the ranks of the infantry. *Per contra* the officers and sergeants and the troopers of the horse were the sternest Puritans of all, the survivors of three years of a disheartening war.

7 The tents were evidently issued for regular marches, not for cross-country manœuvres against the enemy. These manœuvres, as we have seen, often took several days. The *bon général ordinaire* of the 17th and 18th centuries framed his manœuvres on a smaller scale so as not to expose his expensive and highly trained soldiers to discomfort and the consequent temptation to desert.

8 The lord general had during his march thrown out successively two flying columns under Colonel Lilburne to deal with the Lancashire Royalists under the earl of Derby. Lilburne entirely routed the enemy at Wigan on the 25th of August.

9 Fritz Hoenig, *Cromwell*.

GREAT SALT LAKE, a shallow body of highly concentrated brine in the N.W. part of Utah, U.S.A., lying between 118.8° and 113.2° W. long, and between 40.7° and 41.8° lat. Great Salt Lake is 4218 ft. above sea-level. It has no outlet, and is fed chiefly by the Jordan, the Weber and the Bear rivers, all draining the mountainous country to the E. and S.E. The irregular outline of the lake has been compared to the roughly drawn hand, palm at the S., thumb (exaggerated in breadth) pointing N.E., and the fingers (crowded together and drawn too small) reaching N.

No bathymetric survey of the lake has been made, but the maximum depth is 60 ft. and the mean depth less than 20 ft., possibly as little as 13 ft. The lake in 1906 was approximately 75 m. long., from N.W. to S.E., and had a maximum width of 50 m. and an area of 1750 sq. m. This area is not constant, as the water is very shallow at the margins, and the relation between supply from precipitation, &c., and loss by evaporation is variable, there being an annual difference in the height of the water of 15-18 in. between June (highest) and November (lowest), and besides a difference running through longer cycles: in 1850 the water was lower and the lake smaller than by any previous observations (the area and general outline were nearly the same again in 1906); then the water rose until 1873; and between 1886 and 1902 the fall in level was 11.6 ft. The range of rise and fall from 1845 to 1886 was 13 ft., this being the rise in 1865-1886. With the fall of water there is an increase in the specific gravity, which in 1850 was 1.17, and in September 1901 was 1.179; in 1850 the proportion of solids by weight was 22.282%, in September 1901 it was 25.221; at the earlier of these dates the solids in a litre of water weighed 260.69 grams, at the latter date 302.122 grams. The exact cause of this cyclic variation is unknown: the low level of 1906 is usually regarded as the result of extensive irrigation and ploughing in the surrounding country, which have robbed the lake, in part, of its normal supply of water. It is also to be noted that

the rise and fall of the lake level have been coincident, respectively, with continued wet and dry cycles. That the lake will soon dry up entirely seems unlikely, as there is a central trough, 25 to 30 m. wide, about 40 ft. deep, running N.W. and S.E. The area and shore-line of the lake are evidently affected by a slight surface tilt, for during the same generation that has seen the recent fall of the lake level the shore-line is in many cases 2 m. from the old, and fences may be seen a mile or more out in the lake. The lake bed is for the most part clear sand along the margin, and in deeper water is largely coated with crusts of salt, soda and gypsum.

The lake is a novel and popular bathing resort, the specific gravity of the water being so great that one cannot sink or entirely submerge oneself. There are well-equipped bathing pavilions at Garfield and Saltair on the S. shore of the lake about 20 m. from Salt Lake City. The bathing is invigorating; it must be followed by a freshwater bath because of the incrustation of the body from the briny water. The large amount of salt in the water makes both fauna and flora of the lake scanty; there are a few algae, the larvae of an *Ephydra* and of a *Tipula* fly, specimens of what seems to be *Corixa decolor*, and in great quantities, so as to tint the surface of the water, the brine shrimp, *Artemia salina* (or *gracilis* or *fertilis*), notable biologically for the rarity of males, for the high degree of parthenogenesis and for apparent interchangeableness with the *Branchipus*.

The lake is of interest for its generally mountainous surroundings, save to the N.W., where it skirts the Great Salt Lake Desert, for the mountainous peninsula, the Promontory, lying between thumb and fingers of the hand, shaped like and resembling in geological structure the two islands S. of it, Fremont and Antelope,[1] and the Oquirrh range S. of the lake. The physiography of the surrounding country shows clearly that the basin occupied by Great Salt Lake is one of many left by the drying up of a large Pleistocene lake, which has been called lake Bonneville. Well-defined wave-cut cliffs and terraces show two distinct shore-lines of this early lake, one the “Bonneville Shore-line,” about 1000 ft. above Great Salt Lake, and the other, the “Provo Shoreline,” about 625 ft. higher than the present lake. These shorelines and the presence of two alluvial deposits, the lower and the larger of yellow clay 90 ft. deep, and, separated from it by a plane of erosion, the other, a deposit of white marl, 10-20 ft. deep, clearly prove the main facts as to lake Bonneville: a dry basin was first occupied by the shallow waters of a small lake; then, during a long period of excessive moisture (or cold), the waters rose and spread over an area nearly as large as lake Huron with a maximum depth of 1000 ft.; a period of great dryness followed, in which the lake disappeared; then came a second, shorter, but more intense period of moisture, and in this time the lake rose, covered a larger area than before, including W. Utah and a little of S. Idaho and of E. Nevada, about 19,750 sq. m., had a very much broken shore-line of 2550 m. and a maximum depth of 1050 ft. and a mean depth of 800 ft., overflowed the basin at the N., and by a tributary stream through Red Rock Pass at the N. end of the Cache valley poured its waters into the Columbia river system. The great lake was then gradually reduced by evaporation, leaving only shallow bodies of salt water, of which Great Salt Lake is the largest. The cause of the climatic variations which brought about this complex history of the Salt Lake region is not known; but it is worthy of note that the periods of highest water levels were coincident with a great expansion of local valley glaciers, some of which terminated in the waters of lake Bonneville.

Industrially Great Salt Lake is of a certain importance. In early days it was the source of the salt supply of the surrounding country; and the manufacture of salt is now an important industry. The brine is pumped into conduits, carried to large ponds and there evaporated by the sun; during late years the salt has been refined here, being purified of the sulphates and magnesium compounds which formerly rendered it efflorescent and of a low commercial grade. Mirabilite, or Glauber’s salt, is commercially valuable, occurring in such quantities in parts of the lake that one may wade knee-deep in it; it separates from the brine at a temperature between 30° and 20° F. The lake is crossed E. and W. by the Southern Pacific railway’s so-called “Lucin Cut-off,” which runs from Ogden to Lucin on a trestle with more than 20 m. of “fill”; the former route around the N. end of the lake was 43 m. long.

Great Salt Lake was first described in 1689 by Baron La Hontan, who had merely heard of it from the Indians. “Jim” Bridger, a famous mountaineer and scout, saw the lake in 1824, apparently before any other white man. Captain Bonneville described the lake and named it after himself, but the name was transferred to the great Pleistocene lake. John C. Frémont gave the first description of any accuracy in his *Report* of 1845. But comparatively little was known of it before the Mormon settlement in 1847. In 1850 Captain Howard Stansbury completed a survey, whose results were published in 1852. The most extensive and important studies of the region, however, are those by Grove Karl Gilbert of the United States Geological Survey, who in 1879-1890 studied especially the earlier and greater lake.

See J. E. Talmage, *The Great Salt Lake, Present and Past* (Salt Lake City, 1900); and Grove Karl Gilbert, *Lake Bonneville*, monograph 1 of United States Geological Survey (Washington, 1890), containing (pp. 12-19) references to the earlier literature.

1 Besides these islands there are a few small islands farther N., and W. of Antelope, Stansbury Island, which, like Antelope and Fremont Islands, is connected with the mainland by a bar sometimes uncovered, and rarely in more than a foot of water.

GREAT SLAVE LAKE (Athapuscow), a lake of Mackenzie district, Canada. It is situated between 60° 50′ and 62° 55′ N. and 108° 40′ and 117° W., at an altitude of 391 ft. above the sea. It is 325 m. long, from 15 to 50 m. wide, and includes an area of 9770 sq. m. The water is very clear and deep. Its coast line is irregular and deeply indented by large bays, and its north-eastern shores are rugged and mountainous. The western shores are well wooded, chiefly with spruce, but the northern and eastern are dreary and barren. It is navigable from about the 1st of July to the end of October. The Yellow-knife, Hoarfrost, Lockhart (discharging the waters of Aylmer, Clinton-Colden and Artillery Lakes), Tchzudezeth, Du Rocher, Hay (400 m. in length), and Slave rivers empty into Great Slave Lake. The bulk of its water empties by the Mackenzie river into the Arctic Ocean, but a small portion finds its way by the Ark-i-linik river into Hudson’s Bay. It was discovered in 1771 by Samuel Hearne.

GREAT SOUTHERN OCEAN, the name given to the belt of water which extends almost continuously round the globe between the parallel of 40° S. and the Antarctic Circle (66½° S.). The fact that the southern extremity of South America is the only land extending into this belt gives it special physical importance in relation to tides and currents, and its position with reference to the Antarctic Ocean and continent makes it convenient to regard it as a separate ocean from which the Atlantic, Pacific and Indian Oceans may be said to radiate. (See Ocean.)

GREAVES, JOHN (1602-1652), English mathematician and antiquary, was the eldest son of John Greaves, rector of Colemore, near Alresford in Hampshire. He was educated at Balliol College, Oxford, and in 1630 was chosen professor of geometry in Gresham College, London. After travelling in Europe, he visited the East in 1637, where he collected a considerable number of Arabic, Persian and Greek manuscripts, and made a more accurate survey of the pyramids of Egypt than any traveller who had preceded him. On his return to Europe he visited a second time several parts of Italy, and during his stay at Rome instituted inquiries into the ancient weights and measures. In 1643 he was appointed to the Savilian professorship of astronomy at Oxford, but he was deprived of his Gresham professorship for having neglected its duties. In 1645 he essayed a reformation of the calendar, but his plan was not adopted. In 1648 he lost both his fellowship and his Savilian chair on account of his adherence to the royalist

party. But his private fortune more than sufficed for all his wants till his death on the 8th of October 1652.

Besides his papers in the *Philosophical Transactions*, the principal works of Greaves are *Pyramidographia, or a Description of the Pyramids in Egypt* (1646); *A Discourse on the Roman Foot and Denarius* (1649); and *Elementa linguae Persicae* (1649). His miscellaneous works were published in 1737 by Dr Thomas Birch, with a biographical notice of the author. See also Smith's *Vita quorundam erudit. virorum* and Ward's *Gresham Professors*.

GREBE (Fr. *grèbe*), the generally accepted name for all the birds of the family *Podicipedidae*,[1] belonging to the group *Pygopodes* of Illiger, members of which inhabit almost all parts of the world. Some systematic writers have distributed them into several so-called genera, but, with one exception, these seem to be insufficiently defined, and here it will be enough to allow but two—Latham's *Podiceps* and the *Centropelma* of Sclater and Salvin. Grebes are at once distinguishable from all other water-birds by their rudimentary tail and the peculiar structure of their feet, which are not only placed far behind, but have the tarsi flattened and elongated toes furnished with broad lobes of skin and flat blunt nails.

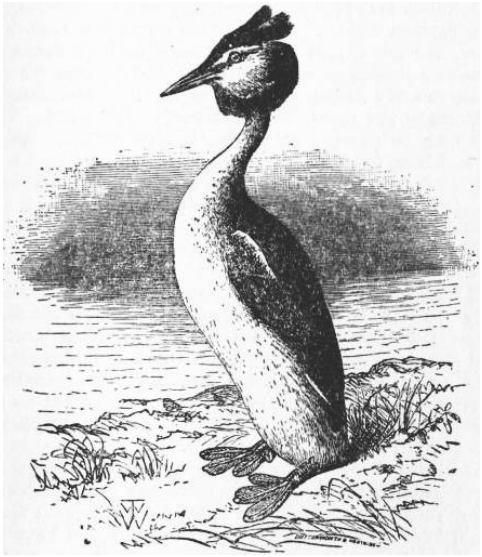

Illustration: Great Crested Grebe.

In Europe are five well-marked species of *Podiceps*, the commonest and smallest of which is the very well-known dab-chick of English ponds, *P. fluviatilis* or *minor*, the little grebe of ornithologists, found throughout the British Islands, and with a wide range in the old world. Next in size are two species known as the eared and horned grebes, the former of which, *P. nigricollis*, is a visitor from the south, only occasionally showing itself in Britain and very rarely breeding, while the latter, *P. auritus*, has a more northern range, breeding plentifully in Iceland, and is a not uncommon winter-visitant. Then there is the larger red-necked grebe, *P. griseigena*, also a northern bird, and a native of the subarctic parts of both Europe and America, while lastly the great crested grebe, *P. cristatus* or gaunt—known as the loon on the meres and broads of East Anglia and some other parts of England, is also widely spread over the old world. North America is credited with seven species of grebes, of which two (*P. griseigena* and *P. auritus*) are admitted to be specifically inseparable from those already named, and two (*P. occidentalis* and *P. californicus*) appear to be but local forms; the remaining two (*P. dominicus* and *P. ludovicianus*) may, however, be accounted good species, and the last differs so much from other grebes that many systematists make it the type of a distinct genus, *Podilymbus*. South America seems to possess four or five more species, one of which, the *P. micropterus* of Gould (*Proc. Zool. Society*, 1858, p. 220), has been deservedly separated from the genus *Podiceps* under the name *Centropelma* by Sclater and Salvin (*Exot. Ornithology*, p. 189, pl. xcv.), owing to the form of its bill, and the small size of its wings, which renders it absolutely flightless. Lake Titicaca in Bolivia is, so far as is known at present, its only habitat. Grebes in general, though averse from taking wing, have much greater power of flight than would seem possible on examination of their alar organs, and are capable of prolonged aerial journeys. Their plumage is short and close. Above it is commonly of some shade of brown, but beneath it is usually white, and so glossy as to be in much request for muffs and the trimming of ladies' dresses. Some species are remarkable for the crests or tippets, generally of a golden-chestnut colour, they assume in the breeding season. *P. auritus* is particularly remarkable in this respect, and when in its full nuptial attire presents an extraordinary aspect, the head (being surrounded, as it were, by a *nimbus* or aureole, such as that with which painters adorn saintly characters), reflecting the rays of light, glitters with a glory that passes description. All the species seem to have similar habits of nidification. Water-weeds are pulled from the bottom of the pool, and piled on a convenient foundation, often a seminatant growth of bogbean (*Menyanthes*), till they form a large mass, in the centre of which a shallow cup is formed, and the eggs, with a chalky white shell almost equally pointed at each end, are laid—the parent covering them, whenever she has time to do so, before leaving the nest. Young grebes are beautiful objects, clothed with black, white and brown down, disposed in streaks and their bill often brilliantly tinted. When taken from the nest and placed on dry ground, it is curious to observe the way in which they progress—using the wings almost as fore-feet, and suggesting the notion that they must be quadrupeds instead of birds.

(A. N.)

1 Often, but erroneously, written *Podicipidae*. The word *Podiceps* being a contracted form of *Podicipes* (cf. Gloger, *Journal für Ornithologie*, 1854, p. 430, note), a combination of *podex*, *podicis* and *pes*, *pedis*, its further compounds must be in accordance with its derivation.

GRECO, EL, the name commonly given to Dominico Theotocopuli (d. 1614), Cretan painter, architect and sculptor. He was born in Crete, between 1545 and 1550, and announces his Cretan origin by his signature in Greek letters on his most important pictures, especially on the "St Maurice" in the Escorial. He appears to have studied art first of all in Venice, and on arriving in Rome in 1570 is described as having been a pupil of Titian, in a letter written by the miniaturist, Giulio Clovio, addressed to Cardinal Alessandro Farnesi, dated the 15th of November 1570.

Although a student under Titian, he was at no time an exponent of his master's spirit, and his early historical pictures were attributed to many other artists, but never to Titian. Of his early works, two pictures of "The Healing of the Blind Man" at Dresden and Palma, and the four of "Christ driving the money-changers out of the Temple" in the Yarborough collection, the Cork collection, the National Gallery, and the Beruete collection at Madrid, are the chief. His first authentic portrait is that of his fellow-countryman, Giulio Clovio. It was painted between 1570 and 1578, is signed in Greek characters, and preserved at Naples, and the

last portrait he painted under the influence of the Italian school appears to be that of a cardinal now in the National Gallery, of which four replicas painted in Spain are known. He appears to have come to Spain in 1577, but, on being questioned two years later in connexion with a judicial suit, as to when he arrived in the country, and for what purpose he came, declined to give any information. He was probably attracted by the prospect of participating in the decoration of the Escorial, and he appears to have settled down in Toledo, where his first works were the paintings for the high altar of Santo Domingo, and his famous picture of "The Disrobing of Christ" in the sacristy of the cathedral. It was in connexion with this last-named work that he proved refractory, and the records of a law-suit respecting the price to be paid to him give us the earliest information of the artist's sojourn in Spain. In 1590, he painted the "History of St Maurice" for Philip II., and in 1578, his masterpiece, entitled "The Burial of the Count Orgaz." This magnificent picture, one of the finest in Spain, is at last being appreciated, and can only be put a little below the masterpieces of Velazquez. It is a strangely individual work, representing Spanish character even more truthfully than did any Spanish artist, and 424
it gathers up all the fugitive moods, the grace and charm, the devices and defects of a single race, and gives them complete stability in their wavering expressions.

Between 1595 and 1600, El Greco executed two groups of paintings in the church of San José at Toledo, and in the hospital of La Caridad, at Illescas. Besides these, he is known to have painted thirty-two portraits, several manuscripts, and many paintings for altar-pieces in Toledo and the neighbourhood. As an architect he was responsible for more than one of the churches of Toledo, and as a sculptor for carvings both in wood and in marble, and he can only be properly understood in all his varied excellences after a visit to the city where most of his work was executed.

He died on the 7th of April 1614, and the date of his death is one of the very few certain facts which we have respecting him. The record informs us that he made no will, that he received the sacraments, and was buried in the church of Santo Domingo. The popular legend of his having gone mad towards the latter part of his career has no foundation in fact, but his painting became more and more eccentric as his life went on, and his natural perversity and love of strange, cold colouring, increased towards the end of his life. As has been well said, "Light with him was only used for emotional appeal, and was focussed or scattered at will." He was haughtily certain of the value of his own art, and was determined to paint in cold, ashen colouring, with livid, startling effect, the gaunt and extraordinary figures that he beheld with his eccentric genius. His pictures have wonderful visionary quality, admirable invention, and are full of passionate fervency. They may be considered extravagant, but are never commonplace, and are exceedingly attractive in their intense emotion, marvellous sincerity, and strange, chilly colour.

El Greco's work is typically modern, and from it the portrait-painter, J. S. Sargent, claims to have learnt more than from that of any other artist. It immortalizes the character of the people amongst whom he dwelt, and he may be considered as the initiator of truth and realism in art, a precursor and inspirer of Velazquez.

In his own time he was exceedingly popular, and held in great repute. Sonnets were written in his honour, and he is himself said to have written several treatises, but these have not come down to our time. For more than a generation his work was hardly known, but it is now gaining rapidly in importance, and its true position is more and more recognized. Some examples of the artist's own handwriting have been discovered in Toledo, and Señor Don Manuel Cossia of Madrid has spent many years collecting information for a work dealing with the artist.

(G. C. W.)

GRECO-TURKISH WAR, 1897. This war between Greece and Turkey (see GREECE: *Modern History*) involved two practically distinct campaigns, in Thessaly and in Epirus. Upon the Thessalian frontier the Turks, early in March, had concentrated six divisions (about 58,000 men), 1500 sabres and 156 guns, under Edhem Pasha. A seventh division was rendered available a little later. The Greeks numbered about 45,000 infantry, 800 cavalry and 96 guns, under the crown prince. On both sides there was a considerable dispersion of forces along the frontier. The Turkish navy, an important factor in the war of 1877-78, had become paralytic ten years later, and the Greek squadron held complete command of the sea. Expeditionary forces directed against the Turkish line of communications might have influenced the course of the campaign; but for such work the Greeks were quite unprepared, and beyond bombarding one or two insignificant ports on the coast-line, and aiding the transport of troops from Athens to Volo, the navy practically accomplished nothing. On the 9th and 10th April Greek irregulars crossed the frontier, either with a view to provoke hostilities or in the hope of fomenting a rising in Macedonia. On the 16th and 17th some fighting occurred, in which Greek regulars took part; and on the 18th Edhem Pasha, whose headquarters had for some time been established at Elassona, ordered a general advance. The Turkish plan was to turn the Greek left and to bring on a decisive action, but this was not carried out. In the centre the Turks occupied the Meluna Pass on the 19th, and the way was practically open to Larissa. The Turkish right wing, however, moving on Damani and the Reveni Pass, encountered resistance, and the left wing was temporarily checked by the Greeks among the mountains near Nezeros. At Mati, covering the road to Tyrnavo, the Greeks entrenched themselves. Here sharp fighting occurred on the 21st and 22nd, during which the Greeks sought to turn the right flank of the superior Turkish central column. On the 23rd fighting was renewed, and the advance guard of the Turkish left column, which had been reinforced, and had pressed back the Greeks, reached Deliler. The Turkish forces had now drawn together, and the Greeks were threatened on both flanks. In the evening a general retreat was ordered, and the loose discipline of the Greek army was at once manifested. Rumours of disaster spread among the ranks, and wild panic supervened. There was nothing to prevent an orderly retirement upon Larissa, which had been fortified and provisioned, and which offered a good defensive position. The general *débâcle* could not, however, be arrested, and in great disorder the mass of the Greek army fled southwards to Pharsala. There was no pursuit, and the Turkish commander-in-chief did not reach Larissa till the 27th. Thus ended the first phase of the war, in which the Greeks showed tenacity in defence, which proved fruitless by reason of initially bad strategic dispositions entailing far too great dispersion, and also because there was no plan of action beyond a general desire to avoid risking a defeat which might prevent the expected risings in Macedonia and elsewhere. The handling of the Turkish army showed little skill or enterprise; but on both sides political considerations tended to prevent the application of sound military principles.

Larissa being abandoned by the Greeks, Velestino, the junction of the Thessalian railways, where there was a strong position covering Volo, seemed to be the natural rallying point for the Greek army. Here the support of the fleet would have been secured, and a Turkish advance across the Othrys range upon Athens could not have taken place until the flanking position had been captured. Whether by direction or by natural impulse, however, the mass of the Greek troops made for Pharsala, where some order was re-established, and preparations were made to resist attack. The importance of Velestino was recognized by sending a brigade thither by railway from Pharsala, and the inferior Greek army was thus split into two portions, separated by nearly 40 m. On 27th April a Turkish reconnaissance on Velestino was repulsed, and further fighting occurred on the 29th and 30th, in which the Greeks under Colonel Smolenski held their own. Meanwhile the Turks made preparations to attack Pharsala, and on 5th May the Greeks were driven from their positions in front of the town by three divisions. Further fighting followed on the 6th, and in the evening the Greek army retired in fair order upon Domokos. It was intended to turn the Greek left with the first division under Hairi Pasha, but the flanking force did not arrive in time to bring about a decisive result. The abandonment of Pharsala involved that of Velestino, where the Turks had obtained no advantage, and on the evening of the 5th Colonel Smolenski began a retirement upon Halmyros. Again delaying, Edhem Pasha did not attack Domokos till the 17th, giving the Greeks time to entrench their positions. The attack was delivered in three columns, of which the right was checked and the centre failed to take the Greek trenches and suffered much loss. The left column, however, menaced the line of retreat, and the Greek army abandoned the whole position during the night. No effective stand was made at the Furka Pass, which was evacuated on the following night. Colonel Smolenski, who arrived on the 18th from Halmyros, was directed to hold the pass of Thermopylae. The Greek forces being much demoralized, the intervention of the tsar was invoked by telegraph; and the latter sent a personal appeal to the Sultan, who directed a suspension of hostilities. On the 20th an armistice was arranged.

In Epirus at the outbreak of war about 15,000 Greeks, including a cavalry regiment and five batteries, the whole under Colonel 425
Manos, occupied a line of defence from Arta to Peta. The Turks, about 28,000 strong, with forty-eight guns, under Achmet Hifsi

Pasha, were distributed mainly at Iannina, Pentepagadia, and in front of Arta. On 18th April the Turks commenced a three days' bombardment of Arta; but successive attempts to take the bridge were repulsed, and during the night of the 21st they retired on Philippiada, 26 m. distant, which was attacked and occupied by Colonel Manos on the 23rd. The Greeks then advanced to Pentepagadia, meeting with little resistance. Their difficulties now began. After some skirmishing on the 27th, the position held by their advanced force near Homopulos was attacked on the 28th. The attack was renewed on the 29th, and no Greek reinforcements were forthcoming when needed. The Euzones made a good defence, but were driven back by superior force, and a retreat was ordered, which quickly degenerated into panic-stricken flight to and across the Arta. Reinforcements, including 2500 Epirote volunteers, were sent to Arta from Athens, and on 12th May another incursion into Turkish territory began, the apparent object being to occupy a portion of the country in view of the breakdown in Thessaly and the probability that hostilities would shortly end. The advance was made in three columns, while the Epirote volunteers were landed near the mouth of the Luro river with the idea of cutting off the Turkish garrison of Prevesa. The centre column, consisting of a brigade, three squadrons and two batteries, which were intended to take up and hold a defensive position, attacked the Turks near Strevina on the 13th. The Greeks fought well, and being reinforced by a battalion from the left column, resumed the offensive on the following day, and fairly held their own. On the night of the 15th a retreat was ordered and well carried out. The volunteers landed at the mouth of the Luro, were attacked and routed with heavy loss.

The campaign in Epirus thus failed as completely as that in Thessaly. Under the terms of the treaty of peace, signed on 20th September, and arranged by the European powers, Turkey obtained an indemnity of £T4,000,000, and a rectification of the Thessalian frontier, carrying with it some strategic advantage. History records few more unjustifiable wars than that which Greece gratuitously provoked. The Greek troops on several occasions showed tenacity and endurance, but discipline and cohesion were manifestly wanting. Many of the officers were incapable; the campaign was gravely mismanaged; and politics, which led to the war, impeded its operations. On the other hand, the fruits of the German tuition, which began in 1880, and received a powerful stimulus by the appointment of General von der Goltz in 1883, were shown in the Turkish army. The mobilization was on the whole smoothly carried out, and the newly completed railways greatly facilitated the concentration on the frontier. The young school of officers trained by General von der Goltz displayed ability, and the artillery at Pharsala and Domokos was well handled. The superior leading was, however, not conspicuously successful; and while the rank and file again showed excellent military qualities, political conditions and the Oriental predilection for half-measures and for denying full responsibility and full powers to commanders in the field enfeebled the conduct of the campaign. On account of the total want of careful and systematic peace training on both sides, a war which presented several interesting strategic problems provided warnings in place of military lessons.

(G. S. C.)

GREECE,[1] an ancient geographical area, and a modern kingdom more or less corresponding thereto, situated at the south-eastern extremity of Europe and forming the most southerly portion of the Balkan Peninsula. The modern kingdom is bounded on the N. by European Turkey and on the E., S. and W. by the Aegean, Mediterranean and Ionian seas. The name *Graecia*, which was more or less vaguely given to the ancient country by the Romans, seems not to have been employed by any native writer before Aristotle; it was apparently derived by the Romans from the Illyrians, who applied the name of an Epirote tribe (Γραικοί, Graeci) to all their southern neighbours. The names Hellas, Hellenes (Ἑλλας, Ἕλληνες), by which the ancient Greeks called their country and their race, and which are still employed by the modern Greeks, originally designated a small district in Phthiotis in Thessaly and its inhabitants, who gradually spread over the lands south of the Cambunian mountains. The name Hellenes was not universally applied to the Greek race until the post-Homeric epoch (Thucyd. i. 3).

(Click to enlarge.)

1. Geography and Statistics

Extent of ancient Greece.

The ancient Greeks had a somewhat vague conception of the northern limits of Hellas. Thessaly was generally included and Epirus excluded; some writers included some of the southern cantons of Epirus, while others excluded not only all that country but Aetolia and Acarnania. Generally speaking, the confines of Hellas in the age of its greatest distinction were represented by a line drawn from the northern shore of the Ambracian Gulf on the W. to the mouth of the Peneus on the E. Macedonia and Thrace were regarded as outside the pale of Hellenic civilization till 386 B.C., when after his conquest of Thessaly and Phocis, Philip of Macedon obtained a seat in the Amphictyonic Council. In another sense, however, the name Hellas expressed an ethnological rather than a geographical unity; it denoted every country inhabited by Hellenes. It thus embraced all the Greek settlements on the coasts and islands of the Mediterranean, on the shores of the Hellespont, the Bosporus and the Black Sea. Nevertheless, the Greek peninsula within the limits described above, together with the adjacent islands, was always regarded as Hellas *par excellence*. The continental area of Hellas proper was no greater than that of the modern Greek kingdom, which comprises but a small portion of the territories actually occupied by the Greek race. The Greeks have always been a maritime people, and the real centre of the national life is now, as in antiquity, the Aegean Sea or Archipelago. Thickly studded with islands and bordered by deeply indented coasts with sheltered creeks and

harbours, the Aegean in the earliest days of navigation invited the enterprise of the mariner; its shores, both European and Asiatic, became covered with Greek settlements and its islands, together with Crete and Cyprus, became Greek. True to their maritime instincts, the Greeks rarely advanced inland to any distance from the sea; the coasts of Macedonia, Thrace and Asia Minor are still mainly Greek, but, except for some isolated colonies, the *hinterland* in each case lies outside the limits of the race. Continental Greece is divided by its mountain ranges into a number of natural cantons; the existence of physical barriers tended in the earliest times to the growth of isolated political communities, and in the epoch of its ancient independence the country was occupied by seventeen separate states, none of them larger than an ordinary English county. These states, which are noticed separately, were: Thessaly, in northern Greece; Acarnania, Aetolia, Locris, Doris, Phocis, Megaris, Boeotia and Attica in central Greece; and Corinthia, Sicyonia, Achaea, Elis, Messenia, Laconia, Argolis and Arcadia in the Peloponnesus.

Extent of modern Greece.

Modern Greece, which (including the adjacent islands) extends from 35° 50′ to 39° 54′ N. and from 19° 20′ to 26° 15′ E., comprises all the area formerly occupied by these states. Under the arrangement concluded at Constantinople on the 21st of July 1832 between Great Britain, France, Russia and Turkey, the northern boundary of Greece was drawn from the Gulf of Arta (Sinus Ambracius) to the Gulf of Volo (S. Pagasaeus), the line keeping to the crest of the Othrys range. Thessaly and part of Acarnania were thus left to Turkey. The island of Euboea, the Cyclades and the northern Sporades were added to the new kingdom. In 1864 the Ionian Islands (*q.v.*) were ceded by Great Britain to Greece. In 1880 the Conference of Berlin proposed a new frontier, which transferred to Greece not only Thessaly but a considerable portion of southern Epirus, extending to the river Kalamas. This, however, was rejected by Turkey, and the existing boundary was traced in 1881. Starting from the Aegean coast at a point near Platamona, between Mount Olympus and the mouth of the Salambria (Peneus), the line passes over the heights of Kritiri and Zygos (Pindus) and descends the course of the river Arta to its mouth. After the war of 1897 Greece restored to Turkey some strategical points on the frontier possessing no geographical importance. The greatest length of Greece is about 250 m., the greatest breadth 180 m. The country is generally divided into five parts, which are indicated by its natural features:—(i.) Northern Greece, which extends northwards from Mount Othrys and the gulfs of Zeitun (Lamia) and Arta to the Cambunian Mountains, and comprises Thessaly and a small portion of Epirus; (ii.) Central Greece, extending from the southern limits of Northern Greece to the gulfs of Corinth and Aegina; (iii.) the peninsula of the Peloponnesus or Morea, attached to the mainland by the Isthmus of Corinth; (iv.) the Ionian Islands on the west coasts of Epirus and Greece; (v.) The islands of the Aegean Sea, including Euboea, the Cyclades and the northern Sporades.

Physical features.

In the complexity of its contour and the variety of its natural features Greece surpasses every country in Europe, as Europe surpasses every continent in the world. The broken character of its coast-line is unique; except a few districts in Thessaly no part of the country is more than 50 m. from the sea. Although the area of Greece is considerably smaller than that of Portugal, its coast-line is greater than that of Spain and Portugal together. The mainland is penetrated by numerous gulfs and inlets, and the adjoining seas are studded with islands. Another characteristic is the number and complexity of the mountain chains, which traverse every part of the country and which, together with their ramifications, cover four-fifths of its surface. The mountain-chains interlace, the interstices forming small enclosed basins, such as the plain of Boeotia and the plateau of Arcadia; the only plain of any extent is that of Thessaly. The mountains project into the sea, forming peninsulas, and sometimes reappearing in rows or groups of islands; they descend abruptly to the coast or are separated from it by small alluvial plains. The portions of the country suitable for human colonization were thus isolated one from the other, but as a rule possessed easy access to the sea. The earliest settlements were generally situated on or around some rocky elevation, which dominated the surrounding plain and was suitable for fortification as a citadel or acropolis; owing to the danger of piratical attacks they were usually at some little distance from the sea, but in the vicinity of a natural harbour. The physical features of the country played an important part in moulding the character of its inhabitants. Protected against foreign invasion by the mountain barriers and to a great extent cut off from mutual intercourse except by sea, the ancient Greek communities developed a marked individuality and a strong sentiment of local patriotism; their inhabitants were both mountaineers and mariners; they possessed the love of country, the vigour and the courage which are always found in highlanders, together with the spirit of adventure, the versatility and the passion for freedom characteristic of a seafaring people. The great variety of natural products as well as the facility of maritime communication tended to the early growth of commercial enterprise, while the peculiar beauty of the scenery, though little dwelt upon in ancient literature, undoubtedly quickened the poetic and artistic instincts of the race. The effects of physical environment are no less noticeable among the modern Greeks. The rural populations of Attica and Boeotia, though descended from Albanian colonists in the middle ages, display the same contrast in character which marked the inhabitants of those regions in ancient times.

In its general aspect the country presents a series of striking and interesting contrasts. Fertile tracts covered with vineyards, olive groves, corn-fields or forests display themselves in close proximity with rugged heights and rocky precipices; the landscape is never, monotonous; its outlines are graceful, and its colouring, owing to the clearness of the air, is at once brilliant and delicate, while the sea, in most instances, adds a picturesque feature, enhancing the charm and variety of the scenery.

Mountains.

The ruling feature in the mountain system of northern Greece is the great chain of Pindus, which, extending southwards from the lofty Shar Dagh (Skardos) near Uskub, forms the backbone of the Balkan peninsula. Reaching the frontier of Greece a little S. of lat. 40°, the Pindus range is intersected by the Cambunian Mountains running E. and W.; the eastern branch, which forms the northern boundary of Thessaly, extends to the Gulf of Salonica and culminates in Mount Olympus (9754 ft.) a little to the N. of the Greek frontier; then bending to the S.E. it follows the coast-line, forming a rampart between the Thessalian plain and the sea; the barrier is severed at one point only where the river Salambria (anc. *Peneus*) finds an exit through the narrow defile of Tempe. South of Tempe the mountain ridge, known as the Mavro Vouno, connects the pyramidal Kissovo (anc. *Ossa*, 6400 ft.) with Plessidi (anc. *Pelion*, 5310 ft.); it is prolonged in the Magnesian peninsula, which separates the Gulf of Volo from the Aegean, and is continued by the mountains of Euboea (highest summits, Dirphys, 5725 ft., and Ocha, 4830 ft.) and by the islands of Andros and Tenos. West of Pindus, the Cambunian Mountains are continued by several ridges which traverse Epirus from north to south, enclosing the plain and lake of Iannina; the most westerly of these, projecting into the Adriatic, forms the Acroceraunian promontory terminating in Cape Glossa. The principal pass through the Cambunian Mountains is that of Meluna, through which runs the carriage-road connecting the town of Elassona in Macedonia with Larissa, the capital of Thessaly; there are horse-paths at Reveni and elsewhere. The central chain of Pindus at the point where it is intersected by the Cambunian Mountains forms the mass of Zygos (anc. *Lacmon*, 7113 ft.) through which a horse-path connects the town of Metzovo with Kalabaka in Thessaly; on the declivity immediately N. of Kalabaka are a series of rocky pinnacles on which a number of monasteries are perched. Trending to the S., the Pindus chain terminates in the conical Mount Velouchi (anc. *Tymphrestus*, 7609 ft.) in the heart of the mountainous region of northern Greece. From this centre-point a number of mountains radiate in all directions. To the E. runs the chain of Helloro (anc. *Othrys*; highest summit, Hagios Elias, 5558 ft.) separating the plain of Thessaly from the valley of the Spercheios and traversed by the Phourka pass (2789 ft.); to the S.E. is Mount Katávothra (anc. *Oeta*, 7080 ft.) extending to the southern shore of the Gulf of Lamia at Thermopylae; to the S.E., S. and S.W. are the mountains of Aetolia and Acarnania. The Aetolian group, which may be regarded as the direct continuation of the Pindus range, includes Kiona (8240 ft.), the highest mountain in Greece, and Vardusi (anc. *Korax*, 8190 ft.). The mountains of Acarnania with Ὑψηλὴ κορυφή (5215 ft.) rise to the W. of the valley of the Aspropotamo (anc. *Achelous*). The Aetolian Mountains are prolonged to the S.E. by the double-crested Liakoura (anc. *Parnassus*; 8064 ft.) in Phocis; by Palaeo Vouno (anc. *Helicon*, 5738 ft.) and Elateas (anc. *Cithaeron*, 4626 ft.) respectively W. and S. of the Boeotian plain; and by the mountains of Attica,—Ozea (anc. *Parnes*, 4626 ft.), Mendeli (anc. *Pentelicus* or *Brilessos*, 3639 ft.), Trellovouno (anc. *Hymettus*, 3369 ft.), and Keratia (2136 ft.)—terminating in the promontory of Sunium, but reappearing in the islands of Ceos, Cythnos, Seriphos and Siphnos. South of Cithaeron are Patera in Megaris (3583 ft.) and Makri Plagi (anc. *Geraneia*, 4495 ft.) overlooking the Isthmus of Corinth.

The mountains of the Morea, grouped around the elevated central plateau of Arcadia, form an independent system with ramifications extending through the Argolid peninsula on the E. and the three southern promontories of Malea, Taenaron and Acritas. At the eastern end of the northern chain, separating Arcadia from the Gulf of Corinth, is Ziria (anc. *Cyllene*, 7789 ft.); it forms a counterpart to Parnassus on the opposite side of the gulf. A little to the W. is Chelmos (anc. *Aroania*, 7725 ft.); farther W., Olonos (anc. *Erymanthus*, 7297 ft.) and Voïdia (anc. *Panachaïcon*, 6322 ft.) overlooking the Gulf of Patras. The highest summit in the Argolid peninsula is Hagios Elias (anc. *Arachnaeon*, 3930 ft.). The series of heights forming the eastern rampart of Arcadia, including Artemision (5814 ft.) and Ktenia (5246 ft.) is continued to the S. by the Malevo range (anc. *Parnon*, highest summit 6365 ft.) which extends into the peninsula of Malea and reappears in the island of Cerigo. Separated from Parnon by the Eurotas valley to the W., the chain of Taygetus (mod. *Pentedaktylon*; highest summit Hagios Elias, 7874 ft., the culminating point of the Morea) forms a barrier between the plains of Laconia and Messenia; it is traversed by the Langáda pass leading from Sparta to Kalamata. The

range is prolonged to the S. through the arid district of Maina and terminates in Cape Matapan (anc. *Taenarum*). The mountains of western Arcadia are less lofty and of a less marked type; they include Hagios Petros (4777 ft.) and Palaeócastro (anc. *Pholoë*, 2257 ft.) N. of the Alpheus valley, Diaphorti (anc. *Lycaeus*, 4660 ft.), the haunt of Pan, and Nomia (4554 ft.) W. of the plain of Megalopolis. Farther south, the mountains of western Messenia form a detached group (Varvara, 4003 ft.; Mathia, 3140 ft.) extending to Cape Gallo (anc. *Acritas*) and the Oenussae Islands. In central Arcadia are Apanokrapa (anc. *Maenalus*, also sacred to Pan) and Roudia (5072 ft.); the Taygetus chain forms the southern continuation of these mountains.

The more noteworthy fortified heights of ancient Greece were the Acrocorinthus, the citadel of Corinth (1885 ft.); Ithome (2631 ft.) at Messene; Larissa (950 ft.) at Argos; the Acropolis of Mycenae (910 ft.); Tiryns (60 ft.) near Nauplia, which also possessed its own citadel, the Palamidhi or Acro-nauplia (705 ft.); the Acropolis of Athens (300 ft. above the mean level of the city and 512 ft. above the sea), and the Cadmea of Thebes (715 ft.).

Greece has few rivers; most of these are small, rapid and turbid, as might be expected from the mountainous configuration of the country. They are either perennial rivers or torrents, the white beds of the latter being dry in summer, and only filled with water after the autumn rains. The chief rivers (none of which is navigable) are the Salambria (*Peneus*) in Thessaly, the Mavropotamo (*Cephisus*) in Phocis, the Hellada (*Spercheios*) in Phthiotis, the Aspropotamo (*Achelous*) in Aetolia, and the Ruphia (*Alpheus*) and Vasiliko (*Eurotas*) in the Morea. Of the famous rivers of Athens, the one, the Ilissus, is only a chain of pools all summer, and the other, the Cephisus, though never absolutely dry, does not reach the sea, being drawn off in numerous artificial channels to irrigate the neighbouring olive groves. A frequent peculiarity of the Greek rivers is their sudden disappearance in subterranean chasms and reappearance on the surface again, such as gave rise to the fabled course of the Alpheus under the sea, and its emergence in the fountain of Arethusa in Syracuse. Some of these chasms—"Katavothras"—are merely sieves with herbage and gravel in the bottom, but others are large caverns through which the course of the river may sometimes be followed. Floods are frequent, especially in autumn, and natural fountains abound and gush out even from the tops of the hills. Aganippe rises high up among the peaks of Helicon, and Peirene flows from the summit of Acrocorinthus. The only noteworthy cascade, however, is that of the Styx in Arcadia, which has a fall of 500 ft. During part of the year it is lost in snow, and it is at all times almost inaccessible. Lakes are numerous, but few are of considerable size, and many merely marshes in summer. The largest are Karla (*Boebeïs*) in Thessaly, Trichonis in Aetolia, Copaïs in Boeotia, Pheneus and Stymphalus in Arcadia.

Rivers.

The valleys are generally narrow, and the plains small in extent, deep basins walled in among the hills or more free at the mouths of the rivers. The principal plains are those of Thessaly, Boeotia, Messenia, Argos, Elis and Marathon. The bottom of these plains consists of an alluvial soil, the most fertile in Greece. In some of the mountainous regions, especially in the Morea, are extensive table-lands. The plain of Mantinea is 2000 ft. high, and the upland district of Sciritis, between Sparta and Tegea, is in some parts 3000 ft.

Plains.

Strabo said that the guiding thing in the geography of Greece was the sea, which presses in upon it at all parts with a thousand arms. From the Gulf of Arta on the one side to the Gulf of Volo on the other the coast is indented with a succession of natural bays and gulfs. The most important are the Gulfs of Aegina (*Saronicus*) and Lepanto (*Corinthiacus*), which separate the Morea from the northern mainland of Greece,—the first an inlet of the Aegean, the second of the Ionian Sea,—and are now connected by a canal cut through the high land of the narrow Isthmus of Corinth (3½ m. wide). The outer portion of the Gulf of Lepanto is called the Gulf of Patras, and the inner part the Bay of Corinth; a narrow inlet on the north side of the same gulf, called the Bay of Salona or Itea, penetrates northwards into Phocis so far that it is within 24 geographical miles of the Gulf of Zeitun on the north-east coast. The width of the entrance to the gulf of Lepanto is subject to singular changes, which are ascribed to the formation of alluvial deposits by certain marine currents, and their removal again by others. At the time of the Peloponnesian war this channel was 1200 yds. broad; in the time of Strabo it was only 850; and in our own day it has again increased to 2200. On the coast of the Morea there are several large gulfs, that of Arcadia (*Cyparissius*) on the west, Kalamata (*Messeniacus*) and Kolokythia (*Laconicus*) on the south and Nauplia (*Argolicus*) on the east. Between Euboea and the mainland lie the channels of Trikeri, Talanti (*Euboicum Mare*) and Egripo; the latter two are connected by the strait of Egripo (*Euripus*). This strait, which is spanned by a swing-bridge, is about 180 ft. wide, and is remarkable for the unexplained eccentricity of its tide, which has puzzled ancients and moderns alike. The current runs at the average speed of 5 m. an hour, but continues only for a short time in one direction, changing its course, it is said, ten or twelve times in a day; it is sometimes very violent.

Coast.

There are no volcanoes on the mainland of Greece, but everywhere traces of volcanic action and frequently visitations of earthquakes, for it lies near a centre of volcanic: agency, the island of Santorin, which has been within recent years in a state of eruption. There is an extinct crater at Mount Laphystium (*Granitsa*) in Boeotia. The mountain of Methane, on the coast of Argolis, was produced by a volcanic eruption in 282 B.C. Earthquakes laid Thebes in ruins in 1853, destroyed every house in Corinth in 1858, filled up the Castalian spring in 1870, devastated Zante in 1893 and the district of Atalanta in 1894. There are hot springs at Thermopylae and other places, which are used for sanitary purposes. Various parts of the coast exhibit indications of upheaval within historical times. On the coast of Elis four rocky islets are now joined to the land, which were separate from it in the days of ancient Greece. There are traces of earlier sea-beaches at Corinth, and on the coast of the Morea, and at the mouth of the Hellada. The land has gained so much that the pass of Thermopylae which was extremely narrow in the time of Leonidas and his three hundred, is now wide enough for the motions of a whole army.

(J. D. B.)

Volcanic action.

Structurally, Greece may be divided into two regions, an eastern and a western. The former includes Thessaly, Boeotia, the island of Euboea, the isthmus of Corinth, and the peninsula of Argolis, and, throughout, the strike of the beds is nearly from west to east. The western region includes the Pindus and all the parallel ranges, and the whole of the Peloponnesus excepting Argolis. Here the folds which affect the Mesozoic and early Tertiary strata run approximately from N.N.W. to S.S.E.

Geology.

Up to the close of the 19th century the greater part of Greece was believed to be formed of Cretaceous rocks, but later researches have shown that the supposed Cretaceous beds include a variety of geological horizons. The geological sequence begins with crystalline schists and limestones, followed by Palaeozoic, Triassic and Liassic rocks. The oldest beds which hitherto have yielded fossils belong to the Carboniferous System (*Fusulina* limestone of Euboea). Following upon these older beds are the great limestone masses which cover most of the eastern region, and which are now known to include Jurassic, Tithonian, Lower and Upper Cretaceous and Eocene beds. In the Pindus and the Peloponnesus these beds are overlaid by a series of shales and platy limestones (Olonos Limestone of the Peloponnesus), which were formerly supposed to be of Tertiary age. It has now been shown, however, that the upper series of limestones has been brought upon the top of the lower by a great overthrust. Triassic fossils have been found in the Olonos Limestone and it is almost certain that other Mesozoic horizons are represented.

The earth movements which produced the mountain chains of western Greece have folded the Eocene beds and must therefore be of post-Eocene date. The Neogene beds, on the other hand, are not affected by the folds, although by faulting without folding they have in some places been raised to a height of nearly 6000 ft. They lie, however, chiefly along the coast and in the valleys, and consist of marls, conglomerates and sands, sometimes with seams of lignite. The Pikermi deposits, of late Miocene age, are famous for their rich mammalian fauna.

Although the folding which formed the mountain chains appears to have ceased, Greece is still continually shaken by earthquakes, and these earthquakes are closely connected with the great lines of fracture to which the country owes its outline. Around the narrow gulf which separates the Peloponnesus from the mainland, earthquakes are particularly frequent, and another region which is often shaken is the south-western corner of Greece, the peninsula of Messene.[2]

(P. La.)

The vegetation of Greece in general resembles that of southern Italy while presenting many types common to that of Asia Minor. Owing to the geographical configuration of the peninsula and its mountainous surface the characteristic flora of the Mediterranean regions is often found in juxtaposition with that of central Europe. In respect to its vegetation the country may be regarded as divided into four zones. In the first, extending from the sea-level to the height of 1500 ft., oranges, olives, dates, almonds, pomegranates, figs and vines flourish, and cotton and tobacco are grown. In the neighbourhood of streams are found the laurel, myrtle, oleander and lentisk, together with the plane and white poplar; the cypress is often a picturesque feature in the landscape, and there is a variety of aromatic plants. The second zone, from 1500 to 3500 ft., is the region of the oak, chestnut and other British trees. In the third, from 3500 to 5500 ft., the beech is the characteristic forest tree; the *Abies cephalonica* and *Pinus pinea* now take the place of the *Pinus halepensis*, which grows everywhere in the lower regions. Above 5500 ft. is the Alpine region, marked by small plants, lichens and mosses. During the short period of spring anemones and

Flora.

other wild flowers enrich the hillsides with magnificent colouring; in June all verdure disappears except in the watered districts and elevated plateaus. The asphodel grows abundantly in the dry rocky soil; aloes, planted in rows, form impenetrable hedges. Medicinal plants are numerous, such as the *Inula Helenium*, the *Mandragora Officinarum*, the *Colchicum napolitanum* and the *Helleborus orientalis*, which still grows abundantly near Aspraspitia, the ancient Anticyra, at the foot of Parnassus.

Fauna.

The fauna is similar to that of the other Mediterranean peninsulas, and includes some species found in Asia Minor but not elsewhere in Europe. The lion existed in northern Greece in the time of Aristotle and at an earlier period in the Morea. The bear is still found in the Pindus range. Wolves are common in all the mountainous regions and jackals are numerous in the Morea. Foxes are abundant in all parts of the country; the polecat is found in the woods of Attica and the Morea; the lynx is now rare. The wild boar is common in the mountains of northern Greece, but is almost extinct in the Peloponnesus. The badger, the marten and the weasel are found on the mainland and in the islands. The red deer, the fallow deer and the roe exist in northern Greece, but are becoming scarce. The otter is rare. Hares and rabbits are abundant in many parts of the country, especially in the Cyclades; the two species never occupy the same district, and in the Cyclades some islands (Naxos, Melos, Tenos, &c.) form the exclusive domain of the hares, others (Seriphos, Kimolos, Mykonos, &c.) of the rabbits. In Andros alone a demarcation has been arrived at, the hares retaining the northern and the rabbits the southern portion of the island. The chamois is found in the higher mountains, such as Pindus, Parnassus and Tymphrestus. The Cretan *agrimi*, or wild goat (*Capra nubiana*, *C. aegagrus*), found in Antimelos and said to exist in Taygetus, the jackal, the stellion, and the chameleon are among the Asiatic species not found westward of Greece. There is a great variety of birds; of 358 species catalogued two-thirds are migratory. Among the birds of prey, which are very numerous, are the golden and imperial eagle, the yellow vulture, the *Gypaëtus barbatus*, and several species of falcons. The celebrated owl of Athena (*Athene noctua*) is becoming rare at Athens, but still haunts the Acropolis and the royal garden; it is a small species, found everywhere in Greece. The wild goose and duck, the bustard, partridge, woodcock, snipe, wood-pigeon and turtle-dove are numerous. Immense flocks of quails visit the southern coast of the Morea, where they are captured in great numbers and exported alive. The stork, which was common in the Turkish epoch, has now become scarce. There is a great variety of reptiles, of which sixty-one species have been catalogued. The saurians are all harmless; among them the stellion (*Stellio vulgaris*), commonly called κροκόδειλος in Mykonos and Crete, is believed by Heldreich to have furnished a name to the crocodile of the Nile (Herod. ii. 69). There are five species of tortoise and nine of Amphibia. Of the serpents, which are numerous, there are only two dangerous species, the *Vipera ammodytes* and the *Vipera aspis*; the first-named is common. Among the marine fauna are the dolphins, familiar in the legends and sculpture of antiquity; in the clear water of the Aegean they often afford a beautiful spectacle as they play round ships; porpoises and whales are sometimes seen. Sea-fish, of which 246 species have been ascertained, are very abundant.

Climate.

The climate of Greece, like that of the other countries of the Balkan peninsula, is liable to greater extremes of heat and cold than prevail in Spain and Italy; the difference is due to the general contour of the peninsula, which assimilates its climatic conditions to those of the European mainland. Another distinctive feature is the great variety of local contrasts; the rapid transitions are the natural effect of diversity in the geographical configuration of the country. Within a few hours it is possible to pass from winter to spring and from spring to summer. The spring is short; the sun is already powerful in March, but the increasing warmth is often checked by cold northerly winds; in many places the corn harvest is cut in May, when southerly winds prevail and the temperature rises rapidly. The great heat of summer is tempered throughout the whole region of the archipelago by the Etesian winds, which blow regularly from the N.E. for forty to fifty days in July and August. This current of cool dry air from the north is due to the vacuum resulting from intense heat in the region of the Sahara. The healthy Etesian winds are generally replaced towards the end of summer by the southerly Libas or sirocco, which, when blowing strongly, resembles the blast from a furnace and is most injurious to health. The sirocco affects, though in a less degree, the other countries of the Balkan peninsula and even Rumania. The mean summer temperature is about 79° Fahr. The autumn is the least healthy season of the year owing to the great increase of humidity, especially in October and November. At the end of October snow reappears on the higher mountains, remaining on the summits till June. The winter is mild, and even in January there are, as a rule, many warm clear days; but the recurrence of biting northerly winds and cold blasts from the mountains, as well as the rapid transitions from heat to cold and the difference in the temperature of sunshine and shade, render the climate somewhat treacherous and unsuitable for invalids. Snow seldom falls in the maritime and lowland districts and frost is rare. The mean winter temperature is from 48° to 55° Fahr. The rainfall varies greatly according to localities; it is greatest in the Ionian Islands (53.34 ins. at Corfu), in Arcadia and in the other mountainous districts, and least on the Aegean littoral and in the Cyclades; in Attica, the driest region in Greece, it is 16.1 ins. The wettest months are November, December and January; the driest July and August, when, except for a few thunder-storms, there is practically no rainfall. The rain generally accompanies southerly or south-westerly winds. In all the maritime districts the sea breeze greatly modifies the temperature; it begins about 9 A.M., attains its maximum force soon after noon, and ceases about an hour after sunset. Greece is renowned for the clearness of its climate; fogs and mists are almost unknown. In most years, however, only four or five days are recorded in which the sky is perfectly cloudless. The natural healthiness of the climate is counteracted in the towns, especially in Athens, by deficient sanitation and by stifling clouds of dust, which propagate infection and are peculiarly hurtful in cases of ophthalmia and pulmonary disease. Malarial fever is endemic in the marshy districts, especially in the autumn.

Area and population.

The area of the country was 18,341 sq. m. before the acquisition of the Ionian Islands in 1864, 19,381 sq. m. prior to the annexation of Thessaly and part of Epirus in 1881, and 24,552 sq. m. at the census in 1896. If we deduct 152 sq. m., the extent of territory ceded to Turkey after the war of 1897, the area of Greece in 1908 would be 24,400 sq. m. Other authorities give 25,164 and 25,136 sq. m. as the area prior to the rectification of the frontier in 1898.[3] The population in 1896 was 2,433,806, or 99.1 to the sq. m., the population of the territories annexed in 1881 being approximately 350,000; and 2,631,952 in 1907, or 107.8 to the sq. m. (according to the official estimate of the area), showing an increase of 198,146 or 0.81% per annum, as compared with 1.61% during the period between 1896 and 1889; the diminished increase is mainly due to emigration. The population by sex in 1907 is given as 1,324,942 males and 1,307,010 females (or 50.3% males to 49.6 females). The preponderance of males, which was 52% to 48% females in 1896, has also been reduced by emigration; it is most marked in the northern departments, especially in Larissa. Only in the departments of Arcadia, Eurytania, Corinth, Cephalonia, Lacedaemon, Laconia, Phocis, Argolis and in the Cyclades, is the female population in excess of the male.

Neither the census of 1896 nor that of 1889 gave any classification by professions, religion or language. The following figures, which are only approximate, were derived from unofficial sources in 1901:—agricultural and pastoral employments 444,000; industries 64,200; traders and their employés 118,000; labourers and servants 31,300; various professions 15,700; officials 12,000; clergy about 6000; lawyers 4000; physicians 2500. In 1879, 1,635,698 of the population were returned as Orthodox Christians, 14,677 as Catholics and Protestants, 2652 as Jews, and 740 as of other religions. The annexation of Thessaly and part of Epirus is stated to have added 24,165 Mahommedan subjects to the Hellenic kingdom. A considerable portion of these, however, emigrated immediately after the annexation, and, although a certain number subsequently returned, the total Mahommedan population in Greece was estimated to be under 5000 in 1908. A number of the Christian inhabitants of these regions, estimated at about 50,000, retained Turkish nationality with the object of escaping military service. The Albanian population, estimated at 200,000 by Finlay in 1851, still probably exceeds 120,000. It is gradually being absorbed in the Hellenic population. In 1870, 37,598 persons (an obviously untrustworthy figure) were returned as speaking Albanian only. In 1879 the number is given as 58,858. The Vlach population, which has been increased by the annexation of Thessaly, numbers about 60,000. The number of foreign residents is unknown. The Italians are the most numerous, numbering about 11,000. Some 1500 persons, mostly Maltese, possess British nationality.

By a law of 27 November 1899, Greece, which had hitherto been divided into sixteen departments (νόμοι) was redivided into twenty-six departments, as follows:—

	Departments.	*Pop.*		*Departments.*	*Pop.*
1	Attica	341,247	14	Corinth	71,229
2	Boeotia	65,816	15	Arcadia	162,324
3	Phthiotis	112,328	16	Achaea	150,918
4	Phocis	62,246	17	Elis	103,810
5	Aetolia and Acarnania	141,405	18	Triphylia	90,523
6	Eurytania	47,192	19	Messenia	127,991
7	Arta	41,280	20	Laconia	61,522

8	Trikkala	90,548	21	Lacedaemon	87,106
9	Karditsa	92,941	22	Corfu	99,571
10	Larissa	95,066	23	Cephalonia	71,235
11	Magnesia	102,742	24	Leucas (with Ithaca)	41,186
12	Euboea	116,903	25	Zante	42,502
13	Argolis	81,943	26	Cyclades	130,378

The population is densest in the Ionian Islands, exceeding 307 per sq. m. The departments of Acarnania, Phocis and Euboea are the most thinly inhabited (about 58, 61 and 66 per sq. m. respectively).

Very little information is obtainable with regard to the movement of the population; no register of births, deaths and marriages is kept in Greece. The only official statistics are found in the periodical returns of the mortality in the twelve principal towns, according to which the yearly average of deaths in these towns for the five years 1903-1907 was approximately 10,253, or 23.8 per 1000; of these more than a quarter are ascribed to pulmonary consumption, due in the main to defective sanitation. Both the birth-rate and death-rate are low, being 27.6 and 20.7 per 1000 respectively. Infant mortality is slight, and in point of longevity Greece compares favourably with most other European countries. The number of illegitimate births is 12.25 per 1000; these are almost exclusively in the towns.

Of the total population 28.5% are stated to live in towns. The population of the principal towns is:—

	1896.	1907.
Athens	111,486	167,479
Peiraeus	43,848	73,579
Patras	37,985	37,724
Trikkala	21,149	17,809
Hermopolis (Syra)	18,760	18,132
Corfu	18,581	28,254*
Volo	16,788	23,563
Larissa	15,373	18,001
Zante	14,906	13,580
Kalamata	14,298	15,397
Pyrgos	12,708	13,690
Tripolis	10,465	10,789
Chalcis	8,661	10,958
Laurium	7,926	10,007

* Including suburbs.

No trustworthy information is obtainable with regard to immigration and emigration, of which no statistics have ever been kept. Emigration, which was formerly in the main to Egypt and Rumania, is now almost exclusively to the United States of America. The principal exodus is from Arcadia, Laconia and Maina; the emigrants from these districts, estimated at about 14,000 annually, are for the most part young men approaching the age of military service. According to American statistics 12,431 Greeks arrived in the United States from Greece during the period 1869-1898 and 130,154 in 1899-1907; a considerable number, however, have returned to Greece, and those remaining in the United States at the end of 1907 were estimated at between 136,000 and 138,000; this number was considerably reduced in 1908 by remigration. Since 1896 the tendency to emigration has received a notable and somewhat alarming impulse. There is an increasing immigration into the towns from the rural districts, which are gradually becoming depopulated. Both movements are due in part to the preference of the Greeks for a town life and in part to distaste for military service, but in the main to the poverty of the peasant population, whose condition and interests have been neglected by the government.

Ethnology.

Greece is inhabited by three races—the Greeks, the Albanians and the Vlachs. The Greeks who are by far the most numerous, have to a large extent absorbed the other races; the process of assimilation has been especially rapid since the foundation of the Greek kingdom. Like most European nations, the modern Greeks are a mixed race. The question of their origin has been the subject of much learned controversy; their presumed descent from the Greeks of the classical epoch has proved a national asset of great value; during the period of their struggle for independence it won them the devoted zeal of the Philhellenes, it inspired the enthusiasm of Byron, Victor Hugo, and a host of minor poets, and it has furnished a pleasing illusion to generations of scholarly tourists who delight to discover in the present inhabitants of the country the mental and physical characteristics with which they have been familiarized by the literature and art of antiquity. This amiable tendency is encouraged by the modern Greeks, who possess an implicit faith in their illustrious ancestry. The discussion of the question entered a very acrimonious stage with the appearance in 1830 of Fallmerayer's *History of the Morea during the Middle Ages*. Fallmerayer maintained that after the great Slavonic immigration at the close of the 8th century the original population of northern Greece and the Morea, which had already been much reduced during the Roman period, was practically supplanted by the Slavonic element and that the Greeks of modern times are in fact Byzantinized Slavs. This theory was subjected to exhaustive criticism by Ross, Hopf, Finlay and other scholars, and although many of Fallmerayer's conclusions remain unshaken, the view is now generally held that the base of the population both in the mainland and the Morea is Hellenic, not Slavonic. During the 5th and 6th centuries Greece had been subjected to Slavonic incursions which resulted in no permanent settlements. After the great plague of 746-747, however, large tracts of depopulated country were colonized by Slavonic immigrants; the towns remained in the hands of the Greeks, many of whom emigrated to Constantinople. In the Morea the Slavs established themselves principally in Arcadia and the region of Taygetus, extending their settlements into Achaia, Elis, Laconia and the promontory of Taenaron; on the mainland they occupied portions of Acarnania, Aetolia, Doris and Phocis. Slavonic place-names occurring in all these districts confirm the evidence of history with regard to this immigration. The Slavs, who were not a maritime race, did not colonize the Aegean Islands, but a few Slavonic place-names in Crete seem to indicate that some of the invaders reached that island. The Slavonic settlements in the Morea proved more permanent than those in northern Greece, which were attacked by the armies of the Byzantine emperors. But even in the Morea the Greeks, or "Romans" as they called themselves (Ῥωμαῖοι), who had been left undisturbed on the eastern side of the peninsula, eventually absorbed the alien element, which disappeared after the 15th century. In addition to the place-names the only remaining traces of the Slav immigration are the Slavonic type of features, which occasionally recurs, especially among the Arcadian peasants, and a few customs and traditions. Even when allowance is made for the remarkable power of assimilation which the Greeks possessed in virtue of their superior civilization, it is difficult to resist the conclusion that the Hellenic element must always have been the most numerous in order to effect so complete an absorption. This element has apparently undergone no essential change since the epoch of Roman domination. The destructive invasions of the Goths in A.D. 267 and 395 introduced no new ethnic feature; the various races which during the middle ages obtained partial or complete mastery in Greece—the Franks, the Venetians, the Turks—contributed no appreciable ingredient to the mass of the population. The modern Greeks may therefore be regarded as in the main the descendants of the population which inhabited Greece in the earlier centuries of Byzantine rule. Owing to the operation of various causes, historical, social and economic, that population was composed of many heterogeneous elements and represented in a very limited degree the race which repulsed the Persians and built the Parthenon. The internecine conflicts of the Greek communities, wars with foreign powers and the deadly struggles of factions in the various cities, had to a large extent obliterated the old race of free citizens by the beginning of the Roman period. The extermination of the Plataeans by the Spartans and of the Melians by the Athenians during the Peloponnesian war, the proscription of Athenian citizens after the war, the massacre of the Corcyraean oligarchs by the democratic party, the slaughter of the Thebans by Alexander and of the Corinthians by Mummius, are among the more familiar instances of the catastrophes which overtook the civic element in the Greek cities; the void can only have been filled from the ranks of the metics or resident aliens and of the descendants of the far more numerous slave population. Of the latter a portion was of Hellenic origin; when a city was taken the males of military age were frequently put to the sword, but the women and children were sold as slaves; in Laconia and Thessaly there was a serf population of indigenous descent. In the classical period four-fifths of the population of Attica were slaves and of the remainder half were metics. In the Roman period the number of slaves enormously increased, the supply being maintained from the regions on the borders of

the empire; the same influences which in Italy extinguished the small landed proprietors and created the *latifundia* prevailed also in Greece. The purely Hellenic population, now greatly diminished, congregated in the towns; the large estates which replaced the small freeholds were cultivated by slaves and managed or farmed by slaves or freedmen, and wide tracts of country were wholly depopulated. How greatly the free citizen element had diminished by the close of the 1st century A.D. may be judged from the estimate of Plutarch that all Greece could not furnish more than 3000 hoplites. The composite population which replaced the ancient Hellenic stock became completely Hellenized. According to craniologists the modern Greeks are brachycephalous while the ancient race is stated to have been dolichocephalous, but it seems doubtful whether any such generalization with regard to the ancients can be conclusively established. The Aegean islanders are more brachycephalous than the inhabitants of the mainland, though apparently of purer Greek descent. No general conception of the facial type of the ancient race can be derived from the highly-idealized statues of deities, heroes and athletes; so far as can be judged from portrait statues it was very varied. Among the modern Greeks the same variety of features prevails; the face is usually oval, the nose generally long and somewhat aquiline, the 430
teeth regular, and the eyes remarkably bright and full of animation. The country-folk are, as a rule, tall and well-made, though slightly built and rather meagre; their form is graceful and supple in movement. The urban population, as elsewhere, is physically very inferior. The women often display a refined and delicate beauty which disappears at an early age. The best physical types of the race are found in Arcadia, in the Aegean Islands and in Crete.

The Albanian population extends over all Attica and Megaris (except the towns of Athens, Peiraeus and Megara), the greater part of Boeotia, the eastern districts of Locris, the southern half of Euboea and the northern side of Andros, the whole of the islands of Salamis, Hydra, Spetsae and Poros, and part of Aegina, the whole of Corinthia and Argolis, the northern districts of Arcadia and the eastern portion of Achaea. There are also small Albanian groups in Laconia and Messenia (see Albania). The Albanians, who call themselves *Shkyipetar*, and are called by the Greeks *Arvanitae* (Ἀρβανῖται), belong to the Tosk or southern branch of the race; their immigration took place in the latter half of the 14th century. Their first settlements in the Morea were made in 1347-1355. The Albanian colonization was first checked by the Turks; in 1454 an Albanian insurrection in the Morea against Byzantine rule was crushed by the Turkish general Tura Khan, whose aid had been invoked by the Palaeologi. With a few exceptions, the Albanians in Greece retained their Christian faith after the Turkish conquest. The failure of the insurrection of 1770 was followed by a settlement of Moslem Albanians, who had been employed by the Turks to suppress the revolt. The Christian Albanians have long lived on good terms with the Greeks while retaining their own customs and language and rarely intermarrying with their neighbours. They played a brilliant part during the War of Independence, and furnished the Greeks with many of their most distinguished leaders. The process of their Hellenization, which scarcely began till after the establishment of the kingdom, has been somewhat slow; most of the men can now speak Greek, but Albanian is still the language of the household. The Albanians, who are mainly occupied with agriculture, are less quick-witted, less versatile, and less addicted to politics than the Greeks, who regard them as intellectually their inferiors. A vigorous and manly race, they furnish the best soldiers in the Greek army, and also make excellent sailors.

The Vlachs, who call themselves *Aromâni*, *i.e.* Romans, form another important foreign element in the population of Greece. They are found principally in Pindus (the Agrapha district), the mountainous parts of Thessaly, Othrys, Oeta, the mountains of Boeotia, Aetolia and Acarnania; they have a few settlements in Euboea. They are for the most part either nomad shepherds and herdsmen or carriers (*kiradjis*). They apparently descend from the Latinized provincials of the Roman epoch who took refuge in the higher mountains from the incursions of the barbarians and Slavs (see Vlachs and Macedonia). In the 13th century the Vlach principality of "Great Walachia" (Μεγάλη Βλαχία) included Thessaly and southern Macedonia as far as Castoria; its capital was at Hypati near Lamia. Acarnania and Aetolia were known as "Lesser Walachia." The urban element among the Vlachs has been almost completely Hellenized; it has always displayed great aptitude for commerce, and Athens owes many of its handsomest buildings to the benefactions of wealthy Vlach merchants. The nomad population in the mountains has retained its distinctive nationality and customs together with its Latin language, though most of the men can speak Greek. Like the Albanians, the pastoral Vlachs seldom intermarry with the Greeks; they occasionally take Greek wives, but never give their daughters to Greeks; many of them are illiterate, and their children rarely attend the schools. Owing to their deficient intellectual culture they are regarded with disdain by the Greeks, who employ the term βλάχος to denote not only a shepherd but an ignorant rustic.

A considerable Italian element was introduced into the Ionian Islands during the middle ages owing to their prolonged subjection to Latin princes and subsequently (till 1797) to the Venetian republic. The Italians intermarried with the Greeks; Italian became the language of the upper classes, and Roman Catholicism was declared the state religion. The peasantry, however, retained the Greek language and remained faithful to the Eastern Church; during the past century the Italian element was completely absorbed by the Greek population.

The Turkish population in Greece, which numbered about 70,000 before the war of liberation, disappeared in the course of the struggle or emigrated at its conclusion. The Turks in Thessaly are mainly descended either from colonists established in the country by the Byzantine emperors or from immigrants from Asia Minor, who arrived at the end of the 14th century; they derive their name Konariots from Iconium (Konia). Many of the beys or land-owning class are the lineal representatives of the Seljuk nobles who obtained fiefs under the feudal system introduced here and in Macedonia by the Sultan Bayezid I.

National character.

Notwithstanding their composite origin, their wide geographical distribution and their cosmopolitan instincts, the modern Greeks are a remarkably homogeneous people, differing markedly in character from neighbouring races, united by a common enthusiasm in the pursuit of their national aims, and profoundly convinced of their superiority to other nations. Their distinctive character, combined with their traditional tendency to regard non-Hellenic peoples as barbarous, has, indeed, to some extent counteracted the results of their great energy and zeal in the assimilation of other races; the advantageous position which they attained at an early period under Turkish rule owing to their superior civilization, their versatility, their wealth, and their monopoly of the ecclesiastical power would probably have enabled them to Hellenize permanently the greater part of the Balkan peninsula had their attitude towards other Christian races been more sympathetic. Always the most civilized race in the East, they have successively influenced their Macedonian, Roman and Turkish conquerors, and their remarkable intellectual endowments bid fair to secure them a brilliant position in the future. The intense patriotic zeal of the Greeks may be compared with that of the Hungarians; it is liable to degenerate into arrogance and intolerance; it sometimes blinds their judgment and involves them in ill-considered enterprises, but it nevertheless offers the best guarantee for the ultimate attainment of their national aims. All Greeks, in whatever country they may reside, work together for the realization of the Great Idea (ἡ Μεγάλη Ἰδέα)—the supremacy of Hellenism in the East—and to this object they freely devote their time, their wealth and their talents; the large fortunes which they amass abroad are often bequeathed for the foundation of various institutions in Greece or Turkey, for the increase of the national fleet and army, or for the spread of Hellenic influence in the Levant. This patriotic sentiment is unfortunately much exploited by self-seeking demagogues and publicists, who rival each other in exaggerating the national pretensions and in pandering to the national vanity. In no other country is the passion for politics so intense; "keen political discussions are constantly going on at the cafés; the newspapers, which are extraordinarily numerous and generally of little value, are literally devoured, and every measure of the government is violently criticized and ascribed to interested motives." The influence of the journals is enormous; even the waiters in the cafés and domestic servants have their favourite newspaper, and discourse fluently on the political problems of the day. Much of the national energy is wasted by this continued political fever; it is diverted from practical aims, and may be said to evaporate in words. The practice of independent criticism tends to indiscipline in the organized public services; it has been remarked that every Greek soldier is a general and every sailor an admiral. During the war of 1897 a young naval lieutenant telegraphed to the minister of war condemning the measures taken by his admiral, and his action was applauded by several journals. There is also little discipline in the ranks of political parties, which are held together, not by any definite principle, but by the personal influence of the leaders; defections are frequent, and as a rule each deputy in the Chamber makes his terms with his chief. On the other hand, the independent character of the Greeks is 431
favourably illustrated by the circumstance that Greece is the only country in the Balkan peninsula in which the government cannot count on securing a majority by official pressure at the elections. Few scruples are observed in political warfare, but attacks on private life are rare. The love of free discussion is inherent in the strongly-rooted democratic instinct of the Greeks. They are in spirit the most democratic of European peoples; no trace of Latin feudalism survives, and aristocratic pretensions are ridiculed. In social life there is no artificial distinction of classes; all titles of nobility are forbidden; a few families descended from the chiefs in the War of Independence enjoy a certain pre-eminence, but wealth and, still more, political or literary notoriety constitute the

principal claim to social consideration. The Greeks display great intellectual vivacity; they are clever, inquisitive, quick-witted and ingenious, but not profound; sustained mental industry and careful accuracy are distasteful to them, and their aversion to manual labour is still more marked. Even the agricultural class is but moderately industrious; abundant opportunities for relaxation are provided by the numerous church festivals. The desire for instruction is intense even in the lowest ranks of the community; rhetorical and literary accomplishments possess a greater attraction for the majority than the fields of modern science. The number of persons who seek to qualify for the learned professions is excessive; they form a superfluous element in the community, an educated proletariat, attaching themselves to the various political parties in the hope of obtaining state employment and spending an idle existence in the cafés and the streets when their party is out of power. In disposition the Greeks are lively, cheerful, plausible, tactful, sympathetic; very affable with strangers, hospitable, kind to their servants and dependants, remarkably temperate and frugal in their habits, amiable and united in family life. Drunkenness is almost unknown, thrift is universally practised; the standard of sexual morality is high, especially in the rural districts, where illegitimacy is extremely rare. The faults of the Greeks must in a large degree be attributed to their prolonged subjection to alien races; their cleverness often degenerates into cunning, their ready invention into mendacity, their thrift into avarice, their fertility of resource into trickery and fraud. Dishonesty is not a national vice, but many who would scorn to steal will not hesitate to compass illicit gains by duplicity and misrepresentation; deceit, indeed, is often practised gratuitously for the mere intellectual satisfaction which it affords. In the astuteness of their monetary dealings the Greeks proverbially surpass the Jews, but fall short of the Armenians; their remarkable aptitude for business is sometimes marred by a certain short-sightedness which pursues immediate profits at the cost of ulterior advantages. Their vanity and egoism, which are admitted by even the most favourable observers, render them jealous, exacting, and peculiarly susceptible to flattery. In common with other southern European peoples the Greeks are extremely excitable; their passionate disposition is prone to take offence at slight provocation, and trivial quarrels not infrequently result in homicide. They are religious, but by no means fanatical, except in regard to politico-religious questions affecting their national aims. In general the Greeks may be described as a clever, ambitious and versatile people, capable of great effort and sacrifice, but deficient in some of the more solid qualities which make for national greatness.

Customs.

The customs and habits of the Greek peasantry, in which the observances of the classical age may often be traced, together with their legends and traditions, have furnished an interesting subject of investigation to many writers (see *Bibliography* below). In the towns the more cosmopolitan population has largely adopted the “European” mode of life, and the upper classes show a marked preference for French manners and usages. In both town and country, however, the influence of oriental ideas is still apparent, due in part to the long period of Turkish domination, in part to the contact of the Greeks with Asiatic races at all epochs of their history. In the rural districts, especially, the women lead a somewhat secluded life and occupy a subject position; they wait at table, and only partake of the meal when the men of the family have been served. In most parts of continental Greece the women work in the fields, but in the Aegean Islands and Crete they rarely leave the house. Like the Turks, the Greeks have a great partiality for coffee, which can always be procured even in the remotest hamlets; the Turkish practice of carrying a string of beads or rosary (*comboloio*), which provides an occupation for the hands, is very common. Many of the observances in connexion with births, christenings, weddings and funerals are very interesting and in some cases are evidently derived from remote antiquity. Nuptial ceremonies are elaborate and protracted; in some of the islands of the archipelago they continue for three weeks. In the preliminary negotiations for a marriage the question of the bride’s dowry plays a very important part; a girl without a dowry often remains unmarried, notwithstanding the considerable excess of the male over the female population. Immediately after the christening of a female child her parents begin to lay up her portion, and young men often refrain from marrying until their sisters have been settled in life. The dead are carried to the tomb in an open coffin; in the country districts professional mourners are engaged to chant dirges; the body is washed with wine and crowned with a wreath of flowers. A valedictory oration is pronounced at the grave. Many superstitions still prevail among the peasantry; the belief in the vampire and the evil eye is almost universal. At Athens and in the larger towns many handsome dwelling-houses may be seen, but the upper classes have no predilection for rural life, and their country houses are usually mere farmsteads, which they rarely visit. In the more fertile districts two-storeyed houses of the modern type are common, but in the mountainous regions the habitations of the country-folk are extremely primitive; the small stone-built hut, almost destitute of furniture, shelters not only the family but its cattle and domestic animals. In Attica the peasants’ houses are usually built of cob. In Maina the villagers live in fortified towers of three or more storeys; the animals occupy the ground floor, the family the topmost storey; the intermediate space serves as a granary or hay-loft. The walls are loop-holed for purposes of defence in view of the traditional vendetta and feuds, which in some instances have been handed down from remote generations and are maintained by occasional sharp-shooting from these primitive fortresses. In general cleanliness and sanitation are much neglected; the traveller in the country districts is doomed to sleepless nights unless he has provided himself with bedding and a hammock. Even Athens, though enriched by many munificent benefactions, is still without a drainage system or an adequate water supply; the sewers of many houses open into the streets, in which rubbish is allowed to accumulate. The effects of insanitary conditions are, however, counteracted in some degree by the excellent climate. The Aegean islanders contrast favourably with the continentals in point of personal cleanliness and the neatness of their dwellings; their houses are generally covered with the flat roof, familiar in Asia, on which the family sleep in summer. The habits and customs of the islanders afford an interesting study. Propitiatory rites are still practised by the mariners and fishermen, and thank-offerings for preservation at sea are hung up in the churches. Among the popular amusements of the Greeks dancing holds a prominent place; the dance is of various kinds; the most usual is the somewhat inanimate round dance (συρτό or τράτα), in which a number of persons, usually of the same sex, take part holding hands; it seems indentical with the Slavonic *kolo* (“circle”). The more lively Albanian fling is generally danced by three or four persons, one of whom executes a series of leaps and pirouettes. The national music is primitive and monotonous. All classes are passionately addicted to card-playing, which is forbidden by law in places of public resort. The picturesque national costume, which is derived from the Albanian Tosks, has unfortunately been abandoned by the upper classes and the urban population since the abdication of King Otho, who always wore it; it is maintained as the uniform of the *euzones* (highland regiments). It consists of a red cap with dark blue tassel, a white shirt with wide sleeves, a vest and jacket, sometimes of velvet, handsomely adorned with gold or black braid, a belt in which various weapons are carried, a white kilt or *fustanella* of many folds, white hose tied with garters, and red leather shoes with pointed ends, from which a tassel depends. Over all is worn the shaggy white *capote*. The islanders wear a dark blue costume with a crimson waistband, loose trousers descending to the knee, stockings and pumps or long boots. The women’s costume is very varied; the loose red fez is sometimes worn and a short velvet jacket with rich gold embroidery. The more elderly women are generally attired in black. In the Megara district and elsewhere peasant girls wear on festive occasions a headdress composed of strings of coins which formerly represented the dowry.

Government.

Greece is a constitutional monarchy; hereditary in the male line, or, in case of its extinction, in the female. The sovereign, by decision of the conference of London (August 1863), is styled “king of the Hellenes”; the title “king of Greece” was borne by King Otho. The heir apparent is styled ὁ διάδοχος, “the successor”; the title “duke of Sparta,” which has been accorded to the crown prince, is not generally employed in Greece. The king and the heir apparent must belong to the Orthodox Greek Church; a special exception has been made for King George, who is a Lutheran. The king attains his majority on completing his eighteenth year; before ascending the throne he must take the oath to the constitution in presence of the principal ecclesiastical and lay dignitaries of the kingdom, and must convoke the Chamber within two months after his accession. The civil list amounts to 1,125,000 dr., in addition to which it was provided that King George should receive £4000 annually as a personal allowance from each of the three protecting powers, Great Britain, France and Russia. The heir apparent receives from the state an annuity of 200,000 dr. The king has a palace at Athens and other residences at Corfu, Tatoi (on the slopes of Mt Parnes) and Larissa. The present constitution dates from the 29th of October 1864. The legislative power is shared by the king with a single chamber (βουλή) elected by manhood suffrage for a period of four years. The election is by ballot; candidates must have completed their thirtieth year and electors their twenty-first. The deputies (βουλευταί), according to the constitution, receive only their travelling expenses, but they vote themselves a payment of 1800 dr. each for the session and a further allowance in case of an extraordinary session. The Chamber sits for a term of not less than three or more than six months. No law can be passed except by an absolute majority of the house, and one-half of the members must be present to form a quorum; these arrangements have greatly facilitated the practice of obstruction, and often enable individual deputies to impose terms on the government for their attendance. In 1898 the number of deputies was 234. Some years previously a law diminishing the national representation and enlarging the constituencies was passed by Trikoupis with the object of checking the local influence of electors upon deputies, but the measure was subsequently repealed. The number of deputies, however, who had hitherto been elected in the proportion of one to twelve

thousand of the population, was reduced in 1905, when the proportion of one to sixteen thousand was substituted; the Chamber of 1906, elected under the new system, consisted of 177 deputies. In 1906 the electoral districts were diminished in number and enlarged so as to coincide with the twenty-six administrative departments (νόμοι); the reduction of these departments to their former number of sixteen, which is in contemplation, will bring about some further diminution in parliamentary representation. It is hoped that recent legislation will tend to check the pernicious practice of bartering personal favours, known as συναλλαγή, which still prevails to the great detriment of public morality, paralysing all branches of the administration and wasting the resources of the state. Political parties are formed not for the furtherance of any principle or cause, but with the object of obtaining the spoils of office, and the various groups, possessing no party watchword or programme, frankly designate themselves by the names of their leaders. Even the strongest government is compelled to bargain with its supporters in regard to the distribution of patronage and other favours. The consequent instability of successive ministries has retarded useful legislation and seriously checked the national progress. In 1906 a law was passed disqualifying junior officers of the army and navy for membership of the Chamber; great numbers of these had hitherto been candidates at every election. This much-needed measure had previously been passed by Trikoupis, but had been repealed by his rival Delyannes. The executive is vested in the king, who is personally irresponsible, and governs through ministers chosen by himself and responsible to the Chamber, of which they are *ex-officio* members. He appoints all public officials, sanctions and proclaims laws, convokes, prorogues and dissolves the Chamber, grants pardon or amnesty, coins money and confers decorations. There are seven ministries which respectively control the departments of foreign affairs, the interior, justice, finance, education and worship, the army and the navy.

Local Administration.

The 26 departments or νομοί, into which the country is divided for administrative purposes, are each under a prefect or nomarch (νόμαρχος); they are subdivided into 69 districts or eparchies, and into 445 communes or demes (δῆμοι) under mayors or demarchs (δήμαρχοι). The prefects and sub-prefects are nominated by the government; the mayors are elected by the communes for a period of four years. The prefects are assisted by a departmental council, elected by the population, which manages local business and assesses rates; there are also communal councils under the presidency of the mayors. There are altogether some 12,000 state-paid officials in the country, most of them inadequately remunerated and liable to removal or transferral upon a change of government. A host of office-seekers has thus been created, and large numbers of educated persons spend many years in idleness or in political agitation. A law passed in 1905 secures tenure of office to civil servants of fifteen years' standing, and some restrictions have been placed on the dismissal and transferral of schoolmasters.

Justice.

Under the Turks the Greeks retained, together with their ecclesiastical institutions, a certain measure of local self-government and judicial independence. The Byzantine code, based on the Roman, as embodied in the Ἑξάβιβλος of Armenopoulos (1345), was sanctioned by royal decree in 1835 with some modifications as the civil law of Greece. Further modifications and new enactments were subsequently introduced, derived from the old French and Bavarian systems. The penal code is Bavarian, the commercial French. Liberty of person and domicile is inviolate; no arrest can be made, no house entered, and no letter opened without a judicial warrant. Trial by jury is established for criminal, political and press offences. A new civil code, based on Saxon and Italian law, has been drawn up by a commission of jurists, but it has not yet been considered by the Chamber. A separate civil code, partly French, partly Italian, is in force in the Ionian Islands. The law is administered by 1 court of cassation (styled the "Areopagus"), 5 courts of appeal, 26 courts of first instance, 233 justices of the peace and 19 correctional tribunals.

The judges, who are appointed by the Crown, are liable to removal by the minister of justice, whose exercise of this right is often invoked by political partisans. The administration of justice suffers in consequence, more especially in the country districts, where the judges must reckon with the influential politicians and their adherents. The pardon or release of a convicted criminal is not infrequently due to pressure on the part of some powerful patron. The lamentable effects of this system have long been recognized, and in 1906 a law was introduced securing tenure of office for two or four years to judges of the courts of first instance and of the inferior tribunals. In the circumstances crime is less rife than might be expected; the temperate habits of the Greeks have conduced to this result. A serious feature is the great prevalence of homicide, due in part to the passionate character of the people, but still more to the almost universal practice of carrying weapons. The traditions of the vendetta are almost extinct in the Ionian Islands, but still linger in Maina, where family feuds are transmitted from generation to generation. The brigand of the old-fashioned type (λῃστής, κλέφτης) has almost disappeared, except in the remoter country districts, and piracy, once so prevalent in the Aegean, has been practically suppressed, but numbers of outlaws or absconding criminals (φυγόδικοι) still haunt the mountains, and the efforts of the police to bring them to justice are far from successful. Their ranks were considerably increased after the war of 1897, when many deserters from the army and adventurers who came to Greece as volunteers betook themselves to a predatory life. On the other hand, there is no habitually criminal class in Greece, such as exists in the large centres of civilization, and professional mendicancy is still rare.

Police duties, for which officers and, in some cases, soldiers of the regular army were formerly employed, are since 1906 carried out by a reorganized gendarmerie force of 194 officers and 6344 non-commissioned officers and men, distributed in the twenty-six departments and commanded by an inspector-general resident at Athens, who is aided by a consultative commission. There are male and female prisons at all the departmental centres; the number of prisoners in 1906 was 5705. Except in the Ionian Islands, the general condition of the prisons is deplorable; discipline and sanitation are very deficient, and conflicts among the prisoners are sometimes reported in which knives and even revolvers are employed. A good prison has been built near Athens by Andreas Syngros, and a reformatory for juvenile offenders (ἐφηβεῖον) has been founded by George Averoff, another national benefactor. Capital sentences are usually commuted to penal servitude for life; executions, for which the guillotine is employed, are for the most part carried out on the island of Bourzi near Nauplia; they are often postponed for months or even for years. There is no enactment resembling the Habeas Corpus Act, and accused persons may be detained indefinitely before trial. The Greeks, like the other nations liberated from Turkish rule, are somewhat litigious, and numbers of lawyers find occupation even in the smaller country towns.

Education.

The Greeks, an intelligent people, have always shown a remarkable zeal for learning, and popular education has made great strides. So eager is the desire for instruction that schools are often founded in the rural districts on the initiative of the villagers, and the sons of peasants, artisans and small shopkeepers come in numbers to Athens, where they support themselves by domestic service or other humble occupations in order to study at the university during their spare hours. Almost immediately after the accession of King Otho steps were taken to establish elementary schools in all the communes, and education was made obligatory. The law is not very rigorously applied in the remoter districts, but its enforcement is scarcely necessary. In 1898 there were 2914 "demotic" or primary schools, with 3465 teachers, attended by 129,210 boys (5.38% of the population) and 29,119 girls (1.19% of the population). By a law passed in 1905 the primary schools, which had reached the number of 3359 in that year, were reduced to 2604. The expenditure on primary schools is nominally sustained by the communes, but in reality by the government in the form of advances to the communes, which are not repaid; it was reduced in 1905 from upwards of 7,000,000 dr. to under 6,000,000 dr. In 1905 there were 306 "Hellenic" or secondary schools, with 819 teachers and 21,575 pupils (boys only) maintained by the state at a cost of 1,720,096 dr.; and 39 higher schools, or gymnasia, with 261 masters and 6485 pupils, partly maintained by the state (expenditure 615,600 dr.) and partly by benefactions and other means. Besides these public schools there are several private educational institutions, of which there are eight at Athens with 650 pupils. The Polytechnic Institute of Athens affords technical instruction in the departments of art and science to 221 students. Scientific agricultural instruction has been much neglected; there is an agricultural school at Aïdinion in Thessaly with 40 pupils; there are eight agricultural stations (σταθμοί) in various parts of the country. There are two theological seminaries—the Rizari School at Athens (120 pupils) and a preparatory school at Arta; three other seminaries have been suppressed. The Commercial and Industrial Academy at Athens (about 225 pupils), a private institution, has proved highly useful to the country; there are four commercial schools, each in one of the country towns. A large school for females at Athens, the Arsakíon, is attended by 1500 girls. There are several military and naval schools, including the military college of the Euelpides at Athens and the school of naval cadets (τῶν δοκίμων). The university of Athens in 1905 numbered 57 professors and 2598 students, of whom 557 were from abroad. Of the six faculties, theology numbered 79 students, law 1467, medicine 567, arts 206, physics and mathematics 192, and pharmacy 87. The university receives a subvention from the state, which in 1905 amounted to 563,960 dr.; it possesses a library of over 150,000 volumes and geological, zoological and botanical museums. A small tax on university education was imposed in 1903; the total cost

to the student for the four years' course at the university is about £25. Higher education is practically gratuitous in Greece, and there is a somewhat ominous increase in the number of educated persons who disdain agricultural pursuits and manual labour. The intellectual culture acquired is too often of a superficial character owing to the tendency to sacrifice scientific thoroughness and accuracy, to neglect the more useful branches of knowledge, and to aim at a showy dialectic and literary proficiency. (For the native and foreign archaeological institutions see Athens.)

Religion.

The Greek branch of the Orthodox Eastern Church is practically independent, like those of Servia, Montenegro and Rumania, though nominally subject to the patriarchate of Constantinople. The jurisdiction of the patriarch was in fact repudiated in 1833, when the king was declared the supreme head of the church, and the severance was completed in 1850. Ecclesiastical affairs are under the control of the Ministry of Education. Church government is vested in the Holy Synod, a council of five ecclesiastics under the presidency of the metropolitan of Athens; its sittings are attended by a royal commissioner. The church can invoke the aid of the civil authorities for the punishment of heresy and the suppression of unorthodox literature, pictures, &c. There were formerly 21 archbishoprics and 29 bishoprics in Greece, but a law passed in 1899 suppressed the archbishoprics (except the metropolitan see of Athens) on the death of the existing prelates, and fixed the total number of sees at 32. The prelates derive their incomes partly from the state and partly from the church lands. There are about 5500 priests, who belong for the most part to the poorest classes. The parochial clergy have no fixed stipends, and often resort to agriculture or small trading in order to supplement the scanty fees earned by their ministrations. Owing to their lack of education their personal influence over their parishioners is seldom considerable. In addition to the parochial clergy there are 19 preachers (ιεροκήρυκες) salaried by the state. There are 170 monasteries and 4 nunneries in Greece, with about 1600 monks and 250 nuns. In regard to their constitution the monasteries are either "idiorrhythmic" or "coenobian" (see Athos); the monks (καλόγεροι) are in some cases assisted by lay brothers (κοσμικοί). More than 300 of the smaller monasteries were suppressed in 1829 and their revenues secularized. Among the more important and interesting monasteries are those of Megaspelaeon and Lavra (where the standard of insurrection, unfurled in 1821, is preserved) near Kalavryta, St Luke of Stiris near Arachova, Daphne and Penteli near Athens, and the Meteora group in northern Thessaly. The bishops, who must be unmarried, are as a rule selected from the monastic order and are nominated by the king; the parish priests are allowed to marry, but the remarriage of widowers is forbidden. The bulk of the population, about 2,000,000, belongs to the Orthodox Church; other Christian confessions number about 15,000, the great majority being Roman Catholics. The Roman Catholics (principally in Naxos and the Cyclades) have three archbisboprics (Athens, Naxos and Corfu), five bishoprics and about 60 churches. The Jews, who are regarded with much hostility, have almost disappeared from the Greek mainland; they now number about 5000, and are found principally at Corfu. The Mahommedans are confined to Thessaly except a few at Chalcis. National sentiment is a more powerful factor than personal religious conviction in the attachment of the Greeks to the Orthodox Church; a Greek without the pale of the church is more or less an alien. The Catholic Greeks of Syros sided with the Turks at the time of the revolution; the Mahommedans of Crete, though of pure Greek descent, have always been hostile to their Christian fellow-countrymen and are commonly called Turks. On the other hand, that portion of the Macedonian population which acknowledges the patriarch of Constantinople is regarded as Greek, while that which adheres to the Bulgarian exarchate, though differing in no point of doctrine, has been declared schismatic. The constitution of 1864 guarantees toleration to all creeds in Greece and imposes no civil disabilities on account of religion.

Agriculture.

Greece is essentially an agricultural country; its prosperity depends on its agricultural products, and more than half the population is occupied in the cultivation of the soil and kindred pursuits. The land in the plains and valleys is exceedingly rich, and, wherever there is a sufficiency of water, produces magnificent crops. Cereals nevertheless furnish the principal figure in the list of imports, the annual value being about 30,000,000 fr. The country, especially since the acquisition of the fertile province of Thessaly, might under a well-developed agricultural system provide a food-supply for all its inhabitants and an abundant surplus for exportation. Thessaly alone, indeed, could furnish cereals for the whole of Greece. Unfortunately, however, agriculture is still in a primitive state, and the condition of the rural population has received very inadequate attention from successive governments. The wooden plough of the Hesiodic type is still in use, especially in Thessaly; modern implements, however, are being gradually introduced. The employment of manure and the rotation of crops are almost unknown; the fields are generally allowed to lie fallow in alternate years. As a rule, countries dependent on agriculture are liable to sudden fluctuations in prosperity, but in Greece the diversity of products is so great that a failure in one class of crops is usually compensated by exceptional abundance in another. Among the causes which have hitherto retarded agricultural progress are the ignorance and conservatism of the peasantry, antiquated methods of cultivation, want of capital, absentee proprietorship, sparsity of population, bad roads, the prevalence of usury, the uncertainty of boundaries and the land tax, which, in the absence of a survey, is levied on ploughing oxen; to these may be added the insecurity hitherto prevailing in many of the country districts and the growing distaste for rural life which has accompanied the spread of education. Large estates are managed under the metayer system; the cultivator paying the proprietor from one-third to half of the gross produce; the landlords, who prefer to live in the larger towns, see little of their tenants, and rarely interest themselves in their welfare. A great proportion of the best arable land in Thessaly is owned by persons who reside permanently out of the country. The great estates in this province extend over some 1,500,000 acres, of which about 500,000 are cultivated. In the Peloponnesus peasant proprietorship is almost universal; elsewhere it is gradually supplanting the metayer system; the small properties vary from 2 or 3 to 50 acres. The extensive state lands, about one-third of the area of Greece, were formerly the property of Mahommedan religious communities (*vakoufs*); they are for the most part farmed out annually by auction. They have been much encroached upon by neighbouring owners; a considerable portion has also been sold to the peasants. The rich plain of Thessaly suffers from alternate droughts and inundations, and from the ravages of field mice; with improved cultivation, drainage and irrigation it might be rendered enormously productive. A commission has been occupied for some years in preparing a scheme of hydraulic works. Usury is, perhaps, a greater scourge to the rural population than any visitation of nature; the institution of agricultural banks, lending money at a fair rate of interest on the security of their land, would do much to rescue the peasants from the clutches of local Shylocks. There is a difficulty, however, in establishing any system of land credit owing to the lack of a survey. Since 1897 a law passed in 1882 limiting the rate of interest to 8% (to 9% in the case of commercial debts) has to some extent been enforced by the tribunals. In the Ionian Islands the rate of 10% still prevails.

The following figures give approximately the acreage in 1906 and the average annual yield of agricultural produce, no official statistics being available:—

	Acres.
Fields sown or lying fallow	3,000,000
Vineyards	337,500
Currant plantations	175,000
Olives (10,000,000 trees)	250,000
Fruit trees (fig, mulberry, &c.)	125,000
Meadows and pastures	7,500,000
Forests	2,000,000
Waste lands	2,875,000
	16,262,500

The average annual yield is as follows:—

Wheat	350,000,000	kilograms
Maize	100,000,000	”
Rye	20,000,000	”
Barley	70,000,000	”
Oats	75,000,000	”
Beans, lentils, &c	25,000,000	”
Currants	350,000,000	Venetian lb
Sultanina	4,000,000	”

Wine	3,000,000	hectolitres
Olive oil	300,000	”
Olives (preserved)	100,000,000	kilograms
Figs (exported only)	12,000,000	”
Seed cotton	6,500,000	”
Tobacco	8,000,000	”
Vegetables and fresh fruits	20,000,000	”
Cocoons	1,000,000	”
Hesperidiums (exported only)	4,000,000	”
Carobs (exported only)	10,000,000	”
Resin	5,000,000	”
Beet	12,000,000	”

Rice is grown in the marshy plains of Elis, Boeotia, Marathon and Missolonghi; beet in Thessaly. The cultivation of vegetables is increasing; beans, peas and lentils are the most common. Potatoes are grown in the upland districts, but are not a general article of diet. Of late years market-gardening has been taken up as a new industry in the neighbourhood of Athens. There is a great variety of fruits. Olive plantations are found everywhere; in 1860 they occupied about 90,000 acres; in 1887, 433,701 acres. The trees are sometimes of immense age and form a picturesque feature in the landscape. In latter years the groves in many parts of the western Morea and Zante have been cut down to make room for currant plantations; the destruction has been deplorable in its consequences, for, as the tree requires twenty years to come into full bearing, replanting is seldom resorted to. Preserved olives, eaten with bread, are a common article of food. Excellent olive oil is produced in Attica and elsewhere. The value of the oil and fruit exported varies from five to ten million francs. Figs are also abundant, especially in Messenia and in the Cyclades. Mulberry trees are planted for the purposes of sericulture; they have been cut down in great numbers in the currant-growing districts. Other fruit trees are the orange, citron, lemon, pomegranate and almond. Peaches, apricots, pears, cherries, &c., abound, but are seldom scientifically cultivated; the fruit is generally gathered while unripe. Cotton in 1906 occupied about 12,500 acres, chiefly in the neighbourhood of Livadia. Tobacco plantations in 1893 covered 16,320 acres, yielding about 3,500,000 kilograms; the yield in 1906 was 9,000,000 kilograms. About 40% of the produce is exported, principally to Egypt and Turkey. More important are the vineyards, which occupied in 1887 an area of 306,421 acres. The best wine is made at Patras, on the royal estate at Decelea, and on other estates in Attica; a peculiar flavour is imparted to the wine of the country by the addition of resin. The wine of Santorin, the modern representative of the famous “malmsey,” is mainly exported to Russia. The foreign demand for Greek wines is rapidly increasing; 3,770,257 gallons were exported in 1890, 4,974,196 gallons in 1894, There is also a growing demand for Greek cognac. The export of wine in 1905 was 20,850,941 okes, value 5,848,544 fr.; of cognac, 363,720 okes, value 1,091,160 fr.

Currants.

The currant, by far the most important of Greek exports, is cultivated in a limited area extending along the southern shore of the Gulf of Corinth and the seaboard of the Western Peloponnesus, in Zante, Cephalonia and Leucas, and in certain districts of Acarnania and Aetolia; attempts to cultivate it elsewhere have generally proved unsuccessful. The history of the currant industry has been a record of extraordinary vicissitudes. Previously to 1877 the currant was exported solely for eating purposes, the amounts for the years 1872 to 1877 being 70,766 tons, 71,222 tons, 76,210 tons, 72,916 tons, 86,947 tons, and 82,181 tons respectively. In 1877, however, the French vineyards began to suffer seriously from the phylloxera, and French wine producers were obliged to have recourse to dried currants, which make an excellent wine for blending purposes. The importation of currants into France at once rose from 881 tons in 1877 to 20,999 tons in 1880, and to 70,401 tons in 1889, or about 20,000 tons more than were imported into England in that year. Meanwhile the total amount of currants produced in Greece had nearly doubled in these thirteen years. The country was seized with a mania for currant planting; every other industry was neglected, and olive, orange and lemon groves were cut down to make room for the more lucrative growth. The currant growers, in order to increase their production as rapidly as possible, had recourse to loans at a high rate of interest, and the great profits which they made were devoted to further planting, while the loans remained unpaid. A crisis followed rapidly. By 1891 the French vineyards had to a great extent recovered from the disease, and wine producers in France began to clamour against the competition of foreign wines and wine-producing raisins and currants. The import duty on these was thereupon raised from 6 francs to 15 francs per 100 kilos, and was further increased in 1894 to 25 francs. The currant trade with France was thus extinguished; of a crop averaging 160,000 tons, only some 110,000 now found a market. Although a fresh opening for exportation was found in Russia, the value of the fruit dropped from £15 to £5 per ton, a price scarcely covering the cost of cultivation. In July 1895 the government introduced a measure, since known as the Retention (παρακράτησις) Law, by which it was enacted that every shipper should deliver into depots provided by the government a weight of currants equivalent to 15% of the amount which he intended to export. A later law fixed the quantity to be retained by the state at 10%, which might be increased to 20%, should a representative committee, meeting every summer at Athens, so advise the government. The currants thus taken over by the government cannot be exported unless they are reduced to pulp, syrup or otherwise rendered unsuitable for eating purposes; they may be sold locally for wine-making or distilling, due precautions being taken that they are not used in any other way. The price of exported currants is thus maintained at an artificial figure. The Retention Law, which after 1895 was voted annually, was passed for a period of ten years in 1899. This pernicious measure, which is in defiance of all economic laws, perpetuates a superfluous production, retards the development of other branches of agriculture and burdens the government with vast accumulations of an unmarketable commodity. It might excusably be adopted as a temporary expedient to meet a pressing crisis, but as a permanent system it can only prove detrimental to the country and the currant growers themselves.

In 1899 a “Bank of Viticulture” was established at Patras for the purpose of assisting the growers, to whom it was bound to make advances at a low rate of interest; it undertook the storage and the sale of the retained fruit, from which its capital was derived. The bank soon found itself burdened with an enormous unsaleable stock, while its loans for the most part remained unpaid; meantime over-production, the cause of the trouble, continued to increase, and prices further diminished. In 1903 a syndicate of English and other foreign capitalists made proposals for a monopoly of the export, guaranteeing fixed prices to the growers. The scheme, which conflicted with Anglo-Greek commercial conventions, was rejected by the Theotokis ministry; serious disturbances followed in the currant-growing districts, and M. Theotokis resigned. His successor, M. Rallis, in order to appease the cultivators, arranged that the Currant Bank should offer them fixed minimum prices for the various growths, and guaranteed it a loan of 6,000,000 dr. The resources of the bank, however, gave out before the end of the season, and prices pursued their downward course. Another experiment was then tried; the export duty (15%) was made payable in kind, the retention quota being thus practically raised from 20 to 35%. The only result of this measure was a diminution of the export; in the spring of 1905 prices fell very low and the growers began to despair. A syndicate of banks and capitalists then came forward, which introduced the system now in operation. A privileged company was formed which obtained a charter from the government for twenty years, during which period the retention and export duties are maintained at the fixed rates of 20 and 15% respectively. The company aims at keeping up the prices of the marketable qualities by employing profitably for industrial purposes the unexported surplus and retained inferior qualities; it pays to the state 4,000,000 dr. annually under the head of export duty; offers all growers at the beginning of each agricultural year a fixed price of 115 dr. per 1000 Venetian ℔ irrespective of quality, and pays a price varying from 115 dr. to 145 dr. according to quality at the end of the year for the unexported surplus. In return for these advantages to the growers the company is entitled to receive 7 dr. on every 1000 ℔ of currants produced and to dispose of the whole retained amount. A special company has been formed for the conversion of the superfluous product into spirit, wine, &c. The system may perhaps prove commercially remunerative, but it penalizes the producers of the better growths in order to provide a livelihood for the growers of inferior and unmarketable kinds and protracts an abnormal situation. The following table gives the annual currant crop from 1877 to 1905:—

Year.	Total crop (tons).	Exported to Gt. Britain.	Exported to France.
1877	82,181	..	881
1878	100,004	..	9,086
1879	92,311	..	19,087
1880	92,337	..	20,999
1881	121,994	..	30,315
1882	109,403	51,933	26,282
1883	114,980	52,099	24,815
1884	129,268	59,629	39,198

1885	113,287	55,765	37,730
1886	127,570	48,892	45,000
1887	127,160	55,549	37,438
1888	158,728	63,714	40,735
1889	142,308	52,251	69,555
1890	146,749	67,502	37,816
1891	161,545	70,762	39,712
1892	116,944	60,418	21,721
1893	119,886	73,000	6,800
1894	135,500	64,500	15,000
1895	167,695	60,500	26,500
1896	153,514	65,000	6,500
1897	115,730	63,000	2,000
1898	153,514	69,500	6,000
1899	144,071	65,600	3,800
1900	47,236	36,000	300
1901	139,820	58,000	1,216
1902	152,580	58,400	4,782
1903	179,499	54,800	4,470
1904	146,500	58,850	820
1905	162,957	61,700	1,042

The “peronospora,” a species of white blight, first caused considerable damage in the Greek vineyards in 1892, recurring in 1897 and 1900.

Stock-farming.

More than half the cultivable area of Greece is devoted to pasturage. Cattle-rearing, as a rule, is a distinct occupation from agricultural farming; the herds are sent to pasture on the mountains in the summer, and return to the plains at the beginning of winter. The larger cattle are comparatively rare, being kept almost exclusively for agricultural labour; the smaller are very abundant. Beef is scarcely eaten in Greece, the milk of cows is rarely drunk and butter is almost unknown. Cheese, a staple article of diet, is made from the milk of sheep and goats. The number of larger cattle has declined in recent years; that of the smaller has increased. The native breed of oxen is small; buffaloes are seldom seen except in north-western Thessaly; a few camels are used in the neighbourhood of Parnassus. The Thessalian breed of horses, small but sturdy and enduring, can hardly be taken to represent the celebrated chargers of antiquity. Mules are much employed in the mountainous districts; the best type of these animals is found in the islands. The flocks of long-horned sheep and goats add a picturesque feature to Greek rural scenery. The goats are more numerous in proportion to the population than in any other European country (137 per 100 inhabitants). The shepherds’ dogs rival those of Bulgaria in ferocity. According to an unofficial estimate published in 1905 the numbers of the various domestic animals in 1899 were as follows: Oxen and buffaloes, 408,744; horses, 157,068; mules, 88,869; donkeys, 141,174; camels, 51; sheep, 4,568,151; goats, 3,339,439; pigs, 79,716. During the four years 1899-1902 the annual average value of imported cattle was 4,218,015 dr., of exported cattle 209,321 dr.

Forests.

The forest area (about 2,500,000 acres or one-fifth of the surface of the mainland) is for the most part state property. The value of the forests has been estimated at 200,000,000 fr.; the most productive are in the district extending from the Pindus range to the Gulf of Corinth. The principal trees are the oak (about 30 varieties), the various coniferae, the chestnut, maple, elm, beech, alder, cornel and arbutus. In Greece, as in other lands formerly subject to Turkish rule, the forests are not only neglected, but often deliberately destroyed; this great source of national wealth is thus continually diminishing. Every year immense forest fires may be seen raging in the mountains, and many of the most picturesque districts in the country are converted into desolate wildernesses. These conflagrations are mainly the work of shepherds eager to provide increased pasturage for their flocks; they are sometimes, however, due to the carelessness of smokers, and occasionally, it is said, to spontaneous ignition in hot weather. Great damage is also done by the goats, which browse on the young saplings; the pine trees are much injured by the practice of scoring their bark for resin. With the disappearance of the trees the soil of the mountain slopes, deprived of its natural protection, is soon washed away by the rain; the rapid descent of the water causes inundations in the plains, while the uplands become sterile and lose their vegetation. The climate has been affected by the change; rain falls less frequently but with greater violence, and the process of denudation is accelerated. The government has from time to time made efforts for the protection of the forests, but with little success till recently. A staff of inspectors and forest guards was first organized in 1877. The administration of the forests has since 1893 been entrusted to a department of the Ministry of Finance, which controls a staff of 4 inspectors (ἐπιθεωρῆται), 31 superintendents (δασαρχοί), 52 head foresters (ἀρχιφύλακες) and 298 foresters (δασυφύλακες). The foresters are aided during the summer months, when fires are most frequent, by about 500 soldiers and gendarmes. About a third of these functionaries have received instruction in the school of forestry at Vythine in the Morea, open since 1898. Owing to the measures now taken, which include excommunication by the parish priests of incendiaries and their accomplices, the conflagrations have considerably diminished. The total annual value of the products of the Greek forests averages 15,000,000 drachmae. The revenue accruing to the government in 1905 was 1,418,158 dr., as compared with 583,991 dr. in 1883. The increase is mainly due to improved administration. The supply of timber for house-construction, ship-building, furniture-making, railway sleepers, &c., is insufficient, and is supplemented by importation (annual value about 12,000,000 francs); transport is rendered difficult by the lack of roads and navigable streams. The principal secondary products are valonea (annual exportation about 1,250,000 fr.) and resin, which is locally employed as a preservative ingredient in the fabrication of wine. The administration of the forests is still defective, and measures for the augmentation and better instruction of the staff of foresters have been designed by the government. In 1900 a society for the re-afforesting of the country districts and environs of the large towns was founded at Athens under the patronage of the crown princess.

	Tons.	Francs.
Chrome	8,900	337,952
Emery	6,972	742,486
Gypsum	185	7,995
Iron ore	465,622	3,387,467
Ferromanganese	89,687	1,182,652
Lead (argentiferous pig) ore	13,729	6,811,792
Lignite	11,757	143,814
Magnesite	43,498	864,982
Manganese ore	8,171	122,565
Mill stones	12,628	34,660
Salt	25,201	1,638,065
Sulphur	1,126	121,000
Zinc ore	22,562	2,852,355

Mines.

The chief minerals are silver, lead, zinc, copper manganese, magnesia, iron, sulphur and coal. Emery, salt, millstone and gypsum, which are found in considerable quantities, are worked by the government. The important mines at Laurium, a source of great wealth to ancient Athens, were reopened in 1864 by a Franco-Italian company, but were declared to be state property in 1871; they are now worked by a Greek and a French company. The output of marketable ore in 1899 amounted to 486,760 tons, besides 289,292 tons of dressed lead ore. In 1905 the output was as follows: Raw and roasted manganese iron ore, 113,636 tons; hematite iron ore, 94,734 tons; calamine or zinc ore, 22,612 tons; arsenic and argentiferous lead, 1875 tons; zinc blende and galena, 443 tons; total, 233,300 tons, together with 164,857 tons of dressed lead, producing 13,822 tons of silver pig lead containing 1657 to 1910 grams of silver per ton. It has been found profitable to resmelt the scoriae of the ancient workings. The total value of the exports from the Laurium mines, which in 1875 amounted to only £150,513, had in 1899 increased to £827,209, but fell in 1905 to £499,882. The revenue accruing to the government from all mines and quarries, including those worked by the state, was estimated in the budget for 1906 at 1,332,000 dr. The emery of Naxos, which is a state monopoly, is excellent in quality and very abundant. Mines of iron ore have latterly been opened at Larimna in Locris.

Magnesite mines are worked by an Anglo-Greek company in Euboea. There are sulphur and manganese mines in the island of Melos, and the volcanic island of Santorin produces pozzolana, a kind of cement, which is exported in considerable quantities. The great abundance of marble in Greece has latterly attracted the attention of foreign capitalists. New quarries have been opened since 1897 by an English company on the north slope of Mount Pentelicus, and are now connected by rail with Athens and the Peiraeus. The marble on this side of the mountain is harder than that on the south, which alone was worked by the ancients. The output in 1905 was 1573 tons. Mount Pentelicus furnished material for most of the celebrated buildings of ancient Athens; the marble, which is white, blue-veined, and somewhat transparent, assumes a rich yellow hue after long exposure to the air. The famous Parian quarries are still worked; white marble is also found at Scyros, Tenos and Naxos; grey at Stoura and Karystos; variegated at Valaxa and Karystos; green on Taygetus and in Thessaly; black at Tenos; and red (porphyry) in Maina.

The official statistics of the output and value of minerals produced in 1905 were as in the preceding table.

The number of persons employed in mining operations in 1905 was 9934.

Commerce and industry.

Owing to the natural aptitude of the Greeks for commerce and their predilection for a seafaring life a great portion of the trade of the Levant has fallen into their hands. Important Greek mercantile colonies exist in all the larger ports of the Mediterranean and the Black Sea, and many of them possess great wealth. In some of the islands of the archipelago almost every householder is the owner or joint owner of a ship. The Greek mercantile marine, which in 1888 consisted of 1352 vessels (70 steamers) with a total tonnage of 219,415 tons, numbered in 1906, according to official returns, 1364 vessels (275 steamers) with a total tonnage of 427,291 tons. This figure is apparently too low, as the ship-owners are prone to understate the tonnage in order to diminish the payment of dues. Almost the whole corn trade of Turkey is in Greek hands. A large number of the sailing ships, especially the smaller vessels engaged in the coasting trade, belong to the islanders. A considerable portion of the shipping on the Danube and Pruth is owned by the inhabitants of Ithaca and Cephalonia; a certain number of their *sleps* (σλέπια) have latterly been acquired by Rumanian Jews, but the Greek flag is still predominant. There are seven principal Greek steamship companies owning 40 liners with a total tonnage of 21,972 tons. In 1847 there was but one lighthouse in Greek waters; in 1906 there were 70 lighthouses and 68 port lanterns. Hermoupolis (Syra) is the chief seat of the carrying trade, but as a commercial port it yields to Peiraeus, which is the principal centre of distribution for imports. Other important ports are Patras, Volo, Corfu, Kalamata and Laurium.

The following table gives the total value (in francs) of special Greek commerce for the given years:—

	1887.	1892.	1897.	1902.
Imports	131,849,325	119,306,007	116,363,348	137,229,364
Exports	102,652,487	82,261,464	81,708,626	79,663,473

The marked fluctuations in the returns are mainly attributable to variations in the price and quantity of imported cereals and in the sale of currants. The great excess of imports, caused by the large importation of food-stuffs and manufactured articles, is due to the neglect of agriculture and the undeveloped condition of local industries.

The imports and exports for 1905 were distributed as follows:—

	Imports from.	Exports to.
	Frs.	Frs.
Russia	27,725,218	810,925
Great Britain	27,516,928	24,436,707
Austria-Hungary	19,444,415	7,876,806
Turkey	15,538,370	4,516,403
Germany	13,896,687	7,514,474
France	10,101,070	7,078,321
Italy	6,190,253	4,266,210
Bulgaria	5,135,718	133,106
Rumania	3,814,641	1,152,207
America	2,656,501	6,440,648
Belgium	2,276,393	2,068,138
Netherlands	1,921,762	7,180,301
Egypt	634,035	5,928,555
Switzerland	348,281	..
Other countries	4,555,781	4,288,365
Total	141,756,053	83,691,166

An enumeration of the chief articles of importation and exportation, together with their value, will be found in tabular form overleaf.

Greece does not possess any manufacturing industries on a large scale; the absence of a native coal supply is an obstacle to their development. In 1889 there were 145 establishments employing steam of 5568 indicated horse-power; in 1892 the total horse-power employed was estimated at 10,000. In addition to the smelting-works at Laurium, at which some 5000 hands are employed by Greek and French companies and local proprietors, there are flour mills, cloth, cotton and silk spinning mills, ship-building and engineering works, oil-presses, tanneries, powder and dynamite mills, soap mills (about 40), and some manufactures of paper, glass, matches, turpentine, white lead, hats, gloves, candles, &c. About 100 factories are established in the neighbourhood of Athens and Peiraeus. The wine industry (10 factories) is of considerable importance, and the manufacture of cognac has latterly made great progress; there are 10 large and numerous small cognac distilleries. Ship-building is carried on actively at all the ports on the mainland and islands; about 200 ships, mostly of low tonnage, are launched annually.

Principal Articles of Importation.

Articles.	1904.		1905.	
	Total value in francs.	Imported from the United Kingdom.	Total value in francs.	Imported from the United Kingdom.
Cereals	27,735,808	none	32,511,784	none
Textiles	17,999,344	10,762,464	13,460,620	5,497,172
Raw minerals	13,341,191	7,630,633	..	..
Forest products	10,146,500	9,769	12,254,190	61,309
Wrought metals	7,757,444	2,162,250	..	..
Coals and pit-coal	6,522,086	6,087,068	5,073,841	4,308,357
Yarn and tissues	4,739,819	2,504,667	8,021,523	6,838,079
Fish	4,992,615	2,394,224	1,014,164	186,072
Raw hides	4,558,101	478,965	3,909,657	215,745
Various animals	4,271,151	none	3,373,523	1,268
Horses	3,011,450	none	2,070,250	none
Paper, books, &c.	3,327,144	157,017	3,319,700	76,454
Coffee	2,957,601	293,610	3,060,904	107,296
Sugar	2,606,696	none	2,887,854	70
Rice	1,977,894	63,882	1,901,486	236,027

Colours	1,750,858	341,839	2,146,509	281,433

Chief Articles of Exportation.

Articles.	1904.		1905.	
	Total value in francs.	Exported to the United Kingdom.	Total value in francs.	Exported to the United Kingdom.
Currants	28,841,678	14,569,137	34,299,780	17,008,929
Minerals and raw metals	19,134,185	5,161,898	15,125,072	5,438,698
Wines	10,084,960	429,143	5,832,139	881,696
Tobacco	7,285,385	39,512	6,157,092	147,565
Olive oil	4,163,262	212,081	2,150,285	64,310
Figs	3,583,428	62,304	3,309,432	338,196
Minerals and metals (worked)	2,754,245	7,750	2,607,580	900
Olives	1,793,362	9,833	1,138,116	18,800
Valonea	1,558,678	200,849	1,917,014	146,927
Cognac	1,027,224	12,099	1,091,160	2,283

Public Works.—The important drainage-works at Lake Copais were taken over by an English company in 1890. The lake covered an area of 58,080 acres, the greater part of which is now rendered fit for cultivation. The drainage works consist of a canal, 28 kilometres in length, and a tunnel of 600 metres descending through the mountain to a lower lake, which is connected by a second tunnel with the sea. The reclaimed land is highly fertile. The area under crops amounted in 1906 to 27,414 acres, of which 20,744 were let to tenants and the remainder farmed by the company. The uncultivated portion affords excellent grazing. The canal through the Isthmus of Corinth was opened to navigation in November 1893. The total cost of the works, which were begun by a company in 1882, was 70,000,000 francs. The narrowness of the canal, which is only 24.60 metres broad at the surface, and the strength of the current which passes through it, seriously detract from its utility. The high charges imposed on foreign vessels have proved almost prohibitive. There are reduced rates for ships sailing in Greek waters. Up to the 31st of July 1906, 37,214 vessels, with a tonnage of 4,971,922, had passed through the canal. The receipts up to that date were 3,207,835 drachmae (mainly from Greek ships) and 415,976 francs (mainly from foreign ships). In 1905, 2930 vessels (2735 Greek) passed through, the receipts being 281,935 drachmae and 34,142 francs. The total liabilities of the company in 1906 were about 40,000,000 fr. The canal would be more frequented by foreign shipping if the harbours at its entrances were improved, and its sides, which are of masonry, lined with beams; efforts are being made to raise funds for these purposes. The widening of the Euripus Channel at Chalcis to the extent of 21.56 metres was accomplished in 1894. The operations involved the destruction of the picturesque Venetian tower which guarded the strait. A canal was completed in 1903 rendering navigable the shallow channel between Leucas (Santa Maura) and the mainland (breadth 15 metres, depth 5 metres). Large careening docks were undertaken in 1909 at Peiraeus at an estimated cost of 4,750,000 drachmae.

Communications.—Internal communication by roads is improving, though much remains to be done, especially as regards the quality of the roads. A considerable impetus was given to road-making under the Trikoupis administration. In 1878 there were only 555 m. of roads; in 1898 there were 2398 m.; in 1906, 3275 m. Electric trams have been introduced at Patras. Railways were open to traffic in 1900 for a length of 598 m.; in 1906 for a length of 867 m. The circuit of the Morea railways (462 m.) was completed in 1902; from Diakophto, on the north coast, a cogwheel railway, finished in 1894, ascends to Kalavryta. A very important undertaking is the completion of a line from Peiraeus to the frontier, the contract for which was signed in 1900 between the Greek government and the Eastern Railway Extension Syndicate (subsequently converted into the *Société des Chemins de Fer helléniques*). A line Connecting Peiraeus with Larissa was begun in 1890, but in 1894 the English company which had undertaken the contract went into liquidation. Under the contract of 1900 the line was drawn through Demerli, in the south of Thessaly, to Larissa, a distance of 217 m., and continued through the vale of Tempe to the Turkish frontier (about 246 m. in all). Branch lines have been constructed to Lamia and Chalcis. The establishment of a connexion with the continental railway system, by a junction with the line from Belgrade to Salonica, would be of immense advantage to Greece, and the Peiraeus would become an important place of embarkation for Egypt, India and the Far East.

Posts and telegraphs.

In 1905 the number of post offices was 640. Of these 320 were also telegraph and 89 telephone stations, with 664 clerks; the remaining post offices possess no special staff, but are served by persons who also pursue other occupations. The number of postmen and other employees was 889. During the year there passed through the post 6,897,899 ordinary letters for the interior, 2,980,958 for foreign destinations, 2,788,477 from abroad; 540,411 registered letters or parcels for the interior, 309,907 for foreign countries, and 300,150 from abroad; 880,673 post-cards for the interior, 504,785 from abroad, and 187,975 sent abroad; 100,680 samples; 7,068,125 printed papers for the interior, 5,278,405 to or from foreign countries. Telegraph lines in 1905 extended over 4222 m. with 6836 m. of wires; 841,913 inland telegrams, 221,188 service telegrams and 129,036 telegrams to foreign destinations were despatched, and 169,519 received from abroad. Receipts amounted to 4,589,601 drachmae (postal service 2,744,212, telegraph and telephone services 1,845,389 drachmae) and expenditure to 3,954,742 drachmae.

Army.

The Greek army has recently been in a state of transition. Its condition has never been satisfactory, partly owing to the absence of systematic effort in the work of organization, partly owing to the pernicious influence of political parties, and in times of national emergency it has never been in a condition of readiness. The experience of the war of 1897 proved the need of far-reaching administrative changes and disciplinary reforms. A scheme of complete reorganization was subsequently elaborated under the auspices of the crown prince Constantine, the commander-in-chief, and received the assent of the Chamber in June 1904. During the war of 1897 about 65,000 infantry, 1000 cavalry, and 24 batteries were put into the field, and after great efforts another 15,000 men were mobilized. Under the new scheme it is proposed to maintain on a peace footing 1887 officers, 25,140 non-commissioned officers and men, and 4059 horses and mules; in time of war the active army will consist of at least 120,000 men and the territorial army of at least 60,000 men. The heavy expenditure entailed by the project has been an obstacle to its immediate realization. In order to meet this expenditure a special fund has been instituted in addition to the ordinary military budget, and certain revenues have been assigned to it amounting to about 5,500,000 drachmae annually. In 1906, however, it was decided to suspend partially for five years the operation of the law of 1904 and to devote the resources thus economized together with other funds to the immediate purchase of new armaments and equipment. Under this temporary arrangement the peace strength of the army in 1908 consisted of 1939 officers and civilians, 19,416 non-commissioned officers and men and 2661 horses and mules; it is calculated that the reserves will furnish about 77,000 men and the territorial army about 37,000 men in time of war.

Military service is obligatory, and liability to serve begins from the twenty-first year. The term of service comprises two years in the active army, ten years in the active army reserve (for cavalry eight years), eight years in the territorial army (for cavalry ten years) and ten years for all branches in the territorial army reserve. As a rule, however, the period of service in the active army has hitherto been considerably shortened; with a view to economy, the men, under the law of 1904, receive furlough after eighteen months with the colours. Exemptions from military service, which were previously very numerous, are also restricted considerably by the law of 1904, which will secure a yearly contingent of about 13,000 men in time of peace. The conscripts in excess of the yearly contingent are withdrawn by lot; they are required to receive six months' training in the ranks as supernumeraries before passing into the reserve, in which they form a special category of "liability" men. Under the temporary system of 1906 the contingent is reduced to about 10,000 men by postponing the abrogation of several exemptions, and the period of service is fixed at fourteen months for all the conscripts alike. The field army as constituted by the law of 1904 consists of 3 divisions, each division comprising 2 brigades of infantry, each of 2 regiments of 3 battalions and other units. There are thus 36 battalions of infantry (of which 12 are cadres); also 6 battalions of *evzones* (highlanders), 18 squadrons of cavalry (6 cadres), 33 batteries of artillery (6 cadres), 3 battalions of engineers and telegraphists, 3 companies of ambulance, 3 of train, &c. The artillery is composed of 24 field batteries, 3 heavy and 6 mountain batteries; it is mainly provided with Krupp 7.5 cm. guns dating from 1870 or earlier. After a series of trials in 1907 it was decided to order 36 field batteries of 7.5 cm. quick-firing guns and 6 mountain batteries, in all 168 guns, with 1500 projectiles for each battery from the Creuzot factory. The infantry, which was hitherto armed with the obsolete

Gras rifle (.433 in.), was furnished in 1907 with the Mannlicher-Schönauer (model 1903) of which 100,000 had been delivered in May 1908. Hitherto the gendarmerie, which replaced the police, have formed a corps drawn from the army, which in 1908 consisted of 194 officers and 6344 non-commissioned officers and men, but a law passed in 1907 provided for these forces being thenceforth recruited separately by voluntary enlistment in annual contingents of 700 men. The participation of the officers in politics, which has proved very injurious to discipline, has been checked by a law forbidding officers below the rank of colonel to stand for the Chamber. In the elections of 1905 115 officers were candidates. The three divisional headquarters are at Larissa, Athens and Missolonghi; the six headquarters of brigades are at Trikkala, Larissa, Athens, Chalcis, Missolonghi and Nauplia. In 1907 annual manœuvres were instituted.

Navy.

The Greek fleet consisted in 1907 of 3 armoured barbette ships of 4885 tons (built in France in 1890, reconstructed 1899), carrying each three 10.8-in. guns, five 6-in., thirteen quick-firing and smaller guns, and three torpedo tubes; 1 cruiser of 1770 tons (built in 1879), with two 6.7-in. and six light quick-firing guns; 1 armoured central battery ship of 1774 tons (built 1867, reconstructed 1897) with two 8.4 in. and nine small quick-firing guns; 2 coast-defence gunboats with one 10.6-in. gun each; 4 corvettes; 1 torpedo depôt ship; 8 destroyers, each with six guns (ordered in 1905); 3 transport steamers; 7 small gunboats; 3 mining boats; 5 torpedo boats; 1 royal yacht; 2 school ships and various minor vessels. The personnel of the navy was composed in 1907 of 437 officers, 26 cadets, 1118 petty officers, 2372 seamen and stokers, 60 boys and 99 civilians, together with 386 artisans employed at the arsenal. The navy is manned chiefly by conscription; the period of service is two years, with four years in the reserve. The headquarters of the fleet and arsenal are in the island of Salamis, where there is a dockyard with naval stores, a floating dock and a torpedo school. Most of the vessels of the Greek fleet were in 1907 obsolete; in 1904 a commission under the presidency of Prince George proposed the rearmament of the existing ironclads and the purchase of three new ironclads and other vessels. A different scheme of reorganization, providing almost exclusively for submarines and scout vessels, was suggested to the government by the French admiral Fournier in 1908, but was opposed by the Greek naval officers. With a view to the augmentation and better equipment of the fleet a special fund was instituted in 1900 to which certain revenues have been assigned; it has been increased by various donations and bequests and by the proceeds of a state lottery. The fleet is not exercised methodically either in navigation or gunnery practice; a long voyage, however, was undertaken by the ironclad vessels in 1904. The Greeks, especially the islanders of the Aegean, make better sailors than soldiers; the personnel of the navy, if trained by foreign officers, might be brought to a high state of efficiency.

Finance.

The financial history of Greece has been unsatisfactory from the outset. Excessive military and naval expenditure (mainly due to repeated and hasty mobilizations), a lax and improvident system of administration, the corruption of political parties and the instability of the government, which has rendered impossible the continuous application of any scheme of fiscal reform—all alike have contributed to the economic ruin of the country. For a long series of years preceding the declaration of national insolvency in 1893 successive budgets presented a deficit, which in years of political excitement and military activity assumed enormous proportions: the shortcomings of the budget were supplied by the proceeds of foreign loans, or by means of advances obtained in the country at a high rate of interest. The two loans which had been contracted during the war of independence were extinguished by means of a conversion in 1889. Of the existing foreign loans the earliest is that of 60,000,000 frs., guaranteed by the three protecting powers in 1832; owing to the payment of interest and amortization by the powers, the capital amounted in 1871 to 100,392,833 fr.; on this Greece pays an annual sum of 900,000 fr., of which 300,000 have been granted by the powers as a yearly subvention to King George. The only other existing foreign obligation of early date is the debt to the heirs of King Otho (4,500,000 dr.) contracted in 1868. A large amount of internal debt was incurred between 1848 and 1880, but a considerable proportion of this was redeemed with the proceeds of the foreign loans negotiated after this period. At the end of 1880 the entire national debt, external and internal, stood at 252,652,481 dr. In 1881 the era of great foreign loans began. In that year a 5% loan of 120,000,000 fr. was raised to defray the expenses of the mobilization of 1880. This was followed in 1884 by a 5% loan of 170,000,000 fr., of which 100,000,000 was actually issued. The service of these loans was guaranteed by various State revenues. A “patriotic loan” of 30,000,000 dr. without interest, issued during the war excitement of 1885, proved a failure, only 2,723,860 dr. being subscribed. In 1888 a 4% loan of 135,000,000 fr. was contracted, secured on the receipts of the five State monopolies, the management of which was entrusted to a privileged company. In the following year (1889) two 4% loans of 30,000,000 fr. and 125,000,000 fr. respectively were issued without guarantee or sinking fund; Greek credit had now apparently attained an established position in the foreign money market, but a decline of public confidence soon became evident. In 1890, of a 5% loan of 80,000,000 fr. effective, authorized for the construction of the Peiraeus-Larissa railway, only 40,050,000 fr. was taken up abroad and 12,900,000 fr. at home; large portions of the proceeds were devoted to other purposes. In 1892 the government was compelled to make large additions to the internal floating debt, and to borrow 16,500,000 fr. from the National Bank on onerous terms. In 1893 an effort to obtain a foreign loan for the reduction of the forced currency proved unsuccessful. (For the events leading up to the declaration of national bankruptcy in that year see under *Recent History*.) A funding convention was concluded in the summer, under which the creditors accepted scrip instead of cash payments of interest. A few months later this arrangement was reversed by the Chamber, and on the 13th December a law was passed assigning provisionally to all the foreign loans alike 30% of the stipulated interest; the reduced coupons were made payable in paper instead of gold, the sinking funds were suspended, and the sums encashed by the monopoly company were confiscated. The causes of the financial catastrophe may be briefly summarized as follows: (1) The military preparations of 1885-1886, with the attendant disorganization of the country; the extraordinary expenditure of these years amounted to 130,987,772 dr. (2) Excessive borrowing abroad, involving a charge for the service of foreign loans altogether disproportionate to the revenue. (3) Remissness in the collection of taxation: the total loss through arrears in a period of ten years (1882-1891) was 36,549,202 dr., being in the main attributable to non-payment of direct taxes. (4) The adverse balance of trade, largely due to the neglected condition of agriculture; in the five years preceding the crisis (1888-1892) the exports were stated to amount to £19,578,973, while the imports reached £24,890,146; foreign live stock and cereals being imported to the amount of £6,193,579. The proximate cause of the crisis was the rise in the exchange owing to the excessive amount of paper money in circulation. Forced currency was first introduced in 1868, when 15,000,000 dr. in paper money was issued; it was abolished in the following year, but reintroduced in 1877 with a paper issue of 44,000,000 dr. It was abolished a second time in 1884, but again put into circulation in 1885, when paper loans to the amount of 45,000,000 dr. were authorized. In 1893 the total authorized forced currency was 146,000,000 dr., of which 88,000,000 (including 14,000,000 dr. in small notes) was on account of the government. The gold and silver coinage had practically disappeared from circulation. The rate of exchange, as a rule, varies directly with the amount of paper money in circulation, but, owing to speculation, it is liable to violent fluctuations whenever there is an exceptional demand for gold in the market. In 1893 the gold franc stood at the ratio of 1.60 to the paper drachma; the service of the foreign loans required upwards of 31,000,000 dr. in gold, and any attempt to realize this sum in the market would have involved an outlay equivalent to at least half the budget. With the failure of the projected loan for the withdrawal of the forced currency repudiation became inevitable. The law of the 13th of December was not recognized by the national creditors: prolonged negotiations followed, but no arrangement was arrived at till 1897, when the intervention of the powers after the war with Turkey furnished the opportunity for a definite settlement. It was stipulated that Turkey should receive an indemnity of £T4,000,000 contingent on the evacuation of Thessaly; in order to secure the payment of this sum by Greece without prejudice to the interests of her creditors, and to enable the country to recover from the economic consequences of the war, Great Britain, France and Russia undertook to guarantee a 2½% loan of 170,000,000 fr., of which 150,000,000 fr. has been issued. By the preliminary treaty of peace (18th of September 1897) an International Financial Commission, composed of six representatives of the powers, was charged with the payment of the indemnity to Turkey, and with “absolute control” over the collection and employment of revenues sufficient for the service of the foreign debt. A law defining the powers of the Commission was passed by the Chamber, 26th of February 1898 (o.s.). The revenues assigned to its supervision were the five government monopolies, the tobacco and stamp duties, and the import duties of Peiraeus (total annual value estimated at 39,600,000 dr.): the collection was entrusted to a Greek society, which is under the absolute control of the Commission. The returns of Peiraeus customs (estimated at 10,700,000 dr.) are regarded as an extra guarantee, and are handed over to the Greek government; when the produce of the other revenues exceeds 28,900,000 dr. the “plus value” or surplus is divided in the proportion of 50.8% to the Greek government and 49.2% to the creditors. The plus values amounted to 3,301,481 dr. in 1898, 3,533,755 dr. in 1899, and 3,442,713 dr. in 1900. Simultaneously with the establishment of the control the interest for the Monopoly Loan was fixed at 43%, for the Funding Loan at 40%, and for the other loans at 32% of the original interest. With the revenues at its disposal the International Commission has already been enabled to make certain augmentations in the service of the foreign debt; since 1900 it has begun to take measures for the reduction of the forced currency, of which 2,000,000 dr. will be annually bought up and destroyed till the amount in circulation is reduced to 40,000,000 dr. On the 1st of January 1901 the authorized paper issue was 164,000,000 dr., of which 92,000,000 (including 18,000,000 in fractional currency) was on account of the government; the amount in actual circulation was 148,619,618 dr. On the 31st of July 1906 the paper issue had been reduced to 152,775,975 dr., and the amount in circulation was 124,668,057 dr. The

financial commission retains its powers until the extinction of all the foreign loans contracted since 1881. Though its activity is mainly limited to the administration of the assigned revenues, it has exercised a beneficial influence over the whole domain of Greek finance; the effect may be observed in the greatly enhanced value of Greek securities since its institution, averaging 25.76% in 1906. No change can be made in its composition or working without the consent of the six powers, and none of the officials employed in the collection of the revenues subject to its control can be dismissed or transferred without its consent. It thus constitutes an element of stability and order which cannot fail to react on the general administration. It is unable, however, to control the expenditure or to assert any direct influence over the government, with which the responsibility still rests for an improved system of collection, a more efficient staff of functionaries and the repression of smuggling. The country has shown a remarkable vitality in recovering from the disasters of 1897, and should it in future obtain a respite from paroxysms of military and political excitement, its financial regeneration will be assured.

The following table gives the actual expenditure and receipts for the period 1889-1906 inclusive:

Year.	Actual Receipts.	Actual Expenditure.	Surplus or Deficit.
	Drachmae.	Drachmae.	Drachmae.
1889	83,731,591	110,772,327	− 27,040,736
1890	79,931,795	125,932,579	− 46,000,784
1891	90,321,872	122,836,385	− 32,514,513
1892	95,465,569	107,283,498	− 11,817,929
1893*	96,723,418	92,133,565	+ 4,589,853
1894	102,885,643	85,135,752	+ 17,749,891
1895	94,657,065	91,641,967	+ 3,015,098
1896	96,931,726	90,890,607	+ 6,041,119
1897**	92,485,825	137,043,929	− 44,558,104
1898***	104,949,718	110,341,431	− 5,391,713
1899	111,318,273	104,586,504	+ 6,731,769
1900	112,206,849	112,049,279	+ 157,570
1901	115,734,159	113,646,301	+ 2,087,858
1902	123,949,931	121,885,707	+ 2,064,224
1903	120,194,362	117,436,549	+ 2,757,813
1904	121,186,246	120,200,247	+ 985,999
1905	126,472,580	118,699,761	+ 7,772,819
1906	125,753,358	124,461,577	+ 1,291,781

* Reduction of interest on foreign debt by 70%.
** War with Turkey.
*** International Financial Commission instituted.

The steady increase of receipts since 1898 attests the growing prosperity of the country, but expenditure has been allowed to outstrip revenue, and, notwithstanding the official figures which represent a series of surpluses, the accumulated deficit in 1905 amounted to about 14,000,000, dr. in addition to treasury bonds for 8,000,000 dr. A remarkable feature has been the rapid fall in the exchange since 1903; the gold franc, which stood at 1.63 dr. in 1902, had fallen to 1.08 in October 1906. The decline, a favourable symptom if resulting from normal economic factors, is apparently due to a combination of exceptional circumstances, and consequently may not be maintained; it has imposed a considerable strain on the financial and commercial situation. The purchasing power of the drachma remains almost stationary and the price of imported commodities continues high; import dues, which since 1904 are payable in drachmae at the fixed rate of 1.45 to the franc, have been practically increased by more than 30%. In April 1900 a 4% loan of 43,750,000 francs for the completion of the railway from Peiraeus to the Turkish frontier, and another loan of 11,750,000 drachmae for the construction of a line from Pyrgos to Meligala, linking up the Morea railway system, were sanctioned by the Chamber; the first-named, the “Greek Railways Loan,” was taken up at 80 by the syndicate contracting for the works and was placed on the market in 1902. The service of both loans is provided by the International Commission from the surplus funds of the assigned revenues. On the 1st of January 1906 the external debt amounted to 725,939,500 francs and the internal (including the paper circulation) to 171,629,436 drachmae.

The budget estimates for 1906 were as follows: Civil list, 1,325,000 dr.; pensions, payment of deputies, &c., 7,706,676 dr.; public debt, 34,253,471 dr.; foreign affairs, 3,563,994 dr.; justice, 6,240,271 dr.; interior, 13,890,927 dr.; religion and education, 7,143,924 dr.; army, 20,618,563 dr.; navy, 7,583,369 dr.; finance, 2,362,143 dr.; collection of revenue, 10,650,487 dr.; various expenditure, 9,122,752 dr.; total, 124,461,577 dr.

The two privileged banks in Greece are the National Bank, founded in 1841; capital 20,000,000 drachmae in 20,000 shares of 1000 dr. each, fully paid up; reserve fund 13,500,000 dr.; notes in circulation (September 1906) 126,721,887 dr., of which 76,360,905 dr. on account of the government; and the Ionian Bank, incorporated in 1839; capital paid up £315,500 in 63,102 shares, of £5 each; notes in circulation, 10,200,000 drachmae, of which 3,500,000 (in fractional notes of 1 and 2 dr.) on account of the government. The notes issued by these two banks constitute the forced paper currency circulating throughout the kingdom. In the case of the Ionian Bank the privilege of issuing notes, originally limited to the Ionian Islands, will expire in 1920. The National Bank is a private institution under supervision of the government, which is represented by a royal commissioner on the board of administration; the central establishment is at Athens with forty-two branches throughout the country. The headquarters of the Ionian Bank, which is a British institution, are in London; the bank has a central office at Athens and five branches in Greece. The privileged Epiro-Thessalian Bank ceased to exist from the 4th of January 1900, when it was amalgamated with the National Bank. There are several other banking companies, as well as private banks, at Athens. The most important is the Bank of Athens (capital 40,000,000 dr.), founded in 1893; it possesses five branches in Greece and six abroad.

Currency, weights and measures.

Greece entered the Latin Monetary Union in 1868. The monetary unit is the new drachma, equivalent to the franc, and divided into 100 lepta or centimes. There are nickel coins of 20, 10 and 5 lepta, copper coins of 10 and 5 lepta. Gold and silver coins were minted in Paris between 1868 and 1884, but have since practically disappeared from the country. The paper currency consists of notes for 1000 dr., 500 dr., 100 dr., 25 dr., 10 dr. and 5 dr., and of fractional notes for 2 dr. and 1 dr. The decimal system of weights and measures was adopted in 1876, but some of the old Turkish standards are still in general use. The dram = 1/10 oz. avoirdupois approximately; the oke = 400 drams or 2.8 lb; the kilo = 22 okes or 0.114 of an imperial quarter; the cantar or quintal = 44 okes or 123.2 lb. Liquids are measured by weight. The punta = 1⅝ in.; the ruppa, 3½ in.; the pik, 26 in.; the stadion = 1 kilometre or 1093½ yds. The stremma (square measure) is nearly one-third of an acre.

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(J. D. B.)

2. History

a. Ancient; to 146 B.C.

1. *Introductory.*—It is necessary to indicate at the outset the scope and object of the present article. The reader must not expect to find in it a compendious summary of the chief events in the history of ancient Greece. It is not intended to supply an "Outlines of Greek History." It may be questioned whether such a sketch of the history, within the limits of space which are necessarily imposed in a work of reference, would be of utility to any class of readers. At any rate, the plan of the present work, in which the subject of Greek history is treated of in a large number of separate articles, allows of the narrative of events being given in a more satisfactory form under the more general of the headings (*e.g.* Athens, Sparta, Peloponnesian War). The character of the history itself suggests a further reason why a general article upon Greek history should not be confined to, or even attempt, a narrative of events. A sketch of Greek history is not possible in the sense in which a sketch of Roman history, or even of English history, is possible. Greek history is not the history of a single state. When Aristotle composed his work upon the constitutions of the Greek states, he found it necessary to extend his survey to no less that 158 states. Greek history is thus concerned with more than 150 separate and independent political communities. Nor is it even the history of a single country. The area occupied by the Greek race extended from the Pyrenees to the Caucasus, and from southern Russia to northern Africa. It is inevitable, therefore, that the impression conveyed by a sketch of Greek history should be a misleading one. A mere narrative can hardly fail to give a false perspective. Experience shows that such a sketch is apt to resolve itself into the history of a few great movements and of a few leading states. What is still worse, it is apt to confine itself, at any rate for the greater part of the period dealt with, to the history of Greece in the narrower sense, *i.e.* of the Greek peninsula. For the identification of Greece with Greece proper there may be some degree of excuse when we come to the 5th and 4th centuries. In the period that lies behind the year 500 B.C. Greece proper forms but a small part of the Greek world. In the 7th and 6th centuries it is outside Greece itself that we must look for the most active life of the Greek people and the most brilliant manifestations of the Greek spirit. The present article, therefore, will be concerned with the causes and conditions of events, rather than with the events themselves; it will attempt analysis rather than narrative. Its object will be to indicate problems and to criticize views; to suggest lessons and parallels, and to estimate the importance of the Hellenic factor in the development of civilization.

2. *The Minoan and Mycenaean Ages.*—When does Greek history begin? Whatever may be the answer that is given to this question, it will be widely different from any that could have been proposed a generation ago. Then the question was, How late does Greek history begin? To-day the question is, How early does it begin? The suggestion made by Grote that the first Olympiad (776 B.C.) should be taken as the starting-point of the history of Greece, in the proper sense of the term "history," seemed likely, not so many years ago, to win general acceptance. At the present moment the tendency would seem to be to go back as far as the 3rd or 4th millennium B.C. in order to reach a starting-point. It is to the results of archaeological research during the last thirty years that we must attribute so startling a change in the attitude of historical science towards this problem. In the days when Grote published the first volumes of his *History of Greece* archaeology was in its infancy. Its results, so far as they affected the earlier periods of Greek history, were scanty; its methods were unscientific. The methods have been gradually perfected by numerous workers in the field; but the results, which have so profoundly modified our conceptions of the early history of the Aegean area, are principally due to the discoveries of two men, Heinrich Schliemann and A. J. Evans. A full account of these discoveries will be found elsewhere (see Aegean Civilization and Crete). It will be sufficient to mention here that Schliemann's labours began with the excavations on the site of Troy in the years 1870-1873; that he passed on to the excavations at Mycenae in 1876 and to those at Tiryns in 1884. It was the discoveries of these years that revealed to us the Mycenaean age, and carried back the history to the middle of the 2nd millennium. The discoveries of Dr A. J. Evans in the island of Crete belong to a later period. The work of excavation was begun in 1900, and was carried on in subsequent years. It has revealed to us the Minoan age, and enabled us to trace back the development and origins of the civilization for a further period of 1000 or 1500 years. The dates assigned by archaeologists to the different periods of Mycenaean and Minoan art must be regarded as merely approximate. Even the relation of the two civilizations is still, to some extent, a matter of conjecture. The general chronological scheme, however, in the sense of the relative order of the various periods and the approximate intervals between them, is too firmly established, both by internal evidence, such as the development of the styles of pottery, and of the art in general, and by external evidence, such as the points of contact with Egyptian art and history, to admit of its being any longer seriously called in question.

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If, then, by “Greek history” is to be understood the history of the lands occupied in later times by the Greek race (*i.e.* the Greek peninsula and the Aegean basin), the beginnings of the history must be carried back some 2000 years before Grote’s proposed starting-point. If, however, “Greek history” is taken to mean the history of the Greek people, the determination of the starting-point is far from easy. For the question to which archaeology does not as yet supply any certain answer is the question of race. Were the creators of the Minoan and Mycenaean civilization Greeks or were they not? In some degree the Minoan evidence has modified the answer suggested by the Mycenaean. Although wide differences of opinion as to the origin of the Mycenaean civilization existed among scholars when the results of Schliemann’s labours were first given to the world, a general agreement had gradually been arrived at in favour of the view which would identify Mycenaean with Achaean or Homeric. In presence of the Cretan evidence it is no longer possible to maintain this view with the same confidence. The two chief difficulties in the way of attributing either the Minoan or the Mycenaean civilization to an Hellenic people are connected respectively with the script and the religion. The excavations at Cnossus have yielded thousands of tablets written in the linear script. There is evidence that this script was in use among the Mycenaeans as well. If Greek was the language spoken at Cnossus and Mycenae, how is it that all attempts to decipher the script have hitherto failed? The Cretan excavations, again, have taught us a great deal as to the religion of the Minoan age; they have, at the same time, thrown a new light upon the evidence supplied by Mycenaean sites. It is no longer possible to ignore the contrast between the cults of the Minoan and Mycenaean ages, and the religious conceptions which they imply, and the cults and religious conceptions prevalent in the historical period. On the other hand, it may safely be asserted that the argument derived from the Mycenaean art, in which we seem to trace a freedom of treatment which is akin to the spirit of the later Greek art, and is in complete contrast to the spirit of Oriental art, has received striking confirmation from the remains of Minoan art. The decipherment of the script would at once solve the problem. We should at least know whether the dominant race in Crete in the Minoan age spoke an Hellenic or a non-Hellenic dialect. And what could be inferred with regard to Crete in the Minoan age could almost certainly be inferred with regard to the mainland in the Mycenaean age. In the meanwhile, possibly until the tablets are read, at any rate until further evidence is forthcoming, any answer that can be given to the question must necessarily be tentative and provisional. (See Aegean Civilization.)

It has already been implied that this period of the history of Greece may be subdivided into a Minoan and a Mycenaean age. Whether these terms are appropriate is a question of comparatively little importance. They at least serve to remind us of the part played by the discoveries at Mycenae and Cnossus in the reconstruction of the history. The term “Mycenaean,” it is true, has other associations than those of locality. It may seem to imply that the civilization disclosed in the excavations at Mycenae is Achaean in character, and that it is to be connected with the Pelopid dynasty to which Agamemnon belonged. In its scientific use, the term must be cleared of all such associations. Further, as opposed to “Minoan” it must be understood in a more definite sense than that in which it has often been employed. It has come to be generally recognized that two different periods are to be distinguished in Schliemann’s discoveries at Mycenae itself. There is an earlier period, to which belong the objects found in the shaft-graves, and there is a later period, to which belong the beehive tombs and the remains of the palaces. It is the latter period which is “Mycenaean” in the strict sense; *i.e.* it is “Mycenaean” as opposed to “Minoan.” To this period belong also the palace at Tiryns, the beehive-tombs discovered elsewhere on the mainland of Greece and one of the cities on the site of Troy (Schliemann’s sixth). The pottery of this period is as characteristic of it, both in its forms (*e.g.* the “stirrup” or “false-necked” form of vase) and in its peculiar glaze, as is the architecture of the palaces and the beehive-tombs. Although the chief remains have been found on the mainland of Greece itself, the art of this period is found to have extended as far north as Troy and as far east as Cyprus. On the other hand, hardly any traces of it have been discovered on the west coast of Asia Minor, south of the Troad. The Mycenaean age, in this sense, may be regarded as extending from 1600 to 1200 B.C. The Minoan age is of far wider extent. Its latest period includes both the earlier and the later periods of the remains found at Mycenae. This is the period called by Dr Evans “Late Minoan.” To this period belong the Great Palace at Cnossus and the linear system of writing. The “Middle Minoan” period, to which the earlier palace belongs, is characterized by the pictographic system of writing and by polychrome pottery of a peculiarly beautiful kind. Dr Evans proposes to carry back this period as far as 2500 B.C. Even behind it there are traces of a still earlier civilization. Thus the Minoan age, even if limited to the middle and later periods, will cover at least a thousand years. Perhaps the most surprising result of the excavations in Crete is the discovery that Minoan art is on a higher level than Mycenaean art. To the scholars of a generation ago it seemed a thing incredible that the art of the shaft-graves, and the architecture of the beehive-tombs and the palaces, could belong to the age before the Dorian invasion. The most recent discoveries seem to indicate that the art of Mycenae is a decadent art; they certainly prove that an art, hardly inferior in its way to the art of the classical period, and a civilization which implies the command of great material resources, were flourishing in the Aegean perhaps a thousand years before the siege of Troy.

Oriental influence.

To the question, “What is the origin of this civilization? Is it of foreign derivation or of native growth?” it is not possible to give a direct answer. It is clear, on the one hand that it was developed, by a gradual process of differentiation, from a culture which was common to the whole Aegean basin and extended as far to the west as Sicily. It is equally clear, on the other hand, that foreign influences contributed largely to the process of development. Egyptian influences, in particular, can be traced throughout the “Minoan” and “Mycenaean” periods. The developed art, however, both in Crete and on the mainland, displays characteristics which are the very opposite of those which are commonly associated with the term “oriental.” Egyptian work, even of the best period, is stiff and conventional; in the best Cretan work, and, in a less degree, in Mycenaean work, we find an originality and a freedom of treatment which remind one of the spirit of the Greek artists. The civilization is, in many respects, of an advanced type. The Cretan architects could design on a grand scale, and could carry out their designs with no small degree of mechanical skill. At Cnossus we find a system of drainage in use, which is far in advance of anything known in the modern world before the 19th century. If the art of the Minoan age falls short of the art of the Periclean age,

it is hardly inferior to that of the age of Peisistratus. It is a civilization, too, which has long been familiar with the art of writing. But it is one that belongs entirely to the Bronze Age. Iron is not found until the very end of the Mycenaean period, and then only in small quantities. Nor is this the only point of contrast between the culture of the earliest age and that of the historical period in Greece. The chief seats of the early culture are to be found either in the island of Crete, or, on the mainland, at Tiryns and Mycenae. In the later history Crete plays no part, and Tiryns and Mycenae are obscure. With the great names of a later age, Argos, Sparta and Athens, no great discoveries are connected. In northern Greece, Orchomenos rather than Thebes is the centre of influence. Further points of contrast readily suggest themselves. The so-called Phoenician alphabet, in use amongst the later Greeks, is unknown in the earliest age. Its systems of writing, both the earlier and the later one, are syllabic in character, and analogous to those in vogue in Asia Minor and Cyprus. In the art of war, the chariot is of more importance than the foot-soldier, and the latter, unlike the Greek hoplite, is lightly clad, and trusts to a shield large enough to cover the whole body, rather than to the metal helmet, breastplate and greaves of later times (see Arms and Armour: Greek). The political system appears to have been a despotic monarchy, and the realm of the monarch to have extended to far wider limits than those of the "city-states" of historical Greece. It is, perhaps, in the religious practices of the age, and in the ideas implied in them, that the contrast is most apparent. Neither in Crete nor on the mainland is there any trace of the worship of the "Olympian" deities. The cults in vogue remind us rather of Asia than of Greece. The worship of pillars and of trees carries us back to Canaan, while the double-headed axe, so prominent in the ritual of Cnossus, survives in later times as the symbol of the national deity of the Carians. The beehive-tombs, found on many sites on the mainland besides Mycenae, are evidence both of a method of sepulture and of ideas of the future state, which are alien to the practice and the thought of the Greeks of history. It is only in one region—in the island of Cyprus—that the culture of the Mycenaean age is found surviving into the historical period. As late as the beginning of the 5th century B.C. Cyprus is still ruled by kings, the alphabet has not yet displaced a syllabary, the characteristic forms of Mycenaean vases still linger on, and the chief deity of the island is the goddess with attendant doves whose images are among the common objects of Mycenaean finds.

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3. *The Homeric Age.*—Alike in Crete and on the mainland the civilization disclosed by excavation comes abruptly to an end. In Crete we can trace it back from c. 1200 B.C. to the Neolithic period. From the Stone Age to the end of the Minoan Age the development is continuous and uninterrupted.[4] But between the culture of the Early Age and the culture of the Dorians, who occupied the island in historical times, no connexion whatever can be established. Between the two there is a great gulf fixed. It would be difficult to imagine a greater contrast than that presented by the rude life of the Dorian communities in Crete when it is compared with the political power, the material resources and the extensive commerce of the earlier period. The same gap between the archaeological age and the historical exists on the mainland also. It is true that the solution of continuity is here less complete. Mycenaean art continues, here and there, in a debased form down to the 9th century, a date to which we can trace back the beginnings of the later Greek art. On one or two lines (*e.g.* architecture) it is even possible to establish some sort of connexion between them. But Greek art as a whole cannot be evolved from Mycenaean art. We cannot bridge over the interval that separates the latter art, even in its decline, from the former. It is sufficient to compare the "dipylon" ware (with which the process of development begins, which culminates in the pottery of the Great Age) with the Mycenaean vases, to satisfy oneself that the gulf exists. What then is the relation of the Heroic or Homeric Age (*i.e.* the age whose life is portrayed for us in the poems of Homer) to the Earliest Age? It too presents many contrasts to the later periods. On the other hand, it presents contrasts to the Minoan Age, which, in their way, are not less striking. Is it then to be identified with the Mycenaean Age? Schliemann, the discoverer of the Mycenaean culture, unhesitatingly identified Mycenaean with Homeric. He even identified the shaft-graves of Mycenae with the tombs of Agamemnon and Clytemnestra. Later inquirers, while refusing to discover so literal a correspondence between things Homeric and things Mycenaean, have not hesitated to accept a general correspondence between the Homeric Age and the Mycenaean. Where it is a case of comparing literary evidence with archaeological, an exact coincidence is not of course to be demanded. The most that can be asked is that a general correspondence should be established. It may be conceded that the case for such a correspondence appears prima facie a strong one. There is much in Homer that seems to find confirmation or explanation in Schliemann's finds. Mycenae is Agamemnon's city; the plan of the Homeric house agrees fairly well with the palaces at Tiryns and Mycenae; the forms and the technique of Mycenaean art serve to illustrate passages in the poems; such are only a few of the arguments that have been urged. It is the great merit of Professor Ridgeway's work (*The Early Age of Greece*) that it has demonstrated, once and for all, that Mycenaean is not Homeric pure and simple. He insists upon differences as great as the resemblances. Iron is in common use in Homer; it is practically unknown to the Mycenaeans. In place of the round shield and the metal armour of the Homeric soldier, we find at Mycenae that the warrior is lightly clad in linen, and that he fights behind an oblong shield, which covers the whole body; nor are the chariots the same in form. The Homeric dead are cremated; the Mycenaean are buried. The gods of Homer are the deities of Olympus, of whose cult no traces are to be found in the Mycenaean Age. The novelty of Professor Ridgeway's theory is that for the accepted equation, Homeric = Achaean = Mycenaean, he proposes to substitute the equations, Homeric = Achaean = post-Mycenaean, and Mycenaean = pre-Achaean = Pelasgian. The Mycenaean civilization he attributes to the Pelasgians, whom he regards as the indigenous population of Greece, the ancestors of the later Greeks, and themselves Greek both in speech and blood. The Homeric heroes are Achaeans, a fair-haired Celtic race, whose home was in the Danube valley, where they had learned the use of iron. In Greece they are newcomers, a conquering class comparable to the Norman invaders of England or Ireland, and like them they have acquired the language of their subjects in the course of a few generations. The Homeric civilization is thus Achaean, *i.e.* it is Pelasgian (Mycenaean) civilization, appropriated by a ruder race; but the Homeric culture is far inferior to the Mycenaean. Here, at any rate, the Norman analogy breaks down. Norman art in England is far in advance of Saxon. Even in Normandy (as in Sicily), where the Norman appropriated rather than introduced, he not only assimilated but developed. In Greece the process must have been reversed.

The theory thus outlined is probably stronger on its destructive side than on its constructive. To treat the Achaeans as an immigrant race is to run counter to the tradition of the Greeks themselves, by whom the Achaeans were regarded as indigenous (cf. Herod. viii. 73). Nor is the Pelasgian part of the theory easy to reconcile with the Homeric evidence. If the Achaeans were a conquering class ruling over a Pelasgian population, we should expect to find this difference of race a prominent feature in Homeric society. We should, at least, expect to find a Pelasgian background to the Homeric picture. As a matter of fact, we find nothing of the sort. There is no consciousness in the Homeric poems of a distinction of race between the governing and the subject classes. There are, indeed, Pelasgians in Homer, but the references either to the people or the name are extraordinarily few. They appear as a people, presumably in Asia Minor, in alliance with the Trojans; they appear also, in a single passage, as one of the tribes inhabiting Crete. The name survives in "Pelasgicon Argos," which is probably to be identified with the valley of the Spercheius,[5] and as an epithet of Zeus of Dodona. The population, however, of Pelasgicon Argos and of Dodona is no longer Pelasgian. Thus, in the age of Homer, the Pelasgians belong, so far as Greece proper is concerned, to a past that is already remote. It is inadmissible to appeal to Herodotus against Homer. For the conditions of the Homeric age Homer is the sole authoritative witness. If, however, Professor Ridgeway has failed to prove that "Mycenaean" equals "Pelasgian," he has certainly proved that much that is Homeric is post-Mycenaean. It is possible that different strata are to be distinguished in the Homeric poems. There are passages which seem to assume the conditions of the Mycenaean age; there are others which presuppose the conditions of a later age. It may be that the latter passages reflect the circumstances of the poet's own times, while the former ones reproduce those of an earlier period. If so, the substitution of iron for bronze must have been effected in the interval between the earlier and the later periods.

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The Homeric state.

It has already been pointed out that the question whether the makers of the Minoan and Mycenaean civilizations were Greeks must still be regarded as an open one. No such question can be raised as to the Homeric Age. The Achaeans may or may not have been Greek in blood. What is certain is that the Achaean Age forms an integral part of Greek history. Alike on the linguistic, the religious and the political sides, Homer is the starting-point of subsequent developments. In the Greek dialects the great distinction is that between the Doric and the rest. Of the non-Doric dialects the two main groups are the Aeolic and Ionic, both of which have been developed, by a gradual process of differentiation, from the language of the Homeric poems. With regard to religion it is sufficient to refer to the judgment of Herodotus, that it was Homer and Hesiod who were the authors of the Greek theogony (ii. 53 οὗτοί εἰσι οἱ ποιήσαντες θεογονίην Ἕλλησι). It is a commonplace that Homer was the Bible of the Greeks. On the political side, Greek constitutional development would be unintelligible without Homer. When Greek history, in the proper sense, begins, oligarchy is almost universal. Everywhere, however, an antecedent stage of monarchy has to be presupposed. In the Homeric system monarchy is the sole form of government; but it is monarchy already well on the way to being transformed into oligarchy. In the person of the king are united the functions of priest, of judge and of leader in war. He belongs to a family which claims divine descent and his office is hereditary. He is, however, no

despotic monarch. He is compelled by custom to consult the council (*boulē*) of the elders, or chiefs. He must ask their opinion, and, if he fails to obtain their consent, he has no power to enforce his will. Even when he has obtained the consent of the council, the proposal still awaits the approval of the assembly (*agora*), of the people.

Homeric society.

Thus in the Homeric state we find the germs not only of the oligarchy and democracy of later Greece, but also of all the various forms of constitution known to the Western world. And a monarchy such as is depicted in the Homeric poems is clearly ripe for transmutation into oligarchy. The chiefs are addressed as kings (βασιλῆες), and claim, equally with the monarch, descent from the gods. In Homer, again, we can trace the later organization into tribe (φυλή), clan (γένος), and phratry, which is characteristic of Greek society in the historical period, and meets us in analogous forms in other Aryan societies. The γένος corresponds to the Roman *gens*, the φυλή to the Roman tribe, and the phratry to the *curia*. The importance of the *phratry* in Homeric society is illustrated by the well-known passage (*Iliad* ix. 63) in which the outcast is described as "one who belongs to no phratry" (ἀφρήτωρ). It is a society that is, of course, based upon slavery, but it is slavery in its least repulsive aspect. The treatment which Eumaeus and Eurycleia receive at the hands of the poet of the *Odyssey* is highly creditable to the humanity of the age. A society which regarded the slave as a mere chattel would have been impatient of the interest shown in a swineherd and a nurse. It is a society, too, that exhibits many of the distinguishing traits of later Greek life. Feasting and quarrels, it is true, are of more moment to the heroes than to the contemporaries of Pericles or Plato; but "music" and "gymnastic" (though the terms must be understood in a more restricted sense) are as distinctive of the age of Homer as of that of Pindar. In one respect there is retrogression in the historical period. Woman in Homeric society enjoys a greater freedom, and receives greater respect, than in the Athens of Sophocles and Pericles.

4. *The Growth of the Greek States.*—The Greek world at the beginning of the 6th century B.C. presents a picture in many respects different from that of the Homeric Age. The Greek race is no longer confined to the Greek peninsula. It occupies the islands of the Aegean, the western seaboard of Asia Minor, the coasts of Macedonia and Thrace, of southern Italy and Sicily. Scattered settlements are found as far apart as the mouth of the Rhone, the north of Africa, the Crimea and the eastern end of the Black Sea. The Greeks are called by a national name, *Hellenes*, the symbol of a fully-developed national self-consciousness. They are divided into three great branches, the Dorian, the Ionian and the Aeolian, names almost, or entirely, unknown to Homer. The heroic monarchy has nearly everywhere disappeared. In Greece proper, south of Thermopylae, it survives, but in a peculiar form, in the Spartan state alone. What is the significance and the explanation of contrasts so profound?

Dorian invasion.

It is probable that the explanation is to be found, directly or indirectly, in a single cause, the Dorian invasion. In Homer the Dorians are mentioned in one passage only (*Odyssey* xix. 177). They there appear as one of the races which inhabit Crete. In the historical period the whole Peloponnese, with the exception of Arcadia, Elis and Achaea, is Dorian. In northern Greece the Dorians occupy the little state of Doris, and in the Aegean they form the population of Crete, Rhodes and some smaller islands. Thus the chief centres of Minoan and Mycenaean culture have passed into Dorian hands, and the chief seats of Achaean power are included in Dorian states. Greek tradition explained the overthrow of the Achaean system by an invasion of the Peloponnese by the Dorians, a northern tribe, which had found a temporary home in Doris. The story ran that, after an unsuccessful attempt to force an entrance by the Isthmus of Corinth, they had crossed from Naupactus, at the mouth of the Corinthian Gulf, landed on the opposite shore, and made their way into the heart of the Peloponnese, where a single victory gave them possession of the Achaean states. Their conquests were divided among the invaders into three shares, for which lots were cast, and thus the three states of Argos, Sparta and Messenia were created. There is much in this tradition that is impossible or improbable. It is impossible, *e.g.* for the tiny state of Doris, with its three or four "small, sad villages" (πολεις μικραὶ καὶ λυπρόχωροι, Strabo, p. 427), to have furnished a force of invaders sufficient to conquer and re-people the greater part of the Peloponnese. It is improbable that the conquest should have been either as sudden, or as complete, as the legend represents. On the contrary, there are indications that the conquest was gradual, and that the displacement of the older population was incomplete. The improbability of the details affords, however, no ground for questioning the reality of the invasion.[6] The tradition can be traced back at Sparta to the 7th century B.C. (Tyrtaeus, quoted by Strabo, p. 362), and there is abundant evidence, other than that of legend, to corroborate it. There is the Dorian name, to begin with. If, as Beloch supposes, it originated on the coast of Asia Minor, where it served to distinguish the settlers in Rhodes and the neighbouring islands from the Ionians and Aeolians to the north of them, how came the great and famous states of the Peloponnese to adopt a name in use among the petty colonies planted by their kinsmen across the sea? Or, if Dorian is simply Old Peloponnesian, how are we to account for the Doric dialect or the Dorian pride of race?

It is true that there are great differences between the literary Doric, the dialect of Corinth and Argos, and the dialects of Laconia and Crete, and that there are affinities between the dialect of Laconia and the non-Dorian dialects of Arcadia and Elis. It is equally true, however, and of far more consequence, that all the Doric dialects are distinguished from all other Greek dialects by certain common characteristics. Perhaps the strongest sentiment in the Dorian nature is the pride of race. Indeed, it looks as if the Dorians claimed to be the sole genuine Hellenes. How can we account for an indigenous population, first imagining itself to be immigrant, and then developing a contempt for the rest of the race, equally indigenous with itself, on account of a fictitious difference in origin? Finally, there is the archaeological evidence. The older civilization comes to an abrupt end, and it does so, on the mainland at least, at the very period to which tradition assigns the Dorian migration. Its development is greatest, and its overthrow most complete, precisely in the regions occupied by the Dorians and the other tribes, whose migrations were traditionally connected with theirs. It is hardly too much to say that the archaeologist would have been compelled to postulate an inroad into central and southern Greece of tribes from the north, at a lower level of culture, in the course of the 12th and 11th centuries B.C., if the historian had not been able to direct him to the traditions of the great migrations (μεταναστάσεις), of which the Dorian invasion was the chief. With the Dorian migration Greek tradition connected the expansion of the Greek race eastwards across the Aegean. In the historical period the Greek settlements on the western coast of Asia Minor fall into three clearly defined groups. To the north is the Aeolic group, consisting of the island of Lesbos and twelve towns, mostly insignificant, on the opposite mainland. To the south is the Dorian *hexapolis*, consisting of Cnidus and Halicarnassus on the mainland, and the islands of Rhodes and Cos. In the centre comes the Ionian *dodecapolis*, a group consisting of ten towns on the mainland, together with the islands of Samos and Chios. Of these three groups, the Ionian is incomparably the most important. The Ionians also occupy Euboea and the Cyclades. Although it would appear that Cyprus (and possibly Pamphylia) had been occupied by settlers from Greece in the Mycenaean age, Greek tradition is probably correct in putting the colonization of Asia Minor and the islands of the Aegean after the Dorian migration. Both the Homeric and the archaeological evidence seem to point to the same conclusion. Between Rhodes on the south and the Troad on the north scarcely any Mycenaean remains have been found. Homer is ignorant of any Greeks east of Euboea. If the poems are earlier than the Dorian Invasion, his silence is conclusive. If the poems are some centuries later than the Invasion, they at least prove that, within a few generations of that event, it was the belief of the Greeks of Asia Minor that their ancestors had crossed the seas after the close of the Heroic Age. It is probable, too, that the names Ionian and Aeolian, the former of which is found once in Homer, and the latter not at all, originated among the colonists in Asia Minor, and served to designate, in the first instance, the members of the Ionic and Aeolic *dodecapoleis*. As Curtius[7] pointed out, the only Ionia known to history is in Asia Minor. It does not follow that Ionia is the original home of the Ionian race, as Curtius argued. It almost certainly follows, however, that it is the original home of the Ionian name.

It is less easy to account for the name *Hellenes*. The Greeks were profoundly conscious of their common nationality, and of the gulf that separated them from the rest of mankind. They themselves recognized a common race and language, and a common type of religion and culture, as the chief factors in this sentiment of nationality (see Herod. viii. 144 Ἑλληνικὸν ἐὸν ὅμαιμόν τε καὶ ὁμόγλωσσον καὶ θεῶν ἱδρύματά τε κοινὰ καὶ θυσίαι ἤθεά τε ὁμότροπα). "Hellenes" was the name of their common race, and "Hellas" of their common country. In Homer there is no distinct consciousness of a common nationality, and consequently no antithesis of Greek and Barbarian (see Thuc. i. 3). Nor is there a true collective name. There are indeed Hellenes (though the name occurs in one passage only, *Iliad* ii. 684), and there is a Hellas; but his Hellas, whatever its precise signification may be, is, at any rate, not equivalent either to Greece proper or to the land of the Greeks, and his Hellenes are the inhabitants of a small district to the south of Thessaly. It is possible that the diffusion of the Hellenic name was due to the Dorian invaders. Its use can be traced back to the first half of the 7th century. Not less obscure are the causes of the fall of monarchy. It cannot have been the immediate effect of the Dorian conquest, for the states founded by the Dorians were at first monarchically governed. It may, however, have been an indirect effect of it. We have already seen that the power of the Homeric king is more limited than that of the rulers of

Government. Cnossus, Tiryns or Mycenae. In other words, monarchy is already in decay at the epoch of the Invasion. The Invasion, in its effects on wealth, commerce and civilization, is almost comparable to the irruption of the barbarians into the Roman empire. The monarch of the Minoan and Mycenaean age has extensive revenues at his command; the monarch of the early Dorian states is little better than a petty chief. Thus the interval, once a wide one, that separates him from the nobles tends to disappear. The decay of monarchy was gradual; much more gradual than is generally recognized. There were parts of the Greek world in which it still survived in the 6th century, *e.g.* Sparta, Cyrene, Cyprus, and possibly Argos and Tarentum. Both Herodotus and Thucydides apply the title "king" (βασιλεύς) to the rulers of Thessaly in the 5th century. The date at which monarchy gave place to a republican form of government must have differed, and differed widely, in different cases. The traditions relating to the foundation of Cyrene assume the existence of monarchy in Thera and in Crete in the middle of the 7th century (Herodotus iv. 150 and 154), and the reign of Amphicrates at Samos (Herod, iii. 59) can hardly be placed more than a generation earlier. In view of our general ignorance of the history of the 7th and 8th centuries, it is hazardous to pronounce these instances exceptional. On the other hand, the change from monarchy to oligarchy was completed at Athens before the end of the 8th century, and at a still earlier date in some of the other states. The process, again, by which the change was effected was, in all probability, less uniform than is generally assumed. There are extremely few cases in which we have any trustworthy evidence, and the instances about which we are informed refuse to be reduced to any common type. In Greece proper our information is fullest in the case of Athens and Argos. In the former case, the king is gradually stripped of his powers by a process of devolution. An hereditary king, ruling for life, is replaced by three annual and elective magistrates, between whom are divided the executive, military and religious functions of the monarch (see ARCHON). At Argos the fall of the monarchy is preceded by an aggrandisement of the royal prerogatives. There is nothing in common between these two cases, and there is no reason to suppose that the process elsewhere was analogous to that at Athens. Everywhere, however, oligarchy is the form of government which succeeds to monarchy. Political power is monopolized by a class of nobles, whose claim to govern is based upon birth and the possession of land, the most valuable form of property in an early society. Sometimes power is confined to a single clan (*e.g.* the Bacchiadae at Corinth); more commonly, as at Athens, all houses that are noble are equally privileged. In every case there is found, as the adviser of the executive, a Boulē, or council, representative of the privileged class. Without such a council a Greek oligarchy is inconceivable. The relations of the executive to the council doubtless varied. At Athens it is clear that the real authority was exercised by the archons;[8] in many states the magistrates were probably subordinate to the council (cf. the relation of the consuls to the senate at Rome). And it is clear that the way in which the oligarchies used their power varied also. The cases in which the power was abused are naturally the ones of which we hear; for an abuse of power gave rise to discontent and was the ultimate cause of revolution. We hear little or nothing of the cases in which power was exercised wisely. Happy is the constitution which has no annals! We know, however, that oligarchy held its ground for generations, or even for centuries, in a large proportion of the Greek states; and a government which, like the oligarchies of Elis, Thebes or Aegina, could maintain itself for three or four centuries cannot have been merely oppressive.

Trade. The period of the transition from monarchy to oligarchy is the period in which commerce begins to develop, and trade-routes to be organized. Greece had been the centre of an active trade in the Minoan and Mycenaean epochs. The products of Crete and of the Peloponnese had found their way to Egypt and Asia Minor. The overthrow of the older civilization put an end to commerce. The seas became insecure and intercourse with the East was interrupted. Our earliest glimpses of the Aegean after the period of the migrations disclose the raids of the pirate and the activity of the Phoenician trader. It is not till the 8th century has dawned that trade begins to revive, and the Phoenician has to retire before his Greek competitor. For some time to come, however, no clear distinction is drawn between the trader and the pirate. The pioneers of Greek trade in the West are the pirates of Cumae (Thucyd. vi. 4). The expansion of Greek commerce, unlike that of the commerce of the modern world, was not connected with any great scientific discoveries. There is nothing in the history of ancient navigation that is analogous to the invention of the mariner's compass or of the steam-engine. In spite of this, the development of Greek commerce in the 7th and 6th centuries was rapid. It must have been assisted by the great discovery of the early part of the former century, the invention of coined money. To the Lydians, rather than the Greeks, belongs the credit of the discovery; but it was the genius of the latter race that divined the importance of the invention and spread its use. The coinage of the Ionian towns goes back to the reign of Gyges (*c.* 675 B.C.). And it is in Ionia that commercial development is earliest and greatest. In the most distant regions the Ionian is first in the field. Egypt and the Black Sea are both opened up to Greek trade by Miletus, the Adriatic and the Western Mediterranean by Phocaea and Samos. It is significant that of the twelve states engaged in the Egyptian trade in the 6th century all, with the exception of Aegina, are from the eastern side of the Aegean (Herod. ii. 178). On the western side the chief centres of trade during these centuries were the islands of Euboea and Aegina and the town of Corinth. The Aeginetan are the earliest coins of Greece proper (*c.* 650 B.C.); and the two rival scales of weights and measures, in use amongst the Greeks of every age, are the Aeginetan and the Euboic. Commerce naturally gave rise to commercial leagues, and commercial relations tended to bring about political alliances. Foreign policy even at this early epoch seems to have been largely determined by considerations of commerce. Two leagues, the members of which were connected by political as well as commercial ties, can be recognized. At the head of each stood one of the two rival powers in the island of Euboea, Chalcis and Eretria. Their primary object was doubtless protection from the pirate and the foreigner. Competing routes were organized at an early date under their influence, and their trading connexions can be traced from the heart of Asia Minor to the north of Italy. Miletus, Sybaris and Etruria were members of the Eretrian league; Samos, Corinth, Rhegium and Zancle (commanding the Straits of Messina), and Cumae, on the Bay of Naples, of the Chalcidian. The wool of the Phrygian uplands, woven in the looms of Miletus, reached the Etruscan markets by way of Sybaris; through Cumae, Rome and the rest of Latium obtained the elements of Greek culture. Greek trade, however, was confined to the Mediterranean area. The Phoenician and the Carthaginian navigators penetrated to Britain; they discovered the passage round the Cape two thousand years before Vasco da Gama's time. The Greek sailor dared not adventure himself outside the Black Sea, the Adriatic and the Mediterranean. Greek trade, too, was essentially maritime. Ports visited by Greek vessels were often the starting points of trade-routes into the interior; the traffic along those routes was left in the hands of the natives (see *e.g.* Herod. iv. 24). One service, the importance of which can hardly be overestimated, was rendered to civilization by the Greek traders—the invention of geography. The science of geography is the invention of the Greeks. The first maps were made by them (in the 6th century); and it was the discoveries and surveys of their sailors that made map-making possible.

Colonization. Closely connected with the history of Greek trade is the history of Greek colonization. The period of colonization, in its narrower sense, extends from the middle of the 8th to the middle of the 6th century. Greek colonization is, however, merely a continuation of the process which at an earlier epoch had led to the settlement, first of Cyprus, and then of the islands and coasts of the Aegean. From the earlier settlements the colonization of the historical period is distinguished by three characteristics. The later colony acknowledges a definite *metropolis* ("mother-city"); it is planted by a definite *oecist* (οἰκιστής); it has a definite date assigned to its foundation.[9] It would be a mistake to regard Greek colonization as commercial in origin, in the sense that the colonies were in all cases established as trading-posts. This was the case with the Phoenician and Carthaginian settlements, most of which remained mere factories; and some of the Greek colonies (*e.g.* many of those planted by Miletus on the shores of the Black Sea) bore this character. The typical Greek colony, however, was neither in origin nor in development a mere trading-post. It was, or it became, a *polis*, a city-state, in which was reproduced the life of the parent state. Nor was Greek colonization, like the emigration from Europe to America and Australia in the 19th century, simply the result of over-population. The causes were as various as those which can be traced in the history of modern colonization. Those which were established for the purposes of trade may be compared to the factories of the Portuguese and Dutch in Africa and the Far East. Others were the result of political discontent, in some form or shape; these may be compared to the Puritan settlements in New England. Others again were due to ambition or the mere love of adventure (see Herod. v. 42 ff., the career of Dorieus). But however various the causes, two conditions must always be presupposed—an expansion of commerce and a growth of population. Within the narrow limits of the city-state there was a constant tendency for population to become redundant, until, as in the later centuries of Greek life, its growth was artificially restricted. Alike from the Roman colonies, and from those founded by the European nations in the course of the last few centuries, the Greek colonies are distinguished by a fundamental contrast. It is significant that the contrast is a political one. The Roman colony was in a position of entire subordination to the Roman state, of which it formed a part. The modern colony was, in varying degrees, in political subjection to the home government. The Greek colony was completely independent; and it was independent from the first. The ties that united a colony to its metropolis were those of sentiment and interest; the political tie did not exist. There were, it is true, exceptions. The colonies established by imperial Athens closely resembled the colonies of imperial Rome. The cleruchy (*q.v.*) formed part of the Athenian state; the cleruchs kept their status as citizens of Athens and acted as a military garrison. And if the political tie, in the proper sense, was wanting, it was

inevitable that political relations should spring out of commercial or sentimental ones. Thus we find Corinth interfering twice to save her colony Syracuse from destruction, and Megara bringing about the revolt of Byzantium, her colony, from Athens. Sometimes it is not easy to distinguish political relations from a political tie (*e.g.* the relations of Corinth, both in the Persian and Peloponnesian Wars, to Ambracia and the neighbouring group of colonies). When we compare the development of the Greek and the modern colonies we shall find that the development of the former was even more rapid than that of the latter. In at least three respects the Greek settler was at an advantage as compared with the colonist of modern times. The differences of race, of colour and of climate, with which the chief problems of modern colonization are connected, played no part in the history of the Greek settlements. The races amongst whom the Greeks planted themselves were in some cases on a similar level of culture. Where the 446
natives were still backward or barbarous, they came of a stock either closely related to the Greek, or at least separated from it by no great physical differences. We need only contrast the Carian, the Sicel, the Thracian or even the Scythian, with the native Australian, the Hottentot, the Red Indian or the Maori, to apprehend the advantage of the Greek. Amalgamation with the native races was easy, and it involved neither physical nor intellectual degeneracy as its consequence. Of the races with which the Greeks came in contact the Thracian was far from the highest in the scale of culture; yet three of the greatest names in the Great Age of Athens are those of men who had Thracian blood in their veins, viz. Themistocles, Cimon and the historian Thucydides. In the absence of any distinction of colour, no insuperable barrier existed between the Greek and the hellenized native. The *demos* of the colonial cities was largely recruited from the native population,[10] nor was there anything in the Greek world analogous to the "mean whites" or the "black belt." Of hardly less importance were the climatic conditions. In this respect the Mediterranean area is unique. There is no other region of the world of equal extent in which these conditions are at once so uniform and so favourable. Nowhere had the Greek settler to encounter a climate which was either unsuited to his labour or subversive of his vigour. That in spite of these advantages so little, comparatively speaking, was effected in the work of Hellenization before the epoch of Alexander and the Diadochi, was the effect of a single counteracting cause. The Greek colonist, like the Greek trader, clung to the shore. He penetrated no farther inland than the sea-breeze. Hence it was only in islands, such as Sicily or Cyprus, that the process of Hellenization was complete. Elsewhere the Greek settlements formed a mere fringe along the coast.

The tyrants.

To the 7th century there belongs another movement of high importance in its bearing upon the economic, religious and literary development of Greece, as well as upon its constitutional history. This movement is the rise of the *tyrannis*. In the political writers of a later age the word possesses a clear-cut connotation. From other forms of monarchy it is distinguished by a twofold differentiation. The *tyrannus* is an unconstitutional ruler, and his authority is exercised over unwilling subjects. In the 7th and 6th centuries the line was not drawn so distinctly between the tyrant and the legitimate monarch. Even Herodotus uses the words "tyrant" and "king" interchangeably (*e.g.* the princes of Cyprus are called "kings" in v. 110 and "tyrants" in v. 109), so that it is sometimes difficult to decide whether a legitimate monarch or a tyrant is meant (*e.g.* Aristophilides of Tarentum, iii. 136, or Telys of Sybaris, v. 44). But the distinction between the tyrant and the king of the Heroic Age is a valid one. It is not true that his rule was always exercised over unwilling subjects; it is true that his position was always unconstitutional. The Homeric king is a legitimate monarch; his authority is invested with the sanctions of religion and immemorial custom. The tyrant is an illegitimate ruler; his authority is not recognized, either by customary usage or by express enactment. But the word "tyrant" was originally a neutral team; it did not necessarily imply a misuse of power. The origin of the *tyrannis* is obscure. The word *tyrannus* has been thought, with some reason, to be a Lydian one. Probably both the name and the thing originated in the Greek colonies of Asia Minor, though the earliest tyrants of whom we hear in Asia Minor (at Ephesus and Miletus) are a generation later than the earliest in Greece itself, where, both at Sicyon and at Corinth, tyranny appears to date back to the second quarter of the 7th century. It is not unusual to regard tyranny as a universal stage in the constitutional development of the Greek states, and as a stage that occurs everywhere at one and the same period. In reality, tyranny is confined to certain regions, and it is a phenomenon that is peculiar to no one age or century. In Greece proper, before the 4th century B.C., it is confined to a small group of states round the Corinthian and Saronic Gulfs. The greater part of the Peloponnese was exempt from it, and there is no good evidence for its existence north of the Isthmus, except at Megara and Athens. It plays no part in the history of the Greek cities in Chalcidice and Thrace. It appears to have been rare in the Cyclades. The regions in which it finds a congenial soil are two, Asia Minor and Sicily. Thus it is incorrect to say that most Greek states passed through this stage. It is still wider of the mark to assume that they passed through it at the same time. There is no "Age of the Tyrants." Tyranny began in the Peloponnese a hundred years before it appears in Sicily, and it has disappeared in the Peloponnese almost before it begins in Sicily. In the latter the great age of tyranny comes at the beginning of the 5th century; in the former it is at the end of the 7th and the beginning of the 6th. At Athens the history of tyranny begins after it has ended both at Sicyon and Corinth. There is, indeed, a period in which tyranny is non-existent in the Greek states; roughly speaking, the last sixty years of the 5th century. But with this exception, there is no period in which the tyrant is not to be found. The greatest of all the tyrannies, that of Dionysius at Syracuse, belongs to the 4th century. Nor must it be assumed that tyranny always comes at the same stage in the history of a constitution; that it is always a stage between oligarchy and democracy. At Corinth it is followed, not by democracy but by oligarchy, and it is an oligarchy that lasts, with a brief interruption, for two hundred and fifty years. At Athens it is not immediately preceded by oligarchy. Between the Eupatrid oligarchy and the rule of Peisistratus there comes the timocracy of Solon. These exceptions do not stand alone. The cause of tyranny is, in one sense, uniform. In the earlier centuries, at any rate, tyranny is always the expression of discontent; the tyrant is always the champion of a cause. But it would be a mistake to suppose that the discontent is necessarily political, or that the cause which he champions is always a constitutional one. At Sicyon it is a racial one; Cleisthenes is the champion of the older population against their Dorian oppressors (see Herod. v. 67, 68). At Athens the discontent is economic rather than political; Peisistratus is the champion of the Diacrii, the inhabitants of the poorest region of Attica. The party-strifes of which we hear in the early history of Miletus, which doubtless gave the tyrant his opportunity, are concerned with the claims of rival industrial classes. In Sicily the tyrant is the ally of the rich and the foe of the *demos*, and the cause which he champions, both in the 5th century and the 4th, is a national one, that of the Greek against the Carthaginian. We may suspect that in Greece itself the tyrannies of the 7th century are the expression of an anti-Dorian reaction. It can hardly be an accident that the states in which the tyrannis is found at this epoch, Corinth, Megara, Sicyon, Epidaurus, are all of them states in which a Dorian upper class ruled over a subject population. In Asia Minor the *tyrannis* assumes a peculiar character after the Persian conquest. The tyrant rules as the deputy of the Persian satrap. Thus in the East the tyrant is the enemy of the national cause; in the West, in Sicily, he is its champion.

Tyranny is not a phenomenon peculiar to Greek history. It is possible to find analogies to it in Roman history, in the power of Caesar, or of the Caesars; in the despotisms of medieval Italy; or even in the Napoleonic empire. Between the tyrant and the Italian despot there is indeed a real analogy; but between the Roman principate and the Greek *tyrannis* there are two essential differences. In the first place, the principate was expressed in constitutional forms, or veiled under constitutional fictions; the tyrant stood altogether outside the constitution. And, secondly, at Rome both Julius and Augustus owed their position to the power of the sword. The power of the sword, it is true, plays a large part in the history of the later tyrants (*e.g.* Dionysius of Syracuse); the earlier ones, however, had no mercenary armies at their command. We can hardly compare the bodyguard of Peisistratus to the legions of the first or the second Caesar.

The view taken of the *tyrannis* in Greek literature is almost uniformly unfavourable. In this respect there is no difference between 447
Plato and Aristotle, or between Herodotus and the later historians.[11] His policy is represented as purely selfish, and his rule as oppressive. Herodotus is influenced partly by the traditions current among the oligarchs, who had been the chief sufferers, and partly by the odious associations which had gathered round tyranny in Asia Minor. The philosophers write under their impressions of the later *tyrannis*, and their account is largely an a priori one. It is seldom that we find any attempt, either in the philosophers or the historians, to do justice to the real services rendered by the tyrants.[12] Their first service was a constitutional one. They helped to break down the power of the old aristocratic houses, and thus to create the social and political conditions indispensable to democracy. The *tyrannis* involved the sacrifice of liberty in the cause of equality. When tyranny falls, it is never succeeded by the aristocracies which it had overthrown. It is frequently succeeded by an oligarchy, but it is an oligarchy in which the claim to exclusive power is based, not upon mere birth, but upon wealth, or the possession of land. It would be unfair to treat this service as one that was rendered unconsciously and unwillingly. Where the tyrant asserted the claims of an oppressed class, he consciously aimed at the destruction of privilege and the effacement of class distinctions. Hence it is unjust to treat his power as resting upon mere force. A government which can last eighty or a hundred years, as was the case with the tyrannies at Corinth and Sicyon, must have a moral force behind it. It must rest upon the consent of its subjects. The second service which the tyrants rendered to Greece was a political one. Their policy tended to break down the barriers which isolated each petty state from its neighbours. In their

history we can trace a system of widespread alliances, which are often cemented by matrimonial connexions. The Cypselid tyrants of Corinth appear to have been allied with the royal families of Egypt, Lydia and Phrygia, as well as with the tyrants of Miletus and Epidaurus, and with some of the great Athenian families. In Sicily we find a league of the northern tyrants opposed to a league of the southern; and in each ease there is a corresponding matrimonial alliance. Anaxilaus of Rhegium is the son-in-law and ally of Terillus of Himera; Gelo of Syracuse stands in the same relation to Theron of Agrigentum. Royal marriages have played a great part in the politics of Europe. In the comparison of Greek and modern history it has been too often forgotten how great a difference it makes, and how great a disadvantage it involves, to a republic that it has neither sons nor daughters to give in marriage. In commerce and colonization the tyrants were only continuing the work of the oligarchies to which they succeeded. Greek trade owed its expansion to the intelligent efforts of the oligarchs who ruled at Miletus and Corinth, in Samos, Aegina and Euboea; but in particular cases, such as Miletus, Corinth, Sicyon and Athens, there was a further development, and a still more rapid growth, under the tyrants. In the same way, the foundation of the colonies was in most cases due to the policy of the oligarchical governments. They can claim credit for the colonies of Chalcis and Eretria, of Megara, Phocaea and Samos, as well as for the great Achaean settlements in southern Italy. The Cypselids at Corinth, and Thrasybulus at Miletus, are instances of tyrants who colonized on a great scale.

Religion under the "tyrants."

In their religious policy the tyrants went far to democratize Greek religion. The functions of monarchy had been largely religious; but, while the king was necessarily a priest, he was not the only priest in the community. There were special priesthoods, hereditary in particular families, even in the monarchical period; and upon the fall of the monarchy, while the priestly functions of the kings passed to republican magistrates, the priesthoods which were in the exclusive possession of the great families tended to become the important ones. Thus, before the rise of tyranny, Greek religion is aristocratic. The cults recognized by the state are the *sacra* of noble clans. The religious prerogatives of the nobles helped to confirm their political ones, and, as long as religion retained its aristocratic character, it was impossible for democracy to take root. The policy of the tyrants aimed at fostering popular cults which had no associations with the old families, and at establishing new festivals. The cult of the wine-god, Dionysus, was thus fostered at Sicyon by Cleisthenes, and at Corinth by the Cypselids; while at Athens a new festival of this deity, which so completely overshadowed the older festival that it became known as the Great Dionysia, probably owed its institution to Peisistratus. Another festival, the Panathenaea, which had been instituted only a few years before his rise to power, became under his rule, and thanks to his policy, the chief national festival of the Athenian state. Everywhere, again, we find the tyrants the patrons of literature. Pindar and Bacchylides, Aeschylus and Simonides found a welcome at the court of Hiero. Polycrates was the patron of Anacreon, Periander of Arion. To Peisistratus has been attributed, possibly not without reason, the first critical edition of the text of Homer, a work as important in the literary history of Greece as was the issue of the Authorized Version of the Bible in English history. If we would judge fairly of tyranny, and of what it contributed to the development of Greece, we must remember how many states there were in whose history the period of greatest power coincides with the rule of a tyrant. This is unquestionably true of Corinth and Sicyon, as well as of Syracuse in the 5th, and again in the 4th century; it is probably true of Samos and Miletus. In the case of Athens it is only the splendour of the Great Age that blinds us to the greatness of the results achieved by the policy of the Peisistratids.

The arts.

With the overthrow of this dynasty tyranny disappears from Greece proper for more than a century. During the century and a half which had elapsed since its first appearance the whole aspect of Greek life, and of the Greek world, had changed. The development was as yet incomplete, but the lines on which it was to proceed had been clearly marked out. Political power was no longer the monopoly of a class. The struggle between the "few" and the "many" had begun; in one state at least (Athens) the victory of the "many" was assured. The first chapter in the history of democracy was already written. In the art of war the two innovations which were ultimately to establish the military supremacy of Greece, hoplite tactics and the trireme, had already been introduced. Greek literature was no longer synonymous with epic poetry. Some of its most distinctive forms had not yet been evolved; indeed, it is only quite at the end of the period that prose-writing begins; but both lyric and elegiac poetry had been brought to perfection. In art, statuary was still comparatively stiff and crude; but in other branches, in architecture, in vase-painting and in coin-types, the aesthetic genius of the race had asserted its pre-eminence. Philosophy, the supreme gift of Greece to the modern world, had become a living power. Some of her most original thinkers belong to the 6th century. Criticism had been applied to everything in turn: to the gods, to conduct, and to the conception of the universe. Before the Great Age begins, the claims of intellectual as well as of political freedom had been vindicated. It was not, however, in Greece proper that progress had been greatest. In the next century the centre of gravity of Greek civilization shifts to the western side of the Aegean; in the 6th century it must be looked for at Miletus, rather than at Athens. In order to estimate how far the development of Greece had advanced, or to appreciate the distinctive features of Greek life at this period, we must study Ionia, rather than Attica or the Peloponnese. Almost all that is greatest and most characteristic is to be found on the eastern side of the Aegean. The great names in the history of science and philosophy before the beginning of the 5th century—Thales, Pythagoras, Xenophanes, Heraclitus, Parmenides, Anaximander, Hecataeus; names which are representative of mathematics, astronomy, geography and metaphysics, are all, without exception, Ionian. In poetry, too, the most famous names, if not so exclusively Ionian, are connected either with the Asiatic coast or with the Cyclades. Against Archilochus and Anacreon, Sappho and Alcaeus, Greece has nothing 448
better to set, after the age of Hesiod, than Tyrtaeus and Theognis. Reference has already been made to the greatness of the Ionians as navigators, as colonizers and as traders. In wealth and in population, Miletus, at the epoch of the Persian conquest, must have been far ahead of any city of European Greece. Sybaris, in Magna Graecia, can have been its only rival outside Ionia. There were two respects, however, in which the comparison was in favour of the mother-country. In warfare, the superiority of the Spartan infantry was unquestioned; in politics, the Greek states showed a greater power of combination than the Ionian.

External relations.

Finally, Ionia was the scene of the first conflicts with the Persian. Here were decided the first stages of a struggle which was to determine the place of Greece in the history of the world. The rise of Persia under Cyrus was, as Herodotus saw, the turning-point of Greek history. Hitherto the Greek had proved himself indispensable to the oriental monarchies with which he had been brought into contact. In Egypt the power of the Saite kings rested upon the support of their Greek mercenaries. Amasis (569-525 B.C.), who is raised to the throne as the leader of a reaction against the influence of the foreign garrison, ends by showing greater favour to the Greek soldiery and the Greek traders than all that were before him. With Lydia the relations were originally hostile; the conquest of the Greek fringe is the constant aim of Lydian policy. Greek influences, however, seem to have quickly permeated Lydia, and to have penetrated to the court. Alyattes (610-560 B.C.) marries an Ionian wife, and the succession is disputed between the son of this marriage and Croesus, whose mother was a Carian. Croesus (560-546 B.C.) secures the throne, only to become the lavish patron of Greek sanctuaries and the ally of a Greek state. The history of Hellenism had begun. It was the rise of Cyrus that closed the East to Greek enterprise and Greek influences. In Persia we find the antithesis of all that is characteristic of Greece—autocracy as opposed to liberty; a military society organized on an aristocratic basis, to an industrial society, animated by a democratic spirit; an army, whose strength lay in its cavalry, to an army, in which the foot-soldier alone counted; a morality, which assigned the chief place to veracity, to a morality which subordinated it to other virtues; a religion, which ranks among the great religions of the world, to a religion, which appeared to the most spiritual minds among the Greeks themselves both immoral and absurd. Between two such races there could be neither sympathy nor mutual understanding. In the Great Age the Greek had learned to despise the Persian, and the Persian to fear the Greek. In the 6th century it was the Persian who despised, and the Greek who feared. The history of the conflicts between the Ionian Greeks and the Persian empire affords a striking example of the combination of intellectual strength and political weakness in the character of a people. The causes of the failure of the Ionians to offer a successful resistance to Persia, both at the time of the conquest by Harpagus (546-545 B.C.) and in the Ionic revolt (499-494 B.C.), are not far to seek. The centrifugal forces always tended to prove the stronger in the Greek system, and nowhere were they stronger than in Ionia. The tie of their tribal union proved weaker, every time it was put to the test, than the political and commercial interests of the individual states. A league of jealous commercial rivals is certain not to stand the strain of a protracted struggle against great odds. Against the advancing power of Lydia a common resistance had not so much as been attempted. Miletus, the greatest of the Ionian towns, had received aid from Chios alone. Against Persia a common resistance was attempted. The Panionium, the centre of a religious amphictyony, became for the moment the centre of a political league. At the time of the Persian conquest Miletus held aloof. She secured favourable terms for herself, and left the rest of Ionia to its fate. In the later conflict, on the contrary, Miletus is the leader in the revolt. The issue was determined, not as Herodotus represents it, by the inherent indolence of the Ionian nature, but by the selfish policy of the leading states. In the sea-fight at Lade (494 B.C.) the decisive battle of the war, the Milesians and Chians fought

Persian wars.

with desperate courage. The day was lost thanks to the treachery of the Samian and Lesbian contingents.

The causes of the successful resistance of the Greeks to the invasions of their country, first by Datis and Artaphernes (490 B.C.), in the reign of Darius, and then by Xerxes in person (480-479 B.C.), are more complex. Their success was partly due to a moral cause. And this was realized by the Greeks themselves. They felt (see Herod. vii. 104) that the subjects of a despot are no match for the citizens of a free state, who yield obedience to a law which is self-imposed. But the cause was not solely a moral one. Nor was the result due to the numbers and efficiency of the Athenian fleet, in the degree that the Athenians claimed (see Herod. vii. 139). The truth is that the conditions, both political and military, were far more favourable to the Greek defence in Europe than they had been in Asia. At this crisis the centripetal forces proved stronger than the centrifugal. The moral ascendancy of Sparta was the determining factor. In Sparta the Greeks had a leader whom all were ready to obey (Herod. viii. 2). But for her influence the forces of disintegration would have made themselves felt as quickly as in Ionia. Sparta was confronted with immense difficulties in conducting the defence against Xerxes. The two chief naval powers, Athens and Aegina, had to be reconciled after a long and exasperating warfare (see AEGINA). After Thermopylae, the whole of northern Greece, with the exception of Athens and a few minor states, was lost to the Greek cause. The supposed interests of the Peloponnesians, who formed the greater part of the national forces, conflicted with the supposed interests of the Athenians. A more impartial view than was possible to the generation for which Herodotus wrote suggests that Sparta performed her task with intelligence and patriotism. The claims of Athens and Sparta were about equally balanced. And in spite of her great superiority in numbers,[13] the military conditions were far from favourable to Persia. A land so mountainous as Greece is was unsuited to the operations of cavalry, the most efficient arm of the service in the Persian Army, as in most oriental ones. Ignorance of local conditions, combined with the dangerous nature of the Greek coast, exposed their ships to the risk of destruction; while the composite character of the fleet, and the jealousies of its various contingents, tended to neutralize the advantage of numbers. In courage and discipline, the flower of the Persian infantry was probably little inferior to the Greek; in equipment, they were no match for the Greek panoply. Lastly, Xerxes laboured under a disadvantage, which may be illustrated by the experience of the British army in the South African War—distance from his base.

5. *The Great Age* (*480-338* B.C.).—The effects of the repulse of Persia were momentous in their influence upon Greece. The effects upon Elizabethan England of the defeat of the Spanish armada would afford quite an inadequate parallel. It gave the Greeks a heightened sense, both of their own national unity and of their superiority to the barbarian, while at the same time it helped to create the material conditions requisite alike for the artistic and political development of the 5th century. Other cities besides Athens were adorned with the proceeds of the spoils won from Persia, and Greek trade benefited both from the reunion of Ionia with Greece, and from the suppression of piracy in the Aegean and the Hellespont. Do these developments justify us in giving to the period, which begins with the repulse of Xerxes, and ends with the victory of Philip, the title of “the Great Age”? If the title is justified in the case of the 5th century, should the 4th century be excluded from the period? At first sight, the difference between the 4th century and the 5th may seem greater than that which exists between the 5th and the 6th. On the political side, the 5th century is an age of growth, the 4th an age of decay; on the literary side, the former is an age of poetry, the latter an age of prose. In spite of these contrasts, there is a real unity in the period which begins with the repulse of Xerxes and ends with the death of Alexander, as compared with any preceding one. It is an age of maturity in politics, in literature, and in art; and this is true of no earlier age. Nor can we say that the 5th century is, in all these aspects of Greek life, immature as compared with the 4th, or, on the other hand, that the 4th is decadent as compared with the 5th. On the political side, maturity is, in one sense, reached in the earlier century. There is nothing in the later century so great as the Athenian empire. In another sense, maturity is not reached till the 4th century. It is only in the later century that the tendency of the Greek constitutions to conform to a common type, democracy, is (at least approximately) realized, and it is only in this century that the principles upon which democracy is based are carried to their logical conclusion. In literature, if we confine our attention to poetry, we must pronounce the 5th century the age of completed development; but in prose the case is different. The style even of Thucydides is immature, as compared with that of Isocrates and Plato. In philosophy, however high may be the estimate that is formed of the genius of the earlier thinkers, it cannot be disputed that in Plato and Aristotle we find a more mature stage of thought. In art, architecture may perhaps be said to reach its zenith in the 5th, sculpture in the 4th century. In its political aspect, the history of the Great Age resolves itself into the history of two movements, the imperial and the democratic. Hitherto Greece had meant, politically, an aggregate of independent states, very numerous, and, as a rule, very small. The principle of autonomy was to the Greek the most sacred of all political principles; the passion for autonomy the most potent of political factors. In the latter half of the 6th century Sparta had succeeded in combining the majority of the Peloponnesian states into a loose federal union; so loose, however, that it appears to have been dormant in the intervals of peace. In the crisis of the Persian invasion the Peloponnesian League was extended so as to include all the states which had espoused the national cause. It looked on the morrow of Plataea and Mycale (the two victories, won simultaneously, in 479 B.C., by Spartan commanders, by which the danger from Persia was finally averted) as if a permanent basis for union might be found in the hegemony of Sparta. The sense of a common peril and a common triumph brought with it the need of a common union; it was Athens, however, instead of Sparta, by whom the first conscious effort was made to transcend the isolation of the Greek political system and to bring the units into combination. The league thus founded (the Delian League, established in 477 B.C.) was under the presidency of Athens, but it included hardly any other state besides those that had conducted the defence of Greece. It was formed, almost entirely, of the states which had been liberated from Persian rule by the great victories of the war. The Delian League, even in the form in which it was first established, as a confederation of autonomous allies, marks an advance in political conceptions upon the Peloponnesian League. Provision is made for an annual revenue, for periodical meetings of the council, and for a permanent executive. It is a real federation, though an imperfect one. There were defects in its constitution which rendered it inevitable that it should be transformed into an empire. Athens was from the first “the predominant partner.” The fleet was mainly Athenian, the commanders entirely so; the assessment of the tribute was in Athenian hands; there was no federal court appointed to determine questions at issue between Athens and the other members; and, worst omission of all, the right of secession was left undecided. By the middle of the century the Delian League has become the Athenian empire. Henceforward the imperial idea, in one form or another, dominates Greek politics. Athens failed to extend her authority over the whole of Greece. Her empire was overthrown; but the triumph of autonomy proved the triumph of imperialism. The Spartan empire succeeds to the Athenian, and, when it is finally shattered at Leuctra (371 B.C.), the hegemony of Thebes, which is established on its ruins, is an empire in all but name. The decay of Theban power paves the way for the rise of Macedon.

Systems of government.

Thus throughout this period we can trace two forces contending for mastery in the Greek political system. Two causes divide the allegiance of the Greek world, the cause of empire and the cause of autonomy. The formation of the confederacy of Delos did not involve the dissolution of the alliance between Athens and Sparta. For seventeen years more Athens retained her place in the league, “which had been established against the Mede” under the presidency of Sparta in 480 B.C. (Thuc. i. 102). The ascendancy of Cimon and the Philolaconian party at Athens was favourable to a good understanding between the two states, and at Sparta in normal times the balance inclined in favour of the party whose policy is best described by the motto “quieta non movere.”

The Peloponnesian Wars.

In the end, however, the opposition of the two contending forces proved too strong for Spartan neutrality. The fall of Cimon (461 B.C.) was followed by the so-called “First Peloponnesian War,” a conflict between Athens and her maritime rivals, Corinth and Aegina, into which Sparta was ultimately drawn. Thucydides regards the hostilities of these years (460-454 B.C.), which were resumed for a few months in 446 B.C., on the expiration of the Five Years’ Truce, as preliminary to those of the great Peloponnesian War (431-404 B.C.). The real question at issue was in both cases the same. The tie that united the opponents of Athens was found in a common hostility to the imperial idea. It is a complete misapprehension to regard the Peloponnesian War as a mere duel between two rival claimants for empire. The ultimatum presented by Sparta on the eve of the war demanded the restoration of autonomy to the subjects of Athens. There is no reason for doubting her sincerity in presenting it in this form. It would, however, be an equal misapprehension to regard the war as merely a struggle between the cause of empire and the cause of autonomy. Corresponding to this fundamental contrast there are other contrasts, constitutional, racial and military. The military interest of the war is largely due to the fact that Athens was a sea power and Sparta a land one. As the war went on, the constitutional aspect tended to become more marked. At first there were democracies on the side of Sparta, and oligarchies on the side of Athens. In the last stage of the war, when Lysander’s influence was supreme, we see the forces of oligarchy everywhere united and organized for the destruction of democracy. In its origin the war was certainly not due to the rivalry of Dorian and Ionian. This racial, or tribal, contrast counted for more in the politics of Sicily than of Greece; and, though the two great branches of the Greek race were represented respectively by the leaders of the two

sides, the allies on neither side belonged exclusively to the one branch or the other. Still, it remains true that the Dorian states were, as a rule, on the Spartan side, and the Ionian states, as a rule, on the Athenian—a division of sentiment which must have helped to widen the breach, and to intensify the animosities.

The Athenian empire.

As a political experiment the Athenian empire possesses a unique interest. It represents the first attempt to fuse the principles of imperialism and democracy. It is at once the first empire in history possessed and administered by a sovereign people, and the first which sought to establish a common system of democratic institutions amongst its subjects.[14] It was an experiment that failed, partly owing to the inherent strength of the oligarchic cause, partly owing to the exclusive character of ancient citizenship. The Athenians themselves recognized that their empire depended for its existence upon the solidarity of democratic interests (see Thuc. iii. 47; Pseudo-Xenophon, *de Rep. Ath.* i. 14, iii. 10). An understanding existed between the democratic leaders in the subject-states and the democratic party at Athens. Charges were 450
easily trumped up against obnoxious oligarchs, and conviction as easily obtained in the Athenian courts of law. Such a system forced the oligarchs into an attitude of opposition. How much this opposition counted for was realized when the Sicilian disaster (413 B.C.) gave the subjects their chance to revolt. The organization of the oligarchical party throughout the empire, which was effected by Lysander in the last stage of the war, contributed to the overthrow of Athenian ascendancy hardly less than the subsidies of Persia. Had Athens aimed at establishing a community of interest between herself and her subjects, based upon a common citizenship, her empire might have endured. It would have been a policy akin to that which secured the permanence of the Roman empire. And it was a policy which found advocates when the day for it was past (see Aristophanes, *Lysistrata*, 574 ff.; cf. the grant of citizenship to the Samians after Aegospotami, *C.I.A.* iv. 2, 1b). But the policy pursued by Athens in the plenitude of her power was the reverse of the policy pursued by Rome in her treatment of the franchise. It is hardly an exaggeration to say that the fate of the empire was sealed by the law of Pericles (451 B.C.), by which the franchise was restricted to those who could establish Athenian descent on both sides. It was not merely that the process of amalgamation through intermarriage was abruptly checked; what was more serious was that a hard and fast line was drawn, once and for all, between the small body of privileged rulers and the great mass of unprivileged subjects. Maine (*Early Institutions*, lecture 13) has classed the Athenian empire with those of the familiar Oriental type, which attempt nothing beyond the raising of taxes and the levying of troops. The Athenian empire cannot, indeed, be classed with the Roman, or with the British rule in India; it does not, therefore, deserve to be classed with the empires of Cyrus or of Jenghiz Khan. Though the basis of its organization, like that of the Persian empire under Darius, was financial, it attempted, and secured, objects beyond the mere payment of tribute and the supply of ships. If Athens did not introduce a common religion, or a common system of education, or a common citizenship, she did introduce a common type of political institutions, and a common jurisdiction.[15] She went some way, too, in the direction of establishing a common system of coins, and of weights and measures. A common language was there already. In a word, the Athenian empire marks a definite stage of political evolution.

The mature democracy.

The other great political movement of the age was the progress of democracy. Before the Persian invasion democracy was a rare phenomenon in Greek politics. Where it was found it existed in an undeveloped form, and its tenure of power was precarious. By the beginning of the Peloponnesian War it had become the prevalent form of government. The great majority of Greek states had adopted democratic constitutions. Both in the Athenian sphere of influence and in the colonial world outside that sphere, democracy was all but the only form of constitution known. It was only in Greece proper that oligarchy held its own. In the Peloponnese it could count a majority of the states; in northern Greece at least a half of them. The spread of democratic institutions was arrested by the victory of Sparta in the East, and the rise of Dionysius in the West. There was a moment at the end of the 5th century when it looked as if democracy was a lost cause. Even Athens was for a brief period under the rule of the Thirty (404-403 B.C.). In the regions which had formed the empire of Athens the decarchies set up by Lysander were soon overthrown, and democracies restored in most cases, but oligarchy continued to be the prevalent form in Greece proper until Leuctra (371 B.C.), and in Sicily tyranny had a still longer tenure of power. By the end of the Great Age oligarchy has almost disappeared from the Greek world, except in the sphere of Persian influence. The Spartan monarchy still survives; a few Peloponnesian states still maintain the rule of the few; here and there in Greece itself we meet with a revival of the *tyrannis*; but, with these exceptions, democracy is everywhere the only type of constitution. And democracy has developed as well as spread. At the end of the 5th century the constitution of Cleisthenes, which was a democracy in the view of his contemporaries, had come to be regarded as an aristocracy (Aristot. *Ath. Pol.* 29. 3). We can trace a similar change of sentiment in Sicily. As compared with the extreme form of constitution adopted at Syracuse after the defeat of the Athenian expedition, the democracies established two generations earlier, on the fall of the *tyrannis*, appeared oligarchical. The changes by which the character of the Greek democracies was revolutionized were four in number: the substitution of sortition for election, the abolition of a property qualification, the payment of officials and the rise of a class of professional politicians. In the democracy of Cleisthenes no payment was given for service, whether as a magistrate, a juror or a member of the Boulē. The higher magistracies were filled by election, and they were held almost exclusively by the members of the great Athenian families. For the highest office of all, the archonship, none but *Pentacosiomedimni* (the first of the four Solonian classes) were eligible. The introduction of pay and the removal of the property qualification formed part of the reforms of Pericles. Sortition had been instituted for election a generation earlier (487 B.C.).[16] What is perhaps the most important of all these changes, the rise of the demagogues, belongs to the era of the Peloponnesian War. From the time of Cleisthenes to the outbreak of the war every statesman of note at Athens, with the exception of Themistocles (and, perhaps, of Ephialtes), is of aristocratic birth. Down to the fall of Cimon the course of Athenian politics is to a great extent determined by the alliances and antipathies of the great clans. With the Peloponnesian War a new epoch begins. The chief office, the *strategia*, is still, as a rule, held by men of rank. But leadership in the Ecclesia has passed to men of a different class. The demagogues were not necessarily poor men. Cleon was a wealthy man; Eucrates, Lysicles and Hyperbolus were, at any rate, tradesmen rather than artisans. The first "labour member" proper is Cleophon (411-404 B.C.), a lyre-maker. They belonged, however, not to the land-owning, but to the industrial classes; they were distinguished from the older race of party-leaders by a vulgar accent, and by a violence of gesture in public speaking, and they found their supporters among the population of the city and its port, the Peiraeus, rather than among the farmers of the country districts. In the 4th century the demagogues, though under another name, that of orators, have acquired entire control of the Ecclesia. It is an age of professionalism, and the professional soldier has his counterpart in the professional politician. Down to the death of Pericles the party-leader had always held office as Strategus. His rival, Thucydides, son of Melesias, forms a solitary exception to this statement. In the 4th century the divorce between the general and the statesman is complete. The generals are professional soldiers, who aspire to no political influence in the state, and the statesmen devote themselves exclusively to politics, a career for which they have prepared themselves by a professional training in oratory or administrative work. The ruin of agriculture during the war had reduced the old families to insignificance. Birth counts for less than nothing as a political asset in the age of Demosthenes.

The city-state.

But great as are the contrasts which have been pointed out between the earlier and the later democracy, those that distinguish the ancient conception of democracy from the modern are of a still more essential nature. The differences that distinguish the democracies of ancient Greece from those of the modern world have their origin, to a great extent, in the difference between a city-state and a nation-state. Many of the most famous Greek states had an area of a 451
few square miles; the largest of them was no larger than an English county. Political theory put the limit of the citizen-body at 10,000. Though this number was exceeded in a few cases, it is doubtful if any state, except Athens, ever counted more than 20,000 citizens. In the nation-states of modern times, democratic government is possible only under the form of a representative system; in the city-state representative government was unnecessary, and therefore unknown. In the ancient type of democracy a popular chamber has no existence. The Ecclesia is not a chamber in any sense of the term; it is an assembly of the whole people, which every citizen is entitled to attend, and in which every one is equally entitled to vote and speak. The question raised in modern political science, as to whether sovereignty resides in the electors or their representatives, has thus neither place nor meaning in ancient theory. In the same way, one of the most familiar results of modern analysis, the distinction between the executive and the legislative, finds no recognition in the Greek writers. In a direct system of government there can be no executive in the proper sense. Executive functions are discharged by the ecclesia, to whose decision the details of administration may be referred. The position of the strategi, the chief officials in the Athenian democracy of the 5th century, was in no sense comparable to that of a modern cabinet. Hence the individual citizen in an ancient democracy was concerned in, and responsible for, the actual work of government to a degree that is inconceivable in a modern state. Thus participation in the administrative and judicial business of the state is made by Aristotle the differentia of the citizen (πολίτης ἐστὶν ὁ μετέχων κρίσεως καὶ ἀρχῆς, Aristot. *Politics*, p. 1275 a 20). A large proportion of the citizens of Athens, in addition to frequent service in the courts of law, must in the course of

their lives have held a magistracy, great or small, or have acted for a year or two as members of the Boulē.[17] It must be remembered that there was nothing corresponding to a permanent civil service in the ancient state. Much of the work of a government office would have been transacted by the Athenian Boulē. It must be remembered, too, that political and administrative questions of great importance came before the popular courts of law. Hence it follows that the ordinary citizen of an ancient democracy, in the course of his service in the Boulē or the law-courts, acquired an interest in political questions, and a grasp of administrative work, which none but a select few can hope to acquire under the conditions of the modern system. Where there existed neither a popular chamber nor a distinct executive, there was no opportunity for the growth of a party-system. There were, of course, political parties at Athens and elsewhere—oligarchs and democrats, conservatives and radicals, a peace-party and a war-party, according to the burning question of the day. There was, however, nothing equivalent to a general election, to a cabinet (or to that collective responsibility which is of the essence of a cabinet), or to the government and the opposition. Party organization, therefore, and a party system, in the proper sense, were never developed. Whatever may have been the evils incident to the ancient form of democracy, the "boss," the caucus and the spoils-system were not among them.

Besides these differences, which, directly or indirectly, result from the difference of scale, there are others, hardly less profound, which are not connected with the size of the city-state. Perhaps the most striking contrast between the democracies of ancient and of modern times is to be found in their attitude towards privilege. Ancient democracy implies privilege; modern democracy implies its destruction. In the more fully developed democracies of the modern world (*e.g.* in the United States, or in Australia), the privilege of class is unknown; in some of them (*e.g.* New Zealand, Australia, Norway) even the privilege of sex has been abolished. Ancient democracy was bound up with privilege as much as oligarchy was. The transition from the latter to the former was effected by enlarging the area of privilege and by altering its basis. In an oligarchical state citizenship might be confined to 10% of the free population; under a democracy 50% might enjoy it. In the former case the qualification might be wealth or land; in the latter case it might be, as it was at Athens, birth, *i.e.* descent, on both sides, from a citizen family. But, in both cases alike, the distinction between a privileged and an unprivileged body of free-born residents is fundamental. To the unprivileged class belonged, not only foreigners temporarily resident (ξένοι) and aliens permanently domiciled (μέτοικοι), but also those native-born inhabitants of the state who were of foreign extraction, on one side or the other.[18] The privileges attaching to citizenship included, in addition to eligibility for office and a vote in the assembly, such private rights as that of owning land or a house, or of contracting a marriage with one of citizen status. The citizen, too, was alone the recipient of all the various forms of pay (*e.g.* for attendance in the assembly, for service in the Boulē or the law-courts, or for the celebration of the great festivals) which are so conspicuous a feature in the developed democracy of the 4th century. The *metoeci* could not even plead in a court of law in person, but only through a patron (προστάτης). It is intelligible that privileges so great should be jealously guarded. In the democracies of the modern world naturalization is easy; in those of ancient Greece admission to the franchise was rarely accorded. In modern times, again, we are accustomed to connect democracy with the emancipation of women. It is true that only a few democratic constitutions grant them the suffrage; but though, as a rule, they are denied public rights, the growth of popular government has been almost everywhere accompanied by an extension of their private rights, and by the removal of the restrictions imposed by law, custom or public opinion upon their freedom of action. In ancient Greece the democracies were as illiberal in their policy as the oligarchies. Women of the respectable class were condemned to comparative seclusion. They enjoyed far less freedom in 4th-century Athens than in the Homeric Age. It is not in any of the democracies, but in conservative Sparta, that they possess privilege and exercise influence.

Position of women.

The most fundamental of all the contrasts between democracy in its ancient and in its modern form remains to be stated. The ancient state was inseparable from slavery. In this respect there was no difference between democracy and the other forms of government. No inconsistency was felt, therefore, between this institution and the democratic principle. Modern political theory has been profoundly affected by the conception of the dignity of labour; ancient political theory tended to regard labour as a disqualification for the exercise of political rights. Where slavery exists, the taint of it will inevitably cling to all labour that can be performed by the slave. In ancient Athens (which may be taken as typical of the Greek democracies) unskilled labour was almost entirely slave-labour, and skilled labour was largely so. The arts and crafts were, to some extent, exercised by citizens, but to a less extent in the 4th than in the 6th century. They were, however, chiefly left to aliens or slaves. The citizen-body of Athens in the age of Demosthenes has been stigmatized as consisting in great measure of salaried paupers. There is, doubtless, an exaggeration in this. It is, however, true, both that the system of state-pay went a long way towards supplying the simple wants of a southern population, and that a large proportion of the citizens had time to spare for the service of the state. Had the life of the lower class of citizens been absorbed in a round of mechanical labours, as fully as is the life of our industrial classes, the working of an ancient democracy would have been impossible. In justice to the ancient democracies it must be conceded that, while popular government carried with it neither the enfranchisement of the alien nor the emancipation of the slave, the rights secured to both classes were more considerable in the democratic states than elsewhere. The lot of the slave, as well as that of the alien, was a peculiarly favourable one at Athens. The pseudo-Xenophon in the 5th century (*De rep. Ath.* 1. 10-12) and Plato in the 4th (*Republic*, p. 563 B), prove that the spirit of liberty, with which Athenian life was permeated, was not without its influence upon the position of these classes. When we read that critics complained of the opulence of slaves, and of the liberties they took, and when we are told that the slave could not be distinguished from the poorer class of citizens either by his dress or his look, we begin to realize the difference between the slavery of ancient Athens and the system as it was worked on the Roman *latifundia* or the plantations of the New World.

Slavery.

It had been anticipated that the fall of Athens would mean the triumph of the principle of autonomy. If Athens had surrendered within a year or so of the Sicilian catastrophe, this anticipation would probably have been fulfilled. It was the last phase of the struggle (412-404 B.C.) that rendered a Spartan empire inevitable. The oligarchical governments established by Lysander recognized that their tenure of power was dependent upon Spartan support, while Lysander himself, to whose genius, as a political organizer not less than as a commander, the triumph of Sparta was due, was unwilling to see his work undone. The Athenian empire had never included the greater part of Greece proper; since the Thirty Years' Peace its possessions on the mainland, outside the boundaries of Attica, were limited to Naupactus and Plataea. Sparta, on the other hand, attempted the control of the entire Greek world east of the Adriatic. Athens had been compelled to acknowledge a dual system; Sparta sought to establish uniformity. The attempt failed from the first. Within a year of the surrender of Athens, Thebes and Corinth had drifted into an attitude of opposition, while Argos remained hostile. It was not long before the policy of Lysander succeeded in uniting against Sparta the very forces upon which she had relied when she entered on the Peloponnesian War. The Corinthian War (394-387 B.C.) was brought about by the alliance of all the second-class powers—Thebes, Athens, Corinth, Argos—against the one first-class power, Sparta. Though Sparta emerged successful from the war, it was with the loss of her maritime empire, and at the cost of recognizing the principle of autonomy as the basis of the Greek political system. It was already evident, thus early in the century, that the centrifugal forces were to prove stronger than the centripetal. Two further causes may be indicated which help to explain the failure of the Spartan empire. In the first place Spartan sea-power was an artificial creation. History seems to show that it is idle for a state to aspire to naval supremacy unless it possesses a great commercial marine. Athens had possessed such a marine; her naval supremacy was due not to the mere size of her fleet, but to the numbers and skill of her seafaring population. Sparta had no commerce. She could build fleets more easily than she could man them. A single defeat (at Cnidus, 391 B.C.) sufficed for the ruin of her sea-power. The second cause is to be found in the financial weakness of the Spartan state. The Spartan treasury had been temporarily enriched by the spoils of the Peloponnesian War, but neither during that war, nor afterwards, did Sparta succeed in developing any scientific financial system. Athens was the only state which either possessed a large annual revenue or accumulated a considerable reserve. Under the conditions of Greek warfare, fleets were more expensive than armies. Not only was money needed for the building and maintenance of the ships, but the sailor must be paid, while the soldier served for nothing. Hence the power with the longest purse could both build the largest fleet and attract the most skilful seamen.

The Spartan empire.

The battle of Leuctra transferred the hegemony from Sparta to Thebes, but the attempt to unite Greece under the leadership of Thebes was from the first doomed to failure. The conditions were less favourable to Thebes than they had been to Athens or Sparta. Thebes was even more exclusively a land-power than Sparta. She had no revenue comparable to that of Athens in the preceding century. Unlike Athens and Sparta, she had not the advantage of being identified with a political cause. As the enemy of Athens in the 5th century, she was on the side of oligarchy; as the rival of Sparta in the 4th, she was on the side of democracy; but in her bid for primacy she could not appeal, as Athens and Sparta could, to

Theban hegemony.

a great political tradition, nor had she behind her, as they had, the moral force of a great political principle. Her position, too, in Boeotia itself was insecure. The rise of Athens was in great measure the result of the *synoecism* (συνοικισμός of Attica. All inhabitants of Attica were Athenians. But "Boeotian" and "Theban" were not synonymous terms. The Boeotian league was an imperfect form of union, as compared with the Athenian state, and the claim of Thebes to the presidency of the league was, at best, sullenly acquiesced in by the other towns. The destruction of some of the most famous of the Boeotian cities, however necessary it may have been in order to unite the country, was a measure which at once impaired the resources of Thebes and outraged Greek sentiment. It has been often held that the failure of Theban policy was due to the death of Epaminondas (at the battle of Mantinea, 362 B.C.). For this view there is no justification. His policy had proved a failure before his death. Where it harmonized with the spirit of the age, the spirit of dissidence, it succeeded; where it attempted to run counter to it, it failed. It succeeded in destroying the supremacy of Sparta in the Peloponnese; it failed to unite the Peloponnese on a new basis. It failed still more significantly to unite Greece north of the Isthmus. It left Greece weaker and more divided than it found it (see the concluding words of Xenophon's *Hellenics*). It would be difficult to overestimate the importance of his policy as a destructive force; as a constructive force it effected nothing.[19] The Peloponnesian system which Epaminondas overthrew had lasted two hundred years. Under Spartan leadership the Peloponnese had enjoyed almost complete immunity from invasion and comparative immunity from *stasis* (faction). The claim that Isocrates makes for Sparta is probably well-founded (*Archidamus*, 64-69; during the period of Spartan ascendency the Peloponnesians were εὐδαιμονέστατοι τῶν Ἑλλήνων). Peloponnesian sentiment had been one of the chief factors in Greek politics; to it, indeed, in no small degree was due the victory over Persia. The Theban victory at Leuctra destroyed the unity, and with it the peace and the prosperity, of the Peloponnese. It inaugurated a period of misery, the natural result of *stasis* and invasion, to which no parallel can be found in the earlier history (See Isocrates, *Archidamus*, 65, 66; the Peloponnesians were ὠμαλισμένοι ταῖς συμφοραῖς). It destroyed, too, the Peloponnesian sentiment of hostility to the invader. The bulk of the army that defeated Mardonius at Plataea came from the Peloponnese; at Chaeronea no Peloponnesian state was represented.

The rise of Macedon.

The question remains, Why did the city-state fail to save Greece from conquest by Macedon? Was this result due to the inherent weakness either of the city-state itself, or of one particular form of it, democracy? It is clear, in any case, that the triumph of Macedon was the effect of causes which had long been at work. If neither Philip nor Alexander had appeared on the scene, Greece might have maintained her independence for another generation or two; but, when invasion came, it would have found her weaker and more distracted, and the conquerors might easily have been less imbued with the Greek spirit, and less sympathetic towards Greek ideals, than the great Macedonian and his son. These causes are to be found in the tendencies of the age, political, economic and moral. Of the two movements which characterized the Great Age in its political aspect, the imperial and the democratic, the one failed and the other succeeded. The failure and the success were equally fatal to the chances of Greece in the conflict with Macedon. By the middle of the 4th century Greek politics had come to be dominated by the theory of the balance of power. This theory, enunciated in its coarsest form by Demosthenes (*Pro Megalopolit.* 4 συμφέρει τῇ πόλει καὶ Λακεδαιμονίους ἀσθενεῖς εἶναι καὶ Θηβαίους; cf. *in Aristocrat.* 102, 103), had shaped the foreign policy of Athens since the end of the Peloponnesian War. As long as Sparta was the stronger, Athens inclined to a Theban alliance; after Leuctra she tended in the direction of a Spartan one. At the epoch of Philip's accession the forces were everywhere nicely balanced. The Peloponnese was fairly equally divided between the Theban and the Spartan interests, and central Greece was similarly divided between the Theban and the Athenian. Farther north we get an Athenian party opposed to an Olynthian in Chalcidice, and a republican party, dependent upon the support of Thebes, opposed to that of the tyrants in Thessaly. It is easy to see that the political conditions of Greece, both in the north and in the south, invited interference from without. And the triumph of democracy in its extreme form was ruinous to the military efficiency of Greece. On the one side there was a monarchical state, in which all powers, civil as well as military, were concentrated in the hands of a single ruler; on the other, a constitutional system, in which a complete separation had been effected between the responsibility of the statesman and that of the commander.[20]

It could not be doubtful with which side victory would rest. Meanwhile, the economic conditions were steadily growing worse. The cause which Aristotle assigns for the decay of the Spartan state—a declining population (see *Politics*, p. 1270 a ἀπώλετο ἡ πόλις τῶν Λακεδαιμονίων διὰ τὴν ὀλιγανθρωπίαν)—might be extended to the Greek world generally. The loss of population was partly the result of war and *stasis*—Isocrates speaks of the number of political exiles from the various states as enormous[21]—but it was also due to a declining birth-rate, and to the exposure of infants. Aristotle, while condemning exposure, sanctions the procuring of abortion (*Politics*, 1335 b). It is probable that both ante-natal and post-natal infanticide were rife everywhere, except among the more backward communities. A people which has condemned itself to racial suicide can have little chance when pitted against a nation in which healthier instincts prevail. The materials for forming a trustworthy estimate of the population of Greece at any given epoch are not available; there is enough evidence, however, to prove that the military population of the leading Greek states at the era of the battle of Chaeronea (338 B.C.) fell far short of what it had been at the beginning of the Peloponnesian War. The decline in population had been accompanied by a decline in wealth, both public and private; and while revenues had shrunk, expenditure had grown. It was a century of warfare; and warfare had become enormously more expensive, partly through the increased employment of mercenaries, partly through the enhanced cost of material. The power of the purse had made itself felt even in the 5th century; Persian gold had helped to decide the issue of the great war. In the politics of the 4th century the power of the purse becomes the determining factor. The public finance of the ancient world was singularly simple in character, and the expedients for raising a revenue were comparatively few. The distinction between direct and indirect taxation was recognized in practice, but states as a rule were reluctant to submit to the former system. The revenue of Athens in the 5th century was mainly derived from the tribute paid by her subjects; it was only in time of war that a direct tax was levied upon the citizen-body.[22] In the age of Demosthenes the revenue derived from the Athenian Confederacy was insignificant. The whole burden of the expenses of a war fell upon the 1200 richest citizens, who were subject to direct taxation in the dual form of the *Trierarchy* and the *Eisphora* (property-tax). The revenue thus raised was wholly insufficient for an effort on a great scale; yet the revenues of Athens at this period must have exceeded those of any other state.

It is to moral causes, however, rather than to political or economic ones, that the failure of Greece in the conflict with Macedon is attributed by the most famous Greek statesmen of that age. Demosthenes is never weary of insisting upon the decay of patriotism among the citizens and upon the decay of probity among their leaders. Venality had always been the besetting sin of Greek statesmen. Pericles' boast as to his own incorruptibility (Thuc. ii. 60) is significant as to the reputation of his contemporaries. In the age of Demosthenes the level of public life in this respect had sunk at least as low as that which prevails in many states of the modern world (see Demosth. *On the Crown*, 61 παρὰ τοῖς Ἕλλησιν, οὐ τισὶν ἀλλ' ἅπασιν ὁμοίως φορὰ προδοτῶν καὶ δωροδόκων συνέβη; cf. §§ 295, 296). Corruption was certainly not confined to the Macedonian party. The best that can be said in defence of the patriots, as well as of their opponents, is that they honestly believed that the policy which they were bribed to advocate was the best for their country's interests. The evidence for the general decay of patriotism among the mass of the citizens is less conclusive. The battle of Megalopolis (331 B.C.), in which the Spartan soldiery "went down in a blaze of glory," proves that the spirit of the Lacedemonian state remained unchanged. But at Athens it seemed to contemporary observers—to Isocrates equally with Demosthenes—that the spirit of the great days was extinct (see Isocr. *On the Peace*, 47, 48). It cannot, of course, be denied that public opinion was obstinately opposed to the diversion of the Theoric Fund to the purposes of the war with Philip. It was not till the year before Chaeronea that Demosthenes succeeded in persuading the assembly to devote the entire surplus to the expenses of the war.[23] Nor can it be denied that mercenaries were far more largely employed in the 4th century than in the 5th. In justice, however, to the Athenians of the Demosthenic era, it should be remembered that the burden of direct taxation was rarely imposed, and was reluctantly endured, in the previous century. It must also be remembered that, even in the 4th century, the Athenian citizen was ready to take the field, provided that it was not a question of a distant expedition or of prolonged service.[24] For distant expeditions, or for prolonged service, a citizen-militia is unsuited. The substitution of a professional force for an unprofessional one is to be explained, partly by the change in the character of Greek warfare, and partly by the operation of the laws of supply and demand. There had been a time when warfare meant a brief campaign in the summer months against a neighbouring state. It had come to mean prolonged operations against a distant enemy.[25] Athens was at war, *e.g.* with Philip, for eleven years continuously (357-346 B.C.). If winter campaigns in Thrace were unpopular at this epoch, they had been hardly less unpopular in the epoch of the Peloponnesian War. In the days of her greatness, too, Athens had freely employed mercenaries, but it was in the navy rather than the army. In the age of Pericles the supply of mercenary rowers was abundant, the supply of mercenary troops inconsiderable. In the age of Demosthenes incessant warfare and ceaseless revolution had filled Greece with crowds of homeless adventurers. The supply helped to create the demand. The mercenary was as cheap as the citizen-soldier, and much more effective. On the whole,

then, it may be inferred that it is a mistake to regard the prevalence of the mercenary system as the expression of a declining patriotism. It would be nearer the mark to treat the transition from the voluntary to the professional system as cause rather than effect: as one among the causes which contributed to the decay of public spirit in the Greek world.

6. *From Alexander to the Roman Conquest* (*336-146* B.C.).—In the history of Greece proper during this period the interest is mainly constitutional. It may be called the age of federation. Federation, indeed, was no novelty in Greece. Federal unions had existed in Thessaly, in Boeotia and elsewhere, and the Boeotian league can be traced back at least to the 6th century. Two newly-founded federations, the Chalcidian and the Arcadian, play no inconsiderable part in the politics of the 4th century. But it is not till the 3rd century that federation attains to its full development in Greece, and becomes the normal type of polity. The two great leagues of this period are the Aetolian and the Achaean. Both had existed in the 4th century, but the latter, which had been dissolved shortly before the beginning of the 3rd century, becomes important only after its restoration in 280 B.C., about which date the former, too, first begins to attract notice. The interest of federalism lies in the fact that it marks an advance beyond the conception of the city-state. It is an attempt to solve the problem which the Athenian empire failed to solve, the reconciliation of the claims of local autonomy with those of national union. The federal leagues of the 3rd century possess a further interest for the modern world, in that there can be traced in their constitutions a nearer approach to a representative system than is found elsewhere in Greek experience. A genuine representative system, it is true, was never developed in any Greek polity. What we find in the leagues is a sort of compromise between the principle of a primary assembly and the principle of a representative chamber. In both leagues the nominal sovereign was a primary assembly, in which every individual citizen had the right to vote. In both of them, however, the real power lay with a council (βουλή) composed of members representative of each of the component states.[26]

Federal government.

The real interest of this period, however, is to be looked for elsewhere than in Greece itself. Alexander's career is one of the turning-points in history. He is one of the few to whom it has been given to modify the whole future of the human race. He originated two forces which have profoundly affected the development of civilization. He created Hellenism, and he created for the western world the monarchical ideal. Greece had produced personal rulers of ability, or even of genius; but to the greatest of these, to Peisistratus, to Dionysius, even to Jason of Pherae, there clung the fatal taint of illegitimacy. As yet no ruler had succeeded in making the person of the monarch respectable. Alexander made it sacred. From him is derived, for the West, that "divinity that doth hedge a king." And in creating Hellenism he created, for the first time, a common type of civilization, with a common language, literature and art, as well as a common form of political organization. In Asia Minor he was content to reinforce the existing Hellenic elements (cf. the case of Side, Arrian, *Anabasis*, i. 26. 4). In the rest of the East his instrument of hellenization was the *polis*. He is said to have founded no less than seventy cities, destined to become centres of Greek influence; and the great majority of these were in lands in which city-life was almost unknown. In this respect his example was emulated by his successors. The eastern provinces were soon lost, though Greek influences lingered on even in Bactria and across the Indus. It was only the regions lying to the west of the Euphrates that were effectively hellenized, and the permanence of this result was largely due to the policy of Rome. But after all deductions have been made, the great fact remains that for many centuries after Alexander's death Greek was the language of literature and religion, of commerce and of administration throughout the Nearer East. Alexander had created a universal empire as well as a universal culture. His empire perished at his death, but its central idea survived—that of the municipal freedom of the Greek *polis* within the framework of an imperial system. Hellenistic civilization may appear degenerate when compared with Hellenic; when compared with the civilizations which it superseded in non-Hellenic lands, it marks an unquestionable advance. (For the history of Greek civilization in the East, see Hellenism.) Greece left her mark upon the civilization of the West as well as upon that of the East, but the process by which her influence was diffused was essentially different. In the East Hellenism came in the train of the conqueror, and Rome was content to build upon the foundations laid by Alexander. In the West Greek influences were diffused by the Roman conquest of Greece. It was through the ascendancy which Greek literature, philosophy and art acquired over the Roman mind that Greek culture penetrated to the nations of western Europe. The civilization of the East remained Greek. The civilization of the West became and remained Latin, but it was a Latin civilization that was saturated with Greek influences. The ultimate division, both of the empire and the church, into two halves, finds its explanation in this original difference of culture.

Alexander's empire.

Ancient Authorities.—(I.) For the earliest periods of Greek history, the so-called Minoan and Mycenaean, the evidence is purely archaeological. It is sufficient here to refer to the article Aegean Civilization. For the next period, the Heroic or Homeric Age, the evidence is derived from the poems of Homer. In any estimate of the value of these poems as historical evidence, much will depend upon the view taken of the authorship, age and unity of the poems. For a full discussion of these questions see Homer. It cannot be questioned that the poems are evidence for the existence of a period in the history of the Greek race, which differed from later periods in political and social, military and economic conditions. But here agreement ends. If, as is generally held by German critics, the poems are not earlier than the 9th century, if they contain large interpolations of considerably later date and if they are Ionian in origin, the authority of the poems becomes comparatively slight. The existence of different strata in the poems will imply the existence of inconsistencies and contradictions in the evidence; nor will the evidence be that of a contemporary. It will also follow that the picture of the heroic age contained in the poems is an idealized one. The more extreme critics, *e.g.* Beloch, deny that the poems are evidence even for the existence of a pre-Dorian epoch. If, on the other hand, the poems are assigned to the 11th or 12th century, to a Peloponnesian writer, and to a period anterior to the Dorian Invasion and the colonization of Asia Minor (this is the view of the late Dr D. B. Munro), the evidence becomes that of a contemporary, and the authority of the poems for the distribution of races and tribes in the Heroic Age, as well as for the social and political conditions of the poet's time, would be conclusive. Homer recognizes no Dorians in Greece, except in Crete (see *Odyssey*, xix. 177), and no Greek colonies in Asia Minor. Only two explanations are possible. Either there is deliberate archaism in the poems, or else they are earlier in date than the Dorian Invasion and the colonization of Asia Minor.

II. For the period that extends from the end of the Heroic Age to the end of the Peloponnesian War[27] the two principal authorities are Herodotus and Thucydides. Not only have the other historical works which treated of this period perished (those at least whose date is earlier than the Christian era), but their authority was secondary and their material chiefly derived from these two writers. In one respect then this period of Greek history stands alone. Indeed, it might be said, with hardly an exaggeration, that there is nothing like it elsewhere in history. Almost our sole authorities are two writers of unique genius, and they are writers whose works have come down to us intact. For the period which ends with the repulse of the Persian invasion our authority is Herodotus. For the period which extends from 478 to 411 we are dependent upon Thucydides'. In each case, however, a distinction must be drawn. The Persian Wars form the proper subject of Herodotus's work; the Peloponnesian War is the subject of Thucydides. The interval between the two wars is merely sketched by Thucydides; while of the period anterior to the conflicts of the Greek with the Persian, Herodotus does not attempt either a complete or a continuous narrative. His references to it are episodical and accidental. Hence our knowledge of the Persian Wars and of the Peloponnesian War is widely different in character from our knowledge of the rest of this period. In the history of these wars the *lacunae* are few; in the rest of the history they are alike frequent and serious. In the history, therefore, of the Persian and Peloponnesian Wars little is to be learnt from the secondary sources. Elsewhere, especially in the interval between the two wars, they become relatively important.

Herodotus.

In estimating the authority of Herodotus (*q.v.*) we must be careful to distinguish between the invasion of Xerxes and all that is earlier. Herodotus's work was published soon after 430 B.C., *i.e.* about half a century after the invasion. Much of his information was gathered in the course of the preceding twenty years. Although his evidence is not that of an eye-witness, he had had opportunities of meeting those who had themselves played a part in the war, on one side or the other (*e.g.* Thersander of Orchomenos, ix. 16). In any case, we are dealing with a tradition which is little more than a generation old, and the events to which the tradition relates, the incidents of the struggle against Xerxes, were of a nature to impress themselves indelibly upon the minds of contemporaries. Where, on the other hand, he is treating of the period anterior to the invasion of Xerxes, he is dependent upon a tradition which is never less than two generations old, and is sometimes centuries old. His informants were, at best, the sons or grandsons of the actors in the wars (*e.g.* Archias the Spartan, iii. 55). Moreover, the invasion of Xerxes, entailing, as it did, the destruction of cities and sanctuaries, especially of Athens and its temples, marks a dividing line in Greek history. It was not merely that evidence perished and records were destroyed. What in reference to tradition is even more important, a new consciousness of power was awakened, new interests were aroused, and new questions and problems came to the front. The former things had passed away; all

things were become new. A generation that is occupied with making history on a great scale is not likely to busy itself with the history of the past. Consequently, the earlier traditions became faint and obscured, and the history difficult to reconstruct. As we trace back the conflict between Greece and Persia to its beginnings and antecedents, we are conscious that the tradition becomes less trustworthy as we pass back from one stage to another. The tradition of the expedition of Datis and Artaphernes is less credible in its details than that of the expedition of Xerxes, but it is at once fuller and more credible than the tradition of the Ionian revolt. When we get back to the Scythian expedition, we can discover but few grains of historical truth.

Much recent criticism of Herodotus has been directed against his veracity as a traveller. With this we are not here concerned. The criticism of him as an historian begins with Thucydides. Among the references of the latter writer to his predecessor are the following passages: i. 21; i. 22 *ad fin.*; i. 20 *ad fin.* (cf. Herod. ix. 53, and vi. 57 *ad fin.*); iii. 62 § 4 (cf. Herod. ix. 87); ii. 2 §§ 1 and 3 (cf. Herod. vii. 233); ii. 8 § 3 (cf. Herod. vi. 98). Perhaps the two clearest examples of this criticism are to be found in Thucydides' correction of Herodotus's account of the Cylonian conspiracy (Thuc. i. 126, cf. Herod. v. 71) and in his appreciation of the character of Themistocles—a veiled protest against the slanderous tales accepted by Herodotus (i. 138). In Plutarch's tract "On the Malignity of Herodotus" there is much that is suggestive, although his general standpoint, viz. that Herodotus was in duty bound to suppress all that was discreditable to the valour or patriotism of the Greeks, is not that of the modern critic. It must be conceded to Plutarch that he makes good his charge of bias in Herodotus's attitude towards certain of the Greek states. The question, however, may fairly be asked, how far this bias is personal to the author, or how far it is due to the character of the sources from which his information was derived. He cannot, indeed, altogether be acquitted of personal bias. His work is, to some extent, intended as an *apologia* for the Athenian empire. In answer to the charge that Athens was guilty of robbing other Greek states of their freedom, Herodotus seeks to show, firstly, that it was to Athens that the Greek world, as a whole, owed its freedom from Persia, and secondly, that the subjects of Athens, the Ionian Greeks, were unworthy to be free. This leads him to be unjust both to the services of Sparta and to the qualities of the Ionian race. For his estimate of the debt due to Athens see vii. 139. For bias against the Ionians see especially iv. 142 (cf. Thuc. vi. 77); cf. also i. 143 and 146, vi. 12-14 (Ladë), vi. 112 *ad fin.* A striking example of his prejudice in favour of Athens is furnished by vi. 91. At a moment when Greece rang with the crime of Athens in expelling the Aeginetans from their Island, he ventures to trace in their expulsion the vengeance of heaven for an act of sacrilege nearly sixty years earlier (see AEGINA). As a rule, however, the bias apparent in his narrative is due to the sources from which it is derived. Writing at Athens, in the first years of the Peloponnesian War, he can hardly help seeing the past through an Athenian medium. It was inevitable that much of what he heard should come to him from Athenian informants, and should be coloured by Athenian prejudices. We may thus explain the leniency which he shows towards Argos and Thessaly, the old allies of Athens, in marked contrast to his treatment of Thebes, Corinth and Aegina, her deadliest foes. For Argos cf. vii. 152; Thessaly, vii. 172-174; Thebes, vii. 132, vii. 233, ix. 87; Corinth (especially the Corinthian general Adeimantus, whose son Aristeus was the most active enemy of Athens at the outbreak of the Peloponnesian War), vii. 5, vii. 21, viii. 29 and 61, vii. 94; Aegina, ix. 78-80 and 85. In his intimacy with members of the great Alcmaeonid house we probably have the explanation of his depreciation of the services of Themistocles, as well as of his defence of the family from the charges brought against it in connexion with Cylon and with the incident of the shield shown on Pentelicus at the time of Marathon (v. 71, vi. 121-124). His failure to do justice to the Cypselid tyrants of Corinth (v. 92), and to the Spartan king Cleomenes, is to be accounted for by the nature of his sources—in the former case, the tradition of the Corinthian oligarchy; in the latter, accounts, partly derived from the family of the exiled king Demaratus and partly representative of the view of the ephorate. Much of the earlier history is cast in a religious mould, *e.g.* the story of the Mermnad kings of Lydia in book i., or of the fortunes of the colony of Cyrene (iv. 145-167). In such cases we cannot fail to recognize the influence of the Delphic priesthood. Grote has pointed out that the moralizing tendency observable in Herodotus is partly to be explained by the fact that much of his information was gathered from priests and at temples, and that it was given in explanation of votive offerings, or of the fulfilment of oracles. Hence the determination of the sources of his narrative has become one of the principal tasks of Herodotean criticism. In addition to the current tradition of Athens, the family tradition of the Alcmaeonidae, and the stories to be heard at Delphi and other sanctuaries, there may be indicated the Spartan tradition, in the form in which it existed in the middle of the 5th century; that of his native Halicarnassus, to which is due the prominence of its queen Artemisia; the traditions of the Ionian cities, especially of Samos and Miletus (important both for the history of the Mermnadae and for the Ionian Revolt); and those current in Sicily and Magna Graecia, which were learned during his residence at Thurii (Sybaris and Croton, v. 44, 45; Syracuse and Gela, vii. 153-167). Among his more special sources we can point to the descendants of Demaratus, who still held, at the beginning of the 4th century, the principality in the Troad which had been granted to their ancestor by Darius (Xen. *Hell.* iii. i. 6), and to the family of the Persian general Artabazus, in which the satrapy of Dascylium (Phrygia) was hereditary in the 5th century.[28] His use of written material is more difficult to determine. It is generally agreed that the list of Persian satrapies, with their respective assessments of tribute (iii. 89-97), the description of the royal road from Sardis to Susa (v. 52-54), and of the march of Xerxes, together with the list of the contingents that took part in the expedition (vii. 26-131), are all derived from documentary and authoritative sources. From previous writers (*e.g.* Dionysius of Miletus, Hecataeus, Charon of Lampsacus and Xanthus the Lydian) it is probable that he has borrowed little, though the fragments are too scanty to permit of adequate comparison. His references to monuments, dedicatory offerings, inscriptions and oracles are frequent.

The chief defects of Herodotus are his failure to grasp the principles of historical criticism, to understand the nature of military operations, and to appreciate the importance of chronology. In place of historical criticism we find a crude rationalism (*e.g.* ii. 45, vii. 129, viii. 8). Having no conception of the distinction between occasion and cause, he is content to find the explanation of great historical movements in trivial incidents or personal motives. An example of this is furnished by his account of the Ionian revolt, in which he fails to discover the real causes either of the movement or of its result. Indeed, it is clear that he regarded criticism as no part of his task as an historian. In vii. 152 he states the principles which have guided him—ἐγὼ δὲ ὀφείλω λέγειν τὰ λεγόμενα, πείθεσθαί γε μὲν οὐ παντάπασι ὀφείλω, καί μοι τοῦτο τὸ ἔπος ἐχέτω ἐς πάντα λόγον. In obedience to this principle he again and again gives two or more versions of a story. We are thus frequently enabled to arrive at the truth by a comparison of the discrepant traditions. It would have been fortunate if all ancient writers who lacked the critical genius of Thucydides had been content to adopt the practice of Herodotus. His accounts of battles are always unsatisfactory. The great battles, Marathon, Thermopylae, Salamis and Plataea, present a series of problems. This result is partly due to the character of the traditions which he follows—traditions which were to some extent inconsistent or contradictory, and were derived from different sources; it is, however, in great measure due to his inability to think out a strategical combination or a tactical movement. It is not too much to say that the battle of Plataea, as described by Herodotus, is wholly unintelligible. Most serious of all his deficiencies is his careless chronology. Even in the case of the 5th century, the data which he affords are inadequate or ambiguous. The interval between the Scythian expedition and the Ionian revolt is described by so vague an expression as μετὰ δὲ οὐ πολλὸν χρόνον ἄνεσις κακῶν ἦν (v. 28). In the history of the revolt itself, though he gives us the interval between its outbreak and the fall of Miletus (ἕκτῳ ἔτεϊ, vi. 18), he does not give us the interval between this and the battle of Ladē, nor does he indicate with sufficient precision the years to which the successive phases of the movement belong. Throughout the work professed synchronisms too often prove to be mere literary devices for facilitating a transition from one subject to another (cf. *e.g.* v. 81 with 89, 90; or vi. 51 with 87 and 94). In the 6th century, as Grote pointed out, a whole generation, or more, disappears in his historical perspective (cf. i. 30, vi. 125, v. 94, iii. 47, 48, v. 113 contrasted with v. 104 and iv. 162). The attempts to reconstruct the chronology of this century upon the basis of the data afforded by Herodotus (*e.g.* by Beloch, *Rheinisches Museum*, xlv., 1890, pp. 465-473) have completely failed.

In spite of all such defects Herodotus is an author, not only of unrivalled literary charm, but of the utmost value to the historian. If much remains uncertain or obscure, even in the history of the Persian Wars, it is chiefly to motives or policy, to topography or strategy, to dates or numbers, that uncertainty attaches. It is to these that a sober criticism will confine itself.

Thucydides.

Thucydides is at once the father of contemporary history and the father of historical criticism. From a comparison of i. 1, i. 22 and v. 26, we may gather both the principles to which he adhered in the composition of his work and the conditions under which it was composed. It is seldom that the circumstances of an historical writer have been so favourable for the accomplishment of his task. Thucydides was a contemporary of the Twenty-Seven Years' War in the fullest sense of the term. He had reached manhood at its outbreak, and he survived its close by at least half-a-dozen years. And he was more than a mere contemporary. As a man of high birth, a member of the Periclean circle, and the holder of the chief political office in the Athenian state, the *strategia*, he was not only familiar with the business of administration and the conduct of military operations, but he possessed in addition a personal knowledge of those who played the principal part in the political life of the age. His exile in the year 424 afforded him opportunities of visiting the scenes of distant operations (*e.g.* Sicily) and of coming in contact

with the actors on the other side. He himself tells us that he spared no pains to obtain the best information available in each case. He also tells us that he began collecting materials for his work from the very beginning of the war. Indeed, it is probable that much of books i.-v. 24 was written soon after the Peace of Nicias (421), just as it is possible that the history of the Sicilian Expedition (books vi. and vii.) was originally intended to form a separate work. To the view, however, which has obtained wide support in recent years, that books i.-v. 22 and books vi. and vii. were separately published, the rest of book v. and book viii. being little more than a rough draught, composed after the author had adopted the theory of a single war of twenty-seven years' duration, of which the Sicilian Expedition and the operations of the years 431-421 formed integral parts, there seem to the present writer to be insuperable objections. The work, as a whole, appears to have been composed in the first years of the 4th century, after his return from exile in 404, when the material already in existence must have been revised and largely recast. There are exceedingly few passages, such as iv. 48. 5, which appear to have been overlooked in the process of revision. It can hardly be questioned that the impression left upon the reader's mind is that the point of view of the author, in all the books alike, is that of one writing after the fall of Athens.

The task of historical criticism in the case of the Peloponnesian War is widely different from its task in the case of the Persian Wars. It has to deal, not with facts as they appear in the traditions of an imaginative race, but with facts as they appeared to a scientific observer. Facts, indeed, are seldom in dispute. The question is rather whether facts of importance are omitted, whether the explanation of causes is correct, or whether the judgment of men and measures is just. Such inaccuracies as have been brought home to Thucydides on the strength, *e.g.* of epigraphic evidence, are, as a rule, trivial. His most serious errors relate to topographical details, in cases where he was dependent on the information of others. Sphacteria (see Pylos) (see G. B. Grundy, *Journal of Hellenic Studies*, xvi., 1896, p. 1) is a case in point. Nor have the difficulties connected with the siege of Plataea been cleared up either by Grundy or by others (see Grundy, *Topography of the Battle of Plataea*, &c., 1894). Where, on the contrary, he is writing at first hand his descriptions of sites are surprisingly correct. The most serious charge as yet brought against his authority as to matters of fact relates to his account of the Revolution of the Four Hundred, which appears, at first sight, to be inconsistent with the documentary evidence supplied by Aristotle's *Constitution of Athens* (*q.v.*). It may be questioned, however, whether the documents have been correctly interpreted by Aristotle. On the whole, it is probable that the general course of events was such as Thucydides describes (see E. Meyer, *Forschungen*, ii. 406-436), though he failed to appreciate the position of Theramenes and the Moderate party, and was clearly misinformed on some important points of detail. With regard to the omission of facts, it is unquestionable that much is omitted that would not be omitted by a modern writer. Such omissions are generally due to the author's conception of his task. Thus the internal history of Athens is passed over as forming no part of the history of the war. It is only where the course of the war is directly affected by the course of political events (*e.g.* by the Revolution of the Four Hundred) that the internal history is referred to. However much it may be regretted that the relations of political parties are not more fully described, especially in book v., it cannot be denied that from his standpoint there is logical justification even for the omission of the ostracism of Hyperbolus. There are omissions, however, which are not so easily explained. Perhaps the most notable instance is that of the raising of the tribute in 425 B.C. (see Delian League).

Nowhere is the contrast between the historical methods of Herodotus and Thucydides more apparent than in the treatment of the causes of events. The distinction between the occasion and the cause is constantly present to the mind of Thucydides, and it is his tendency to make too little rather than too much of the personal factor. Sometimes, however, it may be doubted whether his explanation of the causes of an event is adequate or correct. In tracing the causes of the Peloponnesian War itself, modern writers 457
are disposed to allow more weight to the commercial rivalry of Corinth; while in the case of the Sicilian expedition, they would actually reverse his judgment (ii. 65 ὁ ἐς Σικελίαν πλοῦς ὃς οὐ τοσοῦτον γνώμης ἁμάρτημα ἦν πρὸς οὓς ἐπῄεσαν). To us it seems that the very idea of the expedition implied a gigantic miscalculation of the resources of Athens and of the difficulty of the task. His judgments of men and of measures have been criticized by writers of different schools and from different points of view. Grote criticized his verdict upon Cleon, while he accepted his estimate of the policy of Pericles. More recent writers, on the other hand, have accepted his view of Cleon, while they have selected for attack his appreciation alike of the policy and the strategy of Pericles. He has been charged, too, with failure to do justice to the statesmanship of Alcibiades.[29] There are cases, undoubtedly, in which the balance of recent opinion will be adverse to the view of Thucydides. There are many more in which the result of criticism has been to establish his view. That he should occasionally have been mistaken in his judgment and his views is certainly no detraction from his claim to greatness.

On the whole, it may be said that while the criticism of Herodotus, since Grote wrote, has tended seriously to modify our view of the Persian Wars, as well as of the earlier history, the criticism of Thucydides, in spite of its imposing bulk, has affected but slightly our view of the course of the Peloponnesian War. The labours of recent workers in this field have borne most fruit where they have been directed to subjects neglected by Thucydides, such as the history of political parties, or the organization of the empire (G. Gilbert's *Innere Geschichte Athens im Zeitalter des pel. Krieges* is a good example of such work).

In regard to Thucydides' treatment of the period between the Persian and Peloponnesian Wars (the so-called *Pentecontaëteris*) it should be remembered that he does not profess to give, even in outline, the history of this period as a whole. The period is regarded simply as a prelude to the Peloponnesian War. There is no attempt to sketch the history of the Greek world or of Greece proper during this period. There is, indeed, no attempt to give a complete sketch of Athenian history. His object is to trace the growth of the Athenian Empire, and the causes that made the war inevitable. Much is therefore omitted not only in the history of the other Greek states, especially the Peloponnesian, but even in the history of Athens. Nor does Thucydides attempt an exact chronology. He gives us a few dates (*e.g.* surrender of Ithome, in the tenth year, i. 103; of Thasos, in the third year, i. 101; duration of the Egyptian expedition six years, i. 110; interval between Tanagra and Oenophyta 61 days, i. 108; revolt of Samos, in the sixth year after the Thirty Years' Truce, i. 115), but from these data alone it would be impossible to reconstruct the chronology of the period. In spite of all that can be gleaned from our other authorities, our knowledge of this, the true period of Athenian greatness, must remain slight and imperfect as compared with our knowledge of the next thirty years.

Of the secondary authorities for this period the two principal ones are Diodorus (xi. 38 to xii. 37) and Plutarch. Diodorus is of

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value chiefly in relation to Sicilian affairs, to which he devotes about a third of this section of his work and for which he is almost our sole authority. His source for Sicilian history is the Sicilian writer Timaeus (*q.v.*), an author of the 3rd century B.C. For the history of Greece Proper during the Pentecontaetia Diodorus contributes comparatively little of importance. Isolated notices of particular events (*e.g.* the *Synoecism* of Elis, 471 B.C., or the foundation of Amphipolis, 437 B.C.), which appear to be derived from a chronological writer, may generally be trusted. The greater part of his narrative is, however, derived from Ephorus, who appears to have had before him little authentic information for this period of Greek history other than that afforded by Thucydides' work. Four of Plutarch's *Lives* are concerned with this period, viz. *Themistocles*, *Aristides*, *Cimon* and *Pericles*. From the *Aristides* little can be gained. Plutarch, in this biography, appears to be

Plutarch.

mainly dependent upon Idomeneus of Lampsacus, an excessively untrustworthy writer of the 3rd century B.C., who is probably to be credited with the invention of the oligarchical conspiracy at the time of the battle of Plataea (ch. 13), and of the decree of Aristides, rendering all four classes of citizens eligible for the archonship (ch. 22). The *Cimon*, on the other hand, contains much that is valuable; such as, *e.g.* the account of the battle of the Eurymedon (chs. 12 and 13). To the *Pericles* we owe several quotations from the Old Comedy. Two other of the *Lives*, *Lycurgus* and *Solon*, are amongst our most important sources for the early history of Sparta and Athens respectively. Of the two (besides *Pericles*) which relate to the Peloponnesian War, *Alcibiades* adds little to what can be gained from Thucydides and Xenophon; the *Nicias*, on the other hand, supplements Thucydides' narrative of the Sicilian expedition with many valuable details, which, it may safely be assumed, are derived from the contemporary historian, Philistus of Syracuse. Amongst the most valuable material afforded by Plutarch are the quotations, which occur in almost all the *Lives*, from the collection of Athenian decrees (ψηφισμάτων συναγωγή) formed by the Macedonian writer Craterus, in the 3rd century B.C. Two other works may be mentioned in connexion with the history of Athens. For

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the history of the Athenian Constitution down to the end of the 5th century B.C. Aristotle's *Constitution of Athens* (*q.v.*) is our chief authority. The other *Constitution of Athens*, erroneously attributed to Xenophon, a tract of singular interest both on literary and historical grounds, throws a good deal of light on the internal condition of Athens, and on the system of government, both of the state and of the empire, in the age of the Peloponnesian War, during the earlier years of which it was composed.

To the literary sources for the history of Greece, especially of Athens, in the 5th century B.C. must be added the epigraphic. Few inscriptions have been discovered which date back beyond the Persian Wars. For the latter half of the 5th century they are both numerous and important. Of especial value are the series of Quota-lists, from which can be calculated the amount of tribute paid by the subject-allies of Athens from the year 454 B.C. onwards. The great majority of the inscriptions of this period are of Athenian origin. Their value is enhanced by the fact that they relate, as a rule, to questions of organization, finance and administration, as to which little information is to be gained from the literary sources.

Inscriptions.

For the period between the Persian and Peloponnesian Wars Busolt, *Griechische Geschichte*, iii. 1, is indispensable. Hill's *Sources of Greek History, B.C. 478-431* (Oxford, 1897) is excellent. It gives the most important inscriptions in a convenient form.

III. *The 4th Century to the Death of Alexander*.—Of the historians who flourished in the 4th century the sole writer whose works have come down to us is Xenophon. It is a singular accident of fortune that neither of the two authors, who at once were most representative of their age and did most to determine the views of Greek history current in subsequent generations, Ephorus (*q.v.*) and Theopompus (*q.v.*), should be extant. It was from them, rather than from Herodotus, Thucydides or Xenophon that the Roman world obtained its knowledge of the history of Greece in the past, and its conception of its significance. Both were pupils of Isocrates, and both, therefore, bred up in an atmosphere of rhetoric. Hence their popularity and their influence. The scientific spirit of Thucydides was alien to the temper of the 4th century, and hardly more congenial to the age of Cicero or Tacitus. To the rhetorical spirit, which is common to both, each added defects peculiar to himself. Theopompus is a strong partisan, a sworn foe to Athens and to Democracy. Ephorus, though a military historian, is ignorant of the art of war. He is also incredibly careless and uncritical. It is enough to point to his description of the battle of the Eurymedon (Diodorus xi. 60-62), in which, misled by an epigram, which he supposed to relate to this engagement (it really refers to the Athenian victory off Salamis in Cyprus, 449 B.C.), he makes the coast of Cyprus the scene of Cimon's naval victory, and finds no difficulty in putting it on the same day as the victory on shore on the banks of the Eurymedon, in Pamphylia. Only a few fragments remain of either writer, but Theopompus (*q.v.*) was largely used by Plutarch in several of the *Lives*, while Ephorus continues to be the main source of Diodorus' history, as far as the outbreak of the Sacred War (Fragments of Ephorus in Müller's *Fragmenta historicorum Graecorum*, vol.i.; of Theopompus in *Hellenica Oxyrhynchia, cum Theopompi et Cratippi fragmentis*, ed. B. P. Grenfell and A. S. Hunt, 1909).

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It may be at least claimed for Xenophon (*q.v.*) that he is free from all taint of the rhetorical spirit. It may also be claimed for him that, as a witness, he is both honest and well-informed. But, if there is no justification for the charge of deliberate falsification, it cannot be denied that he had strong political prejudices, and that his narrative has suffered from them. His historical writings are the *Anabasis*, an account of the expedition of the Ten Thousand, the *Hellenica* and the *Agesilaus*, a eulogy of the Spartan king. Of these the *Hellenica* is far the most important for the student of history. It consists of two distinct parts (though there is no ground for the theory that the two parts were separately written and published), books i. and ii., and books iii. to vii. The first two books are intended as a continuation of Thucydides' work. They begin, quite abruptly, in the middle of the Attic year 411/10, and they carry the history down to the fall of the Thirty, in 403. Books iii. to vii., the *Hellenica* proper, cover the period from 401 to 362, and give the histories of the Spartan and Theban hegemonies down to the death of Epaminondas. There is thus a gap of two years between the point at which the first part ends and that at which the second part begins. The two parts differ widely, both in their aim and in the arrangement of the material. In the first part Xenophon attempts, though not with complete success, to follow the chronological method of Thucydides, and to make each successive spring, when military and naval operations were resumed after the winter's interruption, the starting-point of a fresh section. The resemblance between the two writers ends, however, with the outward form of the narrative. All that is characteristic of Thucydides is absent in Xenophon. The latter writer shows neither skill in portraiture, nor insight into motives. He is deficient in the sense of proportion and of the distinction between occasion and cause. Perhaps his worst fault is a lack of imagination. To make a story intelligible it is necessary sometimes to put oneself in the reader's place, and to appreciate his ignorance of circumstances and events which would be perfectly familiar to the actors in the scene or to contemporaries. It was not given to Xenophon, as it was to Thucydides, to discriminate between the circumstances that are essential and those that are not essential to the comprehension of the story. In spite, therefore, of its wealth of detail, his narrative is frequently obscure. It is quite clear that in the trial of the generals, *e.g.*, something is omitted. It may be supplied as Diodorus has supplied it (xiii. 101), or it may be supplied otherwise. It is probable that, when under cross-examination before the council, the generals, or some of them, disclosed the commission given to Theramenes and Thrasybulus. The important point is that Xenophon himself has omitted to supply it. As it stands his narrative is unintelligible. In the first two books, though there are omissions (*e.g.* the loss of Nisaea, 409 B.C.), they are not so serious as in the last five, nor is the bias so evident. It is true that if the account of the rule of the Thirty given in Aristotle's *Constitution of Athens* be accepted, Xenophon must have deliberately misrepresented the course of events to the prejudice of Theramenes. But it is at least doubtful whether Aristotle's version can be sustained against Xenophon's, though it may be admitted, not only that there are mistakes as to details in the latter writer's narrative, but that less than justice is done to the policy and motives of the "Buskin." The *Hellenica* was written, it should be remembered, at Corinth, after 362. More than forty years had thus elapsed since the events recorded in the first two books, and after so long an interval accuracy of detail, even where the detail is of importance, is not always to be expected.[30] In the second part the chronological method is abandoned. A subject once begun is followed out to its natural ending, so that sections of the narrative which are consecutive in order are frequently parallel in point of date. A good example of this will be found in book iv. In chapters 2 to 7 the history of the Corinthian war is carried down to the end of 390, so far as the operations on land are concerned, while chapter 8 contains an account of the naval operations from 394 to 388. In this second part of the *Hellenica* the author's disqualifications for his task are more apparent than in the first two books. The more he is acquitted of bias in his selection of events and in his omissions, the more clearly does he stand convicted of lacking all sense of the proportion of things. Down to Leuctra (371 B.C.) Sparta is the centre of interest, and it is of the Spartan state alone that a complete or continuous history is given. After Leuctra, if the point of view is no longer exclusively Spartan, the narrative of events is hardly less incomplete. Throughout the second part of the *Hellenica* omissions abound which it is difficult either to explain or justify. The formation of the Second Athenian Confederacy of 377 B.C., the foundation of Megalopolis and the restoration of the Messenian state are all left unrecorded. Yet the writer who passes them over without mention thinks it worth while to devote more than one-sixth of an entire book to a chronicle of the unimportant feats of the citizens of the petty state of Phlius. Nor is any attempt made to appraise the policy of the great Theban leaders, Pelopidas and Epaminondas. The former, indeed, is mentioned only in a single passage, relating to the embassy to Susa in 368; the latter does not appear on the scene till a year later, and receives mention but twice before the battle of Mantinea. An author who omits from his narrative some of the most important events of his period, and elaborates the portraiture of an Agesilaus while not attempting the bare outline of an Epaminondas, may be honest; he may even write without a consciousness of bias; he certainly cannot rank among the great writers of history.[31]

For the history of the 4th century Diodorus assumes a higher degree of importance than belongs to him in the earlier periods. This is partly to be explained by the deficiencies of Xenophon's *Hellenica*, partly by the fact that for the interval between the death of Epaminondas and the accession of Alexander we have in Diodorus alone a continuous narrative of events. Books xiv. and xv. of his history include the period covered by the *Hellenica*. More than half of book xiv. is devoted to the history of Sicily and the reign of Dionysius, the tyrant of Syracuse. For this period of Sicilian history he is, practically, our sole authority. In the rest of the book, as well as in book xv., there is much of value, especially in the notices of Macedonian history. Thanks to Diodorus we are enabled to supply many of the omissions of the *Hellenica*. Diodorus is, *e.g.*, our sole literary authority for the Athenian naval confederation of 377. Book xvi. must rank, with the *Hellenica* and Arrian's *Anabasis*, as one of the three principal authorities for this century, so far, at least, as works of an historical character are concerned. It is our authority for the Social and the Sacred Wars, as well as for the reign of Philip. It is a curious irony of fate that, for what is perhaps the most momentous epoch in the history of Greece, we should have to turn to a writer of such inferior capacity. For this period his material is better and his importance greater: his intelligence is as limited as ever. Who but Diodorus would be capable of narrating the siege and capture of Methone twice over, once under the year 354, and again under the year 352 (xvi. 31 and 34; cf. xii. 35 and 42; Archidamus (*q.v.*) dies in 434, commands Peloponnesian army in 431); or of giving three different numbers of years (eleven, ten and nine) in three different passages (chs. 14, 23 and 59) for the length of the Sacred War; or of asserting the conclusion of peace between Athens and Philip in 340, after the failure of his attack on Perinthus and Byzantium? Amongst the subjects which are omitted is the Peace of Philocrates. For the earlier chapters, which bring the narrative down to the outbreak of the Sacred War, Ephorus, as in the previous book, is Diodorus' main source. His source for the rest of the book, *i.e.* for the greater part of Philip's

Diodorus.

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reign, cannot be determined. It is generally agreed that it is not the *Philippica* of Theopompus.

Historians of Alexander's reign.

For the reign of Alexander our earliest extant authority is Diodorus, who belongs to the age of Augustus. Of the others, Q. Curtius Rufus, who wrote in Latin, lived in the reign of the emperor Claudius, Arrian and Plutarch in the 2nd century A.D. Yet Alexander's reign is one of the best known periods of ancient history. The Peloponnesian War and the twenty years of Roman history which begin with 63 B.C. are the only two periods which we can be said to know more fully or for which we have more trustworthy evidence. For there is no period of ancient history which was recorded by a larger number of contemporary writers, or for which better or more abundant materials were available. Of the writers actually contemporary with Alexander there were five of importance—Ptolemy, Aristobulus, Callisthenes, Onesicritus and Nearchus; and all of them occupied positions which afforded exceptional opportunities of ascertaining the facts. Four of them were officers in Alexander's service. Ptolemy, the future king of Egypt, was one of the *somatophylaces* (we may, perhaps, regard them as corresponding to Napoleon's marshals); Aristobulus was also an officer of high rank (see Arrian, *Anab.* vi. 29. 10); Nearchus was admiral of the fleet which surveyed the Indus and the Persian Gulf, and Onesicritus was one of his subordinates. The fifth, Callisthenes, a pupil of Aristotle, accompanied Alexander on his march down to his death in 327 and was admitted to the circle of his intimate friends. A sixth historian, Cleitarchus, was possibly also a contemporary; at any rate he is not more than a generation later. These writers had at their command a mass of official documents, such as the βασίλειοι ἐφημερίδες—the *Gazette* and *Court Circular* combined—edited and published after Alexander's death by his secretary, Eumenes of Cardia; the σταθμοί, or records of the marches of the armies, which were carefully measured at the time; and the official reports on the conquered provinces. That these documents were made use of by the historians is proved by the references to them which are to be found in Arrian, Plutarch and Strabo; *e.g.* Arrian, *Anab.* vii. 25 and 26, and Plutarch, *Alexander* 76 (quotation from the βασίλειοι ἐφημερίδες); Strabo xv. 723 (reference to the σταθμοί), ii. 69 (reports drawn up on the various provinces). We have, in addition, in Plutarch numerous quotations from Alexander's correspondence with his mother, Olympias, and with his officers. The contemporary historians may be roughly divided into two groups. On the one hand there are Ptolemy and Aristobulus, who, except in a single instance, are free from all suspicion of deliberate invention. On the other hand, there are Callisthenes, Onesicritus and Cleitarchus, whose tendency is rhetorical. Nearchus appears to have allowed full scope to his imagination in dealing with the wonders of India, but to have been otherwise veracious. Of the extant writers Arrian (*q.v.*) is incomparably the most valuable. His merits are twofold. As the commander of Roman legions and the author of a work on tactics, he combined a practical with a theoretical knowledge of the military art, while the writers whom he follows in the *Anabasis* are the two most worthy of credit, Ptolemy and Aristobulus. We may well hesitate to call in question the authority of writers who exhibit an agreement which it would be difficult to parallel elsewhere in the case of two independent historians. It may be inferred from Arrian's references to them that there were only eleven cases in all in which he found discrepancies between them. The most serious drawback which can be alleged against them is an inevitable bias in Alexander's favour. It would be only natural that they should pass over in silence the worst blots on their great commander's fame. Next in value to the *Anabasis* comes Plutarch's *Life of Alexander*, the merits of which, however, are not to be gauged by the influence which it has exercised upon literature. The *Life* is a valuable supplement to the *Anabasis*, partly because Plutarch, as he is writing biography rather than history (for his conception of the difference between the two see the famous preface, *Life of Alexander*, ch. i.), is concerned to record all that will throw light upon Alexander's character (*e.g.* his epigrammatic sayings and quotations from his letters); partly because he tells us much about his early life, before he became king, while Arrian tells us nothing. It is unfortunate that Plutarch writes in an uncritical spirit; it is hardly less unfortunate that he should have formed no clear conception and drawn no consistent picture of Alexander's character. Book xvii. of Diodorus and the *Historiae Alexandri* of Curtius Rufus are thoroughly rhetorical in spirit. It is probable that in both cases the ultimate source is the work of Clitarchus.

The orators.

Isocrates.

It is towards the end of the 5th century that a fresh source of information becomes available in the speeches of the orators, the earliest of whom is Antiphon (d. 411 B.C.). Lysias is of great importance for the history of the Thirty (see the speeches against Eratosthenes and Agoratus), and a good deal may be gathered from Andocides with regard to the last years of the 5th and the opening years of the next century. At the other end of this period Lycurgus, Hyperides and Dinarchus throw light upon the time of Philip and Alexander. The three, however, who are of most importance to the historian are Isocrates, Aeschines and Demosthenes. Isocrates (*q.v.*), whose long life (436-338) more than spans the interval between the outbreak of the Peloponnesian War and the triumph of Macedon at Chaeronea, is one of the most characteristic figures in the Greek world of his day. To comprehend that world the study of Isocrates is indispensable; for in an age dominated by rhetoric he is the prince of rhetoricians. It is difficult for a modern reader to do him justice, so alien is his spirit and the spirit of his age from ours. It must be allowed that he is frequently monotonous and prolix; at the same time it must not be forgotten that, as the most famous representative of rhetoric, he was read from one end of the Greek world to the other. He was the friend of Evagoras and Archidamus, of Dionysius and Philip; he was the master of Aeschines and Lycurgus amongst orators and of Ephorus and Theopompus amongst historians. No other contemporary writer has left so indelible a stamp upon the style and the sentiment of his generation. It is a commonplace that Isocrates is the apostle of Panhellenism. It is not so generally recognized that he is the prophet of Hellenism. A passage in the Panegyricus (§ 50 ὥστε τὸ τῶν Ἑλλήνων ὄνομα μήκετι τοῦ γένους ἀλλὰ τῆς διανοίας δοκεῖν εἶναι καὶ μᾶλλον Ἕλληνας καλεῖσθαι τοὺς τῆς παιδεύσεως τῆς ἡμετέρας ἢ τοὺς τῆς κοινῆς φύσεως μετέχοντας) is the key to the history of the next three centuries. Doubtless he had no conception of the extent to which the East was to be hellenized. He was, however, the first to recognize that it would be hellenized by the diffusion of Greek culture rather than of Greek blood. His Panhellenism was the outcome of his recognition of the new forces and tendencies which were at work in the midst of a new generation. When Greek culture was becoming more and more international, the exaggeration of the principle of autonomy in the Greek political system was becoming more and more absurd. He had sufficient insight to be aware that the price paid for this autonomy was the domination of Persia; a domination which meant the servitude of the Greek states across the Aegean and the demoralization of Greek political life at home. His Panhellenism led him to a more liberal view of the distinction between what was Greek and what was not than was possible to the intenser patriotism of a Demosthenes. In his later orations he has the courage not only to pronounce that the day of Athens as a first-rate power is past, but to see in Philip the needful leader in the crusade against Persia. The earliest and greatest of his political orations is the *Panegyricus*, published in 380 B.C., midway between the peace of Antalcidas and Leuctra. It is his *apologia* for Panhellenism. To the period of the Social War belong the *De pace* (355 B.C.) and the *Areopagiticus* (354 B.C.), both of great value as evidence for the internal conditions of Athens at the beginning of the struggle with Macedon. The *Plataicus* (373 B.C.) and the *Archidamus* (366 B.C.) throw light upon the politics of Boeotia and the Peloponnese respectively. The *Panathenaicus* (339 B.C.), the child of his old age, contains little that may not be found in the earlier orations. The *Philippus* (346 B.C.) is of peculiar interest, as giving the views of the Macedonian party.

Demosthenes.

Not the least remarkable feature in recent historical criticism is the reaction against the view which was at one time almost universally accepted of the character, statesmanship and authority of the orator Demosthenes (*q.v.*). During the last quarter of a century his character and statesmanship have been attacked, and his authority impugned, by a series of writers of whom Holm and Beloch are the best known. With the estimate of his character and statesmanship we are not here concerned. With regard to his value as an authority for the history of the period, it is to his speeches, and to those of his contemporaries, Aeschines, Hypereides, Dinarchus and Lycurgus, that we owe our intimate knowledge, both of the working of the constitutional and legal systems, and of the life of the people, at this period of Athenian history. From this point of view his value can hardly be overestimated. As a witness, however, to matters of fact, his authority can no longer be rated as highly as it once was, *e.g.* by Schaefer and by Grote. The orator's attitude towards events, both in the past and in the present, is inevitably a different one from the historian's. The object of a Thucydides is to ascertain a fact, or to exhibit it in its true relations. The object of a Demosthenes is to make a point, or to win his case. In their dealings with the past the orators exhibit a levity which is almost inconceivable to a modern reader. Andocides, in a passage of his speech *On the Mysteries* (§ 107), speaks of Marathon as the crowning victory of Xerxes' campaign; in his speech *On the Peace* (§ 3) he confuses Miltiades with Cimon, and the Five Years' Peace with the Thirty Years' Truce. Though the latter passage is a mass of absurdities and confusions, it was so generally admired that it was incorporated by Aeschines in his speech *On the Embassy* (§§ 172-176). If such was their attitude towards the past; if, in order to make a point, they do not hesitate to pervert history, is it likely that they would conform to a higher standard of veracity in their statements as to the present—as to their contemporaries, their rivals or their own actions? When we compare different speeches of Demosthenes, separated by an interval of years, we cannot fail to observe a marked difference in his statements. The farther he is from the events, the bolder are his mis-statements. It is only necessary to compare the speech *On the Crown* with that *On the Embassy*, and this latter speech with the *Philippics* and *Olynthiacs*, to find illustrations. It

has come to be recognized that no statement as to a matter of fact is to be accepted, unless it receives independent corroboration, or unless it is admitted by both sides. The speeches of Demosthenes may be conveniently divided into four classes according to their dates. To the pre-Philippic period belong the speeches *On the Symmories* (354 B.C.), *On Megalopolis* (352 B.C.), *Against Aristocrates* (351 B.C.), and, perhaps, the speech *On Rhodes* (? 351 B.C.). These speeches betray no consciousness of the danger threatened by Philip's ambition. The policy recommended is one based upon the principle of the balance of power. To the succeeding period, which ends with the peace of Philocrates (346 B.C.), belong the *First Philippic* and the three *Olynthiacs*. To the period between the peace of Philocrates and Chaeronea belong the speech *On the Peace* (346 B.C.), the *Second Philippic* (344 B.C.), the speeches *On the Embassy* (344 B.C.) and *On the Chersonese* (341 B.C.), and the *Third Philippic*. The masterpiece of his genius, the speech On the Crown, was delivered in 330 B.C., in the reign of Alexander. Of the three extant speeches of Aeschines (*q.v.*) that *On the Embassy* is of great value, as enabling us to correct the mis-statements of Demosthenes. For the period from the death of Alexander to the fall of Corinth (323-146 B.C.) our literary authorities are singularly defective. For the Diadochi Diodorus (books xviii.-xx.) is our chief source. These books form the most valuable part of Diodorus' work. They are mainly based upon the work of Hieronymus of Cardia, a writer who combined exceptional opportunities for ascertaining the truth (he was in the service first of Eumenes, and then of Antigonus) with an exceptional sense of its importance. Hieronymus ended his history at the death of Pyrrhus (272 B.C.), but, unfortunately, book xx. of Diodorus' work carries us no farther than 303 B.C., and of the later books we have but scanty fragments. The narrative of Diodorus may be supplemented by the fragments of Arrian's *History of the events after Alexander's death* (which reach, however, only to 321 B.C.), and by Plutarch's *Lives of Eumenes* and of *Demetrius*. For the rest of the 3rd century and the first half of the 2nd we have his *Lives of Pyrrhus*, of *Aratus*, of *Philopoemen*, and of *Agis and Cleomenes*. For the period from 220 B.C. onwards Polybius (*q.v.*) is our chief authority (see Rome: *Ancient History*, section "Authorities"). In a period in which the literary sources are so scanty great weight attaches to the epigraphic and numismatic evidence.

BIBLIOGRAPHY.—The literature which deals with the history of Greece, in its various periods, departments and aspects, is of so vast a bulk that all that can be attempted here is to indicate the most important and most accessible works.

General Histories of Greece.—Down to the middle of the 19th century the only histories of Greece deserving of mention were the products of English scholarship. The two earliest of these were published about the same date, towards the end of the 18th century, nearly three-quarters of a century before any history of Greece, other than a mere compendium, appeared on the Continent. John Gillies' *History of Greece* was published in 1786, Mitford's in 1784. Both works were composed with a political bias and a political object. Gillies was a Whig. In the dedication (to George III.) he expresses the view that "the History of Greece exposes the dangerous turbulence of Democracy, and arraigns the despotism of Tyrants, while it evinces the inestimable benefits, resulting to Liberty itself, from the steady operation of well-regulated monarchy." Mitford was a Tory, who thought to demonstrate the evils of democracy from the example of the Athenian state. His *History*, in spite of its bias, was a work of real value. More than fifty years elapsed between Mitford's work and Thirlwall's. Connop Thirlwall, fellow of Trinity College, Cambridge, afterwards bishop of St David's, brought a sound judgment to the aid of ripe scholarship. His *History of Greece*, published in 1835-1838 (8 vols.), is entirely free from the controversial tone of Mitford's volumes. Ten years later (1846) George Grote published the first volumes of his history, which was not completed (in 12 vols.) till 1856. Grote, like Mitford, was a politician—an ardent Radical, with republican sympathies. It was in order to refute the slanders of the Tory partisan that he was impelled to write a history of Greece, which should do justice to the greatest democracy of the ancient world, the Athenian state. Thus, in the case of three of these four writers, the interest in their subject was mainly political. Incomparably the greatest of these works is Grote's. Grote had his faults and his limitations. His prejudices are strong, and his scholarship is weak; he had never visited Greece, and he knew little or nothing of Greek art; and, at the time he wrote, the importance of coins and inscriptions was imperfectly apprehended. In spite of every defect, however, his work is the greatest history of Greece that has yet been written. It is not too much to say that nobody knows Greek history till he has mastered Grote. No history of Greece has since appeared in England on a scale at all comparable to that of Grote's work. The most important of the more recent ones is that by J. B. Bury (1 vol., 1900), formerly fellow of Trinity College, Dublin, afterwards Regius Professor of Modern History at Cambridge. Mitford and Bury end with the death of Alexander; Gillies and Grote carry on the narrative a generation farther; while Thirlwall's work extends to the absorption of Greece in the Roman Empire (146 B.C.).

While in France the *Histoire des Grecs* (ending at 146 B.C.) of Victor Duruy (new edition, 2 vols., 1883), Minister of Public Instruction under Napoleon III., is the only one that need be mentioned, in Germany there has been a succession of histories of Greece since the middle of the 19th century. Kortüm's *Geschichte Griechenlands* (3 vols., 1854), a work of little merit, was followed by Max Duncker's *Geschichte der Griechen* (vols. 1 and 2 published in 1856; vols. 1 and 2, Neue Folge, which bring the narrative down to the death of Pericles, in 1884; the two former volumes form vols. 5, 6 and 7 of his *Geschichte des Altertums*), and by the *Griechische Geschichte* of Ernst Curtius (3 vols., 1857-1867). An English translation of Duncker, by S. F. Alleyne, appeared in 1883 (2 vols., Bentley), and of Curtius, by A. W. Ward (5 vols., Bentley, 1868-1873). Among more recent works may be mentioned the *Griechische Geschichte* of Adolf Holm (4 vols., Berlin, 1886-1894; English translation by F. Clarke, 4 vols., Macmillan, 1894-1898), and histories with the same title by Julius Beloch (3 vols., Strassburg, 1893-1904) and Georg Busolt (2nd ed., 3 vols., Gotha, 1893-1904). Holm carries on the narrative to 30 B.C., Beloch to 217 B.C., Busolt to Chaeronea (338 B.C.).[32] Busolt's work is entirely 461
different in character from any other history of Greece. The writer's object is to refer in the notes (which constitute five-sixths of the book) to the views of every writer in any language upon every controverted question. It is absolutely indispensable, as a work of reference, for any serious study of Greek history. The ablest work since Grote's is Eduard Meyer's *Geschichte des Altertums*, of which 5 vols. (Stuttgart and Berlin, 1884-1902) have appeared, carrying the narrative down to the death of Epaminondas (362 B.C.). Vols. 2-5 are principally concerned with Greek history. It must be remembered that, partly owing to the literary finds and the archaeological discoveries of the last thirty years, and partly owing to the advance made in the study of epigraphy and numismatics, all the histories published before those of Busolt, Beloch, Meyer and Bury are out of date.

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(E. M. W.)

I. The Period of Roman Rule.—(i.) *Greece under the Republic* (146-27 B.C.). After the collapse of the Achaean League (*q.v.*) the Senate appointed a commission to reorganize Greece as a Roman dependency. Corinth, the chief centre of resistance, was destroyed and its inhabitants sold into slavery. In addition to this act of exemplary punishment, which may perhaps have been inspired in part by the desire to crush a commercial competitor, steps were taken to obviate future insurrections. The national and cantonal federations were dissolved, commercial intercourse between cities was restricted, and the government transferred from the democracies to the propertied classes, whose interests were bound up with Roman supremacy. In other respects few changes were made in existing institutions. Some favoured states like Athens and Sparta retained their full sovereign rights as *civitates liberae*, the other cities continued to enjoy local self-government. The ownership of the land was not greatly disturbed by confiscations, and though a tribute upon it was levied, this impost may not have been universal. General powers of supervision were entrusted to the governor of Macedonia, who could reserve cases of high treason for his decision, and in case of need send troops into the country. But although Greece was in the *provincia* of the Macedonian proconsul, in the sense of belonging to his sphere of command, its status was in fact more favourable than that of other provincial dependencies.

This settlement was acquiesced in by the Greek people, who had come to realize the hopelessness of further resistance. The internal disorder which was arising from the numerous disputes about property rights consequent upon the political revolutions was checked by the good offices of the historian Polybius, whom the Senate deputed to mediate between the litigants. The pacification of the country eventually became so complete that the Romans withdrew the former restrictions upon intercourse and allowed some of the leagues to revive. But its quiet was seriously disturbed during the first Mithradatic War (88-84 B.C.), when numerous Greek states sided with Mithradates (*q.v.*). The success which the invader experienced in detaching the Greeks from Rome is partly to be explained by the skilful way in which his agents incited the imperialistic ambitions of prominent cities like Athens, partly perhaps by his promises of support to the democratic parties. The result of the war was disastrous to Greece. Apart from the confiscations and exactions by which the Roman general L. Cornelius Sulla punished the disloyal communities, the extensive and protracted campaigns left Central Greece in a ruinous condition. During the last decades of the Roman republic European Greece was scarcely affected by contemporary wars nor yet exploited by Roman magistrates in the same systematic manner as most other provinces. Yet oppression by officials who traversed Greece from time to time and demanded lavish entertainments and presentations in the guise of *viaticum* or *aurum coronarium* was not unknown. Still greater was the suffering produced by the rapacity of Roman traders and capitalists: it is recorded that Sicyon was reduced to sell its most cherished art treasures in order to satisfy its creditors. A more indirect but none the less far-reaching drawback to Greek prosperity was the diversion of trade which followed upon the establishment of direct communication between Italy and the Levant. The most lucrative source of wealth which remained to the European Greeks was pasturage in large domains, an industry which almost exclusively profited the richer citizens and so tended to widen the breach between capitalists and the poorer classes, and still further to pauperize the latter. The coast districts and islands also suffered considerably from swarms of pirates who, in the absence of any strong fleet in Greek waters, were able to obtain a firm footing in Crete and freely plundered the chief trading places and sanctuaries; the most notable of such visitations was experienced in 69 B.C. by the island of Delos. This evil came to an end with the general suppression of piracy in the Mediterranean by Pompey (67 B.C.), but the depopulation which it had caused in some regions is attested by the fact that the victorious admiral settled some of his captives on the desolated coast strip of Achaea.

In the conflict between Julius Caesar and Pompey the Greeks provided the latter with a large part of his excellent fleet. In 48 B.C. the decisive campaign of the war was fought on Greek soil, and the resources of the land were severely taxed by the requisitions of both armies. As a result of Caesar's victory at Pharsalus, the whole country fell into his power; the treatment which it received was on the whole lenient, though individual cities were punished severely. After the murder of Caesar the Greeks supported the cause of Brutus (42 B.C.), but were too weak to render any considerable service. In 39 B.C. the Peloponnese for a short time was made over to Sextus Pompeius. During the subsequent period Greece remained in the hands of M. Antonius (Mark Antony), who imposed further exactions in order to defray the cost of his wars. The extensive levies which he made in 31 B.C. for his campaign against Octavian, and the contributions which his gigantic army required, exhausted the country's resources so completely that a general famine was prevented only by Octavian's prompt action after the battle of Actium in distributing supplies of grain and evacuating the land with all haste. The depopulation which resulted from the civil wars was partly remedied by the settlement of Italian colonists at Corinth and Patrae by Julius Caesar and Octavian; on the other hand, the foundation of Nicopolis (*q.v.*) by the latter merely had the effect of transferring the people from the country to the city.

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(ii.) *The Early Roman Empire* (27 B.C.-A.D. 323).—Under the emperor Augustus Thessaly was incorporated with Macedonia; the rest of Greece was converted into the province of Achaea, under the control of a senatorial proconsul resident at Corinth. Many states, including Athens and Sparta, retained their rights as free and nominally independent cities. The provincials were encouraged to send delegates to a communal synod (κοινὸν τῶν Ἀχαίων) which met at Argos to consider the general interests of the country and to uphold national Hellenic sentiment; the Delphic amphictyony was revived and extended so as to represent in a similar fashion northern and central Greece.

Social conditions.

Economic conditions did not greatly improve under the empire. Although new industries sprang up to meet the needs of Roman luxury, and Greek marble, textiles and table delicacies were in great demand, the only cities which regained a really flourishing trade were the Italian communities of Corinth and Patrae. Commerce languished in general, and the soil was mainly abandoned to pasturage. Though certain districts retained a measure of prosperity, *e.g.* Thessaly, Phocis, Elis, Argos and Laconia, huge tracts stood depopulated and many notable cities had sunk into ruins; Aetolia, Acarnania and Epirus never recovered from the effects of former wars and from the withdrawal of their surviving inhabitants into Nicopolis. Such wealth as remained was amassed in the hands of a few great landowners and capitalists; the middle class continued to dwindle, and large numbers of the people were reduced to earning a precarious subsistence, supplemented by frequent doles and largesses.

The social aspect of Greek life henceforward becomes its most attractive feature. After a long period of storm and stress, the European Hellenes had relapsed into a quiet and resigned frame of mind which stands in sharp contrast on the one hand with the energy and ability, and on the other with the vulgar intriguing of their Asiatic kinsmen. Seeing no future before them, the inhabitants were content to dwell in contemplation amid the glories of the past. National pride was fostered by the undisguised respect with which the leading Romans of the age treated Hellenic culture. And although this sentiment could degenerate into antiquarian pedantry and vanity, such as finds its climax in the diatribes of Apollonius of Tyana against the "barbarians," it prevented the nation from sinking into some of the worst vices of the age. A healthy social tone repressed extravagant luxury and the ostentatious display of wealth, and good taste long checked the spread of gladiatorial contests beyond the Italian community of Corinth. The most widespread abuse of that period, the adulation and adoration of emperors, was indeed introduced into European Greece and formed an essential feature of the proceedings at the Delphic amphictyony, but it never absorbed the energies of the people in the same way as it did in Asia. In order to perpetuate their old culture, the Greeks continued to set great store by classical education, and in Athens they possessed an academic centre which gradually became the chief university of the Roman empire. The highest representatives of this type of old-world refinement are to be found in Dio Chrysostom and especially in Plutarch of Chaeroneia (*q.v.*).

The relations between European Greece and Rome were practically confined to the sphere of scholarship. The Hellenes had so far lost their warlike qualities that they supplied scarcely any recruits to the army. They retained too much local patriotism to crowd into the official careers of senators or imperial servants. Although in the 1st century A.D. the astute Greek man of affairs and the *Graeculus esuriens* of Juvenal abounded in Rome, both these classes were mainly derived from the less pure-blooded population beyond the Aegean.

The influx of Greek rhetoricians and professors into Italy during the 2nd and 3rd centuries was balanced by the large number of travellers who came to Greece to frequent its sanatoria, and especially to admire its works of art; the abundance in which these latter were preserved is strikingly attested in the extant record of Pausanias (about A.D. 170).

The experience of the Greeks under their earliest governors seems to have been unfortunate, for in A.D. 15 they petitioned Tiberius to transfer the administration to an imperial legate. This new arrangement was sanctioned, but only lasted till A.D. 44, when Claudius restored the province to the senate. The proconsuls of the later 1st and 2nd centuries were sometimes ill qualified for their posts, but cases of oppression are seldom recorded against them. The years 66 and 67 were marked by a visit of the emperor Nero, who made a prolonged tour through Greece in order to display his artistic accomplishments at the various national festivals. In return for the flattering reception accorded to him he bestowed freedom and exemption from tribute upon the country. But this favour was almost neutralized by the wholesale depredations which he committed among the chief collections of art. A scheme for cutting through the Corinthian isthmus and so reviving the Greek carrying trade was inaugurated in his presence, but soon abandoned.

Roman administration.

As Nero's grant of self-government brought about a recrudescence of misplaced ambition and party strife, Vespasian revoked the gift and turned Achaea again into a province, at the same time burdening it with increased taxes. In the 2nd century a succession of genuinely phil-Hellenic emperors made serious attempts to revive the nation's prosperity. Important material benefits were conferred by Hadrian, who made a lengthy visit to Greece. Besides erecting useful public works in many cities, he relieved Achaea of its arrears of tribute and exempted it from various imposts. In order to check extravagance on the part of the free cities, he greatly extended the practice of placing them under the supervision of imperial functionaries known as *correctores*. Hadrian fostered national sentiment by establishing a new pan-Hellenic congress at Athens, while he gave recognition to the increasing ascendancy of Hellenic culture at Rome by his institution of the Athenaeum.

In the 3rd century the only political event of importance was the edict of Caracalla which threw open the Roman citizenship to large numbers of provincials. Its chief effect in Greece was to diminish the preponderance of the wealthy classes, who formerly had used their riches to purchase the franchise and so to secure exemption from taxation. The chief feature of this period is the renewal of the danger from foreign invasions. Already in 175 a tribe named Costoboci had penetrated into central Greece, but was there broken up by the local militia. In 253 a threatened attack was averted by the stubborn resistance of Thessalonica. In 267-268 the province was overrun by Gothic bands, which captured Athens and some other towns, but were finally repulsed by the Attic levies and exterminated with the help of a Roman fleet.

(iii.) *The Late Roman Empire.*—After the reorganization of the empire by Diocletian, Achaea occupied a prominent position in the "diocese" of Macedonia. Under Constantine I. it was included in the "prefecture" of Illyricum. It was subdivided into the "eparchies" of Hellas, Peloponnesus, Nicopolis and the islands, with headquarters at Thebes, Corinth, Nicopolis and Samos. Thessaly was incorporated with Macedonia. A complex hierarchy of imperial officials was now introduced and the system of taxation elaborated so as to yield a steady revenue to the central power. The levying of the land-tax was imposed upon the δεκάπρωτοι or "ten leading men," who, like the Latin *decuriones*, were entrusted henceforth with the administration in most cities. The tendency to reduce all constitutions to the Roman municipal pattern became prevalent under the rulers of this period, and the greater number of them was stereotyped by the general regulations of the Codex Theodosianus (438). Although the elevation of Constantinople to the rank of capital was prejudicial to Greece, which felt the competition of the new centre of culture and learning and had to part with numerous works of art destined to embellish its privileged neighbour, the general level of prosperity in the 4th century was rising. Commercial stagnation was checked by a renewed expansion of trade consequent upon the diversion of the trade routes to the east from Egypt to the Euxine and Aegean Seas. Agriculture remained in a depressed condition, and many small proprietors were reduced to serfdom; but the fiscal interests of the government called for the good treatment of this class, whose growth at the expense of the slaves was an important step in the gradual equalization of the entire population under the central despotism which restored solidarity to the Greek nation.

This prosperity received a sharp set-back by a series of unusually severe earthquakes in 375 and by the irruption of a host of Visigoths under Alaric (395-396), whom the imperial officers allowed to overrun the whole land unmolested and the local levies were unable to check. Though ultimately hunted down in Arcadia and induced to leave the province, Alaric had time to execute systematic devastations which crippled Greece for several decades. The arrears of taxation which accumulated in consequence were remitted by Theodosius II. in 428.

The emperors of the 4th century made several attempts to stamp out by edict the old pagan religion, which, with its accompaniment of festivals, oracles and mysteries, still maintained an outward appearance of vigour, and, along with the philosophy in which the intellectual classes found comfort, retained the affection of the Greeks. Except for the decree of Theodosius I. by which the Olympian games were interdicted (394), these measures had no great effect, and indeed were not rigorously enforced. Paganism survived in Greece till about 600, but the interchange of ideas and practices which the long-continued contact with Christianity had effected considerably modified its character. Hence the Christian religion, though slow in making its way, eventually gained a sure footing among a nation which accepted it spontaneously. The hold of the Church upon the Greeks was strengthened by the judicious manner in which the clergy, unsupported by official patronage and often out of sympathy with the Arian emperors, identified itself with the interests of the people. Though in the days when the orthodox Church found favour at court corruption spread among its higher branches, the clergy as a whole rendered conspicuous service in opposing the arbitrary interferences of the central government and in upholding the use of the Hellenic tongue, together with some rudiments of Hellenic culture.

The separation of the eastern and western provinces of the empire ultimately had an important effect in restoring the language and customs of Greece to their predominant position in the Levant. This result, however, was long retarded by the romanizing policy of Constantine and his successors. The emperors of the 5th and 6th centuries had no regard for Greek culture, and Justinian I. actively counteracted Hellenism by propagating Roman law in Greece, by impairing the powers of the self-governing cities, and by closing the philosophical schools at Athens (529). In course of time the inhabitants had so far forgotten their ancient culture that they abandoned the name of Hellenes for that of Romans (*Rhomaioi*). For a long time Greece continued to be an obscure and neglected province, with no interests beyond its church and its commercial operations, and its culture declined rapidly. Its history for some centuries dwindles into a record of barbarian invasions which, in addition to occasional plagues and earthquakes, seem to have been the only events found worthy of record by the contemporary chroniclers.

In the 5th century Greece was only subjected to brief raids by Vandal pirates (466-474) and Ostrogoths (482). In Justinian's reign irruptions by Huns and Avars took place, but led to no far-reaching results. The emperor had endeavoured to strengthen the country's defences by repairing the fortifications of cities and frontier posts (530), but his policy of supplanting the local guards by imperial troops and so rendering the natives incapable of self-defence was ill-advised; fortunately it was never carried out with energy, and so the Greek militias were occasionally able to render good service against invaders.

Slavonic immigrations.

Towards the end of the century mention is made for the first time of an incursion by Slavonic tribes (581). These invaders are to be regarded as merely the forerunners of a steady movement of immigration by which a considerable part of Greece passed for a time into foreign hands. It is doubtful how far the newcomers won their territory by force of arms; in view of the desolation of many rural tracts, which had long been in progress as a result of economic changes, it seems probable that numerous settlements were made on unoccupied land and did not challenge serious opposition. At any rate the effect upon the Greek population was merely to accelerate its emigration from the interior to the coastland and the cities. The foreigners, consisting mainly of Slovenes and Wends, occupied the mountainous inland, where they mostly led a pastoral life; the natives retained some strips of plain and dwelt secure in their walled towns, among which the newly-built fortresses of Monemvasia, Corone and Calamata soon rose to prosperity. The Slavonic element, to judge by the geographical names in that tongue which survive in Greece, is specially marked in N.W. Greece and Peloponnesus; central Greece appears to have been protected against them by the fortress-square of Chalcis, Thebes, Corinth and Athens. For a long time the two nations dwelt side by side without either displacing the other. The Slavs were too rude and poor, and too much distracted with cantonal feuds, to make any further headway; the Greeks, unused to arms and engrossed in commerce, were content to adopt a passive attitude. The central government took no steps to dislodge the invaders, until in 783 the empress Irene sent an expedition which reduced most of the tribes to pay tribute. In 810 a desperate attempt by the Slavs to capture Patrae was foiled; henceforth their power steadily decreased and their submission to the emperor was made complete by 850. A powerful factor in their subjugation was the Greek clergy, who by the 10th century had christianized and largely hellenized all the foreigners save a remnant in the

peninsula of Maina.

II. The Byzantine Period.—In the 7th century the Greek language made its way into the imperial army and civil service, but European Greece continued to have little voice in the administration. The land was divided into four "themes" under a yearly appointed civil and military governor. Imperial troops were stationed at the chief strategic points, while the natives contributed ships for naval defence. During the dispute about images the Greeks were the backbone of the image-worshipping party, and the iconoclastic edicts of Leo III. led to a revolt in 727 which, however, was easily crushed by the imperial fleet; a similar movement in 823, when the Greeks sent 350 ships to aid a pretender, met with the same fate. The firm government of the Isaurian dynasty seems to have benefited Greece, whose commerce and industry again became flourishing. In spite of occasional set-backs due to the depredations of pirates, notably the Arab corsairs who visited the Aegean from the 7th century onwards, the Greeks remained the chief carriers in the Levant until the rise of the Italian republics, supplying all Europe with its silk fabrics.

In the 10th century Greece experienced a renewal of raids from the Balkan tribes. The Bulgarians made incursions after 929 and sometimes penetrated to the Isthmus; but they mostly failed to capture the cities, and in 995 their strength was broken by a crushing defeat on the Spercheius at the hands of the Byzantine army. Yet their devastations greatly thinned the population of northern Greece, and after 1084 Thessaly was occupied without resistance by nomad tribes of Vlachs. In 1084 also Greece was subjected to the first attack from the new nations of the west, when the Sicilian Normans gained a footing in the Ionian islands. The same people made a notable raid upon the seaboard of Greece in 1145-1146, and sacked the cities of Thebes and Corinth. The Venetians also appear as rivals of the Greeks, and after 1122 their encroachments in the Aegean Sea never ceased. 464

In spite of these attacks, the country on the whole maintained its prosperity. The travellers Idrīsī of Palermo (1153) and Benjamin of Tudela (1161) testify to the briskness of commerce, which induced many foreign merchants to take up their residence in Greece. But this prosperity revived an aristocracy of wealth which used its riches and power for purely selfish ends, and under the increasing laxity of imperial control the *archontes* or municipal rulers often combined with the clergy in oppressing the poorer classes. Least of all were these nobles prepared to become the champions of Greece against foreign invaders at a time when they alone could have organized an effectual resistance.

III. *The Latin Occupation and Turkish Conquest.*—The capture of Constantinople and dissolution of the Byzantine empire by the Latins (1204) brought in its train an invasion of Greece by Frankish barons eager for new territory. The natives, who had long forgotten the use of arms and dreaded no worse oppression from their new masters, submitted almost without resistance, and only the N.W. corner of Greece, where Michael Angelus, a Byzantine prince, founded the "despotat" of Epirus, was saved from foreign occupation. The rest of the country was divided up between a number of Frankish barons, chief among whom were the dukes of Achaea (or Peloponnese) and "grand signors" of Thebes and Athens, the Venetians, who held naval stations at different points and the island of Crete, and various Italian adventurers who mainly settled in the Cyclades. The conquerors transplanted their own language, customs and religion to their new possessions, and endeavoured to institute the feudal system of land-tenure. Yet recognizing the superiority of Greek civil institutions they allowed the natives to retain their law and internal administration and confirmed proprietors in possession of their land on payment of a rent; the Greek church was subordinated to the Roman archbishops, but upheld its former control over the people. The commerce and industry of the Greek cities was hardly affected by the change of government.

Greek history during the Latin occupation loses its unity and has to be followed in several threads. In the north the "despots" of Epirus extended their rule to Thessaly and Macedonia, but eventually were repulsed by the Asiatic Greeks of Nicaea, and after a decisive defeat at Pelagonia (1259) reduced to a small dominion round Iannina. Thessaly continued to change masters rapidly. Till 1308 it was governed by a branch line of the Epirote dynasty. When this family died out it fell to the Grand Catalan Company; in 1350 it was conquered along with Epirus by Stephen Dushan, king of Servia. About 1397 it was annexed by the Ottoman Turks, who after 1431 also gradually wrested Epirus from its latest possessors, the Beneventine family of Tocco (1390-1469).

The leading power in central Greece was the Burgundian house de la Roche, which established a mild and judicious government in Boeotia and Attica and in 1261 was raised to ducal rank by the French king Louis IX. A conflict with the Grand Catalan Company resulted in a disastrous defeat of the Franks on the Boeotian Cephissus (1311) and the occupation of central Greece by the Spanish mercenaries, who seized for themselves the barons' fiefs and installed princes from the Sicilian house of Aragon as "dukes of Athens and Neopatras" (Thessaly). After seventy-five years of oppressive rule and constant wars with their neighbours the Catalans were expelled by the Peloponnesian baron Nerio Acciaiuoli. The new dynasty, whose peaceful government revived its subjects' industry, became tributary to the Turks about 1415, but was deposed by Sultan Mahommed II., who annexed central Greece in 1456.

The conquest of the Peloponnese was effected by two French knights, William Champlitte and Geoffrey Villehardouin, the latter of whom founded a dynasty of "princes of all Achaea." The rulers of this line were men of ability, who controlled their barons and spiritual vassals with a firm hand and established good order throughout their province. The Franks of the Morea maintained as high a standard of culture as their compatriots at home, while the natives grew rich enough from their industry to pay considerable taxes without discontent. The climax of the Villehardouins' power was attained under Prince William, who subdued the last independent cities of the coast and the mountaineers of Maina (1246-1248). In 1259, however, the same ruler was involved in the war between the rulers of Epirus and Nicaea, and being captured at the battle of Pelagonia, could only ransom himself by the cession of Laconia to the restored Byzantine empire. This new dependency after 1349 was treated with great care by the Byzantine monarchs, who sought to repress the violence of the local aristocracies by sending their kinsmen to govern under the title of "despots." On the other hand, with the extinction of the Villehardouin dynasty the Frankish province fell more and more into anarchy; at the same time the numbers of the foreigners were constantly dwindling through war, and as they disdained to recruit them by intermarriage, the preponderance of the native element in the Morea eventually became complete. Thus by 1400 the Byzantines were enabled to recover control over almost the whole peninsula and apportion it among several "despots." But the mutual quarrels of these princes soon proved fatal to their rule. Already in the 14th century they had employed Albanians and the Turkish pirates who harried their coasts as auxiliaries in their wars. The Albanians largely remained as settlers, and the connexion with the Turks could no longer be shaken off. In spite of attempts to fortify the Isthmus (1415) an Ottoman army penetrated into Morea and deported many inhabitants in 1423. An invasion of central Greece by the despot Constantine was punished by renewed raids in 1446 and 1450. In 1457 the despot Thomas withheld the tribute which he had recently stipulated to pay, but was reduced to obedience by an expedition under Mahommed II. (1458). A renewed revolt in 1459 was punished by an invasion attended with executions and deportations on a large scale, and by the annexation of the Morea to Turkey (1460).

IV. *The Turkish Dominion till 1800.*—Under the Ottoman government Greece was split up into six *sanjaks* or military divisions: (1) Morea, (2) Epirus, (3) Thessaly, (4) Euboea, Boeotia and Attica, (5) Aetolia and Acarnania, (6) the rest of central Greece, with capitals at Nauplia, Jannina, Trikkala, Negropont (Chalkis), Karlili and Lepanto; further divisions were subsequently composed of Crete and the islands. In each *sanjak* a number of fiefs was apportioned to Turkish settlers, who were bound in return to furnish some mounted men for the sultan's army, the total force thus held in readiness being over 7000. The local government was left in the hands of the archontes or primates in each community, who also undertook the farming of the taxes and the policing of their districts. Law was usually administered by the Greek clergy. The natives were not burdened with large imposts, but the levying of the land-tithes was effected in an inconvenient fashion, and the capitation-tax, to which all Christians were subjected was felt as a humiliation. A further grievance lay in the requisitions of forced labour which the pashas were entitled to call for; but the most galling exaction was the tribute of children for the recruiting of the Janissaries (*q.v.*), which was often levied with great ruthlessness. The habitual weakness of the central government also left the Greeks exposed to frequent oppression by the Turkish residents and by their own magistrates and clergy. But the new rulers met with singularly little opposition. The dangerous elements of the population had been cleared away by Mahommed's executions; the rest were content to absorb their energies in agriculture and commerce, which in spite of preferential duties and capitulations to foreign powers largely fell again into the hands of Greeks. Another important instrument by which the people were kept down was their own clergy, whom the Turkish rulers treated with marked favour and so induced to acquiesce in their dominion.

In the following centuries Greece was often the theatre of war in which the Greeks played but a passive part. Several wars with Venice (1463-79, 1498-1504) put the Turks in possession of the last Italian strongholds on the mainland. But the issue was mainly 465

fought out on sea; the conflicts which had never ceased in the Aegean since the coming of the Italians now grew fiercer than ever; Greek ships and sailors were frequently requisitioned for the Turkish fleets, and the damage done to the Greek seaboard by the belligerents and by fleets of adventurers and corsairs brought about the depopulation of many islands and coast-strips. The conquest of the Aegean by the Ottomans was completed by 1570; but Venice retained Crete till 1669 and never lost Corfu until its cession to France in 1797.

In 1684 the Venetians took advantage of the preoccupation of Turkey on the Danube to attack the Morea. A small mercenary army under Francesco Morosini captured the strong places with remarkable ease, and by 1687 had conquered almost the whole peninsula. In 1687 the invaders also captured Athens and Lepanto; but the former town had soon to be abandoned, and with their failure to capture Negropont (1688) the Venetians were brought to a standstill. By the peace of Karlowitz (1699) the Morea became a possession of Venice. The new rulers, in spite of the commercial restrictions which they imposed in favour of their own traders, checked the impoverishment and decrease of population (from 300,000 to 86,000) which the war had caused. By their attempts to cooperate with the native magistrates and the mildness of their administration they improved the spirit of their subjects. But they failed to make their government popular, and when in 1715 the Ottomans with a large and well-disciplined army set themselves to recover the Morea, the Venetians were left without support from the Greeks. The peninsula was rapidly recaptured and by the peace of Passarowitz (1718) again became a Turkish dependency. The gaps left about this time in the Greek population were largely made up by an immigration from Albania.

The condition of the Greeks in the 18th century showed a great improvement which gave rise to yet greater hopes. Already in the 17th century the personal services of the subjects had been commuted into money contributions, and since 1676 the tribute of children fell into abeyance. The increasing use of Greek officials in the Turkish civil service, coupled with the privileges accorded to the Greek clergy throughout the Balkan countries, tended to recall the consciousness of former days of predominance in the Levant. Lastly, the education of the Greeks, which had always remained on a comparatively high level, was rapidly improved by the foundation of new schools and academies.

The long neglect which Greece had experienced at the hands of the European Powers was broken in 1764, when Russian agents appeared in the country with promises of a speedy deliverance from the Turks. A small expedition under Feodor and Alexis Orloff actually landed in the Morea in 1769, but failed to rouse national sentiment. Although the Russian fleet gained a notable victory off Chesme near Chios, a heavy defeat near Tripolitza ruined the prospects of the army. The Albanian troops in the Turkish army subsequently ravaged the country far and wide, until in 1779 they were exterminated by a force of Turkish regulars. In 1774 a concession, embodied in the treaty of Kuchuk Kainarji, by which Greek traders were allowed to sail under the protection of the Russian flag, marked an important step in the rehabilitation of the country as an independent power. Greek commerce henceforth spread swiftly over the Mediterranean, and increased intercourse developed a new sense of Hellenic unity. Among the pioneers who fostered this movement should be mentioned Constantine Rhigas, the "modern Tyrtaeus," and Adamantios Coraës (*q.v.*), the reformer of the Greek tongue. The revived memories of ancient Hellas and the impression created by the French revolution combined to give the final impulse which made the Greeks strike for freedom. By 1800 the population of Greece had increased to 1,000,000, and although 200,000 of these were Albanians, the common aversion to the Moslem united the two races. The military resources of the country alone remained deficient, for the *armatoli* or local militias, which had never been quite disbanded since Byzantine times, were at last suppressed by Ali Pasha of Iannina and found but a poor substitute in the klephts who henceforth spring into prominence. But at the first sign of weakness in the Turkish dominion the Greek nation was ready to rise, and the actual outbreak of revolt had become merely a question of time.

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See also ROMAN EMPIRE, LATER; ATHENS.

(M. O. B. C.)

c. Modern History: 1800-1908.

The decadence of Turkey.

At the beginning of the 19th century Greece was still under Turkish domination, but the dawn of freedom was already breaking, and a variety of forces were at work which prepared the way for the acquisition of national independence. The decadence of the Ottoman empire, which began with the retreat of the Turks from Vienna in 1683, was indicated in the 18th century by the weakening of the central power, the spread of anarchy in the provinces, the ravages of the janissaries, and the establishment of practically independent sovereignties or fiefs, such as those of Mehemet of Bushat at Skodra and of Ali Pasha of Tepelen at Iannina; the 19th century witnessed the first uprisings of the Christian populations and the detachment of the outlying portions of European Turkey. Up to the end of the 18th century none of the subject races had risen in spontaneous revolt against the Turks, though in some instances they rendered aid to the sultan's enemies; the spirit of the conquered nations had been broken by ages of oppression. In some of the remoter and more mountainous districts, however, the authority of the Turks had never been completely established; in Montenegro a small fragment of the Serb race maintained its independence; among the Greeks, the Mainotes in the extreme south of the Morea and the Sphakiote mountaineers in Crete had never been completely subdued. Resistance to Ottoman rule was maintained sporadically in the mountainous districts by the Greek *klephts* or brigands, the counterpart of the Slavonic *haiduks*, and by the pirates of the Aegean; the *armatoles* or bodies of Christian warriors, recognized by the Turks as a local police, often differed little in their proceedings from the brigands whom they were appointed to pursue.

Russian influence.

Of the series of insurrections which took place in the 19th century, the first in order of time was the Servian, which broke out in 1804; the second was the Greek, which began in 1821. In both these movements the influence of Russia played a considerable part. In the case of the Servians Russian aid was mainly diplomatic, in that of the Greeks it eventually took a more material form. Since the days of Peter the Great, the eyes of Russia had been fixed on Constantinople, the great metropolis of the Orthodox faith. The policy of inciting the Greek Christians to revolt against their oppressors, which was first adopted in the reign of the empress Anna, was put into practical operation by the empress Catharine II., whose favourite, Orlov, appeared in the Aegean with a fleet in 1769 and landed in the Morea, where he organized a revolt. The attempt proved a failure; Orlov re-embarked, leaving the Greeks at the mercy of the Turks, and terrible massacres took place at Tripolitza, Lemnos and elsewhere. By the treaty of Kutchuk-Kainarji (July 21, 1774) Russia obtained a vaguely-defined protectorate

over the Orthodox Greek subjects of Turkey, and in 1781 she arrived at an arrangement with Austria, known as the "Greek project," for a partition of Turkish territory and the restoration of the Byzantine empire under Constantine, the son of Catharine II. The outbreak of the French Revolution distracted the attention of the two empires, but Russia never ceased to intrigue among the Christian subjects of Turkey. A revolt of the inhabitants of Suli in 1790 took place with her connivance, and in the two first decades of the 19th century her agents were active and ubiquitous.

Greek revolutionary activity.

The influence of the French Revolution, which pervaded all Europe, extended to the shores of the Aegean. The Greeks, who had hitherto been drawn together mainly by a common religion, were now animated by the sentiment of nationality and by an ardent desire for political freedom. The national awakening, as in the case of the other subject Christian nations, was preceded by a literary revival. Literary and patriotic societies, the Philhellenes, the Philomousi, came into existence; Greek schools were founded everywhere; the philological labours of Coraës, which created the modern written language, furnished the nation with a mode of literary expression; the songs of Rhigas of Velestino fired the enthusiasm of the people. In 1815 was founded the celebrated *Philiké Hetaerea*, or friendly society, a revolutionary organization with centres at Moscow, Bucharest, Triest, and in all the cities of the Levant; it collected subscriptions, issued manifestos, distributed arms and made preparations for the coming insurrection. The revolt of Ali Pasha of Iannina against the authority of the sultan in 1820 formed the prelude to the Greek uprising; this despot, who had massacred the Greeks by hundreds, now declared himself their friend, and became a member of the Hetaerea. In March 1821 Alexander Ypsilanti, a former aide-de-camp of the tsar Alexander I., and president of the Hetaerea, entered Moldavia from Russian territory at the head of a small force; in the same month Archbishop Germanos of Patras unfurled the standard of revolt at Kalavryta in the Morea.

Independence of Greece.

For the history of the prolonged struggle which followed see Greek War of Independence. The warfare was practically brought to a close by the annihilation of the Egyptian fleet at Navarino by the fleets of Great Britain, France and Russia on the 20th of October 1827. Nine months previously, Count John Capo d'Istria (*q.v.*), formerly minister of foreign affairs of the tsar Alexander, had been elected president of the Greek republic for seven years beginning on January 18, 1828. By the protocol of London (March 22, 1829) the Greek mainland south of a line drawn from the Gulf of Arta to the Gulf of Volo, the Morea and the Cyclades were declared a principality tributary to the sultan under a Christian prince. The limits drawn by the protocol of London were confirmed by the treaty of Adrianople (September 14, 1829), by which Greece was constituted an independent monarchy. The governments of Russia, France and England were far from sharing the enthusiasm which the gallant resistance of the Greeks had excited among the peoples of Europe, and which inspired the devotion of Byron, Cochrane, Sir Richard Church, Fabvier and other distinguished Philhellenes; jealousies prevailed among the three protecting powers, and the newly-liberated nation was treated in a niggardly spirit; its narrow limits were reduced by a new protocol (February 3, 1830), which drew the boundary line at the Aspropotamo, the Spercheios and the Gulf of Lamia. Capo d'Istria, whose Russian proclivities and arbitrary government gave great offence to the Greeks, was assassinated by two members of the Mavromichalis family (October 9, 1831), and a state of anarchy followed. Before his death the throne of Greece had been offered to Prince Leopold of Saxe-Coburg-Gotha, afterwards king of the Belgians, who declined it, basing his refusal on the inadequacy of the limits assigned to the new kingdom and especially the exclusion of Crete.

King Otto.

By the convention of London (May 7, 1832) Greece was declared an independent kingdom under the protection of Great Britain, France and Russia with Prince Otto, son of King Louis I. of Bavaria, as king. The frontier line, now traced from the Gulf of Arta to the Gulf of Lamia, was fixed by the arrangement of Constantinople (July 21, 1832). King Otto, who had been brought up in a despotic court, ruled absolutely for the first eleven years of his reign; he surrounded himself with Bavarian advisers and Bavarian troops, and his rule was never popular. The Greek chiefs and politicians, who found themselves excluded from all influence and advancement, were divided into three factions which attached themselves respectively to the three protecting powers. On the 15th of September 1843 a military revolt broke out which compelled the king to dismiss the Bavarians and to accept a constitution. A responsible ministry, a senate nominated by the king, and a chamber elected by universal suffrage were now instituted. Mavrocordatos, the leader of the English party, became the first prime minister, but his government was overthrown at the ensuing elections, and a coalition of the French and Russian parties under Kolettes and Metaxas succeeded to power. The warfare of factions was aggravated by the rivalry between the British and French ministers, Sir Edmond Lyons and M. Piscatory; King Otto supported the French party, and trouble arose with the British government, which in 1847 despatched warships to enforce the payment of interest on the loan contracted after the War of Independence. A British fleet subsequently blockaded the Peiraeus in order to obtain satisfaction for the claims of Pacifico, a Portuguese Jew under British protection, whose house had been plundered during a riot. On the outbreak of hostilities between Russia and Turkey in 1853 the Greeks displayed sympathy with Russia; armed bands were sent into Thessaly, and an insurrection was fomented in Epirus in the hope of securing an accession of territory. In order to prevent further hostile action on the part of Greece, British and French fleets made a demonstration against the Peiraeus, which was occupied by a French force during the Crimean War. The disappointment of the national hopes increased the unpopularity of King Otto, who had never acquiesced in constitutional rule. In 1862 a military revolt broke out, and a national assembly pronounced his deposition. The vacant throne was offered by the assembly to Duke Nicholas of Leuchtenberg, a cousin of the tsar, but the mass of the people desired a constitutional monarchy of the British type; a plebiscite was taken, and Prince Alfred of England was elected by an almost unanimous vote. The three protecting powers, however, had bound themselves to the exclusion of any member of their ruling houses. In the following year Prince William George of Schleswig-Holstein-Sonderburg-Glücksburg, whom the British government had designated as a suitable candidate, was elected by the National Assembly with the title "George I., king of the Hellenes." Under the treaty of London (July 13, 1863) the change of dynasty was sanctioned by the three protecting powers, Great Britain undertaking to cede to Greece the seven Ionian Islands, which since 1815 had formed a commonwealth under British protection.

Accession of George I.

On the 29th of October 1863 the new sovereign arrived in Athens, and in the following June the British authorities handed over the Ionian Islands to a Greek commissioner. King George thus began his reign under the most favourable auspices, the patriotic sentiments of the Greeks being flattered by the acquisition of new territory. He was, however, soon confronted with constitutional difficulties; party spirit ran riot at Athens, the ministries which he appointed proved short-lived, his counsellor, Count Sponneck, became the object of violent attacks, and at the end of 1864 he was compelled to accept an ultra-democratic constitution, drawn up by the National Assembly. This, the sixth constitution voted since the establishment of the kingdom, is that which is still in force. In the following year Count Sponneck left Greece, and the attention of the nation was concentrated on the affairs of Crete. The revolution which broke out in that island received moral and material support from the Greek government, with the tacit approval of Russia; military preparations were pressed forward at Athens, and cruisers were purchased, but the king, aware of the inability of Greece to attain her ends by warlike means, discouraged a provocative attitude towards Turkey, and eventually dismissed the bellicose cabinet of Koumoundouros. The removal of a powerful minister commanding a large parliamentary majority constituted an important precedent in the exercise of the royal prerogative; the king adopted a similar course with regard to Delyannes in 1892 and 1897. The relations with the porte, however, continued to grow worse, and Hobart Pasha, with a Turkish fleet, made a demonstration off Syra. The Cretan insurrection was finally crushed in the spring of 1869, and a conference of the powers, which assembled that year at Paris, imposed a settlement of the Turkish dispute on Greece, but took no steps on behalf of the Cretans. In 1870 the murder of several Englishmen by brigands in the neighbourhood of Athens produced an unfavourable impression in Europe; in the following year the confiscation of the Laurion mines, which had been ceded to a Franco-Italian company, provoked energetic action on the part of France and Italy. In 1875, after an acute constitutional crisis, Charilaos Trikoupes, who but ten months previously had been imprisoned for denouncing the crown in a newspaper article, was summoned to form a cabinet. This remarkable man, the only great statesman whom modern Greece has produced, exercised an extraordinary influence over his countrymen for the next twenty years; had he been able to maintain himself uninterruptedly in power during that period, Greece might have escaped a long succession of misfortunes. His principal opponent, Theodore Delyannes, succeeded in rallying a strong body of adherents, and political parties, hitherto divided into numerous factions, centred around these two prominent figures.

New frontier, 1881.

In 1877 the outbreak of the Russo-Turkish War produced a fever of excitement in Greece; it was felt that the quarrels of the party leaders compromised the interests of the country, and the populace of Athens insisted on the formation of a coalition cabinet. The "great" or "oecumenical" ministry, as it was called, now came into existence under the presidency of the veteran Kanares; in reality, however, it was controlled by Trikoupes, who, recognizing the

unpreparedness of the country, resolved on a pacific policy. The capture of Plevna by the Russians brought about the fall of the “oecumenical” ministry, and Koumoundouros and Delyannes, who succeeded to power, ordered the invasion of Thessaly. Their warlike energies, however, were soon checked by the signing of the San Stefano Treaty, in which the claims of Greece to an extension of frontier were altogether ignored. At the Berlin congress two Greek delegates obtained a hearing on the proposal of Lord Salisbury. The congress decided that the rectification of the frontier should be left to Turkey and Greece, the mediation of the powers being proposed in case of non-agreement; it was suggested, however, that the rectified frontier should extend from the valley of the Peneus on the east to the mouth of the Kalamas, opposite the southern extremity of Corfu, on the west. In 1879 a Greco-Turkish commission for the delimitation met first at Prevesa, and subsequently at Constantinople, but its conferences were without result, the Turkish commissioners declining the boundary suggested at Berlin. Greece then invoked the arbitration of the powers, and the settlement of the question was undertaken by a conference of ambassadors at Berlin (1880). The line approved by the conference was practically that suggested by the congress; Turkey, however, refused to accept it, and the Greek army was once more mobilized. It was evident, however, that nothing could be gained by an appeal to arms, the powers not being prepared to apply coercion to Turkey. By a convention signed at Constantinople in July 1881, the demarcation was entrusted to a commission representing the six powers and the two interested parties. The line drawn ran westwards from a point between the mouth of the Peneus and Platamona to the summits of Mounts Kritiri and Zygos, thence following the course of the river Arta to its mouth. An area of 13,395 square kilometres, with a population of 300,000 souls, was thus added to the kingdom, while Turkey was left in possession of Iannina, Metzovo and most of Epirus. The ceded territory was occupied by Greek troops before the close of the year.

Trikoupes and Delyannes.

In 1882 Trikoupes came into power at the head of a strong party, over which he exercised an influence and authority hitherto unknown in Greek political life. With the exception of three brief intervals (May 1885 to May 1886, October 1890 to February 1892, and a few months in 1893), he continued in office for the next twelve years. The reforms which he introduced during this period were generally of an unpopular character, and were loudly denounced by his democratic rivals; most of them were cancelled during the intervals when his opponent Delyannes occupied the premiership. The same want of continuity proved fatal to the somewhat ambitious financial programme which he now inaugurated. While pursuing a cautious foreign policy, and keeping in control the rash impetuosity of his fellow-countrymen, he shared to the full the national desire for expansion, but he looked to the development of the material resources of the country as a necessary preliminary to the realization of the dreams of Hellenism. With this view he endeavoured to attract foreign capital to the country, and the confidence which he inspired in financial circles abroad enabled him to contract a number of loans and to better the financial situation by a series of conversions. Under a stable, wise, and economical administration this far-reaching programme might perhaps have been carried out with success, but the vicissitudes of party politics and the periodical outbursts of national sentiment rendered its realization impossible. In April 1885 Trikoupes fell from power, and a few months later the indignation excited in Greece by the revolution of Philippopolis placed Delyannes once more at the head of a warlike movement. The army and fleet were again mobilized with a view to exacting territorial compensation for the aggrandizement of Bulgaria, and several conflicts with the Turkish troops took place on the frontier. The powers, after repeatedly inviting the Delyannes cabinet to disarm, established a blockade of Peiraeus and other Greek ports (8th May 1886), France alone declining to cooperate in this measure. Delyannes resigned (11th May) and Trikoupes, who succeeded to power, issued a decree of disarmament (25th May). Hostilities, however, continued on the frontier, and the blockade was not raised till 7th June. Trikoupes had now to face the serious financial situation brought about by the military activity of his predecessor. He imposed heavy taxation, which the people, for the time at least, bore without murmuring, and he continued to inspire such confidence abroad that Greek securities maintained their price in the foreign market. It was ominous, however, that a loan which he issued in 1890 was only partially covered. Meanwhile the Cretan difficulty had become once more a source of trouble to Greece. In 1889 Trikoupes was grossly deceived by the Turkish government, which, after inducing him to dissuade the Cretans from opposing the occupation of certain fortified posts, issued a firman annulling many important provisions in the constitution of the island. The indignation in Greece was intense, and popular discontent was increased by the success of the Bulgarians in obtaining the *exequatur* of the sultan for a number of bishops in Macedonia. In the autumn of 1890 Trikoupes was beaten at the elections, and Delyannes, who had promised the people a radical reform of the taxation, succeeded to power. He proved unequal, however, to cope with the financial difficulty, which now became urgent; and the king, perceiving that a crisis was imminent, dismissed him and recalled Trikoupes. The hope of averting national bankruptcy depended on the possibility of raising a loan by which the rapid depreciation of the paper currency might be arrested, but foreign financiers demanded guarantees which seemed likely to prove hurtful to Greek susceptibilities; an agitation was raised at Athens, and Trikoupes suddenly resigned (May 1893). His conduct at this juncture appears to have been due to some misunderstandings which had arisen between him and the king. The Sotiropoulos-Rhalles ministry which followed effected a temporary settlement with the national creditors, but Trikoupes, returning to power in the autumn, at once annulled the arrangement. He now proceeded to a series of arbitrary measures which provoked the severest criticism throughout Europe and exposed Greece to the determined hostility of Germany. A law was hastily passed which deprived the creditors of 70% of their interest, and the proceeds of the revenues conceded to the monopoly bondholders were seized (December 1893). Long negotiations followed, resulting in an arrangement which was subsequently reversed by the German bondholders. In January 1895 Trikoupes resigned office, in consequence of a disagreement with the crown prince on a question of military discipline. His popularity had vanished, his health was shattered, and he determined to abandon his political career. His death at Cannes (11th April 1896), on the eve of a great national convulsion, deprived Greece of his masterly guidance and sober judgment at a critical moment in her history.

Nationalist agitation, 1896.

His funeral took place at Athens on 23rd April, while the city was still decorated with flags and garlands after the celebration of the Olympic games. The revival of the ancient festival, which drew together multitudes of Greeks from abroad, led to a lively awakening of the national sentiment, hitherto depressed by the economic misfortunes of the kingdom, and a secret patriotic society, known as the *Ethniké Hetaerea*, began to develop prodigious activity, enrolling members from every rank of life and establishing branches in all parts of the Hellenic world. The society had been founded in 1894, by a handful of young officers who considered that the military organization of the country was neglected by the government; its principal aim was the preparation of an insurrectionary movement in Macedonia, which, owing to the activity of the Bulgarians and the reconciliation of Prince Ferdinand with Russia, seemed likely to be withdrawn for ever from the domain of Greek irredentism. The outbreak of another insurrection in Crete supplied the means of creating a diversion for Turkey while the movement in Macedonia was being matured; arms and volunteers were shipped to the island, but the society was as yet unable to force the hand of the government, and Delyannes, who had succeeded Trikoupes in 1895, loyally aided the powers in the restoration of order by advising the Cretans to accept the constitution of 1896. The appearance of strong insurgent bands in Macedonia in the summer of that year testified to the activity of the society and provoked the remonstrances of the powers, while the spread of its propaganda in the army led to the issue of a royal rescript announcing grand military manœuvres, the formation of a standing camp, and the rearmament of the troops with a new weapon (6th December). The objects of the society were effectually furthered by the evident determination of the porte to evade the application of the stipulated reforms in Crete; the Cretan Christians lost patience, and indignation was widespread in Greece. Emissaries of the society were despatched to the island, and affairs were brought to a climax by an outbreak at Canea on 4th February 1897. The Turkish troops fired on the Christians, thousands of whom took refuge on the warships of the powers, and a portion of the town was consumed by fire.

Cretan crisis, 1897.

Delyannes now announced that the government had abandoned the policy of abstention. On the 6th two warships were despatched to Canea, and on the 10th a torpedo flotilla, commanded by Prince George, left Peiraeus amid tumultuous demonstrations. The ostensible object of these measures was the protection of Greek subjects in Crete, and Delyannes was still anxious to avoid a definite rupture with Turkey, but the Ethniké Hetaerea had found means to influence several members of the ministry and to alarm the king. Prince George, who had received orders to prevent the landing of Turkish reinforcements on the island, soon withdrew from Cretan waters owing to the decisive attitude adopted by the commanders of the international squadron. A note was now addressed by the government to the powers, declaring that Greece could no longer remain a passive spectator of events in Crete, and on the 13th of February a force of 1500 men, under Colonel Vassos, embarked at Peiraeus. On the same day a Greek warship fired on a Turkish steam yacht which was conveying troops from Candia to Sitia. Landing near Canea on the night of the 14th, Colonel Vassos issued a proclamation announcing the occupation of Crete in the name of King George. He had received orders to expel the Turkish garrisons from the fortresses, but his advance on Canea was arrested by the international occupation of that town, and after a few engagements with the Turkish troops

and irregulars he withdrew into the interior of the island. Proposals for the coercion of Greece were now put forward by Germany, but Great Britain declined to take action until an understanding had been arrived at with regard to the future government of Crete. Eventually (2nd March) collective notes were addressed to the Greek and Turkish governments announcing the decision of the powers that (1) Crete could in no case in present circumstances be annexed to Greece; (2) in view of the delays caused by Turkey in the application of the reforms, Crete should be endowed with an effective autonomous administration, calculated to ensure it a separate government, under the suzerainty of the sultan. Greece was at the same time summoned to remove its army and fleet within the space of six days, and Turkey was warned that its troops must for the present be concentrated in the fortified towns and ultimately withdrawn from the island. The action of the powers produced the utmost exasperation at Athens; the populace demanded war with Turkey and the annexation of Crete, and the government drew up a reply to the powers in which, while expressing the conviction that autonomy would prove a failure, it indicated its readiness to withdraw some of the ships, but declined to recall the army. A suggestion that the troops might receive a European mandate for the preservation of order in the island proved unacceptable to the powers, owing to the aggressive action of Colonel Vassos after his arrival. Meanwhile troops, volunteers and munitions of war were hurriedly despatched to the Turkish frontier in anticipation of an international blockade of the Greek ports, but the powers contented themselves with a pacific blockade of Crete, and military preparations went on unimpeded.

War with Turkey.

While the powers dallied, the danger of war increased; on 29th March the crown prince assumed command of the Greek troops in Thessaly, and a few days later hostilities were precipitated by the irregular forces of the Ethniké Hetaerea, which attacked several Turkish outposts near Grevena. According to a report of its proceedings, subsequently published by the society, this invasion received the previous sanction of the prime minister. On 17th April Turkey declared war. The disastrous campaign which followed was of short duration, and it was evident from the outset that the Greeks had greatly underrated the military strength of their opponents (see Greco-Turkish War). After the evacuation of Larissa on the 24th, great discontent prevailed at Athens; Delyannes was invited by the king to resign, but refusing to do so was dismissed (29th April). His successor, Rhalles, after recalling the army from Crete (9th May) invoked the mediation of the powers, and an armistice was concluded on the 19th of that month. Thus ended an unfortunate enterprise, which was undertaken in the hope that discord among the powers would lead to a European war and the dismemberment of Turkey. Greek interference in Crete had at least the result of compelling Europe to withdraw the island for ever from Turkish rule. The conditions of peace put forward by Turkey included a war indemnity of £10,000,000 and the retention of Thessaly; the latter demand, however, was resolutely opposed by Great Britain, and the indemnity was subsequently reduced to £4,000,000. The terms agreed to by the powers were rejected by Rhalles; the chamber, however, refused him a vote of confidence and King George summoned Zaimes to power (October 3). The definitive treaty of peace, which was signed at Constantinople on the 6th of December, contained a provision for a slight modification of the frontier, designed to afford Turkey certain strategical advantages; the delimitation was carried out by a commission composed of military delegates of the powers and representatives of the interested parties. The evacuation of Thessaly by the Turkish troops was completed in June 1898. An immediate result of the war was the institution of an international financial commission at Athens, charged with the control of certain revenues assigned to the service of the national debt. The state of the country after the conclusion of hostilities was deplorable; the towns of northern Greece and the islands were crowded with destitute refugees from Thessaly; violent recriminations prevailed at Athens, and the position of the dynasty seemed endangered. A reaction, however, set in, in consequence of an attempt to assassinate King George (28th February 1898), whose great services to the nation in obtaining favourable terms from the powers began to receive general recognition. In the following summer the king made a tour through the country, and was everywhere received with enthusiasm. In the autumn the powers, on the initiative of Russia, decided to entrust Prince George of Greece with the government of Crete; on 26th November an intimation that the prince had been appointed high commissioner in the island was formally conveyed to the court of Athens, and on 21st December he landed in Crete amid enthusiastic demonstrations (see Crete).

Macedonian troubles.

In April 1899 Zaimes gave way to Theotokes, the chief of the Trikoupist party, who introduced various improvements in the administration of justice and other reforms including a measure transferring the administration of the army from the minister of war to the crown prince. In May 1901 a meeting took place at Abbazia, under the auspices of the Austro-Hungarian government, between King George and King Charles of Rumania with a view to the conclusion of a Graeco-Rumanian understanding directed against the growth of Slavonic, and especially Bulgarian, influence in Macedonia. The compact, however, was destined to be short-lived owing to the prosecution of a Rumanian propaganda among the semi-Hellenized Vlachs of Macedonia. In November riots took place at Athens, the patriotic indignation of the university students and the populace being excited by the issue of a translation of the Gospels into modern Greek at the suggestion of the queen. The publication was attributed to Panslavist intrigues against Greek supremacy over the Orthodox populations of the East, and the archbishop of Athens was compelled to resign. Theotokes, whose life was attempted, retired from power, and Zaimes formed a cabinet. In 1902 the progress of the Bulgarian movement in Macedonia once more caused great irritation in Greece. Zaimes, having been defeated at the elections in December, resigned, and was succeeded by Delyannes, whose popularity had not been permanently impaired by the misfortunes of the war. Delyannes now undertook to carry out extensive economic reforms, and introduced a measure restoring the control of the army to the ministry of war. He failed, however, to carry out his programme, and, being deserted by a section of his followers, resigned in June 1903, when Theotokes again became prime minister. The new cabinet resigned within a month owing to the outbreak of disturbances in the currant-growing districts, and Rhalles took office for the second time (July 8). The Bulgarian insurrection in Macedonia during the autumn caused great excitement in Athens, and Rhalles adopted a policy of friendship with Turkey (see Macedonia). The co-operation of the Greek party in Macedonia with the Turkish authorities exposed it to the vengeance of the insurgents, and in the following year a number of Greek bands were sent into that country. The campaign of retaliation was continued in subsequent years.

Murder of Delyannes.

In December Rhalles, who had lost the support of the Delyannist party, was replaced by Theotokes, who promulgated a scheme of army reorganization, introduced various economies and imposed fresh taxation. In December the government was defeated on a vote of confidence and Delyannes once more became prime minister, obtaining a considerable majority in the elections which followed (March 1905), but on the 13th of June he was assassinated. He was succeeded by Rhalles, who effected a settlement of the currant question and cultivated friendly relations with Turkey in regard to Macedonia.

In the autumn anti-Greek demonstrations in Rumania led to a rupture of relations with that country. In December the ministry resigned owing to an adverse vote of the chamber, and Theotokes formed a cabinet. The new government, as a preliminary to military and naval reorganization, introduced a law directed against the candidature of military officers for parliament. Owing to obstruction practised by the military members of the chamber a dissolution took place, and at the subsequent elections (April 1906) Theotokes secured a large majority. In the autumn various excesses committed against the Greeks in Bulgaria in reprisal for the depredations of the Greek bands in Macedonia caused great indignation in Greece, but diplomatic relations between the two countries were not suspended. On the 26th of September Prince George, who had resigned the high commissionership of Crete, returned to Athens; the designation of his successors was accorded by the protecting powers to King George as a satisfaction to Greek national sentiment (see Crete). The great increase in the activity of the Greek bands in Macedonia during the following spring and summer led to the delivery of a Turkish note at Athens (July 1907), which was supported by representations of the powers.

In October 1908 the proclamation by the Cretan assembly of union with Greece threatened fresh complications, the cautious attitude of the Greek government leading to an agitation in the army, which came to a head in 1909. On the 18th of July a popular demonstration against his Cretan policy led to the resignation of Theotokes, whose successor, Rhalles, announced a programme of military and economical reform. The army, however, took matters into its own hands, and on the 23rd of August Rhalles was replaced by Mavromichales, the nominee of the “Military League.” For the next six months constitutional government was practically superseded by that of the League, and for a while the crown itself seemed to be in danger. The influence of the League, however, rapidly declined; army and navy quarrelled; and a fresh *coup d’état* at the beginning of 1910 failed of its effect, owing to the firmness of the king. On the 7th of February Mavromichales resigned, and his successor, Dragoumis, accepting the Cretan leader Venezelo’s suggestion of a national assembly, succeeded in persuading the League to dissolve (March 29) on receiving the king’s assurance that such an assembly would be convened. On the 31st, accordingly, King George formally proclaimed the

convocation of a national assembly to deal with the questions at issue.

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(J. D. B.)

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1 See also GREEK ART, GREEK LANGUAGE, GREEK LAW, GREEK LITERATURE, GREEK RELIGION.

2 For the Geology of Greece see: M. Neumayr, &c., *Denks. k. Akad. Wiss. Wien, math.-nat. Cl.* vol. xl. (1880); A. Philippson, *Der Peloponnes* (Berlin, 1892) and "Beiträge zur Kenntnis der griechischen Inselwelt," *Peterm. Mitt.*, Ergänz.-heft No. 134 (1901); R. Lepsius, *Geologie von Attika* (Berlin, 1893); L. Cayeux, "Phénomènes de charriage dans la Méditerranée orientale," *C. R. Acad. Sci. Paris*, vol. cxxxvi. (1903) pp. 474-476; J. Deprat, "Note préliminaire sur la géologie de l'île d'Eubée," *Bull. Soc. Géol. France*, ser. 4, vol. iii. (1903) pp. 229-243, p. vii. and "Note sur la géologie du massif du Pélion et sur l'influence exercée par les massifs archéens sur la tectonique de l'Égéide," *ib.* vol. iv. (1904), pp. 299-338.

3 No state survey of Greece was available in 1908, though a survey had been undertaken by the ministry of war.

4 It would be more accurate to say to the year 1500 B.C. At Cnossus the palace is sacked soon after this date, and the art, both in Crete and in the whole Aegean area, becomes lifeless and decadent.

5 See T. W. Allen in the *Classical Review*, vol. xx. (1906), No. 4 (May).

6 It has been impugned by J. Beloch, *Griechische Geschichte*, i. 149 ff.

7 *History of Greece* (Eng. trans., i. 32 ff.); cf. the same writer's *Ioner vor der ionischen Wanderung*.

8 If the account of early Athenian constitutional history given in the *Athenaion Politeia* were accepted, it would follow that the archons were inferior in authority to the Eupatrid Boulē, the Areopagus.

9 The dates before the middle of the 7th century are in most cases artificial, *e.g.* those given by Thucydides (book vi.) for the earlier Sicilian settlements. See J. P. Mahaffy, *Journal of Hellenic Studies*, ii. 164 ff.

10 At Syracuse the *demos* makes common cause with the Sicel serf-population against the nobles (Herod. vii. 155).

11 An exception should perhaps be made in the case of Thucydides.

12 The Peisistratidae come off better, however.

13 The numbers given by Herodotus (upwards of 5,000,000) are enormously exaggerated. We must divide by ten or fifteen to arrive at a probable estimate of the forces that actually crossed the Hellespont.

14 It has been denied by some writers (*e.g.* by A. H. J. Greenidge) that Athens interfered with the constitutions of the subject-states. For the view put forward in the text, the following passages may be quoted: Aristotle, *Politics* 1307 b 20; Isocrates, *Panegyricus*, 105, 106, *Panathenaicus*, 54 and 68; Xenophon, *Hellenica*, iii. 4. 7; Ps.-Xen. *Athen. Constit.* i. 14, iii. 10.

15 The evidence seems to indicate that all the more important criminal cases throughout the empire were tried in the Athenian courts. In civil cases Athens secured to the citizens of the subject-states the right of suing Athenian citizens, as well as citizens of other subject-states.

16 After this date, and partly in consequence of the change, the archonship, to which sortition was applied, loses its importance. The *strategi* (generals) become the chief executive officials. As election was never replaced by the lot in their case, the change had less practical meaning than might appear at first sight. (See ARCHON; STRATEGUS.)

17 For an estimate of the numbers annually engaged in the service of Athens, see Aristot. *Ath. Pol.* 24. 3.

18 Foreign is not used here as equivalent to non-Hellenic. It means "belonging to another state, whether Greek or barbarian."

19 It failed even to create a united Arcadia or a strong Messenia.

20 See Demosthenes, *On the Crown*, 235. Philip was αὐτοκράτωρ, δεσπότης, ἡγεμών, κύριος πάντων.

21 See *Archidamus*, 68; Philippus, 96, ὥστε ῥᾴον εἶναι συστῆσαι στρατόπεδον μεῖζον καὶ κρεῖττον ἐκ τῶν πλανωμένων ἢ ἐκ τῶν πολιτευομένων.

22 The *Liturgies* (*e.g.* the trierarchy) had much the same effect as a direct tax levied upon the wealthiest citizens.

23 His extreme caution in approaching the question at an earlier date is to be noticed. See, *e.g.*, *Olynthiacs*, i. 19, 20.

24 *e.g.* the two expeditions sent to Euboea, the cavalry force that took part in the battle of Mantinea, and the army that fought at Chaeronea. The troops in all these cases were citizens.

25 For the altered character of warfare see Demosthenes, *Philippics*, iii. 48, 49.

26 It is known that the councillors were appointed by the states in the Aetolian league; it is only surmised in the case of the Achaean.

27 Strictly speaking, to 411 B.C. For the last seven years of the war our principal authority is Xenophon, *Hellenica*, i., ii.

28 Possibly some of his information about Persian affairs may have been derived, at first or second hand, from Zopyrus, son of Megabyzus, whose flight to Athens is mentioned in iii. 160.

29 For a defence of Thucydides' judgment on all three statesmen, see E. Meyer, *Forschungen*, ii. 296-379.

30 On the discrepancies between Xenophon's account of the Thirty, and Aristotle's, see G. Busolt, *Hermes* (1898), pp. 71-86.

31 The fragment of the New Historian (*Oxyrhynchus Papyri*, vol. v.) affords exceedingly important material for the criticism of Xenophon's narrative. (See THEOPOMPUS.)

32 Vol. iii. goes down to the end of the Peloponnesian War.

GREEK ART. It is proposed in the present article to give a brief account of the history of Greek art and of the principles embodied in that history. In any broad view of history, the products of the various arts practised by a people constitute an objective and most important record of the spirit of that people. But all nations have not excelled in the same way: some have found their best expression in architecture, some in music, some in poetry. The Greeks most fully embodied their ideas in two ways, first in their splendid literature, both prose and verse, and secondly, in their plastic and pictorial art, in which matter they have remained to our days among the greatest instructors of mankind. The three arts of architecture, sculpture and painting were brought by them into a focus; and by their aid they produced a visible splendour of public life such as has perhaps been nowhere else attained.

The volume of the remains of Greek civilization is so vast, and the learning with which these have been discussed is so ample, that it is hopeless to attempt to give in a work like the present any complete account of either. Rather we shall be frankly eclectic, choosing for consideration such results of Greek art as are most noteworthy and most characteristic. In some cases it will be possible to give a reference to a more detailed treatment of particular monuments in these volumes under the heading of the places to which they belong. Architectural detail is relegated to ARCHITECTURE and allied architectural articles. Coins (see NUMISMATICS) and

gems (see GEMS) are treated apart, as are vases (CERAMICS), and in the bibliography which closes this article an effort is made to direct those who wish for further information in any particular branch of our subject.

1. *The Rediscovery of Greek Art.*—The visible works of Greek architect, sculptor and painter, accumulated in the cities of Greece and Asia Minor until the Roman conquest. And in spite of the ravages of conquering Roman generals, and the more systematic despoilings of the emperors, we know that when Pausanias visited Greece, in the age of the Antonines, it was from coast to coast a museum of works of art of all ages. But the tide soon turned. Works of originality were no longer produced, and a succession of disasters gradually obliterated those of previous ages. In the course of the Teutonic and Slavonic invasions from the north, or in consequence of earthquakes, very frequent in Greece, the splendid cities and temples fell into ruins; and with the taking of Constantinople by the Franks in 1204 the last great collection of works of Greek sculpture disappeared. But while paintings decayed, and works in metal were melted down, many marble buildings and statues survived, at least in a mutilated condition, while terra-cotta is almost proof against decay.

With the Renaissance attention was directed to the extant remains of Greek and Roman art; as early as the 15th century collections of ancient sculpture, coins and gems began to be formed in Italy; and in the 16th the enthusiasm spread to Germany and France. The earl of Arundel, in the reign of James I., was the first Englishman to collect antiques from Italy and Asia Minor: his marbles are now in the Ashmolean Museum at Oxford. Systematic travel in Greece for the discovery of buildings and works of art was begun by Spon and Wheler (1675-1676); and the discovery of Pompeii in 1748 opened a new chapter in the history of ancient art.

But though kings delighted to form galleries of ancient statues, and the great Italian artists of the Renaissance drew from them inspiration for their paintings and bronzes, the first really critical appreciation of Greek art belongs to Winckelmann (*Geschichte der Kunst des Altertums*, 1764). The monuments accessible to Winckelmann were but a very small proportion of those we now possess, and in fact mostly works of inferior merit: but he was the first to introduce the historical method into the treatment of ancient art, and to show how it embodied the ideas of the great peoples of the ancient world. He was succeeded by Lessing, and the waves of thought and feeling set in motion by these two affected the cultivated class in all nations,—they inspired in particular Goethe in Germany and Lord Byron in England.

The second stage in the recovery of Greek art begins with the permission accorded by the Porte to Lord Elgin in 1800 to remove to England the sculptural decoration of the Parthenon and other buildings of Athens. These splendid works, after various vicissitudes, became the property of the English nation, and are now the chief treasures of the British Museum. The sight of them was a revelation to critics and artists, accustomed only to the base copies which fill the Italian galleries, and a new epoch in the appreciation of Greek art began. English and German savants, among whom Cockerell and Stackelberg were conspicuous, recovered the glories of the temples of Aegina and Bassae. Leake and Ross, and later Curtius, journeyed through the length and breadth of Greece, identifying ancient sites and studying the monuments which were above ground. Ross reconstructed the temple of Athena Nikē on the Acropolis of Athens from fragments rescued from a Turkish bastion.

Meantime more methodical exploration brought to light the remains of remarkable civilizations in Asia, not only in the valley of the Euphrates, but in Lycia, whence Sir Charles Fellows brought to London the remains of noteworthy tombs, among which the so-called Harpy Monument and Nereid Monument take the first place. Still more important were the accessions derived from the excavations of Sir Charles Newton, who in the years 1852-1859 resided as consul in Asia Minor, and explored the sites of the mausoleum at Halicarnassus and the shrine of Demeter at Cnidus. Pullan at Priene, and Wood at Ephesus also made fruitful excavations.

The next landmark is set by the German excavations at Olympia (1876 and foll.), which not only were conducted with a scientific completeness before unknown, and at great cost, but also established the principle that in future all the results of excavations in Greece must remain in the country, the right of first publication only remaining with the explorers. The discovery of the Hermes of Praxiteles, almost the only certain original of a great Greek sculptor which we possess, has furnished a new and invaluable fulcrum for the study of ancient art. In emulation of the achievements of the Germans at Olympia, the Greek archaeological society methodically excavated the Athenian acropolis, and were rewarded by finding numerous statues and fragments of pediments belonging to the age of Peisistratus, an age when the promise of art was in full bud. More recently French explorers have made a very thorough examination of the site of Delphi, and have succeeded in recovering almost complete two small treasuries, those of the people of Athens and of Cnidus or Siphnos, the latter of 6th-century Ionian work, and adorned with extremely important sculpture.

No other site of the same importance as Athens, Olympia and Delphi remains for excavation in Greece proper. But in all parts of the country, at Tegea, Corinth, Sparta and on a number of other ancient sites, striking and important monuments have come to light. And at the same time monuments already known in Italy and Sicily, such as the temples of Paestum, Selinus and Agrigentum have been re-examined with fuller knowledge and better system. Only Asia Minor, under the influence of Turkish rule, has remained a country where systematic exploration is difficult. Something, however, has been accomplished at Ephesus, Priene, Assos and Miletus, and great works of sculpture such as the reliefs of the great altar at Pergamum, now at Berlin, and the splendid sarcophagi from Sidon, now at Constantinople, show what might be expected from methodic investigation of the wealthy Greek cities of Asia.

From further excavations at Herculaneum we may expect a rich harvest of works of art of the highest class, such as have already been found in the excavations on that site in the past; and the building operations at Rome are constantly bringing to light fine statues brought from Greece in the time of the Empire, which are now placed in the collections of the Capitol and the Baths of Diocletian.

The work of explorers on Greek sites requires as its complement and corrective much labour in the great museums of Europe. As museum work apart from exploration tends to dilettantism and pedantry, so exploration by itself does not produce reasoned knowledge. When a new building, a great original statue, a series of vases is discovered, these have to be fitted in to the existing frame of our knowledge; and it is by such fitting in that the edifice of knowledge is enlarged. In all the museums and universities of Europe the fresh examination of new monuments, the study of style and subject, and attempts to work out points in the history of ancient art, are incessantly going on. Such archaeological work is an important element in the gradual education of the world, and is fruitful, quite apart from the particular results attained, because it encourages a method of thought. Archaeology, dealing with things which can be seen and handled, yet being a species of historic study, lies on the borderland between the province of natural science and that of historic science, and furnishes a bridge whereby the methods of investigation proper to physical and biological study may pass into the human field.

> These investigations and studies are recorded, partly in books, but more particularly in papers in learned journals (see bibliography), such as the *Mitteilungen* of the German Institute, and the *English Journal of Hellenic Studies*.

An example or two may serve to give the reader a clearer notion of the recent progress in the knowledge of Greek art.

To begin with architecture. Each of the palmary sites of which we have spoken has rendered up examples of early Greek temples. At Olympia there is the Heraeum, earliest of known temples of Greece proper, which clearly shows the process whereby stone gradually superseded wood as a constructive material. At Delphi the explorers have been so fortunate as to be able to put together the treasuries of the Cnidians (or Siphnians) and of the Athenians. The former (see fig. 17) is a gem of early Ionic art, with two Caryatid figures in front in the place of columns, and adorned with the most delicate tracery and fine reliefs. On the Athenian acropolis very considerable remains have been found of temples which were destroyed by the Persians when they temporarily occupied the site in 480 B.C. And recently the ever-renewed study of the Erechtheum has resulted in a restoration of its original form more valuable and trustworthy than any previously made.

In the field of sculpture recent discoveries have been too many and too important to be mentioned at any length. One instance may serve to mark the rapidity of our advance. When the remains of the Mausoleum were brought to London from the excavations begun by Sir Charles Newton in 1856 we knew from Pliny that four great sculptors, Scopas, Bryaxis, Leochares and Timotheus, had worked on the sculpture; but we knew of these artists little more than the names. At present we possess many fragments of two pediments at Tegea executed under the direction of Scopas, we have a basis with reliefs signed by Bryaxis, we have identified a

group in the Vatican museum as a copy of the Ganymede of Leochares, and we have pedimental remains from Epidaurus which we know from inscriptional evidence to be either the works of Timotheus or made from his models. Any one can judge how enormously our power of criticizing the Mausoleum sculptures, and of comparing them with contemporary monuments, has increased.

In regard to ancient painting we can of course expect no such fresh illumination. Many important wail-paintings of the Roman age have been found at Rome and Pompeii: but we have no certain or even probable work of any great Greek painter. We have to content ourselves with studying the colouring of reliefs, such as those of the sarcophagi at Constantinople, and the drawings on vases, in order to get some notion of the composition and drawing of painted scenes in the great age of Greece. As to the portraits of the Roman age painted on wood which have come in considerable quantities from Egypt, they stand at a far lower level than even the paintings of Pompeii. The number of our vase-paintings, however, increases steadily, and whole classes, such as the early vases of Ionia, are being marked off from the crowd, and so becoming available for use in illustrating the history of Hellenic civilization.

The study of Greek art is thus one which is eminently progressive. It has over the study of Greek literature the immense advantage that its materials increase far more rapidly. And it is becoming more and more evident that a sound and methodic study of Greek art is quite as indispensable as a foundation for an artistic and archaeological education as the study of Greek poets and orators is as a basis of literary education. The extreme simplicity and thorough rationality of Greek art make it an unrivalled field for the training and exercise of the faculties which go to the making of the art-critic and art historian.

2. *The General Principles of Greek Art.*—Before proceeding to sketch the history of the rise and decline of Greek art, it is desirable briefly to set forth the principles which underlie it (see also P. Gardner's *Grammar of Greek Art*).

As the literature of Greece is composed in a particular language, the grammar and the syntax of which have to be studied before the works in poetry and prose can be read, so Greek works of art are composed in what may be called an artistic language. To the accidence of a grammar may be compared the mere technique of sculpture and painting: to the syntax of a grammar correspond the principles of composition and grouping of individual figures into a relief or picture. By means of the rules of this grammar the Greek artist threw into form the ideas which belonged to him as a personal or a racial possession.

We may mention first some of the more external conditions of Greek art; next, some of those which the Greek spirit posited for itself.

No nation is in its works wholly free from the domination of climate and geographical position; least of all a people so keenly alive to the influence of the outer world as the Greeks. They lived in a land where the soil was dry and rocky, far less hospitable to vegetation than that of western Europe, while on all sides the horizon of the land was bounded by hard and jagged lines of mountain. The sky was extremely clear and bright, sunshine for a great part of the year almost perpetual, and storms, which are more than passing gales, rare. It was in accordance with these natural features that temples and other buildings should be simple in form and bounded by clear lines. Such forms as the cube, the oblong, the cylinder, the triangle, the pyramid abound in their constructions. Just as in Switzerland the gables of the chalets match the pine-clad slopes and lofty summits of the mountains, so in Greece, amid barer hills of less elevation, the Greek temple looks thoroughly in place. But its construction is related not only to the surface of the land, but also to the character of the race. M. Émile Boutmy, in his interesting *Philosophie de l'architecture en Grèce*, has shown how the temple is a triumph of the senses and the intellect, not primarily emotional, but showing in every part definite purpose and design. It also exhibits in a remarkable degree the love of balance, of symmetry, of a mathematical proportion of parts and correctness of curvature which belong to the Greek artist.

The purposes of a Greek temple may be readily judged from its plan. Primarily it was the abode of the deity, whose statue dwelt in it as men dwell in their own houses. Hence the cella or *naos* is the central feature of the building. Here was placed the image to which worship was brought, while the treasures belonging to the god were disposed partly in the cella itself, partly in a kind of treasury which often existed, as in the Parthenon, behind the cella. There was in large temples a porch of approach, the *pronaos*, and another behind, the *opisthodomos*. Temples were not meant for, nor accommodated to, regular services or a throng of worshippers. Processions and festivals took place in the open air, in the streets and fields, and men entered the abodes of the gods at most in groups and families, commonly alone. Thus when a place had been found for the statue, which stood for the presence of the god, for the small altar of incense, for the implements of cult and the gifts of votaries, little space remained free, and great 472
spaces or subsidiary chapels such as are usual in Christian cathedrals did not exist (see Temple).

Here our concern is not with the purposes or arrangements of a temple, but with its appearance and construction, regarded as a work of art, and as an embodiment of Greek ideas. A few simple and striking principles may be formulated, which are characteristic of all Greek buildings:—

(i.) Each member of the building has one function, and only one, and this function controls even the decoration of that member. The pillar of a temple is made to support the architrave and is for that purpose only. The flutings of the pillar, being perpendicular, emphasize this fact. The line of support which runs up through the pillar is continued in the triglyph, which also shows perpendicular grooves. On the other hand, the wall of a temple is primarily meant to divide or space off; thus it may well at the top be decorated by a horizontal band of relief, which belongs to it as a border belongs to a curtain. The base of a column, if moulded, is moulded in such a way as to suggest support of a great weight; the capital of a column is so carved as to form a transition between the column and the cornice which it supports.

(ii.) Greek architects took the utmost pains with the proportions, the symmetry as they called it, of the parts of their buildings. This was a thing in which the keen and methodical eyes of the Greeks delighted, to a degree which a modern finds it hard to understand. Simple and natural relations, 1:2, 1:3, 2:3 and the like, prevailed between various members of a construction. All curves were planned with great care, to please the eye with their flow; and the alternations and correspondences of features is visible at a glance. For example, the temple must have two pediments and two porches, and on its sides and fronts triglyph and metope must alternate with unvarying regularity.

(iii.) Rigidity in the simple lines of a temple is avoided by the device that scarcely any outline is actually straight. All are carefully planned and adapted to the eye of the spectator. In the Parthenon the line of the floor is curved, the profiles of the columns are curved, the corner columns slope inward from their bases, the columns are not even equidistant. This elaborate adaptation, called entasis, was expounded by F. C. Penrose in his work on Athenian architecture, and has since been observed in several of the great temples of Greece.

(iv.) Elaborate decoration is reserved for those parts of the temple which have, or at least appear to have, no strain laid upon them. It is true that in the archaic age experiments were made in carving reliefs on the lower drums of columns (as at Ephesus) and on the line of the architrave (as at Assus). But such examples were not followed. Nearly always the spaces reserved for mythological reliefs or groups are the tops of walls, the spaces between the triglyphs, and particularly the pediments surmounting the two fronts, which might be left hollow without danger to the stability of the edifice. Detached figures in the round are in fact found only in the pediments, or standing upon the tops of the pediments. And metopes are sculptured in higher relief than friezes.

> "When we examine in detail even the simplest architectural decoration, we discover a combination of care, sense of proportion, and reason. The flutings of an Ionic column are not in section mere arcs of a circle, but made up of a combination of curves which produce a beautiful optical effect; the lines of decoration, as may be best seen in the case of the Erechtheum, are cut with a marvellous delicacy. Instead of trying to invent new schemes, the mason contents himself with improving the regular patterns until they approach perfection, and he takes everything into consideration. Mouldings on the outside of a temple, in the full light of the sun, are differently planned from those in the diffused light of the interior. Mouldings executed in soft stone are less fine than those in marble. The mason thinks before he works, and while he works, and thinks in entire correspondence with his surroundings."[1]

Greek architecture, however, is treated elsewhere (see Architecture); we will therefore proceed to speak briefly of the principles exemplified in sculpture. Existing works of Greek sculpture fall easily into two classes. The first class comprises what may be called works of substantive art, statues or groups made for their own sake and to be judged by themselves. Such are cult-statues of gods and goddesses from temple and shrine, honorary portraits of rulers or of athletes, dedicated groups and the like. The second class comprises decorative sculptures, such as were made, usually in relief, for the decoration of temples and tombs and other buildings,

and were intended to be subordinate to architectural effect.

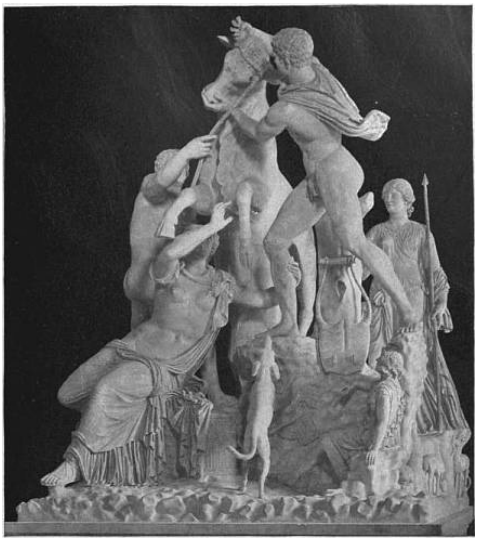
Speaking broadly, it may be said that the works of substantive sculpture in our museums are in the great majority of cases copies of doubtful exactness and very various merit. The Hermes of Praxiteles is almost the only marble statue which can be assigned positively to one of the great sculptors; we have to work back towards the productions of the peers of Praxiteles through works of poor execution, often so much restored in modern times as to be scarcely recognizable. Decorative works, on the other hand, are very commonly originals, and their date can often be accurately fixed, as they belong to known buildings. They are thus infinitely more trustworthy and more easy to deal with than the copies of statues of which the museums of Europe, and more especially those of Italy, are full. They are also more commonly unrestored. But yet there are certain disadvantages attaching to them. Decorative works, even when carried out under the supervision of a great sculptor, were but seldom executed by him. Usually they were the productions of his pupils or masons. Thus they are not on the same level of art as substantive sculpture. And they vary in merit to an extraordinary extent, according to the capacity of the man who happened to have them in hand, and who was probably but little controlled. Every one knows how noble are the pedimental sculptures of the Parthenon. But we know no reason why they should be so vastly superior to the frieze from Phigalia; nor why the heads from the temple at Tegea should be so fine, while those from the contemporary temple at Epidaurus should be comparatively insignificant. From the records of payments made to the sculptors who worked on the Erechtheum at Athens it appears that they were ordinary masons, some of them not even citizens, and paid at the rate of 60 drachms (about 60 francs) for each figure, whether of man or horse, which they produced. Such piece-work would not, in our days, produce a very satisfactory result.

Works of substantive sculpture may be divided into two classes, the statues of human beings and those of the gods. The line between the two is not, however, very easy to draw, or very definite. For in representing men the Greek sculptor had an irresistible inclination to idealize, to represent what was generic and typical rather than what was individual, and the essential rather than the accidental. And in representing deities he so fully anthropomorphized them that they became men and women, only raised above the level of everyday life and endowed with a superhuman stateliness. Moreover, there was a class of heroes represented largely in art who covered the transition from men to gods. For example, if one regards Heracles as a deity and Achilles as a man of the heroic age and of heroic mould, the line between the two will be found to be very narrow.

PLATE I.

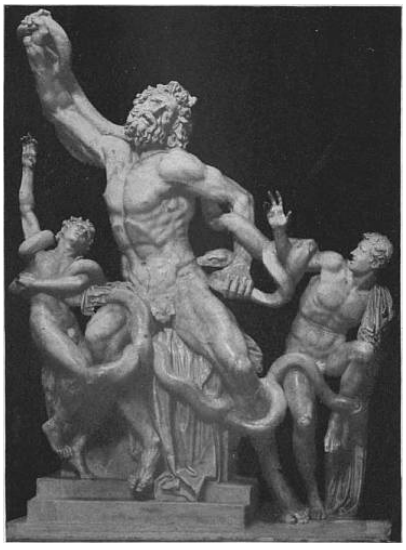
Photo, Brogi.

FIG. 50. HARMODIUS AND ARISTOGITON. (NAT. MUS. NAPLES.)



Photo, Brogi.

FIG. 51. FARNESE BULL. (NAPLES.)



Photo, Anderson.

FIG. 52. LAOCOON GROUP. (VATICAN.)

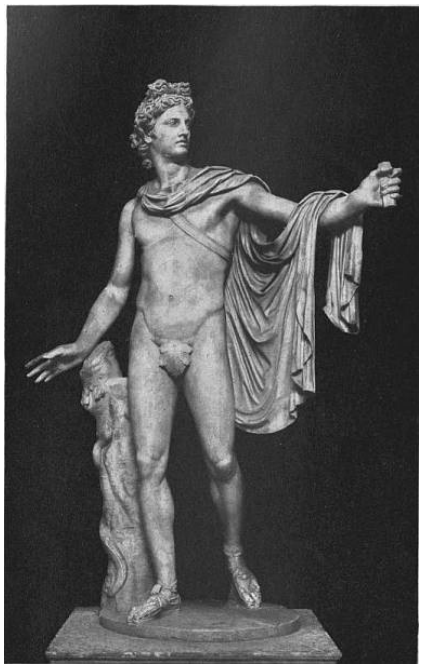
Photo, Anderson.

FIG. 53. GANYMEDE OF LEOCHARES. (VATICAN.)

PLATE II.

Photo, Anderson.

FIG. 54.—FLYING OF MARSYAS. (VILLA ALBANI, ROME.)



Photo, Anderson.

FIG. 55.—APOLLO OF THE BELVIDERE. (VATICAN.)

FIG. 56.—HEAD OF YOUNG ALEXANDER. (BRIT. MUS.)

Photo, Seebah.

FIG. 57.—HERMES OF ALCAMENES. (CONSTANTINOPLE.)

FIG. 58.—THESEUS AND AMAZON (ERETRIA).

Photo, Mansell.

FIG. 59.—DRUM OF COLUMN FROM EPHESUS. (BRIT. MUS.)

Photo, Baldwin Coolidge.

FIG. 60.—YOUNG HERMES. (MUS. OF FINE ARTS, BOSTON.)

Nevertheless one may for convenience speak first of human and afterwards of divine figures. It was the custom from the 6th century onwards to honour those who had done any great achievement by setting up their statues in conspicuous positions. One of the earliest examples is that of the tyrannicides, Harmodius and Aristogiton, a group, a copy of which has come down to us (Plate I. fig. 50[2]). Again, people who had not won any distinction were in the habit of dedicating to the deities portraits of themselves or of a priest or priestess, thus bringing themselves, as it were, constantly under the notice of a divine patron. The rows of statues before the temples at Miletus, Athens and elsewhere came thus into being. But from the point of view of art, by far the most important class of portraits consisted of athletes who had won victories at some of the great games of Greece, at Olympia, Delphi or elsewhere. Early in the 6th century the custom arose of setting up portraits of athletic victors in the great sacred places. We have records of numberless such statues executed by all the greatest sculptors. When Pausanias visited Greece he found them everywhere far too numerous for complete mention.

It is the custom of studying and copying the forms of the finest of the young athletes, combined with the Greek habit of complete nudity during the sports, which lies at the basis of Greek excellence in sculpture. Every sculptor had unlimited opportunities for observing young vigorous bodies in every pose and in every variety of strain. The natural sense of beauty which was an endowment of the Greek race impelled him to copy and preserve what was excellent, and to omit what was ungainly or poor. Thus there existed, and in fact there was constantly accumulating, a vast series of types of male beauty, and the public taste was cultivated to an extreme delicacy. And of course this taste, though it took its start from athletic customs, and was mainly nurtured by them, spread to all branches of portraiture, so that elderly men, women, and at last even children, were represented in art with a mixture of ideality and fidelity to nature such as has not been reached by the sculpture of any other people.

The statues of the gods began either with stiff and ungainly figures roughly cut out of the trunk of a tree, or with the monstrous and symbolical representations of Oriental art. In the Greece of late times there were still standing rude pillars, with the tops sometimes cut into a rough likeness to the human form. And in early decoration of vases and vessels one may find Greek deities represented with wings, carrying in their hands lions or griffins, bearing on their heads lofty crowns. But as Greek art progressed it grew out of this crude symbolism. In the language of Brunn, the Greek artists borrowed from Oriental or Mycenaean sources the letters used in their works, but with these letters they spelled out the ideas of their own nation. What the artists of Babylon and Egypt express in the character of the gods by added attribute or symbol, swiftness by wings, control of storms by the thunderbolt, traits of character by animal heads, the artists of Greece work more and more fully into the sculptural type; modifying the human subject by the constant addition of something which is above the ordinary level of humanity, until we reach the Zeus of Pheidias or the Demeter of Cnidus. When the decay of the high ethical art of Greece sets in, the gods become more and more warped to the merely human level. They lose their dignity, but they never lose their charm.

The decorative sculpture of Greece consists not of single figures, but of groups; and in the arrangement of these groups the strict Greek laws of symmetry, of rhythm, and of balance, come in. We will take the three most usual forms, the pediment, the metope and the frieze, all of which belong properly to the temple, but are characteristic of all decoration, whether of tomb, trophy or other monument.

The form of the pediment is triangular; the height of the triangle in proportion to its length being about 1:8. The conditions of space are here strict and dominant; to comply with them requires some ingenuity. To a modern sculptor the problem thus presented is almost insoluble; but it was allowable in ancient art to represent figures in a single composition as of various sizes, in correspondence not to actual physical measurement but to importance. As the more important figures naturally occupy the midmost place in a pediment, their greater size comes in conveniently. And by placing some of the persons of the group in a standing, some in a seated, some in a reclining position, it can be so contrived that their heads are equidistant from the upper line of the pediment.

The statues in a Greek pediment, which are after quite an early period usually executed in the round, fall into three, five or seven groups, according to the size of the whole. As examples to illustrate this exposition we take the two pediments of the temple at Olympia, the most complete which have come down to us, which are represented in figs. 33 and 34. The east pediment represents the preparation for the chariot race between Pelops and Oenomaus. The central group consists of five figures, Zeus standing between the two pairs of competitors and their wives. In the corners recline the two river-gods Alpheus and Cladeus, who mark the locality; and the two sides are filled up with the closely corresponding groups of the chariots of Oenomaus and Pelops with their grooms and attendants. Every figure to the left of Zeus balances a corresponding figure on his right, and all the lines of the composition slope towards a point above the apex of the pediment.

In the opposite or western pediment is represented the battle between Lapiths and Centaurs which broke out at the marriage of Peirithous in Thessaly. Here we have no less than nine groups. In the midst is Apollo. On each side of him is a group of three, a centaur trying to carry off a woman and a Lapith striking at him. Beyond these on each side is a struggling pair, next once more a trio of two combatants and a woman, and finally in each corner two reclining female figures, the outermost apparently nymphs to mark locality. A careful examination of these compositions will show the reader more clearly than detailed description how clearly in this kind of group Greek artists adhered to the rules of rhythm and of balance.

The metopes were the long series of square spaces which ran along the outer walls of temples between the upright triglyphs and the cornice. Originally they may have been left open and served as windows; but the custom came in as early as the 7th century, first of filling them in with painted boards or slabs of stone, and next of adorning them with sculpture. The metopes of the Treasury of Sicyon at Delphi (Plate IV. fig. 66) are as early as the first half of the 6th century. This recurrence of a long series of square fields for occupation well suited the genius and the habits of the sculptor. As subjects he took the successive exploits of some hero such as Heracles or Theseus, or the contemporary groups of a battle. His number of figures was limited to two or three, and these figures had to be worked into a group or scheme, the main features of which were determined by artistic tradition, but which could be varied in a hundred ways so as to produce a pleasing and in some degree novel result.

With metopes, as regards shape, we may compare the reliefs of Greek tombs, which also usually occupy a space roughly square, and which also comprise but a few figures arranged in a scheme generally traditional. A figure standing giving his hand to one seated, two men standing hand in hand, or a single figure in some vigorous pose is sufficient to satisfy the simple but severe taste of the Greeks.

In regard to friezes, which are long reliefs containing figures ranged between parallel lines, there is more variety of custom. In temples the height of the relief from the background varies according to the light in which it was to stand, whether direct or diffused. Almost all Greek friezes, however, are of great simplicity in arrangement and perspective. Locality is at most hinted at by a few stones or trees, never actually portrayed. There is seldom more than one line of figures, in combat or procession, their heads all equidistant from the top line of the frieze. They are often broken up into groups; and when this is the case, figure will often balance figure on either side of a central point almost as rigidly as in a pediment. An example of this will be found in the section of the Mausoleum frieze shown in fig. 70, Plate IV. Some of the friezes executed by Greek artists for semi-Greek peoples, such as those adorning the tomb at Trysa in Lycia, have two planes, the figures in the background being at a higher level.

The rules of balance and symmetry in composition which are followed in Greek decorative art are still more to be discerned in the paintings of vases, which must serve, in the absence of more dignified compositions, to enlighten us as to the methods of Greek painters. Great painters would not, of course, be bound by architectonic rule in the same degree as the mere workmen who painted vases. Nevertheless we must never forget that Greek painting of the earlier ages was of extreme simplicity. It did not represent localities, save by some slight hint; it had next to no perspective; the colours used were but very few even down to the days of Apelles. Most of the great pictures of which we hear consisted of but one or two figures; and when several figures were introduced they were kept apart and separately treated, though, of course, not without relation to one another. Idealism and ethical purpose must have predominated in painting as in sculpture and in the drama and in the writing of history.

We will take from vases a few simple groups to illustrate the laws of Greek drawing; colouring we cannot illustrate.

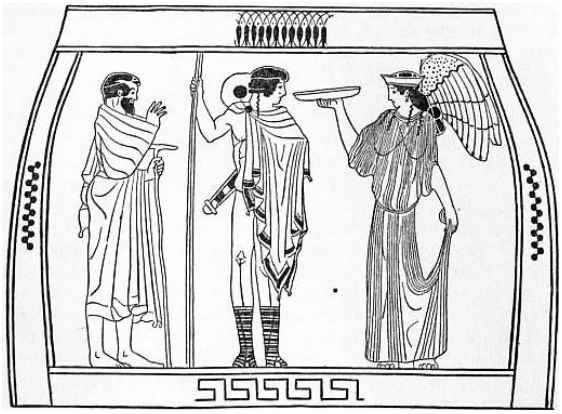
The fields offered to the draughtsman on Greek vases naturally follow the form of the vase; but they may be set down as approximately round, square or oblong. To each of these spaces the artist carefully adapts his designs. In fig. 1 we have a characteristic adaptation to circular form by the vase painter Epictetus.

In the early period of painting all the space not occupied by the figures is filled with patterns or accessories, or even animals which have no connexion with the subject (fig. 9). In later and more developed art, as in this example, the outlines are so figured as to fill the space.

When the space is square we have much the same problem as is presented by the metope spaces of a temple. In the case of both square and oblong fields the laws of balance are carefully observed. Thus if there is an even number of figures in the scheme, two of them will form a sort of centre-piece, those on either side balancing one another. If the number of figures is uneven, either there will be a group of three in the midst, or the midmost figure will be so contrived that he belongs wholly to neither side, but is the balance between them. These remarks will be made clear by figs. 2 and 3, which repeat the two sides of an amphora, one of which bears a design of three figures, the other of four.

(*Brit. Mus. Catalogue of Vases*, iii, Pl. vi. 2).

Fig. 1.—Kylix by Epictetus.



From *Wiener Vorlegeblätter*, 1890, Pl. viii., by permission of the Director of the *K. K. Österr. Archäol. Institut.*

Fig. 2.

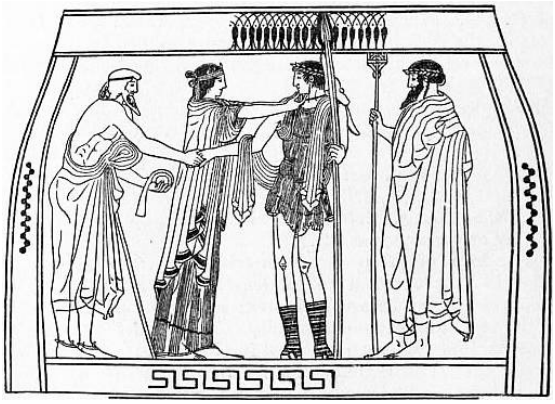


Fig. 3.

Vase Drawings.

The Greek artist not only adhered to the architectonic laws of balance and symmetry, but he thought in schemes. Certain group arrangements had a recognized signification. There are schemes for warriors fighting on equal terms, and schemes which represent the defeat of one of these by the other; the vanquished has commonly fallen on his knees, but still defends himself. There is a scheme for the leading away of a captive woman; the captor leads her by the hand looking back at her, while a friend walks behind to ward off pursuit. Such schemes, are constantly varied in detail, and often very skilfully varied; but the Greek artist uses schemes as a sort of shorthand, to show as clearly as possible what he meant. They serve the same purpose as the mask in the acting of a play, the first glance at which will tell the spectators what they have to look for.

No doubt the great painters of Greece were not so much under the dominion of these schemes as the very inferior painters of vases. They used the schemes for their own purposes instead of being used by them. But as great poets do not revolt against the restrictions of the sonnet or of rhyme, so great artists in Greece probably found recognized conventions more helpful than hurtful.

Students of Greek sculpture and vases must be warned not to suppose that Greek reliefs and drawings can be taken as direct illustrations of Homer or the dramatists. Book illustration in the modern sense did not exist in Greece. The poet and the painter pursued courses which were parallel, but never in actual contact. Each moved by the traditions of his own craft. The poet took the accepted tale and enshrined it in a setting of feeling and imagination. The painter took the traditional schemes which were current, and altered or enlarged them, adding new figures and new motives, but not attempting to set aside the general scheme. But varieties suitable to poetry were not likely to be suitable in painting. Thus it is but seldom that a vase-painter seems to have had in his mind, as he drew, passages of the Homeric poems, though these might well be familiar to him. And almost never does a vase-painting of the 5th century show any sign of the influence of the dramatists, who were bringing before the Athenian public on the stage many of the tales and incidents popular with the vase-painter. Only on vases of lower Italy of the 4th century and later we can occasionally discern something of Aeschylean and Euripidean influence in the treatment of a myth; and even in a few cases we may discern that the vase-painter has taken suggestions direct from the actors in the theatre.

3. *Historic Sketch.*—We propose next to trace in brief outline the history of Greek art from its rise to its decay. We begin with the rise of a national art, after the destruction of the Minoan and Mycenaean civilizations of early Greece by the irruption of tribes from the north, that is to say, about 800 B.C., and we stop with the Roman age of Greece, after which Greek art works in the service of the conquerors (see Roman Art). The period 800-50 B.C. we divide into four sections: (1) the period down to the Persian Wars, 800-480 B.C.; (2) the period of the early schools of art, 480-400 B.C.; (3) the period of the later great schools, 400-300 B.C.; (4) the period of Hellenistic art, 300-50 B.C. In dealing with these successive periods we confine our sketch to the three greater branches of representative art, architecture, sculpture and painting, which in Greece are closely connected. The lesser arts, of pottery, gem-engraving, coin-stamping and the like, are treated of under the heads of Ceramics, Gem, Numismatics, &c., while the more technical treatment of architectural construction are dealt with under Architecture and allied architectural articles. Further, for brief accounts of the chief artists the reader is referred to biographical articles, under such heads as Pheidias, Praxiteles, Apelles. We treat here only of the main course of art in its historic evolution.

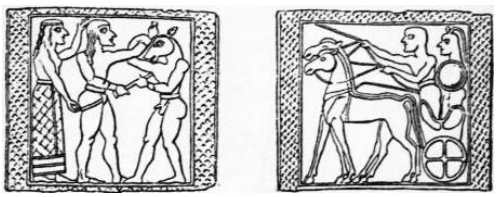
Period I. 800-480 B.C.—The fact is now generally allowed that the Mycenaean, or as it is now termed Aegean, civilization was for the most part destroyed by an invasion from the north. This invasion appears to have been gradual; its racial character is much in dispute. Archaeological evidence abundantly proves that it was the conquest of a more by a less rich and civilized race. In the graves of the period (900-600 B.C.) we find none of the wealthy spoil which has made celebrated the tombs of Mycenae and Vaphio (*q.v.*). The character of the pottery and the bronze-work which is found in these later graves reminds us of the art of the necropolis of Hallstatt in Austria, and other sites belonging to what is called the bronze age of North Europe. Its predominant characteristic is the use of geometrical forms, the lozenge, the triangle, the maeander, the circle with tangents, in place of the elaborate spirals and plant-forms which mark Mycenaean ware. For this reason the period from the 9th to the 7th century in Greece passes by the name of "the Geometric Age." It is commonly held that in the remains of the Geometric Age we may trace the influence of the Dorians, who, coming in as a hardy but uncultivated race, probably of purer Aryan blood than the previous inhabitants of Greece, not only brought to an end the wealth and the luxury which marked the Mycenaean age, but also replaced an art which was in character essentially southern by one which belonged rather to the north and the west. The great difficulty inherent in this view, a difficulty which has yet to be met, lies in the fact that some of the most abundant and characteristic remains of the geometric age which we possess come, not from Peloponnesus, but from Athens and Boeotia, which were never conquered by the Dorians.

Northern invasion.

Fig. 4.—Geometric Vase from Rhodes. (Ashmolean Museum.)

Mon. d. Inst. ix. 39.

Fig. 5.—Corpse with Mourners.

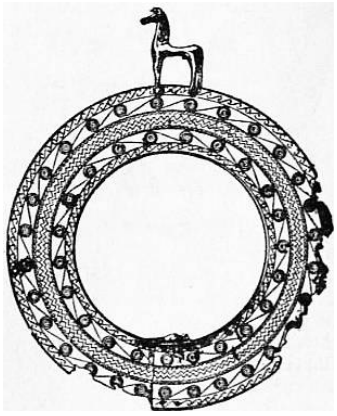


Arch. Zeit. 1884, 8.

Fig. 6.—Gold Plaques: Corinth.

Geometric ware.

The geometric ware is for the most part adorned with painted patterns only. Fig. 4 is a characteristic example, a small two-handled vase from Rhodes in the Ashmolean Museum, the adornment of which consists in zigzags, circles with tangents, and lines of water birds, perhaps swans. Sometimes, however, especially in the case of large vases from the cemetery at Athens, which adjoins the Dipylon gate, scenes from Greek life are depicted, from daily life, not from legend or divine myth. Especially scenes from the lying-in-state and the burial of the dead are prevalent. An excerpt from a Dipylon vase (fig. 5) shows a dead man on his couch surrounded by mourners, male and female. Both sexes are apparently represented naked, and are distinguished very simply; some of them hold branches to sprinkle the corpse or to keep away flies. It will be seen how primitive and conventional is the drawing of this age, presenting a wonderful contrast to the free drawing and modelling of the Mycenaean age. In the same graves with the pottery are sometimes found plaques of gold or bronze, and towards the end of the geometric age these sometimes bear scenes from mythology, treated with the greatest simplicity. For example, in the museum of Berlin are the contents of a tomb found at Corinth, consisting mainly of gold work of geometric decoration. But in the same tomb were also found gold plates or plaques of repoussé work bearing subjects from Greek legend. Two of these are shown in fig. 6. On one Theseus is slaying the Minotaur, while Ariadne stands by and encourages the hero. The tale could not have been told in a simpler or more straightforward way. On the other we have an armed warrior with his charioteer in a chariot drawn by two horses. The treatment of the human body is here more advanced than on the vases of the Dipylon. On the site of Olympia, where Mycenaean remains are not found, but the earliest monuments show the geometric style, a quantity of dedications in bronze have been found, the decoration of which belongs to this style. Fig. 7 shows the handle of a tripod from Olympia, which is adorned with geometric patterns and surmounted by the figure of a horse.



Olympia iv. 33.

Fig. 7.—Handle of Tripod.

It was about the 6th century that the genius of the Greeks, almost suddenly, as it seems to us, emancipated itself from the thraldom of tradition, and passed beyond the limits with which the nations of the east and west had hitherto been content, in a free and bold effort towards the ideal. Thus the 6th century marks the stage in art in which it may be said to have become definitely Hellenic. The Greeks still borrowed many of their decorative forms, either from the prehistoric remains in their own country or, through Phoenician agency, from the old-world empires of Egypt and Babylon, but they used those forms freely to express their own meaning. And gradually, in the course of the century, we see both in the painting of vases and in sculpture a national spirit and a national style forming under the influence of Greek religion and mythology, Greek athletic training, Greek worship of beauty. We must here lay emphasis on the fact, which is sometimes overlooked in an age which is greatly given to the Darwinian search after origins, that it is one thing to trace back to its original sources the nascent art of Greece, and quite another thing to follow and to understand its gradual embodiment of Hellenic ideas and civilization. The immense success with which the veil has in late years been lifted from the prehistoric age of Greece, and the clearness with which we can discern the various strands woven into the web of Greek art, have tended to fix our attention rather on what Greece possessed in common with all other peoples at the same early stage of civilization than on what Greece added for herself to this common stock. In many respects the art of Greece is incomparable—one of the great inspirations which have redeemed the world from mediocrity and vulgarity. And it is the searching out and appreciation of this unique and ideal beauty in all its phases, in idea and composition and execution, which is the true task of Greek archaeological science.

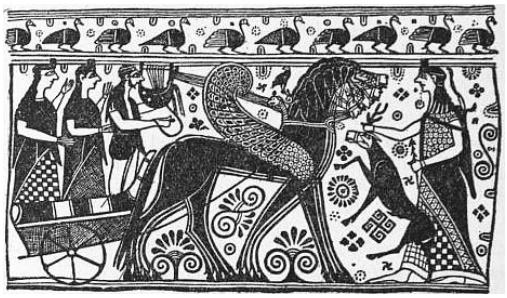
Ionian vases.

In very recent years it has been possible, for the first time, to trace the influence of Ionian painting, as represented by vases, on the rise of art. The discoveries at Naucratis and Daphnae in Egypt, due to the keenness and pertinacity of W. M. Flinders Petrie, threw new light on this matter. It became evident that when those cities were first inhabited by Ionian Greeks, in the 7th century, they used pottery of several distinct but allied styles, the most notable feature of which was the use of the lotus in decoration, the presence of continuous friezes of animals and of monsters, and the filling up of the background with rosettes, lozenges and other forms. Fig. 8 shows a vase found in Rhodes which illustrates this Ionian decoration. The sphinx, the deer and the swan are prominent on it, the last-named serving as a link between the geometric ware and the more brilliant and varied ware of the Ionian cities. The assignment of the many species of early Ionic ware to various Greek localities, Miletus, Samos, Phocaea and other cities, is a work of great difficulty, which now closely occupies the attention of archaeologists. For the results of their studies the reader is referred to two recent German works, Böhlau's *Aus ionischen und italischen Nekropolen*, and Endt's *Beiträge zur ionischen Vasenmalerei*. The feature which is most interesting in this pottery from our present point of view is the way in which representations of Greek myth and legend gradually make their way, and relegate the mere decoration of the vases to borders and neck. One of the earliest examples of representation of a really Greek subject is the contest of Menelaus and Euphorbus on a plate found in Rhodes. On the vases of Melos, of the 7th century, which are, however,

not Ionian, but rather Dorian in character, we have a certain number of mythological scenes, battles of Homeric heroes and the like. One of these is shown in fig. 9. It represents Apollo in a chariot drawn by winged horses, playing on the lyre, and accompanied by a pair of Muses, meeting his sister Artemis. It is notable that Apollo is bearded, and that Artemis holds her stag by the horns, much in the manner of the deities on Babylonian cylinders; in the other hand she carries an arrow; above is a line of water birds.

Mus. Napoléon, 57.

FIG. 8.—Jug from Rhodes.

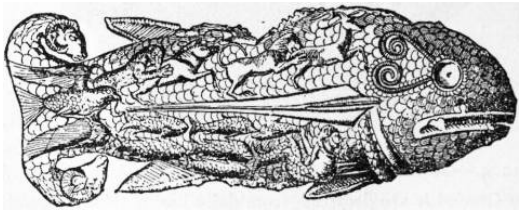


Conze. *Mel. Tongefässe*, 4.

FIG. 9.—Vase Painting: Melos.

Some sites in Asia Minor and the islands adjoining, such cities as Samos, Camirus in Rhodes, and the Ionian colonies on the Black Sea, have furnished us with a mass of ware of the Ionian class, but it seldom bears interesting subjects; it is essentially decorative. For Ionian ware which has closer relation to Greek mythology and history we must turn elsewhere. The cemeteries of the great Etruscan cities, Caere in particular, have preserved for us a large number of vases, which are now generally recognized as Ionian in design and drawing, though they may in some cases be only Italian imitations of Ionian imported ware. Thus has been filled up what was a blank page in the history of early Greek art. The Ionian painting is unrestrained in character, characterized by a licence not foreign to the nature of the race, and wants the self-control and moderation which belong to Doric art, and to Attic art after the first.

Some of the most interesting examples of early Ionic painting are found on the sarcophagi of Clazomenae. In that city in archaic times an exceptional custom prevailed of burying the dead in great coffins of terra-cotta adorned with painted scenes from chariot-racing, war and the chase. The British Museum possesses some remarkable specimens, which are published in A. S. Murray's *Terra-Cotta Sarcophagi of the British Museum*. On one of them he sees depicted a battle between Cimmerian invaders and Greeks, the former accompanied to the field by their great war-dogs. In some of the representations of hunting on these sarcophagi the hunters ride in chariots, a way of hunting quite foreign to the Greeks, but familiar to us from Assyrian wall-sculptures. We know that the life of the Ionians before the Persian conquest was refined and not untinged with luxury, and they borrowed many of the stately ways of the satraps of the kings of Assyria and Persia.



Furtwängler, *Goldfund v. Vettersfelde*.

FIG. 10.—Fish of gold.

Fig. 10 shows a curious product of the Ionian workshops, a fish of solid gold, adorned with reliefs which represent a flying eagle, lions pulling down their prey, and a monstrous sea-god among his fishes. This relic is the more valuable on account of the spot where it was found—Vettersfelde in Brandenburg. It furnishes a proof that the influence and perhaps the commerce of the Greek colonies on the Black Sea spread far to the north through the countries of the Scythians and other barbarians. The fish dates from the 6th century B.C.

PLATE III.

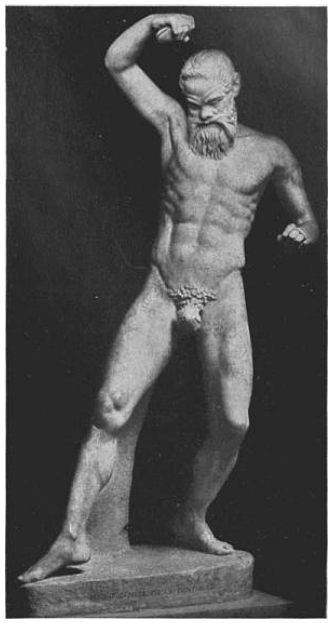
Photo, Giraudon.

FIG. 61.—WINGED VICTORY OF SAMOTHRACE. (LOUVRE.)

FIG. 63. HEAD OF WARRIOR, RESTORED, FROM TEGEA.

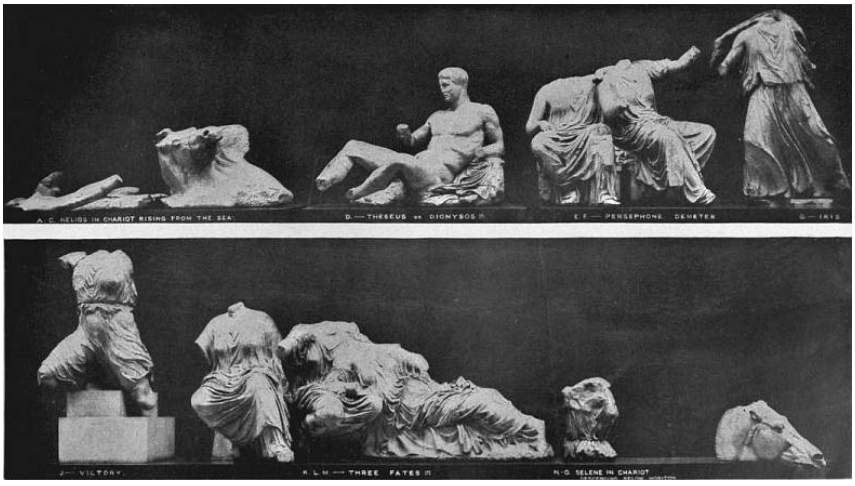
Photo, Giraudon.

FIG. 62.—WINGED VICTORY OF SAMOTHRACE. (LOUVRE.)



Photo, Anderson.

FIG. 64.—MARSYAS OF MYRON. (LATERAN MUS.)



Photo, Mansell.

FIG. 65.—EAST PEDIMENT OF THE PARTHENON; LEFT AND RIGHT ENDS. (BRIT. MUS.)

PLATE IV.

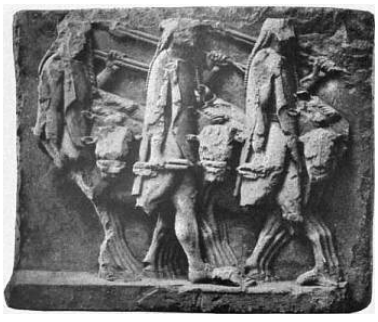
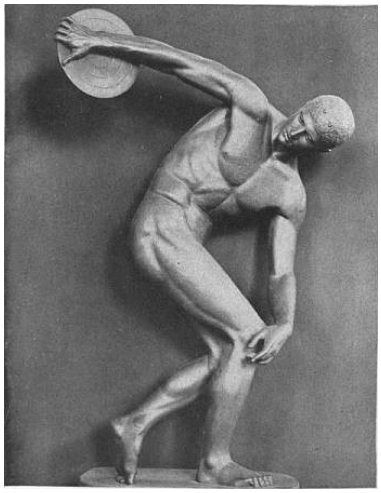


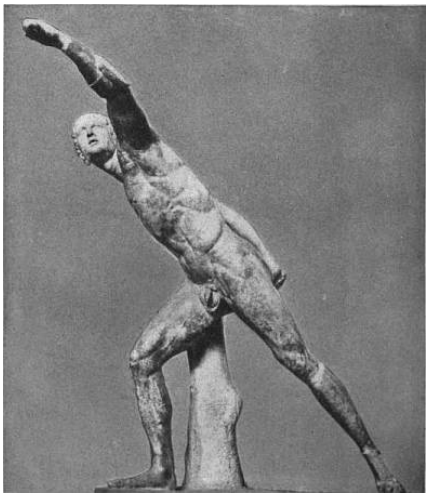
FIG. 66.—METOPE OF THE TREASURY OF SICYON AT DELPHI. (From *Fouilles de Delphes*, by permission of A. Fontemoing.)

FIG. 67.—GREEK PAINTING OF WOMAN'S HEAD. (From *Comptes Rendus* of St. Petersburg, 1865. Pl. I.)



Photo, F. Bruckmann.

FIG. 68.—DISCOBOLUS OF MYRON, RESTORED BY PROF. FURTWÄNGLER.



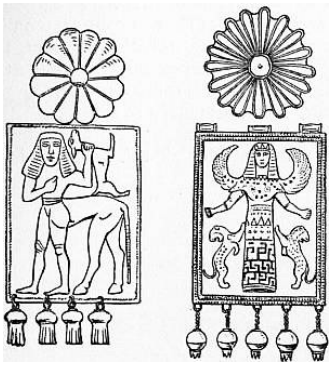
Photo, Giraudon.

FIG. 69.—FIGHTER OF AGASIAS. (LOUVRE.)

Photo, Mansell.

FIG. 70.—PORTION OF FRIEZE OF MAUSOLEUM. (BRIT. MUS.)

We may compare some of the gold ornaments from Camirus in Rhodes, which show an Ionian tendency, perhaps combined with Phoenician elements. On one of them (fig. 11) we see a centaur with human forelegs holding up a fawn, on the other the oriental goddess whom the Greeks identified with their Artemis, winged, and flanked by lions. This form was given to Artemis on the Corinthian chest of Cypselus, a work of art preserved at Olympia, and carefully described for us by Pausanias.



Brit. Mus.

FIG. 11.—Gold Ornaments from Camirus.

From Ionia the style of vase-painting which has been called by various names, but may best be termed the "orientalizing," spread to Greece proper. Its main home here was in Corinth; and small Corinthian unguent-vases bearing figures of swans, lions, monsters and human beings, the intervals between which are filled by rosettes, are found wherever Corinthian trade penetrated, notably in the cemeteries of Sicily. For the larger Corinthian vases, which bore more elaborate scenes from mythology, we must again turn to the graves of the cities of Etruria. Here, besides the Ionian ware, of which mention has already been made, we find pottery of three Greek cities clearly defined, that of Corinth, that of Chalcis in Euboea, and that of Athens. Corinthian and Chalcidian ware is most readily distinguished by means of the alphabets used in the inscriptions which have distinctive forms easily to be identified. Whether in the style of the paintings coming from the various cities any distinct differences may be traced is a far more difficult question, into which we cannot now enter. The subjects are mostly from heroic legend, and are treated with great simplicity and directness. There is a manly vigour about them which distinguishes them at a glance from the laxer works of Ionian style. Fig. 12 shows a group from a Chalcidian vase, which represents the conflict over the dead body of Achilles. The corpse of the hero lies in the midst, the arrow in his heel. The Trojan Glaucus tries to draw away the body by means of a rope tied round the ankle, but in doing so is transfixed by the spear of Ajax, who charges under the protection of the goddess Athena. Paris on the Trojan side shoots an arrow at Ajax.

Mon. d. Inst. i. 51.

FIG. 12.—Fight over the Body of Achilles.

In fig. 13, from a Corinthian vase, Ajax falls on his sword in the presence of his colleagues, Odysseus and Diomedes. The short stature of Odysseus is a well-known Homeric feature. These vases are black-figured; the heroes are painted in silhouette on the red ground of the vases. Their names are appended in archaic Greek letters.

Mus. Napoléon, 66.

Fig. 13.—Suicide of Ajax.

Arch. Zeit. 1882, 9.

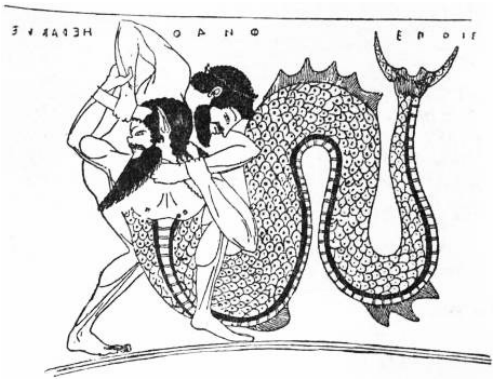
Fig. 14. Harpies: Attic Vase.

Athens.

The early history of vase-painting at Athens is complicated. It was only by degrees that the geometric style gave way to, or developed into, what is known as the black-figured style. It would seem that until the age of Peisistratus Athens was not notable in the world of art, and nothing could be ruder than some of the vases of Athens in the 7th century, for example that here figured, on one side of which are represented the winged Harpies (fig. 14) and on the other Perseus accompanied by Athena flying from the pursuit of the Gorgons. This vase retains in its decoration some features of geometric style; but the lotus and rosette, the lion and sphinx which appear on it, belong to the wave of Ionian influence. Although it involves a departure from strict chronological order, it will be well here to follow the course of development in pottery at Athens until the end of our period. Neighbouring cities, and especially Corinth, seem to have exercised a strong influence at Athens about the 7th century. We have even a class of vases called by archaeologists Corintho-Attic. But in the course of the 6th century there is formed at Athens a distinct and marked black-figured style. The most-remarkable example of this ware is the so-called François vase at Munich, by Clitias and Ergotimus, which contains, in most careful and precise rendering, a number of scenes from Greek myth. One of these vases is dated, since it bears the name and the figure of Callias in his chariot (*Mon. dell' Inst.* iii. 45), and this Callias won a victory at Olympia in 564 B.C. Fig. 15 shows the reverse of a somewhat later black-figured vase of the Panathenaic class, given at Athens as a prize to the winner of a foot-race at the Panathenaea, with the foot-race (*stadion*) represented on it. A large number of Athenian vases of the 6th century have reached us, which bear the signatures of the potters who made, or the artists who painted them; lists of these will be found in the useful work of Klein, *Griechische Vasen mit Meistersignaturen*. The recent excavations on the Acropolis have proved the erroneousness of the view, strongly maintained by Brunn, that the mass of the 478
black-figured vases were of a late and imitative fabric. We now know that, with a few exceptions, vases of this class are not later than the early part of the 5th century. The same excavations have also proved that red-figured vase-painting, that is, vase-painting in which the background was blocked out with black, and the figures left in the natural colour of the vase originated at Athens in the last quarter of the 6th century. We cannot here give a detailed account of the beautiful series of Athenian vases of this fabric. Many of the finest of them are in the British Museum. As an example, fig. 16 presents a group by the painter Pamphaeus, representing Heracles wrestling with the river-monster Achelous, which belongs to the age of the Persian Wars. The clear precision of the figures, the vigour of the grouping, the correctness of the anatomy and the delicacy of the lines are all marks of distinction. The student of art will perhaps find the nearest parallel to these vase-pictures in Japanese drawings. The Japanese artists are very inferior to the Greek in their love and understanding of the human body, but equal them in freshness and vigour of design. At the same time began the beautiful series of white vases made at Athens for the purpose of burial with the dead, and found in great quantities in the cemeteries of Athens, of Eretria, of Gela in Sicily, and of some other cities. They are well represented in the British Museum and that of Oxford.

Mon. d. Inst. x. 48 m.

Fig. 15.—Foot-race: Panathenaic Vase.



Wiener Vorlegeblätter, D. 6.

Fig. 16.—Heracles and Achelous.

We now return to the early years of the 6th century, and proceed to trace, by the aid of recent discoveries, the rise of architecture and sculpture. The Greek temple in its character and form gives the clue to the whole character of Greek art. It is the abode of the deity, who is represented by his sacred image; and the flat surfaces of the temple offer a great field to the sculptor for the depicting of sacred legend. The process of discovery has emphasized the line which divides Ionian from Dorian architecture and art. We will speak first of the temples and the sculpture of Ionia. The Ionians were a people far more susceptible than were the Dorians to oriental influences. The dress, the art, the luxury of western Asia attracted them with irresistible force. We may suspect, as Brunn has suggested, that Ionian artists worked in the great Assyrian and Persian palaces, and that the reliefs which adorn the walls of those palaces were in part their handiwork. Some of the great temples of Ionia have been excavated in recent years, notably those of Apollo at Miletus, of Hera at Samos, and of Artemis at Ephesus. Very little, however, of the architecture of the 6th-century temples of those sites has been recovered. Quite recently, however, the French excavators at Delphi have successfully restored the treasury of the people of Cnidus, which is quite a gem of Ionic style, the entablature being supported in front not by pillars but by two maidens or Corae, and a frieze running all round the building above. But though this building is of Ionic type, it is scarcely in the technical sense of Ionic style, since the columns have not Ionic capitals, but are carved with curious reliefs. The Ionic capital proper is developed in Asia by degrees (see Architecture and Capital; also Perrot and Chipiez, *Hist. de l'art*, vii. ch. 4).

Delphi.

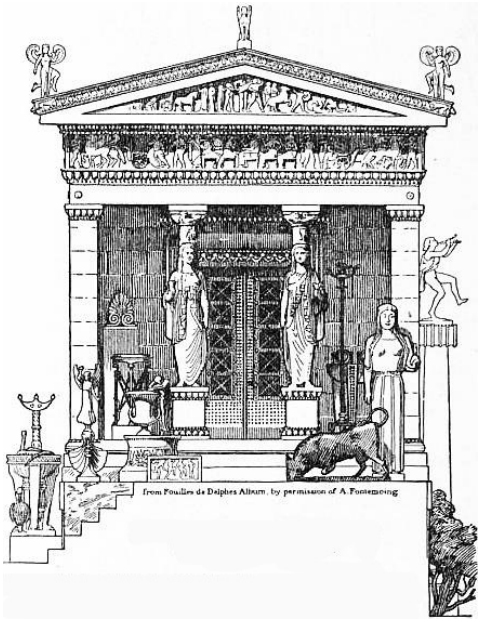
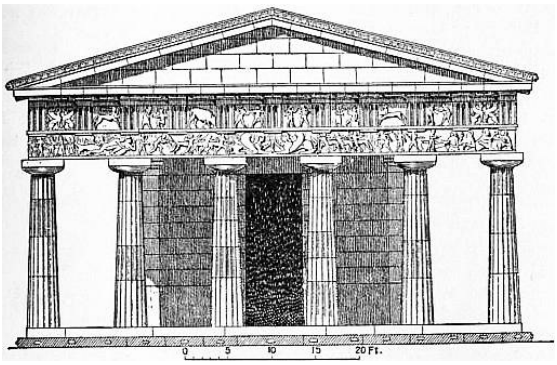


Fig. 17.—Restoration of the Treasury of Cnidus.

The Doric temple is not wholly of European origin. One of the earliest examples is the old temple of Assus in Troas. Yet it was developed mainly in Hellas and the west. The most ancient example is the Heraeum at Olympia, next to which come the fragmentary temples of Corinth and of Selinus in Sicily. With the early Doric temple we are familiar from examples which have survived in fair preservation to our own days at Agrigentum in Sicily, Paestum in Italy, and other sites.

Of the decorative sculpture which adorned these early temples we have more extensive remains than we have of actual construction. It will be best to speak of them under their districts. On the coast of Asia Minor, the most extensive series of archaic decorative sculptures which has come down to us is that which adorned the temple of Assus (fig. 18). These were placed in a unique position on the temple, a long frieze running along the entablature, with representations of wild animals, of centaurs, of Hercules seizing Achelous, and of men feasting, scene succeeding scene without much order or method. The only figures from Miletus which can be considered as belonging to the original temple destroyed by Darius, are the dedicated seated statues, some of which, brought away by Sir Charles Newton, are now preserved at the British Museum. At Ephesus Mr Wood has been more successful, and has recovered considerable fragments of the temple of Artemis, to which, as Herodotus tells us, Croesus presented many columns. The lower part of one of these columns, bearing figures in relief of early Ionian style, has been put together at the British Museum; and remains of inscriptions recording the presentation by Croesus are still to be traced. Reliefs from a cornice of somewhat later date are also to be found at the British Museum. Among the Aegean Islands, Delos has furnished us with the most important remains of early art. French excavators have there found a very early statue of a woman dedicated by one Nicandra to Artemis, a figure which may be instructively compared with another from Samus, dedicated to Hera by Cheramues. The Delian statue is in shape like a flat beam; the Samian, which is headless, is like a round tree. The arms of the Delian figure are rigid to the sides; the Samian lady has one arm clasped to her breast. A great improvement on these helpless and inexpressive figures is marked by another figure found at Delos, and connected, though perhaps incorrectly, with a basis recording the execution of a statue by Archermus and Micciades, two sculptors who stood, in the middle of the 6th century, at the head of a sculptural school at Chios. The representation (fig. 19) is of a running or flying figure, having six wings, like the seraphim in the vision of Isaiah, and clad in long drapery. It may be a statue of Nike or Victory, who is said to have been represented in winged form by Archermus. The figure, with its neatness and precision of work, its expressive face and strong outlines, certainly marks great progress in the art of sculpture. When we examine the early sculpture of Athens, we find reason to think that the Chian school had great influence in that city in the days of Peisistratus.

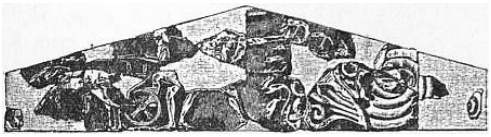


From Perrot and Chipiez, vii. pl. 35, by permission of Chapman and Hall, Ltd., and Hachette & Co.
FIG. 18.—Restoration of the Temple at Assus.

FIG. 19.—Nikē of Delos, restored.

Athenian sculpture.

At Athens, in the age 650-480, we may trace two quite distinct periods of architecture and sculpture. In the earlier of the two periods, a rough limestone was used alike for the walls and the sculptural decoration of temples; in the later period it was superseded by marble, whether native or imported. Every visitor to the museum of the Athenian acropolis stands astonished at the recently recovered groups which decorated the pediments of Athenian temples before the age of Peisistratus—groups of large size, rudely cut in soft stone, of primitive workmanship, and painted with bright red, blue and green, in a fashion which makes no attempt to follow nature, but only to produce a vivid result. The two largest in scale of these groups seem to have belonged to the pediments of the early 6th-century temple of Athena. On other smaller pediments, perhaps belonging to shrines of Heracles and Dionysus, we have conflicts of Heracles with Triton or with other monstrous foes. It is notable how fond the Athenian artists of this early time are of exaggerated muscles and of monstrous forms, which combine the limbs of men and of animals; the measure and moderation which mark developed Greek art are as completely absent as are skill in execution or power of grouping. Fig. 20 shows a small pediment in which appears in relief the slaying of the Lernaean hydra by Heracles. The hero strikes at the many-headed water-snake, somewhat inappropriately, with his club. Iolaus, his usual companion, holds the reins of the chariot which awaits Heracles after his victory. On the extreme left a huge crab comes to the aid of the hydra.



Athen. Mitteil. x. 237.
FIG. 20.—Athenian Pediment: Heracles and Hydra.

Athen. Mitteil. xxii. 3.
FIG. 21.—Pediment: Athena and Giant.

There can be little doubt that Athens owed its great start in art to the influence of the court of Peisistratus, at which artists of all kinds were welcome. We can trace a gradual transformation in sculpture, in which the influence of the Chian and other progressive schools of sculpture is visible, not only

in the substitution of island marble for native stone, but in increased grace and truth to nature, in the toning down of glaring colour, and the appearance of taste in composition. A transition between the older and the newer is furnished by the well-known statue of the calf-bearer, an Athenian preparing to sacrifice a calf to the deities, which is made of marble of Hymettus, and in robust clumsiness of forms is not far removed from the limestone pediments. The sacrificer has been commonly spoken of as Hermes or Theseus, but he seems rather to be an ordinary human votary.

In the time of Peisistratus or his sons a peristyle of columns was added to the old temple of Athena; and this necessitated the preparation of fresh pediments. These were of marble. In one of them was represented the battle between gods and giants; in the midst Athena herself striking at a prostrate foe (fig. 21). In these figures no eye can fail to trace remarkable progress. On about the same level of art are the charming statues dedicated to Athena, which were set up in the latter half of the 6th century in the Acropolis, whose graceful though conventional forms and delicate colouring make them one of the great attractions of the Acropolis Museum. We show a figure (fig. 22) which, if it be rightly connected with the basis on which it stands, is the work of the sculptor Antenor, who was also author of a celebrated group representing the tyrant-slayers, Harmodius and Aristogiton. To the same age belong many other votive reliefs of the Acropolis, representing horsemen, scribes and other votaries of Athena.

Fig. 22.—Figure by Antenor, restored.

Fig. 23.—Bust from Crete.

Dorian sculpture.

From Athens we pass to the seats of Dorian art. And in doing so we find a complete change of character. In place of Dorian draped goddesses and female figures, we find nude male forms. In place of Ionian softness and elegance, we find hard, rigid outlines, strong muscular development, a greater love of and faithfulness to the actual human form—the influence of the palaestra rather than of the harem. To the known series of archaic male figures, recent years have added many examples. We may especially mention a series of figures from the temple of Apollo Ptoos in Boeotia, probably representing the god himself. Still more noteworthy are two colossal nude figures of Apollo, remarkable both for force and for rudeness, found at Delphi, the inscriptions of which prove them to be the work of an Argive sculptor. (Plate V. fig. 76.) From Crete we have acquired the upper part of a draped figure (fig. 23), whether male or female is not certain, which should be an example of the early Daedalid school, whence the art of Peloponnesus was derived; but we can scarcely venture to treat it as a characteristic product of that school; rather the likeness to the dedication of Nicandra is striking.

Another remarkable piece of Athenian sculpture, of the time of the Persian Wars, is the group of the tyrannicides Harmodius and Aristogiton, set up by the people of Athens, and made by the sculptors Critius and Nesiotes. These figures were hard and rigid in outline, but showing some progress in the treatment of the nude. Copies are preserved in the museum of Naples (Plate I. fig. 50). It should be observed that one of the heads does not belong.

Fig. 24.—Head of Hera: Olympia.

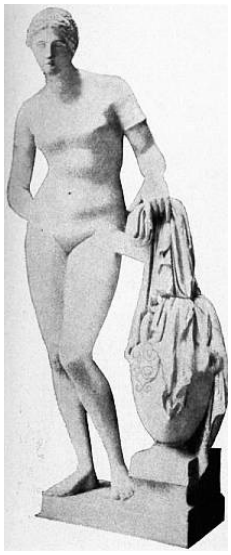
Olympia, Sparta, Selinus.

Next in importance to Athens, as a find-spot for works of early Greek art, ranks Olympia. Olympia, however, did not suffer like Athens from sudden violence, and the explorations there have brought to light a continuous series of remains, beginning with the bronze tripods of the geometric age already mentioned and ending at the barbarian invasions of the 4th century A.D. Notable among the 6th-century stone-sculpture of Olympia are the pediment of the treasury of the people of Megara, in which is represented a battle of gods and giants, and a huge rude head of Hera (fig. 24), which seems to be part of the image worshipped in the Heraeum. Its flatness and want of style are noteworthy. Among the temples of Greece proper the Heraeum of Olympia stands almost alone for antiquity and interest, its chief rival, besides the temples of Athens, being the other temple of Hera at Argos. It appears to have been originally constructed of wood, for which stone was by slow degrees, part by part, substituted. In the time of Pausanias one of the pillars was still of oak, and at the present day the varying diameter of the columns and other structural irregularities bear witness to the process of constant renewal which must have taken place. The early small bronzes of Olympia form an important series, figures of deities standing or striding, warriors in their armour, athletes with exaggerated muscles, and women draped in the Ionian fashion, which did not become unpopular in Greece until after the Persian Wars. Excavations at Sparta have revealed interesting monuments belonging to the worship of ancestors, which seems in the conservative Dorian states of Greece to have been more strongly developed than elsewhere. On some of these stones, which doubtless belonged to the family cults of Sparta, we see the ancestor seated holding a wine-cup, accompanied by his faithful horse or dog; on some we see the ancestor and ancestress seated side by side (fig. 25), ready to receive the gifts of their descendants, who appear in the corner of the relief on a much smaller scale. The male figure holds a wine-cup, in allusion to the libations of wine made at the tomb. The female figure holds her veil and the

pomegranate, the recognized food of the dead. A huge serpent stands erect behind the pair. The style of these sculptures is as striking as the subjects; we see lean, rigid forms with severe outline carved in a very low relief, the surface of which is not rounded but flat. The name of Selinus in Sicily, an early Megarian colony, has long been associated with some of the most curious of early sculptures, the metopes of ancient temples, representing the exploits of Heracles and of Perseus. Even more archaic metopes have in recent years been brought to light, one representing a seated sphinx, one the journey of Europa over the sea on the back of the amorous bull (fig. 26), a pair of dolphins swimming beside her. In simplicity and in rudeness of work these reliefs remind us of the limestone pediments of Athens (fig. 20), but yet they are of another and a severer style; the Ionian laxity is wanting.

Fig. 25.—Spartan Tombstone: Berlin.

Plate V.



From a Cast.
Fig. 71.—APHRODITE OF CNIDUS. (Vatican.)

Photo, Anderson.
Fig. 72.—BRONZE BOXER OF TERME. (Rome.)

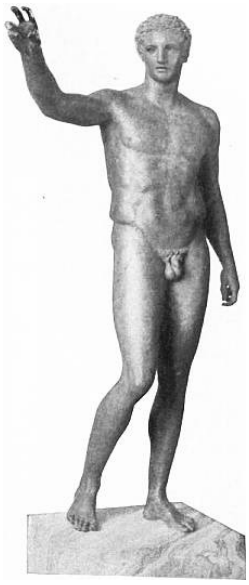


Fig. 73.—BRONZE OF CERIGOTTO. (Athens.) Found in the sea near Cythera.

Fig. 74.—AGIAS AT DELPHI. (From *Fouilles de Delphes*, by permission of A. Fontemoing.)

Fig. 75.—CORA (KORÉ) OF ERECHTHEUM. (Athens.)

Fig. 76.—APOLLO AT DELPHI. (From *Fouilles de Delphes*, by permission of A. Fontemoing.)

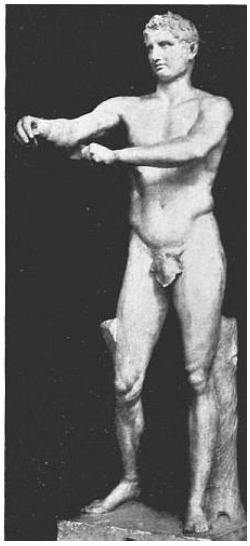
Plate VI.

Photo, Giraudon.

FIG. 77.—APHRODITE PF MELOS. (LOUVRE.)

Photo, Alinari.

FIG. 78.—NIOBE AND HER YOUNGEST DAUGHTER. (FLORENCE.)



Photo, Anderson.

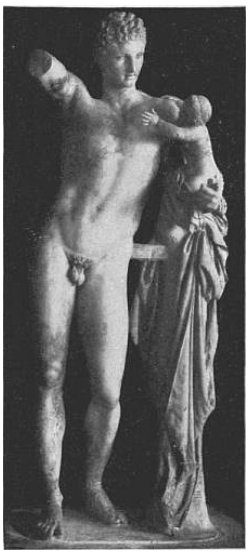
FIG. 79.—APOXYOMENUS. (VATICAN.)

Photo, Brogi.

FIG. 80.—DORYPHORUS OF POLYCLITUS. (NAT. MUS., NAPLES.)

Photo, Alinari.

FIG. 81.—ANTIOCH SEATED ON A ROCK. (VATICAN.)



Photo, English Photographic Co.

FIG. 82.—HERMES OF TELES. (OLYMPIA.)

Delphi.

The recent French excavations at Delphi add a new and important chapter to the history of 6th-century art. Of three treasure-houses, those of Sicyon, Cnidus and Athens, the sculptural adornments have been in great part recovered. These sculptures form a series almost covering the century 570-470 B.C., and include representations of some myths of which we have hitherto had no example. We may say here a few words as to the sculpture which has been discovered, leaving to the article DELPHI an account of the topography and the buildings of the sacred site. Of the archaic temple of Apollo, built as Herodotus tells us by the Alcmaeonidae of Athens, the only sculptural remains which have come down to us are some fragments of the pedimental figures. Of the treasuries which contained the offerings of the pious at Delphi, the most archaic of which there are remains is that belonging to the people of Sicyon. To it appertain a set of exceedingly primitive metopes. One represents Idas and Dioscuri driving off cattle (Plate IV. fig. 66); another, the ship Argo; another, Europa on the bull, others merely animals, a ram or a boar. The treasury of the people of Cnidus (or perhaps Siphnos) is in style some half a century later (see fig. 17). To it belongs a long frieze representing a variety of curious subjects: a battle, perhaps between Greeks and Trojans, with gods and goddesses looking on; a gigantomachy in which the figures of Poseidon, Athena, Hera, Apollo, Artemis and Cybele can be made out, with their opponents, who are armed like Greek hoplites; Athena and Heracles in a chariot; the carrying off of the daughters of Leucippus by Castor and Pollux; Aeolus holding the winds in sacks. The Treasury of the Athenians, erected at the time of the Persian Wars, was adorned with metopes of singularly clear-cut and beautiful style, but very fragmentary, representing the deeds of Heracles and Theseus.

FIG. 26.—Metope: Europa on Bull: Palermo.

FIG. 27.—Restoration of West Pediment, Aegina.

Aegina.

We have yet to speak of the most interesting and important of all Greek archaic sculptures, the pediments of the temple at Aegina (*q.v.*). These groups of nude athletes fighting over the corpses of their comrades are preserved at Munich, and are familiar to artists and students. But the very fruitful excavations of Professor Furtwängler have put them in quite a new light. Furtwängler (*Aegina: Heiligtum der Aphaia*) has entirely rearranged these pediments, in a way which removes the extreme simplicity and rigour of the composition, and introduces far greater variety of attitudes and motive. We repeat here these new arrangements (figs. 27 and 28), the reasons for which must be sought in Furtwängler's great publication. The individual figures are not much altered, as the restorations of Thorwaldsen, even when incorrect, have now a prescriptive right of which it is not easy to deprive them. Besides the pediments of Aegina must be set the remains of the pediments of the temple of Apollo at Eretria in Euboea, the chief group of which (Plate II. fig. 58), Theseus carrying off an Amazon, is one of the most finely executed works of early Greek art.

Period II. 480-400 B.C.—The most marvellous phenomenon in the whole history of art is the rapid progress made by Greece in painting and sculpture during the 5th century B.C. As in literature the 5th century takes us from the rude peasant plays of Thespis to the drama of Sophocles and Euripides; as in philosophy it takes us from Pythagoras to Socrates; so in sculpture it covers the space from the primitive works made for the Peisistratidae to some of the most perfect productions of the chisel.

Architecture.

In architecture the 5th century is ennobled by the Theseum, the Parthenon and the Erechtheum, the temples of Zeus at Olympia, of Apollo at Phigalia, and many other central shrines, as well as by the Hall of the Mystae at Eleusis and the Propylaea of the Acropolis. Some of the most important of the Greek temples of Italy and Sicily, such as those of Segesta and Selinus, date from the same age. It is, however, only of their sculptural decorations, carried out by the greatest masters in Greece, that we need here treat in any detail.

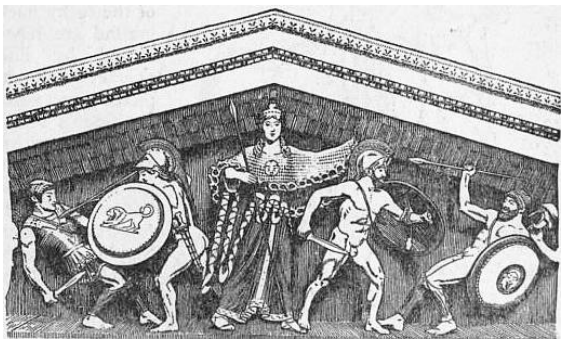


FIG. 28.—Restoration of East Pediment, Aegina.

Painting.

It is the rule in the history of art that innovations and technical progress are shown earlier in the case of painting than in that of sculpture, a fact easily explained by the greater ease and rapidity of the brush compared with the chisel. That this was the order of development in Greek art cannot be doubted. But our means for judging of the painting of the 5th century are very slight. The noble paintings of such masters as Polygnotus, Micon and Panaenus, which once adorned the walls of the great porticoes of Athens and Delphi, have disappeared. There remain only the designs drawn rather than painted on the beautiful vases of the age, which in some degree help us to realize, not the colouring or the charm of contemporary paintings, but the principle of their composition and the accuracy of their drawing.

From monumenti dell' Instituto di Correspondenza archeologica, xi. 40.

FIG. 29.—Vase of Orvieto. (The Children of Niobe.)

Polygnotus of Thasos was regarded by his compatriots as a great ethical painter. His colouring and composition were alike very simple, his figures quiet and statuesque, his drawing careful and precise. He won his fame largely by incorporating in his works the best current ideas as to mythology, religion and morals. In particular his painting of Hades with its rewards and punishments, which was on the walls of the building of the people of Cnidus at Delphi, might be considered as a great religious work, parallel to the paintings of the Campo Santo at Pisa or to the painted windows of such churches as that at Fairford. But he also introduced improvements in perspective and greater freedom in grouping.

It is fortunate for us that the Greek traveller Pausanias has left us very careful and detailed descriptions of some of the most important of the frescoes of Polygnotus, notably of the Taking of Troy and the Visit to Hades, which were at Delphi. A comparison of these descriptions with vase paintings of the middle of the 5th century has enabled us to discern with great probability the principles of Polygnotan drawing and perspective. Professor Robert has even ventured to restore the paintings on the evidence of vases. We here represent one of the scenes depicted on a vase found at Orvieto (fig. 29), which is certainly Polygnotan in character. It represents the slaying of the children of Niobe by Apollo and Artemis. Here we may observe a remarkable perspective. The different heights of the rocky background are represented by lines traversing the picture on which the figures stand; but the more distant figures are no smaller than the nearer. The forests of Mount Sipylus are represented by a single conventional tree. The figures are beautifully drawn, and full of charm; but there is a want of energy in the action.

There can be little doubt that the school of Polygnotus exercised great influence on contemporary sculpture. Panaenus, brother of Pheidias, worked with Polygnotus, and many of the groupings found in the sculptures of the Parthenon remind us of those usual with the Thasian master. At this simple and early stage of art there was no essential difference between fresco-painting and coloured relief, light and shade and aerial perspective being unknown. We reproduce two vase-paintings, one (fig.

Arch. Zeit. 1878, pl. 22.

FIG. 30.—Vase Drawing.

30) a group of man and horse which closely resembles figures in the Panathenaic frieze of the Parthenon (fig. 31); the other (fig. 32) representing Victory pouring water for a sacrificial ox to drink, which reminds us of the balustrade of the shrine of Wingless Victory at Athens.

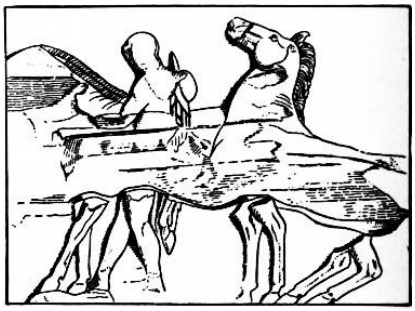
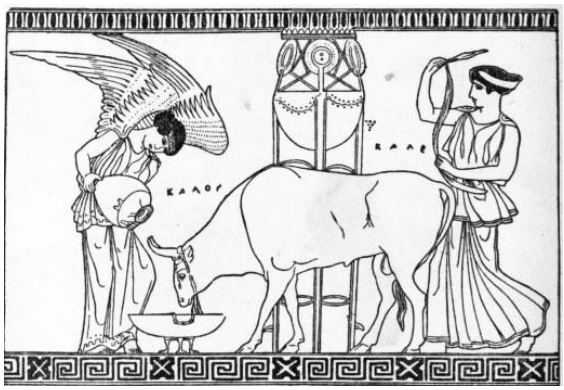


Fig. 31.—Part of Frieze of the Parthenon.

Most writers on Greek painting have supposed that after the middle of the 5th century the technique of painting rapidly improved. This may well have been the case; but we have little means of testing the question. Such improvements would soon raise such a barrier between fresco-painting and vase-painting,—which by its very nature must be simple and architectonic,—that vases can no longer be used with confidence as evidence for contemporary painting. The stories told us by Pliny of the lives of Greek painters are mostly of a trivial and untrustworthy character. Some of them are mentioned in this *Encyclopaedia* under the names of individual artists. We can only discern a few general facts. Of Agatharchus of Athens we learn that he painted, under compulsion, the interior of the house of Alcibiades. And we are told that he painted a scene for the tragedies of Aeschylus or Sophocles. This has led some writers to suppose that he attempted illusive landscape; but this is contrary to the possibilities of the time; and it is fairly certain that what he really did was to paint the wooden front of the stage building in imitation of architecture; in fact he painted a permanent architectural background, and not one suited to any particular play. Of other painters who flourished at the end of the century, such as Zeuxis and Aristides, it will be best to speak under the next period.



From Gerhard's *Auserlesene Vasenbilder*, ii. pl. 1.

Fig. 32.—Nikē and Bull.

It is now generally held, in consequence of evidence furnished by tombs, that the 5th century saw the end of the making of vases on a great scale at Athens for export to Italy and Sicily. And in fact few things in the history of art are more remarkable than the rapidity with which vase-painting at Athens reached its highest point and passed it on the downward road. At the beginning of the century black-figured ware was scarcely out of fashion, and the masters of the severe red-figured style, Pamphaeus, Epictetus and their contemporaries, were in vogue. The schools of Euphronius, Hiero and Duris belong to the age of the Persian wars. With the middle of the century the works of these makers are succeeded by unsigned vases of most beautiful design, some of them showing the influence of Polygnotus. In the later years of the century, when the empire of Athens was approaching its fall, drawing becomes laxer and more careless, and in the treatment of drapery we frequently note the over-elaboration of folds, the want of simplicity, which begin to mark contemporary sculpture. These changes of style can only be satisfactorily followed in the vase rooms of the British Museum, or other treasuries of Greek art (see also A. B. Walters, *History of Ancient Pottery*; and the article Ceramics).

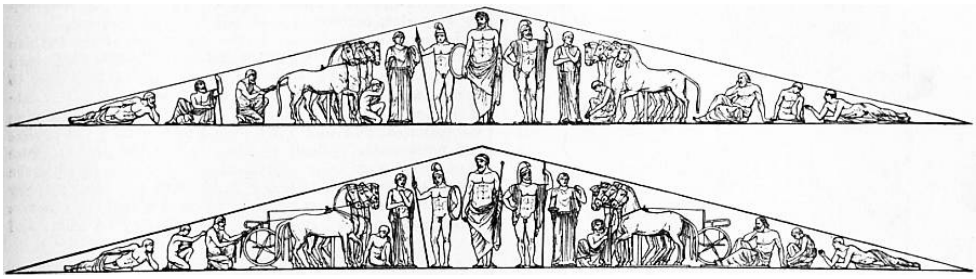


Fig. 33.—East Pediment, Olympia. Two Restorations.

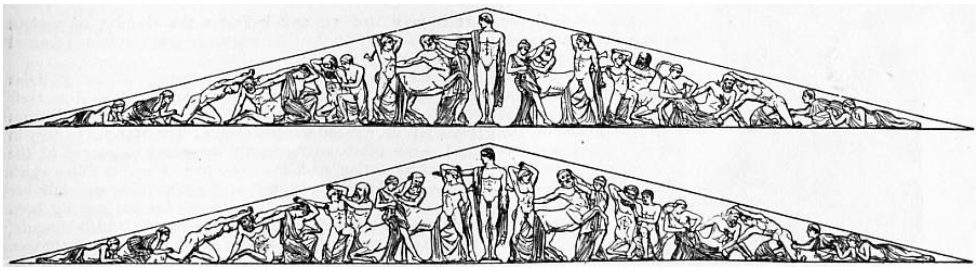
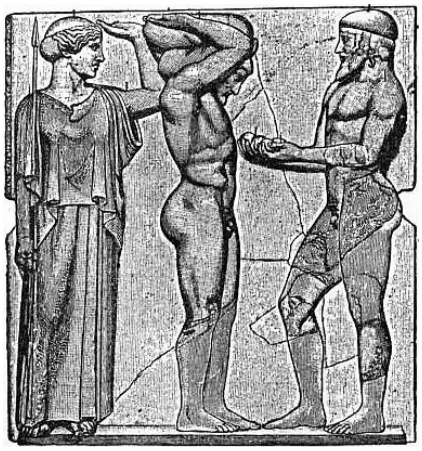


Fig. 34.—West Pediment, Olympia. Two Restorations.

Olympia: Temple of Zeus.

Among the sculptural works of this period the first place may be given to the great temple of Zeus at Olympia. The statue by Pheidias which once occupied the place of honour in that temple, and was regarded as the noblest monument of Greek religion, has of course disappeared, nor are we able with confidence to restore it. But the plan of the temple, its pavement, some of its architectural ornaments, remain. The marbles which occupied the pediments and the metopes of the temple have been in large part recovered, having been probably thrown down by earthquakes and gradually buried in the alluvial soil. The utmost ingenuity and science of the archaeologists of Germany have been employed in the recovery of the composition of these groups; and although doubt remains as to the places of some figures, and their precise attitudes, yet we may fairly say that we know more about the sculpture of the Olympian temple of Zeus than about the sculpture of any other great Greek temple. The exact date of these sculptures is not certain, but we may with some confidence give them to 470-460 B.C. (In speaking of them we shall mostly follow the opinion of Dr Treu, whose masterly work in vol. iii. of the great

German publication on Olympia is a model of patience and of science.) In the eastern pediment (fig. 33), as Pausanias tells us, were represented the preparations for the chariot-race between Oenomaüs and Pelops, the result of which was to determine whether Pelops should find death or a bride and a kingdom. In the midst, invisible to the contending heroes, stood Zeus the supreme arbiter. On one side of him stood Oenomaüs with his wife Sterope, on the other Pelops and Hippodameia, the daughter of Oenomaüs, whose position at once indicates that she is on the side of the newcomer, whatever her parents may feel. Next on either side are the four-horse chariots of the two competitors, that of Oenomaüs in the charge of his perfidious groom Myrtilus, who contrived that it should break down in the running, that of Pelops tended by his grooms. At either end, where the pediment narrows to a point, reclines a river god, at one end Alpheus, the chief stream of Olympia, at the other end his tributary Cladeus. Only one figure remains, not noticed in the careful description of Pausanias, the figure of a handmaid kneeling, perhaps one of the attendants of Sterope. Our engraving gives two conjectural restorations of the pediment, that of Treu and that of Kekule, which differ principally in the arrangement of the corners of the composition; the position of the central figures and of the chariots can scarcely be called in question. The moment chosen is one, not of action, but of expectancy, perhaps of preparation for sacrifice. The arrangement is undeniably stiff and formal, and in the figures we note none of the trained perfection of style which belongs to the sculptures of the Parthenon, an almost contemporary temple. Faults abound, alike in the rendering of drapery and in the representation of the human forms, and the sculptor has evidently trusted to the painter who was afterwards to colour his work, to remedy some of his clumsiness, or to make clear the ambiguous. Nevertheless there is in the whole a dignity, a sobriety, and a simplicity, which reconcile us to the knowledge that this pediment was certainly regarded in antiquity as a noble work, fit to adorn even the palace of Zeus. In the other, the western pediment (fig. 34), the subject is the riot of the Centaurs when they attended the wedding of Peirithous in Thessaly, and, attempting to carry off the bride and her comrades, were slain by Peirithous and Theseus. In the midst of the pediment, invisible like Zeus in the eastern pediment, stands Apollo, while on either side of him Theseus and Peirithous attack the Centaurs with weapons hastily snatched. Our illustration gives two possible arrangements. The monsters are in various attitudes of attempted violence, of combat and defeat; with each grapples one of the Lapith heroes in the endeavour to rob them of their prey. In the corners of the pediment recline female figures, perhaps attendant slaves, though the farthest pair may best be identified as local Thessalian nymphs, looking on with the calmness of divine superiority, yet not wholly unconcerned in what is going forward. Though the composition of the two pediments differs notably, the one bearing the impress of a parade-like repose, the other of an overstrained activity, yet the style and execution are the same in both, and the shortcomings must be attributed to the inferior skill of a local school of sculptors compared with those of Athens or of Aegina. It even appears likely that the designs also belong to a local school. Pausanias, it is true, tells us that the pediments were the work of Alcamenes, the pupil of Pheidias, and of Paeonius, a sculptor of Thrace, respectively; but it is almost certain that he was misled by the local guides, who would naturally be anxious to connect the sculptures of their great temple with well-known names.



Olympia, iii. 45.

Fig. 35—Metope: Olympia; restored.

The metopes of the temple are in the same style of art as the pediments, but the defects of awkwardness and want of mastery are less conspicuous, because the narrow limits of the metope exclude any elaborate grouping. The subjects are provided by the twelve labours of Heracles; the figures introduced in each metope are but two or at most three; and the action is simplified as much as possible. The example shown (fig. 35) represents Heracles holding up the sky on a cushion, with the friendly aid of a Hesperid nymph, while Atlas, whom he has relieved of his usual burden, approaches bringing the apples which it was the task of Heracles to procure.

Another of the fruits of the excavations of Olympia is the floating Victory by Paeonius, unfortunately faceless (fig. 36), which was set up in all probability in memory of the victory of the Athenians and their Messenian allies at Sphacteria in 425 B.C. The inscription states that it was dedicated by the Messenians and people of Naupactus from the spoils of their enemies, but the name of the enemy is not mentioned in the inscription. The statue of Paeonius, which comes floating down through the air with drapery borne backward, is of a bold and innovating type, and we may trace its influence in many works of the next age.

Olympia, iii. 48.

Fig. 36—Nikē of Paeonius; restored.

Delphic charioteer.

Among the discoveries at Delphi none is so striking and valuable to us as the life-size statue in bronze of a charioteer holding in his hand the reins. This is maintained by M. Homolle to be part of a chariot-group set up by Polyzalus, brother of Gelo and Hiero of Syracuse, in honour of a victory won in the chariot-race at the Pythian games at Delphi (fig. 37). The charioteer is evidently a high-born youth, and is clad in the long chiton which was necessary to protect a driver of a chariot from the rush of air. The date would be about 480-470 B.C. Bronze groups representing victorious chariots with their drivers were among the noblest and most costly dedications of antiquity; the present figure is our only satisfactory representative of them. In style the figure is very notable, tall and slight beyond all contemporary examples. The contrast between the conventional decorousness of face and drapery and the lifelike accuracy of hands and feet is very striking, and indicates the clashing of various tendencies in art at the time when the great style was formed in Greece.

Mémoires, Piot, 1807, 16.

Fig. 37.—Bronze Charioteer: Delphi.

The three great masters of the 5th century, Myron, Pheidias and Polyclitus are all in some degree known to us from their works. Of Myron we have copies of two works, the Marsyas (Plate III. fig. 64) and the Discobolus. The Marsyas (a copy in the Lateran Museum) represents the Satyr so named in the grasp of conflicting emotions, eager to pick up the flutes which Athena has thrown down, but at the same time dreading her displeasure if he does so. The Discobolus has usually been judged from the examples in the Vatican and the British Museum, in which the anatomy is modernized and the head wrongly put on. We have now photographs of the very superior replica in the Lancelotti gallery at Rome, the pose of which is much nearer to the original. Our illustration represents a restoration made at Munich, by combining the Lancelotti head with the Vatican body (Plate IV. fig. 68).

Of the works of Pheidias we have unfortunately no certain copy, if we except the small replicas at Athens of his Athena Parthenos. The larger of these (fig. 38) was found in 1880: it is very clumsy, and the wretched device by which a pillar is introduced to support the Victory in the hand of Athena can scarcely be supposed to have belonged to the great original. Tempting theories have been published by Furtwängler (*Masterpieces of Greek Sculpture*) and other archaeologists, which identify copies of the Athena Lemnia of Pheidias, his Pantarces, his Aphrodite Urania and other statues; but doubt hangs over all these attributions.

A more pertinent and more promising question is, how far we may take the decorative sculpture of the Parthenon, since Lord Elgin's time the pride of the British Museum, as the actual work of Pheidias, or as done from his designs. Here again we have no conclusive evidence; but it appears from the testimony of inscriptions that the pediments at all events were not executed until after Pheidias's death.

Of course the pediments and frieze of the Parthenon (*q.v.*), whose work soever they may be, stand at the head of all Greek decorative sculpture. Whether we regard the grace of the composition, the exquisite finish of the statues in the round, or the delightful atmosphere of poetry and religion which surrounds these sculptures, they rank among the masterpieces of the world. The Greeks esteemed them far below the statue which the temple was made to shelter; but to us, who have lost the great figure in ivory and gold, the carvings of the casket which once contained it are a perpetual source of instruction and delight. The whole is reproduced by photography in A. S. Murray's *Sculptures of the Parthenon*.

Fig. 38.—Statuette of Athena Parthenos.

An abundant literature has sprung up in regard to these sculptures in recent years. It will suffice here to mention the discussions in Furtwängler's *Masterpieces*, and the very ingenious attempts of Sauer to determine by a careful examination of the bases and backgrounds of the pediments as they now stand how the figures must have been arranged in them. The two ends of the eastern pediment (Plate III. fig. 65) are the only fairly well-preserved part of the pediments.

Among the pupils of Pheidias who may naturally be supposed to have worked on the sculptures of the Parthenon, the most notable were Alcamenes and Agoracritus. Some fragments remain of the great statue of Nemesis at Rhamnus by Agoracritus. And an interesting light has been thrown on Alcamenes by the discovery at Pergamum of a professed copy of his Hermes set up at the entrance to the Acropolis at Athens (Plate II. fig. 57). The style of this work, however, is conventional and archaistic, and we can scarcely regard it as typical of the master.

Another noted contemporary who was celebrated mainly for his portraits was Cresilas, a Cretan. Several copies of his portrait of Pericles exist, and testify to the lofty and idealizing style of portraiture in this great age.

We possess also admirable sculpture belonging to the other important temples of the Acropolis, the Erechtheum and the temple of Nike. The temple of Nike is the earlier, being possibly a memorial of the Spartan defeat at Sphacteria. The Erechtheum belongs to the end of our period, and embodies the delicacy and finish of the conservative school of sculpture at Athens just as the Parthenon illustrates the ideas of the more progressive school. The reconstruction of the Erechtheum has been a task which has long occupied the attention of archaeologists (see the paper by Mr Stevens in the *American Journal of Archaeology*, 1906). Our illustration (Plate V. fig. 75) shows one of the Corae or maidens who support the entablature of the south porch of the Erechtheum in her proper setting. This use of the female figure in place of a pillar is based on old Ionian precedent (see fig. 17) and is not altogether happy; but the idea is carried out with remarkable skill, the perfect repose and solid strength of the maiden being emphasized.

Beside Pheidias of Athens must be placed the greatest of early Argive sculptors, Polyclitus. His two typical athletes, the Doryphorus or spear-bearer (Plate VI. fig. 80) and the Diadumenus, have long been identified, and though the copies are not first-rate, they enable us to recover the principles of the master's art.

Polyclitus.

Among the bases discovered at Olympia, whence the statues had been removed, are three or four which bear the name of Polyclitus, and the definite evidence furnished by these bases as to the position of the feet of the statues which they once bore has enabled archaeologists, especially Professor Furtwängler, to identify copies of those statues among known works. Also newly discovered copies of Polyclitan works have made their appearance. At Delos there has been found a copy of the Diadumenus, which is of much finer work than the statue in the British Museum from Vaison. The Museum of Fine Arts at Boston, U.S.A., has secured a very beautiful statue of a young Hermes, who but for the wings on the temples might pass as a boy athlete of Polyclitan style (Plate II. fig. 60). In fact, instead of relying as regards the manner of Polyclitus on Roman copies of the Doryphorus and Diadumenus, we have quite a gallery of athletes, boys and men, who all claim relationship, nearer or more remote, to the school of the great Argive master. It might have been hoped that the excavations, made under the leadership of Professor Waldstein at the Argive Heraeum, would have enlightened us as to the style of Polyclitus. Just as the sculptures of the Parthenon are the best monument of Pheidias, so it might seem likely that the sculptural decoration of the great temple which contained the Hera of Polyclitus would show us at large how his school worked in marble. Unfortunately the fragments of sculpture from the Heraeum are few. The most remarkable is a female head, which may perhaps come from a pediment (fig. 39). But archaeologists are not in agreement whether it is in style Polyclitan or whether it rather resembles in style

Attic works. Other heads and some highly-finished fragments of bodies come apparently from the metopes of the same temple. (See also article Argos.)

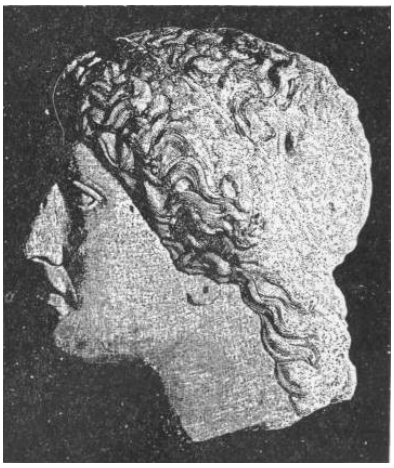


Fig. 39.—Female Head: Heraeum.

Another work of Polyclitus was his Amazon, made it is said in competition with his great contemporaries, Pheidias, Cresilas and Phradmon, all of whose Amazons were preserved in the great temple of Artemis at Ephesus. In our museums are many statues of Amazons representing 5th century originals. These have usually been largely restored, and it is no easy matter to discover their original type. Professor Michaelis has recovered successfully three types (fig. 40). The attribution of these is a matter of controversy. The first has been given to the chisel of Polyclitus; the second seems to represent the Wounded Amazon of Cresilas; the third has by some archaeologists been given to Pheidias. It does not represent a wounded amazon, but one alert, about to leap upon her horse with the help of a spear as a leaping pole. 486

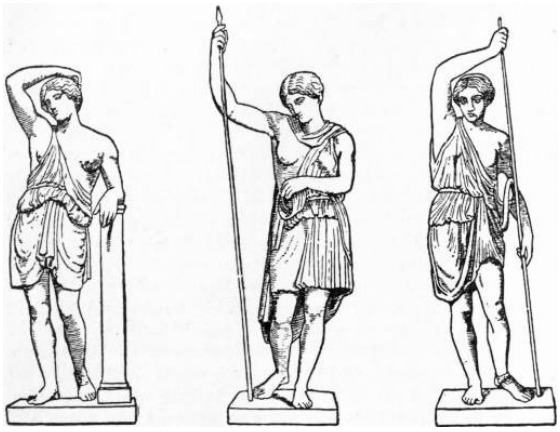


Fig. 40.—Types of Amazons (Michaelis.)

Lycia.

We can devote little more than a passing mention to the sculpture of other temples and shrines of the later 5th century, which nevertheless deserve careful study. The frieze from the temple of Apollo at Phigalia, representing Centaur and Amazon battles, is familiar to visitors of the British Museum, where, however, its proximity to the remains of the Parthenon lays stress upon the faults of grouping and execution which this frieze presents. It seems to have been executed by local Arcadian artists. More pleasing is the sculpture of the Ionic tomb called the Nereid monument, brought by Sir Charles Fellows from Lycia. Here we have not only a series of bands of relief which ran round the tomb, but also detached female figures, whence the name which it bears is derived. A recent view sees in these women with their fluttering drapery not nymphs of the sea, but personifications of sea-breezes.

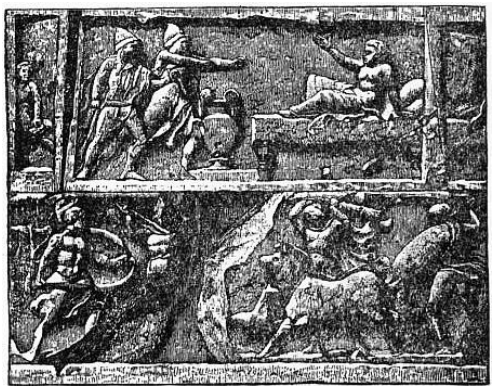
The series of known Lycian tombs has been in recent years enriched through the acquisition by the museum of Vienna of the sculptured friezes which adorned a heroon near Geul Bashi. In the midst of the enclosure was a tomb, and the walls of the enclosure itself were adorned within and without with a great series of reliefs, mostly of mythologic purport. Many subjects which but rarely occur in early Greek art, the siege of Troy, the adventure of the Seven against Thebes, the carrying off of the daughters of Leucippus, Ulysses shooting down the Suitors, are here represented in detail. Professor Benndorf, who has published these sculptures in an admirable volume, is disposed to see in them the influence of the Thasian painter Polygnotus. Any one can see their kinship to painting, and their subjects recur in some of the great frescoes painted by Polygnotus, Micon and others for the Athenians. Like other Lycian sculptures, they contain non-Hellenic elements; in fact Lycia forms a link of the chain which extends from the wall-paintings of Assyria to works like the columns of Trajan and of Antoninus, but is not embodied in the more purely idealistic works of the highest Greek art. The date of the Vienna tomb is not much later than the middle of the 5th century. A small part of the frieze of this monument is shown in fig. 41. It will be seen that in this fragment there are two scenes, one directly above the other. In the upper line Ulysses, accompanied by his son Telemachus, is in the act of shooting the suitors, who are reclining at table in the midst of a feast; a cup-bearer, possibly Melanthius, is escaping by a door behind Ulysses. In the lower line is the central group of a frieze which represents the hunting of the Calydonian boar, which is represented, as is usual in the best time of Greek art, as an ordinary animal and no monster.

Portraits.

Archaeologists have recently begun to pay more attention to an interesting branch of Greek art which had until recently been neglected, that of sculptured portraits. The known portraits of the 5th century now include Pericles, Herodotus, Thucydides, Anacreon, Sophocles, Euripides, Socrates and others. As might be expected in a time when style in sculpture was so strongly pronounced, these portraits, when not later unfaithful copies, are notably ideal. They represent the great men whom they portray not in the spirit of realism. Details are neglected, expression is not elaborated; the sculptor tries to represent what is permanent in his subject rather than what is temporary. Hence these portraits do not seem to belong to a particular time of life; they only represent a man in the perfection of physical force and mental energy. And the race or type is clearly shown through individual traits. In some cases it is still disputed whether statues of this age represent deities or mortals, so notable are the repose and dignity which even human figures acquire under the hands of 5th-century masters. The Pericles after Cresilas in the British Museum, and the athlete-portraits of Polyclitus, are good examples.

Period III. 400-300 B.C.—The high ideal level attained by Greek art at the end of the 5th century is maintained in the 4th. There cannot be any question of decay in it save at Athens, where undoubtedly the loss of religion and the decrease of national prosperity acted prejudicially. But in Peloponnesus the time was one of expansion; several new and important cities, such as Messene,

Megalopolis and Mantinea, arose under the protection of Epaminondas. And in Asia the Greek cities were still prosperous and artistic, as were the cities of Italy and Sicily which kept their independence. On the whole we find during this age some diminution of the freshness and simplicity of art; it works less in the service of the gods and more in that of private patrons; it becomes less ethical and more sentimental and emotional. On the other hand, there can be no doubt that technique both in painting and sculpture advanced with rapid strides; artists had a greater mastery of their materials, and ventured on a wider range of subject.



Heroon of Gyeul Bashi Trysa, Pl. 7.
Fig. 41.—Odysseus and Suitors; Hunting of Boar.

In the 4th century no new temples of importance rose at Athens; the Acropolis had taken its final form; but at Messene, Tegea, Epidaurus and elsewhere, very admirable buildings arose. The remains of the temple at Tegea are of wonderful beauty and finish; as are those of the theatre and the so-called *Tholus* of Epidaurus. In Asia Minor vast temples of the Ionic order arose, especially at Miletus and Ephesus. The colossal pillars of Miletus astonish the visitors to the Louvre; while the sculptured columns of Ephesus in the British Museum (Plate II. fig. 59) show a high level of artistic skill. The Mausoleum erected about 350 B.C. at Halicarnassus in memory of Mausolus, king of Caria, and adorned with sculpture by the most noted artists of the day, was reckoned one of the wonders of the world. It has been in part restored in the British Museum. Mr Oldfield's conjectural restoration, published in *Archaeologia* for 1895, though it has many rivals, surpasses them all in the lightness of the effect, and in close correspondence to the description by Pliny. We show a small part of the sculptural decoration, representing a battle between Greeks and Amazons (Plate IV. fig. 70), wherein the energy of the action and the careful balance of figure against figure are remarkable. We possess also the fine portraits of Mausolus himself and his wife Artemisia, which stood in or on the building, as well as part of a gigantic chariot with four horses which surmounted it.

Another architectural work of the 4th century, in its way a gem, is the structure set up at Athens by Lysicrates, in memory of a choragic victory. This still survives, though the reliefs with which it is adorned have suffered severely from the weather.

Nat. Mus., Naples.
Fig. 42.—Greek Drawing of Women Playing at Knucklebones.

The 4th century is the brilliant period of ancient painting. It opens with the painters of the Asiatic School, Zeuxis and Parrhasius and Protogenes, with their contemporaries Nicias and Apollodorus of Athens, Timanthes of Sicyon or Cythnus, and Euphranor of Corinth. It witnesses the rise of a great school at Sicyon, under Eupompus and Pamphilus, which was noted for its scientific character and the fineness of its drawing, and which culminated in Apelles, the painter of Alexander the Great, and probably the greatest master of the art in antiquity. To each of these painters a separate article is given, fixing their place in the history of the art. Of their paintings unfortunately we can form but a very inadequate notion. Vase-paintings, which in the 5th century give us some notion at least of contemporary drawing, are less careful in the 4th century. Now and then we find on them figures admirably designed, or successfully foreshortened; but these are rare occurrences. The art of the vase decorator has ceased to follow the methods and improvements of contemporary fresco painters, and is pursued as a mere branch of commerce.

But very few actual paintings of the age survive, and even these fragmentary remains have with time lost the freshness of their colouring; nor are they in any case the work of a noteworthy hand. We reproduce two examples. The first is from a stone of the vault of a Crimean grave (Plate IV. fig. 67). The date of the grave is fixed to the 4th century by ornaments found in it, among which was a gold coin of Alexander the Great. The representation is probably of Demeter or her priestess, her hair bound with poppies and other flowers. The original is of large size. The other illustration (fig. 42) represents the remains of a drawing on marble, representing a group of women playing knucklebones. It was found at Herculaneum. Though signed by one Alexander of Athens, who was probably a worker of the Roman age, Professor Robert is right in maintaining that Alexander only copied a design of the age of Zeuxis and Parrhasius. In fact the drawing and grouping is so closely like that of reliefs of about 400 B.C. that the drawing is of great historic value, though there be no colouring. Several other drawings of the same class have been found at Herculaneum, and on the walls of the Transtiberine Villa at Rome (now in the Terme Museum).

Until about the year 1880, our knowledge of the great Greek sculptors of the 4th century was derived mostly from the statements of ancient writers and from Roman copies, or what were

Praxiteles.

supposed to be copies, of their works. We are now in a far more satisfactory position. We now possess an original work of Praxiteles, and sculptures executed under the immediate direction of, if not from the hand of, other great sculptors of that age—Scopas, Timotheus and others. Among all the discoveries made at Olympia, none has become so familiar to the artistic world as that of the Hermes of Praxiteles. It is the first time that we have become possessed of a first-rate Greek original by one of the greatest of sculptors. Hitherto almost all the statues in our museums have been either late copies of Greek works of art, or else the mere decorative sculpture of temples and tombs, which was by the ancients themselves but little regarded. But we can venture without misgiving to submit the new Hermes to the strictest examination, sure that in every line and touch we have the work of a great artist. This is more than we can say of any of the literary remains of antiquity—poem, play or oration. Hermes is represented by the sculptor (fig. 43 and Plate VI. fig. 82) in the act of carrying the young child Dionysus to the nymphs who were charged with his rearing. On the journey he pauses and amuses himself by holding out to the child-god a bunch of grapes, and watching his eagerness to grasp them. To the modern eye the child is not a success; only the latest art of Greece is at home in dealing with children. But the Hermes, strong without excessive muscular development, and graceful without leanness, is a model of physical formation, and his face expresses the perfection of health, natural endowment and sweet nature. The statue can scarcely be called a work of religious art in the modern or Christian sense of the word religious, but from the Greek point of view it is religious, as embodying the result of the harmonious development of all human faculties and life in accordance with nature.

Olympia, iii. 53.

Fig. 43.—Hermes of Praxiteles; restored.

The Hermes not only adds to our knowledge of Praxiteles, but also confirms the received views in regard to him. Already many works in galleries of sculpture had been identified as copies of statues of his school. Noteworthy among these are, the group at Munich representing Peace nursing the infant Wealth, from an original by Cephisodotus, father of Praxiteles; copies of the Cnidian Aphrodite of Praxiteles, especially one in the Vatican which is here illustrated (Plate V. fig. 71); copies of the Apollo slaying a lizard (Sauroctonus), of a Satyr (in the Capitol Museum), and others. These works, which are noted for their softness and charm, make us understand the saying of ancient critics that Praxiteles and Scopas were noted for the pathos of their works, as Pheidias and Polyclitus for the ethical quality of those they produced. But the pathos of Praxiteles is of a soft and dreamy character; there is no action, or next to none; and the emotions which he rouses are sentimental rather than passionate. Scopas, as we shall see, was of another mood. The discovery of the Hermes has naturally set archaeologists searching in the museums of Europe for other works which may from their likeness to it in various respects be set down as Praxitelean in character. In the case of many of the great sculptors of Greece—Strongylion, Silanion, Calamis and others—it is of little use to search for copies of their works, since we have little really trustworthy evidence on which to base our inquiries. But in the case of Praxiteles we really stand on a safe level. Naturally it is impossible in these pages to give any sketch of the results, some almost certain, some very doubtful, of the researches of archaeologists in quest of Praxitelean works. But we may mention a few works which have been claimed by good judges as coming from the master himself. Professor Brunn claimed as work of Praxiteles a torso of a satyr in the Louvre, in scheme identical with the well-known satyr of the Capitol. Professor Furtwängler puts in the same category a delicately beautiful head of Aphrodite at Petworth. And his translator, Mrs Strong, regards the Aberdeen head of a young man in the British Museum as the actual work of Praxiteles. Certainly this last head does not suffer when placed beside the Olympian head of Hermes. At Mantinea has been found a basis whereon stood a group of Latona and her two children, Apollo and Artemis, made by Praxiteles. This base bears reliefs representing the musical contest of Apollo and Marsyas, with the Muses as spectators, reliefs very pleasing in style, and quite in the manner of Attic artists of the 4th century. But of course we must not ascribe them to the hand of Praxiteles himself; great sculptors did not themselves execute the reliefs which adorned temples and other monuments, but reserved them for their pupils. Yet the graceful figures of the Muses of Mantinea suggest how much was due to Praxiteles in determining the tone and character of Athenian art in relief in the 4th century. Exactly the same style which marks them belongs also to a mass of sepulchral monuments at Athens, and such works as the Sidonian sarcophagus of the Mourning Women, to be presently mentioned.

Scopas.

Excavation on the site of the temple of Athena Alea at Tegea has resulted in the recovery of works of the school of Scopas. Pausanias tells us that Scopas was the architect of the temple, and so important in the case of a Greek temple is the sculptural decoration, that we can scarcely doubt that the sculpture also of the temple at Tegea was under the supervision of Scopas, especially as he was more noted as a sculptor than as an architect. In the pediments of the temple were represented two scenes from mythology, the hunting of the Calydonian boar and the combat between Achilles and Telephus. To one or other of these scenes belong several heads of local marble discovered on the spot, which are very striking from their extraordinary life and animation. Unfortunately they are so much injured that they can scarcely be made intelligible except by the help of restoration; we therefore engrave one of them, the helmeted head, as restored by a German sculptor (Plate III. fig. 63). The strong bony frame of this head, and its depth from front to back, are not less noteworthy than the parted lips and deeply set and strongly shaded eye; the latter features impart to the head a vividness of expression such as we have found in no previous work of Greek art, but which sets the key to the developments of art which take place in the Hellenistic age. A draped torso of Atalanta from the same pediment has been fitted to one of these heads. Hitherto Scopas was known to us, setting aside literary records, only as one of the sculptors who had worked at the Mausoleum. Ancient critics and travellers, however, bear ample testimony to his fame, and the wide range of his activity, which extended to northern Greece, Peloponnese and Asia Minor. His Maenads and his Tritons and other beings of the sea were much copied in antiquity. But perhaps he reached his highest level in statues such as that of Apollo as leader of the Muses, clad in long drapery.

Timotheus, Bryaxis, Leochares.

The interesting precinct of Aesculapius at Epidaurus has furnished us with specimens of the style of an Athenian contemporary of Scopas, who worked with him on the Mausoleum. An inscription which records the sums spent on the temple of the Physician-god, informs us that the models for the sculptures of the pediments, and one set of acroteria or roof adornments, were the work of Timotheus. Of the pedimental figures and the acroteria considerable fragments have been recovered, and we may with confidence assume that at all events the models for these were by Timotheus. It is strange that the unsatisfactory arrangement whereby a noted sculptor makes models and some local workman the figures enlarged from those models, should have been tolerated by so artistic a people as the Greeks. The subjects of the pediments appear to have been the common ones of battles between Greek and Amazon and between Lapith and Centaur. We possess fragments of some of the Amazon figures, one of which, striking downwards at the enemy, is here shown (fig. 44). Their attitudes are vigorous and alert; but the work shows no delicacy of detail. Figures of Nereids riding on horses, which were found on the same site, may very probably be roof ornaments (acroteria) of the temple. We have also several figures of Victory, which probably were acroteria on some smaller temple, perhaps that of Artemis. A base found at Athens, sculptured with figures of horsemen in relief, bears the name of Bryaxis, and was probably made by a pupil of his. Probable conjecture assigns to Leochares the originals copied in the Ganymede of the Vatican, borne aloft by an eagle (Plate I. fig. 53) and the noble statue of Alexander the Great at Munich (see Leochares). Thus we may fairly say that we are now acquainted with the work of all the great sculptors who worked on the Mausoleum—Scopas, Bryaxis, Leochares and Timotheus; and are in a far more advantageous position than were the archaeologists of 1880 for determining the artistic problems connected with that noblest of ancient tombs.

Fig. 44.—Amazon from Epidaurus.

Contemporary with the Athenian school of Praxiteles and Scopas was the great school of Argos and Sicyon, of which Lysippus was

the most distinguished member. Lysippus continued the academic traditions of Polyclitus, but he was far bolder in his choice of subjects and more innovating in style. Gods, heroes and mortals alike found in him a sculptor who knew how to combine fine ideality with a vigorous actuality. He was at the height of his fame during Alexander's life, and the grandiose ambition of the great Macedonian found him ample employment, especially in the frequent representation of himself and his marshals.

We have none of the actual works of Lysippus; but our best evidence for his style will be found in the statue of Agias an athlete (Plate V. fig. 74) found at Delphi, and shown by an inscription to be a marble copy of a bronze original by Lysippus. The Apoxyomenus of the Vatican (man scraping himself with a strigil) (Plate VI. fig. 79) has hitherto been regarded as a copy from Lysippus; but of this there is no evidence, and the style of that statue belongs rather to the 3rd century than the 4th. The Agias, on the other hand, is in style contemporary with the works of 4th-century sculptors. 489

Of the elaborate groups of combatants with which Lysippus enriched such centres as Olympia and Delphi, or of the huge bronze statues which he erected in temples and shrines, we can form no adequate notion. Perhaps among the extant heads of Alexander the one which is most likely to preserve the style of Lysippus is the head from Alexandria in the British Museum (Plate II. fig. 56), though this was executed at a later time.

Many noted extant statues may be attributed with probability to the latter part of the 4th or the earlier part of the 3rd century. We will mention a few only. The celebrated group at Florence representing Niobe and her children falling before the arrows of Apollo and Artemis is certainly a work of the pathetic school, and may be by a pupil of Praxiteles. Niobe, in an agony of grief, which is in the marble tempered and idealized, tries to protect her youngest daughter from destruction (Plate VI. fig. 78). Whether the group can have originally been fitted into the gable of a temple is a matter of dispute.

Two great works preserved in the Louvre are so noted that it is but necessary to mention them, the Aphrodite of Melos (Plate VI. fig. 77), in which archaeologists are now disposed to see the influence of Scopas, and the Victory of Samothrace (Plate III. figs. 61 and 62), an original set up by Demetrius Poliorcetes after a naval victory won at Salamis in Cyprus in 306 B.C. over the fleet of Ptolemy, king of Egypt.

Nor can we pass over without notice two works so celebrated as the Apollo of the Belvidere in the Vatican (Plate II. fig. 55), and the Artemis of Versailles. The Apollo is now by most archaeologists regarded as probably a copy of a work of Leochares, to whose Ganymede it bears a superficial resemblance. The Artemis is regarded as possibly due to some artist of the same age. But it is by no means clear that we have the right to remove either of these figures from among the statues of the Hellenistic age. The old theory of Preller, which saw in them copies from a trophy set up to commemorate the repulse of the Gauls at Delphi in 278 B.C., has not lost its plausibility.

Sarcophagi of Sidon.

This may be the most appropriate place for mentioning the remarkable find made at Sidon in 1886 of a number of sarcophagi, which once doubtless contained the remains of kings of Sidon. They are now in the museum of Constantinople, and are admirably published by Hamdy Bey and T. Reinach (*Une Nécropole royale à Sidon*, 1892-1896). The sarcophagi in date cover a considerable period. The earlier are made on Egyptian models, the covers shaped roughly in the form of a human body or mummy. The later, however, are Greek in form, and are clearly the work of skilled Greek sculptors, who seem to have been employed by the grandees of Phoenicia in the adornment of their last resting-places. Four of these sarcophagi in particular claim attention, and in fact present us with examples of Greek art of the 5th and 4th centuries in several of its aspects. To the 5th century belong the tomb of the Satrap, the reliefs of which bring before us the activities and glories of some unknown king, and the Lycian sarcophagus, so called from its form, which resembles that of tombs found in Lycia, and which is also adorned with reliefs which have reference to the past deeds of the hero buried in the tomb, though these deeds are represented, not in the Oriental manner directly, but in the Greek manner, clad in mythological forms. To the 4th century belong two other sarcophagi. One of these is called the Tomb of Mourning Women. On all sides of it alike are ranged a series of beautiful female figures, separated by Ionic pillars, each in a somewhat different attitude, though all attitudes denoting grief (fig. 45). The pediments at the ends of the cover are also closely connected with the mourning for the loss of a friend and protector, which is the theme of the whole decoration of the sarcophagus. We see depicted in them the telling of the news of the death, with the results in the mournful attitude of the two seated figures. The mourning women must be taken, not as the representation of any persons in particular, but generally as the expression of the feeling of a city. Such figures are familiar to us in the art of the second Attic school; we could easily find parallels to the sarcophagus among the 4th-century sepulchral reliefs of Athens. We can scarcely be mistaken in attributing the workmanship of this beautiful sarcophagus to some sculptor trained in the school of Praxiteles. And it is a conjecture full of probability that it once contained the body of Strato, king of Sidon, who ruled about 380 B.C., and who was *proxenos* or public friend of the Athenians.

Hamdy et Reinach, *Nécropole à Sidon*, Pl. 7.

FIG. 45.—Tomb of Mourning Women: Sidon.

More celebrated is the astonishing tomb called that of Alexander, though there can be no doubt that, although it commemorates the victories and exploits of Alexander, it was made not to hold his remains, but those of some ruler of Sidon who was high in his favour. Among all the monuments of antiquity which have come down to us, none is more admirable than this, and none more characteristic of the Greek genius. We give, in two lines, the composition which adorned one of the sides of this sarcophagus. It represents a victory of Alexander, probably that of the Granicus (fig. 46). On the left we see the Macedonian king charging the Persian horse, on the right his general Parmenio, and in the midst a younger officer, perhaps Cleitus. Mingled with the chiefs are foot-soldiers, Greek and Macedonian, with whom the Persians are mingled in unequal fray. What most strikes the modern eye is the remarkable freshness and force of the action and the attitudes. Those, however, who have seen the originals have been specially impressed with the colouring, whereof, of course, our engraving gives no hint, but which is applied to the whole surface of the relief with equal skill and delicacy. There are other features in the relief on which a Greek eye would have dwelt with special pleasure—the exceedingly careful symmetry of the whole, the balancing of figure against figure, the skill with which the result of the battle is hinted rather than depicted. The composition is one in which the most careful planning and the most precise calculation are mingled with freedom of hand and expressiveness in detail. The faces in particular show more expression than would be tolerated in art of the previous century. We are unable as yet to assign an author or even a school to the sculptor of this sarcophagus; he comes to us as a new and striking phenomenon in the history of ancient art. The reliefs which adorn the other sides of the sarcophagus are almost equally interesting. On one side we see Alexander again, in the company of a Persian noble, hunting a lion. The short sides also show us scenes of fighting and hunting. In fact it can scarcely be doubted that if we had but a clue to the interpretation of the reliefs, they would be found to embody historic events of the end of the 4th century. There are but a few other works of art, such as the Bayeux tapestry and the Column of Trajan, which bring contemporary history so vividly before our eyes. The battles with the Persians represented in some of the sculpture of the Parthenon and the temple of Nike at Athens are treated conventionally and with no attempt at realism; but here the ideal and the actual are blended into a work of consummate art, which is at the same time, to those who can read the language of Greek art, a historic record. The portraits of Alexander the Great which appear on this sarcophagus are almost contemporary, and the most authentic likenesses of him which we possess. The great Macedonian exercised so strong an influence on contemporary art that a multitude of heads of the age, both of gods and men, and even the portraits of his successors, show traces of his type.

We have yet to mention what are among the most charming and the most characteristic products of the Greek chisel, the beautiful tombs, adorned with seated or standing portraits or with reliefs, which were erected in great numbers on all the main roads of Greece. A great number of these from the Dipylon cemetery are preserved in the Central Museum at Athens, and impress all visitors by the gentle sentiment and the charm of grouping which they display (Gardner, *Sculptured Tombs of Hellas*). 490

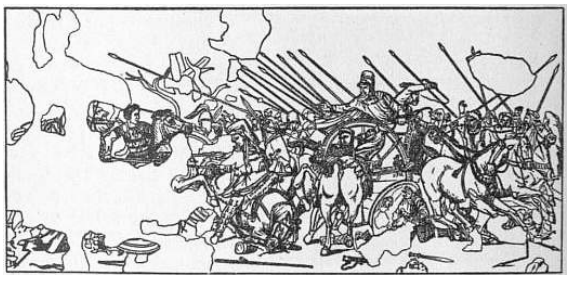
Hamdy et Reinach. *Nécropole à Sidon*, Pl. 30.

Fig. 46.—Battle of The Granicus: Sarcophagus from Sidon.

Period IV., 300-50 B.C.—There can be no question but that the period which followed the death of Alexander, commonly called the age of Hellenism, was one of great activity and expansion in architecture. The number of cities founded by himself and his immediate successors in Asia and Egypt was enormous. The remains of these cities have in a few cases (Ephesus, Pergamum, Assus, Priene, Alexandria) been partially excavated. But the adaptation of Greek architecture to the needs of the semi-Greek peoples included in the dominions of the kings of Egypt, Syria and Pergamum is too vast a subject for us to enter upon here (see Architecture).

Painting during this age ceased to be religious. It was no longer for temples and public stoae that artists worked, but for private persons; especially they made frescoes for the decoration of the walls of houses, and panel pictures for galleries set up by rich patrons. The names of very few painters of the Hellenistic age have come down to us. There can be no doubt that the character of the art declined, and there were no longer produced great works to be the pride of cities, or to form an embodiment for all future time of the qualities of a deity or the circumstances of scenes mythical or historic. But at the same time the mural paintings of Pompeii and other works of the Roman age, which are usually more or less nearly derived from Hellenistic models, prove that in technical matters painting continued to progress. Colouring became more varied, groups more elaborate, perspective was worked out with greater accuracy, and imagination shook itself free from many of the conventions of early art. Pompeian painting, however, must be treated of under Roman, not under Greek art. We figure a single example, to show the elaboration of painting at Alexandria and elsewhere, the wonderful Pompeian mosaic (fig. 47), which represents the victory of Alexander at Issus. This work being in stone has preserved its colouring; and it stands at a far higher level of art than ordinary Pompeian paintings, which are the work of mere house-decorators. This on the contrary is certainly copied from the work of a great master. It is instructive to compare it with the sarcophagus illustrated in Fig. 46, which it excels in perspective and in the freedom of individual figures, though the composition is much less careful and precise. Alexander charges from the left (his portrait being the least successful part of the picture), and bears down a young Persian; Darius in his chariot flees towards the right; in the foreground a young knight is trying to manage a restive horse. It will be observed how very simple is the indication of locality: a few stones and a broken tree stand for rocks and woods.

Among the original sculptural creations of the early Hellenistic age, a prominent place is claimed by the statue of Fortune, typifying the city of Antioch (Plate VI. fig. 81), a work of Eutychides, a pupil of Lysippus. Of this we possess a small copy, which is sufficient to show how worthy of admiration was the original. We have a beautiful embodiment of the personality of the city, seated on a rock, holding ears of corn, while the river Orontes, embodied in a young male figure, springs forth at her feet.



From a photograph by G. Borgi.

Fig. 47.—Mosaic of the Battle of Issus (Naples).

This is, so far as we know, almost the only work of the early part of the 3rd century which shows imagination. Sculptors often worked on a colossal scale, producing such monsters as the colossal Apollo at Rhodes, the work of Chares of Lindus, which was more than 100 ft. in height. But they did not show freshness or invention; and for the most part content themselves with varying the types produced in the great schools of the 4th century. The wealthy kings of Syria, Egypt and Asia Minor formed art galleries, and were lavish in their payments; but it has often been proved in the history of art that originality cannot be produced by mere expenditure.

A great artist, whose date has been disputed, but who is now assigned to the Hellenistic age, Damophon of Messene, is known to us from his actual works. He set up in the shrine of the *Mistress* (Despoena) at Lycosura in Arcadia a great group of figures consisting of Despoena, Demeter, Artemis and the Titan Anytus. Three colossal heads found on the spot probably belong to the three last-mentioned deities. We illustrate the head of Anytus, with wild disordered hair and turbulent expression (fig. 48). Dr Dörpfeld has argued, on architectural grounds, that shrine and images alike must be given to a later time than the 4th century; and this judgment is now confirmed by inscriptional and other evidence.

In one important direction sculpture certainly made progress. Hitherto Greek sculptors had contented themselves with studying the human body whether in rest or motion, from outside. The dissection of the human body, with a consequent increase in knowledge of anatomy, became usual at Alexandria in the medical school which flourished under the Ptolemies. This improved anatomical knowledge soon reacted upon the art of sculpture. Works such as the Fighter of Agasias in the Louvre (Plate IV. fig. 69), and in a less degree the Apoxyomenus (Plate VI. fig. 79), display a remarkable internal knowledge of the human frame, such as could only come from the habit of dissection. Whether this was really productive of improvement in sculpture may be doubted. But it is impossible to withhold one's admiration from works which show an astonishing knowledge of the body of man down to its bony framework, and a power and mastery of execution which have never since been surpassed.

Fig. 48.—Head of Anytus: Lycosura.

With accuracy in the portrayal of men's bodies goes of necessity a more naturalistic tendency in portraiture. As we have seen, the art of portraiture was at a high ideal level in the Pheidian age; and even in the age of Alexander the Great, notable men were rendered rather according to the idea than the fact. To a base and mechanical naturalism Greek art never at any time descended. But from 300 B.C. onwards we have a marvellous series of portraits which may be termed rather characteristic than ideal, which are very minute in their execution, and delight in laying emphasis on the havoc wrought by time and life on the faces of noteworthy men. Such are the portraits of Demosthenes, of Antisthenes, of Zeno and others, which exist in our galleries. And it was no long step from these actual portraits to the invention of characteristic types to represent the great men of a past generation, such as Homer and Lycurgus, or to form generic images to represent weatherbeaten fishermen or toothless old women.

Altar of Pergamum.

Our knowledge of the art of the later Hellenistic age has received a great accession since 1875 through the systematic labours directed by the German Archaeological Institute, which have resulted in recovering the remains of Pergamum, the fortress-city which was the capital of the dynasty of the Philetaeri. Among the ancient buildings of Pergamum none was more ambitious in scale and striking in execution than the great altar used for sacrifices to Zeus, a monument supposed to be referred to in the phrase of the Apocalypse "where Satan's throne is." This altar, like many great sacrificial altars of later Greece, was a vast erection to which one mounted by many steps, and its outside was adorned with a frieze which represented on a gigantic scale, in the style of the 2nd century B.C., the battle between the gods and the giants. This enormous frieze (see Pergamum) is now one of the treasures of the Royal Museums of Berlin, and it cannot fail to impress visitors by the size of the figures, the energy of the action, and the strong vein of sentiment which pervades the whole, giving it a certain air of modernity, though the subject is strange to the Christian world. In early Greek art the giants where they oppose the gods are represented as men armed in full panoply, "in shining armour, holding long spears in their hands," to use the phrase in which Hesiod describes them. But in the Pergamene frieze the giants are strange compounds, having the heads and bodies of wild and fierce barbarians, sometimes also human legs, but sometimes in the place of legs two long serpents, the heads of which take with the giants themselves a share in the battle. Sometimes also they are winged. The gods appear in the forms which had been gradually made for them in the course of Greek history, but they are usually accompanied by the animals sacred to them in cultus, between which and the serpent-feet of the giants a weird combat goes on. We can conjecture the source whence the Pergamene artist derived the shaggy hair, the fierce expression, the huge muscles of his giants (fig. 49); probably these features came originally from the Galatians, who at the time had settled in Asia Minor, and were spreading the terror of their name and the report of their savage devastations through all Asia Minor. The victory over the giants clearly stands for the victory of Greek civilization over Gallic barbarism; and this meaning is made more emphatic because the gods are obviously inferior in physical force to their opponents, indeed, a large proportion of the divine combatants are goddesses. Yet everywhere the giants are overthrown, writhing in pain on the ground, or transfixed by the weapons of their opponents; everywhere the gods are victorious, yet in the victory retain much of their divine calm. The piecing together of the frieze at Berlin has been a labour of many years; it is now complete, and there is a special museum devoted to it. Some of the groups have become familiar to students from photographs, especially the group which represents Zeus slaying his enemies with thunderbolts, and the group wherein Athena seizes by the hair an overthrown opponent, who is winged, while Victory runs to crown her, and beneath is seen Gaia, the earth-goddess who is the mother of the giants, rising out of the ground, and mourning over her vanquished and tortured children. Another and smaller frieze which also decorated the altar-place gives us scenes from the history of Telephus, who opposed the landing of the army of Agamemnon in Asia Minor and was overthrown by Achilles. This frieze, which is quite fragmentary, is put together by Dr Schneider in the *Jahrbuch* of the German Archaeological Institute for 1900.

Fig. 49.—Giant from Great Altar: Pergamum.

Since the Renaissance Rome has continually produced a crop of works of Greek art of all periods, partly originals brought from Greece by conquering generals, partly copies, such as the group at Rome formerly known as Paetus and Arria, and the overthrown giants and barbarians which came from the elaborate trophy set up by Attalus at Athens, of which copies exist in many museums. A noted work of kindred school is the group of Laocoon and his sons (Plate I. fig. 52), signed by Rhodian sculptors of the 1st century B.C., which has been perhaps more discussed than any work of the Greek chisel, and served as a peg for the aesthetic theories of Lessing and Goethe. In our days the histrionic and strained character of the group is regarded as greatly diminishing its interest, in spite of the astounding skill and knowledge of the human body shown by the artists. To the same school belong the late representations of Marsyas being flayed by the victorious Apollo (Plate II. fig. 54), a somewhat repulsive subject, chosen by the artists of this age as a means for displaying their accurate knowledge of anatomy.

On what a scale some of the artists of Asia Minor would work is shown us by the enormous group, by Apollonius and Tauriscus of Tralles, which is called the Farnese Bull (Plate I. fig. 51), and which represents how Dirce was tied to a wild bull by her stepsons Zethus and Amphion.

Rome.

The extensive excavations and alterations which have taken place at Rome in recent years have been very fruitful; the results may be found partly in the palace of the Conservatori on the Capitol, partly in the new museum of the Terme. Among recently found statues none excel in interest some bronzes of large size dating from the Hellenistic age. In the figure of a seated boxer (Plate V. fig. 72), in scale somewhat exceeding life, attitude and gesture are expressive. Evidently the boxer has fought already, and is awaiting a further conflict. His face is cut and swollen; on his hands are the terrible caestus, here made of leather, and not loaded with iron, like the caestus described by Virgil. The figure is of astounding force; but though the face is brutal and the expression savage, in the sweep of the limbs there is nobility, even ideal beauty. To the last the Greek artist could not set aside his admiration for physical perfection. Another bronze figure of more than life-size is that of a king of the Hellenistic age standing leaning on a spear. He is absolutely nude, like the athletes of Polyclitus. Another large bronze presents us with a Hellenistic type of Dionysus.

Besides the bronzes found in Rome we may set those recently found in the sea on the coast of Cythera, the contents of a ship sailing from Greece to Rome, and lost on the way. The date of these bronze statues has been disputed. In any case, even if executed in the Roman age, they go back to originals of the 5th and 4th centuries. The most noteworthy among them is a beautiful athlete (Plate V. fig. 73) standing with hand upraised, which reflects the style of the Attic school of the 4th century.

After 146 B.C. when Corinth was destroyed and Greece became a Roman province, Greek art, though by no means extinct, worked mainly in the employ of the Roman conquerors (see Roman Art).

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VII. **Books related to the subject.**—J. G. Frazer, *Pausanias's Description of Greece* (6 vols.); J. Lange, *Darstellung des Menschen in der älteren griechischen Kunst*; E. Brücke, *The Human Figure; its Beauties and Defects*; A. Michaelis, *Ancient Marbles in Great Britain* (1882); *Catalogue of Greek Sculpture in the British Museum* (3 vols.); *Catalogue of Greek Vases in the British Museum* (4 vols.); J. B. Bury, *History of Greece* (illustrated edition); Baumeister, *Denkmäler des klassischen Altertums* (3 vols.).

(P. G.)

1 *Grammar of Greek Art.*

2 It may here be pointed out that it was found impossible, with any regard for the appearance of the pages, to arrange the Plates for this article so as to preserve a chronological order in the individual figures; they are not arranged consecutively as regards the history or the period, and are only grouped for convenience in paging.—Ed.

3 The date is given when the work cannot be considered new.

GREEK FIRE, the name applied to inflammable and destructive compositions used in warfare during the middle ages and particularly by the Byzantine Greeks at the sieges of Constantinople. The employment of liquid fire is represented on Assyrian bas-reliefs. At the siege of Plataea (429 B.C.) the Spartans attempted to burn the town by piling up against the walls wood saturated with pitch and sulphur and setting it on fire (Thuc. ii. 77), and at the siege of Delium (424 B.C.) a cauldron containing pitch, sulphur and burning charcoal, was placed against the walls and urged into flame by the aid of a bellows, the blast from which was conveyed through a hollow tree-trunk (Thuc. iv. 100). Aeneas Tacticus in the following century mentions a mixture of sulphur, pitch, charcoal, incense and tow, which was packed in wooden vessels and thrown lighted upon the decks of the enemy's ships. Later, as in receipts given by Vegetius (*c.* A.D. 350), naphtha or petroleum is added, and some nine centuries afterwards the same substances are found forming part of mixtures described in the later receipts (which probably date from the beginning of the 13th century) of the collection known as the *Liber ignium* of Marcus Graecus. In subsequent receipts saltpetre and turpentine make their appearance, and the modern "carcass composition," containing sulphur, tallow, rosin, turpentine, saltpetre and crude antimony, is a representative of the same class of mixtures, which became known to the Crusaders as Greek fire but were more usually called wildfire. Greek fire, properly so-called, was, however, of a somewhat different character. It is said that in the reign of Constantine Pogonatus (648-685) an architect named Callinicus, who had fled from Heliopolis in Syria to Constantinople, prepared a wet fire which was thrown out from siphons (τὸ διὰ τῶν σιφώνων ἐκφερόμενον πῦρ ὑγρόν), and that by its aid the ships of the Saracens were set on fire at Cyzicus and their defeat assured. The art of compounding this mixture, which is also referred to as πῦρ θαλάσσιον, or sea fire, was jealously guarded at Constantinople, and the possession of the secret on several occasions proved of great advantage to the city. The nature of the compound is somewhat obscure. It has been supposed that the novelty introduced by Callinicus was saltpetre, but this view involves the difficulty that that substance was apparently not known till the 13th century, even if it were capable of accounting for the properties attributed to the wet fire. Lieut.-Colonel H. W. L. Hime, after a close examination of the available evidence, concludes that what distinguished Greek fire from the other incendiaries of the period was the presence of quicklime, which was well known to give rise to a large development of heat when brought into contact with water. The mixture, then, was composed of such materials as sulphur and naphtha with quicklime, and took fire spontaneously when wetted—whence the name of wet fire or sea fire; and portions of it were "projected and at the same time ignited by applying the hose of a water engine to the breech" of the siphon, which was a wooden tube, cased with bronze. 493

See Lieut.-Col. H. W. L. Hime, *Gunpowder and Ammunition, their Origin and Progress* (London, 1904).

GREEK INDEPENDENCE, WAR OF, the name given to the great rising of the Greek subjects of the sultan against the Ottoman domination, which began in 1821 and ended in 1833 with the establishment of the independent kingdom of Greece. The circumstances that led to the insurrection and the general diplomatic situation by which its fortunes were from time to time affected are described elsewhere (see Greece: *History*; Turkey: *History*). The present article is confined to a description of the general character and main events of the war itself. If we exclude the abortive invasion of the Danubian principalities by Prince Alexander Ypsilanti (March 1821), which collapsed ignominiously as soon as it was disavowed by the tsar, the theatre of the war was confined to continental Greece, the Morea, and the adjacent narrow seas. Its history may, broadly speaking, be divided into three periods: the first (1821-1824), during which the Greeks, aided by numerous volunteers from Europe, were successfully pitted against the sultan's forces alone; the second, from 1824, when the disciplined troops of Mehemet Ali, pasha of Egypt, turned the

tide against the insurgents; the third, from the intervention of the European powers in the autumn of 1827 to the end.

When, on the 2nd of April 1821, Archbishop Germanos, head of the *Hetaeria* in the Morea, raised the standard of the cross at Kalavryta as the signal for a general rising of the Christian population, the circumstances were highly favourable. In the Morea itself, in spite of plentiful warning, the Turks were wholly unprepared; while the bulk of the Ottoman army, under the *seraskier* Khurshid Pasha, was engaged in the long task of reducing the intrepid Ali, pasha of Iannina (see Ali, pasha of Iannina).

Another factor, and that the determining one, soon came to the aid of the Greeks. In warfare carried on in such a country as Greece, sea-girt and with a coast deeply indented, inland without roads and intersected with rugged mountains, victory—as Wellington was quick to observe—must rest with the side that has command of the sea. This was assured to the insurgents at the outset by the revolt of the maritime communities of the Greek archipelago. The Greeks of the islands had been accustomed from time immemorial to seafaring; their ships—some as large as frigates—were well armed, to guard against the Barbary pirates and rovers of their own kin; lastly, they had furnished the bulk of the sailors to the Ottoman navy which, now that this recruiting ground was closed, had to be manned hastily with impressed crews of dock-labourers and peasants, many of whom had never seen the sea. The Turkish fleet, "adrift in the Archipelago"—as the British seamen put it—though greatly superior in tonnage and weight of metal, could never be a match for the Greek brigs, manned as these were by trained, if not disciplined, crews.

Outbreak of the insurrection.

The war was begun by the Greeks without definite plan and without any generally recognized leadership. The force with which Germanos marched from Kalavryta against Patras was composed of peasants armed with scythes, clubs and slings, among whom the "primates" exercised a somewhat honorary authority. The town itself was destroyed and those of its Mussulman inhabitants who could not escape into the citadel were massacred; but the citadel remained in the hands of the Turks till 1828. Meanwhile, in the south, leaders of another stamp had appeared: Petros, bey of the Maina (*q.v.*) chief of the Mavromichales, who at the head of his clan attacked Kalamata and put the Mussulman inhabitants to the sword; and Kolokotrones, a notable brigand once in the service of the Ionian government, who—fortified by a vision of the Virgin—captured Karytaena and slaughtered its infidel population. Encouraged by these successes the revolt spread rapidly; within three weeks there was not a Mussulman left in the open country, and the remnants of the once dominant class were closely besieged in the fortified towns by hosts of wild peasants and brigands. The flames of revolt now spread across the Isthmus of Corinth: early in April the Christians of Dervenokhoria rose, and the whole of Boeotia and Attica quickly followed suit; at the beginning of May the Mussulman inhabitants of Athens were blockaded in the Acropolis. In the Morea, meanwhile, a few Mussulman fortresses still held out: Coron, Modon, Navarino, Patras, Nauplia, Monemvasia, Tripolitsa. One by one they fell, and everywhere were repeated the same scenes of butchery. The horrors culminated in the capture of Tripolitsa, the capital of the vilayet. In September this was taken by storm; Kolokotrones rode in triumph to the citadel over streets carpeted with the dead; and the crowning triumph of the Cross was celebrated by a cold-blooded massacre of 2000 prisoners of all ages and both sexes. This completed the success of the insurrection in the Morea, where only Patras, Nauplia, and one or two lesser fortresses remained to the Turks.

Meanwhile, north of the Isthmus, the fortunes of war had been less one-sided. In the west Khurshid's lieutenant, Omar Vrioni (a Mussulman Greek of the race of the Palaeologi), had inflicted a series of defeats on the insurgents, recaptured Levadia, and on the 30th of June relieved the Acropolis; but the rout of the troops which Mahommed Pasha was bringing to his aid by the Greeks in the defile of Mount Oeta, and the news of the fall of Tripolitsa, forced him to retreat, and the campaign of 1821 ended with the retirement of the Turks into Thessaly.

The month of April had witnessed the revolt of the principal Greek islands, Spetsae on the 7th, Psara on the 23rd, Hydra on the 28th and Samos on the 30th. Their fleets were divided into squadrons, of which one, under Tombazes, was deputed to watch for the entrance of the Ottomans into the archipelago, while the other under Andreas Miaoulis (*q.v.*) sailed to blockade Patras and watch the coasts of Epirus. At sea, as on land, the Greeks opened the campaign with hideous atrocities, almost their first exploit being the capture of a vessel carrying to Mecca the sheik-ul-Islam and his family, whom they murdered with every aggravation of outrage.

General character of the war.

These inauspicious beginnings, indeed, set the whole tone of the war, which was frankly one of mutual extermination. On both sides the combatants were barbarians, without discipline or competent organization. At sea the Greeks rapidly developed into mere pirates, and even Miaoulis, for all his high character and courage, was often unable to prevent his captains from sailing home at critical moments, when pay or booty failed. On land the presence of a few educated Phanariots, such as Demetrios Ypsilanti or Alexander Mavrocordato, was powerless to inspire the rude hordes with any sense of order or of humanity in warfare; while every lull in the fighting, due to a temporary check to the Turks, was the signal for internecine conflicts due to the rivalry of leaders who, with rare exceptions, thought more of their personal power and profit than of the cause of Greece.

Turkish reprisals.

Europe and the rising Philhellenism.

This cause, indeed, was helped more by the impolitic reprisals of the Turks than by the heroism of the insurgents. All Europe stood aghast at the news of the execution of the Patriarch Gregorios of Constantinople (April 22, 1821) and the wholesale massacres that followed, culminating as these did in the extermination of the prosperous community of Scio (Chios) in March 1822. The cause of Greece was now that of Christendom, of the Catholic and Protestant West, as of the Orthodox East. European Liberalism, too, gagged and fettered under Metternich's "system," recognized in the Greeks the champions of its own cause; while even conservative statesmen, schooled in the memories of ancient Hellas, saw in the struggle a fight of civilization against barbarism. This latter belief, which was, moreover, flattering to their vanity, the Greek leaders were astute enough to foster; the propaganda of Adamantios Coraës (*q.v.*) had done its work; and wily brigands, like Odysseus of Ithaka, assuming the style and trappings of antiquity, posed as the champions of classic culture against the barbarian. All Europe, then, hailed with joy the exploit of Constantine Kanaris, who on the night of June 18-19 succeeded in steering a fire-ship among the Turkish squadron off Scio, and burned the flag-ship of the capudan-pasha with 3000 souls on board.

Expedition of Dramali, 1822.

Meanwhile Sultan Mahmud, now wide awake to the danger, had been preparing for a systematic effort to suppress the rising. The threatened breach with Russia had been avoided by Metternich's influence on the tsar Alexander; the death of Ali of Iannina had set free the army of Khurshid Pasha, who now, as *seraskier* of Rumelia, was charged with the task of reducing the Morea. In the spring of 1822 two Turkish armies advanced southwards: one, under Omar Vrioni, along the coast of Western Hellas, the other, under Ali, pasha of Drama (Dramali), through Boeotia and Attica. Omar was held in check by the mud ramparts of Missolonghi; but Dramali, after exacting fearful vengeance for the massacre of the Turkish garrison of the Acropolis at Athens, crossed the Isthmus and with the over-confidence of a conquering barbarian advanced to the relief of the hard-pressed garrison of Nauplia. He crossed the perilous defile of Dervenaki unopposed; and at the news of his approach most of the members of the Greek government assembled at Argos fled in panic terror. Demetrios Ypsilanti, however, with a few hundred men joined the Mainote Karayanni in the castle of Larissa, which crowns the acropolis of ancient Argos. This held Dramali in check, and gave Kolokotrones time to collect an army. The Turks, in the absence of the fleet which was to have brought them supplies, were forced to retreat (August 6); the Greeks, inspired with new courage, awaited them in the pass of Dervenaki, where the undisciplined Ottoman host, thrown into confusion by an avalanche of boulders hurled upon them, was annihilated. In Western Greece the campaign had an outcome scarcely less disastrous for the Turks. The death of Ali of Iannina had been followed by the suppression of the insurgent Suliotes and the advance of Omar Vrioni southwards to Missolonghi; but the town held out gallantly, a Turkish surprise attack, on the 6th of January 1823, was beaten off, and Omar Vrioni had to abandon the siege and retire northwards over the pass of Makrynoros.

Civil war among the Greeks.

The victorious outcome of the year's fighting had a disastrous effect upon the Greeks. Their victories had been due mainly to the guerilla tactics of the leaders of the type of Kolokotrones; Mavrocordato, whose character and antecedents had marked him out as the natural head of the new Greek state, in spite of his successful defence of Missolonghi, had been discredited by failures elsewhere; and the Greeks thus learned to despise their civilized advisers and to underrate the importance of discipline. The temporary removal of the common peril, moreover, let loose all the sectional and personal jealousies, which even in face of the enemy had been with difficulty restrained, and the year 1823 witnessed the first civil war between the Greek parties. These internecine feuds might easily have proved fatal to the cause of Greece. In the Archipelago Hydriotes and Spetsiotes were at daggers drawn; the men of Psara were at open war with those of

Samos; all semblance of discipline and cohesion had vanished from the Greek fleet. Had Khosrev, the new Ottoman admiral, been a man of enterprise, he might have regained the command of the sea and, with it, that of the whole situation. But the fate of his predecessor had filled him with a lively terror of Kanaris and his fire-ships; he contented himself with a cruise round the coasts of Greece, and was happy to return to safety under the guns of the Dardanelles without having accomplished anything beyond throwing supplies and troops into Coron, Modon and Patras. On land, meanwhile, the events of the year before practically repeated themselves. In the west an army of Mussulman and Catholic Albanians, under Mustai Pasha, advanced southwards. On the night of the 21st of August occurred the celebrated exploit of Marko Botzaris and his Suliotes: a successful surprise attack on the camp of the Ottoman vanguard, in which the Suliote leader fell. The jealousy of the Aetolian militia for the Suliotes, however, prevented the victory being decisive; and Mustai advanced to the siege of Anatoliko, a little town in the lagoons near Missolonghi. Here he was detained until, on the 11th of December, he was forced to raise the siege and retire northwards. His colleague, Yussuf Pasha, in East Hellas fared no better; here, too, the Turks gained some initial successes, but in the end the harassing tactics of Kolokotrones and his guerilla bands forced them back into the plain of the Kephissos. At the end of the year the Greeks were once more free to renew their internecine feuds.

Campaign of 1823.

Just when these feuds were at their height, in the autumn of 1823, the most famous of the Philhellenes who sacrificed themselves for the cause of Greece, Lord Byron, arrived in Greece.

The year 1824 was destined to be a fateful one for the Greek cause. The large loans raised in Europe, the first instalment of which Byron had himself brought over, while providing the Greeks with the sinews of war, provided them also with fresh material for strife. To the struggle for power was added a struggle for a share of this booty, and a second civil war broke out, Kolokotrones leading the attack on the forces of the government. Early in 1825 the government was victorious; Kolokotrones was in prison; and Odysseus, the hero of so many exploits and so many crimes, who had ended by turning traitor and selling his services to the Turks, had been captured, imprisoned in the Acropolis, and finally assassinated by his former lieutenant Gouras (July 16, 1824). But a new and more terrible danger now threatened Greece. Sultan Mahmud, despairing of suppressing the insurrection by his own power, had reluctantly summoned to his aid Mehemet Ali, pasha of Egypt, whose well-equipped fleet and disciplined army were now thrown into the scale against the Greeks. Already, in June 1823, the pasha's son-in-law Hussein Bey had landed in Crete, and by April of the following year had reduced the insurgent islanders to submission. Crete now became the base of operations against the Greeks. On the 19th of June Hussein appeared before Kasos, a nest of pirates of evil reputation, which he captured and destroyed. The same day the Egyptian fleet, under Ibrahim Pasha, sailed from Alexandria. Khosrev, too, emboldened by this new sense of support, ventured to sea, surprised and destroyed Psara (July 2), and planned an attack on Samos, which was defeated by Miaoulis and his fire-ships (August 16, 17). On the 1st of September, however, Khosrev succeeded in effecting a junction with Ibrahim off Budrun, and two indecisive engagements followed with the united Greek fleet on the 5th and 10th. The object of Ibrahim was to reach Suda Bay with his transports, which the Greeks should at all costs have prevented. A first attempt was defeated by Miaoulis on the 16th of November, and Ibrahim was compelled to retire and anchor off Rhodes; but the Greek admiral was unable to keep his fleet together, the season was far advanced, his captains were clamouring for arrears of pay, and the Greek fleet sailed for Nauplia, leaving the sea unguarded. On the 5th of December Ibrahim again set sail, and reached Suda without striking a blow. Here he completed his preparations, and, on the 24th of February 1825, landed at Modon in the Morea with a force of 4000 regular infantry and 500 cavalry. The rest followed, without the Greeks making any effort to intercept them.

Second civil war, 1824.

Intervention of Mehemet Ali.

The conditions of the war were now completely changed. The Greeks, who had been squandering the money provided by the loans in every sort of senseless extravagance, affected to despise the Egyptian invaders, but they were soon undeceived. On the 21st of March Ibrahim had laid siege to Navarino, and after some delay a Greek force under Skourti, a Hydriote sea-captain, was sent to its relief. The Greeks had in all some 7000 men, Suliotes, Albanians, *armatoli* from Rumelia, and some irregular Bulgarian and Vlach cavalry. On the 19th of April they were met by Ibrahim at Krommydi with 2000 regular infantry, 400 cavalry and four guns. The Greek entrenchments were stormed at the point of the bayonet by Ibrahim's fellahin at the first onset; the defenders broke and fled, leaving 600 dead on the field. The news of this disaster, and of the fall of Pylos and Navarino that followed, struck terror into the Greek government; and in answer to popular clamour Kolokotrones was taken from prison and placed at the head of the army. But the guerilla tactics of the wily klepht were powerless against Ibrahim, who marched northward, and, avoiding Nauplia for the present, seized Tripolitsa, and made this the base from which his columns marched to devastate the country far and wide.

Ibrahim in the Morea.

Meanwhile from the north the Ottomans were making another supreme effort. The command of the army that was to operate in west Hellas had been given to Reshid "Kutahia," pasha of Iannina, an able general and a man of determined character. On the 6th of April, after bribing the Albanian clansmen to neutrality, he passed the defile of Makrynoros, which the Greeks had left undefended, and on the 7th of May opened the second siege of Missolonghi. For twelve months the population held out, repulsing the attacks of the enemy, refusing every offer of honourable capitulation. This resistance was rendered possible by the Greek command of the sea, Miaoulis from time to time entering the lagoons with supplies; it came to an end when this command was lost. In September 1825 Ibrahim, at the order of the sultan, had joined Reshid before the town; piecemeal the outlying forts and defences now fell, until the garrison, reduced by starvation and disease, determined to hazard all on a final sortie. This took place on the night of the 22nd of April 1826; but a mistaken order threw the ranks of the Greeks into disorder, and the Turks entered the town pell-mell with the retreating crowd. Only a remnant of the defenders succeeded in gaining the forests of Mount Zygos, where most of them perished.

Reshid "Kutahia" besieges Missolonghi.

The fall of Missolonghi, followed as this was by the submission of many of the more notable chiefs, left Reshid free to turn his attention to East Hellas, where Gouras had been ruling as a practically independent chief and in the spirit of a brigand. The peasants of the open country welcomed the Turks as deliverers, and Reshid's conciliatory policy facilitated his march to Athens, which fell at the first assault on the 25th of August, siege being at once laid to the Acropolis, where Gouras and his troops had taken refuge. Round this the war now centred; for all recognized that its fall would involve that of the cause of Greece. In these straits the Greek government entrusted the supreme command of the troops to Karaiskakis, an old retainer of Ali of Iannina, a master of the art of guerilla war, and, above all, a man of dauntless courage and devoted patriotism. A first attempt to relieve the Acropolis, with the assistance of some disciplined troops under the French Colonel Fabvier, was defeated at Chaidari by the Turks. The garrison of the Acropolis was hard pressed, and the death of Gouras (October 13th) would have ended all, had not his heroic wife taken over the command and inspired the defenders with new courage. For months the siege dragged on, while Karaiskakis fought with varying success in the mountains, a final victory at Distomo (February 1827) over Omar Vrioni securing the restoration to the Greek cause of all continental Greece, except the towns actually held by the Turks.

Karaiskakis.

It was at this juncture that the Greek government, reinforced by a fresh loan from Europe, handed over the chief command at sea to Lord Cochrane (earl of Dundonald, *q.v.*), and that of the land forces to General (afterwards Sir Richard) Church, both Miaoulis and Karaiskakis consenting without demur to serve under them. Cochrane and Church at once concentrated their energies on the task of relieving the Acropolis. Already, on the 5th of February, General Gordon had landed and entrenched himself on the hill of Munychia, near the ancient Piraeus, and the efforts of the Turks to dislodge him had failed, mainly owing to the fire of the steamer "Karteria" commanded by Captain Hastings. When Church and Cochrane arrived, a general assault on the Ottoman camp was decided on. This was preceded, on the 25th of April, by an attack, headed by Cochrane, on the Turkish troops established near the monastery of St Spiridion, the result of which was to establish communications between the Greeks at Munychia and Phalerum and isolate Reshid's vanguard on the promontory of the Piraeus. The monastery held out for two days longer, when the Albanian garrison surrendered on terms, but were massacred by the Greeks as they were marching away under escort. For this miserable crime Church has, by some historians, been held responsible by default; it is clear, however, from his own account that no blame rests upon him (see his MS. *Narrative*, vol. i. chap. ii. p. 34). The assault on the Turkish main camp was fixed for the 6th of May; but, unfortunately, a chance skirmish brought on an engagement the day before, in the course of which Karaiskakis was killed, an irreparable loss in view of his prestige with the wild *armatoli*. The assault on the following day was a disastrous failure. The Greeks, advancing prematurely over broken ground and in no sort of order, were fallen upon in flank by Reshid's horsemen, and fled in panic terror. The English officers, who in vain tried to rally them, themselves only just escaped by scrambling into their boats and putting off to the

Cochrane and Church.

Greek defeat

at Athens.

war-vessels, whose guns checked the pursuit and enabled a remnant of the fugitives to escape. Church held Munychia till the 27th, when he sent instructions for the garrison of the Acropolis to surrender. On the 5th of June the remnant of the defenders marched out with the honours of war, and continental Greece was once more in the power of the Turks. Had Reshid at once advanced over the Isthmus, the Morea also must have been subdued; but he was jealous of Ibrahim, and preferred to return to Iannina to consolidate his conquests.

Renewed anarchy.

The fate of Greece was now in the hands of the Powers, who after years of diplomatic wrangling had at last realized that intervention was necessary if Greece was to be saved for European civilization. The worst enemy of the Greeks was their own incurable spirit of faction; in the very crisis of their fate, during the siege of Missolonghi, rival presidents and rival assemblies struggled for supremacy, and a third civil war had only been prevented by the arrival of Cochrane and Church. Under their influence a new National Assembly met at Troezene in March 1827 and elected as president Count Capo d'Istria (*q.v.*), formerly Russian minister for foreign affairs; at the same time a new constitution was promulgated which, when the very life of the insurrection seemed on the point of flickering out, set forth the full ideal of Pan-Hellenic dreams. Anarchy followed; war of Rumeliotes against Moreotes, of chief against chief; rival factions bombarded each other from the two forts at Nauplia over the stricken town, and in derision of the impotent government. Finally, after months of inaction, Ibrahim began once more his systematic devastation of the country. To put a stop to this the Powers decided to intervene by means of a joint demonstration of their fleets, in order to enforce an armistice and compel Ibrahim to evacuate the Morea (Treaty of London, July 6, 1827). The refusal of Ibrahim to obey, without special instruction from the sultan, led to the entrance of the allied British, French and Russian fleet into the harbour of Navarino and the battle of the 20th of October 1827 (see Navarino). This, and the two campaigns of the Russo-Turkish war of 1828-29, decided the issue.

Authorities.—There is no trustworthy history of the war, based on all the material now available, and all the existing works must be read with caution, especially those by eye-witnesses, who were too often prejudiced or the dupes of the Greek factions. The best-known works are: G. Finlay, *Hist. of the Greek Revolution* (2 vols., London, 1861); T. Gordon, *Hist. of the Greek Revolution* (London, 1833); C. W. P. Mendelssohn-Bartholdy, *Geschichte Griechenlands*, &c. (*Staatengeschichte der neuesten Zeit*) (2 vols., Leipzig, 1870-1874); F. C. H. L. Pouqueville, *Histoire de la régénération de la Grèce, &c.* (4 vols., Paris, 1824),—the author was French resident at the court of Ali of Iannina and afterwards consul at Patras; Count A. Prokesch-Osten, *Geschichte des Abfalls der Griechen vom türkischen Reich, &c.* (6 vols., Vienna, 1867), the last four volumes consisting of *pièces justificatives* of much value. See also W. Alison Phillips, *The War of Greek Independence* (London and New York, 1897), a sketch compiled mainly from the above-mentioned works: Spiridionos Tricoupi, Ἱστορία τῆς Ἑλληνικῆς ἐπαναστάσεως (Athens, 1853); J. Philemon, Δοκίμιον ἱστορικὸν περὶ τῆς Ἑλληνικῆς ἐπαναστάσεως (Athens, 1859), in four parts: (1) History of the Hetaeria Philike, (2) The heralding of the war and the rising under Ypsilanti, (3 and 4). The insurrection in Greece to 1822, with many documents. Of great value also are the 29 volumes of Correspondence and Papers of Sir Richard Church, now in the British Museum (Add MSS. 36,543-36,571). Among these is a Narrative by Church of the war in Greece during his tenure of the command (vols. xxi.-xxiii., Nos. 36,563-36,565), which contains the material for correcting many errors repeated in most works on the war, notably the strictures of Finlay and others on Church's conduct before Athens. For further references see the bibliography appended to W. Alison Phillips's chapter on "Greece and the Balkan Peninsula" in the *Cambridge Modern History*, x. 803.

(W. A. P.)

GREEK LANGUAGE. Greek is one of the eight main branches into which the Indo-European languages (*q.v.*) are divided. The area in which it is spoken has been curiously constant throughout its recorded history. These limits are, roughly speaking, the shores of the Aegean, on both the European and the Asiatic side, and the intermediate islands (one of the most archaic of Greek dialects being found on the eastern side in the island of Cyprus), and the Greek peninsula generally from its southern promontories as far as the mountains which shut in Thessaly on the north. Beyond Mt. Olympus and the Cambunian mountains lay Macedonia, in which a closely kindred dialect was spoken, so closely related, indeed, that O. Hoffmann has argued (*Die Makedonen*, Göttingen, 1906) that Macedonian is not only Greek, but a part of the great Aeolic dialect which included Thessalian to the south and Lesbian to the east. In the north-west, Greek included many rude dialects little known even to the ancient Greeks themselves, and it extended northwards beyond Aetolia and Ambracia to southern Epirus and Thesprotia. In the Homeric age the great shrine of Pelasgian Zeus was at Dodona, but, by the time of Thucydides, Aetolia and all north of it had come to be looked upon as the most backward of Greek lands, where men lived a savage life, speaking an almost unintelligible language, and eating raw flesh (ἀγνωστότατοι δὲ γλῶσσαν καὶ ὠμοφάγοι, Thuc. iii. 94, of the Aetolian Eurytanes). The Greeks themselves had no memory of how they came to occupy this land. Their earliest legends connected the origin of their race with Thessaly and Mt. Pindus, but Athenians and Arcadians also boasted themselves of autochthonous race, inhabiting a country wherein no man had preceded their ancestors. The Greek language, at any rate as it has come down to us, is remarkably perfect, in vowel sounds being the most primitive of any of the Indo-European languages, while its verb system has no rival in completeness except in the earliest Sanskrit of the Vedic literature. Its noun system, on the other hand, is much less complete, its cases being more broken down than those of the Aryan, Armenian, Slavonic and Italic families.

The most remarkable characteristic of Greek is one conditioned by the geographical aspect of the land. Few countries are so broken up with mountains as Greece. Not only do mountain ranges as elsewhere on the European continent run east and west, but other ranges cross them from north to south, thus dividing the portions of Greece at some distance from the sea into hollows without outlet, every valley being separated for a considerable part of the year from contact with every other, and inter-communication at all seasons being rendered difficult. Thus till external coercion from Macedon came into play it was never possible to establish a great central government controlling the Greek mainland. The geographical situation of the islands in the Aegean equally led to the isolation of one little territory from another. To these geographical considerations may be added the inveterate desire of the Greeks to make the πόλις, the city state, everywhere and at all times an independent unit, a desire which, originating in the geographical conditions, even accentuated the isolating effect of the natural features of the country. Thus at one time in the little island of Amorgos there were no less than three separate and independent political units. The inevitable result of geographical and political division was the maintenance of a great number of local characteristics in language, differentiating in this respect also each political community from its nearest neighbours. It was only natural that the inhabitants of a country so little adapted to maintain a numerous population should have early sent off swarms to other lands. The earliest stage of colonization lies in the borderland between myth and history. The Greeks themselves knew that a population had preceded them in the islands of the Cyclades which they identified with the Carians of Asia Minor (Herodotus i. 171; Thucydides i. 4. 8). The same population indeed appears to have preceded them on the mainland of Greece, for there are similar place-names in Caria and in Greece which have no etymology in Greek. Thus the endings of words like Parnassus and Halicarnassus seem identical, and the common ending of place-names in -ινθος, Κόρινθος, Προβάλινθος, &c., seems to be the same in origin with the common ending of Asiatic names in -*nda*, Alinda, Karyanda, &c. Probably the earliest portion of Asia Minor to be colonized by the Greeks was the north-west, to which came settlers from Thessaly, when the early inhabitants were driven out by the Thesprotians, who later controlled Thessaly. The name Aeolis, which after times gave to the N.W. of Asia Minor, was the old name for Thessaly (Hdt. vii. 176). These Thesprotians were of the same stock as the Dorians, to whose invasion of the Peloponnese the later migration, which carried the Ionians to Asia and the Cypriot Greeks to Cyprus, in all probability was due. From the north Aegean probably the Dorians reached Crete, where alone their existence is recorded by Homer (*Odyssey*, xix. 175 ff.; Diodorus Siculus v. 80. 2); cp. Fick, *Vorgriechische Ortsnamen* (1906).

Among the Greeks of the pre-Dorian period Herodotus distinguishes various stocks. Though the name is not Homeric, both Herodotus and Thucydides recognize an Aeolian stock which must have spread over Thessaly and far to the west till it was suppressed and absorbed by the Dorian stock which came in from the north-west. The name of Aeolis still attached in Thucydides' time to the western area of Calydon between the mountains and the N. side of the entrance to the Corinthian gulf (iii. 102). In Boeotia the same stock survived (Thuc. vii. 57. 5), overlaid by an influx of Dorians, and it came down to the isthmus; for the Corinthians, though speaking in historical times a Doric dialect, were originally Aeolians (Thuc. iv. 42). In the Peloponnese Herodotus recognizes (viii. 73) three original stocks, the Arcadians, the Ionians of Cynuria, and the Achaeans. In Arcadia there is little doubt that the pre-Dorian population maintained itself and its language, just as in the mountains of Wales, the Scottish

Highlands and Connemara the Celtic language has maintained itself against the Saxon invaders. By Herodotus' time the Cynurians had been doricized, while the Ionians, along the south side of the Corinthian gulf, were expelled by the Achaeans (vii. 94, viii. 73), apparently themselves driven from their own homes by the Dorian invasion (Strabo viii. p. 333 *fin.*). However this may be, the Achaeans of historical times spoke a dialect akin to that of northern Elis and of the Greeks on the north side of the Corinthian gulf. How close the relation may have been between the language of the Achaeans of the Peloponnese in the Homeric age and their contemporaries in Thessaly we have no means of ascertaining definitely, the documentary evidence for the history of the dialects being all very much later than Homeric times. Even in the Homeric catalogue Agamemnon has to lend the Arcadians ships to take them to Troy (*Iliad*, ii. 612). But a population speaking the same or a very similar dialect was probably seated on the eastern coast, and migrated at the beginning of the Doric invasion to Cyprus. As this population wrote not in the Greek alphabet but in a peculiar syllabary and held little communication with the rest of the Greek world, it succeeded in preserving in Cyprus a very archaic dialect very closely akin to that of Arcadia, and also containing a considerable number of words found in the Homeric vocabulary but lost or modified in later Greek elsewhere.

On this historical foundation alone is it possible to understand clearly the relation of the dialects in historical times. The prehistoric movements of the Greek tribes can to some extent be realized in their dialects, as recorded in their inscriptions, though all existing inscriptions belong to a much later period. Thus from the ancient Aeolis of northern Greece sprang the historical dialects of Thessaly and Lesbos with the neighbouring coast of Asia Minor. At an early period the Dorians had invaded and to some extent affected the character of the southern Thessalian and to a much greater extent that of the Boeotian dialect. The dialects of Locris, Phocis and Aetolia were a somewhat uncouth and unliterary form of Doric. According to accepted tradition, Elis had been colonized by Oxylus the Aetolian, and the dialect of the more northerly part of Elis, as already pointed out, is, along with the Achaean of the south side of the Corinthian gulf, closely akin to those dialects north of the Isthmus. The most southerly part of Elis—Triphylia—has a dialect akin to Arcadian. Apart from Arcadian the other dialects of the Peloponnese in historical times are all Doric, though in small details they differ among themselves. Though we are unable to check the statements of the historians as to the area occupied by Ionic in prehistoric times, it is clear from the legends of the close connexion between Athens and Troezen that the same dialect, had been spoken on both sides of the Saronic gulf, and may well have extended, as Herodotus says, along the eastern coast of the Peloponnese and the south side of the Corinthian gulf. According to legend, the Ionians expelled from the Peloponnese collected at Athens before they started on their migrations to the coast of Asia Minor. Be that as it may, legend and language alike connected the Athenians with the Ionians, though by the 5th century B.C. the Athenians no longer cared to be known by the name (Hdt. i. 143). Lemnos, Imbros and Scyros, which had long belonged to Athens, were Athenian also in language. The great island of Euboea and all the islands of the central Aegean between Greece and Asia were Ionic. Chios, the most northerly Ionic island on the Asiatic coast, seems to have been originally Aeolic, and its Ionic retained some Aeolic characteristics. The most southerly of the mainland towns which were originally Aeolic was Smyrna, but this at an early date became Ionic (Hdt. i. 149). The last important Ionic town to the south was Miletus, but at an early period Ionic widened its area towards the south also and took in Halicarnassus from the Dorians. According to Herodotus, there were four kinds of Ionic (χαρακτῆρες γλώσσης τέσσερες, i. 142). Herodotus tells us the areas in which these dialects were spoken, but nothing of the differences between them. They were (1) Samos, (2) Chios and Erythrae, (3) the towns in Lydia, (4) the towns in Caria. The language of the inscriptions unfortunately is a κοινή, a conventional literary language which reveals no differences of importance. Only recently has the characteristic so well known in Herodotus of κ appearing in certain words where other dialects have π (ὅκως for ὅπως, κοῦ for ποῦ, &c.) been found in any inscription. It is, however, clear that this was a popular characteristic not considered to be sufficiently dignified for official documents. We may conjecture that the native languages spoken on the Lydian and Carian coasts had affected the character of the language spoken by the Greek immigrants, more especially as the settlers from Athens married Carian women, while the settlers in the other towns were a mixture of Greek tribes, many of them not Ionic at all (Hdt. i. 146).

The more southerly islands of the Aegean and the most southerly peninsula of Asia Minor were Doric. In the Homeric age Dorians were only one of many peoples in Crete, but in historical times, though the dialects of the eastern and the western ends of the island differ from one another and from the middle whence our most valuable documents come, all are Doric. By Melos and Thera Dorians carried their language to Cos, Calymnus, Cnidus and Rhodes.

These settlements, Aeolic, Ionic and Doric, grew and prospered, and like flourishing hives themselves sent out fresh swarms to other lands. Most prosperous and energetic of all was Miletus, which established its trading posts in the Black Sea to the north and in the delta of the Nile (Naucratis) to the south. The islands also sent off their colonies, carrying their dialects with them, Paros to Thasos, Euboea to the peninsulas of Chalcidice; the Dorians of Megara guarded the entrance to the Black Sea at Chalcedon and Byzantium. While Achaean influence spread out to the more southerly Ionian islands, Corinth carried her dialect with her colonies to the coast of Acarnania, Leucas and Corcyra. But the greatest of all Corinthian colonies was much farther to the west—at Syracuse in Sicily. Unfortunately the continuous occupation of the same or adjacent sites has led to the loss of almost all that is early from Corinth and from Syracuse. Corcyra has bequeathed to us some interesting grave inscriptions from the 6th century B.C. Southern Italy and Sicily were early colonized by Greeks. According to tradition Cumae was founded not long after the Trojan War; even if we bring the date nearer the founding of Syracuse in 735 B.C., we have apparently no record earlier than the first half of the 5th century B.C., though it is still the earliest of Chalcidian inscriptions. Tarentum was a Laconian foundation, but the longest and most important document from a Laconian colony in Italy comes from Heraclea about the end of the 4th century B.C.—the report of a commission upon and the lease of temple lands with description and conditions almost of modern precision. To Achaea belonged the south Italian towns of Croton, Metapontum and Sybaris. The ancestry of the Greek towns of Sicily has been explained by Thucydides (vi. 2-5). Selinus, a colony of Megara, betrays its origin in its dialect. Gela and Agrigentum no less clearly show their descent from Rhodes. According to tradition the great city of Cyrene in Africa was founded from Thera, itself an offshoot from Sparta.

Chief Characteristics of the Greek Dialects

1. *Arcadian and Cyprian.*—As Cyprian was written in a syllabary which could not represent a consonant by itself, did not distinguish between voiced, unvoiced and aspirated consonants, did not represent at all a nasal before another consonant, and did not distinguish between long and short vowels, the interpretation of the symbols is of the nature of a conundrum and the answer is not always certain. Thus the same combination of two symbols would have to stand for τότε, τόδε, δότε, δοθῆ, τόνδε, τῶδε, τὸ, δή. No inscription of more than a few words in length is found in either dialect earlier than the 5th century B.C. In both dialects the number of important inscriptions is steadily increasing. Both dialects change final ο to υ, ἀπό passing into ἀπύ. Arcadian changes the verb ending -αι into -οι. Arcadian uses δ or ζ for an original *gw*-sound, which appears in Attic Greek as β: ζέλλω, Attic βάλλω, "throw." In inflexion both agree in changing -ᾶο of masculine -α stems into αυ (Arcadian carries this form also into the feminine -α stems), and in using locatives in -αι and -οι for the dative, such locatives being governed by the prepositions ἀπύ and ἐξ (before a consonant ἐς in Arcadian). Verbs in -αω, -εω and -οω are declined not as -ω, but as -μι verbs. The final ι of the ending of the 3rd plural present changes the preceding τ to σ: φέρονσι, cp. Laconian (Doric) φέροντι, Attic φέρουσι, Lesbian φέροισι. Instead of the Attic τίς, the interrogative pronoun appears as σίς, the initial σ in Arcadian being written with a special symbol ϟ. The pronunciation is not certain. The original sound was *qw*, as in Latin *quis*, whence Attic τίς and Thessalian κίς. In Arcadian καν the Aeolic particle κε and the Ionic αν seem to be combined.

2. *Aeolic.*—Though Boeotian is overlaid with a Doric element, it nevertheless agrees with Thessalian and Lesbian in some characteristics. Unlike Greek generally, they represent the original *qw* of the word for *four* by π before ε, where Attic and other dialects have τ: πέτταρες, Attic τέτταρες. The corresponding voiced and aspirated sounds are similarly treated: Βέλφαιος the adjective in Thessalian to Δελφοί, and φήρ for θήρ. They all tend to change ο to υ: ὄνυμα, "name"; ου for ω in Thessalian: Ἄπλουν, "Apollo"; and υ in Boeotian for οι: ϝυκία (οἰκία), "house." They also make the dative plural of the third declension in -εσσι, and the perfect participle active is declined like a present participle in -ων. Instead of the Athenian method of giving the father's name in the genitive when a citizen is described, these dialects (especially Thessalian) tend to make an adjective: thus instead of the Attic Δημοσθένης Δημοσθένους, Aeolic would rather have Δ. Δημοσθένειος. Thessalian stands midway between Lesbian and Boeotian, agreeing with Lesbian in the use of double consonants, where Attic has a single consonant, with or without lengthening of the previous syllable: ἐμμί, Attic εἰμί for an original **esmi*; στάλλα, Attic στήλη; ξέννος for an earlier ξένϝος, Attic ξένος, Ionic ξεῖνος, Doric ξῆνος. Where Attic has -ᾶς from an earlier -ανς or -αντς, Lesbian has -αις: ταὶς ἄρχαις accusative in Lesbian for older τὰνς ἄρχανς. Lesbian has no oxyton words according to the grammarians, the accent being carried back to the penult or ante-penultimate syllable. It has also no "rough breathing," but this characteristic it shared with the Ionic of Asia Minor, and in the course of time with other dialects. The characteristic particle of the dialects is κε, which is used like the Doric κα, the Arcadian καν, and the Attic and Ionic ἄν. Thessalian and Lesbian agree in making their long vowels close, η belonging ει (a close *ē*, not a

diphthong), πατείρ, “father.” The υ sound did not become *ü* as in Attic and Ionic, and hence when the Ionic alphabet was introduced it was spelt ου, or when in contact with dentals ιου, as in ὀνίουμα = ὄνυμα, “name,” τιούχα = τύχη, “chance”; the pronunciation, therefore, must have been like the English sound in *news*, *tune*. Boeotian developed earlier than other dialects the changes in the vowels which characterize modern Greek: αι became *ē*, καὶ passing into κή: compare πατείρ and ϝυκία above: ει became ι in ἔχι, “has.” Thessalian shows some examples of the Homeric genitive in -οιο: πολέμοιο, &c.; its ordinary genitive of o- stems is in -οι.

There are some points of connexion between this group and Arcadian-Cyprian: in both Thessalian and Cyprian the characteristic πτόλις (Attic, &c., πόλις) and δαυχνα- for δάφνη are found, and both groups form the “contracting verbs” not in -ω but in -μι. In the second group as in the first there is little that precedes the 5th century B.C. Future additions to our materials may be expected to lessen the gap between the two groups and Homer.

3. *Ionic-Attic.*—One of the earliest of Greek inscriptions—of the 7th century, at least—is the Attic inscription written in two lines from right to left upon a wine goblet (οἰνοχόη) given as a prize: hός νῦν ὀρχεστον πάντον | ἀταλότατα παίζει τοτο δεκᾶν μιν. The last words are uncertain. Till lately early inscriptions in Ionic were few, but recently an early inscription has been found at Ephesus and a later copy of a long early inscription at Miletus.

The most noticeable characteristic of Attic and Ionic is the change of α into η which is universal in Ionic but does not appear in Attic after another vowel or ρ. Thus both dialects used μήτηρ, τιμή from an earlier μᾶτηρ, τιμα, but Attic had σοφία, πρᾶγμα and χώρα, not σοφίη, πρῆγμα and χώρη as in Ionic. The apparent exception κόρη is explained by the fact that in this word a digamma ϝ has been lost after ρ, in Doric κόρϝα. That the change took place after the Ionians came into Asia is shown by the word Μῆδοι, which in Cyprian is Μᾶδοι; the Medes were certainly not known to the Greeks till long after the conquest of Ionia. While Aeolic and the greater part of Doric kept ϝ, this symbol and the sound *w* represented by it had disappeared from both Ionic and Attic before existing records begin—in other words, were certainly not in use after 800 B.C. The symbol was known and occurs in a few isolated instances. Both dialects agreed in changing *u* into *ü*, so that a *u* sound has to be represented by ου. The short *o* tended towards *u*, so that the contraction of ο + ο gave ου. In the same way short *e* tended towards *i*, so that the contraction of ε + ε gave ει, which was not a diphthong but a close *ē*-sound. In Attic Greek these contractions were represented by O and E respectively till the official adoption of the Ionic alphabet at Athens in 403 B.C. So also were the lengthened syllables which represent in their length the loss of an earlier consonant, as ἔμεινα and ἔνειμα, Aeolic ἔμεννα, ἔνεμμα, which stand for a prehistoric *ἔμενσα and *ἔνεμσα, containing the -σ- of the first aorist, and τοὺς, οἴκους, ἔχουσι representing an earlier τόνς, οἴκονς, ἔχοντι (3 pl. present) or *ἔχοντσι (dative pl. of present participle). Both dialects also agreed in changing τ before ι into σ (like Aeolic), as in ἔχουσι above, and in the 3rd person singular of -μι verbs, τίθησι, δίδωσι, &c., and in noun stems, as in δόσις for an earlier *δότις. Neither dialect used the particle κε or κα, but both have ἄν instead. One of the effects of the change of ᾱ into η was that the combination ᾱο changed in both dialects to ηο, which in all Attic records and in the later Ionic has become εω by a metathesis in the quantity of the vowels: νᾱός, earlier νᾱϝός, “temple,” is in Homeric Greek νηός, in later Ionic and Attic νεώς. In the dative (locative) plural of the -ᾱ stems, Ionic has generally -ησι on the analogy of the singular; Attic had first the old locative form in -ησι, -ᾶσι, which survived in forms which became adverbs like Ἀθήνησι and θύρᾱσι; but after 420 B.C. these were replaced by -αις, θύραις, &c. The Ionic of Asia Minor showed many changes earlier than that of the Cyclades and Euboea. It lost the aspirate very early: hence in the Ionic alphabet H is *ē*, not *h*; it changed αυ and ευ into αο and εο, and very early replaced to a large extent the -μι by the -ω verbs. This confusion can be seen in progress in the Attic literature of the 5th and 4th centuries B.C., δείκνυμι gradually giving way to δεικνύω, while the literature generally uses forms like ἐφίει for ἐφίη (impft.). In Attica also the aspiration which survived in the Ionic of Euboea and the Cyclades ceased by the end of the 5th century. The Ionic of Asia Minor has -ιος as the genitive of ι-stems; the other forms of Ionic have -ιδος.

4. *Doric.*—As already mentioned, the dialects of the North-West differ in several respects from Doric elsewhere. As general characteristics of Doric may be noted the contractions of α + ε into η, and of α + ο or ω into ᾱ, while the results in Attic and Ionic of these contractions are ᾱ and ω respectively: ἐνίκη from νικάω, Attic ἐνίκα; τιμᾶμες 1 pl. pres. from τιμάω, Attic τιμῶμεν; τιμᾶν gen. pl. of τιμᾱ “honour,” Attic τιμῶν. In inflection the most noticeable points are the pronominal adverbs in locative form: τουτεῖ, τηνεῖ (this from a stem limited to a few Doric dialects and the Bucolic Poets), τεῖδε, ὅπει, &c.; the nom. pl. of the article τοί, ταί, not οἱ, αἱ and so τοῦτοι in Selinus and Rhodes; the 1st pl. of the verb in -μες, not in -μεν, cp. the Latin -*mus*; the aorist and future in -ξ-, where other dialects have -σ-, or contraction from presents in-ζω; δικάζω, δικάσω, Doric δικάξω, &c.; the future passive with active endings, ἐπιμεληθησεῦντι (Rhodes), found as yet only in the Doric islands and in the Doric prose of Archimedes; the particles αἰ “if” and κα with a similar value to the Aeolic κε and the Attic-Ionic ἄν. Doric had an accentuation system different both from Aeolic and from Ionic-Attic, but the details of the system are very imperfectly known.

In older works Doric is often divided into a *dialectus severior* and a *dialectus mitis*. But the difference is one of time rather than of place, the peculiarities of Doric being gradually softened down till it was ultimately merged in the *lingua franca*, the κοινή, which in time engulfed all the local dialects except the descendant of Spartan, Tzakonian. Here it is possible to mention its varieties only in the briefest form. (*a*) The southern dialects are well illustrated in the inscriptions of Laconia recently much increased in number by the excavations of the British School at Athens. Apart from some brief dedications, the earliest inscription of importance is the list of names placed on a bronze column soon after 479 B.C. to commemorate the tribes which had repulsed the Persians. The column, originally at Delphi, is now at Constantinople. The most striking features of the dialect are the retention of ϝ at the beginning of words, as in the dedication from the 6th century ϝαναξίβιος (*Annual of British School*, xiv. 144). The dialect changed -σ- between vowels into -h-, μῶha for μῶσα “muse.” Later it changed θ into a sound like the English *th*, which was represented by σ. Before *o*-sounds ε here and in some other Doric dialects changed to ι: θιός, σιός for θεός “god.” The result of contraction and “compensatory lengthening” was not ει and ου as in Attic and Ionic, but η and ω: ἦμεν infinitive = εἶναι from **esmen*; gen. sing. of *o*-stems in ω: θεῶ, acc. pl. in -ως: θεώς; *dy* was represented by δδ, not ζ, as in Attic-Ionic; μύσιδδε = μύθιζε. The dialect has many strange words, especially in connexion with the state education and organization of the boys and young men. The Heraclean tables from a Laconian colony in S. Italy have curious forms in -ασσι for the dat. pl. of the participle πρασσόντασσι = Attic πράττουσι. Of the dialect of Messenia we know little, the long inscription about mysteries from Andania being only about 100 B.C. From Argolis there are a considerable number of early inscriptions, and in a later form of the dialect the cures recorded at the temple of Asklepios at Epidaurus present many points of interest. There is also an inscription of the 6th century B.C. from the temple of Aphaia in Aegina. ϝ survives in the old inscriptions: ϝεϝρεμένα (= εἰρημένα); νς, whether original or arising by sound change from -*nty*, persists till the 2nd century B.C.: hαντιτυχόνσα = ἡ ἀντιτυχοῦσα, τὸνς υἱόνς = τοὺς υἱούς. The dialect of the Inachus valley seems to resemble Laconian more closely than does that of the rest of the Argolic area. Corinth and her colonies in the earliest inscriptions preserve ϝ and ϙ (= Latin Q) before ο and υ sounds, and write ξ and ψ by χσ and φσ, the symbols which are used also for this purpose in old Attic. In the Corcyrean and Sicilian forms of the dialect, λ before a dental appears as ν: Φιντίας = Φιλτίας; and in Sicilian the perfect-active was treated as a present: δεδοίκω for δέδοικα, &c. From Megara has come lately an obscure inscription from the beginning of the 5th century; its colony Selinus has inscriptions from the middle of the same century; the inscriptions from Byzantium and its other Pontic colonies date only from Hellenistic times. In Crete, which shows a considerable variety of subdialects, the most important document is the great inscription from Gortyn containing twelve tables of family law, which was discovered in 1884. The local alphabet has no separate symbols for χ and φ, and these sounds are therefore written with κ and π. As in Argive the combination -νς was kept both medially and finally except before words beginning with a consonant; -*ty*- was represented by ζ, later by -ττ-, as in Thessalian and Boeotian: ὀπόττοι, Attic ὁπόσοι; and finally by -θθ-; λ combined with a preceding vowel into an *au*-diphthong: αὐκά, Attic ἀλκή, cp. the English pronunciation of *talk*, &c. In Gortyn and some other towns -σθ—was assimilated to—θθ, where θ must have been a spirant like the English *th* in *thin*; ζ of Attic Greek is represented initially by δ, medially by δδ, but in some towns by τ and ττ: δοός (= ζωός), δικάδδεν (= δικάζειν). Final consonants are generally assimilated to the beginning of the next word. In inflection there are many local peculiarities. In Melos and Thera some very old inscriptions have been found written in an alphabet without symbols for φ, χ, φ, ξ, which are therefore written as πh, κh or ϙh, πσ, κσ. The contractions of ε + ε and of ο + ο are represented by E and O respectively. The old rock inscriptions of Thera are among the most archaic yet discovered. The most characteristic feature of Rhodian Doric is the infinitive in -μειν: δοῦναι, &c. (= Attic δοῦναι), which passed also to Gela and Agrigentum. The inscriptions from Cos are numerous, but too late to represent the earliest form of the dialect.

(*b*) The dialects of N.W. Doric, Locrian, Phocian, Aetolian, with which go Elean and Achaean, present a more uncouth appearance than the other Doric dialects except perhaps Cretan. Only from Locris and Phocis come fairly old inscriptions; later a κοινή was developed, in which the documents of the Aetolian league are written, and of which the most distinctive mark is the dative plural of consonant stems in -οις: ἀρχόντοις (= Attic ἄρχουσι), ἀγώνοις (= Attic ἀγῶσι), &c. Phocian and the Locrian of Opus have also forms like Aeolic in -εσσι. In place of the dative in -ῳ, locatives in -οι are used in Locrian and Phocian. Generally north of the Corinthian gulf the middle present participle from -εω-verbs ends in-ειμενος; similar forms are found also in Elean. Locrian changed ε before ρ into α: πατάρα for πατέρα; cf. English *Kerr* and *Carr*, *sergeant* and *Sargeaunt*. στ appears for σθ, and ϙ and ϝ are still much in use in

the 5th century B.C. Many thousands of inscriptions were found in the French excavations at Delphi, but nothing earlier than the 5th century B.C. In the older inscriptions the Aeolic influence—datives in -εσσι, ὄνυμα for ὄνομα—is better marked than later. In the Laws of the Labyad phratry (about 400 B.C.) the genitive is in ου, but a form in -ω is also found, ϝοίκω, which seems to be an old ablative fossilized as an adverb. The nom. pl. δεκατέτορες is used for the acc.; similar forms are found in Elean and Achaean.

The more important of the older materials for Achaean come from the Achaean colonies of S. Italy, and being scanty give us only an imperfect view of the dialect, but it is clearly in its main features Doric. Much more remarkable is the Elean dialect known chiefly from inscriptions found at Olympia, some of which are as early as the beginning of the 6th century. The native dialect was replaced first by a Doric and then by the Attic κοινή, but under the Caesars the archaic dialect was restored. Many of its characteristics it shares with the dialects north of the Corinthian gulf, but it changes original ē to α: μά = μη, &c.; δ was apparently a spirant, as in modern Greek (= *th* in English *the*, *thine*), and is represented by ζ in some of the earliest inscriptions. Final -σ became -ρ; this is found also in Laconian; -*ty*- became -σσ-, but was not simplified as in Attic to -σ-: ὅσσα = Attic ὅσα.

As we have seen, Ionians, Aetolians and Dorians tended to level local peculiarities and make a generally intelligible dialect in which treaties and other important records were framed. The language of literature is always of necessity to some extent a κοινή: with some Greek writers the use of a κοινή was especially necessary. The local dialect of Boeotia was not easily intelligible in other districts, and a writer like Pindar, whose patrons were mostly not Boeotians, had perforce to write in a dialect that they could understand. Hence he writes in a conventional Doric with Aeolic elements, which forms a strong contrast to that of Corinna, who kept more or less closely to the Boeotian dialect. For different literary purposes Greek had different κοιναί. A poet who would write an epic must adopt a form of language modelled on that of Homer and Hesiod; Alcaeus and Sappho were the models for the love lyric, which was therefore Aeolic; Stesichorus was the founder of the triumphal ode, which, as he was a Dorian of Sicily, must henceforth be in Doric, though Pindar was an Aeolian, and its other chief representatives, Simonides and Bacchylides, were Ionians from Ceos. The choral ode of tragedy was always conventional Doric, and in the iambics also are Doric words like δράω, λάω, &c. Elegy and epigram were founded on epic; the satirical iambics of Hipponax and his late disciple Herondas are Ionic. The first Greek prose was developed in Ionia, of which an excellent example has been preserved to us in Herodotus. Thucydides was not an Ionian, but he could not shake himself free of the tradition: he therefore writes πράσσω, τάσσω, &c., with -σσ-, which was Ionic, but is never found in Attic inscriptions nor in the writers who imitate the language of common life—Aristophanes (when not parodying tragedy, or other forms of literature or dialect), Plato and the Orators (with the partial exception of Antiphon, who ordinarily has -σσ-, but in the one speech actually intended for the law-courts -ττ-). Similarly Hippocrates and his medical school in Cos wrote in Ionic, not, however, in the Ionic of Herodotus, but in a language more akin to the Ionic κοινή of the inscriptions; and this dialect continued to be used in medicine later, much as doctors now use Latin for their prescriptions. The first literary document written in Attic prose is the treatise on the *Constitution of Athens*, which is generally printed amongst the minor works of Xenophon, but really belongs to about 425 B.C. From the fragment of Aristophanes' *Banqueters* and from the first speech of Lysias "Against Theomnestos" it is clear that the Attic dialect had changed rapidly in the 6th and 5th centuries B.C., and that much of the phraseology of Solon's laws was no longer intelligible by 400 B.C. Among the most difficult of the literary dialects to trace is the earliest—the Homeric dialect. The Homeric question cannot be discussed here, and on that question it may be said *quot homines tot sententiae*. To the present writer, however, it seems probable that the poems were composed in Chios as tradition asserted; the language contains many Aeolisms, and the heroes sung are, except for the Athenians (very briefly referred to), and possibly Telamonian Ajax, not of the Ionic stock. Chios was itself an Ionicized Aeolic colony (Diodorus v. 81. 7). The hypothesis of a great poet writing on the basis of earlier Aeolic lays (κλέα ἀνδρῶν) in Chios seems to explain the main peculiarities of the Homeric language, which, however, was modified to some extent in later times first under Ionic and afterwards under Athenian influence.

Of Dorian literature we know little. The works of Archimedes written in the Syracusan dialect were much altered in language by the late copyists. The most striking development of the late classical age in Doric lands is that of pastoral poetry, which, like Spenser, is "writ in no language," but, on a basis of Syracusan and possibly Coan Doric, has in its structure many elements borrowed from the Aeolic love lyric and from epic.

From the latter part of the 5th century B.C. Athens became ever more important as a literary centre, and Attic prose became the model for the later κοινή, which grew up as a consequence of the decay of the local dialects. For this decay there were several reasons. If the Athenian empire had survived the Peloponnesian War, Attic influence would no doubt soon have permeated the whole of that empire. This consummation was postponed. Attic became the court language of Macedon, and, when Alexander's conquests led to the foundation of great new towns, like Alexandria, filled with inhabitants from all parts of the Greek world, this dialect furnished a basis for common intercourse. Naturally the resultant dialect was not pure Attic. There were in it considerable traces of Ionic. In Attica itself the dialect was less uniform than elsewhere even in the 5th century B.C., because Athens was a centre of empire, literature and commerce. Like every other language which is not under the dominion of the schoolmaster, it borrowed the names of foreign objects which it imported from foreign lands, not only from those of Greek-speaking peoples, but also from Egypt, Persia, Lydia, Phoenicia, Thrace and elsewhere. The Ionians were great seafarers, and from them Athens borrowed words for seacraft and even for the tides: ἄμτωτις "ebb," ῥαχία "high tide," an Ionic word ῥηχίη spelt in Attic fashion. From the Dorians it borrowed words connected with war and sport: λοχαγός, κυναγός, &c. A soldier of fortune like Xenophon, who spent most of his life away from Athens, introduced not only strange words but strange grammatical constructions also into his literary compositions. With Aristotle, not a born Athenian but long resident in Athens, the κοινή may be said to have begun. Some characteristics of Attic foreigners found it hard to acquire—its subtle use of particles and its accent. Hence in Hellenistic Greek particles are comparatively rare. According to Cicero, Theophrastus, who came from as near Attica as Eretria in Euboea, was easily detected by a market-woman as no Athenian after he had lived thirty years in Athens. Thoucritus, an Athenian, who was taken prisoner in the Peloponnesian War and lived for many years in Epirus as a slave, was unable to recover the Athenian accent on his return, and his family lay under the suspicion that they were an alien's children, as his son tells us in Demosthenes' speech "Against Eubulides." In the κοινή there were several divisions, though the line between them is faint and irregular. There was a κοινή of literary men like Polybius and of carefully prepared state documents, as at Magnesia or Pergamum; and a different κοινή of the vulgar which is represented to us in its Egyptian form in the Pentateuch, in a later and at least partially Palestinian form in the Gospels. Still more corrupt is the language which we find in the ill-written and ill-spelt private letters found amongst the Egyptian papyri. Not out of the old dialects but out of this κοινή arose modern Greek, with a variety of dialects no less bewildering than that of ancient Greek. In one place more rapidly, in another more slowly, the characteristics of modern Greek begin to appear. As we have seen, in Boeotia the vowels and diphthongs began to pass into the characteristic sounds of modern Greek four centuries before Christ. Dorian dialects illustrate early the passing of the old aspirate θ, the sound of which was like the final *t* in English *bit*, into a sound like the English *th* in *thin*, *pith*, which it still retains in modern Greek. The change of γ between vowels into a *y* sound was charged by the comic poets against Hyperbolus the demagogue about 415 B.C. Only when the Attic sound changes stood isolated amongst the Greek dialects did they give way in the κοινή to Ionic. Thus the forms with -σσ- instead of -ττ- won the day, while modern Greek shows that sometimes the -ρρ- which Attic shared with some Doric dialects and Arcadian was retained, and that sometimes the Ionic -ρσ-, which was also Lesbian and partly Doric, took its place. In other cases, where Ionic and Attic did not agree, forms came in which were different from either: the genitives of masculine ā stems were now formed as in Doric with ᾱ, but the analogy of the other cases may have been the effective force. The form ναός "temple," instead of Ionic νηός, Attic νεώς, can only be Doric.[1] In the first five centuries of the Christian era came in the modern Greek characteristics of Itacism and vowel contraction, of the pronunciation of μπ and ντ as *mb* and *nd* and many other sound changes, the loss of the dative and the confusion of the 1st with the 3rd declension, the dropping of the -μι conjugation, the loss of the optative and the assimilation of the imperfect and second aorist endings to those of the first aorist.[2] There were meantime spasmodic attempts at the revival of the old language. Lucian wrote Attic dialogue with a facility almost equal to Plato; the old dialect was revived in the inscriptions of Sparta; Balbilla, a lady-in-waiting on Hadrian's empress, wrote epigrams in Aeolic, and there were other attempts of the same kind. But they were only *tours de force*, κῆποι Ἀδώνιδος, whose flowers had no root in the spoken language and therefore could not survive. Even in the hands of a cultivated man like Plutarch the κοινή of the 1st century A.D. looks entirely different from Attic Greek. Apart from non-Attic constructions, which are not very numerous, the difference consists largely in the new vocabulary of the philosophical schools since Aristotle, whose jargon had become part of the language of educated men in Plutarch's time, and made a difference in the language not unlike that which has been brought about in English by the development of the natural sciences. It is hardly necessary to say that these changes, whether of the κοινή or of modern Greek, did not of necessity impair the powers of the language as an organ of expression; if elaborate inflection were a necessity for the highest literary merit, then we must prefer Cædmon to Milton and Cynewulf to Shakespeare.

As is obvious from the foregoing account of the Greek dialects, it is not possible to speak of the early history of Greek as handed down to us as that of a single uniform tongue. From the earliest times it shows much variety of dialect accentuated by the geographical characteristics of the country, but arising, at least in part, from the fact that the Greeks came into the country in separate waves divided from one another by centuries. For the history of the language it is necessary to take as a beginning the form of the Indo-European language from which Greek descended, so far as it can be reconstructed from a comparison of the individual I.E. languages (see Indo-European Languages). The sounds of this language, so far as at present ascertained, were the following:—

(*a*) 11 vowels: *a*, *ā*, *e*, *ē*, *i*, *ī*, *o*, *ō*, *u*, *ū*, *ə* (a short indistinct vowel).

(*b*) 14 diphthongs: *ai*, *au*, *ei*, *eu*, *oi*, *ou*, *āi*, *āu*, *ēi*, *ēu*, *ōi*, *ōu*, *əi*, *əu*.

(*c*) 20 stop consonants.

Labials: *p*, *b*, *ph*, *bh* (*ph* and *bh* being *p* and *b* followed by an audible breath, not *f* and *v*).

Dentals: *t*, *d*, *th*, *dh* (*th* and *dh not* spirants like the two English sounds in *thin* and *then*, but aspirated *t* and *d*).

Palatals: *ǩ*, *ǧ*, *ǩh*, *ǧh* (*kh* and *gh* aspirates as explained above).

Velars: *q*, *g*, *qh*, *gh* (velars differ from palatals by being produced against the soft palate instead of the roof of the mouth).

Labio-velars: *qu̯*, *qu̯*, *qu̯h*, *gu̯h* (these differ from the velars by being combined with a slight labial *w*-sound).

(*d*) Spirants—

Labial: *w*.

Dental: *s*, *z*, post-dental *ṣ*, *ẓ*, interdental possibly þ, ð.

Palatal: χ (Scotch ch), y.

Velar: *x* (a deeply guttural χ, heard now in Swiss dialects), ȝ.

Closely akin to *w* and *y* and often confused with them were the semi-vowels *u̯* and *i̯*.

(*e*) Liquids: *l*, *r*.

(*f*) Nasals: *m* (labial), *n* (dental), *ñ* (palatal), ŋ (velar), the last three in combination with similar consonants.

(*a*) As far as the vowels are concerned, Greek retains the original state of things more accurately than any other language. The sounds of short *e* and short *o* in Attic and Ionic were close, so that *e* + *e* contracted to a long close e represented by ει, *o* + *o* to a long close *o* represented by ου. In these dialects *u*, both long and short, was modified to *ü*, and they changed the long *ā* to *ē*, though Attic has ᾱ after ε, ι and ρ. In Greek ə appeared regularly as α, but under the influence of analogy often as ε and o.

(*b*) The short diphthongs as a whole remained unchanged before a following consonant. Before a following vowel the diphthong was divided between the two syllables, the ι or υ forming a consonant at the beginning of the second syllable, which ultimately disappeared. Thus from a root *dheu-* "run" comes a verb θέω for θε-ϝω, from an earlier *θευ-ω. The corresponding adjective is θοός "swift," for θο-ϝο-ς, from an earlier *θου-ο-ς. The only dialect which kept the whole diphthong in one syllable was Aeolic. The long diphthongs, except at the ends of words, were shortened in Attic. Some of these appear merely as long vowels, having lost their second element in the proethnic period. Apparent long diphthongs like those in λητουργία, σῴζω arise by contraction of two syllables.

(*c*) The consonants suffered more extensive change. The voiced aspirates became unvoiced, so that *bh*, *dh*, *ḡh*, *gh*, *gu̯h* are confused with original *ph*, *th*, *ǩh*, *qh*, *qu̯h*: I.E. **bherō* (Skt. *bharāmi*) is Gr. φέρω; I.E. **dhūmos* (Skt. *dhūmas*), Gr. θῦμος; I.E. **ǧhimo-* (Skt. *hima-*), Gr. (δυσ)-χιμο-ς; I.E. **stigh-* (Skt. *stigh-*), Gr. στίχες; I.E. *gu̯hen-* (Skt. *han-*), Gr. θείνω (probably), φόνος. The palatal and velar series cannot be distinguished in Greek; for the differences between them resort must be had to languages of the *satem*-group, such as Sanskrit, Zend or Slavonic, where the palatals appear as sibilants (see Indo-European Languages). The labio-velar series present a great variety of forms in the different Greek dialects, and in the same dialect before different sounds. Thus in Attic before *o* vowels, nasals and liquids, the series appears as π, β, φ; before *e* and *i* vowels as τ, β (δ), θ; in combination with *u*, which led to loss of the *u̯* by dissimilation, κ, γ χ. Thus ἕπομαι corresponds to the Latin *sequo-r*, apart from the ending; βοῦς to Latin *bos* (borrowed from Sabine), English *cow*; φόνος "slaughter," ἔπεφνον, old Irish *gonim*, "I wound." Parallel to these forms with *p* are forms in the Italic languages except Latin and Faliscan, and in the Cymric group of the Celtic languages. The dental forms τ, δ, θ stand by themselves. Thus τις (from the same root as ποῦ, ποῖ, πόθεν, etc.) is parallel to the Latin *quis*, the Oscan *pis*, old Irish *cía*, Welsh *pwy*, "who?" "what?"; Attic τέτταρες, Ionic τέσσερες "four" is parallel to Latin *quattuor*, Oscan πετορα, old Irish *cethir*, old Welsh *petguar*; τίσις is from the same root as ποινή. For the voiced sound, β is much more common than δ before *e* and *i* sounds; thus βίος "life," from the same root as Skt. *jīvas*, Latin *vīvus*; βιός "bowstring," Skt. *jyā*, &c. In Arcado-Cyprian and Aeolic, π and β often precede *e* and *i* sounds. Thus parallel to Attic τέτταρες Lesbian has πέσσυρες, Homer πίσυρες, Boeotian πέτταρες; Thessalian βέλλομαι, Boeotian βείλομαι alongside of Attic βούλομαι, Lesbian βόλλομαι, Doric βώλομαι and also δήλομαι. In Arcadian and Cyprian the form corresponding to τις was σις, in Thessalian κις, where the labialization was lost (see the article on Q).

A great variety of changes in the stopped consonants arose in combination with other sounds, especially *i̯* (a semivowel of the nature of English *y*), *u̯* (*w*) and *s*; -τi̯-, -θi̯- became first -σσ- and later -σ- in Attic Greek, -ττ- in Boeotian (the precise pronunciation of -σσ- and -ττ- is uncertain): Attic ὀ-πόσος, earlier ὀ-πόσσος, Boeotian ὀ-πόττος, from the same stem as the Latin *quot*, *quotiens*; Homeric μέσσος, Attic μέσος from *μεθιος, Latin *medius*; -κi̯-, -χi̯- became -σσ-, Attic -ττ-: πίσσα "pitch," Attic πίττα from *πίκi̯α, cp. Latin *pix*, *picis*, ἐλάσσων, Attic ἐλάττων comparative to ἐλαχύς. δi̯ and γi̯ became ζ: Zεύς (Skt. Dyāuṣ) ἐλπίζω from ἐλπίς, stem ἐλπιδ- "hope," μαστίζω from μάστιξ, stem μαστῖγ- "lash."

(*d*) The sound *u̯* was represented in the Greek alphabet by ϝ, the "digamma," but in Attic and Ionic the sound was lost very early. In Aeolic, particularly Boeotian and Lesbian, it was persistent, and so also in many Doric dialects, especially at the beginning of words. When the Ionic alphabet was adopted by districts which had retained ϝ, it was represented by β: βρόδον Aeolic for ῥόδον, *i.e.* ϝρόδον. In Attic it disappeared, leaving no trace; in Ionic it lengthened the preceding syllable; thus in Homer ὑποδείσας is scanned with o long because the root of the verb contained ϝ: δϝει-. Attic has ξένος, but Ionic ξεῖνος for ξένϝος. Its combination with τ became -σσ-, Attic and Boeotian -ττ-, in τέσσερες, τέτταρες, πέτταρες for I.E. *gu̯etu-*.

But the most effective of all elements in changing the appearance of Greek words was the sound *s*. Before vowels at the beginning, or between vowels in the middle of words, it passed into an *h* sound, the "rough breathing." Thus ἑπτά is the same word as the Latin *septem*, English *seven*; ἅλ-ς has the same stem as the Latin *sal*, English *sal-t*; εὖω for εὐhω is the same as the Latin *uro* (**eusō*). Combined with *i* or *u̯* also it passes into *h*; ὑμήν, Skt. *syūman*, "band"; ἡδύς, Doric ἅδύς, Latin *suā(d)vis*, English *sweet*; cp. οἶκοιο for *ϝοικοi̯ο, νηός, Lesbian ναῦος "temple," through νaϝός from *νασϝο-ς connected with ναίω "dwell." Before nasals and liquids *s* was assimilated: μει-δάω, Latin *mi-ru-s*, English *smile*; νίφα, Latin *nivem*, English *snow*; λήγω, Latin *laxus*, English *slack*; ῥέω from **sreu-ō* of the same origin as English *stream* (where *t* is a later insertion), imperfect ἔῤῥεον for **esreu̯om*; cp. also φιλομμείδης, ἀγάννιφος, ἄλληκτος.

After nasals *s* is assimilated except finally; when assimilated, in all dialects except Aeolic the previous syllable is lengthened if not already long: Attic ἔνειμα, ἔμεινα for the first aorist **enemsa*, **emensa*; but τόνς, τάνς, &c., of the accusative pl. either remained or became in Aeolic τοίς, ταίς, in Ionic and Attic τούς, τάς, in Doric τώς, τάς; cp. τιθείς for *τιθέντς, βάς for *βάντς, είς "one" for **sem-s*, then by analogy of the neuter **sens*. Assimilation of σ to preceding ρ and λ is a matter of dialect: Ionic θαρσέω, but Attic θαρρῶ, and so also the Doric of Thera: ἔκελσα, but ἔστειλα for *ἔστελσα. With nasals *i̯* affected the previous syllable: τεκταίνω (*τεκτn̥i̯ω), where *n̥* is the nasal of the stem τέκτων, itself forming a syllable (see the article N for these so-called sonant nasals). Before *i̯* original *m* becomes *n*; hence βαίνω with *n*, though from the same root as English *come*. Original *i̯* does not survive in Greek, but is represented by the aspirate at the beginning of words, ἀγνός = Skt. *yajnas*; medially after consonants it disappears, affecting the preceding consonant or syllable where a consonant precedes; between vowels it disappears. A sound of the same kind is indicated in Cyprian and some other dialects as a glide or transition sound between two vowels.

(*e*) The most remarkable feature in the treatment of the nasals is that when *n* or *m* forms a syllable by itself its consonant character disappears altogether and it is represented by the vowel α only: τατός, Latin *tentus*, α- negative particle, Latin *in*, English

un; ἁ-πλόος has the same prefix as the Latin *sim-plex* (*sm*). The liquids in similar cases show λα or αλ and ρα or αρ: τέ-τλα-μεν, πέ-παλται; ἔδρακον, θρασύς, θάρσος.

The ends of words were modified in appearance by the loss of all stop-consonants and the change of final *m* to *n*, ἔδειξε, Latin *dixit*; ζυγόν, Latin *iugum*.

Accent.—The vowel system of Greek has been so well preserved because it shows till late times very little in the way of stress accent. As in early Sanskrit the accent was predominantly a pitch accent (see ACCENT).

Noun System.—The I.E. noun had three numbers, but the dual was limited to pairs, the two hands, the two horses in the chariot, and was so little in use that the original form of the oblique cases cannot be restored with certainty. Ionic has no dual. The I.E. noun had the following cases: Nominative, Accusative, Genitive, Ablative, Instrumental, Locative and Dative. The vocative was not properly a case, because it usually stands outside the syntactical construction of the sentence; when a distinctive form appears, it is the bare stem, and there is no form (separate from the nominative) for the plural. Greek has confused genitive and ablative (the distinction between them seems to have been derived from the pronouns), except for the solitary ϝοίκω = οἴκοθεν in an inscription of Delphi. The instrumental, locative and dative are mixed in one case, partly for phonetic, partly for syntactical reasons. In Arcadian, Elean, Boeotian, and later widely in N. Greece, the locative -οι is used for the dative. The masculine *ā*-stems make the nom. in most dialects in -ᾱς. The genitive is in -ᾱο (with ο borrowed from the *o*-stems), which remains in Homer and Boeotian, appears in Arcado-Cyprian as -αυ, and with metathesis of quantity -εω in Ionic. The Attic form in -ου is borrowed directly from the *o*-stems. In the plural the ᾱ and *-o* stems follow the article in making their nominatives in -αι and -οι instead of the original *-ās* and *-ōs*. The neuter plural was in origin a collective singular, and for this reason takes a singular verb; the plural of ζυγόν "yoke" was originally **iugā*, and declined like any other *-ā* stem. But through the influence of the masculine and feminine forms the neuter took the same oblique cases, and like its own singular made the accusative the same as the nominative. In the plural of *-ā* and *-ō* stems, the locative in -αισι, -οισι was long kept apart from the instrumental-dative form in -αις, -οις.

The Verb System.—The verb system of Greek is more complete than that of any of the other I.E. languages. Its only rival, the early Vedic verb system, is already in decay when history begins, and when the classical period of Sanskrit arrives the moods have broken down, and the aorist, perfect, and imperfect tenses are syntactically confused. Throughout the Greek classical period the moods are maintained, but in the period of the κοινή the optative occurs less and less and finally disappears. The original I.E. had two voices, an active and a middle, and to these Greek has added a third, the passive, distinguished from the middle in many verbs by separate forms for the future and aorist, made with a syllable -θη-, τιμηθήσομαι, ἐτιμήθην, though in this instance, τιμήσομαι, the future middle, is often used with a passive sense. Other forms which Greek has added to the original system are the pluperfect—in form a past of the perfect stem with aorist endings. It merely expressed the perfect action in past time, and, except as derived from the context, did not possess the notion of relative time (past at a time already past), which attaches to the Latin forms with the same name. The future optative was also a new formation, betraying its origin in the fact that it is almost entirely limited to *Oratio Obliqua*. The aorist imperatives were also new; the history of some of them, as the second sing. act. παῦσον, is not very clear. The whole verb system is affected by the distinction between *-ō* and *-mi* verbs; the former or thematic verbs have a so-called "thematic vowel" between the root and the personal suffix, while the *-mi* verbs attach the suffixes directly to the root. The distinction is really one between monosyllabic and disyllabic roots. The history of the personal endings is not altogether clear; the *-ō* verbs have in the present forms for the 2nd and 3rd person in -εις and -ει, which are not yet elucidated. In the middle, Greek does not entirely agree with Sanskrit in its personal endings, and the original forms cannot all be restored with certainty. The endings of the primary tenses differed from those of the secondary, but there has been a certain amount of confusion between them.

The syntax of the verb is founded on the original I.E. distinction of the verb forms, not by time (tense), but by forms of action, progressive action (present and imperfect), consummated action (aorist), state arising from action, emphatic or repeated action (perfect). For the details of this see INDO-EUROPEAN LANGUAGES.

BIBLIOGRAPHY.—(i.) A grammar of Greek, which will deal fully with the whole material of the language, is at present a *desideratum*, and is hardly possible so long as new dialect material is being constantly added and while comparatively so little has been done on the syntax of the dialects. The greatest collection of material is to be found in the new edition of Kühner's *Griechische Grammatik, Laut- und Formenlehre*, by Blass (2 vols., 1890-1892); *Syntax*, by Gerth (2 vols., 1896, 1900). Blass's part is useful only for material, the explanations being entirely antiquated. The only full historical account of the language (sounds, forms and syntax) at present in existence is K. Brugmann's *Griechische Grammatik* (3rd ed., 1900). Gustav Meyer's *Griechische Grammatik* (nothing on accent or 501
syntax), which did excellent pioneer work when it first appeared in 1880, was hardly brought up to date in its 3rd edition (1896), but is still useful for the dialect and bibliographical material collected. See also H. Hirt, *Handbuch der griech. Laut- und Formenlehre* (1902). Of smaller grammars in English perhaps the most complete is that of J. Thompson (London, 1902). The grammar of Homer was handled by D. B. Monro (2nd ed., Oxford, 1891). The syntax has been treated in many special works, amongst which may be mentioned W. W. Goodwin, *Syntax of the Greek Moods and Tenses* (new ed., 1889); B. L. Gildersleeve and C. W. E. Miller, *Syntax of Classical Greek from Homer to Demosthenes*, pt. i. (New York, 1901—and following); J. M. Stahl, *Kritisch-historische Syntax des griechischen Verbums* (1907); F. E. Thompson, *Attic Greek Syntax* (1907). (ii.) The relations between Greek and the other I.E. languages are very well brought out in P. Kretschmer's *Einleitung in die Geschichte der griechischen Sprache* (Göttingen, 1896). For comparative grammar see K. Brugmann and B. Delbrück, *Grundriss der vergleichenden Grammatik der indogermanischen Sprachen* (the 2nd ed., begun 1897, is still incomplete) and Brugmann's *Kurze vergleichende Grammatik* (1902-1903); A. Meillet, *Introduction à l'étude comparative des langues indo-européennes* (2nd ed., 1908). Greek compared with Latin and English: P. Giles, *A Short Manual of Comparative Philology for Classical Students* (2nd ed., 1901, with an appendix containing a brief account and specimens of the dialects); Riemann and Goelzer, *Grammaire comparative du Grec et du Latin* (1901), a parallel grammar in 2 vols., specially valuable for syntax. (iii.) For the dialects two works have recently appeared, both covering in brief space the whole field: A. Thumb, *Handbuch der griechischen Dialekte* (with bibliographies for each dialect, 1909); C. D. Buck, *Introduction to the Study of the Greek Dialects, Grammar, Selected Inscriptions, Glossary* (Boston, 1910). Works on a larger scale have been undertaken by R. Meister, by O. Hoffmann and by H. W. Smyth. For the κοινή may be specially mentioned A. Thumb, *Die griech. Sprache in Zeitalter des Hellenismus* (1901); E. Mayser, *Grammatik der griechischen Papyri aus der Ptolemäerzeit: Laut- und Wortlehre* (1906); H. St J. Thackeray, *A Grammar of the Old Testament in Greek*, vol. i. (1909); Blass, *Grammar of New Testament Greek*, trans. by Thackeray (1898); J. H. Moulton, *A Grammar of New Testament Greek. I. Prolegomena* (3rd ed., 1906). (iv.) For the development from the κοινή to modern Greek: A. N. Jannaris, *An Historical Greek Grammar, chiefly of the Attic Dialect, as written and spoken from Classical Antiquity down to the Present Time* (1901); G. N. Hatzidakis, *Einleitung in die neugriechische Grammatik* (1892); A. Thumb, *Handbuch der neugriechischen Volkssprache* (2nd ed. 1910). (v.) The inscriptions are collected in *Inscriptiones Graecae* in the course of publication by the Berlin Academy, those important for dialect in the *Sammlung der griech. Dialektinschriften*, edited by Collitz and Bechtel. The earlier parts of this collection are to some extent superseded by later volumes of the *Inscr. Graecae*, containing better readings and new inscriptions. A good selection (too brief) is Solmsen's *Inscriptiones Graecae ad inlustrandas dialectos selectae* (3rd ed., 1910). A serviceable lexicon for dialect words is van Herwerden's *Lexicon Graecum suppletorium et dialecticum* (2nd ed., much enlarged, 2 vols. 1910). (vi.) The historical basis for the distribution of the Greek dialects is discussed at length in the histories of E. Meyer (*Geschichte des Altertums*, ii.) and G. Busolt (*Griechische Geschichte*, i.); by Professor Ridgeway, *Early Age of Greece*, i. (1901), and P. Kretschmer in *Glotta*, i. 9 ff. See also A. Fick, *Die vorgriechischen Ortsnamen* (1905). (vii.) Bibliographies containing the new publications on Greek, with some account of their contents, appear from time to time in *Indogermanische Forschungen: Anzeiger* (Strassburg, Trübner), annually in *Glotta* (Göttingen, Vandenhoeck und Ruprecht), and *The Year's Work in Classical Studies* (London, Murray).

(P. GI.)

1 Thumb, *Die griechische Sprache im Zeitalter des Hellenismus* (1901), pp. 242-243.

2 Thumb, *op. cit.* p. 249.

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