Title: Encyclopaedia Britannica, 11th Edition, "Justinian II." to "Kells"

Author: Various

Release date: September 25, 2012 [EBook #40863]

Language: English

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

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THE ENCYCLOPÆDIA BRITANNICA

A DICTIONARY OF ARTS, SCIENCES, LITERATURE AND GENERAL INFORMATION

ELEVENTH EDITION

VOLUME XV SLICE VI

Justinian II. to Kells

Articles in This Slice

JUSTINIAN II., Rhinotmetus (669-711), East Roman emperor 685-695 and 704-711, succeeded his father Constantine IV., at the age of sixteen. His reign was unhappy both at home and abroad. After a successful invasion he made a truce with the Arabs, which admitted them to the joint possession of Armenia, Iberia and Cyprus, while by removing 12,000 Christian Maronites from their native Lebanon, he gave the Arabs a command over Asia Minor of which they took advantage in 692 by conquering all Armenia. In 688 Justinian decisively defeated the Bulgarians. Meanwhile the bitter dissensions caused in the Church by the emperor, his bloody persecution of the Manichaeans, and the rapacity with which, through his creatures Stephanus and Theodatus, he extorted the means of gratifying his sumptuous tastes and his mania for erecting costly buildings, drove his subjects into rebellion. In 695 they rose under Leontius, and, after cutting off the emperor's nose (whence his surname), banished him to Cherson in the Crimea. Leontius, after a reign of three years, was in turn dethroned and imprisoned by Tiberius Absimarus, who next assumed the purple. Justinian meanwhile had escaped from Cherson and married Theodora, sister of Busirus, khan of the Khazars. Compelled, however, by the intrigues of Tiberius, to quit his new home, he fled to Terbelis, king of the Bulgarians. With an army of 15,000 horsemen Justinian suddenly pounced upon Constantinople, slew his rivals Leontius and Tiberius, with thousands of their partisans, and once more ascended the throne in 704. His second reign was marked by an unsuccessful war against Terbelis, by Arab victories in Asia Minor, by devastating expeditions sent against his own cities of Ravenna and Cherson, where he inflicted horrible punishment upon the disaffected nobles and refugees, and by the same cruel rapacity towards his subjects. Conspiracies again broke out: Bardanes, surnamed Philippicus, assumed the purple, and Justinian, the last of the house of Heraclius, was assassinated in Asia Minor, December 711.

See E. Gibbon, *Decline and Fall of the Roman Empire* (ed. Bury, 1896), v. 179-183; J. B. Bury, *The Later Roman Empire* (1889), ii. 320-330, 358-367.

JUSTIN MARTYR, one of the earliest and ablest Christian apologists, was born about 100 at Flavia Neapolis (anc. *Sichem*), now Nablus, in Palestinian Syria (Samaria). His parents, according to his own account, were Pagans (*Dial. c. Tryph.* 28). He describes the course of his religious development in the introduction to the dialogue with the Jew Trypho, in which he relates how chance intercourse with an aged stranger brought him to know the truth. Though this narrative is a mixture of truth and fiction, it may be said with certainty that a thorough study of the philosophy of Peripatetics and Pythagoreans, Stoics and Platonists, brought home to Justin the conviction that true knowledge was not to be found in them. On the other hand, he came to look upon the Old Testament prophets as approved by their antiquity, sanctity, mystery and prophecies to be interpreters of the truth. To this, as he tells us in another place (*Apol.* ii. 12), must be added the deep impression produced upon him by the life and death of Christ. His conversion apparently took place at Ephesus; there, at any rate, he places his decisive interview with the old man, and there he had those discussions with Jews and converts to Judaism, the results of which he in later years set down in his *Dialogue*. After his conversion he retained his philosopher's cloak (Euseb., *Hist. Eccl.* iv. 11. 8), the distinctive badge of the wandering professional teacher of philosophy, and went about from place to place discussing the truths of Christianity in the hope of bringing educated Pagans, as he himself had been brought, through philosophy to Christ. In Rome he made a fairly long stay, giving lectures in a class-room of his own, though not without opposition from his fellow-teachers. Among his opponents was the Cynic Crescentius (*Apol.* ii. 13). Eusebius (*Hist. Eccl.* iv. 16. 7-8) concludes somewhat hastily, from the statement of Justin and his disciple Tatian (*Orat. ad Graec.* 19), that the accusation of Justin before the authorities, which led to his death, was due to Crescentius. But we know, from the undoubtedly genuine *Acta SS Justini et sociorum*, that Justin suffered the death of a martyr under the prefect Rusticus between 163 and 167.

To form an opinion of Justin as a Christian and theologian, we must turn to his *Apology* and to the *Dialogue* with the Jew Trypho, for the authenticity of all other extant works attributed to him is disputed with good reason. The *Apology*—it is more correct to speak of one *Apology* than of two, for the second is only a continuation of the first, and dependent upon it—was written in Rome about 150. In the first part Justin defends his fellow-believers against the charge of atheism and hostility to the state. He then draws a positive demonstration of the truth of his religion from the effects of the new faith, and especially from the excellence of its moral teaching, and concludes with a comparison of Christian and Pagan doctrines, in which the latter are set down with naïve confidence as the work of demons. As the main support of his proof of the truth of Christianity appears his detailed demonstration that the prophecies of the old dispensation, which are older than the Pagan poets and philosophers, have found their fulfilment in Christianity. A third part shows, from the practices of their religious worship, that the Christians had in truth dedicated themselves to God. The whole closes with an appeal to the princes, with a reference to the edict issued by Hadrian in favour of the Christians. In the so-called *Second Apology*, Justin takes occasion from the trial of a Christian recently held in Rome to argue that the innocence of the Christians was proved by the very persecutions.

Even as a Christian Justin always remained a philosopher. By his conscious recognition of the Greek philosophy as a preparation for the truths of the Christian religion, he appears as the first and most distinguished in the long list of those who have endeavoured to reconcile Christian with non-Christian culture. Christianity consists for him in the doctrines, guaranteed by the manifestation of the Logos in the person of Christ, of God, righteousness and immortality, truths which have been to a certain extent foreshadowed in the monotheistic religious philosophies. In this process the conviction of the reconciliation of the sinner with God, of the salvation of the world and the individual through Christ, fell into the background before the vindication of supernatural truths intellectually conceived. Thus Justin may give the impression of having rationalized Christianity, and of not having given it its full value as a religion of salvation. It must not, however, be forgotten that Justin is here speaking as the apologist of Christianity to an educated Pagan public, on whose philosophical view of life he had to base his arguments, and from whom he could not expect an intimate comprehension of the religious position of Christians. That he himself had a thorough comprehension of it he showed in the *Dialogue* with the Jew Trypho. Here, where he had to deal with the Judaism that believed in a Messiah, he was far better able to do justice to Christianity as a revelation; and so we find that the arguments of this work are much more completely in harmony with primitive Christian theology than those of the *Apology*. He also displays in this work a considerable knowledge of the Rabbinical writings and a skilful polemical method which was surpassed by none of the later anti-Jewish writers.

Justin is a most valuable authority for the life of the Christian Church in the middle of the 2nd century. While we have elsewhere no connected account of this, Justin's *Apology* contains a few paragraphs (61 seq.), which give a vivid description of the public worship of the Church and its method of celebrating the sacraments (Baptism and the Eucharist). And from this it is clear that though, as a theologian, Justin wished to go his own way, as a believing Christian he was ready to make his standpoint that of the Church and its baptismal confession of faith. His works are also

of great value for the history of the New Testament writings. He knows of no canon of the New Testament, *i.e.* no fixed and inclusive collection of the apostolic writings. His sources for the teachings of Jesus are the "Memoirs of the Apostles," by which are probably to be understood the Synoptic Gospels (without the Gospel according to St John), which, according to his account, were read along with the prophetic writings at the public services. From his writings we derive the impression of an amiable personality, who is honestly at pains to arrive at an understanding with his opponents. As a theologian, he is of wide sympathies; as a writer, he is often diffuse and somewhat dull. There are not many traces of any particular literary influence of his writings upon the Christian Church, and this need not surprise us. The Church as a whole took but little interest in apologetics and polemics, nay, had at times even an instinctive feeling that in these controversies that which she held holy might easily suffer loss. Thus Justin's writings were not much read, and at the present time both the *Apology* and the *Dialogue* are preserved in but a single MS. (cod. Paris, 450, A.D. 1364).

BIBLIOGRAPHY.—The editions of Robert Étienne (Stephanus) (1551); H. Sylburg (1593); F. Morel (1615); Prudentius Maranuis (1742) are superseded by J. C. T. Otto, *Justini philosophi et martyris opera quae feruntur omnia* (3rd ed. 5 vols., Jena, 1876-1881). This edition contains besides the *Apologies* (vol. i.) and the *Dialogue* (vol. ii.) the following writings: *Speech to the Greeks* (*Oratio*); *Address to the Greeks* (*Cohortatio*): *On the Monarchy of God*; *Epistle to Diognetus*; *Fragments on the Resurrection and other Fragments*; *Exposition of the True Faith*; *Epistle to Zenas and Serenus*; *Refutation of certain Doctrines of Aristotle*; *Questions and Answers to the Orthodox*; *Questions of Christians to Pagans*; *Questions of Pagans to Christians*. None of these writings, not even the *Cohortatio*, which former critics ascribed to Justin, can be attributed to him. The authenticity of the *Dialogue* has occasionally been disputed, but without reason. For a handy edition of the *Apology* see G. Krüger, *Die Apologien Justins des Märtyrers* (3rd ed. Tübingen, 1904). There is a good German translation with a comprehensive commentary by H. Veil (1894). For English translations consult the "Oxford Library of the Fathers" and the "Ante-Nicene Library." Full information about Justin's history and views may be had from the following monographs: C. Semisch, *Justin der Märtyrer* (2 vols., 1840-1842); J. Donaldson, *A Critical History of Christian Literature and Doctrine*, vol. 2 (1866); C. E. Freppel, *St Justin* (3rd ed., 1886); Moritz von Engelhardt, *Das Christentum Justins des Märtyrers* (1878); T. M. Wehofer, *Die Apologie Justins des Philosophen und Märtyrers in litterarhistorischer Beziehung zum ersten Male untersucht* (1897); Alfred Leonhard Feder, *Justins des Märtyrers Lehre von Jesus Christus* (1906). On the critical questions raised by the spurious writings consult W. Gaul, *Die Abfassungsverhältnisse der pseudo-justinischen Cohortatio ad Graecos* (1902); Adolf Harnack, *Diodor von Tarsus. Vier pseudo-justinische Schriften als Eigentum Diodors nachgewiesen* (1901).

(G. K.)

JUTE, a vegetable fibre now occupying a position in the manufacturing scale inferior only to cotton and flax. The term jute appears to have been first used in 1746, when the captain of the "Wake" noted in his log that he had sent on shore "60 bales of gunney with all the jute rope" (*New Eng. Dict. s.v.*). In 1795 W. Roxburgh sent to the directors of the East India Company a bale of the fibre which he described as "the jute of the natives." Importations of the substance had been made at earlier times under the name of *pāt*, an East Indian native term by which the fibre continued to be spoken of in England till the early years of the 19th century, when it was supplanted by the name it now bears. This modern name appears to be derived from *jhot* or *jhout* (Sansk. *jhat*), the vernacular name by which the substance is known in the Cuttack district, where the East India Company had extensive roperies when Roxburgh first used the term.

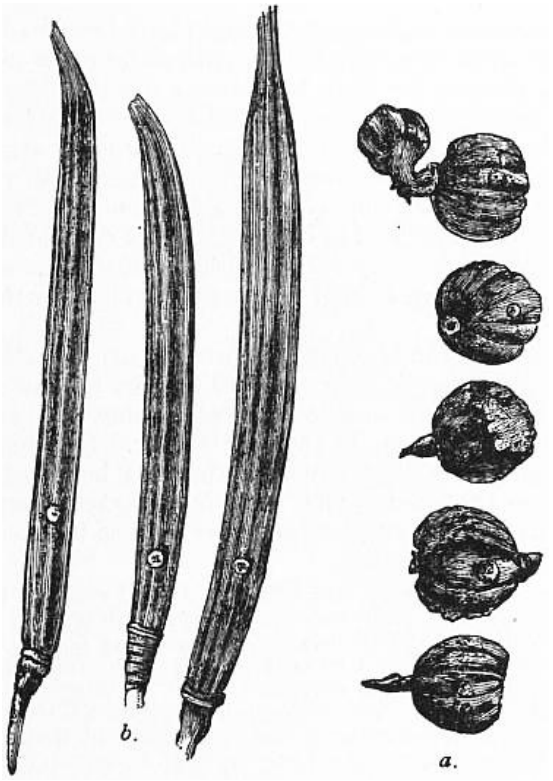

FIG. 1.—Capsules of Jute Plants. *a*, *Corchorus capsularis*; *b*, *C. olitorius*.

The fibre is obtained from two species of *Corchorus* (nat. ord. *Tiliaceae*), *C. capsularis* and *C. olitorius*, the products of both being so essentially alike that neither in commerce nor agriculture is any distinction made between them. These and various other species of *Corchorus* are natives of Bengal, where they have been cultivated from very remote times for economic purposes, although there is reason to believe that the cultivation did not originate in the northern parts of India. The two species cultivated for jute fibre are in all respects very similar to each other, except in their fructification and the relatively greater size attained by *C. capsularis*. They are annual plants from 5 to 10 ft. high, with a cylindrical stalk as thick as a man's finger, and hardly branching except near the top. The light-green leaves are from 4 to 5 in. long by 1½ in. broad above the base, and taper upward into a fine point; the edges are serrated; the two lower teeth are drawn out into bristle-like points. The small whitish-yellow flowers are produced in clusters of two or three opposite the leaves.

The capsules or seed-pods in the case of *C. capsularis* are globular, rough and wrinkled, while in *C. olitorius* they are slender, quill-like cylinders (about 2 in. long), a very marked distinction, as may be noted from fig. 1, in which *a* and *b* show the capsules of *C. capsularis* and *C. olitorius* respectively. Fig. 2 represents a flowering top of *C. olitorius*.

Both species are cultivated in India, not only on account of their fibre, but also for the sake of 604
their leaves, which are there extensively used as a pot-herb. The use of *C. olitorius* for the latter purpose dates from very ancient times, if it may be identified, as some suppose, with the mallows (מלוח) mentioned in Job xxx. 4; hence the name Jew's mallow. It is certain that the Greeks used this plant as a pot-herb; and by many other nations around the shores of the Mediterranean this use of it was, and is still, common. Throughout Bengal the name by which the plants when used as edible vegetables are recognized is *nalitā*; when on the other hand they are spoken of as fibre-producers it is generally under the name *pāt*. The cultivation of *C. capsularis* is most prevalent in central and eastern Bengal, while in the neighbourhood of Calcutta, where, however, the area under cultivation is limited, *C. olitorius* is principally grown. The fibre known as China jute or Tien-tsin jute is the product of another plant, *Abutilon Avicennae*, a member of the Mallow family.

Cultivation and Cropping.—Attempts have been made to grow the jute plant in America, Egypt, Africa and other places, but up to the present the fibre has proved much inferior to that obtained from plants grown in India. Here the cultivation of the plant extends from the Hugli through eastern and northern Bengal. The successful cultivation of the plant demands a hot, moist climate, with a fair amount of rain. Too much rain at the beginning of the season is detrimental to the growth, while a very dry season is disastrous. The climate of eastern and northern Bengal appears to be ideal for the growth of the plant.

The quality of the fibre and the produce per acre depend in a measure on the preparation of the soil. The ground should be ploughed about four times and all weeds removed. The seed is then sown broadcast as in the case of flax. It is only within quite recent years that any attention has been paid to the selection of the seed. The following extract from *Capital* (Jan. 17, 1907) indicates the new interest taken in it.

> "Jute seed experiments are being continued and the report for 1906 has been issued. The object of these experiments is, of course, to obtain a better class of jute seed by growing plants, especially for no other purpose than to obtain their seed. The agricultural department has about 300 maunds (25,000 lb.) of selected seed for distribution this year. The selling price is to be *Rs.* 10 per maund. The agricultural department of the government of Bengal are now fully alive to the importance of fostering the jute industry by showing conclusively that attention to scientific agriculture will make two maunds of jute grow where only one maund grew before. Let them go on (as they will) till all the ryots are thoroughly indoctrinated into the new system."

The time of sowing extends from the middle of March to the middle of June, while the reaping, which depends upon the time of sowing and upon the weather, is performed from the end of June to the middle of October. The crop is said to be ready for gathering when the flowers appear; if gathered before, the fibre is weak, while if left until the seed is ripe, the fibre is stronger, but is coarser and lacks the characteristic lustre.

The fibre is separated from the stalks by a process of retting similar to that for flax and hemp. In certain districts of Bengal it is the practice to stack the crop for a few days previous to retting in order to allow the leaves to dry and to drop off the stalks. It is stated that the colour of the fibre is darkened if the leaves are allowed to remain on during the process of retting. It is also thought that the drying of the plants before retting facilitates the separation of the fibre. Any simple operation which improves the colour of the fibre or shortens the operation of retting is worthy of consideration. The benefits to be derived from the above process, however, cannot be great, for the bundles are usually taken direct to the pools and streams. The period necessary for the completion of the retting process varies according to the temperature and to the properties of the water, and may occupy from two days to a month. After the first few days of immersion the stalks are examined daily to test the progress of the retting. When the fibres are easily separated from the stalk, the operation is complete and the bundles should be withdrawn. The following description of the retting of jute is taken from Royle's *Fibrous Plants of India*:—

> "The proper point being attained, the native operator, standing up to his middle in water, takes as many of the sticks in his hands as he can grasp, and removing a small portion of the bark from the ends next the roots, and grasping them together, he strips off the whole with a little management from end to end, without breaking either stem or fibre. Having prepared a certain quantity into this half state, he next proceeds to wash off: this is done by taking a large handful; swinging it round his head he dashes it repeatedly against the surface of the water, drawing it through towards him, so as to wash off the impurities; then, with a dexterous throw he fans it out on the surface of the water and carefully picks off all remaining black spots. It is now wrung out so as to remove as much water as possible, and then hung up on lines prepared on the spot, to dry in the sun."

The separated fibre is then made up into bundles ready for sending to one of the jute presses. The jute is carefully sorted into different qualities, and then each lot is subjected to an enormous hydraulic pressure from which it emerges in the shape of the well-known bales, each weighing 400 lb.

The crop naturally depends upon the quality of the soil, and upon the attention which the fibre has received in its various stages; the yield per acre varies in different districts. Three bales per acre, or 1200 lb. is termed a 100% crop, but the usual quantity obtained is about 2.6 bales per acre. Sometimes the crop is stated in lakhs of 100,000 bales each. The crop in 1906 reached nearly 9,000,000 bales, and in 1907 nearly 10,000,000 was reached. The following particulars were issued on the 19th of September 1906 by Messrs. W. F. Souter & Co., Dundee:—

Year.	Actual acreage.	Estimated yield (100% equal 3 bales per acre).	Estimated total crop. Bales.	Shipment to Europe.		Shipment to America.		Supplies to Indian mills and local consumption.	Out-turn total crop. Bales.
				Jute. Bales.	Cuttings. Bales.	Jute. Bales.	Cuttings. Bales.		
1901—1st	2,216,500	94% =	6,250,000						
Final	2,249,000	96% =	6,500,000	3,528,691	54,427	295,921	426,331	3,100,000 =	7,405,370
1902—1st	2,200,000	80% =	5,280.000						
Final	2,200,000	80% =	5,280,000	2,773,621	39,019	230,415	207,999	2,600,000 =	5,851,054
1903—1st	2,100,000	85% =	5,400,000						
Final	2,250,000	93¾% =	6,500,000	3,161,791	59,562	329,048	236,959	3,650,000 =	7,437,360
1904—1st	2,700,000	87½% =	7,100,000						
Final	2,850,000	85% =	7,400,000	2,939,940	44,002	253,882	290,854	3,475,782 =	7,004,460
1905—1st	3,163,500	87% =	8,250,000						
Final	3,145,000	87% =	8,200,000	3,483,315	63,118	347,974	245,044	4,018,523 =	8,233,358
		Outlying	200,000						
			Madras	75,384					
1906—1st	3,271,400	87% =	8,713,000						
Outlying	67,000	Madras	100,000						
Final	3,336,400		8,736,220						
(Outlying Districts and Madras, say 250,000 bales additional)									

Estimated consumption of jute 1906-1907.

In Europe	Bales per annum.	
Scotland	1,250,000	
England	20,000	
Ireland	25,000	
France	475,000	
Belgium	120,000	
Germany	750,000	
Austria and Bohemia	262,000	
Norway and Sweden	62,500	
Russia	180,000	
Holland	25,000	
Spain	90,000	
Italy	160,000	
	———	3,419,500 bales
In America	600,000	
	———	600,000 ”
In India—		
Mills	3,900,000	
Local	500,000	
	———	4,400,000 ”
		———————
		8,419,500 bales

Statistics of consumption of jute, rejections and cuttings.

Consumption.	1894. Bales.	1904. Bales.	1906. Bales.
United Kingdom	1,200,000	1,200,000	1,295,000
Continent	1,100,000	1,800,000	2,124,500
America	500,000	500,000	600,000
Indian mills	1,500,000	2,900,000	3,900,000
Local Indian consumption	500,000	500,000	500,000
Total jute crop consumption	4,800,000	6,900,000	8,419,500

A number of experiments in jute cultivation were made during 1906, and the report showed that very encouraging results were obtained from land manured with cow-dung. If more scientific attention be given to the cultivation it is quite possible that what is now considered as 100% yield may be exceeded.

Characteristics.—The characters by which qualities of jute are judged are colour, lustre, softness, strength, length, firmness, uniformity and absence of roots. The best qualities are of a clear whitish-yellow colour, with a fine silky lustre, soft and smooth to the touch, and fine, long and uniform in fibre. When the fibre is intended for goods in the natural colour it is essential that it should be of a light shade and uniform, but if intended for yarns which are to be dyed a dark shade, the colour is not so important. The cultivated plant yields a fibre with a length of from 6 to 10 ft., but in exceptional cases it has been known to reach 14 or 15 ft. in length. The fibre is decidedly inferior to flax and hemp in strength and tenacity; and, owing to a peculiarity in its microscopic structure, by which the walls of the separate cells composing the fibre vary much in thickness at different points, the single strands of fibre are of unequal strength. Recently prepared fibre is always stronger, more lustrous, softer and whiter than such as has been stored for some time—age and exposure rendering it brown in colour and harsh and brittle in quality. Jute, indeed, is much more woody in texture than either flax or hemp, a circumstance which may be easily demonstrated by its behaviour under appropriate reagents; and to that fact is due the change in colour and character it undergoes on exposure to the air. The fibre bleaches with facility, up to a certain point, sufficient to enable it to take brilliant and delicate shades of dye colour, but it is with great difficulty brought to a pure white by bleaching. A very striking and remarkable fact, which has much practical interest, is its highly hygroscopic nature. While in a dry position and atmosphere it may not possess more than 6% of moisture, under damp conditions it will absorb as much as 23%.

Sir G. Watt, in his *Dictionary of the Economic Products of India*, mentions the following eleven varieties of jute fibre: Serajganji, Narainganji, Desi, Deora, Uttariya, Deswāl, Bākrabadi, Bhatial, Karimginji, Mirganji and Jungipuri. There are several other varieties of minor importance. The first four form the four classes into which the commercial fibre is divided, and they are commonly

known as Serajgunge, Naraingunge, Daisee and Dowrah. Serajgunge is a soft fibre, but it is superior in colour, which ranges from white to grey. Naraingunge is a strong fibre, possesses good spinning qualities, and is very suitable for good warp yarns. Its colour, which is not so high as Serajgunge, begins with a cream shade and approaches red at the roots. All the better class yarns are spun from these two kinds. Daisee is similar to Serajgunge in softness, is of good quality and of great length; its drawback is the low colour, and hence it is not so suitable for using in natural colour. It is, however, a valuable fibre for carpet yarns, especially for dark yarns. Dowrah is a strong, harsh and low quality fibre, and is used principally for heavy wefts. Each class is subdivided according to the quality and colour of the material, and each class receives a distinctive mark called a baler's mark. Thus, the finest fibres may be divided as follows:—

Superfine	first marks.			
Extra fine	first marks	1st, 2nd	and 3rd	numbers.
Superior	first marks	”	”	”
Standard	”	”	”	”
Good	”	”	”	”
Ordinary	”	”	”	”
Good	second marks	”	”	”
Ordinary	”	”	”	”

The lower qualities are, naturally, divided into fewer varieties.

FIG. 2.—*Corchorus olitorius*.

Each baler has his own marks, the fibres of which are guaranteed equal in equality to some standard mark. It would be impossible to give a list of the different marks, for there are hundreds, and new marks are constantly being added. A list of all the principal marks is issued in book form by the Calcutta Jute Baler's association.

The relative prices of the different classes depend upon the crop, upon the demand and upon the quality of the fibre; in 1905 the prices of Daisee jute and First Marks were practically the same, although the former is always considered inferior to the latter. It does not follow that a large crop of jute will result in low prices, for the year 1906-1907 was not only a record one for crops, but also for prices. R. F. C. grade has been as high as £40 per ton, while its lowest recorded price is £12. Similarly the price for First Marks reached £29, 15s. in 1906 as compared with £9, 5s. per ton in 1897. The following table shows a few well-known grades with the average prices during December for the years 1903, 1904, 1905 and 1906.

Class.	Dec. 1903.			Dec. 1904.			Dec. 1905.			Dec. 1906.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
First marks	12	15	0	16	0	0	19	15	0	27	15	0
Blacks S C C	11	2	6	14	5	0	17	15	0	20	15	0

Red S C C	12	0	0	14	17	6	18	15	0	23	15	0
Native rejections	8	2	6		—		14	10	0	15	17	6
S 4 group		—			—		25	10	0	38	0	0
R F block D group		—			—			—		36	0	0
R F circle D group	14	10	0	16	15	0	21	10	0		—	
R F D group	11	15	0	14	2	6	17	12	6	22	0	0
N B green D	14	5	0		—		21	0	0	32	0	0
Heart T 4	14	12	6	17	10	0	22	10	0	34	0	0
Heart T 5	14	12	6	17	10	0	21	0	0	31	0	0
Daisee 2	12	17	6		—		18	15	0	25	10	0
Daisee assortment	12	10	0	14	17	6	18	5	0		—	
Mixed cuttings	4	5	0		—		10	0	0	10	0	0

Jute Manufacture.—Long before jute came to occupy a prominent place amongst the textile fibres of Europe, it formed the raw material of a large and important industry throughout the regions of Eastern Bengal. The Hindu population made the material up into cordage, paper and cloth, the chief use of the latter being in the manufacture of gunny bags. Indeed, up to 1830-1840 there was little or no competition with hand labour for this class of material. The process of weaving gunnies for bags and other coarse articles by these hand-loom weavers has been described as follows:—

> "Seven sticks or chattee weaving-posts, called *tanā parā* or warp, are fixed upon the ground, occupying the length equal to the measure of the piece to be woven, and a sufficient number of twine or thread is wound on them as warp called *tanā*. The warp is taken up and removed to the weaving machine. Two pieces of wood are placed at two ends, which are tied to the *ohari* and *okher* or roller; they are made fast to the *khoti*. The *belut* or treadle is put into the warp; next to that is the *sarsul*; a thin piece of wood is laid upon the warp, called *chupari* or regulator. There is no sley used in this, nor is a shuttle necessary; in the room of the latter a stick covered with thread called *singa* is thrown into the warp as woof, which is beaten in by a piece of plank called *beyno*, and as the cloth is woven it is wound up to the roller. Next to this is a piece of wood called *khetone*, which is used for smoothing and regulating the woof; a stick is fastened to the warp to keep the woof straight."

Gunny cloth is woven of numerous qualities, according to the purpose to which it is devoted. Some kinds are made close and dense in texture, for carrying such seed as poppy or rape and sugar; others less close are used for rice, pulses, and seeds of like size, and coarser and opener kinds again are woven for the outer cover of packages and for the sails of country boats. There is a thin close-woven cloth made and used as garments among the females of the aboriginal tribes near the foot of the Himalayas, and in various localities a cloth of pure jute or of jute mixed with cotton is used as a sheet to sleep on, as well as for wearing purposes. To indicate the variety of uses to which jute is applied, the following quotation may be cited from the official report of Hem Chunder Kerr as applying to Midnapur.

> "The articles manufactured from jute are principally (1) gunny bags; (2) string, rope and cord; (3) *kampa*, a net-like bag for carrying wood or hay on bullocks; (4) *chat*, a strip of stuff for tying bales of cotton or cloth; (5) *dola*, a swing on which infants are rocked to sleep; (6) *shika*, a kind of hanging shelf for little earthen pots, &c.; (7) *dulina*, a floor-cloth; (8) *beera*, a small circular stand for wooden plates used particularly in *poojahs*; (9) painter's brush and brush for white-washing; (10) *ghunsi*, a waist-band worn next to the skin; (11) *gochh-dari*, a hair-band worn by women; (12) *mukbar*, a net bag used as muzzle for cattle; (13) *parchula*, false hair worn by players; (14) *rakhi-bandhan*, a slender arm-band worn at the Rakhi-poornima festival; and (15) *dhup*, small incense sticks burned at *poojahs*."

The fibre began to receive attention in Great Britain towards the close of the 18th century, and early in the 19th century it was spun into yarn and woven into cloth in the town of Abingdon. It is claimed that this was the first British town to manufacture the material. For years small quantities of jute were imported into Great Britain and other European countries and into America, but it was not until the year 1832 that the fibre may be said to have made any great impression in Great Britain. The first really practical experiments with the fibre were made in this year in Chapelshade Works, Dundee, and these experiments proved to be the foundation of an enormous industry. It is interesting to note that the site of Chapelshade Works was in 1907 cleared for the erection of a large new technical college.

In common with practically all new industries progress was slow for a time, but once the value of the fibre and the cloth produced from it had become known the development was more rapid. The pioneers of the work were confronted with many difficulties; most people condemned the fibre and the cloth, many warps were discarded as unfit for weaving, and any attempt to mix the fibre with flax, tow or hemp was considered a form of deception. The real cause of most of these objections was the fact that suitable machinery and methods of treatment had not been developed for preparing yarns from this useful fibre. Warden in his *Linen Trade* says:—

> "For years after its introduction the principal spinners refused to have anything to do with jute,

and cloth made of it long retained a tainted reputation. Indeed, it was not until Mr. Rowan got the Dutch government, about 1838, to substitute jute yarns for those made from flax in the manufacture of the coffee bagging for their East Indian possessions, that the jute trade in Dundee got a proper start. That fortunate circumstance gave an impulse to the spinning of the fibre which it never lost, and since that period its progress has been truly astonishing."

The demand for this class of bagging, which is made from fine hessian yarns, is still great. These fine Rio hessian yarns form an important branch of the Dundee trade, and in some weeks during 1906 as many as 1000 bales were despatched to Brazil, besides numerous quantities to other parts of the world.

For many years Great Britain was the only European country engaged in the manufacture of jute, the great seat being Dundee. Gradually, however, the trade began to extend, and now almost every European country is partly engaged in the trade.

The success of the mechanical method of spinning and weaving of jute in Dundee and district led to the introduction of textile machinery into and around Calcutta. The first mill to be run there by power was started in 1854, while by 1872 three others had been established. In the next ten years no fewer than sixteen new mills were erected and equipped with modern machinery from Great Britain, while in 1907 there were thirty-nine mills engaged in the industry. The expansion of the Indian power trade may be gathered from the following particulars of the number of looms and spindles from 1892 to 1906. In one or two cases the number of spindles is obtained approximately by reckoning twenty spindles per loom, which is about the average for the Indian mills.

Year.	Looms.	Spindles.
1892-3	8,479	177,732
1893-4	9,082	189,144
1894-5	9,504	197,673
1895-6	10,071	212,595
1896-7	12,276	254,610
1897-8	12,737	271,363
1898-9	13,323	277,398
1899-1900	14,021	293,218
1900-01	15,242	315,264
1901-02	16,059	329,300
1902-03	17,091	350,120
1904*	19,901	398,020**
1905*	21,318	426,360**
1906*	26,799	520,980**

* End of calendar year, the remainder being taken to the 31st of March, the end of financial year.

** Approximate number of spindles.

The Calcutta looms are engaged for the most part with a few varieties of the commoner classes of jute fabrics, but the success in this direction has been really remarkable. Dundee, on the other hand, turns out not only the commoner classes of fabrics, but a very large variety of other fabrics. Amongst these may be mentioned the following: Hessian, bagging, tarpaulin, sacking, scrims, Brussels carpets, Wilton carpets, imitation Brussels, and several other types of carpets, rugs and matting, in addition to a large variety of fabrics of which jute forms a part. Calcutta has certainly taken a large part of the trade which Dundee held in its former days, but the continually increasing demands for jute fabrics for new purposes have enabled Dundee to enter new markets and so to take part in the prosperity of the trade.

The development of the trade with countries outside India from 1828 to 1906 may be seen by the following figures of exports:—

Average	per year	from	1828	to	1832-33	11,800	cwt.
"	"	"	1833-34	"	1837-38	67,483	"
"	"	"	1838-39	"	1842-43	117,047	"
"	"	"	1843-44	"	1847-48	234,055	"
"	"	"	1848-49	"	1852-53	439,850	"
"	"	"	1853-54	"	1857-58	710,826	"
"	"	"	1858-59	"	1862-63	969,724	"
"	"	"	1863-64	"	1867-68	2,628,110	"
"	"	"	1868-69	"	1872-73	4,858,162	"
"	"	"	1873-74	"	1877-78	5,362,267	"
"	"	"	1878-79	"	1882-83	7,274,000	"
"	"	"	1883-84	"	1887-88	8,223,859	"

”	”	”	1888-89	”	1892-93	10,372,991	”
”	”	”	1893-94	”	1897-98	12,084,292	”
”	”	”	1898-99	”	1902-03	11,959,189	”
”	”	”	1903-04	”	1905-06	13,693,090	”

The subjoined table shows the extent of the trade from an agricultural, as well as from a manufacturing, point of view. The difference between the production and the exports represents the native consumption, for very little jute is sent overland. The figures are taken to the 31st of March, the end of the Indian financial year.

Year.	Acres under cultivation.	Production in cwt.	Exports by sea in cwt.
1893	2,181,334	20,419,000	10,537,512
1894	2,230,570	17,863,000	8,690,133
1895	2,275,335	21,944,400	12,976,791
1896	2,248,593	19,825,000	12,266,781
1897	2,215,105	20,418,000	11,464,356
1898	2,159,908	24,425,000	15,023,325
1899	1,690,739	19,050,000	9,864,545
1900	2,070,668	19,329,000	9,725,245
1901	2,102,236	23,307,000	12,414,552
1902	2,278,205	26,564,000	14,755,115
1903	2,142,700	23,489,000	13,036,486
1904	2,275,050	25,861,000	13,721,447
1905	2,899,700	26,429,000	12,875,312
1906	3,181,600	29,945,000	14,581,307

Manufacture.—In their general features the spinning and weaving of jute fabrics do not differ essentially as to machinery and processes from those employed in the manufacture of hemp and heavy flax goods. Owing, however, to the woody and brittle nature of the fibre, it has to undergo a preliminary treatment peculiar to itself. The pioneers of the jute industry, who did not understand this necessity, or rather who did not know how the woody and brittle character of the fibre could be remedied, were greatly perplexed by the difficulties they had to encounter, the fibre spinning badly into a hard, rough and hairy yarn owing to the splitting and breaking of the fibre. This peculiarity of jute, coupled also with the fact that the machinery on which it was first spun, although quite suitable for the stronger and more elastic fibres for which it was designed, required certain modifications to suit it to the weaker jute, was the cause of many annoyances and failures in the early days of the trade.

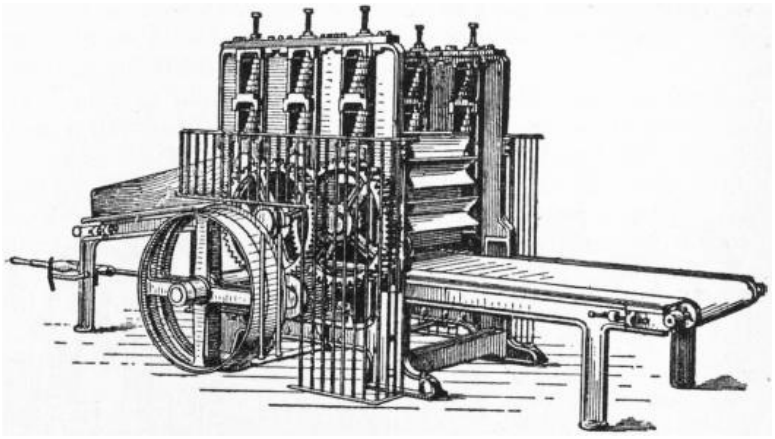

FIG. 3.—Jute Opener. (The three machines shown in this article are made by Urquhart, Lindsay & Co., Ltd., Dundee.)

The first process in the manufacture of jute is termed batching. Batch setting is the first part of this operation; it consists of selecting the different kinds or qualities of jute for any predetermined kind of yarn. The number of bales for a batch seldom exceeds twelve, indeed it is generally about six, and of these there may be three, four or even more varieties or marks. The “streaks”[1] or “heads” of jute as they come from the bale are in a hard condition in consequence of having been subjected to a high hydraulic pressure during baling; it is therefore necessary to soften them before any further process is entered. The streaks are sometimes partly softened or crushed by means of a steam hammer during the process of opening the bale, then taken to the “strikers-up” where the different varieties are selected and hung on pins, and then taken to the jute softening machine. The more general practice, however, is to employ what is termed a “bale opener,” or “jute crusher.” The essential parts of one type of bale opener are three specially shaped rollers, the peripheries of which contain a number of small knobs. Two of these rollers are supported in the same horizontal plane of the framework, while the third or top roller is kept in close contact by means of weights and springs acting on each end of the arbor. Another type of

machine termed the three pair roller jute opener is illustrated in fig. 3. The layers from the different bales are laid upon the feed cloth which carries them up to the rollers, between which the layers are crushed and partly separated. The proximity of the weighted roller or rollers to the fixed ones depends upon the thickness of material passing through the machine. The fibre is delivered by what is called the delivery cloth, and the batcher usually selects small streaks of about 1½ lb to 2 lb weight each and passes them on to the attendant or feeder of the softening machine. These small streaks are now laid as regularly as possible upon the feed-cloth of the softening machine, a general view of which is shown in fig. 4. The fibre passes between a series of fluted rollers, each pair of which is kept in contact by spiral springs as shown in the figure. The standard number of pairs is sixty-three, but different lengths obtain. There is also a difference in the structure of the flutes, some being straight, and others spiral, and each pair may or may not contain the same number of flutes. The springs allow the top rollers of each pair to rise as the material passes through the machine. Advantage is taken of this slight upward and downward movement of the top rollers to automatically regulate the flow of water and oil upon the material. The apparatus for this function is placed immediately over the 11th and 12th rollers of the softening machine and an idea of its construction may be gathered from fig. 5. In many cases the water and oil are applied by less automatic, but equally effective, means. The main object is to see that the liquids are distributed evenly while the fibre is passing through, and to stop the supply when the machine stops or when no fibre is passing. The uniform moistening of the fibre in this machine facilitates the subsequent operations, indeed the introduction of this preliminary process (originally by hand) constituted the first important step in the practical solution of the difficulties of jute spinning. The relative quantities of oil and water depend upon the quality of the batch. Sometimes both whale and mineral oils are used, but in most cases the whale oil is omitted. About 1 to 1¼ gallons of oil is the usual amount given per bale of 400 lb of jute, while the quantity of water per bale varies from 3 to 7 gallons. The delivery attendants remove the streaks, give them a twist to facilitate future handling, and place them on what are termed jute barrows. The streaks are now handed over to the cutters who cut off the roots, and finally the material is allowed to remain for twelve to twenty-four hours to allow the mixture of oil and water to thoroughly spread over the fibre.

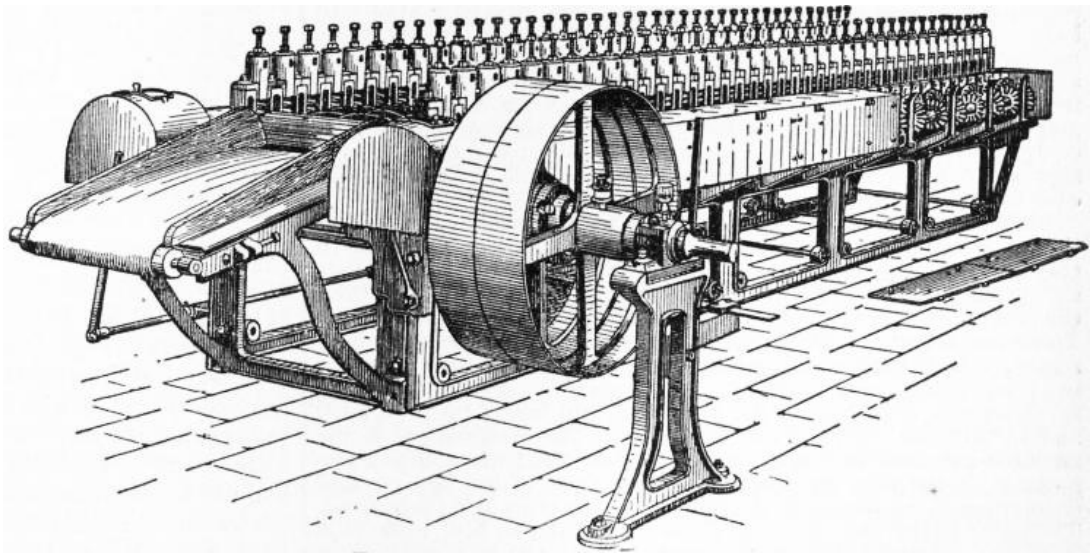

FIG. 4.—Jute Softening Machine.

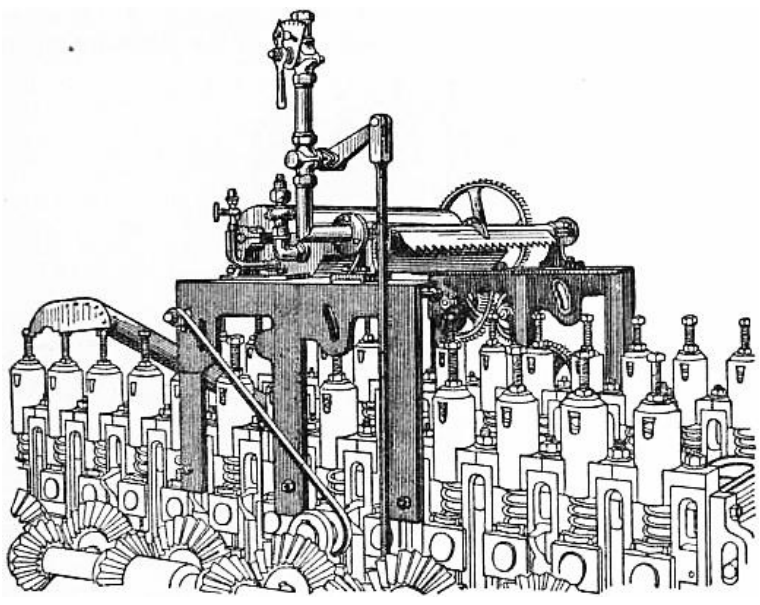

Fig. 5.—Improved Batching Gear.

When the moisture has spread sufficiently, the material is taken to the “breaker card,” the first machine in the preparing department. A certain weight of jute, termed a “dollop,” is laid upon the feed cloth for each revolution of the latter. The fibre, which should be arranged on the sheet as evenly as possible, is carried up by the feed cloth and passes between the feed roller and the shell on to the large cylinder. This cylinder, which has a high surface speed, carries part of the fibre towards the workers and strippers; the surface speed of the workers being much slower than that of the cylinder. The pins in the two rollers oppose each other, those of the workers being “back-set,” and this arrangement, combined with the relative angle of the pins, and the difference in the surface speeds of the two rollers, results in part of the fibre being broken and carried round by the worker towards the stripper. This, as its name implies, strips the fibre off the worker, and carries it round to the cylinder. The pins of the stripper and cylinder point in the same direction, but since the surface speed of the cylinder is much greater than the surface speed of the stripper, it follows that the fibre is combed between the two, and that part is carried forward by the cylinder to be reworked. The strippers and workers are in pairs, of which there may be two or more. After passing the last pair of workers and strippers the fibre is carried forward towards the doffing roller, the pins of which are back-set, and the fibre is removed from the cylinder by the doffer, from which it passes between the drawing and pressing rollers into the conductor, and finally between the delivery and pressing rollers into the sliver can. It may be mentioned that more or less breaking takes place between each pair of rollers, the pins of which are opposed, and that combing and drawing out obtains between those rollers with pins pointing in the same direction. The ratio of the surface speeds of the drawing roller and the feed roller is termed the draft:—

$$\frac{\text{surface speed of drawing roller}}{\text{surface speed of feed roller}} = \text{draft.}$$

In this machine the draft is usually about thirteen.

The sliver from the can of the breaker card may be wound into balls, or it may be taken direct to the finisher card. In the latter method from eight to fifteen cans are placed behind the feed rollers, and all the slivers from these cans are united before they emerge from the machine. The main difference between a breaker card and a finisher card is that the latter is fitted with finer pins, that it contains two doffing rollers, and that it usually possesses a greater number of pairs of workers and strippers—a full circular finisher card having four sets.

After the fibre has been thoroughly carded by the above machines, the cans containing the sliver from the finisher card are taken to the first drawing frame. A very common method is to let four slivers run into one sliver at the first drawing, then two slivers from the first drawing are run into one sliver at the second drawing frame. There are several types of drawing frames, *e.g.* push-bar or slide, rotary, spiral, ring, open-link or chain, the spiral being generally used for the second drawing. All, however, perform the same function, viz., combing out the fibres and thus laying them parallel, and in addition drawing out the sliver. The designation of the machine indicates the particular method in which the gill pins are moved. These pins are much finer than those of the breaker and finisher cards, consequently the fibres are more thoroughly separated. The draft in the first drawing varies from three to five, while that in the second drawing is usually five to seven. It is easy to see that a certain amount of draft, or drawing out of the sliver, is necessary, otherwise the various doublings would cause the sliver to emerge thicker and thicker from each machine. The doublings play a very important part in the appearance of the ultimate rove and yarn, for the chief reason for doubling threads or slivers is to minimize irregularities of thickness and of colour in the material. In an ordinary case, the total doublings in jute from the breaker card to the end of the second drawing is ninety-six: $12 \times 4 \times 2 = 96$; and if the slivers were made thinner and more of them used the ultimate result would naturally be improved.

The final preparing process is that of roving. In this operation there is no doubling of the slivers, but each sliver passes separately through the machine, from the can to the spindle, is drawn out to about eight times its length, and receives a small amount of twist to strengthen it, in order that it may be successfully wound upon the roving bobbin by the flyer. The chief piece of mechanism in the roving frame is the gearing known as the “differential motion.” It works in conjunction with the disk and scroll, the cones, or the expanding pulley, to impart an intermittingly variable speed to the bobbin (each layer of the bobbin has its own particular speed which is constant for the full traverse, but each change of direction of the builder is accompanied by a quick change of speed to the bobbin). It is essential that the bobbin should have such a motion, because the delivery of the sliver and the speed of the flyer are constant for a given size of rove, whereas the layers of rove on the bobbin increase in length as the bobbin fills. In the jute roving frame the bobbin is termed the “follower,” because its revolutions per minute are fewer than those of the flyer. Each layer of rove increases the diameter of the material on the bobbin shank; hence, at the beginning of each layer, the speed of the bobbin must be increased, and kept at this increased speed for the whole traverse from top to bottom or vice versa.

Let R = the revolutions per second of the flyer;
r = the revolutions per second of the bobbin;

d = the diameter of bobbin shaft plus the material;
L = the length of sliver delivered per second;
then $(R - r)\, d \cdot \pi = L$.

In the above expression R, π and L are constant, therefore as d increases the term (R − r) must decrease; this can happen only when r is increased, that is, when the bobbin revolves quicker. It is easy to see from the above expression that if the bobbin were the "leader" its speed would have to decrease as it filled.

The builder, which receives its motion from the disk and scroll, from the cones, or from the expanding pulley, has also an intermittingly variable speed. It begins at a maximum speed when the bobbin is empty, is constant for each layer, but decreases as the bobbin fills.

The rove yarn is now ready for the spinning frame, where a further draft of about eight is given. The principles of jute spinning are similar to those of dry spinning for flax. For very heavy jute yarns the spinning frame is not used—the desired amount of twist being given at the roving frame.

The count of jute yarn is based upon the weight in pounds of 14,400 yds., such length receiving the name of "spyndle." The finest yarns weigh 2¾ ℔ to 3 ℔ per spyndle, but the commonest kinds are 7 ℔, 8 ℔, 9 ℔ and 10 ℔ per spyndle. The sizes rise in pounds up to about 20 ℔, then by 2 ℔ up to about 50 ℔ per spyndle, with much larger jumps above this weight. It is not uncommon to find 200 ℔ to 300 ℔ rove yarn, while the weight occasionally reaches 450 ℔ per spyndle. The different sizes of yarn are extensively used in a large variety of fabrics, sometimes alone, sometimes in conjunction with other fibres, *e.g.* with worsted in the various kinds of carpets, with cotton in tapestries and household cloths, with line and tow yarns for the same fabrics and for paddings, &c., and with wool for horse clothing. The yarns are capable of being dyed brilliant colours, but, unfortunately, the colours are not very fast to light. The fibre can also be prepared to imitate human hair with remarkable closeness, and advantage of this is largely taken in making stage wigs.

For detailed information regarding jute, the cloths made from it and the machinery used, see the following works: Watts's *Dictionary of the Economic Products of India*; Royle's *Fibrous Plants of India*; Sharp's *Flax, Tow and Jute Spinning*; Leggatt's *Jute Spinning*; Woodhouse and Milne's *Jute and Linen Weaving*; and Woodhouse and Milne's *Textile Design: Pure and Applied*.

(T. Wo.)

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1 Also in the forms "streek," "strick" or "strike," as in Chaucer, *Cant. Tales*, Prologue 676, where the Pardoner's hair is compared with a "strike of flax." The term is also used of a handful of hemp or other fibre, and is one of the many technical applications of "strike" or "streak," which etymologically are cognate words.

JÜTERBOG, or Güterbog, a town of Germany in the Prussian province of Brandenburg, on the Nuthe, 39 m. S.W. of Berlin, at the junction of the main lines of railway from Berlin to Dresden and Leipzig. Pop. (1900), 7407. The town is surrounded by a medieval wall, with three gateways, and contains two Protestant churches, of which that of St Nicholas (14th century) is remarkable for its three fine aisles. There are also a Roman Catholic church, an old town-hall and a modern school. Jüterbog carries on weaving and spinning both of flax and wool, and trades in the produce of those manufactures and in cattle. Vines are cultivated in the neighbourhood. Jüterbog belonged in the later middle ages to the archbishopric of Magdeburg, passing to electoral Saxony in 1648, and to Prussia in 1815. It was here that a treaty over the succession to the duchy of Jülich was made in March 1611 between Saxony and Brandenburg, and here in November 1644 the Swedes defeated the Imperialists. Two miles S.W. of the town is the battlefield of Dennewitz where the Prussians defeated the French on the 6th of September 1813.

JUTES, the third of the Teutonic nations which invaded Britain in the 5th century, called by Bede *Iutae* or *Iuti* (see Britain, Anglo-Saxon). They settled in Kent and the Isle of Wight together with the adjacent parts of Hampshire. In the latter case the national name is said to have

survived until Bede's own time, in the New Forest indeed apparently very much later. In Kent, however, it seems to have soon passed out of use, though there is good reason for believing that the inhabitants of that kingdom were of a different nationality from their neighbours (see KENT, KINGDOM OF). With regard to the origin of the Jutes, Bede only says that Angulus (Angel) lay between the territories of the Saxons and the Iutae—a statement which points to their identity with the Iuti or Jyder of later times, *i.e.* the inhabitants of Jutland. Some recent writers have preferred to identify the Jutes with a tribe called Eucii mentioned in a letter from Theodberht to Justinian (*Mon. Germ. Hist., Epist. iii.*, p. 132 seq.) and settled apparently in the neighbourhood of the Franks. But these people may themselves have come from Jutland.

See Bede, *Hist. Eccles*, i. 15, iv. 16.

(H. M. C.)

JUTIGALPA, or JUTICALPA, the capital of the department of Jutigalpa in eastern Honduras, on one of the main roads from the Bay of Fonseca to the Atlantic coast, and on a small left-hand tributary of the river Patuca. Pop. (1905), about 18,000. Jutigalpa is the second city of Honduras, being surpassed only by Tegucigalpa. It is the administrative centre of a mountainous region rich in minerals, though mining is rendered difficult by the lack of communications and the unsettled condition of the country. The majority of the inhabitants are Indians or half-castes, engaged in the cultivation of coffee, bananas, tobacco, sugar or cotton.

JUTLAND (Danish *Jylland*), though embracing several islands as well as a peninsula, may be said to belong to the continental portion of the kingdom of Denmark. The peninsula (Chersonese or Cimbric peninsula of ancient geography) extends northward, from a line between Lübeck and the mouth of the Elbe, for 270 m. to the promontory of the Skaw (Skagen), thus preventing a natural communication directly east and west between the Baltic and North Seas. The northern portion only is Danish, and bears the name Jutland. The southern is German, belonging to Schleswig-Holstein. The peninsula is almost at its narrowest (36 m.) at the frontier, but Jutland has an extreme breadth of 110 m. and the extent from the south-western point (near Ribe) to the Skaw is 180 m. Jutland embraces nine *amter* (counties), namely, Hjörring, Thisted, Aalborg, Ringkjöbing, Viborg, Randers, Aarhus, Vejle and Ribe. The main watershed of the peninsula lies towards the east coast; therefore such elevated ground as exists is found on the east, while the western slope is gentle and consists of a low sandy plain of slight undulation. The North Sea coast (western) and Skagerrack coast (north-western) consist mainly of a sweeping line of dunes with wide lagoons behind them. In the south the northernmost of the North Frisian Islands (Fanö) is Danish. Towards the north a narrow mouth gives entry to the Limfjord, or Liimfjord, which, wide and ramifying among islands to the west, narrows to the east and pierces through to the Cattegat, thus isolating the counties of Hjörring and Thisted (known together as Vendsyssel). It is, however, bridged at Aalborg, and its depth rarely exceeds 12 ft. The seaward banks of the lagoons are frequently broken in storms, and the narrow channels through them are constantly shifting. The east coast is slightly bolder than the west, and indented with true estuaries and bays. From the south-east the chain of islands forming insular Denmark extends towards Sweden, the strait between Jutland and Fünen having the name of the Little Belt. The low and dangerous coasts, off which the seas are generally very shallow, are efficiently served by a series of lifeboat stations. The western coast region is well compared with the Landes of Gascony. The interior is low. The Varde, Omme, Skjerne, Stor and Karup, sluggish and tortuous streams draining into the western lagoons, rise in and flow through marshes, while the eastern Limfjord is flanked by the swamps known as Vildmose. The only considerable river is the Gudenaa, flowing from S.W. into the Randersfjord (Cattegat), and rising among the picturesque lakes of the county of Aarhus, where the principal elevated ground in the peninsula is found in the Himmelbjerg and adjacent hills (exceeding 500 ft.). The German portion of the peninsula is generally similar to that of western Jutland, the main difference lying in the occurrence of islands (the North Frisian) off the west coast in place of sand-bars and lagoons. Erratic blocks are of frequent occurrence in south Jutland. (For geology, and the general consideration of Jutland in connexion with the whole kingdom, see DENMARK.)

Although in ancient times well wooded, the greater portion of the interior of Jutland consisted for centuries of barren drift-sand, which grew nothing but heather; but since 1866, chiefly through the instrumentality of the patriotic Heath association, assisted by annual contributions from the state, a very large proportion of this region has been more or less reclaimed for cultivation. The means adopted are: (i.) the plantation of trees; (ii.) the making of irrigation canals and irrigating meadows; (iii.) exploring for, extracting and transporting loam, a process aided by the construction of short light railways; and (iv.), since 1889, the experimental cultivation of fenny districts. The activity of the association takes the form partly of giving gratuitous advice, partly of experimental attempts, and partly of model works for imitation. The state also makes annual grants directly to owners who are willing to place their plantations under state supervision, for the sale of plants at half price to the poorer peasantry, for making protective or sheltering plantations, and for free transport of marl or loam. The species of timber almost exclusively planted are the red fir (*Picea excelsa*) and the mountain pine (*Pinus montana*). This admirable work quickly caused the population to increase at a more rapid rate in the districts where it was practised than in any other part of the Danish kingdom. The counties of Viborg, Ringkjöbing and Ribe cover the principal heath district.

Jutland is well served by railways. Two lines cross the frontier from Germany on the east and west respectively and run northward near the coasts. The eastern touches the ports of Kolding, Fredericia, Vejle, Horsens, Aarhus, Randers, Aalborg on Limfjord, Frederikshavn and Skagen. On the west the only port of first importance is Esbjerg. The line runs past Skjerne, Ringkjöbing, Vemb and Holstebro to Thisted. Both throw off many branches and are connected by lines east and west between Kolding and Esbjerg, Skanderborg and Skjerne, Langaa and Struer on Limfjord via Viborg. Of purely inland towns only Viborg in the midland and Hjörring in the extreme north are of importance.

JUTURNA

(older form Diuturna, the lasting), an old Latin divinity, a personification of the never-failing springs. Her original home was on the river Numicius near Lavinium, where there was a spring called after her, supposed to possess healing qualities (whence the old Roman derivation from *juvare*, to help). Her worship was early transferred to Rome, localized by the Lacus Juturnae near the temple of Vesta, at which Castor and Pollux, after announcing the victory of lake Regillus, were said to have washed the sweat from their horses. At the end of the First Punic War Lutatius Catulus erected a temple in her honour on the Campus Martius, subsequently restored by Augustus. Juturna was associated with two festivals: the Juturnalia on the 11th of January, probably a dedication festival of a temple built by Augustus, and celebrated by the college of the *fontani*, workmen employed in the construction and maintenance of aqueducts and fountains; and the Volcanalia on the 23rd of August, at which sacrifice was offered to Volcanus, the Nymphs and Juturna, as protectors against outbreaks of fire. In Virgil, Juturna appears as the sister of Turnus (probably owing to the partial similarity of the names), on whom Jupiter, to console her for the loss of her chastity, bestowed immortality and the control of all the lakes and rivers of Latium. For the statement that she was the wife of Janus and mother of Fontus (or Fons), the god of fountains, Arnobius (*Adv. gentes* iii. 29) is alone responsible.

See Virgil, *Aeneid*, xii. 139 and Servius *ad loc.*; Ovid, *Fasti*, ii. 583-616; Valerius Maximus, i. 8. 1; L. Deubner, "Juturna und die Ausgrabungen auf dem römischen Forum," in *Neue Jahrb. f. das klassische Altertum* (1902), p. 370.

JUVENAL

(Decimus Junius Juvenalis) (*c.* 60-140), Roman poet and satirist, was born at Aquinum. Brief accounts of his life, varying considerably in details, are prefixed to different MSS. of the works. But their common original cannot be traced to any competent authority, and some of their statements are intrinsically improbable. According to the version which appears to be the earliest:—

"Juvenal was the son or ward of a wealthy freedman; he practised declamation till middle age, not as a professional teacher, but as an amateur, and made his first essay in satire by writing the lines on Paris, the actor and favourite of Domitian, now found in the seventh satire (lines 90 seq.).

> Encouraged by their success, he devoted himself diligently to this kind of composition, but refrained for a long time from either publicly reciting or publishing his verses. When at last he did come before the public, his recitations were attended by great crowds and received with the utmost favour. But the lines originally written on Paris, having been inserted in one of his new satires, excited the jealous anger of an actor of the time, who was a favourite of the emperor, and procured the poet's banishment under the form of a military appointment to the extremity of Egypt. Being then eighty years of age, he died shortly afterwards of grief and vexation."

Some of these statements are so much in consonance with the indirect evidence afforded by the satires that they may be a series of conjectures based upon them. The rare passages in which the poet speaks of his own position, as in satires xi. and xiii., indicate that he was in comfortable but moderate circumstances. We should infer also that he was not dependent on any professional occupation, and that he was separated in social station, and probably too by tastes and manners, from the higher class to which Tacitus and Pliny belonged, as he was by character from the new men who rose to wealth by servility under the empire. Juvenal is no organ of the pride and dignity, still less of the urbanity, of the cultivated representatives of the great families of the republic. He is the champion of the more sober virtues and ideas, and perhaps the organ of the rancours and detraction, of an educated but depressed and embittered middle class. He lets us know that he has no leanings to philosophy (xiii. 121) and pours contempt on the serious epic writing of the day (i. 162). The statement that he was a trained and practised declaimer is confirmed both by his own words (i. 16) and by the rhetorical mould in which his thoughts and illustrations are cast. The allusions which fix the dates when his satires first appeared, and the large experience of life which they imply, agree with the statement that he did not come before the world as a professed satirist till after middle age.

The statement that he continued to write satires long before he gave them to the world accords well with the nature of their contents and the elaborate character of their composition, and might almost be inferred from the emphatic but yet guarded statement of Quintilian in his short summary of Roman literature. After speaking of the merits of Lucilius, Horace and Persius as satirists, he adds, "There are, too, in our own day, distinguished writers of satire whose names will be heard of hereafter" (*Inst. Or.* x. 1, 94). There is no Roman writer of satire who could be mentioned along with those others by so judicious a critic, except Juvenal. The motive which a writer of satire must have had for secrecy under Domitian is sufficiently obvious; and the necessity of concealment and self-suppression thus imposed upon the writer may have permanently affected his whole manner of composition.

So far the original of these lives follows a not improbable tradition. But when we come to the story of the poet's exile the case is otherwise. The undoubted reference to Juvenal in Sidonius Apollinaris as the victim of the rage of an actor only proves that the original story from which all the varying versions of the lives are derived was generally believed before the middle of the 5th century of our era. If Juvenal was banished at the age of eighty, the author of his banishment could not have been the "enraged actor" in reference to whom the original lines were written, as Paris was put to death in 83, and Juvenal was certainly writing satires long after 100. The satire in which the lines now appear was probably first published soon after the accession of Hadrian, when Juvenal was not an octogenarian but in the maturity of his powers. The cause of the poet's banishment at that advanced age could not therefore have been either the original composition or the first publication of the lines.

An expression in xv. 45 is quoted as a proof that Juvenal had visited Egypt. He may have done so as an exile or in a military command; but it seems hardly consistent with the importance which the emperors attached to the security of Egypt, or with the concern which they took in the interests of the army, that these conditions were combined at an age so unfit for military employment. If any conjecture is warrantable on so obscure a subject, it is more likely that this temporary disgrace should have been inflicted on the poet by Domitian. Among the many victims of Juvenal's satire it is only against him and against one of the vilest instruments of his court, the Egyptian Crispinus, that the poet seems to be animated by personal hatred. A sense of wrong suffered at their hands may perhaps have mingled with the detestation which he felt towards them on public grounds. But if he was banished under Domitian, it must have been either before or after 93, at which time, as we learn from an epigram of Martial, Juvenal was in Rome.

More ancient evidence is supplied by an inscription found at Aquinum, recording, so far as it has been deciphered, the dedication of an altar to Ceres by a Iunius Iuvenalis, tribune of the first cohort of Dalmatians, *duumvir quinquennalis*, and *flamen Divi Vespasiani*, a provincial magistrate whose functions corresponded to those of the censor at Rome. This Juvenalis may have been the poet, but he may equally well have been a relation. The evidence of the satires does not point to a prolonged absence from the metropolis. They are the product of immediate and intimate familiarity with the life of the great city. An epigram of Martial, written at the time when Juvenal was most vigorously employed in their composition, speaks of him as settled in Rome. He himself hints (iii. 318) that he maintained his connexion with Aquinum, and that he had some special interest in the worship of the "Helvinian Ceres." Nor is the tribute to the national religion implied

by the dedication of the altar to Ceres inconsistent with the beliefs and feelings expressed in the satires. While the fables of mythology are often treated contemptuously or humorously by him, other passages in the satires clearly imply a conformity to, and even a respect for, the observances of the national religion. The evidence as to the military post filled by Juvenal is curious, when taken in connexion with the confused tradition of his exile in a position of military importance. But it cannot be said that the satires bear traces of military experience; the life described in them is rather such as would present itself to the eyes of a civilian.

The only other contemporary evidence which affords a glimpse of Juvenal's actual life is contained in three epigrams of Martial. Two of these (vii. 24 and 91) were written in the time of Domitian, the third (xii. 18) early in the reign of Trajan, after Martial had retired to his native Bilbilis. The first attests the strong regard which Martial felt for him; but the subject of the epigram seems to hint that Juvenal was not an easy person to get on with. In the second, addressed to Juvenal himself, the epithet *facundus* is applied to him, equally applicable to his "eloquence" as satirist or rhetorician. In the last Martial imagines his friend wandering about discontentedly through the crowded streets of Rome, and undergoing all the discomforts incident to attendance on the levées of the great. Two lines in the poem suggest that the satirist, who inveighed with just severity against the worst corruptions of Roman morals, was not too rigid a censor of the morals of his friend. Indeed, his intimacy with Martial is a ground for not attributing to him exceptional strictness of life.

The additional information as to the poet's life and circumstances derivable from the satires themselves is not important. He had enjoyed the training which all educated men received in his day (i. 15); he speaks of his farm in the territory of Tibur (xi. 65), which furnished a young kid and mountain asparagus for a homely dinner to which he invites a friend during the festival of the Megalesia. From the satire in which this invitation is contained we are able to form an idea of the style in which he habitually lived, and to think of him as enjoying a hale and vigorous age (203), and also as a kindly master of a household (159 seq.). The negative evidence afforded in the account of his establishment suggests the inference that, like Lucilius and Horace, Juvenal had no personal experience of either the cares or the softening influence of family life. A comparison of this poem with the invitation of Horace to Torquatus (*Ep.* i. 5) brings out strongly the differences not in urbanity only but in kindly feeling between the two satirists. Gaston Boissier has drawn from the indications afforded of the career and character of the persons to whom the satires are addressed most unfavourable conclusions as to the social circumstances and associations of Juvenal. If we believe that these were all real people, with whom Juvenal lived in intimacy, we should conclude that he was most unfortunate in his associates, and that his own relations to them were marked rather by outspoken frankness than civility. But they seem to be more "nominis umbrae" than real men; they serve the purpose of enabling the satirist to aim his blows at one particular object instead of declaiming at large. They have none of the individuality and traits of personal character discernible in the persons addressed by Horace in his *Satires* and *Epistles*. It is noticeable that, while Juvenal writes of the poets and men of letters of a somewhat earlier time as if they were still living, he makes no reference to his friend Martial or the younger Pliny and Tacitus, who wrote their works during the years of his own literary activity. It is equally noticeable that Juvenal's name does not appear in Pliny's letters.

The times at which the satires were given to the world do not in all cases coincide with those at which they were written and to which they immediately refer. Thus the manners and personages of the age of Domitian often supply the material of satiric representation, and are spoken of as if they belonged to the actual life of the present,[1] while allusions even in the earliest show that, as a finished literary composition, it belongs to the age of Trajan. The most probable explanation of these discrepancies is that in their present form the satires are the work of the last thirty years of the poet's life, while the first nine at least may have preserved with little change passages written during his earlier manhood. The combination of the impressions, and, perhaps of the actual compositions, of different periods also explains a certain want of unity and continuity found in some of them.

There is no reason to doubt that the sixteen satires which we possess were given to the world in the order in which we find them, and that they were divided, as they are referred to in the ancient grammarians, into five books. Book I., embracing the first five satires, was written in the freshest vigour of the author's powers, and is animated with the strongest hatred of Domitian. The publication of this book belongs to the early years of Trajan. The mention of the exile of Marius (49) shows that it was not published before 100. In the second satire, the lines 29 seq.,

> "Qualis erat nuper tragico pollutus adulter
> Concubitu,"

show that the memory of one of the foulest scandals of the reign of Domitian was still fresh in the minds of men. The third satire, imitated by Samuel Johnson in his *London*, presents such a picture as Rome may have offered to the satirist at any time in the 1st century of our era; but it

was under the worst emperors, Nero and Domitian, that the arts of flatterers and foreign adventurers were most successful, and that such scenes of violence as that described at 277 seq. were most likely to occur;[2] while the mention of Veiento (185) as still enjoying influence is a distinct reference to the court of Domitian. The fourth, which alone has any political significance, and reflects on the emperor as a frivolous trifler rather than as a monster of lust and cruelty, is the reproduction of a real or imaginary scene from the reign of Domitian, and is animated by the profoundest scorn and loathing both of the tyrant himself and of the worst instruments of his tyranny. The fifth is a social picture of the degradation to which poor guests were exposed at the banquets of the rich, but many of the epigrams of Martial and the more sober evidence of one of Pliny's letters show that the picture painted by Juvenal, though perhaps exaggerated in colouring, was drawn from a state of society prevalent during and immediately subsequent to the times of Domitian.[3] Book II. consists of the most elaborate of the satires, by many critics regarded as the poet's masterpiece, the famous sixth satire, directed against the whole female sex, which shares with Domitian and his creatures the most cherished place in the poet's antipathies. It shows certainly no diminution of vigour either in its representation or its invective. The time at which this satire was composed cannot be fixed with certainty, but some allusions render it highly probable that it was given to the world in the later years of Trajan, and before the accession of Hadrian. The date of the publication of Book III., containing the seventh, eighth and ninth satires, seems to be fixed by its opening line to the first years after the accession of Hadrian. In the eighth satire another reference is made (120) to the misgovernment of Marius in Africa as a recent event, and at line 51 there may be an allusion to the Eastern wars that occupied the last years of Trajan's reign. The ninth has no allusion to determine its date, but it is written with the same outspoken freedom as the second and the sixth, and belongs to the period when the poet's power was most vigorous, and his exposure of vice most uncompromising. In Book IV., comprising the famous tenth, the eleventh and the twelfth satires, the author appears more as a moralist than as a pure satirist. In the tenth, the theme of the "vanity of human wishes" is illustrated by great historic instances, rather than by pictures of the men and manners of the age; and, though the declamatory vigour and power of expression in it are occasionally as great as in the earlier satires, and although touches of Juvenal's saturnine humour, and especially of his misogyny, appear in all the satires of this book, yet their general tone shows that the white heat of his indignation is abated; and the lines of the eleventh, already referred to (201 seq.),

> "Spectent juvenes quos clamor et audax
> Sponsio, quos cultae decet assedisse puellae:
> Nostra bibat vernum contrada cuticula solem,"

leave no doubt that he was well advanced in years when they were written.

Two important dates are found in Book V., comprising satires xiii.-xvi. At xiii. 16 Juvenal speaks of his friend Calvinus as now past sixty years of age, having been born in the consulship of Fonteius. Now L. Fonteius Capito was consul in 67. Again at xv. 27 an event is said to have happened in Egypt "nuper consule Iunco." There was a L. Aemilius Iuncus consul *suffectus* in 127. The fifth book must therefore have been published some time after this date. More than the fourth, this book bears the marks of age, both in the milder tone of the sentiments expressed, and in the feebler power of composition exhibited. The last satire is now imperfect, and the authenticity both of this and of the fifteenth has been questioned, though on insufficient grounds.

Thus the satires were published at different intervals, and for the most part composed between 100 and 130, but the most powerful in feeling and vivid in conception among them deal with the experience and impressions of the reign of Domitian, occasionally recall the memories or traditions of the times of Nero and Claudius, and reproduce at least one startling page from the annals of Tiberius.[4] The same overmastering feeling which constrained Tacitus (*Agric.* 2, 3), when the time of long endurance and silence was over, to recall the "memory of the former oppression," acted upon Juvenal. There is no evidence that these two great writers, who lived and wrote at the same time, who were animated by the same hatred of the tyrant under whom the best years of their manhood were spent, and who both felt most deeply the degradation of their times, were even known to one another. Tacitus belonged to the highest official and senatorial class, Juvenal apparently to the middle class and to that of the struggling men of letters; and this difference in position had much influence in determining the different bent of their genius, and in forming one to be a great national historian, the other to be a great social satirist. If the view of the satirist is owing to this circumstance more limited in some directions, and his taste and temper less conformable to the best ancient standards of propriety, he is also saved by it from prejudices to which the traditions of his class exposed the historian. But both writers are thoroughly national in sentiment, thoroughly masculine in tone. No ancient authors express so strong a hatred of evil. The peculiar greatness and value of both Juvenal and Tacitus is that they did not shut their eyes to the evil through which they had lived, but deeply resented it—the one with a vehement and burning passion, like the "saeva indignatio" of Swift, the other with perhaps even deeper but more restrained emotions of mingled scorn and sorrow, like the scorn and

sorrow of Milton when “fallen on evil days and evil tongues.” In one respect there is a difference. For Tacitus the prospect is not wholly cheerless, the detested tyranny was at an end, and its effects might disappear with a more beneficent rule. But the gloom of Juvenal’s pessimism is unlighted by hope.

A. C. Swinburne has suggested that the secret of Juvenal’s concentrated power consisted in this, that he knew what he hated, and that what he did hate was despotism and democracy. But it would be hardly true to say that the animating motive of his satire was political. It is true that he finds the most typical examples of lust, cruelty, levity and weakness in the emperors and their wives—in Domitian, Otho, Nero, Claudius and Messalina. It is true also that he shares in the traditional idolatry of Brutus, that he strikes at Augustus in his mention of the “three disciples of Sulla,” and that he has no word of recognition for what even Tacitus acknowledges as the beneficent rule of Trajan. So too his scorn for the Roman populace of his time, who cared only for their dole of bread and the public games, is unqualified. But it is only in connexion with its indirect effects that he seems to think of despotism; and he has no thought of democracy at all. It is not for the loss of liberty and of the senatorian rule that he chafes, but for the loss of the old national manliness and self-respect. This feeling explains his detestation of foreign manners and superstitions, his loathing not only of inhuman crimes and cruelties but even of the lesser derelictions from self-respect, his scorn of luxury and of art as ministering to luxury, his mockery of the poetry and of the stale and dilettante culture of his time, and perhaps, too, his indifference to the schools of philosophy and his readiness to identify all the professors of stoicism with the reserved and close-cropped puritans, who concealed the worst vices under an outward appearance of austerity. The great fault of his character, as it appears in his writings, is that he too exclusively indulged this mood. It is much more difficult to find what he loved and admired than what he hated. But it is characteristic of his strong nature that, where he does betray any sign of human sympathy or tenderness, it is for those who by their weakness and position are dependent on others for their protection—as for “the peasant boy with the little dog, his playfellow,”[5] or for “the home-sick lad from the Sabine highlands, who sighs for his mother whom he has not seen for a long time, and for the little hut and the familiar kids.”[6]

If Juvenal is to be ranked as a great moralist, it is not for his greatness and consistency as a thinker on moral questions. In the rhetorical exaggeration of the famous tenth satire, for instance, the highest energies of patriotism—the gallant and desperate defence of great causes, by sword or speech—are quoted as mere examples of disappointed ambition; and, in the indiscriminate condemnation of the arts by which men sought to gain a livelihood, he leaves no room for the legitimate pursuits of industry. His services to morals do not consist in any positive contributions to the notions of active duty, but in the strength with which he has realized and expressed the restraining influence of the old Roman and Italian ideal of character, and also of that religious conscience which was becoming a new power in the world. Though he disclaims any debt to philosophy (xiii. 121), yet he really owes more to the “Stoica dogmata,” then prevalent, than he is aware of. But his highest and rarest literary quality is his power of painting characters, scenes, incidents and actions, whether from past history or from contemporary life. In this power, which is also the great power of Tacitus, he has few equals and perhaps no superior among ancient writers. The difference between Tacitus and Juvenal in power of representation is that the prose historian is more of an imaginative poet, the satirist more of a realist and a grotesque humorist. Juvenal can paint great historical pictures in all their detail—as in the famous representation of the fall of Sejanus; he can describe a character elaborately or hit it off with a single stroke. The picture drawn may be a caricature, or a misrepresentation of the fact—as that of the father of Demosthenes, “blear-eyed with the soot of the glowing mass,” &c.—but it is, with rare exceptions, realistically conceived, and it is brought before us with the vivid touches of a Defoe or a Swift, or of the great pictorial satirist of the 18th century, Hogarth. Yet even in this, his most characteristic talent, his proneness to exaggeration, the attraction which coarse and repulsive images have for his mind, and the tendency to sacrifice general effect to minuteness of detail not infrequently mar his best effects.

The difficulty is often felt of distinguishing between a powerful rhetorician and a genuine poet, and it is felt particularly in the case of Juvenal. He himself knew and has well described (vii. 53 seq.) the conditions under which a great poet could flourish; and he felt that his own age was incapable of producing one. He has little sense of beauty either in human life or nature. Whenever such sense is evoked it is only as a momentary relief to his prevailing sense of the hideousness of contemporary life, or in protest against what he regarded as the enervating influences of art. Even his references to the great poets of the past indicate rather a *blasé* sense of indifference and weariness than a fresh enjoyment of them. Yet his power of touching the springs of tragic awe and horror is a genuine poetical gift, of the same kind as that which is displayed by some of the early English dramatists. But he is, on the whole, more essentially a great rhetorician than a great poet. His training, the practical bent of his understanding, his strong but morose character, the circumstances of his time, and the materials available for his art, all fitted him to rebuke his own age and all after-times in the tones of a powerful preacher, rather than charm them with the art of an accomplished poet. The composition of his various

satires shows no negligence, but rather excess of elaboration; but it produces the impression of mechanical contrivance rather than of organic growth. His movement is sustained and powerful, but there is no rise and fall in it. The verse is most carefully constructed, and is also most effective, but it is so with the rhetorical effectiveness of Lucan, not with the musical charm of Virgil. The diction is full, even to excess, of meaning, point and emphasis. Few writers have added so much to the currency of quotation. But his style altogether wants the charm of ease and simplicity. It wearies by the constant strain after effect, its mock-heroics and allusive periphrasis, and excites distrust by its want of moderation.

On the whole no one of the ten or twelve really great writers of ancient Rome leaves on the mind so mixed an impression, both as a writer and as a man, as Juvenal. He has little, if anything at all, of the high imaginative mood—the mood of reverence and noble admiration—which made Ennius, Lucretius and Virgil the truest poetical representatives of the genius of Rome. He has nothing of the wide humanity of Cicero, of the urbanity of Horace, of the ease and grace of Catullus. Yet he represents another mood of ancient Rome, the mood natural to her before she was humanized by the lessons of Greek art and thought. If we could imagine the elder Cato living under Domitian, cut off from all share in public life, and finding no outlet for his combative energy except in literature, we should perhaps understand the motives of Juvenal's satire and the place which is his due as a representative of the genius of his country. As a man he shows many of the strong qualities of the old Roman plebeian—the aggressive boldness, the intolerance of superiority and privilege, which animated the tribunes in their opposition to the senatorian rule. Even where we least like him we find nothing small or mean to alienate our respect from him. Though he loses no opportunity of being coarse, he is not licentious; though he is often truculent, he cannot be called malignant. It is, indeed, impossible to say what motives of personal chagrin, of love of detraction, of the mere literary passion for effective writing, may have contributed to the indignation which inspired his verse. But the prevailing impression we carry away after reading him is that in all his early satires he was animated by a sincere and manly detestation of the tyranny and cruelty, the debauchery and luxury, the levity and effeminacy, the crimes and frauds, which we know from other sources were then rife in Rome, and that a more serene wisdom and a happier frame of mind were attained by him when old age had somewhat allayed the fierce rage which vexed his manhood.

AUTHORITIES.—The remarkable statements in a "life" found in a late Italian MS. (Barberini, viii. 18), "Iunius Iuvenalis Aquinas Iunio Iuvenale patre matre vero Septumuleia ex Aquinati municipio Claudio Nerone et L. Antistio consulibus (55) natus est, sororem habuit Septumuleiam quae Fuscino (*Sat.* xiv. 1) nupsit," though not necessarily false, cannot be accepted without confirmation.

The earliest evidence for the banishment of Juvenal is that of Sidonius Apollinaris (*c.* 480), *Carm.* ix. 269, "Non qui tempore Caesaris secundi | Aeterno coluit Tomos reatu | Nec qui consimili deinde casu | Ad vulgi tenuem strepentis auram | Irati fuit histrionis exul," lines which by the exact parallel drawn between Ovid's fate and Juvenal's imply the belief that Juvenal died in exile. The banishment is also mentioned by J. Malalas, a Greek historian subsequent to Justinian, who gives the place as Pentapolis in Africa, *Chron.* x. 262, Dindorf. The inscription (on a stone now lost) is as follows, the words and letters in brackets being the conjectural restorations of scholars:—"[Cere] ri sacrum | [D. Iu] nius Iuvenalis | trib. coh. [I] Delmatarum | II vir quinq. flamen | divi Vespasiani | vovit dedicav[it] que | sua pec.," *Corp. inscr. lat.* X. 5382, xiii. 201 sqq. The best of the known manuscripts of Juvenal (P) is at Montpellier (125); but there are several others which cannot be neglected. Amongst these may be specially mentioned the Bodleian MS. (Canon. Lat. 41), which contains a portion of Satire vi., the existence of which was unknown until E. O. Winstedt published it in the *Classical Review* (1899), pp. 201 seq. Another fragment in the Bibliothèque Nationale was described by C. E. Stuart in the *Classical Quarterly* (Jan. 1909). Numerous scholia and glossaries attest the interest taken in Juvenal in post-classical times and the middle ages. There are two classes of scholia—the older or "Pithoeana," first published by P. Pithoeus, and the "Cornutus scholia" of less value, specimens of which have been published by various scholars. The earliest edition which need now be mentioned is that of P. Pithoeus, 1585, in which P was first used for the text. Amongst later ones we may mention the commentaries of Ruperti (1819) and C. F. Heinrich (1839, with the old scholia), O. Jahn (1851, critical with the old scholia), A. Weidner (1889), L. Friedländer (1895, with a full verbal index). The most useful English commentaries are those of J. E. B. Mayor (a voluminous and learned commentary on thirteen of the *Satires*, ii., vi. and ix. being omitted), J. D. Lewis (1882, with a prose translation) and J. D. Duff (1898, expurgated, and ii. and ix. being omitted). There are recent critical texts: conservative and chiefly based on P, by F. Buecheler (1893, with selections from the scholia) and S. G. Owen (in the Oxford Series of Texts); on the other side, by A. E. Housman (1905) and by the same, but with fewer innovations, in the new *Corpus poetarum latinorum*, fasc. v. The two last-named editors alone give the newly discovered lines of Satire vi. There are no recent translations of Juvenal into English verse. Dryden translated i., iii., vi., x. and xvi., the others being committed to inferior hands. Other versions are Gifford's (1802), of some merit, and C. Badham's (1814). Johnson's imitations of Satires iii. and x. are well known. For the numerous articles and contributions to the criticism and elucidation of the *Satires*, reference should be made to Teuffel's *Geschichte der römischen Litteratur* (Eng. trans. by Warre), § 331, and Schanz, ditto (1901, ii. §

2, § 420*a*).

(W. Y. S.; J. P. P.)

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1 This is especially noticeable in the seventh satire, but it applies also to the mention of Crispinus, Latinus, the class of *delatores*, &c., in the first, to the notice of Veiento in the third, of Rubellius Blandus in the eighth, of Gallicus in the thirteenth, &c.

2 Cf. Tacitus, *Annals*, xiii. 25.

3 Pliny's remarks on the vulgarity as well as the ostentation of his host imply that he regarded such behaviour as exceptional, at least in the circle in which he himself lived (*Ep.* ii. 6).

4 x. 56-107.

5 "Meliusne hic rusticus infans
Cum matre et casulis et conlusore catello," &c.—ix. 60.

6 xi. 152, 153.

JUVENCUS, GAIUS VETTIUS AQUILINUS,

Christian poet, flourished during the reign of Constantine the Great. Nothing is known of him except that he was a Spanish presbyter of distinguished family. About 330 he published his *Libri evangeliorum IV.*, each book containing about 800 hexameters. The division into books is possibly a reminiscence of the number of the Gospels. The work itself, written with the idea of ousting the absurdities of Pagan mythology and replacing them by the truths of Christianity, may be called the first Christian epic. In the *Praefatio* the author expresses the hope that the sacredness of his subject may procure him safety at the final conflagration of the world and admission into heaven. The whole is, in the main, a poetical version of the Gospel of Matthew, the other evangelists only being used for supplementary details. It is founded upon a pre-vulgate Latin translation, although there is evidence that Juvencus also consulted the Greek. In spite of metrical irregularities, the language and style are simple and show good taste, being free from the artificiality of other Christian poets and prose writers, and the author has made excellent use of Virgil (his chief model) and other classical writers. Juvencus set the fashion of verse translations of the Bible, and the large number of MSS. of his poem mentioned in lists and still extant are sufficient evidence of its great popularity. According to Jerome, he was also the author of some poems on the sacraments, but no trace of these has survived. The Latin *Heptateuch*, a hexameter version of the first seven books of the Old Testament, has been attributed to Juvencus amongst others; but it is now generally supposed to be the work of a certain Cyprianus, a Gaul who lived in the 6th century, possibly a bishop of Toulon, author of the *Life of Caesarius*, bishop of Arelate (Arles).

See M. Manitius, *Geschichte der christlich-lateinischen Poesie* (1891); A. Ebert, *Allgemeine Geschichte der Literatur des Mittelalters*, vol. i. (1889); editions of Juvencus by C. Marold (1886); J. Hümer in *Corpus scriptorum ecclesiasticorum latinorum*, vol. xxiv. (Vienna, 1891); J. T. Hatfield, *A Study of Juvencus* (1890), dealing with syntax, metre and language; editions of the *Heptateuch* by J. E. B. Mayor (1889; reviewed by W. Sanday in *Classical Review*, October 1889, and by J. T. Hatfield in *American Journal of Philology*, vol. xi., 1890), and R. Peiper, vol. xxiii. of the Vienna series above.

JUVENILE OFFENDERS.

In modern social science the question of the proper penal treatment of juvenile (*i.e.* non-adult) offenders has been increasingly discussed; and the reformatory principle, first applied in the case of children, has even been extended to reclaimable adult offenders (juveniles in crime, if not in age) in a way which brings them sufficiently within the same category to be noticed in this article. In the old days the main idea in England was to use the same penal methods for all criminals, young and old; when the child broke the law he was sent to prison like his elders. It was only in comparatively recent times that it was realized that child criminals were too often the victims to circumstances beyond their own control. They were cursed with inherited taint; they were brought up among evil surroundings; they suffered from

the culpable neglect of vicious parents, and still more from bad example and pernicious promptings. They were rather potential than actual criminals, calling for rescue and regeneration rather than vindictive reprisals. Under the old system a painstaking English gaol chaplain calculated that 58% of all criminals had made their first lapse at fifteen. Boys and girls laughed at imprisonment. Striplings of thirteen and fourteen had been committed ten, twelve, sixteen or seventeen times. Religion and moral improvement were little regarded in prisons, industrial and technical training were impossible. The chief lesson learnt was an intimate and contemptuous acquaintance with the demoralizing interior of a gaol. There were at one time in London 200 “flash houses” frequented by 6000 boys trained and proficient in thieving and depredation.

The substantial movement for reform dates from the protests of Charles Dickens, who roused public opinion to such an extent that the first Reformatory School Act was passed in 1854. Sporadic efforts to meet the evil had indeed been made earlier. In 1756 the Marine Society established a school for the reception and reform of younger criminals; in 1788 the City of London formed a similar institution, which grew much later into the farm school at Redhlll. In 1838 an act of parliament created an establishment at Parkhurst for the detention and correction of juvenile offenders, to whom pardon was given conditional on their entrance into some charitable institution. Parkhurst was technically a prison, and the system combined industrial training with religious and educational instruction. These earlier efforts had, however, been quite insufficient to meet the evils, for in the years immediately preceding 1854 crime was being so constantly reinforced in its beginnings, under the existing penal system, that it threatened to swamp the country. Unofficial, but more or less accurate, figures showed that between 11,000 and 12,000 juveniles passed annually through the prisons of England and Wales, a third of the whole number being contributed by London alone. In 1854 the total reached 14,000. The ages of offenders ranged from less than twelve to seventeen; 60% of the whole were between fourteen and seventeen; 46% had been committed more than once; 18% four times and more.

The Reformatory School Act 1854, which was thrashed out at conferences held in Birmingham in 1851 and 1853, substituted the school for the gaol, and all judicial benches were empowered to send delinquents to schools when they had been guilty of acts punishable by short imprisonment, the limit of which was at first fourteen and became afterwards ten days. A serious flaw in this act long survived; this was the provision that a short period of imprisonment in gaol must precede reception into the reformatory; it was upheld by well-meaning but mistaken people as essential for deterrence. But more enlightened opinion condemned the rule as inflicting an indelible prison taint and breeding contamination, even with ample and effective safeguards. Wiser legislation has followed, and an act of 1899 abolished preliminary imprisonment.

Existing reformatories, or “senior home office schools” as they are officially styled, in England numbered 44 in 1907. They receive all juvenile offenders, up to the age of sixteen, who have been convicted of an offence punishable with penal servitude or imprisonment. The number of these during the years between 1894 and 1906 constantly varied, but the figure of the earliest date, 6604, was never exceeded, and in some years it was considerably less, while in 1906 it was no more than 5586, though the general population had increased by several millions in the period. These figures, in comparison with those of 1854, must be deemed highly satisfactory, even when we take into account that the latter went up to the age of seventeen. Older offenders, between sixteen and twenty-one, come within the category of juvenile adults and are dealt with differently (see *Borstal Scheme* below).

Other schools must be classed with the reformatory, although they have no connexion with prisons and deal with youths who are only potential criminals. The first in importance are the industrial schools. When the newly devised reformatories were doing excellent service it was realized that many of the rising generation might some day lapse into evil ways but were still on the right side and might with proper precautions be kept there. They wanted preventive, not punitive treatment, and for them industrial schools were instituted. The germ of these establishments existed in the Ragged Schools, “intended to educate destitute children and save them from vagrancy and crime.” They had been invented by John Pounds (1766-1839), a Portsmouth shoemaker, who, early in the 19th century, was moved with sympathy for these little outcasts and devoted himself to this good work. The ragged school movement found powerful support in active philanthropists when public attention was aroused to the prevalence of juvenile delinquency. The first Industrial School Act was passed in 1856 and applied only to Scotland. Next year its provisions were extended to England, and their growth was rapid. There were 45 schools in the beginning; in 1878 the number had more than been doubled; in 1907 there were 102 in England and Wales and 31 in Scotland.

The provisions of the Education Acts 1871 and 1876 led to a large increase in the number of children committed for breaches of the law and to the establishment of two kinds of subsidiary industrial schools, short detention of truant schools and day industrial schools in which children do not reside but receive their meals, their elementary education and a certain amount of industrial training. The total admissions to truant schools in 1907 were 1368 boys, and the numbers actually in the schools on the last day of that year were 1125 with 2568 on licence. The

average length of detention was fourteen weeks and three days on first admission, seventeen weeks and five days on first re-admission, and twenty-three weeks six days on second re-admission. The total number of admissions into truant schools from 1878 to the end of 1907 was 44,315, of whom just half had been licensed and not returned, 11,239 had been licensed and once re-admitted, 8900 had been re-admitted twice or oftener.

The day industrial schools owed their origin to another reason than the enforcement of the Education Acts. It was found that some special treatment was required for large masses of youths in large cities, who were in such a neglected or degraded condition that there was little hope of their growing into healthy men and women or becoming good citizens. They were left unclean, were ill-fed and insufficiently clothed, and were not usefully taught. The total number who attended these day schools in 1907 was 1951 boys and 1232 girls.

The disciplinary system of the English schools is planned upon the establishment or institution system, as opposed to that of the “family” or “boarding out” systems adopted in some countries, and some controversy has been aroused as to the comparative value of the methods. The British practice has always favoured the well-governed school, with the proviso that it is kept small so that the head may know all of his charges. But a compromise has been effected in large establishments by dividing the boys into “houses,” each containing a small manageable total as a family under an official father or head. Under this system the idea of the home is maintained, while uniformity of treatment and discipline is secured by grouping several houses together under one general authority. The plan of “boarding out” is not generally approved of in England; the value of the domestic training is questionable and of uncertain quality, depending entirely upon the character and fitness of the foster-parents secured. Education must be less systematic in the private home, industrial training is less easily carried out, and there can be none of that *esprit de corps* that stimulates effort in physical training as applied to athletics and the playing of games. No very definite decision has been arrived at as to the comparative merits of institution life and boarding out. Among the Latin races—France, Italy, Portugal and Spain—the former is as a rule preferred; also in Belgium; in Germany, Holland and the United States placing out in private families is very much the rule; in Austria-Hungary and Russia both methods are in use.

The total admissions to English reformatory schools from their creation to the 31st of December 1907 amounted to 76,455, or 64,031 boys and 12,424 girls. The total discharges for the same period were 70,890, or 59,081 boys and 11,809 girls. The results may be tested by the figures for those discharged in 1904, 1905 and 1906:—

Boys.—3573 were placed out, of whom 66 had died, leaving 3507; of these it was found that 2735 (or about 78%) were in regular employment; 158 (or about 4%) were in casual employment; 439 (or about 13%) had been convicted; and 175 (or about 5%) were unknown.

Girls.—480, of whom 11 had died, leaving 469; of these it was found that 384 (or about 82%) were in regular employment; 28 (or about 6%) were in casual employment; 17 (or about 4%) had been convicted, and 40 (or about 8%) were unknown.

For industrial schools, including truant and day schools, the total admissions, up to the 31st of December 1907, were 153,893, or 120,955 boys and 32,938 girls. The total discharges to the same date (excluding transfers) were 136,961, or 108,398 boys and 28,563 girls. The results as tested by those discharged in 1904, 1905 and 1906 were as follow:—

Boys.—8909 were placed out, of whom 118 had since died, leaving 8791 to be reported on; of these it was found that 7547 (or about 86%) were in regular employment; 415 (or about 4.7%) were in casual employment; 419 (or about 4.7%) convicted or re-committed; and 410 (or about 4.6%) unknown.

Girls.—2505 placed out, of whom 50 had died, leaving 2455; of these 2180 (or about 89%) were in regular employment; 112 (or about 4%) were in casual employment; 21 (or about 1%) convicted or re-committed; and 142 (or about 6%) unknown.

These results are of course wholly independent of those achieved by the juvenile-adult prison reformatory at Borstal instituted in October 1902. The record of the first year’s work of this excellent system showed that 50% of cases placed out had done well, thanks to the system and philanthropic labours of the Borstal Association.

An interesting point in regard to the reclamation of these criminally inclined juveniles is the nature of the employments to which they have been recommended, and in which, as shown, they have done so well. In 1904, 1905 and 1906, the total number of boys discharged and placed was 12,482. By far the largest number of these, nearly a sixth, joined the army, 679 of them entering the bands; 292 joined the navy; 961 the mercantile marine; 1567 went to farm service; 414 worked in factories or mills as skilled hands; but others joined as labourers, a general class the total of which was 1096. Other jobs found included miners (629), carters (352), iron or steel workers (214), mechanics (301), shoemakers (181), tailors (161), shop assistants (228), carpenters (178), bakers (131), messengers and porters, including 112 errand boys (315). The balance found employment in smaller numbers at other trades. The fate of 585 was unknown, 858 had been re-convicted, and the balance were in unrecorded or casual employment.

The outlets found by the girls from these various schools naturally follow lines appropriate to their sex and the instruction received. Out of a total of 2985 discharged in the three years mentioned, 1235 became general servants, 268 housemaids, 203 laundry-maids, 52 cooks, 98 nursemaids, 65 dressmakers, 221 were engaged in factories and mills, and the balance was made up by marriage, death or casual employment.

In Ireland the reformatory and industrial school system conforms to that of Great Britain. There were in 1905 six reformatory and 70 industrial schools in Ireland, mostly under Roman Catholic management.

A short account of the reformatory methods of dealing with juvenile offenders in certain other countries will fitly find a place here.

Austria-Hungary.—The law leaves children of less than ten years of age to domestic discipline, as also children above that age if not exactly criminal, although the latter may be sent to correctional schools. There they are detained for varying periods, but never after twenty years of age, and they may be sent out on licence to situations or employment found for them. These schools also receive children between ten and fourteen guilty of crimes which are, however, by law deemed "contraventions" only; also the destitute between the same ages and the incorrigible whose parents cannot manage them.

In Hungary the penal code prescribes that children of less than twelve cannot be charged with offences; those between twelve and sixteen may be deemed to have acted without discretion, and thus escape sentence, but are sent to a correctional school where they may be detained till they are twenty years of age. An excellent system prevails in Hungary by which the supervision of those liberated is entrusted to a "protector," a philanthropic person in the district who visits and reports upon the conduct of the boys, much like the "probation officer" in the United States.

Belgium.—The law of November 1891 places the whole mass of juveniles—those who are likely to give trouble and those who have already done so—at the disposal of the state. The system is very elastic, realizing the infinite variety of childish natures. The purely paternal régime would be wasted upon the really vicious; a severe discipline would press too heavily on the well-disposed. Accordingly, all juveniles, male and female, are divided into six principal classes with a corresponding treatment, it being strictly ruled that there is no intermingling of the classes; the very youngest, rescued early, are never to be associated with the older, who may be already vicious and degraded and who could not fail to exercise a pernicious influence. One of the great merits of the Belgian system is that the regulations may be relaxed, and children of whose amendment good hopes are entertained may be released provisionally, either to the care of parents and guardians or to employers, artisans or agriculturists who will teach them a trade.

Denmark.—There were 61 establishments of all classes for juveniles in Denmark in 1906, holding some 2000 inmates. In 1874, by the will of Countess Danner, a large female refuge was founded at Castle Jagerspris, which holds some 360 girls. Another of the same class is the Royal Vodrofsvei Bonnehjem at Copenhagen, founded in the same year by Mlle Schneider. The régime preferred in Denmark is that of the family or the very small school. The Jagerspris system is to divide the whole number of 360 into small parties of 20 each under a nurse or official mother. Employment in Danish schools is mainly agricultural, field labour and gardening, with a certain amount of industrial training; and on discharge the inmates go to farms or to apprenticeship, while a few emigrate.

France.—There are five methods of disposing of juvenile offenders in France:—

1. The preliminary or preventative prison (*maisons d'arrêt* and *de justice*) for those arrested and accused.

2. The ordinary prison for all sentenced to less than six months, whose time of detention is too short to admit of their transfer to a provincial colony. It also receives children whom parents have found unmanageable.

3. The public or private penitentiary colony for the irresponsible children, acquitted as "without discretion," as well as for the guilty sentenced to more than six months' and less than two years' detention.

4. The correctional colony, where the system is more severe, receiving all sentenced for more than two years and all who have misconducted themselves in the milder establishments.

5. Various penitentiary houses for young females, whatever their particular sentence.

Foremost among French penal reformers stands the name of F. A. Demetz (1796-1873), the founder of the famous colony of Mettray. M. Demetz was a judge who, aghast at the evils inflicted upon children whom he was compelled by law to imprison, left the bench and undertook to find some other outlet for them. At that time the French law, while it acquitted minors shown to have acted without discretion, still consigned them for safe keeping and inevitable contamination to the common gaols. M. Demetz conceived the idea of an agricultural colony, and in 1840 organized a small "*société paternelle*," as it was called, of which he became vice-president.

Another philanthropist, the Vicomte de Bretignières de Courteilles, a landed proprietor in Touraine, associated himself in the enterprise and endowed the institution with land at Mettray near Tours. The earliest labours at Mettray were in the development of the institution, but as this approached completion they were applied to farmwork, agricultural employment being the chief feature of the place. The motto and device of Mettray was "the moralization of youth by the cultivation of the soil"; a healthy life in the open air was to replace the enervating and demoralizing influences of the confined prisons; and this was effected in the usual farming operations, to which were added gardening, vine-dressing, the raising of stock and the breeding of silkworms. The labour was not light; on the contrary, the directors of the colony sought by constant employment to send their charges to bed tired, ready to sleep soundly and not romp and chatter in their dormitories. The excellence of its aims, and the manifestly good results that were growing out of the system, soon made Mettray a model for imitation in France and beyond it. Many establishments were planned upon it, started by the state or private enterprise; penitentiary colonies were created for boys in connexion with some of the great central prisons. The colony of Val de Yèvre has a good record. It was started by a private philanthropist, Charles J. M. Lucas, (1803-1889) but after five-and-twenty years was handed over to the state. Other cognate establishments are those of Petit Quevilly near Rouen, Petit Bourg near Paris, St Hiliar and Eysses. There are several female colonies, especially that of Darnetal at Rouen.

It is for the magistrate or *juge d'instruction* to select the class of establishment to which the juvenile delinquents brought before him shall be committed. The very young, those of twelve years of age and under, are placed out in the country with families, unless they can be again entrusted to their parents or committed to *maisons paternels*, containing very limited numbers, twenty or thirty, in charge of a large staff. After twelve, and from that age to fourteen or fifteen, the "ungrateful age" as the French call it, boys are sent to a reformatory or "preservative school," where they will be under stronger discipline. For the third class, from fifteen to sixteen or eighteen, stricter measures are necessary, so as to dispose of them in specially selected penal colonies, as has already been done at Eysses, where the discipline is severe, while embodying technical and industrial instruction.

Germany.—In most parts of the German Empire juvenile delinquents and neglected youths are treated in the same establishments. No child of less than twelve years of age can be proceeded against in a court of law, although in some German states destitute or abandoned children have been taken at the ages of six, five and even three years. Youths between twelve and eighteen may be convicted, but their offences are passed over if they are proved to have acted without discretion. There are many kinds of correctional institutions and a number of schools not of a correctional character. These last are generally very small, the largest taking barely a hundred, but are very numerous. Many private persons have devoted themselves to the work. Count A. von der Recke-Volmerstein (1791-1878) about 1821 founded a refuge for neglected children in Düsselthal, between Düsseldorf and Elberstadt. Pastor T. F. Fliedner (1800-1864) built up a fine establishment at Kaiserswerth from 1833, in which was an infant school, a penitentiary and an orphan asylum. Another famous name is that of W. von Türk (1774-1846), who studied under Pestalozzi in Switzerland.

A school which has largely influenced public opinion in Great Britain, as in Germany, is the Rauhe Haus, near Hamburg, founded by Dr Wickern in 1833. This began with a single cottage but had grown in twenty years to a hamlet of twenty houses, with from twelve to sixteen inmates in each. The establishment is a Lutheran one; both boys and girls are admitted, in separate houses, and a marked feature of the place is the number of "brothers," young men of good character qualifying for rescue work as superintendents of homes, prison officers and schoolmasters. They take part in the work and are in constant touch with the boys whom they closely supervise, being bound to "keep them in sight day and night, eat with them, sleep in their dormitories, direct their labour, accompany them to chapel, join in their recreations and sports." These "brothers" are honourably known throughout the world and have performed a large work in distant lands as missionaries, prison officers and schoolmasters. The Rauhe Haus receives three classes of juveniles: first, the boys, mostly street arabs; second, girls of the same category; third, children taken as boarders from private families, who confess their inability to manage them. The instruction given is in trades, in farming operations, gardening and fruit-raising. The pupils are largely assisted on release, through the good offices of the citizens of Hamburg.

Holland.—In the Low Countries, refuges, called "Godshuis," were founded as early as the 14th century, intended for the care and shelter of neglected youth and indigent old age. In the 17th century people came from all parts of Europe to learn from the Dutch how orphans and unfortunate children could best be cared for. The Godshuis of Amsterdam was a vast establishment, into which as many as 4000 juveniles were sometimes crowded, with such disastrous effects that its name was changed to that of "pesthuis," and the government in the beginning of the present century ordered it to be emptied and closed. Other reformatory institutions in Holland are the Netherlands Mettray, the reform school of Zetten, near the Arnheim railway station, for Protestant girls; and that of Alkmaar for boys; the reformatory school of St Vincent de Paul at Amsterdam for both sexes; the Amsterdam reformatory for young

vagabonds, male and female; the reform school of Smallepod at Amsterdam. The Netherlands Mettray, which is about five hours' journey from Amsterdam on a farm called Rissjelt, near Zutphen, is planned on the model of the French Mettray and was founded about 1855 by M. Suringar, a veteran Dutch philanthropist, long vice-president of the directors of prisons in Amsterdam.

Italy.—In Italy there is no distinction between the treatment of the offending and the neglected or deserted in youth. There are seventeen or more correctional establishments, eight of which are state institutions and the rest founded by private benevolence or by charitable associations or local communities. None of these is exclusively agricultural; ten are industrial, seven industrial and agricultural combined. In Italy the age of responsibility is nine, below which no child can be charged with an offence. The Italian schools are mostly planned on a large scale. That of Marchiondi Spagliardi accommodates 550, divided among three houses under one supreme head. The Turazza institution at Treviso holds 380, and there are eight others with from 200 to 300 inmates. The régime is very various; the larger number of schools are on the congregate system, with daily labour in association and isolation by night. The "family" method is also practised with small groups, divisions or companies, into which the children are formed according to age or conduct.

Sweden.—All children below the age of sixteen may be sent to a correctional establishment or boarded out in respectable families:—

1. If they have committed acts punishable by law which indicate moral perversity and it is deemed advisable to correct them.

2. If they are neglected, ill-used, or if their moral deterioration is feared from the vicious life and character of parents or friends.

3. If their conduct at school or at home is such that a more severe correctional treatment is necessary for their rescue.

Under this law the state is also to provide special schools to take all above ten who have shown peculiar depravity; all who have reached eighteen and who are not yet thought fit for freedom; all who have relapsed after provisional release. Sweden is rich in institutions devoted to the care of destitute and deserted children, all due to the efforts of the charitable. The largest correctional establishment is that founded at Hall, near the town of Sodertelge on the shores of the Baltic. This admirable agricultural colony, modelled on that of Mettray, owes its existence to the "Oscar-Josephine society," founded by Queen Josephine, widow of Oscar I.

United States.—In the words of a report made in 1878 by F. B. Sanborn, secretary of the American Social Science Society, "America can justly plume herself upon the work accomplished by her juvenile reformatories since their inauguration down to the present time." The first in point of date and still the most considerable of the reformatories in the United States is that founded in 1825, thanks to the unwearied efforts of the great American publicist and philanthropist Edward Livingston, which now has its home on Randall's Island in New York City. In the following year a reformatory of the same class was founded in Boston, and another in the year after in Philadelphia. All were intended to receive criminal youth. There are state reformatories now in almost all the states of the Union, and those for juvenile adults in New York and Massachusetts have attracted world-wide attention, aiming so high and with such an elaboration of means that they deserve particular description.

The great state reformatory establishment of Elmira, New York, called into existence in 1889 with the avowed aim of compassing the reformation of the criminal by new processes, partakes of the system involved in the treatment of juvenile offenders. It was based upon the principle that crime ought to be attacked in its beginnings by other than ordinary punitive and prison methods. Under this view, the right of society to defend itself by punishment was denied, and it was held that a youthful offender was more sinned against than sinning. It was urged that his crime, due largely to inherited defects, mental or physical and vicious surroundings, was not his own fault, and he had a paramount claim to be treated differently by the state when in custody. The state was not justified in using powers of repression to imprison him in the usual mechanical hard and fast fashion and then return him to society, no better, possibly worse, than before; it was bound to regenerate him, to change his nature, improve his physique, and give him a new mental equipment, so that when again at large he might be fitted to take his place amongst honest citizens, to earn his living by reputable means and escape all temptation to drift back into crime. This is the plausible explanation given for the state reformatory movement, which led to the creation on such costly and extensive lines of Elmira, and of Concord in Massachusetts, a cognate establishment. There is very little penal about the treatment, which is that of a boarding school; the education, thorough and carried far, includes languages, music, science and industrial art; diet is plentiful, even luxurious; amusements and varied recreation are permitted; well stocked libraries are provided with entertaining books; a prison newspaper is issued (edited by an inmate). Physical development is sedulously cultivated both by gymnastics and military exercises, and the whole course is well adapted to change entirely the character of the individual subjected

to it. The trouble taken in the hope of transforming erring youth into useful members of society goes still further. The original sentence has been indefinite, and release on parole will be granted to inmates who pass through the various courses with credit and are supposed to have satisfied the authorities of their desire to amend. The limit of detention need not exceed twelve months, after which parole is possible, although the average period passed before it is granted is twenty-two months. The hope of permanent amendment is further sought by the fact that a situation, generally with good wages and congenial work, provided by the authorities, awaits every inmate at the time of his discharge. The inmates, selected from a very large class, are first offenders, but guilty generally of criminal offences, which include manslaughter, burglary, forgery, fraud, robbery and receiving. The exact measure of reformation achieved can never be exactly known, from the absence of authentic statistics and the difficulty of following up the surveillance of individuals when released on parole. Reports issued by the manager of Elmira claim that 81% of those paroled have done well, but these results are not definitely authenticated. They are based upon the ascertained good conduct during the term of surveillance, six or twelve months only, during which time these subjects have not yet spent the gratuities earned and have probably still kept the situations found for them on discharge. No doubt the material treated at Elmira and Concord is of a kind to encourage hope of reformation, as they are first offenders and presumably not of the criminal classes. Although the processes are open to criticism, the discipline enforced in these state reformatories does not err in excessive leniency. They are not “hotels,” as has been sometimes said in ridicule, where prisoners go to enjoy themselves, have a good time, study Plato and conic sections, and pass out to an assured future. There is plenty of hard work, mental and physical, and the “inmates” rather envy their fellows in state prisons. A point to which great attention is paid is that physical degeneracy lies at the bottom of the criminal character, and great attention is paid to the development of nervous energy and strengthening by every means the normal and healthful functions of the body. A leading feature in the treatment is the frequency and perfection with which bathing is carried out. A series of Turkish baths forms a part of the course of instruction; the baths being fitted elaborately with all the adjuncts of shower bath, cold douche, ending with gymnastic exercises.

A remarkable and unique institution is the state reformatory for women at Sherborn, Massachusetts, for women with sentences of more than a year, who in the opinion of the court are fit subjects for reformatory treatment. The majority of the inmates were convicted of drunkenness, an offence which the law of Massachusetts visits with severity—a sentence of two years being very common. This at once differentiates the class of women from that in ordinary penal establishments. At the same time we find that other women guilty of serious crime are sent by the courts to this prison with a view to their reform. Thus of 352 inmates, while no fewer than 200 were convicted of drunkenness, there were also 63 cases of offences against chastity and 30 of larceny. The average age was thirty-one and the average duration of sentence just over a year. In appearance and in character it more resembles a hospital or home for inebriates than a state convict prison. A system of grades or divisions is relied upon as a stimulus to reform. The difference in grades is denoted by small and scarcely perceptible variations of the little details of everyday life, such as are supposed in a peculiar degree to affect the appreciation of women, *e.g.* in the lowest division the women have their meals off old and chipped china; in the next the china is less chipped; in the highest there is no chipped china; in the next prettily set out with tumblers, cruet-stands and a pepper pot to each prisoner. The superintendent relies greatly also on the moralizing influence of animals and birds. Well-behaved convicts are allowed to tend sheep, calves, pigs, chickens, canaries and parrots. This privilege is highly esteemed and productive, it is said, of the most softening influences.

The “George Junior Republic” (*q.v.*) is a remarkable institution established in 1895 at Freeville, near the centre of New York State, by Mr. William Reuben George. The original features of the institution are that the motto “Nothing without labour” is rigidly enforced, and that self-government is carried to a point that, with mere children, would appear whimsical were it not a proved success. The place is, as the name implies, a miniature “republic” with laws, legislature, courts and administration of its own, all made and carried on by the “citizens” themselves. The tone and spirit of the place appeared to be excellent and there is much evidence that in many cases strong and independent character is developed in children whose antecedents have been almost hopeless.

Borstal Scheme in England.—The American system of state reformatories as above described has been sharply criticized, but the principle that underlies it is recognized as, in a measure, sound, and it has been adopted by the English authorities. Some time back the experiment of establishing a penal reformatory for offenders above the age hitherto committed to reformatory schools was resolved upon. This led to the foundation of the Borstal scheme, which was first formally started in October 1902. The arguments which had led to it may be briefly stated here. It had been conclusively shown that quite half the whole number of professional criminals had been first convicted when under twenty-one years of age, when still at a malleable period of development, when in short the criminal habit had not yet been definitely formed. Moreover these adolescents escaped special reformatory treatment, for sixteen is in Great Britain the age

of criminal majority, after which no youthful offenders can be committed to the state reformatory schools. But there was always a formidable contingent of juvenile adults between sixteen and twenty-one, sent to penal servitude, and their numbers although diminishing rose to an average total of 15,000. It was accordingly decided to create a penal establishment under state control, which should be a half-way house between the prison and the reformatory school. A selection was made of juvenile adults, sentenced to not less than six months and sent to Borstal in 1902 to be treated under rules approved by the home secretary. They were to be divided on arrival into three separate classes, penal, ordinary and special, with promotion by industry and good conduct from the lowest to the highest, in which they enjoyed distinctive privileges. The general system, educational and disciplinary, was intelligent and governed by common sense. Instruction, both manual and educational, was well suited to the recipients; the first embraced field work, market gardening, and a knowledge of useful handicrafts; the second was elementary but sound, aided by well-chosen libraries and brightened by the privilege of evening association to play harmless but interesting games. Physical development was also guaranteed by gymnastics and regular exercises. The results were distinctly encouraging. They arrived at Borstal “rough, untrained cubs,” but rapidly improved in demeanour and inward character, gaining self-reliance and self-respect, and left the prison on the high road to regeneration. It was wisely remembered that to secure lasting amendment it is not enough to chasten the erring subject, to train his hands, to strengthen his moral sense while still in durance; it is essential to assist him on discharge by helping him to find work, and encourage him by timely advice to keep him in the straight path. Too much praise cannot be accorded to the agencies and associations which labour strenuously and unceasingly to this excellent end. Especial good work has been done by the Borstal association, founded under the patronage of the best known and most distinguished persons in English public life—archbishops, judges, cabinet ministers and privy councillors—which receives the juvenile adults on their release and helps them to employment. Their labours, backed by generous voluntary contributions, have produced very gratifying results. Although the offenders originally selected to undergo the Borstal treatment were those committed for a period of six months, it was recognized that this limit was experimental, and that thoroughly satisfactory results could only be obtained with sentences of at least a year’s duration, so as to give the reforming agencies ample time to operate. In the second year’s working of the system it was formally applied to young convicts sentenced to penal servitude between the ages of sixteen and twenty-one. In the next year it was adopted for all offenders between the ages of sixteen and twenty-one committed to prison, as far as the length of sentence would permit. The commissioners of prisons, in their *Report* for the year 1908 (Cd. 4300) thus expressed themselves on the working of the experiment:—

> “Experience soon began to point to the probable success of this general application of the principle, in spite of the fact that the prevailing shortness of sentences operated against full benefit being derived from reformatory effort. The success was most marked in those localities where magistrates, or other benevolent persons, personally co-operated in making the scheme a success. Local Borstal committees were established at all prisons, and it was arranged that those members of the local committees should become *ex officio* honorary members of the Central Borstal Association, which it was intended should become, what it now is, the parent society directing the general aid on discharge of this category of young prisoners.”

In spite of the general adoption of the Borstal system, there was a large class of young criminals who were outside its effects, those who were sentenced to terms of ten days and under for trifling offences. These juvenile adults, once having had the fear of prison taken away by actual experience, were found to come back again and again. To remedy this state of affairs, a bill was introduced in 1907 to give effect to the principle of a long period of detention for all those showing a tendency to embark on a criminal career. The bill was, however, dropped, but a somewhat similar bill was introduced the next year and became law under the title of The Prevention of Crime Act 1908. This measure introduces a new departure in the treatment of professional crime by initiating a system of detention for habitual criminals (see Recidivism). The act attempts the reformation of young offenders by giving the court power to pass sentence of detention in a Borstal institution for a term of not less than one year nor more than three on those between the ages of sixteen and twenty-one who by reason of criminal habits or tendencies or association with persons of bad character require such instruction and discipline as appear most conducive to their reformation. The power of detention applies also to reformatory school offences, while such persons as are already undergoing penal servitude or imprisonment may be transferred to a Borstal institution if detention would conduce to their advantage. The establishment of other Borstal institutions is authorized by the act, while a very useful provision is the power to release on licence if there is a reasonable probability that the offender will abstain from crime and lead a useful and industrious life. The licence is issued on condition that he is placed under the supervision or authority of some society or person willing to take charge of him. Supervision is introduced after the expiration of the term of sentence, and power is given to transfer to prison incorrigibles or those exercising a bad influence on the other inmates of a Borstal institution. The act marks a noteworthy advance in the endeavour to arrest the growing habit of crime.

JUVENTAS (Latin for "youth": later *Juventus*), in Roman mythology, the tutelar goddess of young men. She was worshipped at Rome from very early times. In the front court of the temple of Minerva on the Capitol there was a chapel of Juventas, in which a coin had to be deposited by each youth on his assumption of the *toga virilis*, and sacrifices were offered on behalf of the rising manhood of the state. In connexion with this chapel it is related that, when the temple was in course of erection, Terminus, the god of boundaries, and Juventas refused to quit the sites they had already appropriated as sacred to themselves, which accordingly became part of the new sanctuary. This was interpreted as a sign of the immovable boundaries and eternal youth of the Roman state. It should be observed that in the oldest accounts there is no mention of Juventas, whose name (with that of Mars) was added in support of the augural prediction. After the Second Punic War Greek elements were introduced into her cult. In 218 B.C., by order of the Sibylline books, a *lectisternium* was prepared for Juventas and a public thanksgiving to Hercules, an association which shows the influence of the Greek Hebe, the wife of Heracles. In 207 Marcus Livius Salinator, after the defeat of Hasdrubal at the battle of Sena, vowed another temple to Juventas in the Circus Maximus, which was dedicated in 191 by C. (or M.) Licinius Lucullus; it was destroyed by fire in 16 B.C. and rebuilt by Augustus. In imperial times, Juventas personified, not the youth of the Roman state, but of the future emperor.

See Dion. Halic., iii. 69, iv. 15; Livy v. 54, xxi. 62, xxxvi. 36.

JUXON, WILLIAM (1582-1663), English prelate, was the son of Robert Juxon and was born probably at Chichester, being educated at Merchant Taylors' School, London, and at St John's College, Oxford, where he was elected to a scholarship in 1598. He studied law at Oxford, but afterwards he took holy orders, and in 1609 became vicar of St Giles, Oxford, a living which he retained until he became rector of Somerton, Oxfordshire, in 1615. In December 1621 he succeeded his friend, William Laud, as president of St John's College, and in 1626 and 1627 he was vice-chancellor of the university. Juxon soon obtained other important positions, including that of chaplain-in-ordinary to Charles I. In 1627 he was made dean of Worcester and in 1632 he was nominated to the bishopric of Hereford, an event which led him to resign the presidency of St John's in January 1633. However, he never took up his episcopal duties at Hereford, as in October 1633 he was consecrated bishop of London in succession to Laud. He appears to have been an excellent bishop, and in March 1636 Charles I. entrusted him with important secular duties by making him lord high treasurer of England; thus for the next five years he was dealing with the many financial and other difficulties which beset the king and his advisers. He resigned the treasurership in May 1641. During the Civil War the bishop, against whom no charges were brought in parliament, lived undisturbed at Fulham Palace, and his advice was often sought by the king, who had a very high opinion of him, and who at his execution selected him to be with him on the scaffold and to administer to him the last consolations of religion. Juxon was deprived of his bishopric in 1649 and retired to Little Compton in Gloucestershire, where he had bought an estate, and here he became famous as the owner of a pack of hounds. At the restoration of Charles II. he became archbishop of Canterbury and in his official capacity he took part in the coronation of this king, but his health soon began to fail and he died at Lambeth on the 4th of June 1663. By his will the archbishop was a benefactor to St John's College, where he was buried; he also aided the work of restoring St Paul's Cathedral and rebuilt the great hall at Lambeth Palace.

See W. H. Marah, *Memoirs of Archbishop Juxon and his Times* (1869); the best authority for the archbishop's life is the article by W. H. Hutton in the *Dict. Nat. Biog.* (1892).

K The eleventh letter in the Phoenician alphabet and in its descendant Greek, the tenth in Latin owing to the omission of Teth (see I), and once more the eleventh in the alphabets of Western Europe owing to the insertion of J. In its long history the shape of K has changed very little. It is on the inscription of the Moabite Stone (early 9th cent. B.C.) in the form (written from right to left) of 𐤊 and 𐤟. Similar forms are also found in early Aramaic, but another form 𐤊 or 𐤊, which is found in the Phoenician of Cyprus in the 9th or 10th century B.C. has had more effect upon the later development of the Semitic forms. The length of the two back strokes and the manner in which they join the upright are the only variations in Greek. In various places the back strokes, treated as an angle <, become more rounded (, so that the letter appears as Κ, a form which in Latin probably affected the development of C (*q.v.*). In Crete it is elaborated into Ꞁ and Ꞁ. In Latin K, which is found in the earliest inscriptions, was soon replaced by C, and survived only in the abbreviations for *Kalendae* and the proper name *Kaeso*. The original name Kaph became in Greek *Kappa*. The sound of K throughout has been that of the unvoiced guttural, varying to some extent in its pronunciation according to the nature of the vowel sound which followed it. In Anglo-Saxon C replaced K through Latin influence, writing being almost entirely in the hands of ecclesiastics. As the sound-changes have been discussed under C it is necessary here only to refer to the palatalization of K followed earlier by a final *e* as in *watch* (Middle English *wacche*, Anglo-Saxon *wæcce*) by the side of *wake* (M.E. *waken*, A.-S. *wacan*); batch, bake, &c. Sometimes an older form of the substantive survives, as in the Elizabethan and Northern *make* = *mate* alongside *match*.

(P. Gi.)

K_2, or Mt Godwin-Austen, the second highest mountain in the world, ranking after Mt Everest. It is a peak of the Karakoram extension of the Muztagh range dividing Kashmir from Chinese Turkestan. The height of K_2 as at present determined by triangulation is 28,250 ft., but it is possible that an ultimate revision of the values of refraction at high altitudes may have the effect of lowering the height of K_2, while it would elevate those of Everest and Kinchinjunga. The latter mountain would then rank second, and K_2 third, in the scale of altitude, Everest always maintaining its ascendancy. K_2 was ascended for the first time by the duke of the Abruzzi in June 1909, being the highest elevation on the earth's surface ever reached by man.

KA'BA, KAABA, or Kaabeh, the sacred shrine of Mahommedanism, containing the "black stone," in the middle of the great mosque at Mecca (*q.v.*).

KABARDIA, a territory of S. Russia, now part of the province of Terek. It is divided into Great and Little Kabardia by the upper river Terek, and covers 3780 sq. m. on the northern slopes of the Caucasus range (from Mount Elbruz to Pasis-mta, or Edena), including the Black Mountains (Kara-dagh) and the high plains on their northern slope. Before the Russian conquest it extended as far as the Sea of Azov. Its population is now about 70,000. One-fourth of the territory is owned by the aristocracy and the remainder is divided among the *auls* or villages. A great portion is under permanent pasture, part under forests, and some under perpetual snow. Excellent breeds of horses are reared, and the peasants own many cattle. The land is well cultivated in the lower parts, the chief crops being millet, maize, wheat and oats. Bee-keeping is extensively practised, and Kabardian honey is in repute. Wood-cutting and the manufacture of wooden wares, the making of *búrkas* (felt and fur cloaks), and saddlery are very general. Nalchik is the chief town.

The Kabardians are a branch of the Adyghè (Circassians). The policy of Russia was always to be friendly with the Kabardian aristocracy, who were possessed of feudal rights over the Ossetes, the Ingushes, the Abkhasians and the mountain Tatars, and had command of the roads leading into Transcaucasia. Ivan the Terrible took Kabardia under his protection in the 16th century. Later, Russian influence was counterbalanced by that of the Crimean khans, but the Kabardian nobles nevertheless supported Peter the Great during his Caucasian campaign in 1722-23. In 1739 Kabardia was recognized as being under the double protectorate of Russia and Turkey, but thirty-five years later it was definitively annexed to Russia, and risings of the population in 1804 and 1822 were cruelly suppressed. Kabardia is considered as a school of good manners in Caucasia; the Kabardian dress sets the fashion to all the mountaineers. Kabardians constitute the best detachment of the personal Imperial Guards at St Petersburg.

A short grammar of the Kabardian language and a Russian-Kabardian dictionary, by Lopatinsky, were published in *Sbornik Materialov dla Opisaniya Kavkaza* (vol. xii., Tiflis, 1891). Fragments of the poem “Sosyruko,” some Persian tales, and the tenets of the Mussulman religion were printed in Kabardian in 1864, by Kazi Atazhukin and Shardanov. The common law of the Kabardians has been studied by Maxim Kovalevsky and Vsevolod Miller.

KABBA, a province of the British protectorate of Northern Nigeria, situated chiefly on the right bank of the Niger, between 7° 5′ and 8° 45′ N. and 5° 30′ and 7° E. It has an area of 7800 sq. m. and an estimated population of about 70,000. The province consists of relatively healthy uplands interspersed with fertile valleys. It formed part at one time of the Nupe emirate, and under Fula rule the armies of Bida regularly raided for slaves and laid waste the country. Amongst the native inhabitants the Igbira are very industrious, and crops of tobacco, indigo, all the African grains, and a good quantity of cotton are already grown. The sylvan products are valuable and include palm oil, kolas, shea and rubber. Lokoja, a town which up to 1902 was the principal British station in the protectorate, is situated in this province. The site of Lokoja, with a surrounding tract of country at the junction of the Benue and the Niger, was ceded to the British government in 1841 by the *attah* of Idah, whose dominions at that time extended to the right bank of the river. The first British settlement was a failure. In 1854 MacGregor Laird, who had taken an active part in promoting the exploration of the river, sent thither Dr W. B. Baikie, who was successful in dealing with the natives and in 1857 became the first British consul in the interior. The town of Lokoja was founded by him in 1860. In 1868 the consulate was abolished and the settlement was left wholly to commercial interests. In 1879 Sir George Goldie formed the Royal Niger Company, which bought out its foreign rivals and acquired a charter from the British government. In 1886 the company made Lokoja its military centre, and on the transfer of the company’s territories to the Crown it remained for a time the capital of Northern Nigeria. In 1902 the political capital of the protectorate was shifted to Zungeru in the province of Zaria, but Lokoja remains the commercial centre. The distance of Lokoja from the sea at the Niger mouth is about 250 m.

In the absence of any central native authority the province is entirely dependent for administration upon British initiative. It has been divided into four administrative divisions. British and native courts of justice have been established. A British station has been established at Kabba town, which is an admirable site some 50 m. W. by N. of Lokoja, about 1300 ft. above the sea, and a good road has been made from Kabba to Lokoja. Roads have been opened through the province. (See Nigeria.)

KABBABISH (“goatherds”: James Bruce derives the name from *Hebsh*, sheep), a tribe of African nomads of Semitic origin. It is perhaps the largest “Arab” tribe in the Anglo-Egyptian Sudan, and its many clans are scattered over the country extending S.W. from the province of Dongola to the confines of Darfur. The Kabbabish speak Arabic, but their pronunciation differs much from that of the true Arabs. The Kabbabish have a tradition that they came from Tunisia and are of Mogrebin or western descent; but while the chiefs look like Arabs, the tribesmen resemble the Beja family. They themselves declare that one of their clans, Kawahla, is not of

Kabbabish blood, but was affiliated to them long ago. Kawahla is a name of Arab formation, and J. L. Burckhardt spoke of the clan as a distinct one living about Abu Haraz and on the Atbara. The Kabbabish probably received Arab rulers, as did the Abābda. They are chiefly employed in cattle, camel and sheep breeding, and before the Sudan wars of 1883-99 they had a monopoly of all transport from the Nile, north of Abu Gussi, to Kordofan. They also cultivate the lowlands which border the Nile, where they have permanent villages. They are of fine physique, dark with black wiry hair, carefully arranged in tightly rolled curls which cling to the head, with regular features and rather thick aquiline noses. Some of the tribes wear large hats like those of the Kabyles of Algeria and Tunisia.

See James Bruce, *Travels to Discover the Source of the Nile* (1790); A. H. Keane, *Ethnology of Egyptian Sudan* (1884); *Anglo-Egyptian Sudan* (edited by Count Gleichen, 1905).

KABBALAH (late Hebrew *ḳabbālah*, *qabbālah*), the technical name for the system of Jewish theosophy which played an important part in the Christian Church in the middle ages. The term primarily denotes “reception” and then “doctrines received by tradition.” In the older Jewish literature the name is applied to the whole body of received religious doctrine with the exception of the Pentateuch, thus including the Prophets and Hagiographa as well as the oral traditions ultimately embodied in the Mishnah.[1] It is only since the 11th or 12th century that Kabbalah has become the exclusive appellation for the renowned system of theosophy which claims to have been transmitted uninterruptedly by the mouths of the patriarchs and prophets ever since the creation of the first man.

The cardinal doctrines of the Kabbalah embrace the nature of the Deity, the Divine emanations or *Sĕphīrōth*, the cosmogony, the creation of angels and man, their destiny, and the import of the revealed law. According to this esoteric doctrine, God, who is boundless, and above everything, even above being and thinking, is called *Ēn Sōph* (ἄπειρος); He is the space of the universe containing τὸ πᾶν, but the universe is not his space. In this boundlessness He could not be comprehended by the intellect or described in words, and as such the Ēn Sōph was in a certain sense *Ăyĭn*, non-existent (*Zōhar*, iii. 283).[2] To make his existence known and comprehensible, the Ēn Sōph had to become active and creative. As creation involves intention, desire, thought and work, and as these are properties which imply limit and belong to a finite being, and moreover as the imperfect and circumscribed nature of this creation precludes the idea of its being the direct work of the infinite and perfect, the Ēn Sōph had to become creative, through the medium of ten Sephiroth or intelligences, which emanated from him like rays proceeding from a luminary.

Doctrine of the Sephiroth.

Now the wish to become manifest and known, and hence the idea of creation, is co-eternal with the inscrutable Deity, and the first manifestation of this primordial will is called the first *Sephirah* or emanation. This first Sephirah, this spiritual substance which existed in the Ēn Sōph from all eternity, contained nine other intelligences or *Sephiroth*. These again emanated one from the other, the second from the first, the third from the second, and so on up to ten.

The ten Sephiroth, which form among themselves and with the Ēn Sōph a strict unity, and which simply represent different aspects of one and the same being, are respectively denominated (1) the Crown, (2) Wisdom, (3) Intelligence, (4) Love, (5) Justice, (6) Beauty, (7) Firmness, (8) Splendour, (9) Foundation, and (10) Kingdom. Their evolution was as follows: “When the Holy Aged, the concealed of all concealed, assumed a form, he produced everything in the form of male and female, as things could not continue in any other form. Hence Wisdom, the second Sephirah, and the beginning of development, when it proceeded from the Holy Aged (another name of the first Sephirah) emanated in male and female, for Wisdom expanded, and Intelligence, the third Sephirah, proceeded from it, and thus were obtained male and female, viz. Wisdom the father and Intelligence the mother, from whose union the other pairs of Sephiroth successively emanated” (*Zohar*, iii. 290). These two opposite potencies, viz. the masculine Wisdom or Sephirah No. 2 and the feminine Intelligence or Sephirah No. 3 are joined together by the first potency, the Crown or Sephirah No. 1; they yield the first triad of the Sephiric decade, and constitute the divine head of the archetypal man.

From the junction of Sephiroth Nos. 2 and 3 emanated the masculine potency Love or Mercy (4) and the feminine potency Justice (5), and from the junction of the latter two emanated again the uniting potency Beauty (6). Beauty, the sixth Sephirah, constitutes the chest in the archetypal man, and unites Love (4) and Justice (5), which constitute the divine arms, thus yielding the second triad of the Sephiric decade. From this second conjunction emanated again the masculine potency Firmness (7) and the feminine potency Splendour (8), which constitute the divine legs of

the archetypal man; and these sent forth Foundation (9), which is the genital organ and medium of union between them, thus yielding the third triad in the Sephiric decade. Kingdom (10), which emanated from the ninth Sephirah, encircles all the other nine, inasmuch as it is the Shechinah, the divine halo, which encompasses the whole by its all-glorious presence.

In their totality and unity the ten Sephiroth are not only denominated the World of Sephiroth, or the World of Emanations, but, owing to the above representation, are called the primordial or archetypal man (= πρωτόγονος) and the heavenly man. It is this form which, as we are assured, the prophet Ezekiel saw in the mysterious chariot (Ezek. i. 1-28), and of which the earthly man is a faint copy.

As the three triads respectively represent intellectual, moral and physical qualities, the first is called the Intellectual, the second the Moral or Sensuous, and the third the Material World. According to this theory of the archetypal man the three Sephiroth on the right-hand side are masculine and represent the principle of rigour, the three on the left are feminine and represent the principle of mercy, and the four central or uniting Sephiroth represent the principle of mildness. Hence the right is called "the Pillar of Judgment," the left "the Pillar of Mercy," and the centre "the Middle Pillar." The middle Sephiroth are synecdochically used to represent the worlds or triads of which they are the uniting potencies. Hence the Crown, the first Sephirah, which unites Wisdom and Intelligence to constitute the first triad, is by itself denominated the Intellectual World. So Beauty is by itself described as the Sensuous World, and in this capacity is called the Sacred King or simply the King, whilst Kingdom, the tenth Sephirah, which unites all the nine Sephiroth, is used to denote the Material World, and as such is denominated the Queen or the Matron. Thus a trinity of units, viz. the Crown, Beauty and Kingdom, is obtained within the trinity of triads. But further, each Sephirah is as it were a trinity in itself. It (1) has its own absolute character, (2) receives from above, and (3) communicates to what is below. "Just as the Sacred Aged is represented by the number three, so are all the other lights (Sephiroth) of a threefold nature" (*Zohar*, iii. 288). In this all-important doctrine of the Sephiroth, the Kabbalah insists upon the fact that these potencies are not creations of the Ēn Sōph, which would be a diminution of strength; that they form among themselves and with the Ēn Sōph a strict unity, and simply represent different aspects of the same being, just as the different rays which proceed from the light, and which appear different things to the eye, are only different manifestations of one and the same light; that for this reason they all alike partake of the perfections of the Ēn Sōph; and that as emanations from the Infinite, the Sephiroth are infinite and perfect like the Ēn Sōph, and yet constitute the first finite things. They are infinite and perfect when the Ēn Sōph imparts his fullness to them, and finite and imperfect when that fullness is withdrawn from them.

The Universe.

The conjunction of the Sephiroth, or, according to the language of the Kabbalah, the union of the crowned King and Queen, produced the universe in their own image. Worlds came into existence before the Ēn Sōph manifested himself in the human form of emanations, but they could not continue, and necessarily perished because the conditions of development which obtained with the sexual opposites of the Sephiroth did not exist. These worlds which perished are compared to sparks which fly out from a red-hot iron beaten by a hammer, and which are extinguished according to the distance they are removed from the burning mass. Creation is not *ex nihilo*; it is simply a further expansion or evolution of the Sephiroth.[3] The world reveals and makes visible the Boundless and the concealed of the concealed. And, though it exhibits the Deity in less splendour than its Sephiric parents exhibit the Ēn Sōph, because it is farther removed from the primordial source of light than the Sephiroth, still, as it is God manifested, all the multifarious forms in the world point out the unity which they represent. Hence nothing in the whole universe can be annihilated. Everything, spirit as well as body, must return to the source whence it emanated (*Zohar*, ii. 218). The universe consists of four different worlds, each of which forms a separate Sephiric system of a decade of emanations.

They were evolved in the following order. (1) The World Of Emanations, also called the Image and the Heavenly or Archetypal Man, is, as we have seen, a direct emanation from the Ēn Sōph. Hence it is most intimately allied to the Deity, and is perfect and immutable. From the conjunction of the King and Queen (*i.e.* these ten Sephiroth) is produced (2) the World of Creation, or the Briatic world, also called "the Throne." Its ten Sephiroth, being farther removed from the Ēn Sōph, are of a more limited and circumscribed potency, though the substances they comprise are of the purest nature and without any admixture of matter. The angel Metatron inhabits this world. He alone constitutes the world of pure spirit, and is the garment of Shaddai, *i.e.* the visible manifestation of the Deity. His name is numerically equivalent to that of the Lord (*Zohar*, iii. 231). He governs the visible world, preserves the harmony and guides the revolutions of all the spheres, and is the captain of all the myriads of angelic beings. This Briatic world again gave rise to (3) the World of Formation, or Yetziratic World. Its ten Sephiroth, being still farther removed from the Primordial Source, are of a less refined substance. Still they are yet without matter. It is the abode of the angels, who are wrapped in luminous garments, and who assume a sensuous form when they appear to men. The myriads of the angelic hosts who people this world are divided into ten ranks, answering to the ten Sephiroth, and each one of these numerous angels is set over a different part of the universe, and derives his name from the heavenly body or

element which he guards (*Zohar*, i. 42). From this world finally emanated (4) the World of Action, also called the World of Matter. Its ten Sephiroth are made up of the grosser elements of the former three worlds; they consist of material substance limited by space and perceptible to the senses in a multiplicity of forms. This world is subject to constant changes and corruption, and is the dwelling of the evil spirits. These, the grossest and most deficient of all forms, are also divided into ten degrees, each lower than the other. The first two are nothing more than the absence of all visible form and organization; the third degree is the abode of darkness; whilst the remaining seven are "the seven infernal halls," occupied by the demons, who are the incarnation of all human vices. These seven hells are subdivided into innumerable compartments corresponding to every species of sin, where the demons torture the poor deluded human beings who have suffered themselves to be led astray whilst on earth. The prince of this region of darkness is Sāmāel, the evil spirit, the serpent who seduced Eve. His wife is the Harlot or the Woman of Whoredom. The two are treated as one person, and are called "the Beast" (*Zohar*, ii. 255-259, with i. 35).

Doctrine of Man.

The whole universe, however, was incomplete, and did not receive its finishing stroke till man was formed, who is the acme of the creation and the microcosm. "The heavenly Adam (*i.e.* the ten Sephiroth) who emanated from the highest primordial obscurity (*i.e.* the Ēn Sōph) created the earthly Adam" (*Zohar*, ii. 70). "Man is both the import and the highest degree of creation, for which reason he was formed on the sixth day. As soon as man was created everything was complete, including the upper and nether worlds, for everything is comprised in man. He unites in himself all forms" (*Zohar*, iii. 48). Each member of his body corresponds to a part of the visible universe. "Just as we see in the firmament above, covering all things, different signs which are formed of the stars and the planets, and which contain secret things and profound mysteries studied by those who are wise and expert in these things; so there are in the skin, which is the cover of the body of the son of man, and which is like the sky that covers all things above, signs and features which are the stars and planets of the skin, indicating secret things and profound mysteries whereby the wise are attracted who understand the reading of the mysteries in the human face" (*Zohar*, ii. 76). The human form is shaped after the four letters which constitute the Jewish Tetragrammaton (*q.v.*; see also Jehovah). The head is in the shape of י, the arms and the shoulders are like ה, the breast like ו, and the two legs with the back again resemble ה (*Zohar*, ii. 72). The souls of the whole human race pre-exist in the World of Emanations, and are all destined to inhabit human bodies. Like the Sephiroth from which it emanates, every soul has ten potencies, consisting of a trinity of triads. (1) The Spirit (*nĕshāmah*), which is the highest degree of being, corresponds to and is operated upon by the Crown, which is the highest triad in the Sephiroth, and is called the Intellectual World; (2) the Soul (*rūăḥ*), which is the seat of the moral qualities, corresponds to and is operated upon by Beauty, which is the second triad in the Sephiroth, and is called the Moral World; and (3) the Cruder Soul (*nephesh*), which is immediately connected with the body, and is the cause of its lower instincts and the animal life, corresponds to and is operated upon by Foundation, the third triad in the Sephiroth, called the Material World. Each soul prior to its entering into this world consists of male and female united into one being. When it descends on this earth the two parts are separated and animate two different bodies. "At the time of marriage the Holy One, blessed be he, who knows all souls and spirits, unites them again as they were before; and they again constitute one body and one soul, forming as it were the right and the left of the individual.... This union, however, is influenced by the deeds of the man and by the ways in which he walks. If the man is pure and his conduct is pleasing in the sight of God, he is united with that female part of the soul which was his component part prior to his birth" (*Zohar*, i. 91). The soul's destiny upon earth is to develop those perfections the germs of which are eternally implanted in it, and it ultimately must return to the infinite source from which it emanated. Hence, if, after assuming a body and sojourning upon earth, it becomes polluted by sin and fails to acquire the experience for which it descends from heaven, it must three times reinhabit a body, till it is able to ascend in a purified state through repeated trials. If, after its third residence in a human body, it is still too weak to withstand the contamination of sin, it is united with another soul, in order that by their combined efforts it may resist the pollution which by itself it was unable to conquer. When the whole pleroma of pre-existent souls in the world of the Sephiroth shall have descended and occupied human bodies and have passed their period of probation and have returned purified to the bosom of the infinite Source, then the soul of Messiah will descend from the region of souls; then the great Jubilee will commence. There shall be no more sin, no more temptation, no more suffering. Universal restoration will take place. Satan himself, "the venomous Beast," will be restored to his angelic nature. Life will be an everlasting feast, a Sabbath without end. All souls will be united with the Highest Soul, and will supplement each other in the Holy of Holies of the Seven Halls (*Zohar*, i. 45, 168; ii. 97).

Antiquity and Influence of

According to the Kabbalah all these esoteric doctrines are contained in the Hebrew Scriptures. The uninitiated cannot perceive them; but they are plainly revealed to the spiritually minded, who discern the profound import of this theosophy beneath the surface of the letters and words of Holy Writ. "If the law simply consists of ordinary expressions and narratives, such as the words of Esau, Hagar, Laban, the ass of Balaam or

 Balaam himself, why should it be called the law of truth, the perfect law, the true witness of God? Each word contains a sublime source, each narrative points not only to the single instance in question, but also to generals" (*Zohar*, iii. 149, cf. 152).

> To obtain these heavenly mysteries, which alone make the Torah superior to profane codes, definite hermeneutical rules are employed, of which the following are the most important. (1) The words of several verses in the Hebrew Scriptures which are regarded as containing a recondite sense are placed over each other, and the letters are formed into new words by reading them vertically. (2) The words of the text are ranged in squares in such a manner as to be read either vertically or boustrophedon. (3) The words are joined together and redivided. (4) The initials and final letters of several words are formed into separate words. (5) Every letter of a word is reduced to its numerical value, and the word is explained by another of the same quantity. (6) Every letter of a word is taken to be the initial or abbreviation of a word. (7) The twenty-two letters of the alphabet are divided into two halves; one half is placed above the other; and the two letters which thus become associated are interchanged. By this permutation, *Aleph*, the first letter of the alphabet, becomes *Lamed*, the twelfth letter; *Beth* becomes *Mem*, and so on. This cipher alphabet is called *Albam*, from the first interchangeable pairs. (8) The commutation of the twenty-two letters is effected by the last letter of the alphabet taking the place of the first, the last but one the place of the second, and so forth. This cipher is called *Atbash*. These hermeneutical canons are much older than the Kabbalah. They obtained in the synagogue from time immemorial, and were used by the Christian fathers in the interpretation of Scripture.[4] Thus Canon V., according to which a word is reduced to its numerical value and interpreted by another word of the same value, is recognized in the New Testament (cf. Rev. xiii. 18). Canon VI. is adopted by Irenaeus, who tells us that, according to the learned among the Hebrews, the name Jesus contains two letters and a half, and signifies that Lord who contains heaven and earth [ieshu = יהוה שמים וארץ] (*Against Heresies*, ii. xxiv., i. 205, ed. Clark). The cipher *Atbash* (Canon VIII.) is used in Jeremiah xxv. 26, li. 41, where Sheshach is written for Babel. In Jer. li. 1, לב קמי, *Leb-Kamai* ("the heart of them that rise up against me"), is written for כשדים, *Chaldea*, by the same rule.

Exegesis of this sort is not the characteristic of any single circle, people or century; unscientific methods of biblical interpretation have prevailed from Philo's treatment of the Pentateuch to modern apologetic interpretations of Genesis, ch. i.[5] The Kabbalah itself is but an extreme and remarkable development of certain forms of thought which had never been absent from Judaism; it is bound up with earlier tendencies to mysticism, with man's inherent striving to enter into communion with the Deity. To seek its sources would be futile. The Pythagorean theory of numbers, Neoplatonic ideas of emanation, the Logos, the personified Wisdom, Gnosticism—these and many other features combine to show the antiquity of tendencies which, clad in other shapes, are already found in the old pre-Christian Oriental religions.[6] In its more mature form the Kabbalah belongs to the period when medieval Christian mysticism was beginning to manifest itself (viz. in Eckhart, towards end of 13th century); it is an age which also produced the rationalism of Maimonides (*q.v.*). Although some of its foremost exponents were famous Talmudists, it was a protest against excessive intellectualism and Aristotelian scholasticism. It laid stress, not on external authority, as did the Jewish law, but on individual experience and inward meditation. "The mystics accorded the first place to prayer, which was considered as a mystical progress towards God, demanding a state of ecstasy."[7] As a result, some of the finest specimens of Jewish devotional literature and some of the best types of Jewish individual character have been Kabbalist.[8] On the other hand, the Kabbalah has been condemned, and nowhere more strongly than among the Jews themselves. Jewish orthodoxy found itself attacked by the more revolutionary aspects of mysticism and its tendencies to alter established customs. While the medieval scholasticism denied the possibility of knowing anything unattainable by reason, the spirit of the Kabbalah held that the Deity could be realized, and it sought to bridge the gulf. Thus it encouraged an unrestrained emotionalism, rank superstition, an unhealthy asceticism, and the employment of artificial means to induce the ecstatic state. That this brought moral laxity was a stronger reason for condemning the Kabbalah, and the evil effects of nervous degeneration find a more recent illustration in the mysticism of the Chasidim (*Ḥăsīdīm*, "saints"), a Jewish sect in eastern Europe which started from a movement in the 18th century against the exaggerated casuistry of contemporary rabbis, and combined much that was spiritual and beautiful with extreme emotionalism and degradation.[9] The appearance of the Kabbalah and of other forms of mysticism in Judaism may seem contrary to ordinary and narrow conceptions of orthodox Jewish legalism. Its interest lies, not in its doctrines, which have often been absurdly over-estimated (particularly among Christians), but in its contribution to the study of human thought. It supplied a want which has always been felt by certain types, and it became a movement which had mischievous effects upon ill-balanced minds. As usual, the excessive self-introspection was not checked by a rational criticism; the individual was guided by his own reason, the limitations of which he did not realize; and in becoming a law unto himself he ignored the accumulated experiences of civilized humanity.[10]

A feature of greater interest is the extraordinary part which this theosophy played in the Christian Church, especially at the time of the Renaissance. We have already seen that the Sephiric decade or the archetypal man, like Christ, is considered to be of a double nature, both

infinite and finite, perfect and imperfect. More distinct, however, is the doctrine of the Trinity. In Deut. vi. 43, where Yahweh occurs first, then Ĕlōhēnū, and then again Yahweh, we are told "The voice though one, consists of three elements, fire (*i.e.* warmth), air (*i.e.* breath), and water (*i.e.* humidity), yet all three are one in the mystery of the voice and can only be one. Thus also Yahweh, Ĕlōhēnū, Yahweh, constitute one—three forms which are one" (*Zohar*, ii. 43; compare iii. 65). Discussing the thrice holy in Isaiah vi. 3, one codex of the *Zohar* had the following remark: "The first holy denotes the Holy Father, the second the Holy Son, and the third the Holy Ghost" (cf. Galatinus, *De arcanis cathol.* lib. ii. c. 3, p. 31; Wolf, *Bibliotheca hebraica*, i. 1136). Still more distinct is the doctrine of the atonement. "The Messiah invokes all the sufferings, pain, and afflictions of Israel to come upon Him. Now if He did not remove them thus and take them upon Himself, no man could endure the sufferings of Israel, due as their punishment for transgressing the law; as it is written (Isa. liii. 4), Surely He hath borne our griefs and carried our sorrows" (*Zohar*, ii. 12). These and similar statements favouring the doctrines of the New Testament made many Kabbalists of the highest position in the synagogue embrace the Christian faith and write elaborate books to win their Jewish brethren over to Christ. As early as 1450 a company of Jewish converts in Spain, at the head of which were Paul de Heredia, Vidal de Saragossa de Aragon, and Davila, published compilations of Kabbalistic treatises to prove from them the doctrines of Christianity. They were followed by Paul Rici, professor at Pavia, and physician to the emperor Maximilian I. Among the best-known non-Jewish exponents of the Kabbalah were the Italian count Pico di Mirandola (1463-1494), the renowned Johann Reuchlin (1455-1522), Heinrich Cornelius Agrippa of Nettesheim (1487-1535), Theophrastus Paracelsus (1493-1541), and, later, the Englishman Robert Fludd (1574-1637). Prominent among the "nine hundred theses" which Mirandola had placarded in Rome, and which he undertook to defend in the presence of all European scholars, whom he invited to the Eternal City, promising to defray their travelling expenses, was the following: "No science yields greater proof of the divinity of Christ than magic and the Kabbalah." Mirandola so convinced Pope Sixtus of the paramount importance of the Kabbalah as an auxiliary to Christianity that his holiness exerted himself to have Kabbalistic writings translated into Latin for the use of divinity students. With equal zeal did Reuchlin act as the apostle of the Kabbalah. His treatises exercised an almost magic influence upon the greatest thinkers of the time. Pope Leo X. and the early Reformers were alike captivated by the charms of the Kabbalah as propounded by Reuchlin, and not only divines, but statesmen and warriors, began to study the Oriental languages in order to be able to fathom the mysteries of Jewish theosophy. The *Zohar*, that farrago of absurdity and spiritual devotion, was the weapon with which these Christians defended Jewish literature against hostile ecclesiastic bodies (Abrahams, *Jew. Lit.* p. 106). Thus the Kabbalah linked the old scholasticism with the new and independent inquiries in learning and philosophy after the Renaissance, and although it had evolved a remarkably bizarre conception of the universe, it partly anticipated, in its own way, the scientific study of natural philosophy.[11] Jewish theosophy, then, with its good and evil tendencies, and with its varied results, may thus claim to have played no unimportant part in the history of European scholarship and thought.

Main Sources.

The main sources to be noticed are:—

1. The *Sēpher Yĕsīrah*, or "book of creation," not the old Hilkoth Y. ("rules of creation"), which belongs to the Talmudic period (on which see Kohler, *Jew. Ency.* xii. 602 seq.), but a later treatise, a combination of medieval natural philosophy and mysticism. It has been variously ascribed to the patriarch Abraham and to the illustrious rabbi 'Aqiba; its essential elements, however, maybe of the 3rd or 4th century A.D., and it is apparently earlier than the 9th (see L. Ginzberg, *op. cit.* 603 sqq.). It has "had a greater influence on the development of the Jewish mind than almost any other book after the completion of the Talmud" (ibid.).

2. The *Bāhīr* ("brilliant," Job. xxxvii. 21), though ascribed to Neḥunyah b. Haqqanah (1st century A.D.), is first quoted by Naḥmanides, and is now attributed to his teacher Ezra or Azriel (1160-1238). It shows the influence of the *Sēpher Yĕṣīrah*, is marked by the teaching of a celestial Trinity, is a rough outline of what the *Zohar* was destined to be, and gave the first opening to a thorough study of metaphysics among the Jews. (See further 1. Broydé, *Jew. Ency.* ii. 442 seq.).

3. The *Zohar* ("shining," Dan. xii. 3) is a commentary on the Pentateuch, according to its division into fifty-two hebdomadal lessons. It begins with the exposition of Gen. i. 4 ("let there be light") and includes eleven dissertations: (1) "Additions and Supplements"; (2) "The Mansions and Abodes," describing the structure of paradise and hell; (3) "The Mysteries of the Pentateuch," describing the evolution of the Sephiroth, &c.; (4) "The Hidden Interpretation," deducing esoteric doctrine from the narratives in the Pentateuch; (5) "The Faithful Shepherd," recording discussions between Moses the faithful shepherd, the prophet Elijah and R. Simon b. Yoḥai, the reputed compiler of the *Zohar*; (6) "The Secret of Secrets," a treatise on physiognomy and psychology; (7) "The Aged," *i.e.* the prophet Elijah, discoursing with R. Simon on the doctrine of transmigration as evolved from Exod. xxi. 1-xxiv. 18; (8) "The Book of Secrets," discourses on cosmogony and demonology; (9) "The Great Assembly," discourses of R. Simon to his numerous assembly of disciples on the form of the Deity and on pneumatology; (10) "The Young Man," discourses by young men of superhuman origin on the mysteries of ablutions; and (11) "The Small

Assembly," containing the discourses on the Sephiroth which R. Simon delivered to the small congregation of six surviving disciples. The *Zohar* pretends to be a compilation made by Simon b. Yoḥai (the second century A.D.) of doctrines which God communicated to Adam in Paradise, and which have been received uninterruptedly from the mouths of the patriarchs and prophets. It was discovered, so the story went, in a cavern in Galilee where it had been hidden for a thousand years. Amongst the many facts, however, established by modern criticism which prove the *Zohar* to be a compilation of the 13th century, are the following: (1) the *Zohar* itself praises most fulsomely R. Simon, its reputed author, and exalts him above Moses; (2) it mystically explains the Hebrew vowel points, which did not obtain till 570; (3) the compiler borrows two verses from the celebrated hymn called "The Royal Diadem," written by Ibn Gabirol, who was born about 1021; (4) it mentions the capture of Jerusalem by the crusaders and the re-taking of the Holy City by the Saracens; (5) it speaks of the comet which appeared at Rome, 15th July 1264, under the pontificate of Urban IV.; (6) by a slip the *Zohar* assigns a reason why its contents were not revealed before 5060-5066 A.M., *i.e.* 1300-1306 A.D., (7) the doctrine of the Ēn Sōph and the Sephiroth was not known before the 13th century; and (8) the very existence of the *Zohar* itself was not known prior to the 13th century. Hence it is now believed that Moses de Leon (d. 1305), who first circulated and sold the *Zohar* as the production of R. Simon, was himself the author or compiler. That eminent scholars both in the synagogue and in the church should have been induced to believe in its antiquity is owing to the fact that the *Zohar* embodies many older opinions and doctrines, and the undoubted antiquity of some of them has served as a lever in the minds of these scholars to raise the late speculations about the Ēn Sōph, the Sephiroth, &c., to the same age.

LITERATURE.—The study of the whole subject being wrapped up with Gnosticism and Oriental theosophy, the related literature is immense. Among the more important works may be mentioned, Baron von Rosenroth's *Kabbala Denudata* (Sulzbach, 1677-1678; Frankfort, 1684); A. Franck, *La Kabbale* (Paris, 2nd ed., 1889; German by Jellinek, Leipzig, 1844); C. D. Ginsburg, *The Kabbalah, its Doctrines, Development and Literature* (London, 1865); I. Meyer, *Qabbalah* (Philadelphia, 1888); Rubin, *Kabbala und Agada* (Vienna, 1895), *Heidentum und Kabbalah* (1893); Karppe, *Ét. sur les origines du Zohar* (Paris, 1891); A. E. Waite, *Doctrine and Literature of the Kabbalah* (London, 1902); Flügel, *Philosophy, Kabbala, &c.* (Baltimore, 1902); D. Neumark, *Gesch. d. Jüd. Philosophie d. Mittelalters* (Berlin, 1907); also S. A. Binion, in C. D. Warner's *World's Best Literature*, 8425 sqq. See further the very full articles in the *Jewish Ency.* by K. Kohler and L. Ginzberg ("Cabbala"), I. Broydé ("Bahir," "Zohar"), with the references.

(C. D. G.; S. A. C.)

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1 C. Taylor, *Sayings of the Jewish Fathers* (1897), pp. 106 sqq., 175 seq.; W. Bacher, *Jew. Quart. Rev.* xx. 572 sqq. (1908).

2 On the *Zōhar*, "the Bible of the Kabbalists," see below.

3 The view of a mediate creation, in the place of immediate creation out of nothing, and that the mediate beings were emanations, was much influenced by Solomon ibn Gabirol (1021-1070).

4 See F. Weber, *Jüdische Theologie* (1897), pp. 118 sqq.

5 See C. A. Briggs, *Study of Holy Scripture* (1899), pp. 427 sqq., 570.

6 Even the "over-Soul" of the mystic Isaac Luria (1534-1572) is a conception known in the 3rd century A.D. (Rabbi Rēsh Lakīsh). For the early stages of Kabbalistic theories, see K. Kohler, *Jew. Ency.* iii. 457 seq., and L. Ginzberg, ibid. 459 seq.; and for examples of the relationship between old Oriental (especially Babylonian) and Jewish Kabbalistic teaching (early and late), see especially A. Jeremias, *Babylonisches in N. Test.* (Leipzig, 1905); E. Bischoff, *Bab. Astrales im Weltbilde des Thalmud u. Midrasch* (1907).

7 L. Ginzberg, *Jew. Ency.* iii. 465.

8 See, especially, on the mystics of Safed in Upper Galilee, S. Schechter, *Studies* (1908), pp. 202-285.

9 See the instructive article by S. Schechter, *Studies in Judaism* (London, 1896), pp. 1-55.

10 See the discriminating estimates by S. A. Hirsch, *Jew. Quart. Rev.* xx. 50-73; I. Abrahams, *Jew. Lit.* (1906), ch. xvii.: *Judaism* (1907), ch. vi.

11 See, *e.g.*, G. Margoliouth, "The Doctrine of Ether in the Kabbalah," *Jew. Quart. Rev.* xx. 828 sqq. On the influence of the Kabbalah on the Reformation, see Stöckl, *Gesch. d. Philosophie des Mittelalters*, ii. 232-251.

KABINDA, a Portuguese possession on the west coast of Africa north of the mouth of the Congo. Westwards it borders the Atlantic, N. and N.E. French Congo, S. and S.E. Belgian Congo.

It has a coast-line of 93 m., extends inland, at its greatest breadth, 70 m., and has an area of about 3000 sq. m. In its physical features, flora, fauna and inhabitants, it resembles the coast region of French Congo (*q.v.*). The only considerable river is the Chiloango, which in part forms the boundary between Portuguese and Belgian territory, and in its lower course divides Kabinda into two fairly even portions. The mouth of the river is in 5° 12′ S., 12° 5′ E. The chief town, named Kabinda, is a seaport on the right bank of the small river Bele, in 5° 33′ S., 12° 10′ E.; pop. about 10,000. From the beauty of its situation, and the fertility of the adjacent country, it has been called the paradise of the coast. The harbour is sheltered and commodious, with anchorage in four fathoms. Kabinda was formerly a noted slave mart. Farther north are the ports of Landana and Massabi. Between Kabinda and Landana is Molembo at the head of a small bay of the same name. There is a considerable trade in palm oil, ground nuts and other jungle produce, largely in the hands of British and German firms.

The possession of the enclave of Kabinda by Portugal is a result of the efforts made by that nation during the last quarter of the 19th century to obtain sovereignty over both banks of the lower Congo. Whilst Portugal succeeded in obtaining the southern bank of the river to the limit of navigability from the sea, the northern bank became part of the Congo Free State (see AFRICA, § 5). Portuguese claims to the north of the river were, however, to some extent met by the recognition of her right to Kabinda. The southernmost part of Kabinda is 25 m. (following the coast-line) north of the mouth of the Congo. This district as far north as the Chiloango river (and including the adjacent territory of Belgian Congo) is sometimes spoken of as Kacongo. The name Loango (*q.v.*) was also applied to this region as well as to the coast-lands immediately to the north. Administratively Kabinda forms a division of the Congo district of the province of Angola (*q.v.*). The inhabitants are Bantu negroes who are called Kabindas. They are an intelligent, energetic and enterprising people, daring sailors and active traders.

KABĪR, the most notable of the Vaishnava reformers of religion in northern India, who flourished during the first half of the 15th century. He is counted as one of the twelve disciples of Rāmānand, the great preacher in the north (about A.D. 1400) of the doctrine of *bhakti* addressed to Rāma, which originated with Rāmānuja (12th century) in southern India. He himself also mentions among his spiritual forerunners Jaidēo and Nāmdēo (or Nāmā) the earliest Marāthī poet (both about 1250). Legend relates that Kabīr was the son of a Brāhman widow, by whom he was exposed, and was found on a lotus in Lahar Talāo, a pond near Benares, by a Musalmān weaver named ‘Alī (or Nūrī), who with his wife Nīmā adopted him and brought him up in their craft as a Musalmān. He lived most of his life at Benares, and afterwards removed to Maghar (or Magahar), in the present district of Bastī, where he is said to have died in 1449. There appears to be no reason to doubt that he was originally a Musalmān and a weaver; his own name and that of his son Kamāl are Mahommedan, not Hindu. His adhesion to the doctrine of Rāmānand is not a solitary instance of the religious syncretism which prevailed at this time in northern India. The religion of the earlier Sikh *Gurus*, which was largely based upon his teaching, also aimed at the fusion of Hinduism and Islam; and the example of Malik Muhammad,[1] the author of the Padmāwat, who lived a century later than Kabīr, shows that the relations between the two creeds were in some cases extremely intimate. It is related that at Kabīr’s death the Hindūs and Musalmāns each claimed him as an adherent of their faith, and that when his funeral issued forth from his house at Maghar the contention was only assuaged by the appearance of Kabīr himself, who bade them look under the cloth which covered the corpse, and immediately vanished. On raising the cloth they found nothing but a heap of flowers. This was divided between the rival faiths, half being buried by the Musalmāns and the other half burned by the Hindus.[2]

Kabīr’s fame as a preacher of *bhakti*, or enthusiastic devotion to a personal God, whom he preferred to call by the Hindu names of Rāma and Hari, is greater than that of any other of the Vaishnava spiritual leaders. His fervent conviction of the truth and power of his doctrine, and the homely and searching expression given to it in his utterances, in the tongue of the people and not in a learned language remote from their understanding, won for him multitudes of adherents; and his sect, the *Kabīrpanthīs*, is still one of the most numerous in northern India, its numbers exceeding a million. Its headquarters are the *Kabīr Chaurā* at Benares, where are preserved the works attributed to Kabīr (called the *Granth*), the greater part of which, however, were written by his immediate disciples and their followers in his name.

Those works which seem to have the best claim to be considered his own compositions are the *Sākhīs*, or stanzas, some 5000 in number, which have a very wide currency even among those who do not formally belong to the sect, and the *Shabdāwalī*, consisting of a thousand “words”

(*shabd*), or short doctrinal expositions. Perhaps some of the *Rēkhtas*, or odes (100 in number), and of the *Ramainīs*—brief mystical poems in very obscure language—may also be from his hand. Of these different forms specimens will be found translated in Professor H. H. Wilson's *Sketch of the Religious Sects of the Hindus*, i. 79-90. Besides the followers who call themselves by Kabīr's name, there may be reckoned to him many other religious sects which bear that of some intermediate *guru* or master, but substantially concur with Kabīr in doctrine and practice. Such, for instance, are the *Nānakshāhīs* in the United Provinces, the Central Provinces, and Bombay, and the *Dādū-panthīs*, numerous in Rajpūtānā (Wilson, *loc. cit.* pp. 103 sqq.); the Sikhs, numbering two and a half millions in the Panjāb, are also his spiritual descendants, and their *Granth* or Scripture is largely stocked with texts drawn from his works.

Kabīr taught the life of *bhakti* (faith, or personal love and devotion), the object of which is a *personal* God, and not a philosophical abstraction or an impersonal quality-less, all-pervading spiritual substance (as in the Vēdānta of Śankarāchārya). His utterances do not, like those of Tulsī Dās, dwell upon the incidents of the human life of Rāma, whom he takes as his type of the Supreme; nevertheless, it is the essence of his creed that God became incarnate to bring salvation to His children, mankind, and that the human mind of this incarnation still subsists in the Divine Person. He proclaims the unity of the Godhead, the vanity of idols, the powerlessness of *brāhmans* or *mullās* to guide or help, and the divine origin of the human soul, *divinae particula aurae*. All evil in the world is ascribed to *Māyā*, illusion or falsehood, and truth in thought, word and deed is enjoined as the chief duty of man: "No act of devotion can equal truth; no crime is so heinous as falsehood; in the heart where truth abides there is My abode."[3] The distinctions of creeds are declared to be of no importance in the presence of God: "The city of *Hara*[4] is to the east, that of '*Alī*[5] is to the west; but explore your own heart, for there are both *Rāma* and *Karīm*;"[6] "Behold but One in all things: it is the second that leads you astray. Every man and woman that has ever been born is of the same nature as yourself. *He*, whose is the world, and whose are the children of '*Alī* and *Rāma*, He is my *Guru*, He is my *Pīr*." He proclaims the universal brotherhood of man, and the duty of kindness to all living creatures. Life is the gift of God, and must not be violated; the shedding of blood, whether of man or animals, is a heinous crime. The followers of Kabīr do not observe celibacy, and live quiet unostentatious lives; Wilson (p. 97) compares them to Quakers for their hatred of violence and unobtrusive piety.

The resemblance of many of Kabīr's utterances to those of Christ, and especially to the ideas set forth in St John's gospel, is very striking; still more so is the existence in the ritual of the sect of a sacramental meal, involving the eating of a consecrated wafer and the drinking of water administered by the *Mahant* or spiritual superior, which bears a remarkable likeness to the Eucharist. Yet, though the deities of Hinduism and the prophet of Islam are frequently mentioned in his sayings, the name of Jesus has nowhere been found in them. It is conjectured that the doctrine of Rāmānand, which came from southern India, has been influenced by the Christian settlements in that region, which go back to very early times. It is also possible that Sūfiism, the pietistic (as distinguished from the theosophic) form of which seems to owe much to eastern Christianity, has contributed some echo of the Gospel to Kabīr's teaching. A third (but scarcely probable) hypothesis is that the sect has borrowed both maxims and ritual, long after Kabīr's own time, from the teaching of the Roman Catholic missionaries, who were established at Agra from the reign of Akbar (1556-1605) onwards.

No critical edition of the writings current under the name of Kabīr has yet been published, though collections of his sayings (chiefly the *Sākhīs*) are constantly appearing from Indian presses. The reader is referred, for a summary account of his life and doctrine, to H. H. Wilson's *Sketch of the Religious Sects of the Hindus* (Works, i. 68 sqq.). Dr E. Trumpp's edition of the *Ādi Granth* (Introduction, pp. xcvii. sqq.) may also be consulted. Recent publications dealing with the subject are the Rev. G. H. Westcott's *Kabīr and the Kabīr Panth* (Cawnpore, 1908), and Mr. M. A. Macauliffe's *The Sikh Religion* (Oxford, 1909), vi. 122-316.

(C. J. L.)

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1 See article HINDOSTANI LITERATURE.

2 An exactly similar tale is told of Nānak, the first *Guru* of the Sikhs, who died in 1538.

3 This and the following passages in quotation marks are from Professor Wilson's translation of 100 *Sākhīs*, pp. 83-90.

4 Benares; Hara, a name of Śiva.

5 *I.e.* Mecca.

6 "The Bountiful," one of the Korānic names of God (Allah).

KABUL, the capital of Afghanistan, standing at an elevation of 6900 ft. above the sea in 34° 32′ N. and 69° 14′ E. Estimated pop. (1901), 140,000. Lying at the foot of the bare and rocky mountains forming the western boundary of the Kabul valley, just below the gorge made by the Kabul River, the city extends a mile and a half east to west and one mile north to south. Hemmed in by the mountains, there is no way of extending it, except in a northerly direction towards the Sherpur cantonment. As the key of northern India, Kabul has been a city of vast importance for countless ages. It commands all the passes which here debouch from the north through the Hindu Kush, and from the west through Kandahar; and through it passed successive invasions of India by Alexander the Great, Mahmud of Ghazni, Jenghiz Khan, Baber, Nadir Shah and Ahmad Shah. Indeed from the time of Baber to that of Nadir Shah (1526-1738) Kabul was part of the empire of Delhi. It is now some 160 m. from the British frontier post of Jamrud near Peshawar.

Kabul was formerly walled; the old wall had seven gates, of which two alone remain, the Lahori and the Sirdar. The city itself is a huddle of narrow and dirty streets, with the Bala Hissar or fort forming the south-east angle, and rising about 150 ft. above the plain. The Amir's palace is situated outside the town about midway between it and the Sherpur cantonment which lies about a mile to the north-east. Formerly the greatest ornament of the city was the arcaded and roofed bazaar called *Chihâr Châtâ*, ascribed to Ali Mardan Khan, a noble of the 17th century, who has left behind him many monuments of his munificent public spirit both in Kabul and in Hindustan. Its four arms had an aggregate length of about 600 ft., with a breadth of 30. The display of goods was remarkable, and in the evening it was illuminated. This edifice was destroyed by Sir G. Pollock on evacuating Kabul in 1842 as a record of the treachery of the city.

The tomb of the Sultan Baber stands on a slope about a mile to the west of the city in a charming spot. The grave is marked by two erect slabs of white marble. Near him lie several of his wives and children; the garden was formerly enclosed by a marble wall; a clear stream waters the flower-beds. From the hill that rises behind the tomb there is a noble prospect of his beloved city, and of the all-fruitful plain stretching to the north of it.

After the accession of Abdur Rahman in 1880 the city underwent great changes. The Bala Hissar was destroyed and has never since been entirely rebuilt, and a fortified cantonment at Sherpur (one side of which was represented by the historic Bemaru ridge) had taken the place of the old earthworks of the British occupation of 1842 which were constructed on nearly the same site. The city streets were as narrow and evil-smelling, the surrounding gardens as picturesque and attractive, and the wealth of fruit was as great, as they had been fifty years previously. The amir, however, effected many improvements. Kabul is now connected by well-planned and metalled roads with Afghan Turkestan on the west, with the Oxus and Bokhara on the north, and with India on the east. The road to India was first made by British and is now maintained by Afghan engineers. The road southwards to Ghazni and Kandahar was always naturally excellent and has probably needed little engineering, but the general principle of road-making in support of a military advance has always been consistently maintained, and the expeditions of Kabul troops to Kafiristan have been supported by a very well graded and substantially constructed road up the Kunar valley from Jalalabad to Asmar, and onwards to the Bashgol valley of Kafiristan. The city ways have been improved until it has become possible for wheeled vehicles to pass, and the various roads connecting the suburbs and the city are efficiently maintained. A purely local railway has also been introduced, to assist in transporting building material. The buildings erected by Abdur Rahman were pretentious, but unmarked by any originality in design and hardly worthy representation of the beauty and dignity of Mahommedan architecture. They included a new palace and a durbar hall, a bridge across the river and embankment, a pavilion and garden laid out around the site of Baber's tomb overlooking the Chardeh valley; and many other buildings of public utility connected with stud arrangements, the manufacture of small arms and ammunition, and the requirements of what may be termed a wholesale shop under European direction, besides hospitals, dispensaries, bazaars, &c. The new palace is within an entrenchment just outside the city. It is enclosed in a fine garden, well planted with trees, where the harem serai (or ladies' apartments) occupies a considerable space. The public portion of the buildings comprise an ornamental and lofty pavilion with entrances on each side, and a high-domed octagonal room in the centre, beautifully fitted and appointed, where public receptions take place. The durbar hall, which is a separate building, is 60 yards long by 20 broad, with a painted roof supported by two rows of pillars. But the arrangement of terraced gardens and the lightly constructed pavilion which graces the western slopes of the hills overlooking Chardeh are the most attractive of these innovations. Here, on a summer's day, with the scent of roses pervading the heated air, the cool refreshment of the passing breezes and of splashing fountains may be enjoyed by the officials of the Kabul court, whilst they look across the beauty of the thickly planted plains of Chardeh to the rugged outlines of Paghman and the snows of the Hindu Kush. The artistic taste of the landscape gardening is excellent, and the mountain scenery is not unworthy of Kashmir. It is pleasant to record that the graveyard of those officers who fell in the Kabul campaign of 1879-1880, which lies at the northern end of the Bemaru ridge, is not uncared for.

Kabul is believed to be the *Ortospanum* or *Ortospana* of the geographies of Alexander's march, a name conjectured to be a corruption of *Urddhasthâna*, "high place." This is the meaning of the name Bala Hissar. But the actual name is perhaps also found as that of a people in this position (Ptolemy's *Kabolitae*), if not in the name of a city apparently identical with Ortospana, *Carura*, in some copies read *Cabura*. It was invaded by the Arabs as early as the thirty-fifth year of the Hegira, but it was long before the Mahommedans effected any lasting settlement. In the early Mahommedan histories and geographies we find (according to a favourite Arabic love of jingle) *Kâbul* and *Zâbul* constantly associated. Zâbul appears to have been the country about Ghazni. Kabul first became a capital when Baber made himself master of it in 1504, and here he reigned for fifteen years before his invasion of Hindustan. In modern times it became a capital again, under Timur Shah (see AFGHANISTAN), and so has continued both to the end of the Durani dynasty, and under the Barakzais, who now reign. It was occupied by Sir John Keane in 1839, General Pollock in 1842, and again by Sir Frederick, afterwards Lord Roberts, in 1879.

Kabul is also the name of the province including the city so called. It may be considered to embrace the whole of the plains called Koh Daman and Beghram, &c., to the Hindu Kush northward, with the Kohistan or hill country adjoining. Eastward it extends to the border of Jalalabad at Jagdalak; southward it includes the Logar district, and extends to the border of Ghazni; north-westward it includes the Paghman hills, and the valley of the upper Kabul river, and so to the Koh-i-Baba. Roughly it embraces a territory of about 100 m. square, chiefly mountainous. Wheat and barley are the staple products of the arable tracts. Artificial grasses are also much cultivated, and fruits largely, especially in the Koh Daman. A considerable part of the population spends the summer in tents. The villages are not enclosed by fortifications, but contain small private castles or fortalices.

See C. Yate, *Northern Afghanistan* (1888); J. A. Gray, *At the Court of the Amir* (1895); Sir T. H. H. Holdich, *The Indian Borderland* (1901).

(T. H. H.*)

KABUL RIVER,

a river of Afghanistan, 300 m. in length. The Kabul (ancient *Kophes*), which is the most important (although not the largest) river in Afghanistan, rises at the foot of the Unai pass leading over the Sanglakh range, an offshoot of the Hindu Kush towards Bamian and Afghan Turkestan. Its basin forms the province of Kabul, which includes all northern Afghanistan between the Hindu Kush and the Safed Koh ranges. From its source to the city of Kabul the course of the river is only 45 m., and this part of it is often exhausted in summer for purposes of irrigation. Half a mile east of Kabul it is joined by the Logar, a much larger river, which rises beyond Ghazni among the slopes of the Gul Koh (14,200 ft.), and drains the rich and picturesque valleys of Logar and Wardak. Below the confluence the Kabul becomes a rapid stream with a great volume of water and gradually absorbs the whole drainage of the Hindu Kush. About 40 m. below Kabul the Panjshir river joins it; 15 m. farther the Tagao; 20 m. from the Tagao junction the united streams of Alingar and Alishang (rivers of Kafiristan); and 20 m. below that, at Balabagh, the Surkhab from the Safed Koh. Two or three miles below Jalalabad it is joined by the Kunar, the river of Chitral. Thenceforward it passes by deep gorges through the Mohmand hills, curving northward until it emerges into the Peshawar plain at Michni. Soon afterwards it receives the Swat river from the north and the Bara river from the south, and after a further course of 40 m. falls into the Indus at Attock. From Jalalabad downwards the river is navigable by boats or rafts of inflated skins, and is considerably used for purposes of commerce.

KABYLES,

or KABAIL, a confederation of tribes in Algeria, Tunisia, and a few oases of the Sahara, who form a branch of the great Berber race. Their name is the Arabic *gabīlat* (pl.: *gabāil*), and was at first indiscriminately applied by the Arabs to all Berber peoples. The part of Algeria which they inhabit is usually regarded as consisting of two divisions—Great Kabylia and Lesser Kabylia, the former being also known as the Kabylia of the Jurjura (also called Adrar Budfel, "Mountain of Snow"). Physically many Kabyles do not present much contrast to the Arabs of Algeria. Both Kabyle and Arab are white at birth, but rapidly grow brown through exposure to air and sunshine. Both have in general brown eyes and wavy hair of coarse quality, varying from dark brown to jet black. In stature there is perhaps a little difference in favour of the Kabyle, and

he appears also to be of heavier build and more muscular. Both are clearly long-headed. Some, however, of the purer type of Kabyles in Kabylia proper have fair skins, ruddy complexions and blue or grey eyes. In fact there are two distinct types of Kabyles: those which by much admixture have approximated to Arab and negroid types, and those which preserve Libyan features. Active, energetic and enterprising, the Kabyle is to be found far from home—as a soldier in the French army, as a workman in the towns, as a field labourer, or as a pedlar or trader earning the means of purchasing his bit of ground in his native village. The Kabyles are Mahommedans of the Sunnite branch and the Malikite rite, looking to Morocco as the nearer centre of their religion. Some of the Kabyles retain their vernacular speech, while others have more or less completely adopted Arabic. The best known of the Kabyle dialects is the Zouave[1] or Igaouaouen, those speaking it having been settled on the northern side of the Jurjura at least from the time of Ibn Khaldun; it is the principal basis of Hanoteau's *Essai de grammaire kabyle* (Paris, 1858). Unlike their southern brethren, the Kabyles have no alphabet, and their literature is still in the stage of oral transmission, for the most part by professional reciters. Hanoteau's *Poésies populaires de la Kabylie du Jurjura* (Paris, 1867) gives the text and translation of a considerable number of historical pieces, proverbial couplets and quatrains, dancing songs, &c.

Consult General L. L. C. Faidherbe and Dr Paul Topinard, *Instructions sur l'anthropologie de l'Algérie* (Paris, 1874); Melchior Joseph Eugène Daumas, *Le Sahara algérien* (Paris, 1845) and *Mœurs et coutumes de l'Algérie* (1857); De Slane's translation of Ibn Khaldun's *Hist. des Berbères* (Algiers, 1852); Aucapitaine, *Les Kabyles et la colonie de l'Algérie* (Paris, 1864) and *Les Beni M'zab* (1868); L.J.A.C. Hanoteau and A. Letourneux, *La Kabylie et les coutumes kabyles* (Paris, 1893); Charmetant, in *Jahrbücher der Verbreitung des Glaubens* (1874); Masqueray, *Formation des cités ... de l'Algérie* (1886); Dugas, *La Kabylie et le peuple kabyle* (Paris, 1878); Récoux, *La Démographie de l'Algérie* (Paris, 1880); J. Liorel, *Races berbères: les Kabyles* (Paris, 1893); MacIver and Wilkin, *Libyan Notes* (1901).

1 From the enlistment of Kabyles speaking the Zouave dialect the Zouave regiments of the French army came to be so called.

KACH GANDAVA, or KACHHI (Kach, Kej, Kiz), a low-lying flat region in Baluchistan separating the Bugti hills from those of Kalat. It is driven, like a wedge, into the frontier mountain system and extends for 150 m. from Jacobabad to Sibi, with nearly as great a breadth at its base on the Sind frontier. Area, 5310 sq. m.; pop. (1901), 82,909. The Mula pass, which connects it with the Kalat highlands, was once (when the ancient city of Kandabel was the capital of Gandava) a much trodden trade highway, and is still a practicable route though no longer a popular one. The soil is fertile wherever it can be irrigated by the floods brought down from the surrounding hills; but much of the central portion is sandy waste. It is traversed by the North-Western railway. The climate is unhealthy in summer, when pestilential hot winds are sometimes destructive to life. The annual rainfall averages only 3 in. Kachhi, though subject to the khan of Kalat, is administered under the tribal system. There are no schools, dispensaries or gaols.

See *Baluchistan District Gazetteer*, vol. vi. (Bombay, 1907).

KACHIN HILLS, a mountainous tract in Upper Burma, inhabited by the Kachin or Chingpaw, who are known on the Assam frontier as Singphos. Owing to the great number of tribes, sub-tribes and clans of the Kachins, the part of the Kachin hills which has been taken under administration in the Myitkyina and Bhamo districts was divided into 40 Kachin hill tracts (recently reduced to five). Beyond these tracts there are many Kachins in Katha, Möng Mit and the northern Shan States. The country within the Kachin hill tracts is roughly estimated at 19,177 sq. m., and consists of a series of ranges, for the most part running north and south, and intersected by valleys, all leading towards the Irrawaddy, which drains the country. There were 64,405 Kachins enumerated at the census of 1901. Philological investigations show that it is probable that the progenitors of the Kachins or Chingpaw were the Indo-Chinese race who, before the beginnings of history, but after the Môn-Annam wave had covered Indo-China, forsook

their home in western China to pour over the region where Tibet, Assam, Burma and China converge, and that the Chingpaw are the residue left round the headquarters of the Irrawaddy and the Chindwin after those branches, destined to become the Tibetans, the Nagas, the Burmans and the Kuki Chins, had gone westwards and southwards. In the middle of the 19th century the southern limit of the Kachins was 200 m. farther north than it is now. Since then the race has been drifting steadily southward and eastward, a vast aggregate of small independent clans united by no common government, but all obeying a common impulse to move outwards from their original seats along the line of least resistance. Now the Kachins are on both sides of the border of Upper Burma, and are a force to be reckoned with by frontier administrators. According to the Kachin Hill Tribes Regulation of 1895, administrative responsibility is accepted by the British government on the left bank of the Irrawaddy for the country south of the Nmaikha, and on the right bank for the country south of a line drawn from the confluence of the Malikha and Nmaikha through the northern limit of the Laban district and including the jade mines. The tribes north of this line were told that if they abstained from raiding to the south of it they would not be interfered with. South of that line peace was to be enforced and a small tribute exacted, with a minimum of interference in their private affairs. On the British side of the border the chief objects have been the disarmament of the tribes and the construction of frontier and internal roads. A light tribute is exacted.

The Kachins have been the object of many police operations and two regular expeditions: (1) Expedition of 1892-93. Bhamo was occupied by the British on the 28th of December 1885, and almost immediately trouble began. Constant punitive measures were carried on by the military police; but in December 1892 a police column proceeding to establish a post at Sima was heavily attacked, and simultaneously the town of Myitkyina was raided by Kachins. A force of 1200 troops was sent to put down the rising. The enemy received their final blow at Palap, but not before three officers were killed, three wounded, and 102 sepoys and followers killed and wounded. (2) Expedition of 1895-96. The continued misconduct of the Sana Kachins from beyond the administrative border rendered punitive measures necessary. They had remained unpunished since the attack on Myitkyina in December 1892. Two columns were sent up, one of 250 rifles from Myitkyina, the other of 200 rifles from Mogaung, marching in December 1895. The resistance was insignificant, and the operations were completely successful. A strong force of military police is stationed at Myitkyina, with several outposts in the Kachin hills, and the country is never wholly free from crimes of violence committed by the Kachins.

KADUR, a district of Mysore state, in southern India, with an area of 2813 sq. m. Pop. (1901), 362,752, showing an increase of 9% in the decade. The larger portion of the district consists of the Malnad or hill country, which contains some of the wildest mountain scenery in southern India. The western frontier is formed by the chain of the Ghats, of which the highest peaks are the Kudremukh (6215 ft.) and the Meniti Gudda (5451 ft.). The centre is occupied by the horse-shoe range of the Baba Budans, containing the loftiest mountain in Mysore, Mulaingiri (6317 ft.). The Maidan or plain country lying beneath the amphitheatre formed by the Baba Budan hills is a most fertile region, well watered, and with the famous “black cotton soil.” The principal rivers are the Tunga and Bhadra, which rise near each other in the Ghats, and unite to form the Tungabhadra, a tributary of the Kistna. The eastern region is watered by the Vedavati. At the point where this river leaves the Baba Budan hills it is embanked to form two extensive tanks which irrigate the lower valley. From all the rivers water is drawn off into irrigation channels by means of anicuts or weirs. The chief natural wealth of Kadur is in its forests, which contain inexhaustible supplies of the finest timber, especially teak, and also furnish shelter for the coffee plantations. Iron is found and smelted at the foot of the hills, and corundum exists in certain localities. Wild beasts and game are numerous, and fish are abundant.

The largest town is Tarikere (pop. 10,164); the headquarters are at Chikmagalur (9515): The staple crop is rice, chiefly grown on the hill slopes, where the natural rainfall is sufficient, or in the river valley, where the fields can be irrigated. Coffee cultivation is said to have been introduced by a Mahommedan saint, Baba Budan, more than two centuries ago; but it first attracted European capital in 1840. The district is served by the Southern Mahratta railway.

KAEMPFER, ENGELBRECHT (1651-1716), German traveller and physician, was born on the 16th of November 1651 at Lemgo in Lippe-Detmold, Westphalia, where his father was a pastor. He studied at Hameln, Lüneburg, Hamburg, Lübeck and Danzig, and after graduating Ph.D. at Cracow, spent four years at Königsberg in Prussia, studying medicine and natural science. In 1681 he visited Upsala in Sweden, where he was offered inducements to settle; but his desire for foreign travel led him to become secretary to the embassy which Charles XI. sent through Russia to Persia in 1683. He reached Persia by way of Moscow, Kazan and Astrakhan, landing at Nizabad in Daghestan after a voyage in the Caspian; from Shemakha in Shirvan he made an expedition to the Baku peninsula, being perhaps the first modern scientist to visit these fields of "eternal fire." In 1684 he arrived in Isfahan, then the Persian capital. When after a stay of more than a year the Swedish embassy prepared to return, Kaempfer joined the fleet of the Dutch East India Company in the Persian Gulf as chief surgeon, and in spite of fever caught at Bander Abbasi he found opportunity to see something of Arabia and of many of the western coast-lands of India. In September 1689 he reached Batavia; spent the following winter in studying Javanese natural history; and in May 1690 set out for Japan as physician to the embassy sent yearly to that country by the Dutch. The ship in which he sailed touched at Siam, whose capital he visited; and in September 1690 he arrived at Nagasaki, the only Japanese port then open to foreigners. Kaempfer stayed two years in Japan, during which he twice visited Tōkyō. His adroitness, insinuating manners and medical skill overcame the habitual jealousy and reticence of the natives, and enabled him to elicit much valuable information. In November 1692 he left Japan for Java and Europe, and in October 1693 he landed at Amsterdam. Receiving the degree of M.D. at Leiden, he settled down in his native city, becoming also physician to the count of Lippe. He died at Lemgo on the 2nd of November 1716.

The only work Kaempfer lived to publish was *Amoenitatum exoticarum politico-physico-medicarum fasciculi* V. (Lemgo, 1712), a selection from his papers giving results of his invaluable observations in Georgia, Persia and Japan. At his death the unpublished manuscripts were purchased by Sir Hans Sloane, and conveyed to England. Among them was a *History of Japan*, translated from the manuscript into English by J. G. Scheuchzer and published at London, in 2 vols., in 1727. The original German has never been published, the extant German version being taken from the English. Besides Japanese history, this book contains a description of the political, social and physical state of the country in the 17th century. For upwards of a hundred years it remained the chief source of information for the general reader, and is still not wholly obsolete. A life of the author is prefixed to the *History*.

KAFFA, a country of N.E. Africa, part of the Abyssinian empire. Kaffa proper (formerly known also as Gomara) has an area of little more than 5000 sq. m., but the name is used in a general sense to include the neighbouring territories of Gimirra, Jimma, Ennarea, &c. In this larger acceptation Kaffa extends roughly from 6° to 9° N. and from 35° to 37½° E. It forms the S.W. part of the great Abyssinian plateau and consists of broken table-land deeply scored by mountain torrents and densely wooded. The general elevation is about 8000 ft., while several peaks are over 10,000 ft. From the western slopes of the plateau descend headstreams of the Sobat. The principal river however is the Omo, the chief feeder of Lake Rudolf. Kaffa proper is believed to be the native home of the coffee plant (whence the name), which grows in profusion on the mountain sides. The principal town was Bonga, 7½° N., 36° 12′ E., a great trading centre, but the Abyssinian headquarters are at Anderacha, about 12 m. S.S.W. of Bonga. Jiren, the capital of Jimma, 60 m. N.E. of Bonga, is a still more important town, its weekly market being attended by some 20,000 persons.

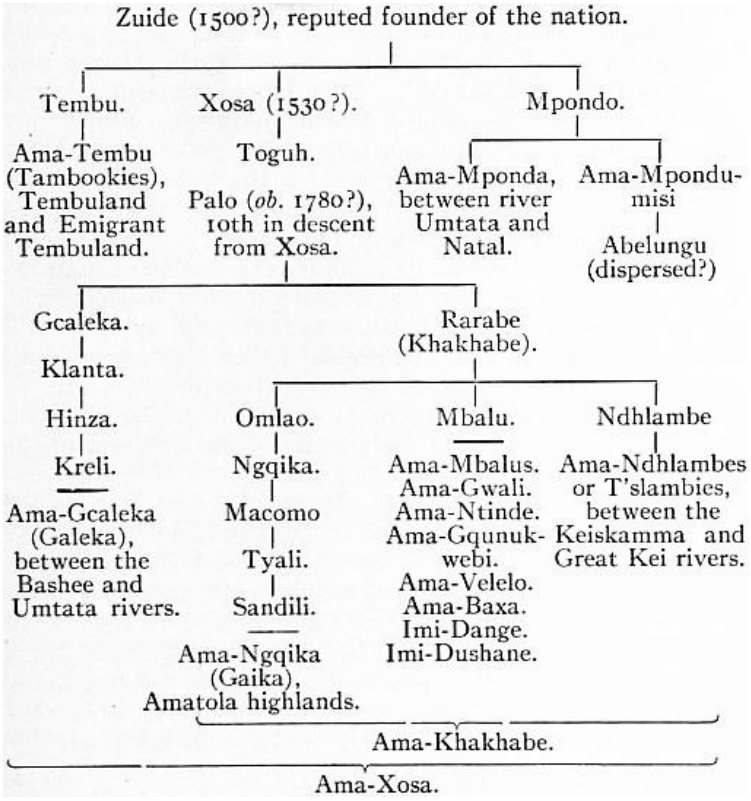
A great variety of races inhabit these countries of southern Ethiopia. The Kaficho (people of Kaffa proper) are said to be of the same stock as the northern Abyssinians and to have been separated from the rest of the country by the Mahommedan invasion of the 16th century. Thus Jimma, immediately north of Kaffa proper, is peopled by Mahommedan Gallas. The Kaficho, though much mixed with Galla blood, retained their Christianity and a knowledge of Geez, the ecclesiastical tongue of Abyssinia. The ordinary language of the Kaficho has no outward resemblance to modern Abyssinian. Their speech was, however, stated by Dr C. T. Beke (*c.* 1850) to be cognate with the Gonga tongue, spoken in a portion of Damot, on the northern side of the Abai. Kaffa, after having been ruled by independent sovereigns, who were also suzerains of the neighbouring states, was about 1895 conquered by the Abyssinians. The first European explorer of Kaffa was Antoine de'Abbadie, who visited it in 1843. Not until the early years of the 20th century was the country accurately mapped.

KAFFIR BREAD, in botany, the popular name for a species of *Encephalartos* (*E. caffra*), one of the cycads, a native of South Africa, so called from the farinaceous food-stuff which is found at the apex of the stem (Gr. ἐν, in, κεφαλή, head, and ἄρτος, bread). It is a tree reaching nearly 20 ft. in height, with very stiff, spreading pinnate leaves 3 to 4 ft. long and recurving at the tip. The species of *Encephalartos*, which are natives of tropical and South Africa, form handsome greenhouse and conservatory plants; some species are effectively used in subtropical gardening in the summer months.

KAFFIRS (Arabic *Kafir*, an unbeliever), a name given by the Arabs to the native races of the east coast of Africa. The term was current along the east coast at the arrival of the Portuguese, and passed from them to the Dutch and English, and to the natives themselves under the form of *Kafula*. There are no general or collective national names for these peoples, and the various tribal divisions are mostly designated by historical or legendary chiefs, founders of dynasties or hereditary chieftaincies. The term has no real ethnological value, for the Kaffirs have no national unity. To-day it is used to describe that large family of Bantu negroes inhabiting the greater part of the Cape, the whole of Natal and Zululand, and the Portuguese dominions on the east coast south of the Zambezi. The name is also loosely applied to any negro inhabitant of South Africa. For example, the Bechuana of the Transvaal and Orange Free State are usually called Kaffirs.

The Kaffirs are divisible into two great branches: the Ama-Zulu with the Ama-Swazi and Ama-Tonga and the Kaffirs proper, represented by the Ama-Xosa, the Tembu (*q.v.*) and the Pondo (*q.v.*). Hence the compound term Zulu-Kaffir applied in a collective sense to all the Kaffir peoples. Intermediate between these two branches were several broken tribes now collectively known as Ama-Fengu, *i.e.* “wanderers” or “needy” people, from *fenguza*, to seek service[1] (see FINGO).

> The ramifications of the Kaffirs proper cannot be understood without reference to the national genealogies, most of the tribal names, as already stated, being those of real or reputed founders of dynasties. Thus the term Ama-Xosa means simply the “people of Xosa,” a somewhat mythical chief supposed to have flourished about the year 1530. Ninth in descent from his son Toguh was Palo, who died about 1780, leaving two sons, Gcaleka and Rarabe (pronounced Kha-Kha-bē), from whom came the Ama-Gcaleka, Ama-Dhlambe (T’slambies) and the Ama-Ngquika (Gaika or Sandili’s people). The Pondo do not descend from Xosa, but probably from an elder brother, while the Tembu, though apparently representing a younger branch, are regarded by all the Kaffir tribes as the royal race. Hence the Gcaleka chief, who is the head of all the Ama-Xosa tribes, always takes his first or “great wife” from the Tembu royal family, and her issue alone have any claim to the succession. The subjoined genealogical tree will place Kaffir relations in a clearer light:—



It will be seen that, as representing the elder branch, the Gcaleka stand apart from the rest of Xosa's descendants, whom they group collectively as Ama-Rarabe (Ama-Khakhabe), and whose genealogies, except in the case of the Gaikas and T'slambies, are very confused. The Ama-Xosa country lies mainly between the Keiskama and Umtata rivers.

The Zulu call themselves Abantu ba-Kwa-Zulu, *i.e.* "people of Zulu's land," or briefly Bakwa-Zulu, from a legendary chief Zulu, founder of the royal dynasty. They were originally an obscure tribe occupying the basin of the Umfolosi river, but rose suddenly to power under Chaka,[2] who had been brought up among the neighbouring and powerful Umtetwas, and who succeeded the chiefs of that tribe and of his own in the beginning of the 19th century. But the true mother tribe seems to have been the extinct Ama-Ntombela, whence the Ama-Tefulu, the U'ndwande, U'mlelas, U'mtetwas and many others, all absorbed or claiming to be true Zulus. But they are only so by political subjection, and the gradual adoption of the Zulu dress, usages and speech. Hence in most cases the term Zulu implies political rather than blood relationship. This remark applies also to the followers of Mosilikatze (properly Umsilikazi), who, after a fierce struggle with the Bechuana, founded about 1820 a second Zulu state about the head waters of the Orange river. In 1837 most of them were driven northwards by the Boers and are now known as Matabele.

The origin of the Zulu-Kaffir race has given rise to much controversy. It is obvious that they are not the aborigines of their present domain, whence in comparatively recent times—since the beginning of the 16th century—they have displaced the Hottentots and Bushmen of fundamentally distinct stock. They themselves are conscious of their foreign origin. Yet they are closely allied in speech (see Bantu Languages) and physique to the surrounding Basuto, Bechuana and other members of the great South African Negroid family. Hence their appearance in the south-east corner of the continent is sufficiently explained by the gradual onward movement of the populations pressing southward on the Hottentot and Bushman domain. The specific differences in speech and appearance by which they are distinguished from the other branches of the family must in the same way be explained by the altered conditions of their new habitat. Hence it is that the farther they have penetrated southwards the farther have they become differentiated from the pure Negro type. Thus the light and clear brown complexion prevalent amongst the southern Tembu becomes gradually darker as we proceed northwards, passing at last to the blue-black and sepia of the Ama-Swazi and Tekeza. Even many of the mixed Fingo tribes are of a polished ebony colour, like that of the Jolofs and other Senegambian negroes. The Kaffir hair is uniformly of a woolly texture. The head is dolichocephalic, but it is also high or long vertically,[3] and it is in this feature of hypsistenocephaly (height and length combined) that the Kaffir presents the most striking contrast with the pure Negro. But, the nose being generally rather broad[4] and the lips thick, the Kaffir face, though somewhat oval, is never regular in the European sense, the deviations being normally in the direction of the Negro, with which race the peculiar odour of the skin again connects the Kaffirs. In stature they rank next to the Patagonians, Polynesians and West Africans, averaging from 5 ft. 9 in. to 5 ft. 11 in., and even 6

ft.[5] They are slim, well-proportioned and muscular. Owing to the hard life they lead, the women are generally inferior in appearance to the men, except amongst the Zulu, and especially the Tembu. Hence in the matrimonial market, while the Ama-Xosa girl realizes no more than ten or twelve head of cattle, the Tembu belle fetches as many as forty, and if especially fine even eighty.

The more warlike tribes were usually arrayed in leopard or ox skins, of late years generally replaced by European blankets, with feather head-dresses, coral and metal ornaments, bead armlets and necklaces. The Makua and a few others practise tattooing, and the Ama-Xosa are fond of painting or smearing their bodies with red ochre. Their arms consist chiefly of ox-hide shields 4 to 6 ft. long, the kerrie or club, and the assegai, of which there are two kinds, one long, with 9-in. narrow blade, for throwing, the other short, with broad blade 12 to 18 in. long, for stabbing. The dwellings are simple conical huts grouped in kraals or villages. Although cattle form their chief wealth, and hunting and stock-breeding their main pursuits, many have turned to husbandry. The Zulu raise regular crops of “mealies” (maize), and the Pondo cultivate a species of millet, tobacco, water melons, yams and other vegetables. Milk (never taken fresh), millet and maize form the staples of food, and meat is seldom eaten except in time of war.

A young Kaffir attains man’s estate socially, not at puberty, but upon his marriage. Polygyny is the rule and each wife is regarded as adding dignity to the household. Marriage is by purchase, the price being paid in cattle. Upon the husband’s death family life is continued under the headship of the eldest son of the house, the widows by virtue of levirate becoming the property of the uncle or nearest males, not sons. A son inherits and honourably liquidates, if he can, his father’s debts.

Mentally the Kaffirs are superior to the Negro. In their social and political relations they display great tact and intelligence; they are remarkably brave, warlike and hospitable, and were honest and truthful until through contact with the whites they became suspicious, revengeful and thievish, besides acquiring most European vices. Of religion as ordinarily understood they have very little, and have certainly never developed any mythologies or dogmatic systems. It is more than doubtful whether they had originally formed any notion of a Supreme Being. Some conception, however, of a future state is implied by a strongly developed worship of ancestry, and by a belief in spirits and ghosts to whom sacrifices are made. There are no idols or priests, but belief in witchcraft formerly gave the “witch-doctor” or medicine-man overwhelming power.[6] Circumcision and polygyny are universal; the former is sometimes attributed to Mahommedan influences, but has really prevailed almost everywhere in East Africa from the remotest time.

Dearer than anything else to the Kaffir are his cattle; and many ceremonial observances in connexion with them were once the rule. Formerly ox-racing was a common sport, the oxen running, riderless, over a ten-mile course. The owner of a champion racing ox was a popular hero, and these racers were valued at hundreds of head of cattle. Cattle are the currency of the Kaffirs in their wild state. Ten to twenty head are the price of a wife. When a girl marries, her father (if well off) presents her with a cow from his herd. This animal is called *ubulungu* or “doer of good” and is regarded as sacred. It must never be killed nor may its descendants, as long as it lives. A hair of its tail is tied round the neck of each child immediately after birth. In large kraals there is the “dancing-ox,” usually of red colour. Its horns are trained to peculiar shapes by early mutilations. It figures in many ceremonies when it is paid a kind of knee-worship.

The Kaffirs have three, not four, seasons: “Green Heads,” “Kindness” and “Cutting”; the first and last referring to the crops, the second to the “warm weather.” Women and children only eat after the men are satisfied. A light beer made from sorghum is the national drink.

Of the few industries the chief are copper and iron smelting, practised by the Tembu, Zulu and Swazi, who manufacture weapons, spoons and agricultural implements both for their own use and for trade. The Swazi display some taste in wood-carving, and others prepare a peculiar water-tight vessel of grass. Characteristic of this race is their neglect of the art of navigation. Not the smallest boats are ever made for crossing the rivers, much less for venturing on the sea, except by the Makazana of Delagoa Bay and by the Zambezi people, who have canoes and flat-bottomed boats made of planks.

The Kaffir race had a distinct and apparently very old political system, which may be described as a patriarchal monarchy limited by a powerful aristocracy. Under British rule the tribal independence of the Kaffirs has disappeared. Varying degrees of autonomy have been granted, but the supreme powers of the chiefs have gone, the Swazi being in 1904 the last to be brought to order. In the Transkeian Territories tribal organization exists, but it is modified by special legislation and the natives are under the control of special magistrates. To a considerable extent in Natal and throughout Zululand the Kaffirs are placed in reserves, where tribal organization is kept up under European supervision. In Basutoland the tribal organization is very strong, and the power of chiefs is upheld by the imperial government, which exercises general supervision.

See Gustav Fritsch, *Die Eingeborenen Südafrikas*, with atlas, 30 plates and 120 typical heads (Breslau, 1872); W. H. I. Bleek, *Comparative Grammar of the South African Languages* (London and Cape Town, pt. i., 1862; pt. ii., 1869); Theo. Hahn, *Grundzüge einer Grammatik des Herero* (Berlin, 1857); Dr Colenso, *Grammar of the Zulu-Kafir Language* (1855); Girard de Rialle, *Les Peuples de l’Afrique et de l’Amérique* (Paris, 1880); G. W. Stow, *The Native Races of South Africa*

(London, 1905); G. McC. Theal, *History and Ethnography of South Africa, 1505 to 1795* (3 vols., London, 1907-1910) and *History of South Africa since 1795* (5 vols., London, 1908), specially valuable for the political history of the Kaffirs; Caesar C. Henkel, *The Native or Transkeian Territories* (Hamburg, 1903); *The Natives of South Africa* (1901), and its sequel, *The South African Natives* (1908); Dudley Kidd, *The Essential Kafir* (1904) and *Kafir Socialism*. The last four books deal with the many social and economic questions raised by the contact of the Kaffir races with Europeans.

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1 The Ama-Fengu are regarded both by the Zulu and Ama-Xosa as slaves or out-castes, without any right to the privileges of true-born Kaffirs. Any tribes which become broken and mixed would probably be regarded as Ama-Fengu by the other Kaffirs. Hence the multiplicity of clans, such as the Ama-Bele, Aba-Sembotweni Ama-Zizi, Ama-Kuze, Aba-Sekunene, Ama-Ntokaze, Ama-Tetyeni Aba-Shwawa, &c., all of whom are collectively grouped as Ama-Fengu.

2 Seventh in descent from Zulu, through Kumede, Makeba, Punga, Ndaba, Yama and Tezengakona or Senzangakona (Bleek, *Zulu Legends*).

3 P. Topinard, *Anthropology* (1878), p. 274.

4 This feature varies considerably, “in the T’slambie tribes being broader and more of the Negro shape than in the Gaika or Gcaleka, while among the Ama-Tembu and Ama-Mpondo it assumes more of the European character. In many of them the perfect Grecian and Roman noses are discernible” (Fleming’s *Kaffraria*, p. 92).

5 Gustav Fritsch gives the mean of the Ama-Xosa as 1.718 metres, less than that of the Guinea Negro (1.724), but more than the English (1.708) and Scotch (1.710).

6 Since the early years of the 19th century Protestant and Roman Catholic missions have gained hundreds of thousands of converts among the Kaffirs. Purely native Christian churches have also been organized.

KAFFRARIA, the descriptive name given to the S.E. part of the Cape province, South Africa. Kaffraria, *i.e.* the land of the Kaffirs (*q.v.*), is no longer an official designation. It used to comprise the districts now known as King William’s Town and East London, which formed British Kaffraria, annexed to Cape Colony in 1865, and the territory beyond the Kei River south of the Drakensberg Mountains as far as the Natal frontier, known as Kaffraria proper. As a geographical term it is still used to indicate the Transkeian territories of the Cape provinces comprising the four administrative divisions of Transkei, Pondoland, Tembuland and Griqualand East, incorporated into Cape Colony at various periods between 1879 and 1894. They have a total area of 18,310 sq. m., and a population (1904) of 834,644, of whom 16,777 were whites. Excluding Pondoland—not counted previously to 1904—the population had increased from 487,364 in 1891 to 631,887 in 1904.

Physical Features.—The physical characteristics of Kaffraria bear a general resemblance to those of the Cape province proper. The country rises from sea-level in a series of terraces to the rugged range of the Drakensberg. Between that range and the coast-lands are many subsidiary ranges with fertile valleys through which a large number of rivers make their way to the Indian Ocean. These rivers have very rapid falls in comparison to their length and when less than 40 m. from the coast are still 2000 ft. above sea-level. The chief, beginning at the south, are the Kei, the Bashee, the Umtata, the St John’s or Umzimvubu, and the Umtamvuna, which separates Kaffraria from Natal. The St John’s River rises in the Drakensberg near the Basuto-Natal frontier. The river valley has a length of 140 m., the river with its many twists being double that length. It receives numerous tributaries, one, the Tsitza, possessing a magnificent waterfall, the river leaping over an almost vertical precipice of 375 ft. The St John’s reaches the sea between precipitous cliffs some 1200 ft. high and covered with verdure. The mouth is obstructed by a sand bar over which there is 14 ft. of water. None of the rivers of Kaffraria except the St John’s is navigable.

Kaffraria is one of the most fertile regions in South Africa. The mountain gorges abound in fine trees, thick forest and bush cover the river banks, grass grows luxuriantly in the lower regions, and the lowlands and valleys are favourable to almost any kind of fruit, field and garden cultivation. The coast districts are very hot in summer, the temperature from October to April on an average varying from 70° to 90° F., while in winter the day temperature is seldom below 50°, though the nights are very cold. But the variation in altitude places climates of all grades within easy reach, from the burning coast to the often snow-clad mountain. Thunderstorms are frequent in summer; the winters are generally dry. On the whole the climate is extremely healthy. At St John’s are sulphur springs.

A considerable area is devoted to the raising of wheat and other cereals, especially in the

northern district (Griqualand East), where in the higher valleys are many farms owned by Europeans. Large quantities of stock are raised. Most of the land is held by the natives under tribal tenure, and the ease with which their wants are supplied is detrimental to the full cultivation of the land. Kaffraria is, however, one of the chief recruiting grounds for labour throughout South Africa. Most of the white inhabitants are engaged in trade.

Towns and Communication.—The chief town is Kokstad (*q.v.*), pop. (1904), 2903, the capital of Griqualand East. Umtata (2100 ft. above the sea, pop. 2342) on the river of the same name, capital of Tembuland, is the residence of an assistant chief magistrate, headquarters of a division of the Cape Mounted Rifles, and seat of the Anglican bishopric of Kaffraria. The principal buildings are the cathedral, a Gothic structure, built 1901-1906, and the town-hall, a fine building in Renaissance style, erected 1907-1908. Port St John is the chief town in Pondoland, and the only harbour of the country. Butterworth is the chief town in Transkei. Cala (pop. about 1000), in the N.W. part of Tembuland, is the educational centre of Kaffraria. A railway, 107 m. long, the first link in the direct Cape-Natal line, runs from Indwe, 65 m. from Sterkstroom Junction on the main line from East London to the Transvaal, to Maclear, an agricultural centre in Griqualand East. Another railway parallel but south of that described also traverses Kaffraria. Starting from Amabele, a station on the main line from East London to the north, it goes via Butterworth (132 m. from East London) to Umtata (234 m.).

Administration and Justice.—The Cape administrative and judicial system is in force, save as modified by special enactments of the Cape parliament. A “Native Territories Penal Code” which came into operation on the 1st of January 1887 governs the relations of the natives, who are under the jurisdiction of a chief magistrate (resident at Cape Town) with subordinate magistrates in the Territories. In civil affairs the tribal organization and native laws are maintained. No chief, however, exercises criminal jurisdiction. Since 1898 certain provisions of the Glen Grey Act have been applied to Kaffraria (see Glen Grey). The revenue is included in the ordinary budget of the Cape province. The expenditure on Kaffraria considerably exceeds the revenue derived from it. The franchise laws are the same as in the Cape proper. Though the Kaffirs outnumber the whites by fifty to one, white men form the bulk of the electorate, which in 1904 numbered 4778.

Religion.—Numbers of Protestant missionary societies have churches and educational establishments in Kaffraria, but, except in Fingoland, the bulk of the Kaffirs are heathen. The Griquas profess Christianity and have their own churches and ministers. The Anglican diocese of St John’s, Kaffraria, was founded in 1873.

Annexation to the Cape.—The story of the conflicts between the Kaffir tribes and the Cape colonists is told under Cape Colony. As early as 1819 Kaffirland, or Kaffraria, was held not to extend west beyond the Keiskamma River. The region east of that river as far as the Kei River became in 1847 the Crown colony of British Kaffraria, and was annexed to Cape Colony in 1865. The Transkeian territories remained in nominal independence until 1875, when the Tembu sought British protection. An inter-tribal war in 1877 between Fingo and Gcaleka resulted in the territory of the Gcaleka chief Kreli being occupied by the British. It was not, however, till 1879 that Fingoland and the Idutywa Reserve, together with the district then commonly called Noman’s-land, were proclaimed an integral part of the Cape. About this time most of the rest of Kaffraria came under British control, but it was 1885 before Gcalekaland, the coast region of Transkei, and the various districts comprising Tembuland—Bomvanaland on the coast, Tembuland Proper and Emigrant Tembuland—were annexed to the colony. By the annexation, the frontier of the colony was carried to the Umtata River, so that by 1885 only Pondoland, fronting on the Indian Ocean, separated the Cape from Natal. In Pondoland, Port St John, proclaimed British territory in 1881, was, along with the lower reaches of the St John’s River, incorporated with Cape Colony in 1884; in 1886 the Xesibe country (Mount Ayliff) was annexed to the Cape and added to Griqualand East; and in the following year Rhode Valley was included within the boundary line. The rest of Pondoland, chiefly in virtue of a British protectorate established over all the coast region in 1885, was already more or less under British control, and in 1894 it was annexed to the Cape in its entirety. Thus the whole of Kaffraria was incorporated in Cape Colony, with the exception of some 1550 sq. m., then part of Noman’s-land, annexed by Natal in 1866 and named Alfred county. To the wise administration of Major Sir Henry G. Elliot, who served in Kaffraria in various official capacities from 1877 to 1903, the country owes much of its prosperity.

Particulars concerning each of the four divisions of Kaffraria follow.

Griqualand East (area, 7594 sq. m.), so called to distinguish it from Griqualand West, a district north of the Orange River, lies between Basutoland (N.W.), Natal (N.E.), Tembuland (S.W.) and Pondoland (S.E.). It occupies the southern slopes of the Drakensberg or the fertile valleys at their feet. It includes most of the region formerly called Noman’s-land, and afterwards named Adam Kok’s Land from the Griqua chief who occupied it in 1862 with the consent of the British authorities, and governed the country till his death in 1876, establishing a *volksraad* on the Dutch model. The Griquas are still ruled by an officially appointed headman. The majority of the inhabitants are Basutos and Kaffirs (Pondomisi, Ama-Baka and other tribes). The Griquas number about 6000. Since its annexation to Cape Colony Griqualand East has made fairly rapid progress.

The population rose from 121,000 in 1881 to 222,685 in 1904, of whom 5901 were whites. Stock-breeding on the uplands, tillage on the lower slopes of the Drakensberg, are the chief industries. On these slopes and uplands the climate is delightful and well suited to Europeans. There is considerable trade with Basutoland in grain and stock, and through Kokstad with Port St John and Port Shepstone, Natal. Much of the best agricultural land is owned by Europeans.

Tembuland (area, 4122 sq. m.), which lies S.W. of Griqualand East and comprises the districts of Tembuland Proper, Emigrant Tembuland and Bomvanaland, takes its name from, the Tembu nation, called sometimes Tambookies, one of the most powerful of the Kaffir groups. In the national genealogies the Tembu hold an honourable position, being traditionally descended from Tembu, elder brother of Xosa, from whom most of the other Kaffirs claim descent. The inhabitants increased from about 160,000 in 1881 to 231,472 in 1904, of whom 8056 were whites. The chief town is Umtata.

Transkei (area, 2552 sq. m.) comprises the districts of Fingoland, the Idutywa Reserve and Gcalekaland, this last being named from the Gcaleka nation, who claim to be the senior branch of the Xosa family, the principal royal line of the Kaffir tribes. They still form the chief element of the population, which rose from 136,000 in 1881 to 177,730 in 1904 (1707 whites). Here are some prosperous missionary stations, where the natives are taught agriculture, mechanical industries and a knowledge of letters. The heroic deeds of Hinza, Kreli and other chiefs famous in the wars are still remembered; but witchcraft, rain-making and other pagan practices seem to have died out. Even more advanced in all social respects are the Fingo, who give their name to the district of Fingoland, and also form the bulk of the population in the Idutywa Reserve. They wear European clothes, support their schools by voluntary contributions, edit newspapers, translate English poetry, set their national songs to correct music, and the majority profess Christianity. The industrial institution of Blythswood, about 20 m. N.W. of Butterworth, is a branch of Lovedale (*q.v.*), and is largely supported by the Fingo.

Pondoland (area, 4040 sq. m.; pop. (1904), 202,757 (including 1113 whites), an estimated increase of 36,000 since 1891) is bounded E. by the sea, N. by Natal, W. by Griqualand East, by S. and Tembuland. In Pondoland the primitive organization of the natives has been little altered and the influence of the chiefs is very great. Land is held almost wholly in tribal tenure, though a number of whites possess farms acquired before the annexation of the country. The Pondo have shown some appreciation of the benefits of education.

See G. McCall Theal's *History of South Africa* and other works cited under CAPE COLONY; also *The Native or Transkeian Territories*, by C. C. Henkel (Hamburg, 1903), a useful handbook by an ex-official in the Transkeian Territories.

KAFIRISTAN, a province of Afghanistan. Very little of this country was known with accuracy and nothing at first hand until General Sir W. (then Colonel) Lockhart headed a mission to examine the passes of the Hindu Kush range in 1885-1886. He penetrated into the upper part of the Bashgal valley, but after a few days he found himself compelled to return to Chitral. Previously Major Tanner, R.A., had sought to enter Kafiristan from Jalalabad, but sudden severe illness cut short his enterprise. M'Nair, the famous explorer of the Indian Survey department, believed that he had actually visited this little-known land during an adventurous journey which he made from India and through Chitral in disguise; but the internal evidence of his reports shows that he mistook the Kalash district of Chitral, with its debased and idolatrous population, for the true Kafiristan of his hopes. In 1889 Mr G. S. Robertson (afterwards Sir George Robertson, K.C.S.I.) was sent on a mission to Kafiristan. He only remained a few days, but a year later he revisited the country, staying amongst the Kafirs for nearly a year. Although his movements were hampered, his presence in the country being regarded with suspicion, he was able to study the people, and, in spite of intertribal jealousy, to meet members of many of the tribes. The facts observed and the information collected by him during his sojourn in eastern Kafiristan, and during short expeditions to the inner valleys, are the most trustworthy foundations of our knowledge of this interesting country.

Kafiristan, which literally means "the land of the infidel," is the name given to a tract of country enclosed between Chitral and Afghan territory. It was formerly peopled by pagan mountaineers, who maintained a wild independence until 1895, when they were finally subdued by Abdur Rahman, the amir of Kabul, who also compelled them to accept the religion of Islam. The territory thus ill named is included between 34° 30′ and 36° N., and from about 70° to 71° 30′ E. As the western and northern boundaries are imperfectly known, its size cannot be estimated with any certainty. Its greatest extent is from east to west at 35° 10′ N.; its greatest breadth is probably about 71° E. The total area approximates to 5000 sq. m. Along the N. the boundary is

the province of Badakshan, on the N.E. the Lutkho valley of Chitral. Chitral and lower Chitral enclose it to the E., and the Kunar valley on the S.E. Afghanistan proper supplies the S. limit. The ranges above the Nijrao and Pansher valleys of Afghanistan wall it in upon the W. The northern frontier is split by the narrow Minjan valley of Badakshan, which seems to rise in the very heart of Kafiristan.

Speaking generally, the country consists of an irregular series of main valleys, for the most part deep, narrow and tortuous, into which a varying number of still deeper, narrower and more twisted valleys, ravines and glens pour their torrent water. The mountain ranges of Metamorphic rock, which separate the main drainage valleys, are all of considerable altitude, rugged and difficult, with the outline of a choppy sea petrified. During the winter months, when the snow lies deep, Kafiristan becomes a number of isolated communities, with few if any means of intercommunication. In the whole land there is probably nothing in the shape of a plain. Much of the silent, gigantic country warms the heart as well as captivates the eye with its grandeur and varied beauty; much of it is the bare skeleton of the world wasted by countless centuries of storms and frost, and profoundly melancholy in its sempiternal ruin. Every variety of mountain scenery can be found: silent peaks and hard, naked ridges, snowfields and glaciers; mighty pine forests, wooded slopes and grazing grounds; or wild vine and pomegranate thickets bordering sparkling streams. At low elevations the hill-sides are covered with the wild olive and evergreen oaks. Many kinds of fruit trees—walnuts, mulberries, apricots and apples—grow near the villages or by the wayside, as well as splendid horse-chestnuts and other shade trees. Higher in elevation, and from 4000 to 8000 ft., are the dense pine and cedar forests. Above this altitude the slopes become dreary, the juniper, cedar and wild rhubarb gradually giving place to scanty willow patches, tamarisk and stunted birches. Over 13,000 ft. there are merely mosses and rough grass. Familiar wildflowers blossom at different heights. The rivers teem with fish. Immense numbers of red-legged partridges live in the lower valleys, as well as pigeons and doves. Gorgeously plumaged pheasants are plentiful. Of wild animals the chief are the *markhor* (a goat) and the *oorial* (a sheep). In the winter the former are recklessly slaughtered by hunters, being either brought to bay by trained hounds, or trapped in pits, or caught floundering in the snow-drifts; but in the summer immense herds move on the higher slopes. The *ibex* is very rare. Bears and leopards are fairly common, as well as the smaller hill creatures.

Passes and Roads.

All the northern passes leading into Badakshan or into the Minjan valley of Badakshan seem to be over 15,000 ft. in altitude. Of these the chief are the Mandal, the Kamah (these two alone have been explored by a European traveller), the Kti, the Kulam and the Ramgal passes. Those to the east, the Chitral passes, are somewhat lower, ranging from 12,000 to 14,000 ft., *e.g.* the Zidig, the Shui, the Shawal and the Parpit, while the Patkun, which crosses one of the dwindled spurs near the Kunar river, is only 8400 ft. high. Between neighbouring valleys the very numerous communicating footways must rarely be lower than 10,000, while they sometimes exceed 14,000 ft. The western passes are unknown. All these toilsome paths are so faintly indicated, even when free from snow, that to adventure them without a local guide is usually unsafe. Yet the light-framed cattle of these jagged mountains can be forced over many of the worst passes. Ordinarily the herding tracks, near the crest of the ridges and high above the white torrents, are scarcely discoverable to untutored eyes. They wind and waver, rise, drop and twist about the irregular semi-precipitous slopes with baffling eccentricity and abruptness. Nevertheless the cattle nose their way along blunderingly, but without hurt. Of no less importance in the open months, and the sole trade routes during winter, are the lower paths by the river. An unguided traveller is continually at fault upon these main lines of intercourse and traffic.

Rivers.

All the rivers find their tumultuous way into the Kabul, either directly, as the Alingar at Laghman, or after commingling with the Kunar at Arundu and at Chigar-Serai. The Bashgal, draining the eastern portion of the country, empties itself into the Kunar at Arundu. It draws its highest waters from three main sources at the head of the Bashgal valley. It glides gently through a lake close to this origin, and then through a smaller tarn. The first affluent of importance is the Skorigal, which joins it above the village of Pshui. Next comes the noisier Manangal water, from the Shawal pass, which enters the main stream at Lutdeh or Bragamatal, the chief settlement of the Bashgal branch of the Katir tribe. By-and-by the main stream becomes, at the hamlet of Sunra, a raging, shrieking torrent in a dark narrow valley, its run obstructed by giant boulders and great tree-trunks. Racing past Bagalgrom, the chief village of the Madugal Kafirs, the river clamours round the great spur which, 1800 ft. higher up, gives space for the terraces and houses of Kamdesh, the headquarters of the Kam people. The next important affluent is the river which drains the Pittigal valley, its passes and branches. Also on the left bank, and still lower down, is the joining-place of the Gourdesh valley waters. Finally it ends in the Kunar just above Arundu and Birkot. The middle part of Kafiristan, including the valleys occupied by the Presun, Kti, Ashkun and Wai tribes, is drained by a river variously called the Pech, the Kamah, and the Presun or Viron River. It has been only partially explored. Fed by the fountains and snows of the upper Presun valley, it is joined at the village of Shtevgrom by the torrent from the Kamah pass. Thence it moves quietly past meadowland, formerly set apart as holy ground, watering on its way all the Presun villages. Below the last of them, with an abrupt bend, it hurries into the unexplored and rockbound Tsaru country, where it absorbs on the right hand the Kti and the Ashkun and on the left the Wai rivers,

finally losing itself in the Kunar, close to Chigar-Serai. Concerning the Alingar or Kao, which carries the drainage of western Kafiristan into the Kabul at Laghman, there are no trustworthy details. It is formed from the waters of all the valleys inhabited by the Ramgal Kafirs, and by that small branch of the Katirs known as the Kalam tribe.

Climate.

The climate varies with the altitude, but in the summer-time it is hot at all elevations. In the higher valleys the winter is rigorous. Snow falls heavily everywhere over 4000 ft. above the sea-level. During the winter of 1890-1891 at Kamdesh (elevation 6100 ft.) the thermometer never fell below 17° F. In many of the valleys the absence of wind is remarkable. Consequently a great deal of cold can be borne without discomfort. The Kunar valley, which is wet and windy in winter, but where snow, if it falls, melts quickly, gives a much greater sensation of cold than the still Kafiristan valleys of much lower actual temperature. A deficiency of rain necessitates the employment of a somewhat elaborate system of irrigation, which in its turn is dependent upon the snowfall.

The Kafirs.

The present inhabitants are probably mainly descended from the broken tribes of eastern Afghanistan, who, refusing to accept Islam (in the 10th century), were driven away by the fervid swordsmen of Mahomet. Descending upon the feeble inhabitants of the trackless slopes and perilous valleys of modern Kafiristan, themselves, most likely, refugees of an earlier date, they subjugated and enslaved them and partially amalgamated with them. These ancient peoples seem to be represented by the Presun tribe, by the slaves and by fragments of lost peoples, now known as the Jazhis and the Aroms. The old division of the tribes into the Siah-Posh, or the black-robed Kafirs, and the Safed-Posh, or the white-robed, was neither scientific nor convenient, for while the Siah-Posh have much in common in dress, language, customs and appearance, the Safed-Posh divisions were not more dissimilar from the Siah-Posh than they were from one another. Perhaps the best division at present possible is into (1) Siah-Posh, (2) Waigulis, and (3) Presungalis or Viron folk.

The Siah-Posh.

The black-robed Kafirs consist of one very large, widely spread tribe, the Katirs, and four much smaller communities, the Kam, the Madugalis, the Kashtan or Kashtoz, and the Gourdesh. Numerically, it is probable that the Katirs are more important than all the remaining tribes put together. They inhabit several valleys, each community being independent of the others, but all acknowledging the same origin and a general relationship. The Katirs fall readily into the following groups: (*a*) Those of the Bashgal valley, also called Kamoz and Lutdehchis, who occupy eleven villages between Badawan and Sunra, the border hamlet of the Madugal country, namely, Ptsigrom, Pshui or Pshowar, Apsai, Shidgal, Bragamatal (Lutdeh), Bajindra, Badamuk, Oulagal, Chabu, Baprok and Purstam; (*b*) the Kti or Katwar Kafirs, who live in two settlements in the Kti valley; (*c*) the Kulam people, who have four villages in the valley of the same name; (*d*) the Ramgalis, or Gabariks, who are the most numerous, and possess the western part on the Afghan border. Of the remaining tribes of the Siah-Posh, the chief is the Kam or Kamtoz, who inhabit the Bashgal valley, from the Madugal boundary to the Kunar valley, and its lateral branches in seven chief settlements, namely, Urmir, Kambrom or Kamdesh, Mergrom, Kamu, Sarat, Pittigal and Bazgal. The next Siah-Posh tribe in importance is the Muman or Madugal Kafirs, who have three villages in the short tract between the Katirs and the Kam in the Bashgal valley. The last Siah-Posh tribe is the Kashtan or Kashtoz, who in 1891 were all located in one greatly overcrowded village, their outlying settlement having been plundered by the Afghan tribes of the Kunar valley. One colony of Siah-Posh Kafirs lives in the Gourdesh valley; but they differ from all the other tribes, and are believed to be descended, in great part, from the ancient people called the Aroms.

The Waigulis.

Our exact knowledge of the Waigulis is scanty. They seem to be related in language and origin with a people fierce, shy and isolated, called the Ashkun, who are quite unknown. The Wai speak a tongue altogether different from that spoken by the Siah-Posh and by the Presungalis. The names of their ten chief villages are Runchi, Nishi, Jamma, Amzhi, Chimion, Kegili, Akun or Akum, Mildesh, Bargal and Prainta. Of these Amzhi and Nishi are the best known.

The Presungalis.

The Presungalis, also called Viron, live in a high valley. In all respects they differ from other Kafirs, in none more than in their unwarlike disposition. Simple, timid, stolid-featured and rather clumsy, they are remarkable for their industry and powers of endurance. They probably represent some of the earliest immigrants. Six large well-built villages are occupied by them—Shtevgrom, Pontzgrom, Diogrom, Kstigigrom, Satsumgrom and Paskigrom.

The Slaves.

The slaves are fairly numerous. Their origin is probably partly from the very ancient inhabitants and partly from war prisoners. Coarse in feature and dark in tint, they cannot be distinguished from the lowest class of freemen, while their dress is indistinctive. They are of two classes—household slaves, who are treated not unkindly; and artisan slaves, who are the skilled handicraftsmen—carvers, blacksmiths, bootmakers and so forth; many of the musicians are also slaves. They live in a particular portion of a village, and were considered to a certain extent unclean, and might not approach closely to certain sacred spots. All slaves seem to wear the Siah-Posh dress, even when they own as masters the feeble Presungal folk.

Little respect is shown to women, except in particular cases to a few of advanced years. Usually they are mistresses and slaves, saleable chattels and field-workers. Degraded, immoral, overworked and carelessly fed, they are also, as a rule, unpleasant to the sight. Little girls are sometimes quite beautiful, but rough usage and exposure to all weathers soon make their complexions coarse and dark. They are invariably dirty and uncombed. In comparison with the men they are somewhat short. Physically they are capable of enormous labour, and are very enduring. All the field-work falls to them, as well as all kinds of inferior occupations, such as load-carrying. They have no rights as against their husbands or, failing them, their male relations. They cannot inherit or possess property.

Women.

There are certainly three tongues spoken, besides many dialects, that used by the Siah-Posh being of course the most common; and although it has many dialects, the employers of one seem to understand all the others. It is a Prakritic language. Of the remaining two, the Wai and the Presun have no similarity; they are also unlike the Siah-Posh. Kafirs themselves maintain that very young children from any valley can acquire the Wai speech, but that only those born in the Presungal can ever converse in that language, even roughly. To European ears it is disconcertingly difficult, and it is perhaps impossible to learn.

Language.

Before their conquest by Abdur Rahman all the Kafirs were idolaters of a rather low type. There were lingering traces of ancestor-worship, and perhaps of fire-worship also. The gods were numerous; tribal, family, household deities had to be propitiated, and mischievous spirits and fairies haunted forests, rivers, vales and great stones. Imra was the Creator, and all the other supernatural powers were subordinate to him. Of the inferior gods, Moni seemed to be the most ancient; but Gísh, the war-god, was by far the most popular. It was his worship, doubtless, which kept the Kafirs so long independent. In life as a hero, and after death as a god, he symbolized hatred to the religion of Mahomet. Every village revered his shrine; some possessed two. Imra, Gísh and Moni were honoured with separate little temples, as was usually Dizáni goddess; but three or four of the others would share one between them, each looking out of a small separate square window. The worshipped object was either a large fragment of stone or an image of wood conventionally carved, with round white stones for eyes. Different animals were sacrificed at different shrines: cows to Imra, male goats and bulls to Gísh, sheep to the god of wealth; but goats were generally acceptable, and were also slain ceremonially to discover a complaisant god, to solemnize a vow, to end a quarrel, to ratify brotherhood. The ministers of religion were a hereditary priest, a well-born chanter of praise, and a buffoon of low station, who was supposed to become inspired at each sacrifice, and to have the power of seeing fairies and other spirits whenever they were near, also of understanding their wishes. The blood of the offering, together with flour, wine and butter, was cast on the shrine after the animal and the other gifts had been sanctified with water sprinkled by the officiating priests, while he cried “Súch, súch!” (“Be pure!”). Dense clouds of smoke from burning juniper-cedar, which crackled and gave forth pungent incense, added to the spectacle, which was dignified by the bearing of the officials and solemnized by the devout responses of the congregation. There was no human sacrifice except when a prisoner of war, after a solemn service at a shrine, was taken away and stabbed before the wooden tomb of some unavenged headman. Kafirs believed in a kind of Hell where wicked people burned; but the Hereafter was an underground region entered by a guarded aperture, and inhabited by the shapes which men see in dreams. Suicide was as unknown as fear of dying. Melancholy afflicted only the sick and the bereaved. Religious traditions, miracles and anecdotes were puerile, and pointed no social lesson or any religious law. Music, dancing and songs of praise were acceptable to the gods, and every village (*grom*) had its dancing platform and dancing house (*grom ma*), furnished with a simple altar. No prayers were offered, only invocations, exhortative or remonstrant.

Religion.

The great majority of the tribes were made up of clans. A person’s importance was derived chiefly from the wealth of his family and the number of male adults which it contained. The power of a family, as shown by the number and quality of its fighting men as well as by the strength of its followers, was the index of that family’s influence. Weak clans and detached families, or poor but free households, carried their independence modestly. The lowest clan above the slaves sought service with their wealthier tribesmen as henchmen and armed shepherds. By intricate ceremonial, associated with complicated duties, social and religious, which extended over two years, punctuated at intervals by prodigious compulsory banquets, rich men could become elders or *jast*. Still further outlay and ostentation enabled the few who could sustain the cost to rank still higher as chief or *Mír*. Theoretically, all the important and outside affairs of the tribe were managed by the *jast* in council; actually they were controlled by two or three of the most respected of that class. Very serious questions which inflamed the minds of the people would be debated in informal parliaments of the whole tribe. Kafirs have a remarkable fondness for discussing in conclave. Orators, consequently, are influential. The internal business of a tribe was managed by an elected magistrate with twelve assistants. It was their duty to see that the customs of the people were respected; that the proper seasons for gathering fruit were rigidly observed. They regulated the irrigation of the fields, moderating the incessant quarrels which originated in the competition for the water; and they kept the channels in good repair. Their chief, helped by contributions in kind from all householders, entertained tribal guests. He also saw that the weekly Kafir Sabbath, from

Tribal Organization.

the sowing to the carrying of the crops, was carefully observed, the fires kept burning, and the dancers collected and encouraged. Opposition to these annual magistrates or infraction of tribal laws was punished by fines, which were the perquisites and the payment of those officials. Serious offences against the whole people were judged by the community itself; the sentences ranged as high as expulsion from the settlement, accompanied with the burning of the culprit's house and the spoliation of his goods. In such cases, the family and the clan refusing to intervene, the offender at once became cowed into submission.

Houses and Villages.

Habitations are generally strong, and built largely of wood. They are frequently two or more storeys high, often with an open gallery at the top. Wealthy owners were fond of elaborate carving in simple designs and devices. A room is square, with a smoke-hole when possible; small windows, with shutters and bolts, and heavy doors fastened by a sliding wooden pin, are common. The nature of the ground, its defensible character, the necessity of not encroaching upon the scanty arable land, and such considerations, determine the design of the villages. Specimens of many varieties may be discovered. There is the shockingly overcrowded oblong kind, fort-shaped, three storeys high, and on a river's bank, which is pierced by an underground way leading to the water. Here all rooms look on to the large central courtyard; outwards are few or no windows. There is also the tiny hamlet of a few piled-up hovels perched on the flattish top of some huge rock, inaccessible when the ladder connecting it with the neighbouring hill-side or leading to the ground is withdrawn. Some villages on mounds are defended at the base by a circular wall strengthened with an entanglement of branches. Others cling to the knife-edged back of some difficult spur. Many are hidden away up side ravines. A few boldly rely upon the numbers of their fighting men, and are unprotected save by watch-towers. While frequently very picturesque at a distance, all are dirty and grimed with smoke; bones and horns of slaughtered animals litter the ground. The ground floor of a house is usually a winter stable for cows and the latrine, as well as the manure store for the household; the middle part contains the family treasures; on the top is the living-place. In cold valleys, such as the Presungal, the houses are often clustered upon a hillock, and penetrate into the soil to the depth of two or more apartments. Notched poles are the universal ladders and stairways.

Characteristics.

In height Kafirs average about 5 ft. 6 in. They are lean; always in hard condition; active jumpers, untiring walkers, expert mountaineers; exceptionally they are tall and heavy. With chests fairly deep, and muscular, springy legs, there is some lightness and want of power about the shoulder muscles, the arms and the hand-grasp. In complexion they are purely Eastern. Some tribes, notably the Wai, are fairer than others, but the average colour is that of the natives of the Punjab. Albinos, or red-haired people, number less than ½% of the population. As a rule, the features are well-shaped, especially the nose. The glance is wild and bold, with the wide-lidded, restless gaze of the hawk; or the exact converse—a shifty, furtive peer under lowered brows. This look is rather common amongst the wealthier families and the most famous tribesmen. The shape of a man's head not uncommonly indicates his social rank. Several have the brows of thinkers and men of affairs. The degraded forms are the bird-of-prey type—low, hairy foreheads, hooked noses with receding chin, or the thickened, coarse features of the darker slave class. Intellectually they are of good average power. Their moral characteristics are passionate covetousness, and jealousy so intense that it smothers prudence. Before finally destroying, it constantly endangered their wildly cherished independence. Revenge, especially on neighbouring Kafirs, is obtained at any price. Kafirs are subtle, crafty, quick in danger and resolute, as might be expected of people who have been plunderers and assassins for centuries, whose lives were the forfeit of a fault in unflinchingness or of a moment's vacillation. Stealthy daring, born of wary and healthy nerves and the training of generations, almost transformed into an instinct, is the national characteristic. Ghastly shadows, they flitted in the precincts of hostile villages far distant from their own valleys, living upon the poorest food carried in a fetid goatskin bag; ever ready to stab in the darkness or to wriggle through apertures, to slay as they slept men, women and babies. Then, with clothing for prize, and human ears as a trophy, they sped, watchful as hares, for their far-away hills, avenger Pathans racing furiously in their track. Kafirs, most faithful to one another, never abandoned a comrade. If he were killed, they sought to carry away his head for funeral observances. As traders, though cunning enough, they are no match for the Afghan. They were more successful as brigands and blackmailers than as skilled thieves. In night robbery and in pilfering they showed little ingenuity. Truth was considered innately dangerous; but a Kafir is far more trustworthy than his Mahommedan neighbours. Although hospitality is generally viewed as a hopeful investment, it can be calculated on, and is unstinted. Kafirs are capable of strong friendship. They are not cruel, being kind to children and to animals, and protective to the weak and the old. Family ties and the claim of blood even triumph over jealousy and covetousness.

Dress, Weapons, Utensils, &c.

The national attire of the men is a badly-cured goatskin, confined at the waist by a leather belt studded with nails, supporting the I-hilted dagger, strong but clumsy, of slave manufacture, sheathed in wood covered with iron or brass, and often prettily ornamented. Women are dressed in a long, very dark tunic of wool, ample below the shoulders, and edged with red. This is fastened at the bosom by an iron pin, a thorn, or a fibula; it is gathered round the body by a woven band, an inch wide, knotted in front to dangle down in tassels. On this girdle is carried a

fantastically handled knife in a leather covering. The woman's tunic is sometimes worn by men. As worn by women its shape is something between a long frock-coat and an Inverness cape. Its hue and the blackness of the hairy goatskin give the name of Siah-Posh, "black-robed," to the majority of the clans. The other tribes wear such articles of cotton attire as they can obtain by barter, by theft, or by killing beyond the border, for only woollen cloth is made in the country. Of late years long robes from Chitral and Badakshan have been imported by the wealthy, as well as the material for loose cotton trousers and wide shirts. Clothing, always hard to obtain, is precious property. Formerly little girls, the children of slaves, or else poor relations, used to be sold in exchange for clothes and ammunition. Mahommedans eagerly bought the children, which enabled them in one transaction to acquire a female slave and to convert an infidel. Men go bareheaded, which wrinkles them prematurely, or they wear Chitral caps. Certain priests, and others of like degree, wind a strip of cotton cloth round their brows. Siah-Posh women wear curious horned caps or a small square white head-dress upon informal occasions. Females of other tribes bind their heads with turbans ornamented with shells and other finery. Excellent snow gaiters are made of goat's hair for both sexes, and of woollen material for women. Boots, strongly sewn, of soft red leather cannot be used in the snow or when it is wet, because they are imperfectly tanned. For the ceremonial dances all manner of gay-coloured articles of attire, made of cheap silk, cotton velvet, and sham cloth-of-gold, are displayed, and false jewelry and tawdry ornaments; but they are not manufactured in the country, but brought from Peshawar by pedlars. Woollen blankets and goat's-hair mats cover the bedsteads—four-legged wooden frames laced across with string or leather thongs. Low square stools, 18 in. broad, made upon the same principle as the bedsteads, are peculiar to the Kafirs and their half-breed neighbours of the border. Iron tripod tables, singularly Greek in design, are fashioned in Waigul. A warrior's weapons are a matchlock (rarely a flintlock), a bow and arrows, a spear and the dagger which he never puts aside day or night. The axes, often carried, are light and weak, and chiefly indicate rank. Clubs, carefully ornamented by carving, are of little use in a quarrel; their purpose is that of a walking-stick. As they are somewhat long, these walking-clubs have been often supposed to be leaping-poles. Swords are rarely seen, and shields, carried purely for ostentation, seldom. Soft stone is quarried to make large utensils, and great grim chests of wood become grain boxes or coffins indifferently. Prettily carved bowls with handles, or with dummy spouts, hold milk, butter, water or small quantities of flour. Wine, grain, everything else, is stored or carried in goatskin bags. Musical instruments are represented by reed flageolets, small drums, primitive fiddles, and a kind of harp.

Isolated and at the outskirts of every village is a house used by women when menstruating and for lying-in. Children are named as soon as born. The infant is given to the mother to suckle, while a wise woman rapidly recites the family ancestral names; the name pronounced at the instant the baby begins to feed is that by which it is thereafter known. Everybody has a double name, the father's being prefixed to that given at birth. Very often the two are the same. There is a special day for the first head-shaving. No hair is allowed on a male's scalp, except from a 4-in. circle at the back of the head, whence long locks hang down straight. Puberty is attained ceremoniously by boys. Girls simply change a fillet for a cotton cap when nature proclaims womanhood. Marriage is merely the purchase of a wife through intermediaries, accompanied by feasting. Divorce is often merely a sale or the sending away of a wife to slave for her parents in shame. Sexual morality is low. Public opinion applauds gallantry, and looks upon adultery as hospitality, provided it is not discovered by the husband. If found out, *in flagrante delicto*, there is a fiscal fine in cows. There is much collusion to get this penalty paid in poor households. Funeral rites are most elaborate, according to the rank and warrior fame of the deceased, if a male, and to the wealth and standing of the family, if a woman. Children are simply carried to the cemetery in a blanket, followed by a string of women lamenting. A really great man is mourned over for days with orations, dancing, wine-drinking and food distribution. Gun-firing gives notice of the procession. After two or three days the corpse is placed in the coffin at a secluded spot, and the observances are continued with a straw figure lashed upon a bed, to be danced about, lamented over, and harangued as before. During regular intervals for business and refreshment old women wail genealogies. A year later, with somewhat similar ritual, a wooden statue is inaugurated preliminary to erection on the roadside or in the village Valhalla. The dead are not buried, but deposited in great boxes collected in an assigned place. Finery is placed with the body, as well as vessels holding water and food. Several corpses may be heaped in one receptacle, which is, rarely, ornamented with flags; its lid is kept from warping by heavy stones. The wooden statues or effigies are at times sacrificed to when there is sickness, and at one of the many annual festivals food is set before them. Among the Presungal there are none of these images. Blood-feuds within a tribe do not exist. The slayer of his fellow, even by accident, has to pay a heavy compensation or else become an outcast. Several hamlets and at least one village are peopled by families who had thus been driven forth from the community. The stigma attaches itself to children and their marriage connexions. Its outward symbol is an inability to look in the face any of the dead person's family. This avoidance is ceremonial. In private and after dark all may be good friends after a decorous interval. The compensation is seldom paid, although payment carries with it much enhancement of family dignity. All the laws to punish theft, assault, adultery and other injury are based on a system of compensation whenever possible, and of enlisting the whole of the community in all acts of punishment. Kafirs have true conceptions of justice. There is no death penalty; a fighting male is too valuable a property of the whole tribe to be so wasted. War begins honourably with

Peculiar Customs.

proper notice, as a rule, but the murder of an unsuspecting traveller may be the first intimation. Bullets or arrow-heads sent to a tribe or village is the correct announcement of hostilities. The slaying of a tribesman need not in all cases cause a war. Sometimes it may be avoided by the sinning tribe handing over a male to be killed by the injured relations. Ambush, early morning attacks by large numbers, and stealthy killing parties of two or three are the favourite tactics. Peace is made by the sacrifice of cows handed over by the weaker tribe to be offered up to a special god of the stronger. When both sides have shown equal force and address, the same number of animals are exchanged. Field-work falls exclusively to the women. It is poor. The ploughs are light and very shallow. A woman, who only looks as if she were yoked with the ox, keeps the beast in the furrows, while a second holds the handle. All the operations of agriculture are done primitively. Grazing and dairy-farming are the real trade of the Kafirs, the surplus produce being exchanged on the frontier or sold for Kabul rupees. Herders watch their charges fully armed against marauders.

History.—The history of Kafiristan has always been of the floating legendary sort. At the present day there are men living in Chitral and on other parts of the Kafiristan frontier who are prepared to testify as eye-witnesses to marvels observed, and also heard, by them, not only in the more remote valleys but even in the Afghan borderland itself. It is not surprising therefore that the earlier records are to a great extent fairy tales of a more or less imaginative kind and chiefly of value to those interested in folk-lore. Sir Henry Yule, a scientific soldier, a profound geographer and a careful student, as the result of his researches thought that the present Kafiristan was part of that pagan country stretching between Kashmir and Kabul which medieval Asiatics referred to vaguely as *Bilaur*, a name to be found in Marco Polo as *Bolor*. The first distinct mention of the Kafirs as a separate people appears in the history of Timur. On his march to the invasion of India the people at Andarab appealed to Timur for help against the Kator and the Siah-Posh Kafirs. He responded and entered the country of those tribes through the upper part of the Panjhir valley. It was in deep winter weather and Timur had to be let down the snows by *glissade* in a basket guided by ropes. A detachment of 10,000 horse which he speaks of as having been sent against the Siah-Posh to his left, presumably therefore to the north, met with disaster; but he himself claims to have been victorious. Nevertheless he seems quickly to have evacuated the impracticable mountain land, quitting the country at Khawak. He caused an inscription to be carved in the defiles of Kator to commemorate his invasion and to explain its route. Inside the Kafir country on the Najil or Alishang River there is a fort still called Timur’s Castle, and in the Kalam fort there is said to be a stone engraved to record that as the farthest point of his advance. In the *Memoirs* of Baber there is mention of the Kafirs raiding into Panjhir and of their taste for drinking, every man having a leathern wine-bottle slung round his neck. The *Ain-i-Akbari* makes occasional mention of the Kafirs, probably on the authority of the famous *Memoirs*; it also contains a passage which may possibly have originated the widespread story that the Kafirs were descendants of the Greeks. Yule however believed that this passage did not refer to the Kafirs at all, but to the claims to descent from Alexander of the rulers in Swat before the time of the Yusufzai. Many of the princelings of the little Hindu-Kush states at the present day pride themselves on a similar origin, maintaining the founders of their race to be Alexander, “the two-horned,” and a princess sent down miraculously from heaven to wed him.

Benedict Goes, travelling from Peshawar to Kabul in 1603, heard of a place called *Capperstam*, where no Mahommedan might enter on pain of death. Hindu traders were allowed to visit the country, but not the temples. Benedict Goes tasted the Kafir wine, and from all that he heard suspected that the Kafirs might be Christians. Nothing more is heard of the Kafirs until 1788, when Rennell’s *Memoir of a Map of Hindostan* was published. Twenty-six years later Elphinstone’s *Caubal* was published. During the British occupation of Kabul in 1839-1840 a deputation of Kafirs journeyed there to invite a visit to their country from the Christians whom they assumed to be their kindred. But the Afghans grew furiously jealous, and the deputation was sent coldly away.

After Sir George Robertson’s sojourn in the country and the visit of several Kafirs to India with him in 1892 an increasing intimacy continued, especially with the people of the eastern valleys, until 1895, when by the terms of an agreement entered into between the government of India and the ruler of Afghanistan the whole of the Kafir territory came nominally under the sway of Kabul. The amir Abdur Rahman at once set about enforcing his authority, and the curtain, partially lifted, fell again heavily and in darkness. Nothing but rumours reached the outside world, rumours of successful invasions, of the wholesale deportation of boys to Kabul for instruction in the religion of Islam, of rebellions, of terrible repressions. Finally even rumour ceased. A powerful Asiatic ruler has the means of ensuring a silence which is absolute, and nothing is ever known from Kabul except what the amir wishes to be known. Probably larger numbers of the growing boys and young men of Kafiristan are fatanical Mahommedans, fanatical with the zeal of the recent convert, while the older people and the majority of the population cherish their ancient customs in secret and their degraded religion in fear and trembling—waiting dumbly for a sign.

See Sir G. S. Robertson, *Kafirs of the Hindu-Kush* (London, 1896).

(G. S. R.)

KAGERA, a river of east equatorial Africa, the most remote headstream of the Nile. The sources of its principal upper branch, the Nyavarongo, rise in the hill country immediately east of Lake Kivu. After a course of over 400 m. the Kagera enters Victoria Nyanza on its western shore in 0° 58′ S. It is navigable by steamers for 70 m. from its mouth, being obstructed by rapids above that point. The river was first heard of by J. H. Speke in 1858, and was first seen (by white men) by the same traveller (Jan. 16, 1862) on his journey to discover the Nile source. Speke was well aware that the Kagera was the chief river emptying into the Victoria Nyanza and in that sense *the* headstream of the Nile. By him the stream was called "Kitangŭlé," *kagera* being given as equivalent to "river." The exploration of the Kagera has been largely the work of German travellers.

See NILE; also Speke's *Discovery of the Source of the Nile* (Edinburgh, 1863); R. Kandt's *Caput Nili* (Berlin, 1904); and map by P. Sprigade and M. Moisel in *Grosser deutscher Kolonialatlas*, No. 16 (Berlin, 1906).

KAHLUR, or BILASPUR, a native state of India, within the Punjab. It is one of the hill states that came under British protection after the first Sikh war in 1846. The Gurkhas had overrun the country in the early part of the 19th century, and expelled the raja, who was, however, reinstated by the British in 1815. The state occupies part of the basin of the Sutlej amid the lower slopes of the Himalaya. Area, 448 sq. m. Pop. (1901), 90,873; estimated gross revenue, £10,000; tribute, £530. The chief, whose title is raja, is a Chandel Rajput. The town of Bilaspur is situated on the left bank of the Sutlej, 1465 ft. above sea-level; pop. (1901), 3192.

KAHN, GUSTAVE (1859-), French poet, was born at Metz on the 21st of December 1859. He was educated in Paris at the École des Chartes and the École des langues orientales, and began to contribute to obscure Parisian reviews. After four years spent in Africa he returned to Paris in 1885, and founded in 1886 a weekly review, *La Vogue*, in which many of his early poems appeared. In the autumn of the same year he founded, with Jean Moréas and Paul Adam, a short-lived periodical, *Le Symboliste*, in which they preached the nebulous poetic doctrine of Stéphane Mallarmé; and in 1888 he became one of the editors of the *Revue indépendante*. He contributed poetry and criticism to the French and Belgian reviews favourable to the extreme symbolists, and, with Catulle Mendès, he founded at the Odéon, the Théâtre Antoine and the Théâtre Sarah Bernhardt, matinées for the production of the plays of the younger poets. He claimed to be the earliest writer of the *vers libre*, and explained his methods and the history of the movement in a preface to his *Premiers poèmes* (1897). Later books are *Le Livre d'images* (1897); *Les Fleurs de la passion* (1900); some novels; and a valuable contribution to the history of modern French verse in *Symbolistes et décadents* (1902).

KAHNIS, KARL FRIEDRICH AUGUST (1814-1888), German Lutheran theologian, was born at Greiz on the 22nd of December 1814. He studied at Halle, and in 1850 was appointed

professor ordinarius at Leipzig. Ten years later he was made canon of Meissen. He retired in 1886, and died on the 20th of June 1888 at Leipzig. Kahnis was at first a neo-Lutheran, blessed by E. W. Hengstenberg and his pietistic friends. He then attached himself to the Old Lutheran party, interpreting Lutheranism in a broad and liberal spirit and showing some appreciation of rationalism. His *Lutherische Dogmatik, historisch-genetisch dargestellt* (3 vols., 1861-1868; 2nd ed. in 2 vols., 1874-1875), by making concessions to modern criticism, by spiritualizing and adapting the old dogmas, by attacking the idea of an infallible canon of Scripture and the conventional theory of inspiration, by laying stress on the human side of Scripture and insisting on the progressive character of revelation, brought him into conflict with his former friends. A. W. Diekhoff, Franz Delitzsch (*Für und wider Kahnis*, 1863) and Hengstenberg (*Evangelische Kirchenzeitung*, 1862) protested loudly against the heresy, and Kahnis replied to Hengstenberg in a vigorous pamphlet, *Zeugniss für die Grundwahrheiten des Protestantismus gegen Dr Hengstenberg* (1862).

Other works by Kahnis are *Lehre vom Abendmahl* (1851), *Der innere Gang des deutschen Protestantismus seit Mitte des vorigen Jahrhunderts* (1854; 3rd ed. in 2 vols., 1874; Eng. trans., 1856); *Christentum und Luthertum* (1871); *Geschichte der deutschen Reformation*, vol. i. (1872); *Der Gang der Kirche in Lebensbildern* (1881, &c.); and *Über das Verhältnis der alten Philosophie zum Christentum* (1884).

K'AI-FÊNG FU, the capital of the province of Honan, China. It is situated in 34° 52′ N., 114° 33′ E., on a branch line of the Peking-Hankow railway, and forms also the district city of Siang-fu. A city on the present site was first built by Duke Chwang (774-700 B.C.) to mark off (*k'ai*) the boundary of his fief (*fêng*); hence its name. It has, however, passed under several *aliases* in Chinese history. During the Chow, Suy and T'ang dynasties (557-907) it was known as P'ien-chow. During the Wu-tai, or five dynasties (907-960), it was the Tung-king, or eastern capital. Under the Sung and Kin dynasties (960-1260) it was called P'ien-king. By the Yuan or Mongol dynasty (1260-1368) its name was again changed to P'ien-liang, and on the return of the Chinese to power with the establishment of the Ming dynasty (1368-1644), its original name was restored. The city is situated at the point where the last spur of the Kuen-lun mountain system merges in the eastern plain, and a few miles south of the Hwang-ho. Its position, therefore, lays it Open to the destructive influences of this river. In 1642 it was totally destroyed by a flood caused by the dikes bursting, and on several prior and subsequent occasions it has suffered injury from the same cause. The city is large and imposing, with broad streets and handsome buildings, the most notable of which are a twelve-storeyed pagoda 600 ft. high, and a watch tower from which, at a height of 200 ft., the inhabitants are able to observe the approach of the yellow waters of the river in times of flood. The city wall forms a substantial protection and is pierced by five gates. The whole neighbourhood, which is the site of one of the earliest settlements of the Chinese in China, is full of historical associations, and it was in this city that the Jews who entered China in A.D. 1163 first established a colony. For many centuries these people held themselves aloof from the natives, and practised the rites of their religion in a temple built and supported by themselves. At last, however, they fell upon evil times, and in 1851, out of the seventy families which constituted the original colony, only seven remained. For fifty years no rabbi had ministered to the wants of this remnant. In 1853 the city was attacked by the T'ai-p'ing rebels, and, though at the first assault its defenders successfully resisted the enemy, it was subsequently taken. The captors looted and partially destroyed the town. It has now little commerce, but contains several schools on Western lines—including a government college opened in 1902, and a military school near the railway station. A mint was established in 1905, and there is a district branch of the imperial post. The population—largely Mahommedan—was estimated (1908) at 200,000. Jews numbered about 400.

KAILAS, a mountain in Tibet. It is the highest peak of the range of mountains lying to the north of Lake Manasorawar, with an altitude of over 22,000 ft. It is famous in Sanskrit literature as Siva's paradise, and is a favourite place of pilgrimage with Hindus, who regard it as the most sacred spot on earth. A track encircles the base of the mountain, and it takes the pilgrim three

weeks to complete the round, prostrating himself all the way.

KAIN, the name of a sub-province and of a town of Khorasan, Persia. The sub-province extends about 300 m. N. to S., from Khāf to Seīstān, and about 150 m. W. to E., from the hills of Tūn to the Afghan frontier, comprising the whole of south-western Khorasan. It is very hilly, but contains many wide plains and fertile villages at a mean elevation of 4000 ft. It has a population of about 150,000, rears great numbers of camels and produces much grain, saffron, wool, silk and opium. The chief manufactures are felts and other woollen fabrics, principally carpets, which have a world-wide reputation. The best Kaini carpets are made at Darakhsh, a village in the Zīrkūh district and 50 m. N.E. of Birjend. It is divided into eleven administrative divisions:—Shāhābād (with the capital Birjend), Naharjān, Alghur, Tabas sunnī Khaneh, Zīrkūh Shakhan, Kain, Nīmbulūk, Nehbandān, Khūsf, Arab Khāneh or Momenabad.

The town of Kain, the capital of the sub-province until 1740, when it was supplanted by Birjend, is situated 65 m. N. of Birjend on the eastern side of a broad valley, stretching from N. to S., at the base of the mountain Abuzar, in 33° 42′ N. and 59° 8′ E., and at an elevation of 4500 ft. Its population is barely 5000. It is surrounded by a mud wall and bastions, and near it, on a hill rising 500 ft. above the plain, are the ruins of an ancient castle which, together with the old town, was destroyed either by Shah Rukh (1404-1447), a son, or by Baysunkur (d. 1433), a grandson of Timur (Tamerlane), who afterwards built a new town. After a time the Uzbegs took possession and held the town until Shah Abbas I. (1587-1629) expelled them. In the 18th century it fell under the sway of the Afghans and remained a dependency of Herat until 1851. A large number of windmills are at work outside the town. The great mosque, now in a ruinous state, was built A.H. 796 (A.D. 1394) by Kāren b. Jamshid and repaired by Yūsof Dowlatyār.

KAIRA, or KHEDA, a town and district of British India, in the northern division of Bombay. The town is 20 m. S.W. of Ahmedabad and 7 m. from Mehmadabad railway station. Pop. (1901), 10,392. Its antiquity is proved by the evidence of copperplate grants to have been known as early as the 5th century. Early in the 18th century it passed to the Babi family, with whom it remained till 1763, when it was taken by the Mahrattas; it was finally handed over to the British in 1803. It was a large military station till 1830, when the cantonment was removed to Deesa.

The DISTRICT OF KAIRA has an area of 1595 sq. m.; pop. (1901), 716,332, showing a decrease of 18% in the decade, due to the results of famine. Except a small corner of hilly ground near its northern boundary and in the south-east and south, where the land along the Mahi is furrowed into deep ravines, the district forms one unbroken plain, sloping gently towards the south-west. The north and north-east portions are dotted with patches of rich rice-land, broken by untilled tracts of low brushwood. The centre of the district is very fertile and highly cultivated; the luxuriant fields are surrounded by high hedges, and the whole country is clothed with clusters of shapely trees. To the west this belt of rich vegetation passes into a bare though well-cultivated tract of rice-land, growing more barren and open till it reaches the maritime belt, whitened by a salt-like crust, along the Gulf of Cambay. The chief rivers are the Mahi on the south-east and south, and the Sabarmati on the western boundary. The Mahi, owing to its deeply cut bed and sandbanks, is impracticable for either navigation or irrigation; but the waters of the Sabarmati are largely utilized for the latter purpose. A smaller stream, the Khari, also waters a considerable area by means of canals and sluices. The principal crops are cotton, millets, rice and pulse; the industries are calico-printing, dyeing, and the manufacture of soap and glass. The chief centre of trade is Nadiad, on the railway, with a cotton-mill. A special article of export is *ghi*, or clarified butter. The Bombay & Baroda railway runs through the district. The famine of 1899-1900 was felt more severely here than in any other part of the province, the loss of cattle being specially heavy.

KAIRAWAN (KEROUAN), the "sacred" city of Tunisia, 36 m. S. by W. by rail from Susa, and about 80 m. due S. from the capital. Kairawān is built in an open plain a little west of a stream which flows south to the Sidi-el-Hani lake. Of the luxuriant gardens and olive groves mentioned in the early Arabic accounts of the place hardly a remnant is left. Kairawān, in shape an irregular oblong, is surrounded by a crenellated brick wall with towers and bastions and five gates. The city, however, spreads beyond the walls, chiefly to the south and west. Some of the finest treasures of Saracenic art in Tunisia are in Kairawān; but the city suffered greatly from the vulgarization which followed the Turkish conquest, and also from the blundering attempts of the French to restore buildings falling into ruin. The streets have been paved and planted with trees, but the town retains much of its Oriental aspect. The houses are built round a central courtyard, and present nothing but bare walls to the street. The chief buildings are the mosques, which are open to Christians, Kairawān being the only town in Tunisia where this privilege is granted.

In the northern quarter stands the great mosque founded by Sidi Okba ibn Nafi, and containing his shrine and the tombs of many rulers of Tunisia. To the outside it presents a heavy buttressed wall, with little of either grandeur or grace. It consists of three parts: a cloistered court, from which rises the massive and stately minaret, the maksura or mosque proper, and the vestibule. The maksura is a rectangular domed chamber divided by 296 marble and porphyry columns into 17 aisles, each aisle having 8 arches. The central aisle is wider than the others, the columns being arranged by threes. All the columns are Roman or Byzantine, and are the spoil of many ancient cities. Access to the central aisle is gained through a door of sculptured wood known as the Beautiful Gate. It has an inscription with the record of its construction. The walls are of painted plaster-work; the mimbar or pulpit is of carved wood, each panel bearing a different design. The court is surrounded by a double arcade with coupled columns. In all the mosque contains 439 columns, including two of alabaster given by one of the Byzantine emperors. To the Mahommedan mind the crowning distinction of the building is that through divine inspiration the founder was enabled to set it absolutely true to Mecca. The mosque of Sidi Okba is the prototype of many other notable mosques (see MOSQUE). Of greater external beauty than that of Sidi Okba is the mosque of the Three Gates. Cufic inscriptions on the façade record its erection in the 9th and its restoration in the 15th century A.D. Internally the mosque is a single chamber supported by sixteen Roman columns. One of the finest specimens of Moorish architecture in Kairawān is the *zawia* of Sidi Abid-el-Ghariani (d. *c.* A.D. 1400), one of the Almoravides, in whose family is the hereditary governorship of the city. The entrance, a door in a false arcade of black and white marble, leads into a court whose arches support an upper colonnade. The town contains many other notable buildings, but none of such importance as the mosque of the Companion (*i.e.* of the Prophet), outside the walls to the N.W. This mosque is specially sacred as possessing what are said to be three hairs of the Prophet's beard, buried with the saint, who was one of the companions of Mahomet. (This legend gave rise to the report that the tomb contained the remains of Mahomet's barber.) The mosque consists of several courts and chambers, and contains some beautiful stained glass. The court which forms the entrance to the shrine of the saint is richly adorned with tiles and plaster-work, and is surrounded by an arcade of white marble columns, supporting a painted wooden roof. The minaret is faced with tiles and is surmounted by a gilded crescent. The 19th-century mosque of Sidi Amar Abada, also outside the wall, is in the form of a cross and is crowned with seven cupolas. In the suburbs are huge cisterns, attributed to the 9th century, which still supply the city with water. The cemetery covers a large area and has thousands of Cufic and Arabic inscriptions.

Formerly famous for its carpets and its oil of roses, Kairawān is now known in northern Africa rather for copper vessels, articles in morocco leather, potash and saltpetre. The town has a population of about 20,000, including a few hundred Europeans.

Arab historians relate the foundation of Kairawān by Okba with miraculous circumstances (Tabari ii. 63; Yāqūt iv. 213). The date is variously given (see Weil, *Gesch. d. Chalifen*, i. 283 seq.); according to Tabari it must have been before 670. The legend says that Okba determined to found a city which should be a rallying-point for the followers of Mahomet in Africa. He led his companions into the desert, and having exhorted the serpents and wild beasts, in the name of the Prophet, to retire, he struck his spear into the ground exclaiming "Here is your Kairawān" (resting-place), so naming the city.[1] In the 8th century Kairawān was the capital of the province of Ifrikia governed by amirs appointed by the caliphs. Later it became the capital of the Aghlabite princes, thereafter following the fortunes of the successive rulers of the country (see TUNISIA: *History*). After Mecca and Medina Kairawān is the most sacred city in the eyes of the Mahommedans of Africa, and constant pilgrimages are made to its shrines. Until the time of the French occupation no Christian was allowed to pass through the gates without a special permit from the bey, whilst Jews were altogether forbidden to approach the holy city. Contrary to expectation no opposition was offered by the citizens to the occupation of the place by the French troops in 1881. On that occasion the native troops hastened to the mosques to perform their devotions; they were followed by European soldiers, and the mosques having thus been "violated"

have remained open ever since to non-Mahommedans.

See Murray's *Handbook to Algeria and Tunis*, by Sir R. L. Playfair (1895); A. M. Broadley, *The Last Punic War: Tunis Past and Present* (1882) and H. Saladin, *Tunis el Kairouan* (1908).

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1 Though Okba founded his city in a desert place, excavations undertaken in 1908 revealed the existence of Roman ruins, including a temple of Saturn, in the neighbourhood.

KAISERSLAUTERN, a town in the Bavarian palatinate, on the Waldlauter, in the hilly district of Westrich, 41 m. by rail W. of Mannheim. Pop. (1905), 52,306. Among its educational institutions are a gymnasium, a Protestant normal school, a commercial school and an industrial museum. The house of correction occupies the site of Frederick Barbarossa's castle, which was demolished by the French in 1713. Kaiserslautern is one of the most important industrial towns in the palatinate. Its industries include cotton and wool spinning and weaving, iron-founding, and the manufacture of beer, tobacco, gloves, boots, furniture, &c. There is some trade in fruit and in timber.

Kaiserslautern takes its name from the emperor (Kaiser) Frederick I., who built a castle here about 1152, although it appears to have been a royal residence in Carolingian times. It became an imperial city, a dignity which it retained until 1357, when it passed to the palatinate. In 1621 it was taken by the Spanish, in 1631 by the Swedish, in 1635 by the imperial and in 1713 by the French troops. During 1793 and 1794 it was the scene of fighting; and in the Franco-Prussian War of 1870 it was the base of operations of the second German army, under Prince Frederick Charles. It was one of the early stations of the Reformation, and in 1849 was the centre of the revolutionary spirit in the palatinate.

See Lehmann, *Urkundliche Geschichte von Kaiserslautern* (Kaiserslautern, 1853), and E. Jost, *Geschichte der Stadt Kaiserslautern* (Kaiserslautern, 1886).

KAISERSWERTH, a town in the Prussian Rhine province, on the right bank of the Rhine, 6 m. below Düsseldorf. Pop. (1905), 2462. It possesses a Protestant and a large old Romanesque Roman Catholic church of the 12th or 13th century, with a valuable shrine, said to contain the bones of St Suitbert, and has several benevolent institutions, of which the chief is the *Diakonissen Anstalt*, or training-school for Protestant sisters of charity. This institution, founded by Pastor Theodor Fliedner (1800-1864) in 1836, has more than 100 branches, some being in Asia and America; the head establishment at Kaiserswerth includes an orphanage, a lunatic asylum and a Magdalen institution. The Roman Catholic hospital occupies the former Franciscan convent. The population is engaged in silk-weaving and other small industries.

In 710 Pippin of Heristal presented the site of the town to Bishop Suitbert, who built the Benedictine monastery round which the town gradually formed. Until 1214 Kaiserswerth lay on an island, but in that year Count Adolph V. of Berg, who was besieging it, dammed up effectually one arm of the Rhine. About the beginning of the 14th century Kaiserswerth, then an imperial city, came to the archbishopric of Cologne, and afterwards to the duchy of Juliers, whence, after some vicissitudes, it finally passed into the possession of the princes of the palatinate, whose rights, long disputed by the elector of Cologne, were legally settled in 1772. In 1702 the fortress was captured by the Austrians and Prussians, and the Kaiserpfalz, whence the young emperor Henry IV. was abducted by Archbishop Anno of Cologne in 1062, was blown up.

See J. Disselhoff, *Das Diaconissenmutterhaus zu Kaiserswerth* (new ed., 1903; Eng. trans., 1883).

KAITHAL, or KYTHAL, an ancient town of British India in Karnal district, Punjab. Pop. (1901), 14,408. It is said to have been founded by the mythical hero Yudisthira, and is connected by tradition with the monkey-god Hanuman. In 1767 it fell into the hands of the Sikh chieftain, Bhai Desu Singh, whose descendants, the bhais of Kaithal, ranked among the most powerful Cis-Sutlej chiefs. Their territories lapsed to the British in 1843. There remain the fort of the bhais, and several Mahommedan tombs of the 13th century and later. There is some trade in grain, sal-ammoniac, live stock and blankets; and cotton, saltpetre, lac ornaments and toys are manufactured.

KAKAPO, the Maori name, signifying "night parrot," and frequently adopted by English writers, of a bird, commonly called by the British in New Zealand the "ground-parrot" or "owl-parrot." The existence of this singular form was first made known in 1843 by Ernst Dieffenbach (*Travels in N. Zealand*, ii. 194), from some of its tail-feathers obtained by him, and he suggested that it was one of the *Cuculidae*, possibly belonging to the genus *Centropus*, but he added that it was becoming scarce, and that no example had been seen for many years. G. R. Gray, noticing it in June 1845 (*Zool. Voy. "Erebus" and "Terror,"* pt. ix. p. 9), was able to say little more of it, but very soon afterwards a skin was received at the British Museum, of which, in the following September, he published a figure (*Gen. Birds*, pt. xvii.), naming it *Strigops*[1] *habroptilus*, and rightly placing it among the parrots, but he did not describe it technically for another eighteen months (*Proc. Zool. Society*, 1847, p. 61). Many specimens have now been received in Europe, so that it is represented in most museums, and several examples have reached England alive.

In habits the kakapo is almost wholly nocturnal,[2] hiding in holes (which in some instances it seems to make for itself) under the roots of trees or rocks during the day time, and only issuing forth about sunset to seek its food, which is solely vegetable in kind, and consists of the twigs, leaves, seeds and fruits of trees, grass and fern roots—some observers say mosses also. It sometimes climbs trees, but generally remains on the ground, only using its comparatively short wings to balance itself in running or to break its fall when it drops from a tree—though not always then—being apparently incapable of real flight. It thus becomes an easy prey to the marauding creatures—cats, rats and so forth—which European colonists have, by accident or design, let loose in New Zealand. Sir G. Grey says it had been, within the memory of old people, abundant in every part of that country, but (writing in 1854) was then found only in the unsettled districts.

The kakapo is about the size of a raven, of a green or brownish-green colour, thickly freckled and irregularly barred with dark brown, and dashed here and there with longitudinal stripes of light yellow. Examples are subject to much variation in colour and shade, and in some the lower parts are deeply tinged with yellow. Externally the most striking feature of the bird is its head, armed with a powerful beak that it well knows how to use, and its face clothed with hairs and elongated feathers that sufficiently resemble the physiognomy of an owl to justify the generic name bestowed upon it. Of its internal structure little has been described, and that not always correctly. Its furcula has been said (*Proc. Zool. Society*, 1874, p. 594) to be "lost," whereas the clavicles, which in most birds unite to form that bone, are present, though they do not meet, while in like manner the bird has been declared (*op. cit.*, 1867, p. 624, note) to furnish among the *Carinatae* "the only apparent exception to the presence of a keel" to the sternum. The keel, however, is undoubtedly there, as remarked by Blanchard (*Ann. Nat. Sc., Zoologie*, 4th series, vol. xi. p. 83) and A. Milne Edwards (*Ois. Foss. de la France*, ii. 516), and, though much reduced in size, is nearly as much developed as in the Dodo and the Ocydrome. The aborted condition of this process can hardly be regarded but in connexion with the incapacity of the bird for flight, and may very likely be the result of disuse. There can be scarcely any doubt as to the propriety of considering this genus the type of a separate family of *Psittaci*; but whether it stands alone or some other forms (*Pezoporus* or *Geopsittacus*, for example, which in coloration and habits present some curious analogies) should be placed with it, must await future determination. In captivity the kakapo is said to show much intelligence, as well as an affectionate and playful disposition. Unfortunately it does not seem to share the longevity characteristic of most parrots, and none that has been held in confinement appears to have long survived, while many succumb speedily.

For further details see Gould's *Birds of Australia* (ii. 247), and *Handbook* (ii. 539); Dr Finsch's *Die Papageien* (i. 241), and Sir Walter Buller's *Birds of New Zealand* especially.

(A. N.)

1 This generic term was subsequently altered by Van der Hoeven, rather pedantically, to *Stringops*, a spelling now generally adopted.

2 It has, however, been occasionally observed abroad by day; and, in captivity, one example at least is said to have been as active by day as by night.

KAKAR, a Pathan tribe on the Zhob valley frontier of Baluchistan. The Kakars inhabit the back of the Suliman mountains between Quetta and the Gomal river; they are a very ancient race, and it is probable that they were in possession of these slopes long before the advent of Afghan or Arab. They are divided into many distinct tribes who have no connexion beyond the common name of Kakar. Not only is there no chief of the Kakars, or general *jirgah* (or council) of the whole tribe, but in most cases there are no recognized heads of the different clans. In 1901 they numbered 105,444. During the second Afghan War the Kakars caused some annoyance on the British line of communications; and the Kakars inhabiting the Zhob valley were punished by the Zhob valley expedition of 1884.

KALA-AZAR, or Dum-Dum fever, a tropical disease, characterized by remittent fever, anaemia and enlargement of the spleen (splenomegaly) and often of the liver. It is due to a protozoon parasite (see PARASITIC DISEASES), discovered in 1900 by Leishman in the spleen, and is of a malarial type. The treatment is similar to that for malaria. In Assam good results have been obtained by segregation.

KALABAGH, a town of British India in the Mianwali district of the Punjab. Pop. (1901), 5824. It is picturesquely situated at the foot of the Salt range, on the right bank of the Indus, opposite the railway station of Mari. The houses nestle against the side of a precipitous hill of solid rock-salt, piled in successive tiers, the roof of each tier forming the street which passes in front of the row immediately above, and a cliff, also of pure rock-salt, towers above the town. The supply of salt, which is worked from open quarries, is practically inexhaustible. Alum also occurs in the neighbouring hills, and forms a considerable item of local trade. Iron implements are manufactured.

KALACH, also known as DONSKAYA, a village of S.E. Russia, in the territory of the Don Cossacks, and a river port on the Don, 31 m. N.E. of Nizhne-Chirskaya, in 43° 30′ E. and 48° 43′ N. Its permanent population, only about 1200, increases greatly in summer. It is the terminus of the railway (45 m.) which connects the Don with Tsaritsyn on the Volga, and all the goods (especially fish, petroleum, cereals and timber) brought from the Caspian Sea up the Volga and destined for middle Russia, or for export through the Sea of Azov, are unloaded at Tsaritsyn and sent over to Kalach on the Don.

KALAHANDI (formerly KAROND), a feudatory state of India, which was transferred from the Central Provinces to the Orissa division of Bengal in 1905. A range of the Eastern Ghats runs from N.E. to S.W. through the state, with open undulating country to the north. Area 3745 sq. m.; pop. (1901), 350,529; estimated revenue, £8000; tribute, £800. The inhabitants mostly belong to the aboriginal race of Khonds. A murderous outbreak against Hindu settlers called for armed intervention in 1882. The chief, Raghu Kishor Deo, was murdered by a servant in 1897, and during the minority of his son, Brij Mohan Deo, the state was placed in charge of a British political agent. The capital is Bhawani Patna.

KALAHARI DESERT, a region of South Africa, lying mainly between 20° and 28° S. and 19° and 24° E., and covering fully 120,000 sq. m. The greater part of this territory forms the western portion of the (British) Bechuanaland protectorate, but it extends south into that part of Bechuanaland annexed to the Cape and west into German South-West Africa. The Orange river marks its southern limit; westward it reaches to the foot of the Nama and Damara hills, eastward to the cultivable parts of Bechuanaland, northward and north-westward to the valley of the Okavango and the bed of Lake Ngami. The Kalahari, part of the immense inner table-land of South Africa, has an average elevation of over 3000 ft. with a general slope from east to west and a dip northward to Ngami. Described by Robert Moffat as “the southern Sahara,” the Kalahari resembles the great desert of North Africa in being generally arid and in being scored by the beds of dried-up rivers. It presents however many points of difference from the Sahara. The surface soil is mainly red sand, but in places limestone overlies shale and conglomerates. The ground is undulating and its appearance is comparable with that of the ocean at times of heavy swell. The crests of the waves are represented by sand dunes, rising from 30 to 100 ft.; the troughs between the dunes vary greatly in breadth. On the eastern border long tongues of sand project into the veld, while the veld in places penetrates far into the desert. There are also, and especially along the river beds, extensive mud flats. After heavy rain these become pans or lakes, and water is then also found in mud-bottomed pools along the beds of the rivers. The water in the pans is often brackish, and in some cases thickly encrusted with salt. Pans also occur in crater-like depressions where rock rises above the desert sands. A tough, sun-bleached grass, growing knee-high in tufts at intervals of about 15 in., covers the dunes and gives the general colour of the landscape. Considerable parts of the Kalahari, chiefly in the west and north, are however covered with dense scrub and there are occasional patches of forest. Next to the lack of water the chief characteristics of the desert are the tuberous and herbaceous plants and the large numbers of big game found in it. Of the plants the most remarkable is the water-melon, of which both the bitter and sweet variety are found, and which supplies both man and beast with water. The game includes the lion, leopard, hippopotamus, rhinoceros, buffalo, zebra, quagga, many kinds of antelope (among them the kudu and gnu), baboon and ostrich. The elephant, giraffe and eland are also found. The hunting of these three last-named animals is prohibited, and for all game there is a close time from the beginning of September to the end of February.

The climate is hot, dry and healthy, save in the neighbourhood of the large marshes in the north, where malarial fever is prevalent. In this region the drainage is N.E. to the great Makarikari marsh and the Botletle, the river connecting the marsh with the Ngami system. In the south the drainage is towards the Orange. The Molopo and the Kuruman, which in their upper course in eastern Bechuanaland are perennial streams, lose their water by evaporation and percolation on their way westward through the Kalahari. The Molopo, a very imposing river on the map, is dry in its lower stretches. The annual rainfall does not exceed 10 in. It occurs in the summer months, September to March, and chiefly in thunderstorms. The country is suffering from progressive desiccation, but there is good evidence of an abundant supply of water not far beneath the surface. In the water-melon season a few white farmers living on the edge of the desert send their herds thither to graze. Such few spots as have been under cultivation by artificial irrigation yield excellent returns to the farmer; but the chief commercial products of the desert are the skins of animals.

The Kalahari is the home of wandering Bushmen (*q.v.*), who live entirely by the chase, killing their prey with poisoned arrows, of Ba-Kalahari, and along the western border of Hottentots, who are both hunters and cattle-rearers. The Ba-Kalahari (men of the Kalahari), who constitute the majority of the inhabitants, appear to belong to the Batau tribe of the Bechuanas, now no longer having separate tribal existence, and traditionally reported to be the oldest of the Bechuana tribes. Their features are markedly negroid, though their skin is less black than that of many negro peoples. They have thin legs and arms. The Ba-Kalahari are said to have possessed enormous herds of large horned cattle until deprived of them and driven into the desert by a fresh migration of more powerful Bechuana tribes. Unlike the Bushmen, and in spite of desert life, the Ba-Kalahari have a true passion for agriculture and cattle-breeding. They carefully cultivate their gardens, though in many cases all they can grow is a scanty supply of melons and pumpkins, and they rear small herds of goats. They are also clever hunters, and from the neighbouring Bechuana chiefs obtain spears, knives, tobacco and dogs in exchange for the skins of the animals they kill. In disposition they are peaceful to timidity, grave and almost morose. Livingstone states that he never saw Ba-Kalahari children at play. An ingenious method is employed to obtain water where there is no open well or running stream. To one end of a reed about 2 ft. long a bunch of grass is tied, and this end of the reed is inserted in a hole dug at a spot where water is known to exist underground, the wet sand being rammed down firmly round it. An ostrich egg-shell, the usual water vessel, is placed on the ground alongside the reed. The water-drawer, generally a woman, then sucks up the water through the reed, dexterously squirting it into the adjacent egg-shell. To aid her aim she places between her lips a straw, the other end of which is inserted in the shell. The shells, when filled, are buried, the object of the Ba-Kalahari being to preserve their supplies from any sudden raid by Bushmen or other foe. Early travellers stated that no amount of bullying or hunting in a Ba-Kalahari village would result in a find of water; but that on friendly relations being established the natives would bring a supply, however arid the district. The British government has since sunk wells in one or two districts. Though the Ba-Kalahari have no religion in the strict sense of the word, they show traces of totemism, and as Batau, *i.e.* “men of the lion,” revere rather than fear that beast.

The Kalahari was first crossed to Lake Ngami by David Livingstone, accompanied by William C. Oswell, in 1849. In 1878-1879 a party of Boers, with about three hundred wagons, trekked from the Transvaal across the Kalahari to Ngami and thence to the hinterland of Angola. Many of the party, men, women and children, perished of thirst during the journey. Survivors stated that in all some 250 people and 9000 cattle died.

See BECHUANALAND. *Die Kalahari*, by Dr Siegfried Passarge (Berlin, 1904), is a valuable treatise on the geology, topography, hydrography, climate and flora of the desert, with maps and bibliography. The author spent two years (1896-1898) in the Kalahari. See also *Missionary Travels and Researches in South Africa*, &c., by David Livingstone (London, 1857).

KALAMATA (officially Καλάμαι, from an ancient town near the site), chief town of the modern Greek nomarchy of Messenia in the Morea, situated on the left bank of the Nedon, about 1 m. from the sea. Pop. (1907), 13,123. There is a suburb on the right bank of the stream. On a hill behind the town are the ruins of a medieval castle, but no ancient Greek remains have been discovered, although some travellers have identified the site with that of the classical Pharae or Pherae. It is the seat of a court of justice and of an archbishop. During the middle ages it was for a time a fief of the Villehardouins. In 1685 Kalamata was captured by the Venetians; in 1770, and again in 1821, it was the revolutionary headquarters in the Morea. In 1825 it was sacked by Ibrahim Pasha. Kalamata is situated in a very fruitful district, of which it is the emporium. The harbour, though recently improved, offers little shelter to shipping. Vessels load and discharge by means of lighters, the outer harbour having a depth at entrance of 24 ft. and inside of 14 ft. The inner harbour has a depth of 15 ft. and is sheltered by a breakwater 1640 ft. in length; in the winter months the fishing craft take shelter in the haven of Armyro. The silk industry, formerly important, still employs about 300 women and girls in four spinning establishments. Olive oil and silk are the chief exports.

KALAMAZOO, a city and the county-seat of Kalamazoo county, Michigan, U.S.A., on the

W. bank of the Kalamazoo River, about 49 m. S. of Grand Rapids and 144 m. W. of Detroit. Pop. (1900) 24,404, of whom 4710 were foreign-born; (1910 census) 39,437. It is served by the Michigan Central, the Lake Shore & Michigan Southern, the Grand Rapids & Indiana, the Kalamazoo, Lake Shore & Chicago, and the Chicago, Kalamazoo & Saginaw railways, and by interurban electric lines. The city has a public library, and is the seat of Kalamazoo college (Baptist), which grew out of the Kalamazoo literary institute (1833) and was chartered under its present name in 1855; the Michigan female seminary (Presbyterian), established in 1866; the Western State normal school (1904); Nazareth Academy (1897), for girls; Barbour Hall (1899), a school for boys; two private schools for the feeble-minded; and the Michigan asylum for the insane, opened in 1859. The surrounding country is famous for its celery, and the city is an important manufacturing centre, ranking third among the cities of the state in the value of its factory products in 1904. The value of the factory product in 1904 was $13,141,767, an increase of 82.9% since 1900. The waterworks and electric-lighting plant are owned and operated by the municipality. Kalamazoo was settled in 1829, was known as Bronson (in honour of Titus Bronson, an early settler) until 1836, was incorporated as the village of Kalamazoo in 1838, and in 1884 became a city under a charter granted in the preceding year.

KALAPUYA, or Callapooya, a tribe and stock of North-American Indians, whose former range was the valley of the Willamette River, Oregon. They now number little more than a hundred, on a reservation on Grande Ronde reservation, Oregon.

KALAT, the capital of Baluchistan, situated in 29° 2′ N. and 66° 35′ E., about 6780 ft. above sea-level, 88 m. from Quetta. The town gives its name also to a native state with an area, including Makran and Kharan, of 71,593 m. and a population (1901) of 470,336. The word Kalat is derived from *kala*—a fortress; and Kalat is the most picturesque fortress in the Baluch highlands. It crowns a low hill, round the base of which clusters the closely built mass of flat-roofed mud houses which form the insignificant town. A *miri* or citadel, having an imposing appearance, dominates the town, and contains within its walls the palace of the khan. It was in an upper room of this residence that Mehrab Khan, ruler of Baluchistan, was killed during the storming of the town and citadel by the British troops at the close of the first Afghan War in 1839. In 1901 it had a population of only 2000. The valleys immediately surrounding the fortress are well cultivated and thickly inhabited, in spite of their elevation and the extremes of temperature to which they are exposed. Recent surveys of Baluchistan have determined the position of Hozdar or Khozdar (27° 48′ N., 66° 38′ E.) to be about 50 m. S. of Kalat. Khozdar was the former capital of Baluchistan, and is as directly connected with the southern branches of the Mulla Pass as Kalat is with the northern, the Mulla being the ancient trade route to Gandava (Kandabe) and Sind. In spite of the rugged and barren nature of the mountain districts of the Kalat highlands, the main routes through them (concentrating on Khozdar rather than on Kalat) are comparatively easy. The old “Pathan vat,” the trade highway between Kalat and Karachi by the Hab valley, passes through Khozdar. From Khozdar another route strikes a little west of south to Wad, and then passes easily into Las Bela. This is the “Kohan vat.” A third route runs to Nal, and leads to the head of the Kolwa valley (meeting with no great physical obstruction), and then strikes into the open high road to Persia. Some of the valleys about Kalat (Mastang, for instance) are wide and fertile, full of thriving villages and strikingly picturesque; and in spite of the great preponderance of mountain wilderness (a wilderness which is, however, in many parts well adapted for the pasturage of sheep) existing in the Sarawan lowlands almost equally with the Jalawan highlands, it is not difficult to understand the importance which the province of Kalat, anciently called Turan (or Tubaran), maintained in the eyes of medieval Arab geographers (see Baluchistan). New light has been thrown on the history of Kalat by the translation of an unpublished manuscript obtained at Tatta by Mr Tate, of the Indian Survey Department, who has added thereto notes from the Tufhat-ul-Kiram, for the use of which he was indebted to Khan Sahib Rasul Baksh, mukhtiardar of Tatta. According to these authorities, the family of the khans of Kalat is of Arabic origin, and not, as is usually stated, of Brahuic extraction. They belong to the Ahmadzai branch of the Mirwari clan, which originally emigrated from Oman to the Kolwa valley

of Mekran. The khan of Kalat, Mir Mahmud Khan, who succeeded his father in 1893, is the leading chieftain in the Baluch Confederacy. The revenue of the khan is estimated at nearly £60,000, including subsidies from the British government; and an accrued surplus of £240,000 has been invested in Indian securities.

See G. P. Tate, *Kalat* (Calcutta, 1896); *Baluchistan District Gazetteer*, vol. vi. (Bombay, 1907).

(T. H. H.*)

KALAT-I-GHILZAI, a fort in Afghanistan. It is situated on an isolated rocky eminence 5543 ft. above sea-level and 200 ft. above the plain, on the right bank of the river Tarnak, on the road between Kabul and Kandahar, 87 m. from Kandahar and 229 m. from Kabul. It is celebrated for its gallant defence by Captain Craigie and a sepoy garrison against the Afghans in the first Afghan War of 1842. In memory of this feat of arms, the 12th Pioneers still bear the name of "The Kalat-i-Ghilzai Regiment," and carry a special colour with the motto "Invicta."

KALB, JOHANN ("Baron de Kalb") (1721-1780), German soldier in the American War of Independence, was born in Hüttendorf, near Bayreuth, on the 29th of June 1721. He was of peasant parentage, and left home when he was sixteen to become a butler; in 1743 he was a lieutenant in a German regiment in the French service, calling himself at this time Jean de Kalb. He served with the French in the War of the Austrian Succession, becoming captain in 1747 and major in 1756; in the Seven Years' War he was in the corps of the comte de Broglie, rendering great assistance to the French after Rossbach (November 1757) and showing great bravery at Bergen (April 1759); and in 1763 he resigned his commission. As secret agent, appointed by Choiseul, he visited America in 1768-1769 to inquire into the feeling of the colonists toward Great Britain. From his retirement at Milon la Chapelle, Kalb went to Metz for garrison duty under de Broglie in 1775. Soon afterwards he received permission to volunteer in the army of the American colonies, in which the rank of major-general was promised to him by Silas Deane. After many delays he sailed with eleven other officers on the ship fitted out by Lafayette and arrived at Philadelphia in July 1777. His commission from Deane was disallowed, but the Continental Congress granted him the rank of major-general (dating from the 15th of September 1777), and in October he joined the army, where his growing admiration for Washington soon led him to view with disfavour de Broglie's scheme for putting a European officer in chief command. Early in 1778, as second in command to Lafayette for the proposed expedition against Canada, he accompanied Lafayette to Albany; but no adequate preparations had been made, and the expedition was abandoned. In April 1780, he was sent from Morristown, New Jersey, with his division of Maryland men, his Delaware regiment and the 1st artillery, to relieve Charleston, but on arriving at Petersburg, Virginia, he learned that Charleston had already fallen. In his camp at Buffalo Ford and Deep River, General Horatio Gates joined him on the 25th of July; and next day Gates led the army by the short and desolate road directly towards Camden. On the 11th-13th of August, when Kalb advised an immediate attack on Rawdon, Gates hesitated and then marched to a position on the Salisbury-Charlotte road which he had previously refused to take. On the 14th Cornwallis had occupied Camden, and a battle took place there on the 16th when, the other American troops having broken and fled, Kalb, unhorsed and fighting fiercely at the head of his right wing, was wounded eleven times. He was taken prisoner and died on the 19th of August 1780 in Camden. Here in 1825 Lafayette laid the corner-stone of a monument to him. In 1887 a statue of him by Ephraim Keyser was dedicated in Annapolis, Maryland.

See Friedrich Kapp, *Leben des amerikanischen Generals Johann Kalb* (Stuttgart, 1862; English version, privately printed, New York, 1870), which is summarized in George W. Greene's *The German Element in the War of American Independence* (New York, 1876).

KALCKREUTH (or KALKREUTH), FRIEDRICH ADOLF, COUNT VON (1737-1818), Prussian soldier, entered the regiment of Gardes du Corps in 1752, and in 1758 was adjutant or aide de camp to Frederick the Great's brother, Prince Henry, with whom he served throughout the later stages of the Seven Years' War. He won special distinction at the battle of Freiberg (Sept. 29, 1762), for which Frederick promoted him major. Personal differences with Prince Henry severed their connexion in 1766, and for many years Kalckreuth lived in comparative retirement. But he made the campaign of the War of the Bavarian Succession as a colonel, and on the accession of Frederick William II. was restored to favour. He greatly distinguished himself as a major-general in the invasion of Holland in 1787, and by 1792 had become count and lieutenant-general. Under Brunswick he took a conspicuous part in the campaign of Valmy in 1792, the siege and capture of Mainz in 1793, and the battle of Kaiserslautern in 1794. In the campaigns against Napoleon in 1806 he played a marked part for good or evil, both at Auerstädt and in the miserable retreat of the beaten Prussians. In 1807 he defended Danzig for 78 days against the French under Marshal Lefebvre, with far greater skill and energy than he had shown in the previous year. He was promoted field marshal soon afterwards, and conducted many of the negotiations at Tilsit. He died as governor of Berlin in 1818.

The *Dictées du Feldmaréchal Kalckreuth* were published by his son (Paris, 1844).

KALCKREUTH, LEOPOLD, COUNT VON (1855-), German painter, a direct descendant of the famous field-marshal (see above), was born at Düsseldorf, received his first training at Weimar from his father, the landscape painter Count Stanislaus von Kalckreuth (1820-1894), and subsequently studied at the academies of Weimar and Munich. Although he painted some portraits remarkable for their power of expression, he devoted himself principally to depicting with relentless realism the monotonous life of the fishing folk on the sea-coast, and of the peasants in the fields. His palette is joyless, and almost melancholy, and in his technique he is strongly influenced by the impressionists. He was one of the founders of the secessionist movement. From 1885 to 1890 Count von Kalckreuth was professor at the Weimar art school. In 1890 he resigned his professorship and retired to his estate of Höckricht in Silesia, where he occupied himself in painting subjects drawn from the life of the country-folk. In 1895 he became a professor at the art school at Karlsruhe. The Munich Pinakothek has his "Rainbow" and the Dresden Gallery his "Old Age." Among his chief works are the "Funeral at Dachau," "Homewards," "Wedding Procession in the Carpathian Mountains," "The Gleaners," "Old Age," "Before the Fish Auction," "Summer," and "Going to School."

See A. Ph. W. v. Kalckreuth, *Gesch. der Herren, Freiherren und Grafen von Kalckreuth* (Potsdam, 1904).

KALEIDOSCOPE (from Gr. καλός, beautiful, εἶδος, form, and σκοπεῖν, to view). The article REFLECTION explains the symmetrical arrangement of images formed by two mirrors inclined at an angle which is a sub-multiple of four right angles. This is the principle of the kaleidoscope, an optical toy which received its present form at the hands of Sir David Brewster about the year 1815, and which at once became exceedingly popular owing to the beauty and variety of the images and the sudden and unexpected changes from one graceful form to another. A hundred years earlier R. Bradley had employed a similar arrangement which seems to have passed into oblivion (*New Improvements of Planting and Gardening*, 1710). The instrument has been extensively used by designers. In its simplest form it consists of a tube about twelve inches long containing two glass plates, extending along its whole length and inclined at an angle of 60°. The eye-end of the tube is closed by a metal plate having a small hole at its centre near the intersection of the glass plates. The other end is closed by a plate of muffed glass at the distance of distinct vision, and parallel to this is fixed a plate of clear glass. In the intervening space (the *object-box*) are contained a number of fragments of brilliantly coloured glass, and as the tube is turned round its axis these fragments alter their positions and give rise to the various patterns. A third reflecting plate is sometimes employed, the cross-section of the three forming an equilateral

triangle. Sir David Brewster modified his apparatus by moving the object-box and closing the end of the tube by a lens of short focus which forms images of distant objects at the distance of distinct vision. These images take the place of the coloured fragments of glass, and they are symmetrically multiplied by the mirrors. In the *polyangular kaleidoscope* the angle between the mirrors can be altered at pleasure. Such instruments are occasionally found in old collections of philosophical apparatus and they have been used in order to explain to students the formation of multiple images.

(C. J. J.)

KALERGIS, DIMITRI (Demetrios) (1803-1867), Greek statesman, was a Cretan by birth, studied medicine at Paris and on the outbreak of the War of Greek Independence went to the Morea and joined the insurgents. He fought under Karaiskakis, was taken prisoner by the Turks before Athens and mulcted of an ear; later he acted as aide de camp to the French philhellene Colonel Fabvier and to Count Capo d'Istria, president of Greece. In 1832 he was promoted lieutenant-colonel. In 1843, as commander of a cavalry division, he was the prime mover in the insurrection which forced King Otto to dismiss his Bavarian ministers. He was appointed military commandant of Athens and aide de camp to the king, but after the fall of the Mavrocordato ministry in 1845 was forced to go into exile, and spent several years in London, where he became an intimate of Prince Louis Napoleon. In 1848 he made an abortive descent on the Greek coast, in the hope of revolutionizing the kingdom. He was captured, but soon released and, after a stay in the island of Zante, went to Paris (1853). At the instance of the Western Powers he was recalled on the outbreak of the Crimean War and appointed minister of war in the reconstituted Mavrocordato cabinet (1854). He was, however, disliked by King Otto and his consort, and in October 1855 was forced to resign. In 1861 he was appointed minister plenipotentiary in Paris, in which capacity he took an important part in the negotiations which followed the fall of the Bavarian dynasty and led to the accession of Prince George of Denmark to the Greek throne.

KALEWALA, or Kalevala, the name of the Finnish national epos. It takes its name from the three sons of Kalewa (or Finland), viz. the ancient Wäinämöinen, the inventor of the sacred harp Kantele; the cunning art-smith, Ilmarinen; and the gallant Lemminkäinen, who is a sort of Arctic Don Juan. The adventures of these three heroes are wound about a plot for securing in marriage the hand of the daughter of Louhi, a hero from Pohjola, a land of the cold north. Ilmarinen is set to construct a magic mill, the Sanpo, which grinds out meal, salt and gold, and as this has fallen into the hands of the folk of Pohjola, it is needful to recover it. The poem actually opens, however, with a very poetical theory of the origin of the world. The virgin daughter of the atmosphere, Luonnotar, wanders for seven hundred years in space, until she bethinks her to invoke Ukko, the northern Zeus, who sends his eagle to her; this bird makes its nest on the knees of Luonnotar and lays in it seven eggs. Oat of the substance of these eggs the visible world is made. But it is empty and sterile until Wäinämöinen descends upon it and woos the exquisite Aino. She disappears into space, and it is to recover from his loss and to find another bride that Wäinämöinen makes his series of epical adventures in the dismal country of Pohjola. Various episodes of great strangeness and beauty accompany the lengthy recital of the struggle to acquire the magical Sanpo, which gives prosperity to whoever possesses it. In the midst of a battle the Sanpo is broken and falls into the sea, but one fragment floats on the waves, and, being stranded on the shores of Finland, secures eternal felicity for that country. At the very close of the poem a virgin, Mariatta, brings forth a king who drives Wäinämöinen out of the country, and this is understood to refer to the ultimate conquest of Paganism by Christianity.

The *Kalewala* was probably composed at various times and by various bards, but always in sympathy with the latent traditions of the Finnish race, and with a mixture of symbolism and realism exactly accordant with the instincts of that race. While in the other antique epics of the world bloodshed takes a predominant place, the *Kalewala* is characteristically gentle, lyrical and even domestic, dwelling at great length on situations of moral beauty and romantic pathos. It is entirely concerned with the folk-lore and the traditions of the primeval Finnish race. The poem is written in eight-syllabled trochaic verse, and an idea of its style may be obtained from

Longfellow's *Hiawatha*, which is a pretty true imitation of the Finnish epic.

Until the 19th century the *Kalewala* existed only in fragments in the memories and on the lips of the peasants. A collection of a few of these scattered songs was published in 1822 by Dr Zacharius Topelius, but it was not until 1835 that anything like a complete and systematically arranged collection was given to the world by Dr Elias Lönnrot. For years Dr Lönnrot wandered from place to place in the most remote districts, living with the peasantry, and taking down from their lips all that they knew of their popular songs. Some of the most valuable were discovered in the governments of Archangel and Olonetz. After unwearied diligence Lönnrot was successful in collecting 12,000 lines. These he arranged as methodically as he could into thirty-two runes or cantos, which he published exactly as he heard them sung or chanted. Continuing his researches, Dr Lönnrot published in 1849 a new edition of 22,793 verses in fifty runes. A still more complete text was published by A. V. Forsman in 1887. The importance of this indigenous epic was at once recognized in Europe, and translations were made into Swedish, German and French. Several translations into English exist, the fullest being that by J. M. Crawford in 1888. The best foreign editions are those of Castren in Swedish (1844), Leouzon le Duc in French (1845 and 1868), Schiefner in German (1852).

(E. G.)

KALGAN (Chang-Chia K'ow), a city of China, in the province of Chih-li, with a population estimated at from 70,000 to 100,000. It lies in the line of the Great Wall, 122 m. by rail N.W. of Peking, commanding an important pass between China and Mongolia. Its position is stated as in 40° 50′ N. and 114° 54′ E., and its height above the sea as 2810 ft. The valley amid the mountains in which it is situated is under excellent cultivation, and thickly studded with villages. Kalgan consists of a walled town or fortress and suburbs 3 m. long. The streets are wide, and excellent shops are abundant; but the ordinary houses have an unusual appearance, from the fact that they are mostly roofed with earth and become covered with green-sward. Large quantities of soda are manufactured; and the town is the seat of a very extensive transit trade. In October 1909 it was connected by railway with Peking. In early autumn long lines of camels come in from all quarters for the conveyance of the tea-chests from Kalgan to Kiakhta; and each caravan usually makes three journeys in the winter. Some Russian merchants have permanent residences and warehouses just outside the gate. On the way to Peking the road passes over a beautiful bridge of seven arches, ornamented with marble figures of animals. The name Kalgan is Mongolian, and means a barrier or "gate-beam."

KALGOORLIE, a mining town of Western Australia, 24 m. by rail E.N.E. of Coolgardie. Pop. (1901), 6652. It is a thriving town with an electric tramway service, and is the junction of four lines of railway. The gold-field, discovered in 1893, is very rich, supporting about 15,000 miners. The town is supplied with water, like Coolgardie, from a source near Perth 360 m. distant.

KALI (black), or *Kali Ma* (the Black Mother), in Hindu mythology, the goddess of destruction and death, the wife of Siva. According to one theory, Calcutta owes its name to her, being originally Kalighat, "Kali's landing-place." Siva's consort has many names (*e.g.* Durga, Bhawani, Parvati, &c.). Her idol is black, with four arms, and red palms to the hands. Her eyes are red, and her face and breasts are besmeared with blood. Her hair is matted, and she has projecting fang-like teeth, between which protrudes a tongue dripping with blood. She wears a necklace of skulls, her earrings are dead bodies, and she is girded with serpents. She stands on the body of Siva, to account for which attitude there is an elaborate legend. She is more worshipped in Gondwana

and the forest tracts to the east and south of it than in any other part of India. Formerly human sacrifice was the essential of her ritual. The victim, always a male, was taken to her temple after sunset and imprisoned there. When morning came he was dead: the priests told the people that Kali had sucked his blood in the night. At Dantewara in Bastar there is a famous shrine of Kali under the name of Danteswari. Here many a human head has been presented on her altar. About 1830 it is said that upwards of twenty-five full-grown men were immolated at once by the raja. Cutting their flesh and burning portions of their body were among the acts of devotion of her worshippers. Kali is goddess of small-pox and cholera. The Thugs murdered their victims in her honour, and to her the sacred pickaxe, wherewith their graves were dug, was consecrated.

The *Hook-swinging Festival* (*Churruk* or *Churuck Puja*), one of the most notable celebrations in honour of the goddess Kali, has now been prohibited in British territory. Those who had vowed themselves to self-torture submitted to be swung in the air supported only by hooks passed through the muscles over the blade-bones. These hooks were hung from a long crossbeam, which see-sawed upon a huge upright pole. Hoisted into the air by men pulling down the other end of the see-saw beam, the victim was then whirled round in a circle. The torture usually lasted fifteen or twenty minutes.

See A. A. Macdonell, *Vedic Mythology* (Strassburg, 1897).

KĀLIDĀSA, the most illustrious name among the writers of the second epoch of Sanskrit literature, which, as contrasted with the age of the Vedic hymns, may be characterized as the period of artificial poetry. Owing to the absence of the historical sense in the Hindu race, it is impossible to fix with chronological exactness the lifetime of either Kālidāsa or any other Sanskrit author. Native tradition places him in the 1st century B.C.; but the evidence on which this belief rests is worthless. The works of the poet contain no allusions by which their date can be directly determined; yet the extremely corrupt form of the Prākrit or popular dialects spoken by the women and the subordinate characters in his plays, as compared with the Prākrit in inscriptions of ascertained age, led such authorities as Weber and Lassen to agree in fixing on the 3rd century A.D. as the approximate period to which the writings of Kālidāsa should be referred.

He was one of the “nine gems” at the court of King Vikramaditya or Vikrama, at Ujjain, and the tendency is now to regard the latter as having flourished about A.D. 375; others, however, place him as late as the 6th century. The richness of his creative fancy, his delicacy of sentiment, and his keen appreciation of the beauties of nature, combined with remarkable powers of description, place Kālidāsa in the first rank of Oriental poets. The effect, however, of his productions as a whole is greatly marred by extreme artificiality of diction, which, though to a less extent than in other Hindu poets, not unfrequently takes the form of puerile conceits and plays on words. In this respect his writings contrast very unfavourably with the more genuine poetry of the Vedas. Though a true poet, he is wanting in that artistic sense of proportion so characteristic of the Greek mind, which exactly adjusts the parts to the whole, and combines form and matter into an inseparable poetic unity. Kālidāsa’s fame rests chiefly on his dramas, but he is also distinguished as an epic and a lyric poet.

He wrote three plays, the plots of which all bear a general resemblance, inasmuch as they consist of love intrigues, which, after numerous and seemingly insurmountable impediments of a similar nature, are ultimately brought to a successful conclusion.

Of these, *Sakuntalā* is that which has always justly enjoyed the greatest fame and popularity. The unqualified praise bestowed upon it by Goethe sufficiently guarantees its poetic merit. There are two recensions of the text in India, the Bengalī and the Devanāgarī, the latter being generally considered older and purer. *Sakuntalā* was first translated into English by Sir William Jones (Calcutta, 1789), who used the Bengalī recension. It was soon after translated into German by G. Forster (1791; new ed. Leipzig, 1879). An edition of the Sanskrit original, with French translation, was published by A. L. Chézy at Paris in 1830. This formed the basis of a translation by B. Hirzel (Zürich, 1830); later trans. by L. Fritze (Chemnitz, 1876). Other editions of the Bengalī recension were published by Prema Chandra (Calcutta, 1860) for the use of European students and by R. Pischel (2nd ed., Kiel, 1886). The Devanāgarī recension was first edited by O. Böhtlingk (Bonn, 1842), with a German translation. On this were based the successive German translations of E. Meier (Tübingen, 1851) and E. Lobedanz (8th ed., Leipzig, 1892). The same recension has been edited by Dr C. Burkhard with a Sanskrit-Latin vocabulary and short Prākrit grammar (Breslau, 1872), and by Professor Monier Williams (Oxford, 2nd ed. 1876), who also translated the drama (5th ed., 1887). There is another translation by P. N. Patankar (Poona, 1888-). There are also a South Indian and a Cashmir recension.

The *Vikramorvasī*, or *Urvasī won by Valour*, abounds with fine lyrical passages, and is of all Indian dramas second only to *Sakuntalā* in poetic beauty. It was edited by R. Lenz (Berlin, 1833) and translated into German by C. G. A. Höfer (Berlin, 1837), by B. Hirzel (1838), by E. Lobedanz (Leipzig, 1861) and F. Bollensen (Petersburg, 1845). There is also an English edition by Monier Williams, a metrical and prose version by Professor H. H. Wilson, and a literal prose translation by Professor E. B. Cowell (1851). The latest editions are by S. P. Pandit (Bombay, 1879) and K. B. Paranjpe (ibid. 1898).

The third play, entitled *Mālavikāgnimitra*, has considerable poetical and dramatic merit, but is confessedly inferior to the other two. It possesses the advantage, however, that its hero Agnimitra and its heroine Mālavikā are more ordinary and human characters than those of the other plays. It is edited by O. F. Tullberg (Bonn, 1840), by Shankar P. Pandit, with English notes (1869), and S. S. Ayyar (Poona, 1896); translated into German by A. Weber (1856), and into English by C. H. Tawney (2nd ed., Calcutta, 1898).

Two epic poems are also attributed to Kālidāsa. The longer of these is entitled *Raghuvamsa*, the subject of which is the same as that of the *Rāmāyana*, viz. the history of Rāma, but beginning with a long account of his ancestors, the ancient rulers of Ayodhya (ed. by A. F. Stenzler, London, 1832; and with Eng. trans. and notes by Gopal Raghunath Nandargĩkar, Poona, 1897; verse trans. by P. de Lacy Johnstone, 1902). The other epic is the *Kumārasambhava*, the theme of which is the birth of Kumāra, otherwise called Kārttikeya or Skanda, god of war (ed. by Stenzler, London, 1838; K. M. Banerjea, 3rd ed. Calcutta, 1872; Parvanikara and Parab, Bombay, 1893; and M. R. Kale and S. R. Dharadhara, ibid. 1907; Eng. trans. by R. T. Griffith, 1879). Though containing many fine passages, it is tame as a whole.

His lyrical poems are the *Meghadūta* and the *Ritusamhāra*. The *Meghadūta*, or the Cloud-Messenger, describes the complaint of an exiled lover, and the message he sends to his wife by a cloud. It is full of deep feeling, and abounds with fine descriptions of the beauties of nature. It was edited with free English translation by H. H. Wilson (Calcutta, 1813), and by J. Gildemeister (Bonn, 1841); a German adaptation by M. Müller appeared at Königsberg (1847), and one by C. Schütz at Bielefeld (1859). It was edited by F. Johnson, with vocabulary and Wilson's metrical translation (London, 1867); later editions by K. P. Parab (Bombay, 1891) and K. B. Pathak (Poona, 1894). The *Ritusamhāra*, or Collection of the Seasons, is a short poem, of less importance, on the six seasons of the year. There is an edition by P. von Bohlen, with prose Latin and metrical German translation (Leipzig, 1840); Eng. trans. by C. S. Sitaram Ayyar (Bombay, 1897).

Another poem, entitled the *Nalodaya*, or Rise of Nala, edited by F. Benary (Berlin, 1830), W. Yates (Calcutta, 1844) and Vidyasagara (Calcutta, 1873), is a treatment of the story of Nala and Damayanti, but describes especially the restoration of Nala to prosperity and power. It has been ascribed to the celebrated Kālidāsa, but was probably written by another poet of the same name. It is full of most absurd verbal conceits and metrical extravagances.

So many poems, partly of a very different stamp, are attributed to Kālidāsa that it is scarcely possible to avoid the necessity of assuming the existence of more authors than one of that name. It is by no means improbable that there were three poets thus named; indeed modern native astronomers are so convinced of the existence of a triad of authors of this name that they apply the term Kālidāsa to designate the number three.

On Kālidāsa generally, see A. A. Macdonell's *History of Sanskrit Literature* (1900), and on his date G. Huth, *Die Zeit des K.* (Berlin, 1890).

(A. A. M.)

KALIMPONG, a village of British India, in the Darjeeling district of Bengal, 4000 ft. above sea-level; pop. (1901), 1069. It is a frontier market for the purchase of wool and mules from Tibet, and an important agricultural fair is held in November. In 1900 Kalimpong was chosen by the Church of Scotland as the site of cottage homes, known as St Andrew's Colonial Homes, for the education and training of poor European and Eurasian children.

KALINGA, or Calinga, one of the nine kingdoms of southern India in ancient times. Its exact limits varied, but included the eastern Madras coast from Pulicat to Chicacole, running inland

from the Bay of Bengal to the Eastern Ghats. The name at one time had a wider and vaguer meaning, comprehending Orissa, and possibly extending to the Ganges valley. The Kalinga of Pliny certainly included Orissa, but latterly it seems to have been confined to the Telugu-speaking country; and in the time of Hsüan Tsang (630 A.D.) it was distinguished on the south and west from Andhra, and on the north from Odra or Orissa. Taranatha, the Tibetan historian, speaks of Kalinga as one division of the country of Telinga. Hsüan Tsang speaks of Kalinga ("Kie-ling-kia") having its capital at what has been identified with the site either of Rajahmundry or Coringa. Both these towns, as well as Singapur, Calingapatam and Chicacole, share the honour of having been the chief cities of Kalinga at different periods; but inscriptions recently deciphered seem to prove that the capital of the Ganga dynasty of Kalinga was at Mukhalingam in the Ganjam district.

KALINJAR, a town and hill fort of British India in the Banda district of the United Provinces. Pop. (1901), 3015. The fort stands on an isolated rock, the termination of the Vindhya range, at an elevation of 1203 ft., overlooking the plains of Bundelkhand. Kalinjar is the most characteristic specimen of the hill-fortresses, originally hill-shrines, of central India. Its antiquity is proved by its mention in the *Mahābhārata*. It was besieged by Mahmud of Ghazni in 1023, and here the Afghan emperor Sher Shah met his death in 1545, and Kalinjar played a prominent part in history down to the time of the Mutiny in 1857, when it was held by a small British garrison. Both the fort and the town, which stands at the foot of the hill, are of interest to the antiquary on account of their remains of temples, sculptures, inscriptions and caves.

KALIR [QALIR], ELEAZER, Hebrew liturgical poet, whose hymns (*piyyutim*) are found in profusion in the festival prayers of the German synagogal rite. The age in which he lived is unknown. Some (basing the view on Saadiah's *Sefer ha-galuy*) place him as early as the 6th century, others regard him as belonging to the 10th century. Kalir's style is powerful but involved; he may be described as a Hebrew Browning.

Some beautiful renderings of Kalir's poems may be found in the volumes of Davis & Adler's edition of the German Festival Prayers entitled *Service of the Synagogue*.

KALISCH, ISIDOR (1816-1886), Jewish divine, was born at Krotoschin in Prussia on the 15th of November 1816, and was educated at Berlin, Breslau and Prague. In 1848 he came to London, but passed on in 1849 to America, where he ministered as rabbi in Cleveland, Cincinnati, Milwaukee, Detroit and Newark, New Jersey. At Newark from 1875 he gave himself entirely to literary work, and exercised a strong influence as leader of the radical and reforming Jewish party.

Among his works are *Wegweisen für rationelle Forschungen in den biblischen Schriften* (1853); and translations of *Nathan der Weise* (1869); *Sepher Jezirah* (1877); and Munz's *History of Philosophy among the Jews* (1881). He also wrote a good deal of German and Hebrew verse.

KALISCH, MARCUS (or MAURICE) (1828-1885), Jewish scholar, was born in Pomerania in 1828, and died in England 1885. He was one of the pioneers of the critical study of the Old Testament in England. At one time he was secretary to the Chief Rabbi; in 1853 he became tutor in the Rothschild family and enjoyed leisure to produce his commentaries and other works. The first instalment of his commentary on the Pentateuch was *Exodus* (1855); this was followed by *Genesis* (1858) and *Leviticus* in two parts (1867-1872). Kalisch wrote before the publication of Wellhausen's works, and anticipated him in some important points. Besides these works, Kalisch published in 1877-1878 two volumes of Bible studies (on *Balaam* and *Jonah*). He was also author of a once popular Hebrew grammar in two volumes (1862-1863). In 1880 he published *Path and Goal*, a brilliant discussion of human destiny. His commentaries are of permanent value, not only because of the author's originality, but also because of his erudition. No other works in English contain such full citations of earlier literature.

(I. A.)

KALISPEL, or PEND D'OREILLE, a tribe of North-American Indians of Salishan stock. They formerly ranged the country around Pend d'Oreille Lake, Washington. They number some 600, and are settled on a reservation in Montana.

KALISZ, a government of Russian Poland, having Prussia on the W., and the governments of Warsaw and Piotrków on the E. Its area is 4390 sq. m. Its surface is a lowland, sloping towards the west, and is drained by the Prosna and the Warta and their tributaries, and also by the Bzura. It was formerly covered with countless small lakes and thick forests; the latter are now mostly destroyed, but many lakes and marshes exist still. Pop. (1897), 844,358 of whom 427,978 were women, and 113,609 lived in towns; estimated pop. (1906), 983,200. They are chiefly Poles. Roman Catholics number 83%; Jews and Protestants each amount to 7%. Agriculture is carried to perfection on a number of estates, as also livestock breeding. The crops principally raised are rye, wheat, oats, barley and potatoes. Various domestic trades, including the weaving of linen and wool, are carried on in the villages. There are some factories, producing chiefly cloth and cottons. The government is divided into eight districts, the chief towns of which, with their populations in 1897, are: Kalisz (21,680), Kolo (9400), Konin (8530), Leczyca (8863), Slupec (3758), Sieradz (7019), Turek (8141) and Wielun (7442).

KALISZ, the chief town of the above government, situated in 51° 46′ N. and 18° E., 147 m. by rail W.S.W. of Warsaw, on the banks of the Prosna, which there forms the boundary of Prussia. Pop. (1871), 18,088; (1897), 21,680, of whom 37% were Jews. It is one of the oldest and finest cities of Poland, is the seat of a Roman Catholic bishop, and possesses a castle, a teachers' institute and a large public park. The industrial establishments comprise a brewery, and factories for ribbons, cloth and sugar, and tanneries.

> Kalisz is identified with the *Calisia* of Ptolemy, and its antiquity is indicated by the abundance of coins and other objects of ancient art which have been discovered on the site, as well as by the numerous burial mounds existing in the vicinity. It was the scene of the decisive victory of Augustus the Strong of Poland over the Swedes on the 29th of October 1706, of several minor conflicts in 1813, and of the friendly meeting of the Russian and Prussian troops in 1835, in memory of which an iron obelisk was erected in the town by Nicholas I. in 1841. The treaty of 1813 between Russia and Prussia was signed here.

KALK, a town in the Prussian Rhine province, on the right bank of the Rhine, 2 m. E. of Cologne. Pop. (1905), 25,478. Kalk is an important junction of railway lines connecting Cologne with places on the right bank of the river. It has various iron and chemical industries, brickworks and breweries, and an electric tramway joins it with Cologne.

KALKAS, or Khalkas, a Mongoloid people mainly concentrated in the northern steppes of Mongolia near their kinsmen, the Buriats. According to Sir H. Howorth they derive their name from the river Kalka, which runs into the Buir lake. Of all Mongolians they physically differ most from the true Mongol type (see Mongols). Their colour is a brown rather than a yellow, and their eyes are open and not oblique. They have, however, the broad flat face, high cheekbones and lank black hair of their race. They number some 250,000, and their territory is divided into the four khanates of Tushetu (Tushiyetu), Tsetien (Setzen), Sai'noi'm (Sain Noyan) and Jesaktu (Jassaktu).

KALKBRENNER, FRIEDRICH WILHELM (1784-1849), German pianist and composer, son of Christian Kalkbrenner (1755-1806), a Jewish musician of Cassel, was educated at the Paris Conservatoire, and soon began to play in public. From 1814 to 1823 he was well known as a brilliant performer and a successful teacher in London, and then settled in Paris, dying at Enghien, near there, in 1849. He became a member of the Paris piano-manufacturing firm of Pleyel & Co., and made a fortune by his business and his art combined. His numerous compositions are less remembered now than his instruction-book, with "studies," which have had considerable vogue among pianists.

KÁLLAY, BENJAMIN VON (1839-1903), Austro-Hungarian statesman, was born at Budapest on the 22nd of December 1839. His family derived their name from their estates at Nágy Kallo, in Szabolcs, and claimed descent from the Balogh Semjen tribe, which colonized the counties of Borsod, Szabolcs, and Szatmár, at the close of the 9th century, when the Magyars conquered Hungary. They played a prominent part in Hungarian history as early as the reign of Koloman (1095-1114); and from King Matthias Corvinus (1458-1490) they received their estates at Mezö Tur, near Kecskemét, granted to Michael Kállay for his heroic defence of Jajce in Bosnia, and still held by his descendants. The father of Benjamin von Kállay, a superior official of the Hungarian Government, died in 1845, and his widow, who survived until 1903, devoted herself to the education of her son. At an early age Kállay manifested a deep interest in politics, and especially in the Eastern Question. He travelled in Russia, European Turkey and Asia Minor, gaining a thorough knowledge of Greek, Turkish and several Slavonic languages. He became as proficient in Servian as in his native tongue. In 1867 he entered the Hungarian Diet as Conservative deputy for Mühlbach (Szásy-Szebes); in 1869 he was appointed consul-general at Belgrade; and in 1872 he visited Bosnia for the first time. His views on Balkan questions strongly influenced Count Andrássy, the Austro-Hungarian minister for foreign affairs. Leaving Belgrade in 1875, he resumed his seat in the Diet, and shortly afterwards founded the journal *Kélet Nepe*,

or *Eastern Folk*, in which he defended the vigorous policy of Andrássy. After the Russo-Turkish War of 1878 he went to Philippopolis as Austro-Hungarian envoy extraordinary on the International Eastern Rumelian Commission. In 1879 he became second, and soon afterwards first, departmental chief at the foreign office in Vienna. On the 4th of June 1882 he was appointed Imperial minister of finance and administrator of Bosnia and Herzegovina, and the distinction with which he filled this office, for a period of 21 years, is his chief title of fame (see Bosnia and Herzegovina). Kállay was an honorary member of the Budapest and Vienna academies of science, and attained some eminence as a writer. He translated J. S. Mill's *Liberty* into Hungarian, adding an introductory critique; while his version of *Galatea*, a play by the Greek dramatist S. N. Basiliades (1843-1874), proved successful on the Hungarian stage. His monographs on Servian history (*Geschichte der Serben*) and on the Oriental ambition of Russia (*Die Orientpolitik Russlands*) were translated into German by J. H. Schwicker, and published at Leipzig in 1878. But, in his own opinion, his masterpiece was an academic oration on the political and geographical position of Hungary as a link between East and West. In 1873 Kállay married the countess Vilma Bethlen, who bore him two daughters and a son. His popularity in Bosnia was partly due to the tact and personal charm of his wife. He died on the 13th of July 1903.

KALMAR (Calmar), a seaport of Sweden on the Baltic coast, chief town of the district (*län*) of Kalmar, 250 m. S.S.W. of Stockholm by rail. Pop. (1900), 12,715. It lies opposite the island of Öland, mainly on two small islands, but partly on the mainland, where there is a pleasant park. The streets are regular, and most of the houses are of wood. The principal public edifices, however, are constructed of limestone from Öland, including the cathedral, built by Nicodemus Tessin and his son Nicodemus in the second half of the 17th century. Kalmar, a town of great antiquity, was formerly strongly fortified, and there remains the island-fortress of Kalmarnahus, dating partly from the 12th century, but mainly from the 16th and 17th. It contains the beautiful chamber of King Eric XIV. (d. 1577), an historical museum, and in the courtyard a fine ornate well-cover. This stronghold stood several sieges in the 14th, 15th and 16th centuries, and the town gives name to the treaty (Kalmar Union) by which Sweden, Norway and Denmark were united into one kingdom in 1397. Kalmar has an artificial harbour admitting vessels drawing 19 ft. There are a school of navigation, and tobacco and match factories, the produce of which, together with timber and oats, is exported. Ship-building is carried on.

KALMUCK, or Kalmyk Steppe, a territory or reservation belonging to the Kalmuck or Kalmyk Tatars, in the Russian government of Astrakhan, bounded by the Volga on the N.E., the Manych on the S.W., the Caspian Sea on the E., and the territory of the Don Cossacks on the N.W. Its area is 36,900 sq. m., to which has to be added a second reservation of 3045 sq. m. on the left bank of the lower Volga. According to I. V. Mushketov, the Kalmuck Steppe must be divided into two parts, western and eastern. The former, occupied by the Ergeni hills, is deeply trenched by ravines and rises 300 and occasionally 630 ft. above the sea. It is built up of Tertiary deposits, belonging to the Sarmatian division of the Miocene period and covered with loess and black earth, and its escarpments represent the old shore-line of the Caspian. No Caspian deposits are found on or within the Ergeni hills. These hills exhibit the usual black earth flora, and they have a settled population. The eastern part of the steppe is a plain, lying for the most part 30 to 40 ft. below the level of the sea, and sloping gently towards the Volga. Post-Pliocene "Aral-Caspian deposits," containing the usual fossils (*Hydrobia*, *Neritina*, eight species of *Cardium*, two of *Dreissena*, three of *Adacna* and *Lithoglyphus caspius*), attain thicknesses varying from 105 ft. to 7 or 10 ft., and disappear in places. Lacustrine and fluviatile deposits occur intermingled with the above. Large areas of moving sands exist near Enotayevsk, where high dunes or *barkhans* have been formed. A narrow tract of land along the coast of the Caspian, known as the "hillocks of Baer," is covered with hillocks elongated from west to east, perpendicularly to the coast-line, the spaces between them being filled with water or overgrown with thickets of reed, *Salix*, *Ulmus campestris*, almond trees, &c. An archipelago of little islands is thus formed close to the shore by these mounds, which are backed on the N. and N.W. by strings of salt lakes, partly desiccated. Small streams originate in the Ergenis, but are lost as soon as they reach the lowlands, where

water can only be obtained from wells. The scanty vegetation is a mixture of the flora of south-east Russia and that of the deserts of central Asia. The steppe has an estimated population of 130,000 persons, living in over 27,700 *kibitkas*, or felt tents. There are over 60 Buddhist monasteries. Part of the Kalmucks are settled (chiefly in the hilly parts), the remainder being nomads. They breed horses, cattle and sheep, but suffer heavy losses from murrain. Some attempts at agriculture and tree-planting are being made. The breeding of livestock, fishing, and some domestic trades, chiefly carried on by the women, are the principal sources of maintenance.

See I. V. Mushketov, *Geol. Researches in the Kalmyk Steppe in 1884-1885* (St Petersburg, 1894, in Russian); Kostenkov's works (1868-1870); and other works quoted in Semenov's *Geogr. Dict.* and *Russ. Encycl. Dict.*

(P. A. K.; J. T. Be.)

KALNÓKY, GUSTAV SIEGMUND, Count

(1832-1898), Austro-Hungarian statesman, was born at Lettowitz, in Moravia, on the 29th of December 1832, of an old Transylvanian family which had held countly rank in Hungary from the 17th century. After spending some years in a hussar regiment, in 1854 he entered the diplomatic service without giving up his connexion with the army, in which he reached the rank of general in 1879. He was for the ten years 1860 to 1870 secretary of embassy at London, and then, after serving at Rome and Copenhagen, was in 1880 appointed ambassador at St Petersburg. His success in Russia procured for him, on the death of Baron v. Haymerle in 1881, the appointment of minister of foreign affairs for Austria-Hungary, a post which he held for fourteen years. Essentially a diplomatist, he took little or no part in the vexed internal affairs of the Dual Monarchy, and he 644 came little before the public except at the annual statement on foreign affairs before the Delegations. His management of the affairs of his department was, however, very successful; he confirmed and maintained the alliance with Germany, which had been formed by his predecessors, and co-operated with Bismarck in the arrangements by which Italy joined the alliance. Kalnóky's special influence was seen in the improvement of Austrian relations with Russia, following on the meeting of the three emperors in September 1884 at Skiernevice, at which he was present. His Russophile policy caused some adverse criticism in Hungary. His friendliness for Russia did not, however, prevent him from strengthening the position of Austria as against Russia in the Balkan Peninsula by the establishment of a closer political and commercial understanding with Servia and Rumania. In 1885 he interfered after the battle of Slivnitza to arrest the advance of the Bulgarians on Belgrade, but he lost influence in Servia after the abdication of King Milan. Though he kept aloof from the Clerical party, Kalnóky was a strong Catholic; and his sympathy for the difficulties of the Church caused adverse comment in Italy, when, in 1891, he stated in a speech before the Delegations that the question of the position of the pope was still unsettled. He subsequently explained that by this he did not refer to the Roman question, which was permanently settled, but to the possibility of the pope leaving Rome. The jealousy felt in Hungary against the Ultramontanes led to his fall. In 1895 a case of clerical interference in the internal affairs of Hungary by the nuncio Agliardi aroused a strong protest in the Hungarian parliament, and consequent differences between Bánffy, the Hungarian minister, and the minister for foreign affairs led to Kalnóky's resignation. He died on the 13th of February 1898 at Prödlitz in Moravia.

KALOCSA,

a town of Hungary, in the county of Pest-Pilis-Solt-Kis-Kun, 88 m. S. of Budapest by rail. Pop. (1900), 11,372. It is situated in a marshy but highly productive district, near the left bank of the Danube, and was once of far greater importance than at present. Kalocsa is the see of one of the four Roman Catholic archbishops in Hungary. Amongst its buildings are a fine cathedral, the archiepiscopal palace, an astronomical observatory, a seminary for priests, and colleges for training of male and female teachers. The inhabitants of Kalocsa and its wide-spreading communal lands are chiefly employed in the cultivation of the vine, fruit, flax, hemp and cereals, in the capture of water-fowl and in fishing. Kalocsa is one of the oldest towns in Hungary. The present archbishopric, founded about 1135, is a development of a bishopric said to have been founded in the year 1000 by King Stephen the Saint. It suffered much during the 16th

century from the hordes of Ottomans who then ravaged the country. A large part of the town was destroyed by a fire in 1875.

KALPI, or CALPEE, a town of British India, in the Jalaun district of the United Provinces, on the right bank of the Jumna, 45 m. S.W. of Cawnpore. Pop. (1901), 10,139. It was founded, according to tradition, by Vasudeva, at the end of the 4th century A.D. In 1196 it fell to Kutab-ud-din, the viceroy of Mahommed Ghori, and during the subsequent Mahommedan period it played a large part in the annals of this part of India. About the middle of the 18th century it passed into the hands of the Mahrattas. It was captured by the British in 1803, and since 1806 has remained in British possession. In May 1858 Sir Hugh Rose (Lord Strathnairn) defeated here a force of about 10,000 rebels under the rani of Jhansi. Kalpi had a mint for copper coinage in the reign of Akbar; and the East India Company made it one of their principal stations for providing the "commercial investment." The old town, which is beside the river, has ruins of a fort, and several temples of interest, while in the neighbourhood are many ancient tombs. There is a lofty modern tower ornamented with representations of the battles of the *Ramayana*. The new town lies away from the river to the south-east. Kalpi is still a centre of local trade (principally in grain, *ghi* and cotton), with a station on the Indian Midland railway from Jhansi to Cawnpore, which here crosses the Jumna. There are manufactures of sugar and paper.

KALUGA, a government of middle Russia, surrounded by those of Moscow, Smolensk, Orel and Tula, with an area of 11,942 sq. m. Its surface is an undulating plain, reaching 800 to 900 ft. in its highest parts, which lie in the S.W., and deeply trenched by watercourses, especially in the N.E. The Oka, a main tributary of the Volga, and its confluents (the Zhizdra and Ugra) drain all but a strip of country in the west, which is traversed by the Bolva, an affluent of the Dnieper. The government is built up mainly of carboniferous deposits (coal-bearing), with patches of the soft Jurassic clays and limestones which formerly covered them. Cretaceous deposits occur in the S.W., and Devonian limestones and shales crop out in the S.E. The government is covered with a thick layer of boulder clay in the north, with vast ridges and fields of boulders brought during the Glacial Period from Finland and the government of Olonets; large areas in the middle are strewn with flint boulders and patches of loess are seen farther south. The mean annual temperature is 41° F. Iron ores are the chief mineral wealth, nearly 40,000 persons being engaged in mining. Beds of coal occur in several places, and some of them are worked. Fireclay, china-clay, chalk, grindstone, pure quartz sand, phosphorite and copper are also extracted. Forests cover 20% of the surface, and occur chiefly in the south. The soil is not very suitable for agriculture, and owing to a rather dense population, considerable numbers of the inhabitants find occupation in industry, or as carriers and carpenters for one-half of the year at the Black Sea ports.

The population (1,025,705 in 1860) was 1,176,353 in 1897, nearly all Great Russians. There were 116 women to 100 men, and out of the total population 94,853 lived in towns. The estimated population in 1906 was 1,287,300. Of the total area over 4,000,000 acres are owned by the peasant communities, nearly 3,000,000 acres by private owners and some 250,000 by the Crown. The principal crops are rye, oats, barley, buckwheat, and potatoes. Hemp is grown for local use and export. Bees are kept. The chief non-agricultural industries are distilleries, iron-works, factories for cloth, cottons, paper, matches, leather and china, flour-mills and oil works. Large quantities of wooden wares are fabricated in the villages of the south. A considerable trade is carried on in hemp, hempseed and hempseed oil, corn and hides; and iron, machinery, leather, glass, chemicals and linen are exported. The government is divided into 11 districts, the chief towns of which, with their populations in 1897, are: Kaluga (49,728), Borovsk (8407), Kozelsk (5908), Likhvin (1776), Maloyaroslavets (2500), Medyn (4392), Meshchovsk (3667), Mosalsk (2652), Peremyshl (3956), Tarusa (1989) and Zhizdra (5996).

(P. A. K.; J. T. BE.)

KALUGA, the chief town of the above government, situated on the left bank of the Oka, 117 m. S.W. of Moscow by rail, in 54° 31′ N. and 36° 6′ E. Pop. (1870), 36,880; (1897) 49,728. It is the see of a Greek Orthodox bishop. The public buildings include the cathedral of the Trinity (rebuilt in the 19th century in place of an older edifice dating from 1687), two monastic establishments, an ecclesiastical seminary, and a lunatic asylum. The principal articles of industrial production are leather, oil, bast mats, wax candles, starch and Kaluga cakes. The first historical mention of Kaluga occurs in 1389; its incorporation with the principality of Moscow took place in 1518. In 1607 it was held by the second false Demetrius and vainly besieged for four months by the forces of Shuisky, who had ascended the Russian throne as Basil IV. on the death of the first false Demetrius. In 1619 Kaluga fell into the hands of the hetman or chief of the Zaporozhian Cossacks. Later two-thirds of its inhabitants were carried off by a plague; and in 1622 the whole place was laid waste by a conflagration. It recovered, however, in spite of several other conflagrations (especially in 1742 and 1754). On several occasions Kaluga was the residence of political prisoners; among others Shamyl, the Lesghian chief, spent his exile there (1859-1870).

KALYAN, a town of British India, in the Thana district of Bombay, situated 33 m. N.E. of Bombay city, where the two main lines of the Great Indian Peninsula railway diverge. Pop. (1901), 10,749. There is a considerable industry of rice-husking. Kalyan is known to have been the capital of a kingdom and a centre of sea-borne commerce in the early centuries of the Christian era. The oldest remains now existing are of Mahommedan times.

KAMA, or Kamadeva, in Hindu mythology, the god of love. He is variously stated to have been the child of Brahma or Dharma (virtue). In the *Rig Veda*, Kama (desire) is described as the first movement that arose in the One after it had come into life through the power of fervour or abstraction. In the Atharva-Veda Kama does not mean sexual desire, but rather the yearning after the good of all created things. Later Kama is simply the Hindu Cupid. While attempting to lure Siva to sin, he was destroyed by a fiery glance of the goddess' third eye. Thus in Hindu poetry Kama is known as Ananga, the "bodiless god." Kama's wife Rati (voluptuousness) mourned him so greatly that Siva relented, and he was reborn as the child of Krishna and Rukmini. The babe was called Pradyumna (Cupid). He is represented armed with a bow of sugar-cane; it is strung with bees, and its five arrows are tipped with flowers which overcome the five senses. A fish adorns his flag, and he rides a parrot or sparrow, emblematic of lubricity.

KĀMALĀ, a red powder formerly used in medicine as an anthelmintic and employed in India as a yellow dye. It is obtained from *Mallotus philippinensis*, Müll., a small euphorbiaceous tree from 20 to 45 ft. in height, distributed from southern Arabia in the west to north Australia and the Philippines in the east. In India kāmalā has several ancient Sanskrit names, one of which, kapila, signifies dusky or tawny red. Under the name of wars, kanbil, or qinbil, kāmalā appears to have been known to the Arabian physicians as a remedy for tapeworm and skin diseases as early as the 10th century, and indeed is mentioned by Paulus Ægineta still earlier. The drug was formerly in the British Pharmacopoeia, but is inferior to many other anthelmintics and is not now employed.

KAMCHATKA, a peninsula of N.-E. Siberia, stretching from the land of the Chukchis S.S.W. for 750 m., with a width of from 80 to 300 m. (51° to 62° N., and 156° to 163° E.), between the Sea of Okhotsk and Bering Sea. It forms part of the Russian Maritime Province. Area, 104,260 sq. m.

The isthmus which connects the peninsula with the mainland is a flat *tundra*, sloping gently both ways. The mountain chain, which Ditmar calls central, seems to be interrupted under 57° N. by a deep indentation corresponding to the valley of the Tighil. There too the hydrographical network, as well as the south-west to north-east strike of the clay-slates and metamorphic schists on Ditmar's map, seem to indicate the existence of two chains running south-west to north-east, parallel to the volcanic chain of S.E. Kamchatka. Glaciers were not known till the year 1899, when they were discovered on the Byelaya and Ushkinskaya (15,400 ft.) mountains. Thick Tertiary deposits, probably Miocene, overlie the middle portions of the west coast. The southern parts of the central range are composed of granites, syenites, porphyries and crystalline slates, while in the north of Ichinskaya volcano, which is the highest summit of the peninsula (16,920 ft.), the mountains consist chiefly of Tertiary sandstones and old volcanic rocks. Coal-bearing clays containing fresh-water molluscs and dicotyledonous plants, as also conglomerates, alternate with the sandstones in these Tertiary deposits. Amber is found in them. Very extensive layers of melaphyre and andesite, as also of conglomerates and volcanic tuffs, cover the middle portions of the peninsula. The south-eastern portion is occupied by a chain of volcanoes, running along the indented coast, from Cape Lopatka to Cape Kronotskiy (54° 25′ N.), and separated from the rest of the peninsula by the valleys of the Bystraya (an affluent of the Bolstraya, on the west coast) and Kamchatka rivers. Another chain of volcanoes runs from Ichinskaya (which burst into activity several times in the 18th and 19th centuries) to Shiveluch, seemingly parallel to the above but farther north. The two chains contain twelve active and twenty-six extinct volcanoes, from 7000 to more than 15,000 ft. high. The highest volcanoes are grouped under 56° N., and the highest of them, Kluchevskaya (16,990 ft.), is in a state of almost incessant activity (notable outbreaks in 1729, 1737, 1841, 1853-1854, and 1896-1897), a flow of its lava having reached to Kamchatka river in 1853. The active Shiveluch (9900 ft.) is the last volcano of this chain. Several lakes and probably Avacha Bay are old craters. Copper, mercury, and iron ores, as also pure copper, ochre and sulphur, are found in the peninsula. The principal river is the Kamchatka (325 m. long), which flows first north-eastwards in a fertile longitudinal valley, and then, bending suddenly to the east, pierces the above-mentioned volcanic chain. The other rivers are the Tighil (135 m.) and the Bolstraya (120 m.), both flowing into the Sea of Okhotsk; and the Avacha, flowing into the Pacific.

The floating ice which accumulates in the northern parts of the Sea of Okhotsk and the cold current which flows along the east coast of the peninsula render its summers chilly, but the winter is relatively warm, and temperatures below -40° F. are experienced only in the highlands of the interior and on the Okhotsk littoral. The average temperatures at Petropavlovsk (53° N.) are: year 37° F., January 17°, July 58°; while in the valley of the Kamchatka the average temperature of the winter is 16°, and of the summer as high as 58° and 64°. Rain and snow are copious, and dense fogs enshroud the coast in summer; consequently the mountains are well clothed with timber and the meadows with grass, except in the *tundras* of the north. The natives eat extensively the bulbs of the Martagon lily, and weave cloth out of the fibres of the Kamchatka nettle. *Delphinopterus leucus*, the sea-lion (*Otaria Stelleri*), and walrus abound off the coasts. The sea-otter (*Enhydris marina*) has been destroyed.

The population (5846 in 1870) was 7270 in 1900. The southern part of the peninsula is occupied by Kamchadales, who exhibit many attributes of the Mongolian race, but are more similar to the aborigines of N.E. Asia and N.W. America. Fishing (quantities of salmon enter the rivers) and hunting are their chief occupations. Dog-sledges are principally used as means of communication. The efforts of the government to introduce cattle-breeding have failed. The Kamchadale language cannot be assigned to any known group; its vocabulary is extremely poor. The purity of the tongue is best preserved by the people of the Penzhinsk district on the W. coast. North of 57° N. the peninsula is peopled with Koryaks, settled and nomad, and Lamuts (Tunguses), who came from the W. coast of the Sea of Okhotsk. The principal Russian settlements are: Petropavlovsk, on the E. coast, on Avacha Bay, with an excellent roadstead; Verkhne-Kamchatsk and Nizhne-Kamchatsk in the valley of the Kamchatka river; Bolsheryetsk, on the Bolshaya; and Tighil, on the W. coast.

The Russians made their first settlements in Kamchatka in the end of the 17th century; in 1696

Atlasov founded Verkhne-Kamchatsk, and in 1704 Robelev founded Bolsheryetsk. In 1720 a survey of the peninsula was undertaken; in 1725-1730 it was visited by Bering's expedition; and in 1733-1745 it was the scene of the labours of the Krasheninnikov and Steller expedition.

See G. A. Erman, *Reise um die Erde* iii., (Berlin, 1848); C. von Ditmar, *Reisen und Aufenthalt in Kamchatka in den Jahren 1851-1855* (1890-1900); G. Kennan, *Tent Life in Siberia* (1870), and paper in *Jour. of American Geog. Soc.* (1876); K. Diener, in *Petermann's Mitteilungen* (1891, vol. xxxvii.); V. A. Obruchev, in *Izvestia* of the East Siberian Geographical Society (xxiii. 4, 5; 1892); F. H. H. Guillemard, *Cruise of the "Marchesa"* (2nd ed., London, 1889); and G. E. H. Barrett-Hamilton in *Scott. Geog. Mag.* (May, 1899), with bibliography.

(P. A. K.; J. T. Be.)

KAME (a form of Scandinavian *comb*, hill), in physical geography, a short ridge or bunched mound of gravel or sand, "tumultuously stratified," occurring in connexion with glacial deposits, having been formed at the mouths of tunnels under the ice. When the ice-sheet melts, these features, formerly concealed by the glacier, are revealed. They are common in the glaciated portions of the lower Scottish valleys. By some authorities the term "kame," or specifically "serpentine kame," is taken as synonymous with "esker," which however is preferably to be applied to the long mound deposited within the ice-tunnel, not to the bunched mound at its mouth.

KAMENETS PODOLSKIY, or Podolian Kamenets (Polish Kamieniec), a town of S.W. Russia, chief town of the government of Podolia. It stands in 48° 40′ N. and 26° 30′ E., on a high, rocky bluff of the river Smotrich, a left-hand tributary of the Dniester, and near the Austrian frontier. Pop. (1863), 20,699; (1900) 39,113, of whom 50% were Jews and 30% Poles. Round the town lies a cluster of suburban villages, Polish Folwark, Russian Folwark, Zinkovtsui, Karvasarui, &c.; and on the opposite side of the river, accessible by a wooden bridge, stands the castle which long frowned defiance across the Dniester to Khotin in Bessarabia. Kamenets is the see of a Roman Catholic and a Greek Orthodox bishop. The Roman Catholic cathedral of St Peter and St Paul, built in 1361, is distinguished by a minaret, recalling the time when it was used as a mosque by the Turks (1672-1699). The Greek cathedral of John the Baptist dates from the 16th century, but up to 1798 belonged to the Basilian monastery. Other buildings are the Orthodox Greek monastery of the Trinity, and the Catholic Armenian church (founded in 1398), possessing a 14th-century missal and an image of the Virgin Mary that saw the Mongol invasion of 1239-1242. The town contains Orthodox Greek and Roman Catholic seminaries, Jewish colleges, and an archaeological museum for church antiquities, founded in 1890. Kamenets was laid waste by the Mongol leader Batu in 1240. In 1434 it was made the chief town of the province of Podolia. In the 15th and 16th centuries it suffered frequently from the invasions of Tatars, Moldavians and Turks; and in 1672 the hetman of the Cossacks, Doroshenko, assisted by Sultan Mahommed IV. of Turkey, made himself master of the place. Restored to Poland by the peace of Karlowitz (1699), it passed with Podolia to Russia in 1795. Here the Turks were defeated by the Poles in 1633, and here twenty years later peace was concluded between the same antagonists. The fortifications were demolished in 1813.

KAMENZ, a town in the kingdom of Saxony, on the Black Elster, 21 m. N.E. of Dresden, on a branch line of railway from Bischofswerda. Pop. (1900), 9726. It has four Evangelical churches, among them a Wendish one, and a handsome new town-hall with a library. The hospital is dedicated to the memory of Lessing, who was born here. A colossal bust of the poet was placed opposite the Wendish church in 1863, and a monument was raised to him on a neighbouring hill

in 1864. The industries of Kamenz include wool-spinning, and the manufacture of cloth, glass, crockery and stoneware. Built about 1200, Kamenz, was known by the name Dreikretcham until the 16th century. In 1318 it passed to the mark of Brandenburg; in 1319 to Bohemia; and in 1635, after suffering much in the Hussite and Thirty Years' wars, it came into the possession of Saxony. In 1706 and 1842 it was almost entirely consumed by fire.

KAMENZ is also the name of a village in Prussia, not far from Breslau; pop. 900. This is famous on account of its Cistercian monastery, founded in 1094. Of the house, which was closed in 1810, only a few buildings remain.

KAMES, HENRY HOME, LORD (1696-1782), Scottish lawyer and philosopher, son of George Home of Kames, in Berwickshire, where he was born in 1696. After receiving a somewhat imperfect education from a private tutor, he was in 1712 indentured to a writer to the signet in Edinburgh, but an accidental introduction to Sir Hew Dalrymple, then president of the court of session, determined him to aspire to the position of advocate. He accordingly set himself to studying various branches of literature, specially metaphysics and moral philosophy. He was called to the bar in January 1724, and, as he lacked those brilliant qualities which sometimes command immediate success, he employed his leisure in the compilation of *Remarkable Decisions in the Court of Session from 1716 to 1728* (1728). This work having attracted attention, his power of ingenious reasoning and mastery of law gradually gained him a leading position at the bar. In 1752 he was appointed a judge in the court of session under the title of Lord Kames, and in 1763 he was made one of the lords of justiciary. In 1741 he married Agatha Drummond, through whom in 1761 he succeeded to the estate of Blair Drummond, Perthshire. He continued to discharge his judicial duties till within a few days of his death at Edinburgh on the 27th of December 1782.

Lord Kames took a special interest in agricultural and commercial affairs. In 1755 he was appointed a member of the board of trustees for encouragement of the fisheries, arts and manufactures of Scotland, and about the same time he was named one of the commissioners for the management of the forfeited estates annexed to the Crown. On the subject of agriculture he wrote *The Gentleman Farmer* (1776). In 1765 he published a small pamphlet *On the Flax Husbandry of Scotland*; and, besides availing himself of his extensive acquaintance with the proprietors of Scotland to recommend the introduction of manufactures, he took a prominent part in furthering the project of the Forth and Clyde Canal. He was also one of the founders of the Physical and Literary Society, afterwards the Royal Society of Edinburgh. It is, however, as a writer on philosophy that Lord Kames is best known. In 1751 he published his *Essays on the Principles of Morality and Natural Religion* (Ger. trans., Leipzig, 1772), in which he endeavoured to maintain the doctrine of innate ideas, but conceded to man an apparent but only apparent freedom of the will. His statement of the latter doctrine so aroused the alarm of certain clergymen of the Church of Scotland that he found it necessary to withdraw what was regarded as a serious error, and to attribute man's delusive sense of freedom, not to an innate conviction implanted by God, but to the influence of the passions. His other philosophical works are *An Introduction to the Art of Thinking* (1761), *Elements of Criticism* (1762), *Sketches of the History of Man* (1774).

See *Life of Lord Kames*, by A. F. Tytler, Lord Woodhouselee (2 vols., 1807).

KAMMIN, or CAMMIN, a town in the Prussian province of Pomerania, 2½ m. from the Baltic, on the Kamminsche Bodden, a lake connected with the sea by the Dievenow. Pop. (1905), 5923. Among its four Evangelical churches, the cathedral and the church of St Mary are noteworthy. Iron-founding and brewing are carried on in the town, which has also some fishing and shipping. There is steamer communication with Stettin, about 40 m. S.S.W. Kammin is of Wendish origin, and obtained municipal privileges in 1274. From about 1200 till 1628 it was the seat of a bishopric, which at the latter date became a secular principality, being in 1648 incorporated with Brandenburg.

See Küchen, *Geschichte der Stadt Kammin* (Kammin, 1885).

KAMPEN, a town in the province of Overysel, Holland, on the left bank of the Ysel, 3½ m. above its mouth, and a terminal railway station 8 m. N.W. of Zwolle. It has regular steamboat communication with Zwolle, Deventer, Amsterdam, and Enkhuizen. Pop. (1900), 19,664. Kampen is surrounded by beautiful gardens and promenades in the place of the old city walls, and has a fine river front. The four turreted gateways furnish excellent examples of 16th and 17th century architecture. Of the churches the Bovenkerk ("upper church"), or church of St Nicholas, ranks with the cathedral of Utrecht and the Janskerk at 's Hertogenbosch as one of the three great medieval churches in Holland. It was begun in 1369, and has double aisles, ambulatory and radiating chapels, and contains some finely carved woodwork. The Roman Catholic Buitenkerk ("outer church") is also a fine building of the 14th century, with good modern panelling. There are many other, though slighter, remains of the ancient churches and monasteries of Kampen; but the most remarkable building is the old town-hall, which is unsurpassed in Holland. It dates from the 14th century, but was partly restored after a fire in 1543. The exterior is adorned with niched statues and beautiful iron trellis work round the windows. The old council-chamber is wainscoted in black oak, and contains a remarkable sculptured chimney-piece (1545) and fine wood carving. The town-hall contains the municipal library, collections of tapestry, portraits and antiquities, and valuable archives relating to the town and province. Kampen is the seat of a Christian Reformed theological school, a gymnasium, a higher burgher school, a municipal school of design, and a large orphanage. There are few or no local taxes, the municipal chest being filled by the revenues derived from the fertile delta-land, the Kampeneiland, which is always being built up at the mouth of the Ysel. There is a considerable, trade in dairy produce; and there are shipyards, rope-walks, a tool factory, cigar factories, paper mills, &c.

KAMPTEE, or Kamthi, a town of British India, in the Nagpur district of the Central Provinces, just below the confluence of the Kanhan with the rivers Pench and Kolar; 10 m. N.E. of Nagpur by rail. Pop. (1901), 38,888, showing a continuous decrease since 1881. Kamptee was founded in 1821, as a military cantonment in the neighbourhood of the native capital of Nagpur, and became an important centre of trade. Since the opening of the railway, trade has largely been diverted to Nagpur, and the garrison has recently been reduced. The town is well laid out with wide roads, gardens and tanks.

KAMRUP, a district of British India, in the Brahmaputra valley division of Eastern Bengal and Assam. The headquarters are at Gauhati. Area, 3858 sq. m.; pop. (1901), 589,187, showing a decrease of 7% in the decade. In the immediate neighbourhood of the Brahmaputra the land is low, and exposed to annual inundation. In this marshy tract reeds and canes flourish luxuriantly, and the only cultivation is that of rice. At a comparatively short distance from the river banks the ground begins to rise in undulating knolls towards the mountains of Bhutan on the north, and towards the Khasi hills on the south. The hills south of the Brahmaputra in some parts reach the height of 800 ft. The Brahmaputra, which divides the district into two nearly equal portions, is navigable by river steamers throughout the year, and receives several tributaries navigable by large native boats in the rainy season. The chief of these are the Manas, Chaul Khoya and Barnadi on the north, and the Kulsi and Dibru on the south bank. There is a government forest preserve in the district and also a plantation where seedlings of teak, *sál*, *sissu*, *súm*, and *nahor* are reared, and experiments are being made with the caoutchouc tree. The population is entirely rural, the only town with upwards of 5000 inhabitants being Gauhati (11,661). The temples of Hajo and Kamākhya attract many pilgrims from all quarters. The staple crop of the district is rice, of which there are three crops. The indigenous manufactures are confined to the weaving of silk

and cotton cloths for home use, and to the making of brass cups and plates. The cultivation and manufacture of tea by European capital is not very prosperous. The chief exports are rice, oil-seeds, timber and cotton; the imports are fine rice, salt, piece goods, sugar, betel-nuts, coco-nuts and hardware. A section of the Assam-Bengal railway starts from Gauhati, and a branch of the Eastern Bengal railway has recently been opened to the opposite bank of the river. A metalled road runs due south from Gauhati to Shillong.

KAMYSHIN, a town of Russia, in the government of Saratov, 145 m. by river S.S.W. of the city of Saratov, on the right bank of the Volga. Pop. (1861), 8644; (1897), 15,934. Being the terminus of the railway to Tambov, Moscow and the Baltic ports, it is an important port for the export of cereals and salt from the Volga, and it imports timber and wooden wares. It is famous for its water-melons. Peter the Great built here a fort, which was known at first as Dmitrievsk, but acquired its present name in 1780.

KANAKA, a Polynesian word meaning “man,” used by Polynesians to describe themselves. Its ethnical value, never great, has been entirely destroyed by its indiscriminate use by the French to describe all South Sea islanders, whether black or brown. The corrupt French form *canaque* has been used by some English writers. The term came into prominence in 1884-1885 in connexion with the scandals arising over the kidnapping of South Sea islanders for enforced labour on the sugar plantations of north Queensland.

KANARA, or Canara, the name of two adjoining districts of British India: North Kanara in the presidency of Bombay, South Kanara in that of Madras. Both are on the western coast.

North Kanara District forms part of the southern division of Bombay. The administrative headquarters are at Karwar, which is also the chief seaport. Area, 3945 sq. m.; pop. (1901), 454,490, showing an increase of 2% in the decade. The trade of the interior, which used to pass down to the seaports, has been largely diverted by the opening of the Southern Mahratta railway. Along the coast rice is the chief crop, and coco-nut palms are also important. In the upland there are valuable gardens of areca palms, cardamoms and pepper. Rice and timber are exported, and sandalwood-carving and salt manufacture are carried on. The main feature in the physical geography of the district is the range of the Western Ghats, which, running from north to south, divides it into two parts, a lowland or coast strip (Payanghat), and an upland plateau (Balaghat). The coast-line is only broken by the Karwar headland in the north, and by the estuaries of four rivers and the mouths of many smaller streams, through which the salt water finds an entrance into numerous lagoons winding several miles inland. The breadth of the lowlands varies from 5 to 15 miles. From this narrow belt rise a few smooth, flat-topped hills, from 200 to 300 ft. high; and at places it is crossed by lofty, rugged, densely wooded spurs, which, starting from the main range, maintain almost to the coast a height of not less than 1000 ft. Among these hills lie well-tilled valleys of garden and rice land. The plateau of the Balaghat is irregular, varying from 1500 to 2000 ft. in height. In some parts the country rises into well-wooded knolls, in others it is studded by small, isolated, steep hills. Except on the banks of streams and in the more open glades, the whole is one broad waste of woodland and forest. The open spaces are dotted with hamlets or parcelled out into rice clearings. Of the rivers flowing eastward from the watershed of the Sahyadri hills the only one of importance is the Wardha or Varada, a tributary of the Tungabhadra. Of those that flow westwards, the four principal ones, proceeding from north to south, are the Kali, Gungawali, Tadri and Sharavati. The last of these forms the famous Gersoppa Falls. Extensive forests clothe the hills, and are conserved under the rules of the forest

department.

South Kanara District has its headquarters at Mangalore. Area, 4021 sq. m. Pop. (1901), 1,134,713, showing an increase of 7% in the decade. The district is intersected by rivers, none of which exceeds 100 miles in length. They all take their rise in the Western Ghats, and many are navigable during the fair weather for from 15 to 25 miles from the coast. The chief of these streams are the Netravati, Gurpur and Chendragiri. Numerous groves of coco-nut palms extend along the coast, and green rice-fields are seen in every valley. The Western Ghats, rising to a height of 3000 to 6000 ft., fringe the eastern boundary. Forest land of great extent and value exists, but most of it is private property. Jungle products (besides timber) consist of bamboo, cardamoms, wild arrowroot, gall-nuts, gamboge, catechu, fibrous bark, cinnamon, gums, resin, dyes, honey and beeswax. The forests formerly abounded in game, which, however, is rapidly decreasing under incessant shooting. The staple crop is rice. The chief articles of import are piece goods, cotton yarn, oils and salt. Tiles are manufactured in several places out of a fine potter's clay. The Azhikal-Mangalore line of the Madras railway serves the district.

See *South Canara District Manual* (2 vols., Madras, 1894-1895).

KANARESE, a language of the Dravidian family, spoken by about ten millions of people in southern India, chiefly in Mysore, Hyderabad, and the adjoining districts of Madras and Bombay. It has an ancient literature, written in an alphabet closely resembling that employed for Telugu. Since the 12th century the Kanarese-speaking people have largely adopted the Lingayat form of faith, which may be described as an anti-Brahmanical sect of Siva worshippers (see Hinduism). Most of them are agriculturists, but they also engage actively in trade.

KANARIS (or Canaris), **CONSTANTINE** (1790-1877), Greek patriot, belonged to the class of coasting sailors who produced if not the most honest, at least the bravest, and the most successful of the combatants in the cause of Greek independence. He belonged by birth to the little island of Psara, to the north-west of Chio. He first became prominent as the effective leader of the signal vengeance taken by the Greeks for the massacre at Chio in April 1822 by the Turkish Capitan Pasha. The commander of the force of fifty small vessels and eight fireships sent to assail the Turkish fleet was the navarch Miaoulis, but it was Kanaris who executed the attack with the fireships on the flagship of the Capitan Pasha on the night of the 18th of June 1822. The Turks were celebrating the feast of Bahram at the end of the Ramadān fast. Kanaris had two small brigs fitted as fireships, and thirty-six men. He was allowed to come close to the Turkish flagship, and succeeded in attaching his fireships to her, setting them on fire, and escaping with his party. The fire reached the powder and the flagship blew up, sending the Capitan Pasha and 2000 Turks into the air. Kanaris was undoubtedly aided by the almost incredible sloth and folly of his opponents, but he chose his time well, and the service of the fireships was always considered peculiarly dangerous. That Kanaris could carry out the venture with a volunteer party not belonging to a regularly disciplined service, not only proved him to be a clever partisan fighter, but showed that he was a leader of men. He repeated the feat at Tenedos in November of 1822, and was then considered to have disposed of nearly 4000 Turks in the two ventures. When his native island, Psara, was occupied by the Turks he continued to serve under the command of Miaoulis. He was no less distinguished in other attacks with fireships at Samos and Mytilene in 1824, which finally established an utter panic in the Turkish navy. His efforts to destroy the ships of Mehemet Ali at Alexandria in 1825 were defeated by contrary winds. When the Greeks tried to organize a regular navy he was appointed captain of the frigate "Hellas" in 1826. In politics he was a follower of Capo d'Istria. He helped to upset the government of King Otho and to establish his successor, was prime minister in 1864-1865, came back from retirement to preside over the ministry formed during the crisis of the Russo-Turkish war, and died in office on the 15th of September 1877. Kanaris is described as of small stature, simple in appearance, somewhat shy and melancholy. He is justly remembered as the most blameless of the popular heroes of the War of Independence. He was almost the only one among them whom Dundonald, with whom he served in a successful attack on an Egyptian war-ship near Alexandria, exempts from the

sweeping charges of cowardice he brings against the Greeks.

(D. H.)

KANAUJ, an ancient city of British India, in Farukhabad district, United Provinces, near the left bank of the Ganges. Pop. (1901), 18,552. Kanauj in early times formed the capital of a great Hindu kingdom. Its prosperity dates from a prehistoric period, and seems to have culminated about the 6th century under Harsha. In 1019 it fell before Mahmud of Ghazni, and again in 1194 before Mahommed Ghori. The existing ruins extend over the lands of five villages, occupying a semicircle fully 4 m. in diameter. No Hindu buildings remain intact; but the great mosque, constructed by Ibrahim Shah of Jaunpur in 1406 out of Hindu temples, is still called by Hindus "Sita's Kitchen." Kanauj, which is traditionally said to be derived from *Kanyakubja* (= the crooked maiden), has given its name to an important division of Brahmans in northern India. Hinduism in Lower Bengal also dates its origin from a Brahman migration southwards from this city, about 800 or 900. Kanauj is now noted for the distilling of scents.

KANDAHAR, the largest city in Afghanistan, situated in 31° 37′ N. lat. and 65° 43′ E. long., 3400 ft. above the sea. It is 370 m. distant from Herat on the N.W., by Girishk and Farah—Girishk being 75 m., and Farah 225 m. from Kandahar. From Kabul, on the N.E., it is distant 315 m., by Kalat-i-Ghilzai and Ghazni—Kalat-i-Ghilzai being 85 m., and Ghazni 225 m. from Kandahar. To the Peshin valley the distance is about 110 m., and from Peshin to India the three principal routes measure approximately as follows: by the Zhob valley to Dera Ismail Khan, 300 m.; by the Bori valley to Dera Ghazi Khan, 275 m.; by Quetta and the Bolan to Dadar, 125 m.; and by Chappar and Nari to Sibi, 120 m. The Indian railway system extends to New Chaman, within some 80 m. of Kandahar. Immediately round the city is a plain, highly cultivated and well populated to the south and west; but on the north-west barren, and bounded by a double line of hills, rising to about 1000 ft. above its general level, and breaking its dull monotony with irregular lines of scarped precipices, crowned with fantastic pinnacles and peaks. To the north-west these hills form the watershed between the valleys of the Arghandab and the Tarnak, until they are lost in the mountain masses of the Hazarajat—a wild region inhabited by tribes of Tatar origin, which effectually shuts off Kandahar from communication with the north. On the south-west they lose themselves in the sandy desert of Registan, which wraps itself round the plain of Kandahar, and forms another impassable barrier. But there is a break in these hills—a gate, as it were, to the great high road between Herat and India; and it is this gate which the fortress of Kandahar so effectually guards, and to which it owes its strategic importance. Other routes there are, open to trade, between Herat and northern India, either following the banks of the Hari Rud, or, more circuitously, through the valley of the Helmund to Kabul; or the line of hills between the Arghandab and the Tarnak may be crossed close to Kalat-i-Ghilzai; but of the two former it may be said that they are not ways open to the passage of Afghan armies owing to the hereditary hostility existing between the Aeimak and Hazara tribes and the Afghans generally, while the latter is not beyond striking distance from Kandahar. The one great high road from Herat and the Persian frontier to India is that which passes by Farah and crosses the Helmund at Girishk. Between Kandahar and India the road is comparatively open, and would be available for railway communication but for the jealous exclusiveness of the Afghans.

To the north-west, and parallel to the long ridges of the Tarnak watershed, stretches the great road to Kabul, traversed by Nott in 1842, and by Stewart and subsequently by Roberts in 1880. Between this and the direct route to Peshin is a road which leads through Maruf to the Kundar river and the Guleri pass into the plains of Hindustan at Dera Ismail Khan. This is the most direct route to northern India, but it involves the passage of some rough country, across the great watershed between the basins of the Helmund and the Indus. But the best known road from Kandahar to India is that which stretches across the series of open stony plains interspersed with rocky hills of irregular formation leading to the foot of the Kwaja Amran (Khojak) range, on the far side of which from Kandahar lies the valley of Peshin. The passage of the Kwaja Amran involves a rise and fall of some 2300 ft., but the range has been tunnelled and a railway now connects the frontier post of New Chaman with Quetta. Two lines of railway now connect Quetta

with Sind, the one known as the Harnai loop, the other as the Bolan or Mashkaf line. They meet at Sibi (see BALUCHISTAN). Several roads to India have been developed through Baluchistan, but they are all dominated from Kandahar. Thus Kandahar becomes a sort of focus of all the direct routes converging from the wide-stretching western frontier of India towards Herat and Persia, and the fortress of Kandahar gives protection on the one hand to trade between Hindustan and Herat, and on the other it lends to Kabul security from invasion by way of Herat.

Kandahar is approximately a square-built city, surrounded by a wall of about 3¾ m. circuit, and from 25 to 30 ft. high, with an average breadth of 15 ft. Outside the wall is a ditch 10 ft. deep. The city and its defences are entirely mud-built. There are four main streets crossing each other nearly at right angles, the central "chouk" being covered with a dome. These streets are wide and bordered with trees, and are flanked by shops with open fronts and verandas. There are no buildings of any great pretension in Kandahar, a few of the more wealthy Hindus occupying the best houses. The tomb of Ahmad Shah is the only attempt at monumental architecture. This, with its rather handsome cupola, and the twelve minor tombs of Ahmad Shah's children grouped around, contains a few good specimens of fretwork and of inlaid inscriptions. The four streets of the city divide it into convenient quarters for the accommodation of its mixed population of Duranis, Ghilzais, Parsiwans and Kakars, numbering in all some 30,000 souls. Of these the greater proportion are the Parsiwans (chiefly Kizilbashes).

It is reckoned that there are 1600 shops and 182 mosques in the city. The mullahs of these mosques are generally men of considerable power. The walls of the city are pierced by the four principal gates of "Kabul," "Shikarpur," "Herat" and the "Idgah," opposite the four main streets, with two minor gates, called the Top Khana and the Bardurani respectively, in the western half of the city. The Idgah gate passes through the citadel, which is a square-built enclosure with sides of about 260 yds. in length. The flank defences of the main wall are insufficient; indeed there is no pretence at scientific structure about any part of the defences; but the site of the city is well chosen for defence, and the water supply (drawn by canals from the Arghandab or derived from wells) is good.

About 4 m. west of the present city, stretched along the slopes of a rocky ridge, and extending into the plains at its foot, are the ruins of the old city of Kandahar sacked and plundered by Nadir Shah in 1738. From the top of the ridge a small citadel overlooks the half-buried ruins. On the north-east face of the hill forty steps, cut out of solid limestone, lead upward to a small, dome-roofed recess, which contains some interesting Persian inscriptions cut in relief on the rock, recording particulars of the history of Kandahar, and defining the vast extent of the kingdom of the emperor Baber. Popular belief ascribes the foundation of the old city to Alexander the Great.

Although Kandahar has long ceased to be the seat of government, it is nevertheless by far the most important trade centre in Afghanistan, and the revenues of the Kandahar province assist largely in supporting the chief power at Kabul. There are no manufactures or industries of any importance peculiar to Kandahar, but the long lines of bazaars display goods from England, Russia, Hindustan, Persia and Turkestan, embracing a trade area as large probably as that of any city in Asia. The customs and town dues together amount to a sum equal to the land revenue of the Kandahar province, which is of considerable extent, stretching to Pul-i-Sangin, 10 m. south of Kalat-i-Ghilzai on the Kabul side, to the Helmund on the west, and to the Hazara country on the north. Although Farah has been governed from Kandahar since 1863, its revenues are not reckoned as a part of those of the province. The land revenue proper is assessed in grain, the salaries of government officials, pay of soldiers, &c., being disbursed by "barats" or orders for grain at rates fixed by government, usually about 20% above the city market prices. The greater part of the English goods sold at Herat are imported by Karachi and Kandahar—a fact which testifies to the great insecurity of trade between Meshed and Herat. Some of the items included as town dues are curious. For instance, the tariff on animals exposed for sale includes a charge of 5% ad valorem on slave girls, besides a charge of 1 rupee per head. The kidney fat of all sheep and the skins of all goats slaughtered in the public yard are perquisites of government, the former being used for the manufacture of soap, which, with snuff, is a government monopoly. The imports consist chiefly of English goods, indigo, cloth, boots, leather, sugar, salt, iron and copper, from Hindustan, and of shawls, carpets, "barak" (native woollen cloth), postins (coats made of skins), shoes, silks, opium and carpets from Meshed, Herat and Turkestan. The exports are wool, cotton, madder, cummin seed, asafoetida, fruit, silk and horses. The system of coinage is also curious: 105 English rupees are melted down, and the alloy extracted, leaving 100 rupees' worth of silver; 295 more English rupees are then melted, and the molten metal mixed with the 100 rupees silver; and out of this 808 Kandahari rupees are coined. As the Kandahari rupee is worth about 8 annas (half an English rupee) the government thus realizes a profit of 1%. Government accounts are kept in "Kham" rupees, the "Kham" being worth about five-sixths of a Kandahari rupee; in other words, it about equals the franc, or the Persian "kran."

Immediately to the south and west of Kandahar is a stretch of well-irrigated and highly cultivated country, but the valley of the Arghandab is the most fertile in the district, and, from the luxuriant abundance of its orchards and vineyards, offers the most striking scenes of landscape beauty. The pomegranate fields form a striking feature in the valley—the pomegranates of Kandahar, with its "sirdar" melons and grapes, being unequalled in quality by any in the East.

The vines are grown on artificial banks, probably for want of the necessary wood to trellis them—the grapes being largely exported in a semi-dried state. Fruit, indeed, besides being largely exported, forms the chief staple of the food supply of the inhabitants throughout Afghanistan. The art of irrigation is so well understood that the water supply is at times exhausted, no river water being allowed to run to waste. The plains about Kandahar are chiefly watered by canals drawn from the Arghandab near Baba-wali, and conducted through the same gap in the hills which admits the Herat road. The amount of irrigation and the number of water channels form a considerable impediment to the movements of troops, not only immediately about Kandahar, but in all districts where the main rivers and streams are bordered by green bands of cultivation. Irrigation by "karez" is also largely resorted to. The karez is a system of underground channelling which usually taps a sub-surface water supply at the foot of some of the many rugged and apparently waterless hills which cover the face of the country. The water is not brought to the surface, but is carried over long distances by an underground channel or drain, which is constructed by sinking shafts at intervals along the required course and connecting the shafts by tunnelling. The general agricultural products of the country are wheat, barley, pulse, fruit, madder, asafoetida, lucerne, clover and tobacco.

Of the mineral resources of the Kandahar district not much is known, but an abandoned gold mine exists about 2 m. north of the town. Some general idea of the resources of the Kandahar district may be gathered from the fact that it supplied the British troops with everything except luxuries during the entire period of occupation in 1879-81; and that, in spite of the great strain thrown on those resources by the presence of the two armies of Ayub Khan and of General Roberts, and after the total failure of the autumn crops and only a partial harvest the previous spring, the army was fed without great difficulty until the final evacuation, at one-third of the prices paid in Quetta for supplies drawn from India.

History.—Kandahar has a stormy history. Sultan Mahmud of Ghazni took it in the 11th century from the Afghans who then held it. In the beginning of the 13th century it was taken by Jenghiz Khan, and in the 14th by Timur. In 1507 it was captured by the emperor Baber, but shortly afterwards it fell again into Afghan hands, to be retaken by Baber in 1521. Baber's son, Humayun, agreed to cede Kandahar to Persia, but failed to keep his word, and the Persians besieged the place unsuccessfully. Thus it remained in the possession of the Moguls till 1625, when it was taken by Shah Abbas. Aurangzeb tried to take it in 1649 with 5000 men, but failed. Another attempt in 1652 was equally unsuccessful. It remained in Persian possession till 1709, when it was taken by the Afghans, but was retaken after a two years' siege by Nadir Shah. Nadir Shah was assassinated in 1749, and immediately on hearing the news of his death Ahmad Shah (Abdali) seized Nadir Shah's treasure at Kandahar, and proclaimed himself king, with the consent, not only of the Afghans, but, strange to say, of the Hazaras and Baluchis as well. He at once changed the site of the city to its present position, and thus founded the Afghan kingdom, with modern Kandahar as its capital. Ahmad Shah died in 1773, and was succeeded by his son Timur, who died in 1793, and left the throne to his son Zaman Shah. This prince was deposed by his half-brother Mahmud, who was in his turn deposed by Shah Shuja, the full brother of Zaman Shah. After a short reign Shah Shuja was compelled to abdicate from his inability to repress the rising power of Fateh Khan, a Barakzai chief, and he took refuge first with Ranjit Singh, who then ruled the Punjab, and finally secured the protection of British power. Afghanistan was now practically dismembered. Mahmud was reinstated by Fateh Khan, whom he appointed his vizier, and whose nephews, Dost Mahommed Khan and Kohn dil Khan, he placed respectively in the governments of Kabul and Kandahar. Fateh Khan was barbarously murdered by Kamran (Mahmud's son) near Ghazni in 1818; and in retaliation Mahmud himself was driven from power, and the Barakzai clan secured the sovereignty of Afghanistan. While Dost Mahommed held Kabul, Kandahar became temporarily a sort of independent chiefship under two or three of his brothers. In 1839 the cause of Shah Shuja was actively supported by the British. Kandahar was occupied, and Shah Shuja reinstated on the throne of his ancestors. Dost Mahommed was defeated near Kabul, and after surrender to the British force, was deported into Hindustan. The British army of occupation in southern Afghanistan continued to occupy Kandahar from 1839 till the autumn of 1842, when General Nott marched on Kabul to meet Pollock's advance from Jalalabad. The cantonments near the city, built by Nott's division, were repaired and again occupied by the British army in 1879, when Shere Ali was driven from power by the invasion of Afghanistan, nor were they finally evacuated till the spring of 1881. Trade statistics of late years show a gradual increase of exports to India from Kandahar and the countries adjacent thereto, but a curious falling-off in imports. The short-sighted policy of the amir Abdur Rahman in discouraging imports doubtless affected the balance, nor did his affectation of ignoring the railway between New Chaman and Kila Abdulla (on the Peshin side of the Khojak) conduce to the improvement of trade.

(T. H. H.*)

KANDI, a town of British India, in Murshidabad district, Bengal. Pop. (1901), 12,037. It is the residence of the rajas of Paikpara, a wealthy and devout Hindu family. The founder of this family was Ganga Govind Singh, the banyan or agent of Warren Hastings, who was born at Kandi, and retired hither in his old age with an immense fortune. His name has acquired celebrity for the most magnificent *sraddha*, or funeral obsequies, ever performed in Bengal, celebrated in honour of his mother, at a cost, it is said, of £200,000.

KANDY, a town near the centre of Ceylon, 75 m. from Colombo by rail, formerly the capital of a kingdom of the same name, situated towards the heart of the island, 1718 ft. above the sea. It lies round the margin of an artificial lake constructed by the last king of Kandy in 1806, and is beautifully surrounded by hills. The most striking objects are the temples (of which twelve are Buddhist and four Brahman), the tombs of the Kandian kings, and the various buildings of the royal residence, partly allowed to fall into disrepair, partly utilized by the government. Of the temples the Dalada Malagawa is worthy of particular mention; it claims, as the name indicates, to be in possession of a Buddha tooth.

Kandy was occupied by the Portuguese in the 16th century and by the Dutch in 1763; but in both instances the native kings succeeded in shaking off the foreign yoke. The British got possession of the place in 1803, but the garrison afterwards capitulated and were massacred, and it was not till 1814-15 that the king was defeated and dethroned. The British authority was formally established by the convention of March 2, 1815. In 1848, owing to an attempt at rebellion, the town was for a time under martial law. It has been greatly improved of recent years. Sir William Gregory when governor did much to restore the ancient Kandy decorations, while the Victoria Jubilee Commemoration Building, including “Ferguson Memorial Hall,” and two fine hotels, add to the improvements. The Royal Botanic Gardens are situated at Peradeniya, 3 m. distant. Kandy is a uniquely beautiful, highland, tropical town, full of interesting historical and Buddhistic associations. A water supply and electric lighting have been introduced. Roman Catholic missions are active in the work of education, for which a large block of buildings has been erected. Church of England, Wesleyan and Baptist missions are also at work. The population of the town in 1900 was 26,386; of the district, 377,591. Average annual rainfall, 81½ in.; average temperature, 75.3. There is a branch railway from Kandy, north to Matale, 17 m.

KANE, ELISHA KENT (1820-1857), American scientist and explorer, was born in Philadelphia on the 20th of February 1820, the son of the jurist John Kintzing Kane (1795-1858), a friend and supporter of Andrew Jackson, attorney-general of Pennsylvania in 1845-1846, U.S. judge of the Eastern District of Pennsylvania after 1846, and president of the American Philosophical Society in 1856-1858. Young Kane entered the university of Virginia and obtained the degree of M.D. in 1842, and in the following year entered the U.S. navy as surgeon. He had already acquired a considerable reputation in physiological research. The ship to which he was appointed was ordered to China, and he found opportunities during the voyage for indulging his passion for exploration, making a journey from Rio de Janeiro to the base of the Andes, and another from Bombay through India to Ceylon. On the arrival of the ship at its destination he provided a substitute for his post and crossed over to the island of Luzon, which he explored. In 1844 he left China, and, returning by India, Persia, Syria, Egypt, Greece, Austria, Germany and Switzerland, reached America in 1846. In that year he was ordered to the west coast of Africa, where he visited Dahomey, and contracted fever, which told severely on his constitution. On his return in 1847, he exchanged the naval for the military service, and was sent to join the U.S. army in Mexico, where he had some extraordinary adventures, and where he was again stricken with fever.

On the fitting out of the first Grinnell expedition, in 1850, to search for Sir John Franklin, Kane was appointed surgeon and naturalist under Lieut. de Haven, who commanded the ships “Advance” and “Rescue.” The expedition, after an absence of sixteen months, during nine of which the ships were ice-bound, returned without having found any trace of the missing vessels. Kane was in feeble health, but worked on at his narrative of the expedition, which was published

in 1854, under the title of *The U.S. Grinnell Expedition in Search of Sir John Franklin*. He was determined not to give up the search for Franklin, and in spite of ill-health travelled through the States lecturing to obtain funds, and gave up his pay for twenty months. At length Henry Grinnell fitted out an expedition, in the little brig "Advance," of which Kane was given the command. She sailed in June 1853, and passing up Smith Sound at the head of Baffin Bay advanced into the enclosed sea which now bears the name of Kane Basin, thus establishing the Polar route of many future Arctic expeditions. Here, off the coast of Greenland, the expedition passed two winters, accomplishing much useful geographical, as well as scientific, work, including the attainment of what was to remain for sixteen years the highest northern latitude, 80° 35′ N. (June 1854). From this point a large area of open water was seen which was believed to be an "open Polar Sea," a chimera which played an important and delusive rôle in subsequent explorations. After enduring the greatest hardships it was resolved to abandon the ship, Upernivik being reached on the 5th of August 1855, whence a relief expedition brought the explorers home. Medals were authorized by Congress, and in the following year Dr Kane received the founder's medal of the Royal Geographical Society, and, two years later, a gold medal from the Paris Geographical Society. He published *The Second Grinnell Expedition* in 1856. Dr Kane died at Havana on the 16th of February 1857, at the age of thirty-seven. Between his first and second arctic voyages he made the acquaintance of the Fox family, the spiritualists. With one of the daughters, Margaret, he carried on a long correspondence, which was afterwards published by the lady, who declared that they were privately married.

See *Biography of E. K. Kane*, by William Elder (1858); *Life of E. K. Kane and other American Explorers*, by S. M. Smucker (1858); *The Love-Life of Dr Kane, containing the Correspondence and a History of the Engagement and Secret Marriage between E. K. Kane and Margaret Fox* (New York, 1866); "Discoveries of Dr Kane," in *Jour. of the Roy. Geog. Soc.*, vol. xxviii. (reprinted in *R. G. S. Arctic Papers* of 1875).

KANE, a borough of McKean county, Pennsylvania, U.S.A., about 90 m. E.S.E. of Erie. Pop. (1890), 2944; (1900), 5296, (971 foreign-born); (1910) 6626. It is served by the Pennsylvania, the Baltimore & Ohio, the Kane & Elk, and the Big Level & Kinzua railways. It is situated about 2015 ft. above the sea in a region producing natural gas, oil, lumber and silica, and has some reputation as a summer resort. The borough has manufactories of window glass, plate glass and bottles, and repair shops of the Pennsylvania railroad. Kane was settled in 1859, and was incorporated as a borough in 1887. It was named in honour of its founder Gen. Thomas L. Kane (1822-1883), brother of Elisha Kent Kane.

KANGAROO, the universally accepted, though not apparently the native, designation of the more typical representatives of the marsupial family *Macropodidae* (see MARSUPIALIA). Although intimately connected with the cuscuses and phalangers by means of the musk-kangaroo, the kangaroos and wallabies, together with the rat-kangaroos, are easily distinguishable from other diprotodont marsupials by their general conformation, and by peculiarities in the structure of their limbs, teeth and other organs. They vary in size from that of a sheep to a small rabbit. The head, especially in the larger species, is small, compared with the rest of the body, and tapers forward to the muzzle. The shoulders and fore-limbs are feebly developed, and the hind-limbs of disproportionate strength and magnitude, which give the animals a peculiarly awkward appearance when moving about on all-fours, as they occasionally do when feeding. Rapid progression is, however, performed only by the powerful hind-limbs, the animals covering the ground by a series of immense bounds, during which the fore part of the body is inclined forwards, and balanced by the long, strong and tapering tail, which is carried horizontally backwards. When not moving, they often assume a perfectly upright position, the tail aiding the two hind-legs to form a tripod, and the front-limbs dangling by the side of the chest. This position gives full scope for the senses of sight, hearing and smell to warn of the approach of enemies. The fore-paws have five digits, each armed with a strong, curved claw. The hind-foot is extremely long, narrow and (except in the musk-kangaroo) without the first toe. It consists mainly of one very large and strong toe, corresponding to the fourth of the human foot, ending in a

strong curved and pointed claw (fig. 2). Close to the outer side of this lies a smaller fifth digit, and to the inner side two excessively slender toes (the second and third), bound together almost to the extremity in a common integument. The two little claws of these toes, projecting together from the skin, may be of use in scratching and cleaning the fur of the animal, but the toes must have quite lost all connexion with the functions of support or progression. This type of foot-structure is termed syndactylous.

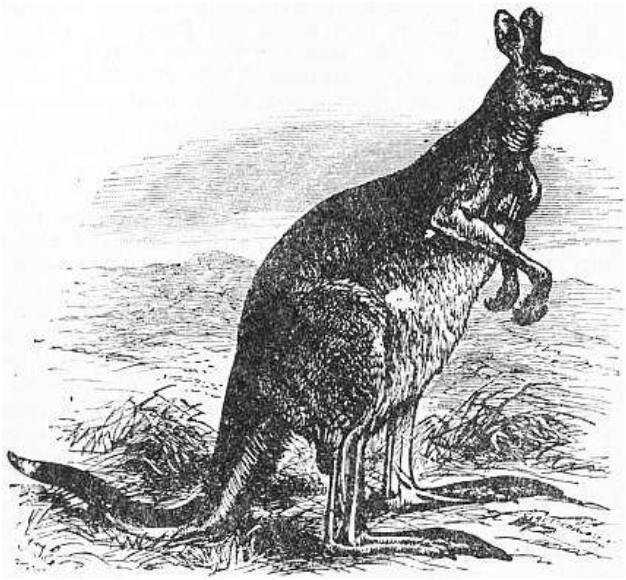


FIG. 1.—The Great Grey Kangaroo (*Macropus giganteus*).

The dental formula, when completely developed, is *incisors* $\frac{3}{1}$, *canines* $\frac{1}{0}$, *premolars* $\frac{3}{3}$, *molars* $\frac{3}{3}$ on each side, giving a total of 34 teeth. The three incisors of the upper jaw are arranged in a continuous arched series, and have crowns with broad cutting edges; the first or middle incisor is often larger than the others. Corresponding to these in the lower jaw is but one tooth on each side, which is of great size, directed horizontally forwards, narrow, lanceolate and pointed with sharp edges. Owing to the slight union of the two halves of the lower jaw in front in many species the two lower incisors work together like the blades of a pair of scissors. The canines are absent or rudimentary in the lower, and often deciduous at an early age in the upper jaw. The first two premolars are compressed, with cutting longitudinal edges, the anterior one is deciduous, being lost about the time the second one replaces the milk-molar, so that three premolars are never found in place and use in the same individual. The last premolar and the molars have quadrate crowns, provided with two strong transverse ridges, or with four obtuse cusps. In *Macropus giganteus* and its immediate allies, the premolars and sometimes the first molar are shed, so that in old examples only the two posterior molars and the incisors are found in place. The milk-dentition, as in other marsupials, is confined to a single tooth on each side of each jaw, the other molars and incisors being never changed. The dentition of the kangaroos, functionally considered, thus consists of sharp-edged incisors, most developed near the median line of the mouth, for the purpose of cropping herbage, and ridged or tuberculated molars for crushing.

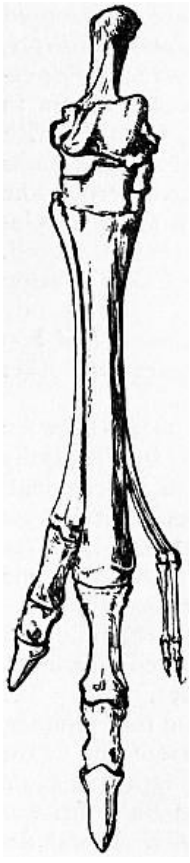


FIG. 2.—Skeleton of right hind-foot of Kangaroo.

The number of vertebrae is—in the cervical region 7, dorsal 13, lumbar 6, sacral 2, caudal varying according to the length of the tail, but generally from 21 to 25. In the fore-limb the clavicle and the radius and ulna are well developed, allowing of considerable freedom of motion of the fore-paw. The pelvis has large epipubic or “marsupial” bones. The femur is short, and the tibia and fibula of great length, as is the foot, the whole of which is applied to the ground when the animal is at rest in the upright position.

The stomach is large and very complex, its walls being puckered by longitudinal muscular bands into a number of folds. The alimentary canal is long, and the caecum well developed. The young (which, as in other marsupials, leave the uterus in an extremely small and imperfect condition) are placed in the pouch as soon as they are born; and to this they resort temporarily for shelter for some time after they are able to run, jump and feed upon the herbage which forms the nourishment of the parent. During the early period of their sojourn in the pouch, the blind, naked, helpless young creatures (which in the great kangaroo scarcely exceed an inch in length)

are attached by their mouths to the nipple of the mother, and are fed by milk injected into their stomach by the contraction of the muscle covering the mammary gland. In this stage of existence the elongated upper part of the larynx projects into the posterior nares, and so maintains a free communication between the lungs and the external surface, independently of the mouth and gullet, thus averting danger of suffocation while the milk is passing down the gullet.

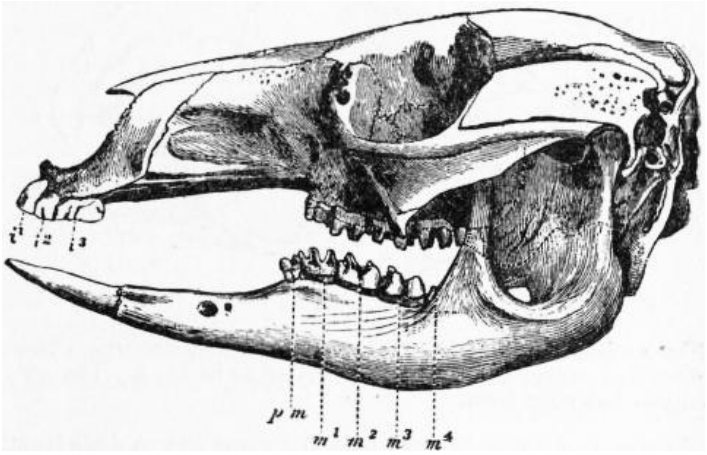


FIG. 3.—Skull and teeth of Bennett's Wallaby (*Macropus ruficollis bennettii*): i^1, i^2, i^3, first, second and third upper incisors; *pm*, second premolar (the first having been already shed); m^1, m^2, m^3, m^4, last premolar and three molars. The last, not fully developed, is nearly concealed by the ascending part of the lower jaw.

Kangaroos are vegetable-feeders, browsing on grass and various kinds of herbage, but the smaller species also eat roots. They are naturally timid and inoffensive, but the larger kinds when hard pressed will turn and defend themselves, sometimes killing a dog by grasping it in their fore-paws, and inflicting terrible wounds with the sharp claws of their powerful hind-legs, supporting themselves meanwhile upon the tail. The majority are inhabitants of Australia and Tasmania, forming one of the most prominent and characteristic features of the fauna of these lands, and performing the part of the deer and antelopes of other parts of the world. They were important sources of food-supply to the natives, and are hunted by the colonists, both for sport and on account of the damage they do in consuming grass required for cattle and sheep. A few species are found in New Guinea, and the adjacent islands, which belong, in the zoological sense, to the Australian province, beyond the bounds of which none occurs.

The more typical representatives of the group constitute the sub-family *Macropodinae*, in which the cutting-edges of the upper incisors are nearly level, or the first pair but slightly longer than the others (fig. 3). The canines are rudimentary and often wanting. The molars are usually not longer (from before backwards) than the anterior premolars, and less compressed than in the next section. The crowns of the molars have two prominent transverse ridges. The fore-limbs are small with subequal toes, armed with strong, moderately long, curved claws. Hind-limbs very long and strongly made. Head small, with more or less elongated muzzle. Ears generally rather long and ovate.

The typical genus *Macropus*, in which the muzzle is generally naked, the ears large, the fur on the nape of the neck usually directed backwards, the claw of the fourth hind-toe very large, and the tail stout and tapering, includes a large number of species. Among these, the great grey kangaroo (*M. giganteus*, fig. 1) deserves special mention on account of having been discovered during Captain Cook's first voyage in 1770. The great red kangaroo (*M. rufus*) is about the same size, while other large species are *M. antilopinus* and *M. robustus*. The larger wallabies, or brush-kangaroos, such as the red-necked wallaby (*M. ruficollis*) constitute a group of smaller-sized species; while the smaller wallabies, such as the filander (*q.v.*) (*M. muelleri*) and *M. thetidis*, constitute yet another section. The genus ranges from the eastern Austro-Malay islands to New Guinea.

Nearly allied are the rock-wallabies of Australia and Tasmania, constituting the genus *Petrogale*, chiefly distinguished by the thinner tail being more densely haired and terminating in a tuff. Well-known species are *P. penicillata*, *P. xanthopus* and *P. lateralis*. The few species of nail-tailed wallabies, *Onychogale*, which are confined to the Australian mainland, take their name from the presence of a horny spur at the end of the tail, and are further distinguished by the hairy muzzle. *O. unguifer*, *O. fraenatus* and *O. lunatus* represent the group. The hare-wallabies, such as *Lagorchestes leporoides*, *L. hirsutus* and *L. consepicillatus*, constitute a genus with the same distribution as the last, and likewise with a hairy muzzle, but with a rather short, evenly furred tail, devoid of a spur. They are great leapers and swift runners, mostly frequenting open stony plains.

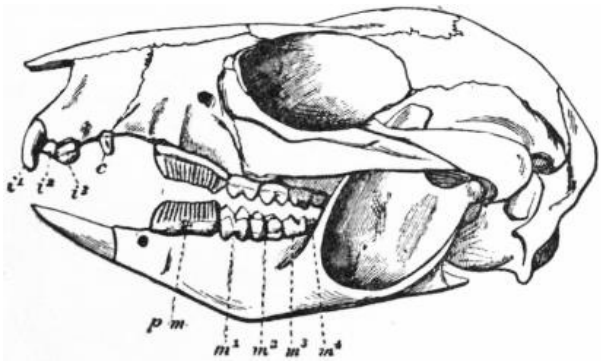


FIG. 4.—Skull and teeth of Lesueuir's Rat-Kangaroo (*Bettongia lesueuiri*). *c*, upper canine. Other letters as in fig. 3. The anterior premolar has been shed.

More distinct is the Papuan genus *Dorcopsis*, as typified by *D. muelleri*, although it is to some extent connected with *Macropus* by *D. macleyi*. The muzzle is naked, the fur on the nape of the neck directed more or less completely forward, and the hind-limbs are less disproportionately elongated. Perhaps, however, the most distinctive feature of the genus is the great fore-and-aft length of the penultimate premolar in both jaws. Other species are *D. rufolateralis* and *D. aurantiacus*. In the tree-kangaroos, which include the Papuan *Dendrolagus inustus*, *D. ursinus*, *D. dorianus*, *D. benetianus* and *D. maximus*, and the North Queensland *D. lumholtzi*, the reduction in the length of the hind-limbs is carried to a still further degree, so that the proportions of the fore and hind limbs are almost normal. The genus agrees with *Dorcopsis* in the direction of the hair on the neck, but the muzzle is only partially hairy, and the elongation of the penultimate premolar is less. These kangaroos are largely arboreal in their habits, but they descend to the ground to feed. Lastly, we have the banded wallaby, *Lagostrophus fasciatus*, of Western Australia, a small species characterized by its naked muzzle, the presence of long bristles on the hind-feet which conceal the claws, and also of dark transverse bands on the lower part of the back. The skull has a remarkably narrow and pointed muzzle and much inflated auditory bullae; while the two halves of the lower jaw are firmly welded together at their junction, thus effectually preventing the scissor-like action of the lower incisors distinctive of *Macropus* and its immediate allies. As regards the teeth, canines are wanting, and the penultimate upper premolar is short, from before backwards, with a distinct ledge on the inner side.

In the rat-kangaroos, or kangaroo-rats, as they are called in Australia, constituting the sub-family *Potoroinae*, the first upper incisor is narrow, curved, and much exceeds the others in length; the upper canines are persistent, flattened, blunt and slightly curved, and the first two premolars of both jaws have large, simple, compressed crowns, with a nearly straight or slightly concave free cutting-edge, and both outer and inner surfaces usually marked by a series of parallel, vertical grooves and ridges. Molars with quadrate crowns and a blunt conical cusp at each corner, the last notably smaller than the rest, sometimes rudimentary or absent. Forefeet narrow; the three middle toes considerably exceeding the first and fifth in length and their claws long, compressed and but slightly curved. Hind-feet as in *Macropus*. Tail long, and sometimes partially prehensile when it is used for carrying bundles of grass with which these animals build their nests. The group is confined to Australia and Tasmania, and all the species are relatively small.

In the members of the typical genus *Potorous* (formerly known as *Hypsiprymnus*) the head is long and slender, with the auditory bullae somewhat swollen; while the ridges on the first two premolars are few and perpendicular, and there are large vacuities on the palate. The tarsus is short and the muzzle naked. The genus includes *P. tridactylus*, *P. gilberti* and *P. platyops*. In *Bettongia*, on the other hand, the head is shorter and wider, with smaller and more rounded ears, and more swollen auditory bullae. The ridges on the first two premolars are also more numerous and somewhat oblique (fig. 4); the tarsus is long and the tail is prehensile. The species include *B. lesueuiri*, *B. gaimardi* and *B. cuniculus*. The South Australian *Caloprymnus campestris* represents a genus near akin to the last, but with the edge of the hairy border of the bare muzzle less emarginate in the middle line, still more swollen auditory bullae, very large and posterially expanded nasals and longer vacuities on the palate. The list is completed by *Aepyprymnus rufescens*, which differs from all the others by the hairy muzzle, and the absence of inflation in the auditory bullae and of vacuities in the palate.

Perhaps, however, the most interesting member of the whole group is the tiny musk-kangaroo (*Hypsiprymnodon moschatus*) of north-east Australia, which alone represents the sub-family *Hypsiprymnodontinae*, characterized by the presence of an opposable first toe on the hind-foot and the outward inclination of the penultimate upper premolar, as well by the small and feeble claws. In all these features the musk-kangaroo connects the *Macropodidae* with the *Phalangeridae*. The other teeth are like those of the rat-kangaroos.

(W. H. F.; R. L.*)

KANGAROO-RAT, a name applied in different parts of the world to two widely different groups of mammals. In Australia it is used to denote the small kangaroo-like marsupials technically known as *Potoroinae*, which zoologists prefer to call rat-kangaroos (see MARSUPIALIA and KANGAROO). In North America it is employed for certain small jumping rat-like rodents nearly allied to the pocket-gophers and belonging to the family *Geomyidae*. Kangaroo-rats in this latter series are represented by three North American genera, of which *Dipodomys phillipsi*, *Cricetodipus agilis* and *Microdipodops megacephalus* may respectively be taken as examples. Resembling pocket-gophers in the possession of cheek-pouches, kangaroo-rats, together with pocket-mice, are distinguished by their elongated hind-limbs and tails, large eyes, well-developed ears and general jerboa-like appearance and habits. The upper incisor teeth are also relatively narrower, and there are important differences in the skull. The cheek-teeth are rootless in kangaroo-rats, but they develop roots in the pocket-mice. The former inhabit open, sandy districts, where they burrow beneath rocks or stones, and hop about like jerboas; their food consisting of grasses and other plants.

KANGAVAR, a small district of Persia, situated between Hamadan and Kermanshah, and, being held in fief by the family of a deceased court official, forming a separate government. The district is very fertile and contains 30 villages. Its revenues amount to about £500 per annum, and its chief place is the large village of Kangavar, which has a population of about 2500 and is 47 m. from Hamadan on the high road to Kermanshah.

KANGRA, a town and district of British India, in the Jullundur division of the Punjab. The town, sometimes called Nagarkot, is situated 2409 ft. above the sea. Pop. (1901), 4746. The Katoch rajas had a stronghold here, with a fort and rich temples. Mahmud of Ghazni took the fort in 1009 and from one of the temples carried off a vast treasure. In 1360 Kangra was again plundered, by Feroz Shah. The temple of Devi Bajreshri was one of the oldest and wealthiest in northern India. It was destroyed, together with the fort and the town, by an earthquake on the 4th of April 1905, when 1339 lives were lost in this place alone, and about 20,000 elsewhere. In 1855 the headquarters of the district were removed to the sanitarium of Dharmsala.

The district of Kangra extends from the Jullundur Doab far into the southern ranges of the Himalaya. Besides some Rajput states, annexed after the Sikh wars, it includes Lahul, Spiti and Kulu, which are essentially Tibetan. The Beas is the only important river. Area, 9978 sq. m., of which Kangra proper has only 2725. Pop. (1901), 768,124; average density 77 persons per sq. m., but with only one person per sq. m. in Spiti. Tea cultivation was introduced into Kangra about 1850. The Palampur fair, established by government with a view to fostering commerce with central Asia, attracts a small concourse of Yarkandi merchants. The Lahulis carry on an enterprising trade with Ladakh and countries beyond the frontier, by means of pack sheep and goats. Rice, tea, potatoes, opium, spices, wool and honey are the chief exports.

See *Kangra District Gazetteer* (Lahore, 1906).

KANISHKA, king of Kabul, Kashmir, and north-western India in the 2nd century A.D., was a Tatar of the Kushan tribe, one of the five into which the Yue-chi Tatars were divided. His dominions extended as far down into India as Madurā, and probably as far to the north-west as

Bokhāra. Private inscriptions found in the Punjab and Sind, in the Yusufzai district and at Madurā, and referred by European scholars to his reign, are dated in the years five to twenty-eight of an unknown era. It is the references by Chinese historians to the Yue-chi tribes before their incursion into India, together with conclusions drawn from the history of art and literature in his reign, that render the date given the most probable. Kanishka's predecessors on the throne were Pagans; but shortly after his accession he professed himself, probably from political reasons, a Buddhist. He spent vast sums in the construction of Buddhist monuments; and under his auspices the fourth Buddhist council, the council of Jālandhara (Jullunder) was convened under the presidency of Vasumitra. At this council three treatises, commentaries on the Canon, one on each of the three baskets into which it is divided, were composed. King Kanishka had these treatises, when completed and revised by Aśvaghosha, written out on copper plates, and enclosed the latter in stone boxes, which he placed in a memorial mound. For some centuries afterwards these works survived in India; but they exist now only in Chinese translations or adaptations. We are not told in what language they were written. It was probably Sanskrit (not Pali, the language of the Canon)—just as in Europe we have works of exegetical commentary composed, in Latin, on the basis of the Testament and Septuagint in Greek. This change of the language used as a medium of literary intercourse was partly the cause, partly the effect, of a complete revulsion in the intellectual life of India. The reign of Kanishka was certainly the turning-point in this remarkable change. It has been suggested with great plausibility, that the wide extent of his domains facilitated the incursion into India of Western modes of thought; and thus led in the first place to the corruption and gradual decline of Buddhism, and secondly to the gradual rise of Hinduism. Only the publication of the books written at the time will enable us to say whether this hypothesis—for at present it is nothing more—is really a sufficient explanation of the very important results of his reign. In any case it was a migration of nomad hordes in Central Asia that led, in Europe, to the downfall of the Roman civilization; and then, through the conversion of the invaders, to medieval conditions of life and thought. It was the very same migration of nomad hordes that led, in India, to the downfall of the Buddhist civilization; and subsequently, after the conversion of the Saka and Tatar invaders, to medieval Hinduism. As India was nearer to the starting-point of the migration, its results were felt there somewhat sooner.

AUTHORITIES.—Vincent A. Smith, *The Early History of India* (Oxford, 1908); "The Kushan Period of Indian History," in *J.R.A.S.* (1903); M. Boyer, "L'Époque de Kaniska," in *Journal Asiatique* (1900); T. Watters, *On Yuan Chwang* (London, 1904, 1905); J. Takakusu, "The Sarvāstivādin Abhidharma Books," in *Jour. of the Pali Text Soc.* (1905), esp. pp. 118-130; Rhys Davids, *Buddhist India* (London, 1903), ch. xvi., "Kanishka."

(T. W. R. D.)

KANKAKEE, a city and the county-seat of Kankakee county, Illinois, U.S.A., in the N.E. part of the state, on the Kankakee river, 56 m S. of Chicago. Pop. (1900), 13,595, of whom 3346 were foreign-born; (1910 census), 13,986. Kankakee is served by the Cleveland, Cincinnati, Chicago & St Louis, the Illinois Central, and the Chicago, Indiana & Southern (controlled by the New York Central) railways. It is the seat of the Eastern Hospital for the Insane (1879) a state institution; St Joseph's Seminary (Roman Catholic) and a Conservatory of Music. At Bourbonnais Grove, 3 m. N. of Kankakee is St Viateur's College (founded 1868), a well-known Roman Catholic divinity school, and Notre Dame Academy, another Catholic institution. The city has a public library and four large parks; in Court House Square there is a monument erected by popular subscription in honour of the soldiers from Kankakee county who died in the Civil War. There are rock quarries here, and the city manufactures sewing machines, musical instruments, especially pianos, foundry and machine shop products, agricultural implements and furniture. The total value of the factory product in 1905 was $2,089,143, an increase of 222% since 1900. Kankakee is also a shipping point for agricultural products. It was first settled in 1832; was platted as the town of Bourbonnais in 1853, when Kankakee county was first organized; was chartered as the city of Kankakee in 1855, and was re-chartered in 1892.

KANKER, a feudatory state of India, within the Central Provinces; area, 1429 sq. m.; pop.

(1901), 103,536; estimated revenue, £10,000. It is a hilly tract, containing the headwaters of the Mahanadi. The extensive forests have recently been made profitable by the opening of a branch railway. The residence of the raja, who is of an old Rajput family though ruling over Gonds, is at Kanker (pop. 3906).

KANO, one of the most important provinces of the British protectorate of Northern Nigeria. It includes the ancient emirates of Kano, Katsena, Daura and Kazaure, and covers an area of about 31,000 sq. m. The sub-province of Katagum was incorporated with Kano in 1905, and is included within this area. The population of the double province is estimated at about 2,250,000.

Kano was one of the original seven Hausa states. Written annals carry the record of its kings back to about A.D. 900. Legendary history goes back much further. It was conquered by the Songhoi (Songhay) in the early part of the 16th century, and more than once appears to have made at least partial submission to Bornu. Mahommedanism was introduced at a period which, according to the system adopted for the dating of the annals, must be placed either in the 12th or the 14th century. The Hausa system of government and taxation was adopted by the Fula when in the early part of the 19th century that Mahommedan people overran the Hausa states. It has been erroneously stated that the Fula imposed Mahommedanism on the Hausa states. The fact that they adopted the existing system of government and taxation, which are based upon Koranic law, would in itself be sufficient proof that this was not the case. But the annals of Kano distinctly record the introduction and describe the development of Mahommedanism at an early period of local history.

The capital is the city of Kano, situated in 12° N. and 8° 20′ E., 220 m. S.S.E. of Sokoto and 500 N.E. of Lagos. It is built on an open plain, and is encompassed by a wall 11 m. in perimeter and pierced by thirteen gates. The wall is from 30 to 50 ft. high and about 40 ft. thick at the base. Round the wall is a deep double ditch, a dwarf wall running along its centre. The gates are simply cow-hide, but are set in massive entrance towers. Only about a third of the area (7¼ sq. m.) enclosed by the walls is inhabited nor was the whole space ever occupied by buildings, the intention of the founders of the city being to wall in ground sufficient to grow food for the inhabitants during a siege. The arable land within the city is mainly on the west and north; only to the south-east do the houses come right to the walls. Within the walls are two steep hills, one, Dala, about 120 ft. high being the most ancient quarter of the town. Dala lies north-west. To its east is a great pond, the Jakara, 1½ m. long, and by its north-east shore is the market of the Arab merchants. Here also was the slave market. The palace of the emir, in front of which is a large open space, is in the Fula quarter in the south-east of the city. The palace consists of a number of buildings covering 33 acres and surrounded by a wall 20 to 30 ft. high. The architecture of the city is not without merit. The houses are built of clay with (generally) flat roofs impervious to fire. Traces of Moorish influence are evident and the horse-shoe arch is common. The audience hall of the emir’s palace—25 ft. sq. and 18 ft. high—is decorated with designs in black, white, green and yellow, the yellow designs (formed of micaceous sand) glistening like gold. The dome-shaped roof is supported by twenty arches.

The city is divided into fourteen quarters, each presided over by a headman, and inhabited by separate sections of the community. It is probably the greatest commercial city in the central Sudan. Other towns, like Zaria, may do as much trade, but Kano is pre-eminent as a manufacturing centre. The chief industry is the weaving of cloth from native grown cotton. Leather goods of all kinds are also manufactured, and from Kano come most of the “morocco leather” goods on the European markets. Dyeing is another large trade, as is the preparation of indigo. Of traders there are four distinct classes. They are: (1) Arabs from Tripoli, who export ostrich feathers, skins and ivory, and bring in burnouses, scents, sweets, tea, sugar, &c.; (2) Salaga merchants who import kola nuts from the hinterland of the Guinea Coast, taking in exchange cloth and live stock and leather and other goods; (3) the Asbenawa traders, who come from the oases of Asben or Air with camels laden with salt and “potash” (*i.e.* sodium carbonates), and with herds of cattle and sheep, receiving in return cotton and hardware and kolas; (4) the Hausa merchants. This last class trades with the other three and despatches caravans to Illorin and other places, where the Kano goods, the “potash” and other merchandise are exchanged for kolas and European goods. The “potash” finds a ready sale among the Yorubas, being largely used for cooking purposes. In Kano itself is a great market for livestock: camels, horses, oxen, asses and goats being on sale.

Besides Hausa, who represent the indigenous population, there are large colonies of Kanuri (from Bornu) and Nupians in Kano. The Fula form the aristocratic class. The population is said to

amount to 100,000. About a mile and a half east of Kano is Nassarawa, formerly the emir's suburban residence, but since 1902 the British Residency and barracks.

The city of Kano appears on the map of the Arab geographer, Idrisi, A.D. 1145, and the hill of Dala is mentioned in the earliest records as the original site of Kano. Barth, however, concluded that the present town does not date earlier than the second half of the 16th century, and that before the rise of the Fula power (*c.* 1800) scarcely any great Arab merchant ever visited Kano. The present town may be the successor of an older town occupying a position of similar pre-eminence. Kano submitted to the Fula without much resistance, and under them in the first half of the 19th century flourished greatly. It was visited by Hugh Clapperton, an English officer, in 1824, and in it Barth lived some time in 1851 and again in 1854. Barth's descriptions of the wealth and importance of the city attracted great attention in Europe, and Kano was subsequently visited by several travellers, missionaries, and students of Hausa, but none was permitted to live permanently in the city. In the closing years of the century, Kano became the centre of resistance to British influence, and the emir, Alieu, was the most inveterate of Fula slave raiders. In February 1903 the city was captured by a British force under Colonel T. L. N. Morland, and a new emir, Abbas, a brother of Alieu, installed.

After the occupation by the British in 1903 the province was organized for administration on the same system as that adopted throughout northern Nigeria. The emir on his installation takes an oath of allegiance to the British Crown, and accepts the position of a chief of the first class under British rule. A resident is placed at his court, and assistant residents have their headquarters in the administrative districts of the province. British courts of justice are established side by side with the native courts throughout the province. Taxation is assessed under British supervision and paid into the native treasury. A fixed portion is paid by the emir to the British government. The emir is not allowed to maintain a standing army, and the city of Kano is the headquarters of the British garrison. The conditions of appointment of the emirs are fully laid down in the terms accepted at Sokoto on the close of the Sokoto-Kano campaign of 1903. Since the introduction of British rule there has been no serious trouble in the province. The emir Abbas worked loyally with the British and proved himself a ruler of remarkable ability and intelligence. He was indefatigable in dispensing justice, and himself presided over a native court in which he disposed of from fifty to a hundred cases a month. He also took an active interest in the reform and reorganization of the system of taxation, and in the opening of the country to trade. He further showed himself helpful in arranging difficulties which at times arose in connexion with the lesser chiefs of his province.

The province of Kano is generally fertile. For a radius of 30 m. round the capital the country is closely cultivated and densely populated, with some 40 walled towns and with villages and hamlets hardly half a mile apart. Kano district proper contains 170 walled towns and about 450 villages. There are many streams, but water is chiefly obtained from wells 15 to 40 ft. deep. The principal crops are African grains, wheat, onions, cotton, tobacco, indigo, with sugar-cane, cassava, &c. The population is chiefly agricultural, but also commercial and industrial. The chief industries are weaving, leather-making, dyeing and working in iron and pottery. Cattle are abundant. (See NIGERIA: *History*; and SOKOTO.)

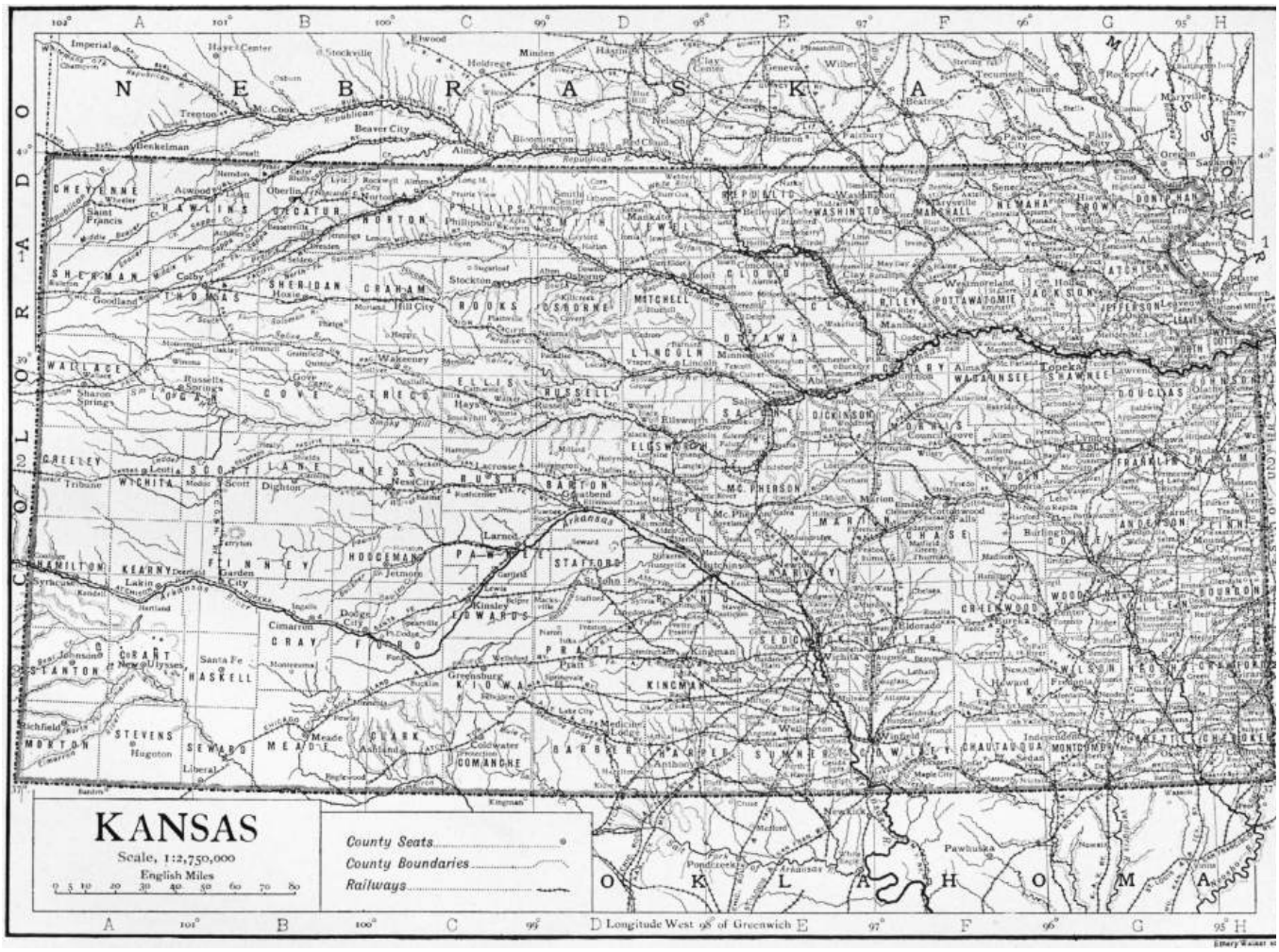
Consult the *Travels* of Heinrich Barth (new ed., London, 1890); *Hausaland*, by C. H. Robinson (London, 1896); Northern Nigeria, by Sir F. D. Lugard, in vol. xxii. *Geographical Journal* (London, 1904); *A Tropical Dependency*, by Lady Lugard (London, 1905); the Colonial Office *Reports* on Northern Nigeria from 1902 onward, and other works cited under NIGERIA.

(F. L. L.)

KANSAS (known as the "Sunflower State"), the central commonwealth of the United States of America, lying between 37° and 40° N. lat. and between 94° 38′ and 102° 1′ 34″ W. long. (*i.e.* 25° W. long, from Washington). It is bounded on the N. by Nebraska, on the E. by Missouri, on the S. by Oklahoma, and on the W. by Colorado. The state is nearly rectangular in shape, with a breadth of about 210 m. from N. to S. and a length of about 410 m. from E. to W. It contains an area of 82,158 sq. m. (including 384 sq. m. of water surface).

Physiography.—Three physiographic regions may be distinguished within the state—the first, a small portion of the Ozark uplift in the extreme south-east corner; the second, the Prairie Plains, covering approximately the east third of the state; the third, the Great Plains, covering the remaining area. Between the latter two there is only the most gradual transition. The entire state is indeed practically an undulating plain, gently sloping from west to east at an average of about 7 ft. per mile. There is also an inclination in the eastern half from north to south, as indicated by the course of the rivers, most of which flow south-easterly (the Kansas, with its general easterly course, is the principal exception), the north-west corner being the highest portion of the state.

The lowest point in the state in its south-east part, in Montgomery county, is 725 ft. above sea level. The average elevation of the east boundary is about 850 ft., while contour lines of 3500-3900 ft. run near the west border. Somewhat more than half the total area is below 2000 ft. The gently rolling prairie surface is diversified by an endless succession of broad plains, isolated hills and ridges, and moderate valleys. In places there are terraced uplands, and in others the undulating plain is cut by erosion into low escarpments. The bluffs on the Missouri are in places 200 ft. high, and the valley of the Cimarron, in the south-west, has deep cuts, almost gorges. The west central portion has considerable irregularities of contour, and the north-west is distinctively hilly. In the south-west, below the Arkansas river, is an area of sandhills, and the Ozark Plateau region, as above stated, extends into the south-east corner, though not there much elevated. The great central valley is traversed by the Kansas (or Kaw) river, which, inclusive of the Smoky Hill Branch, extends the entire length of the state, with lateral valleys on the north. Another broad valley is formed in the south half of the state by the Arkansas river, with lateral valleys on the north and south. The south-east portion contains the important Neosho and smaller valleys. In the extreme south-west is the valley of the Cimarron, and along the south boundary is a network of the south tributaries of the Arkansas. Numerous small affluents of the Missouri enrich and diversify the north-east quarter. The streams of Kansas are usually fed by perennial springs, and, as a rule, the east and middle portions of the state are well watered. Most of the streams maintain a good flow of water in the driest seasons, and in case of heavy rains many of them “underflow” the adjacent bottom lands, saturating the permeable substratum of the country with the surplus water, which in time drains out and feeds the subsiding streams. This feature is particularly true of the Saline, Solomon and Smoky Hill rivers. The west part is more elevated and water is less abundant.



(Click to enlarge.)

Climate.—The climate of Kansas is exceptionally salubrious. Extremes of heat and cold occur, but as a rule the winters are dry and mild, while the summer heats are tempered by the perpetual prairie breezes, and the summer nights are usually cool and refreshing. The average annual temperature of the state for seventeen years preceding 1903 was 54.3° F., the warmest mean being 56.0°, the coldest 52.6°. The extreme variation of yearly means throughout the east, west and middle sections during the same period was very slight, 51.6° to 56.6°, and the greatest variation for any one section was 3.7°. The absolute extremes were 116° and -34°. The dryness of the air tempers exceedingly to the senses the cold of winter and the heat of summer. The temperature over the state is much more uniform than is the precipitation, which diminishes

somewhat regularly westward. In the above period of seventeen years the yearly means in the west section varied from 11.93 to 29.21 in. (av. 19.21), in the middle from 18.58 to 34.30 (av. 26.68), in the east from 26.00 to 45.71 (av. 34.78); the mean for the state ranging from 20.12 to 35.50 (av. 27.12).[1] The precipitation in the west is not sufficient for confident agriculture in any series of years, since agriculture is practically dependent upon the mean fall; a fact that has been and is of profound importance in the history of the state. The line of 20 in. fall (about the limit of certain agriculture) approximately bisects the state in dry years. The precipitation is very largely in the growing season—at Dodge the fall between April and October is 78% of that for the year. Freshets and droughts at times work havoc. The former made notable 1844 and 1858; and the latter 1860, 1874 and 1894. Tornadoes are also a not infrequent infliction, least common in the west. The years 1871, 1879, 1881 and 1892 were made memorable by particularly severe storms. There are 150 to 175 “growing days” for crops between the frosts of spring and autumn, and eight in ten days are bright with sunshine—half of them without a cloud. Winds are prevailingly from the south (in the winter often from the north-west).

Fauna and Flora.—The fauna and flora of the state are those which are characteristic of the plain region generally of which Kansas is a part. The state lies partly in the humid, or Carolinian, and partly in the arid, or Upper Sonoran, area of the Upper Austral life-zone; 100° W. long. is approximately the dividing line between these areas. The bison and elk have disappeared. A very great variety of birds is found within the state, either as residents or as visitants from the adjoining avifaunal regions—mountain, plain, northern and southern. In 1886 Colonel N. S. Goss compiled a list of 335 species, of which 175 were known to breed in the state. The wild turkey, once abundant, was near extermination in 1886, and prairie chickens (pinnated grouse) have also greatly diminished in number. The jack-rabbit is characteristic of the prairie. Locusts (“grasshoppers” in local usage) have worked incalculable damage, notably in 1854, 1866, and above all in 1874-1875. In the last two cases their ravages extended over a great portion of the state.

Kansas has no forests. Along the streams there is commonly a fringe of timber, which in the east is fairly heavy. There is an increasing scarcity westward. With the advancing settlement of the state thin wind-break rows become a feature of the prairies. The lessened ravages of prairie fires have facilitated artificial afforesting, and many cities, in particular, are abundantly and beautifully shaded. Oaks, elms, hickory, honey-locusts, white ash, sycamore and willows, the rapid growing but miserable box-elder and cottonwood, are the most common trees. Black walnut was common in the river valleys in Territorial days. The planting of tree reserves by the United States government in the arid counties of this state promises great success. A National Forest of 302,387 acres in Finney, Kearney, Hamilton and Grant counties was set aside in May 1908. Buffalo and bunch, and other short native prairie grasses, very nutritious ranging food but unavailable as hay, once covered the plains and pastured immense herds of buffalo and other animals, but with increasing settlement they have given way generally to exotic bladed species, valuable alike for pasture and for hay, except in the western regions. The hardy and ubiquitous sunflower has been chosen as the state flower or floral emblem. Cactus and yucca occur in the west.

The soil of the upland prairies is generally a deep rich clay loam of a dark colour. The bottom lands near the streams are a black sandy loam; and the intermediate lands, or “second bottoms,” show a rich and deep black loam, containing very little sand. These soils are all easily cultivated, free from stones, and exceedingly productive. There are exceptional spots on the upland prairies composed of stiff clay, not as easily cultivated, but very productive when properly managed and enriched. The south-west section is distinctively sandy.

Agriculture.—The United States Census of 1900 shows that of the farming area of the state in 1900 (41,662,970 acres, 79.6% of the total area), 60.1% was “improved.” The value of all farm property was $864,100,286—of which land and improvements (including buildings), livestock and implements and machinery represented respectively 74.5, 22.1 and 3.4%. Almost nine-tenths of all farms derived their principal income from livestock or hay and grain, these two sources being about equally important. Of the total value of farm products in 1899 ($209,895,542), crops represented 53.7, animal products 45.9 and forest products only 0.4%. In 1899 the wheat crop was 38,778,450 bushels, being less than that of Minnesota, North Dakota, Ohio or South Dakota. According to the *Year Book* of the United States Department of Agriculture, the crop in 1906 was 81,830,611 bushels, almost one-ninth of the crop of the entire country for that year, and much more than the crop of any other state. In 1909 it was 87,203,000 bushels (less than the crops of either Minnesota or North Dakota). Winter wheat constitutes almost the entire output. The hard varieties rank in the flour market with the finest Minnesota wheat. The wheat belt crosses the state from north to south in its central third. Greater even than wheat in absolute output, though not relatively to the output of other states, is Indian corn. In 1906 the crop was 195,075,000 bushels, and in 1909 it was 154,225,000. The crop is very variable, according to seasons and prospective markets; ranging *e.g.* in the decade 1892-1901 from 42.6 (1901) to 225.1 (1899) million bushels. The Indian corn belt is mainly in the eastern third of the state. In the five years 1896-1900 the combined value of the crops of Indian corn and wheat exceeded the value of the same crops in any other state of the Union (Illinois being a close second). In the western third irrigation has been tried, in the earlier years unsuccessfully; in all Kansas, in 1899, there were 23,620 acres irrigated, of which 8939 were in Finney and 7071 in Kearney county. In this western

third the rainfall is insufficient for Indian corn; but Kafir corn, an exceptional drought-resisting cereal, has made extraordinary progress in this region, and indeed generally over the state, since 1893, its acreage increasing 416.1% in the decade 1895-1904. With the saccharine variety of sorghum, which increased greatly in the same period, this grain is replacing Indian corn. Oats are the third great cereal crop, the yield being 24,780,000 bushels in 1906 and 27,185,000 in 1909. Alfalfa showed an increased acreage in 1895-1904 of 310.8%; it is valuable in the west for the same qualities as the Kafir corn. The hay crop in 1909 was 2,652,000 tons. Alfalfa, the Japanese soy bean and the wheat fields—which furnish the finest of pasture in the early spring and ordinarily well into the winter season—are the props of a prosperous dairy industry. In the early ’eighties the organization of creameries and cheese factories began in the county-seats; they depended upon gathered cream. About 1889 separators and the whole-milk system were introduced, and about the same time began the service of refrigerator cars on the railways; the hand separator became common about 1901. Western Kansas is the dairy country. Its great ranges, whose insufficient rainfall makes impossible the certain, and therefore the profitable, cultivation of cereals, or other settled agriculture, lend themselves with profit to stock and dairy farming. Dairy products increased 60.6% in value from 1895 to 1904, amounting in the latter year to $16,420,095. This value was almost equalled by that of eggs and poultry ($14,050,727), which increased 79.7% in the same decade. The livestock interest is stimulated by the enormous demand for beef-cattle at Kansas City.

Sugar-beet culture was tried in the years following 1890 with indifferent success until the introduction of bounties in 1901. It has extended along the Arkansas valley from the Colorado beet district and into the north-western counties. There is a large beet-sugar factory at Garden City, Finney county. Experiments have been made unsuccessfully in sugar cane (1885) and silk culture (1885 seq.). The bright climate and pure atmosphere are admirably adapted to the growth of the apple, pear, peach, plum, grape and cherry. The smaller fruits also, with scarce an exception, flourish finely. The fruit product of Kansas ($2,431,773 in 1899) is not, however, as yet particularly notable when compared with that of various other states.

According to the estimates of the state department of agriculture, of the total value of all agricultural products in the twenty years 1885-1904 ($3,078,999,855), Indian corn and wheat together represented more than two-fifths (821.3 and 518.1 million dollars respectively), and livestock products nearly one-third (1024.9 millions). The aggregate value of all agricultural products in 1903-1904 was $754,954,208.

Minerals.—In the east portion of the state are immense beds of bituminous coal, often at shallow depths or cropping out on the surface. In 1907 more than 95% of the coal came from Crawford, Cherokee, Leavenworth and Osage counties, and about 91.5% from the first two. The total value of the production of coal in 1905 (6,423,979 tons) was $9,350,542, and in 1908 (6,245,508 tons) $9,292,222. In the central portion, which belongs to the Triassic formation, magnesian limestone, ferruginous sandstone and gypsum are representative rocks. Gypsum (in beautiful crystalline form) is found in an almost continuous bed across the state running north-east and south-west with three principal areas, the northern in Marshall county, the central in Dickinson and Saline counties, and the southern (the heaviest, being 3 to 40 ft. thick) in Barber and Comanche counties. The product in 1908 was valued at $281,339. Magnesian limestone, or dolomite, is especially plentiful along the Blue, Republican and Neosho rivers and their tributaries. This beautiful stone, resembling white, grey and cream-coloured marble, is exceedingly useful for building purposes. It crops out in the bluffs in endless quantities, and is easily worked. The stone resources of the state are largely, but by no means exclusively, confined to the central part. There are marbles in Osage and other counties, shell marble in Montgomery county, white limestone in Chase county, a valuable bandera flagstone and hydraulic cement rock near Fort Scott, &c. The limestones produced in 1908 were valued at $403,176 and the sandstones at $67,950. In the central region salt is produced in immense quantities, within a great north to south belt about Hutchinson. The beds, which are exploited by the brine method at Hutchinson, at Ellsworth (Ellsworth county), at Anthony (Harper county) and at Sterling (Rice county), lie from 400 to 1200 ft. underground, and are in places as much as 350 ft. thick and 99% pure. At Kanopolis in Ellsworth county, at Lyons in Rice county and at Kingman, Kingman county, the salt is mined and sold as rock-salt. In the south-west salt is found in beds and dry incrustations, varying in thickness from a few inches to 2 ft. The total product from 1880-1899 was valued at $5,538,855; the product of 1908 (when Kansas ranked fourth among the states producing salt) was valued at $882,984. The development has been mainly since 1887 at Hutchinson and since about 1890 in the rock-salt mines. In the west portion of the state, which belongs to the Cretaceous formation, chalks and a species of native quicklime are very prominent in the river bluffs. The white and cream-coloured chalks are much used for building purposes, but the blue is usually too soft for exposure to the weather. The quicklime as quarried from the bluffs slakes perfectly, and with sand makes a fairly good mortar, without calcination or other previous preparation. The lignite found near the Colorado line makes a valuable domestic fuel.

Natural gas, oil, zinc and lead have been discovered in south-east Kansas and have given that section an extraordinary growth and prosperity. Indications of gas were found about the time of the Civil War, but only in the early ’seventies were they recognized as unmistakable, and they were not successfully developed until the ’eighties. Iola, in Allen county, is the centre of the field, and the gas yields heat, light, and a cheap fuel for smelters, cement-works and other

manufacturing plants throughout a large region. The pools lie from 400 to 950 ft. below the surface; some wells have been drilled 1500 ft. deep. The value of the natural gas produced in the state was $15,873 in 1889, $2,261,836 in 1905 and $7,691,587 in 1908, when there were 1917 producing wells, and Kansas ranked fourth of the states of the United States in the value of the natural gas product, being surpassed by Pennsylvania, West Virginia and Ohio. Petroleum was discovered about 1865 in Miami and Bourbon counties, and about 1892 at Neodesha, Wilson county. There was only slight commercial exploitation before 1900. The production increased from 74,714 barrels in that year to 4,250,779 in 1904; in 1908 it was 1,801,781 barrels. Chanute has been the most active centre of production. The field was prospected here in the 'nineties, but developed only after 1900. In 1877 an immense deposit of lead was discovered on land now within the limits of Galena. Rich zinc blendes were at first thrown away among the by-products of the lead mines. After the discovery of their true nature there was a slow development, and at the end of the century a notable boom in the fields. From 1876 to 1897 the total value of the output of the Galena field was between $25,000,000 and $26,000,000; but at present Kansas is far more important as a smelter than as a miner of zinc and lead, and in 1906 58% of all spelter produced in the United States came from smelters in Kansas. In 1908 the mines' output was 2293 tons of lead valued at $192,612 and 8628 tons of zinc valued at $811,032. Pottery, fire, ochre and brick clays are abundant, the first two mainly in the eastern part of the state. Coffeyville has large vitrified brick interests. In 1908 the total value of all the mineral products (incompletely reported) of Kansas was $26,162,213.

Industry and Trade.—Manufactures are not characteristic of the state. The rank of the state in manufactures in 1900 was sixteenth and in farm products seventh in the Union. The value of the manufactured product in 1900, according to the Twelfth United States Census, was $172,129,398, an increase of 56.2% over the output of 1890; of this total value, the part representing establishments under the "factory system" was $154,008,544,[2] and in 1905 the value of the factory product was $198,244,992, an increase of 28.7%. Kansas City, Topeka, Wichita, Leavenworth and Atchison were the only cities which had manufactures whose gross product was valued in 1905 at more than $3,000,000 each; their joint product was valued at $126,515,804, and that of Kansas City alone was $96,473,050, almost half the output of the state. The most important manufacturing industry, both in 1900 and in 1905, was slaughtering and meat-packing—for which Kansas City is the second centre of the country—with a product for the state valued at $77,411,883 in 1900, and $96,375,639 in 1905; in both these years the value of the product of Kansas was exceeded only by that of Illinois. The flour and grist mill industry ranked next, with a product valued at $21,328,747 in 1900 and nearly twice that amount, $42,034,019, in 1905. In 1900 a quarter of the wheat crop was handled by the mills of the state. Lesser manufacturing interests are railway shop construction (value in 1905, $11,521,144); zinc smelting and refining (value in 1905, $10,999,468); the manufacture of cheese, butter and condensed milk (value in 1905, $3,946,349); and of foundry and machine shop products (value in 1905, $3,756,825).

Communications.—Kansas is excellently provided with railways, with an aggregate length in January 1909 of 8914.77 m. (in 1870, 1880, 1890 respectively, 1,501, 3,244 and 8,710 m.). The most important systems are the Atchison, Topeka & Santa Fé, the Missouri Pacific, the Chicago, Rock Island & Pacific, the Union Pacific, the Missouri, Kansas & Texas, the Chicago, Burlington & Quincy, and the St Louis & San Francisco systems. The first train entered Kansas on the Union Pacific in 1860. During the following decade the lines of the Missouri Pacific, the Missouri, Kansas & Texas and the Santa Fé were well under construction. These roads give excellent connexions with Chicago, the Gulf and the Pacific. Kansas has an eastern river front of 150 m. on the Missouri, which is navigable for steamboats of good size. The internal rivers of the state are not utilized for commercial purposes.

Population.—In population Kansas ranked in 1900 and 1910 (1,690,949) twenty-second in the Union. The decennial increases of population from 1860 to 1900 were 239.9, 173.4, 43.3 and 3.0%, the population in 1900 being 1,470,495, or 18 to the sq. m.[3] Of this number 22.5% lived in cities of 2500 or more inhabitants. Nine cities numbered more than 10,000 inhabitants: Kansas City (51,418), Topeka—the state capital (33,608), Wichita (24,671), Leavenworth (20,735), Atchison (15,722), Lawrence—the seat of the state university (10,862), Fort Scott (10,322), Galena (10,155) and Pittsburg (10,112). The life of all of these save the last two goes back to Territorial days; but the importance of Fort Scott, like that of Galena and Pittsburg, is due to the development of the mineral counties in the south-east. Other cities of above 5000 inhabitants were Hutchinson (9379), Emporia (8223), Parsons (7682), Ottawa (6934), Newton (6208), Arkansas City (6140), Salina (6074), Argentine (5878) and Iola (5791). The number of negroes (3.5%) is somewhat large for a northern and western state. This is largely owing to an exodus of coloured people from the South in 1878-1880, at a time when their condition was an unusually hard one: an exodus turned mainly toward Kansas. The population is very largely American-born (91.4% in 1900; 47.1% being natives of Kansas). Germans, British, Scandinavians and Russians constitute the bulk of the foreign-born. The west third of the state is comparatively scantily populated, owing to its aridity. In the 'seventies, after a succession of wet seasons, and again in the 'eighties, settlement was pushed far westward, beyond the limits of safe agriculture, but hundreds of settlers—and indeed many entire communities—were literally starved out by the

recurrence of droughts. Irrigation has made a surer future for limited areas, however, and the introduction of drought-resisting crops and the substitution of dairy and livestock interests in the place of agriculture have brightened the outlook in the western counties, whose population increased rapidly after 1900. The early ’eighties were made notable by a tremendous “boom” in real estate, rural and urban, throughout the commonwealth. As regards the distribution of religious sects, in 1906 there were 458,190 communicants of all denominations, and of this number 121,208 were Methodists (108,097 being Methodist Episcopalians of the Northern Church), 93,195 were Roman Catholics, 46,299 were Baptists (34,975 being members of the Northern Baptist Convention and 10,011 of the National (Colored) Baptist Convention), 40,765 were Presbyterians (33,465 being members of the Northern Church) and 40,356 were Disciples of Christ. The German-Russian Mennonites, whose immigration became notable about 1874, furnished at first many examples of communal economy, but these were later abandoned. In 1906 the total number of Mennonites was 7445, of whom 3581 were members of the General Conference of Mennonites of North America, 1825 belonged to the Schellenberger Brüder-gemeinde, and the others were distributed among seven other sects.

Government.—The constitution is that adopted at Wyandotte on the 29th of July 1859 and ratified by the people on the 4th of October 1859; it came into operation on the 29th of January 1861, and was amended in 1861, 1864, 1867, 1873, 1875, 1876, 1880, 1888, 1900, 1902, 1904 and 1906. An amendment may be proposed by either branch of the legislature, and, if approved by two-thirds of the members elected to each house as well as by a majority of the electors voting on it at a general election, it is adopted. A constitutional convention to revise or amend the constitution may be called in the same manner. Universal manhood suffrage is the rule, but women may vote in school and municipal elections, Kansas being the first state to grant women municipal suffrage as well as the right to hold municipal offices (1887). General elections to state, county and township offices are biennial, in even-numbered years, and take place on the first Tuesday after the first Monday in November. The state executive officers are a governor, lieutenant-governor, secretary of state, auditor, treasurer, attorney-general and superintendent of public instruction, all elected for a term of two years. The governor appoints, with the approval of the Senate, a board of public works and some other administrative boards, and he may veto any bill from the legislature, which cannot thereafter become a law unless again approved by two-thirds of the members elected to each house.

The legislature, consisting of a Senate and a House of Representatives, meets in regular session at Topeka, the capital, on the second Tuesday of January in odd-numbered years. The membership of the senate is limited to 40, and that of the house of representatives to 125. Senators are elected for four years and representatives for two years. In regular sessions not exceeding fifty days and in special sessions not exceeding thirty days the members of both houses are paid three dollars a day besides an allowance for travelling expenses, but they receive no compensation for the extra time of longer sessions. In 1908 a direct primary law was passed applicable to all nominations except for presidential electors, school district officers and officers in cities of less than 5000 inhabitants; like public elections the primaries are made a public charge; nomination is by petition signed by a certain percentage (for state office, at least 1%; for district office, at least 2%; for sub-district or county office, at least 3%) of the party vote; the direct nominating system applies to the candidates for the United States Senate, the nominee chosen by the direct primaries of each party being the nominee of the party.

The judicial power is vested in one supreme court, thirty-eight district courts, one probate court for each county, and two or more justices of the peace for each township. All justices are elected: those of the supreme court, seven in number, for six years, two or three every two years; those of the district courts for four years; and those of the probate courts and the justices of the peace for two years. The more important affairs of each county are managed by a board of commissioners, who are elected by districts for four years, but each county elects also a clerk, a treasurer, a probate judge, a register of deeds, a sheriff, a coroner, an attorney, a clerk of the district court, and a surveyor, and the district court for the county appoints a county auditor. The township officers, all elected for two years, are a trustee, a clerk, a treasurer, two or more justices of the peace, two constables and one road overseer for each road district. Cities are governed under a general law, but by this law they are divided into three classes according to size, and the government is different for each class. Those having a population of more than 15,000 constitute the first class, those having a population of more than 2000 but not more than 15,000 constitute the second class, and those having a population not exceeding 2000 constitute the third class. Municipal elections are far removed from those of the state, being held in odd-numbered years in April. In cities of the first class the state law requires the election of a mayor, city clerk, city treasurer, police judge and councilmen; in those of the second class it requires the election of a mayor, police judge, city treasurer, councilmen, board of education, justices of the peace and constables; and in those of the third class it requires the election of a mayor, police judge and councilmen. Several other offices provided for in each class are filled by the appointment of the mayor.

The principal grounds for a divorce in Kansas are adultery, extreme cruelty, habitual drunkenness, abandonment for one year, gross neglect of duty, and imprisonment in the

penitentiary as a felon subsequent to marriage, but the applicant for a divorce must have resided in the state the entire year preceding the presentment of the petition. A married woman has the same rights to her property after marriage as before marriage, except that she is not permitted to bequeath away from her husband more than one-half of it without his written consent, and no will made by the husband can affect the right of the wife, if she survive him, to one-half of the property of which he died seized. Whenever a husband dies intestate, leaving a farm or a house and lot in a town or city which was the residence of the family at his death, his widow, widow and children, or children alone if there be no widow, may hold the same as a homestead to the extent of 160 acres if it be a farm, or one acre if it be a town or city lot. A homestead of this size is exempt from levy for the debts of the intestate except in case of an incumbrance given by consent of both husband and wife, or of obligations for purchase money, or of liens for making improvements, and the homestead of a family cannot be alienated without the joint consent of husband and wife. The homestead status ceases, however, whenever the widow marries again or when all the children arrive at the age of majority. An eight-hour labour law was passed in 1891 and was upheld by the state supreme court. In 1909 a law was passed for state regulation of fire insurance rates (except in the case of farmers' mutuals insuring farm property only) and forbidding local discrimination of rates within the state. In the same year a law was passed requiring that any corporation acting as a common carrier in the state must receive the permission of the state board of railway commissioners for the issue of stocks, bonds or other evidences of indebtedness.

The manufacture and sale of intoxicating liquors except for medical, scientific and mechanical purposes were prohibited by a constitutional amendment adopted in 1880. The Murray liquor law of 1881, providing for the enforcement of the amendment, was declared constitutional by the state supreme court in 1883. At many sessions of the legislature its enemies vainly attempted its repeal. It was more seriously threatened in 1890 by the "Original Package Decision," of the United States Supreme Court, the decision, namely, that the state law could not apply to liquor introduced into Kansas from another state and sold from the original package, such inter-state commerce being within the exclusive jurisdiction of Congress. That body thereupon gave Kansas the power needed, and its action was upheld by the Federal Supreme Court. The enforcement of the law has varied, however, enormously according to the locality. In 1906-1907 a fresh crusade to enforce the law was begun by the attorney-general, who brought ouster suits against the mayors of Wichita, Junction City, Pittsburg and Leavenworth for not enforcing the law and for replacing it with the "fine" system, which was merely an irregular licence. In 1907 the attorney-general's office turned its attention to outside brewing companies doing business in the state and secured injunctions against such breweries doing business in the state and the appointment of receivers of their property. The provision of the law permitting the sale of whisky for medicinal, scientific or mechanical purposes was repealed by a law of 1909 prohibiting the sale, manufacture or barter of spirituous, malt, vinous or any other intoxicating liquors within the state. The severity of this law was ascribed to efforts of the liquor interests to render it objectionable.

The constitution forbids the contraction of a state debt exceeding $1,000,000. The actual debt on the 30th of June 1908 was $605,000, which was a permanent school fund. Taxation is on the general-property system. The entire system has been—as in other states where it prevails—extremely irregular and arbitrary as regards local assessments, and very imperfect; and the figures of total valuation (in 1880 $160,570,761, in 1890 $347,717,218, in 1906 $408,329,749, and in 1908, when it was supposed to be the actual valuation of all taxable property, $2,453,691,859), though significant of taxation methods, are not significant of the general condition or progress of the state.

Education.—Of higher educational institutions, the state supports the university of Kansas at Lawrence (1866), an agricultural college at Manhattan (1863; aided by the United States government); a normal school at Emporia (1865), a western branch of the same at Hays (1902); a manual training normal school (1903) at Pittsburg, western university (Quindaro) for negroes and the Topeka industrial and educational institute (1896, reorganized on the plan of Tuskegee institute in 1900) also for negroes. The university of Kansas was organized in 1864 and opened in 1866. Its engineering department was established in 1870, its normal department in 1876 (abolished 1885), its department of music in 1877, its department of law in 1878, and the department of pharmacy in 1885; in 1891 the preparatory department was abolished and the university was reorganized with "schools" in place of the former "departments." In 1899 a school of medicine was established, in connexion with which the Eleanor Taylor Bell memorial hospital was erected in 1905. In 1907-1908 the university had a faculty of 211, an enrolment of 2063 (1361 men and 702 women); the university library contained 60,000 volumes and 37,000 pamphlets. An efficient compulsory education law was passed in 1903. Kansas ranks very high among the states in its small percentage of illiteracy (inability to write)—in 1900 only 2.9% of persons at least ten years of age; the figures for native whites, foreign whites and negroes being respectively 1.3, 8.5, 22.3. In addition to the state schools, various flourishing private or denominational institutions are maintained. The largest of these are the Kansas Wesleyan University (Methodist Episcopal, 1886) at Salina and Baker University (Methodist Episcopal, 1858) at Baldwin. Among the many smaller colleges are Washburn College (Congregational, 1869) at Topeka, the South-west Kansas College (Methodist Episcopal, opened 1886) at Winfield,

the College of Emporia (Presbyterian, 1883) at Emporia, Bethany College (Lutheran, 1881) at Lindsborg, Fairmount College (non-sectarian, 1895) at Wichita, St Mary's College (Roman Catholic, 1869) at St Mary's, and Ottawa University (Baptist, 1865) at Ottawa. At Topeka is the College of the Sisters of Bethany (Protestant Episcopal, 1861) for women. There are also various small professional schools and private normal schools. An industrial school for Indian children is maintained by the United States near Lawrence (Haskell Institute, 1884). Among the state charitable and reformatory institutions are state hospitals for the insane at Topeka and Osawatomie and a hospital for epileptics at Parsons; industrial reform schools for girls at Beloit, for boys at Topeka, and for criminals under twenty-five at Hutchinson; a penitentiary at Lansing; a soldiers' orphans' home at Atchison and a soldiers' home at Dodge City; and schools for feeble-minded youth at Winfield, for the deaf at Olathe, and for the blind at Kansas City. These institutions are under the supervision of a state board of control. The state contributes also to many institutions on a private basis. Most of the counties maintain poor farms and administer outdoor relief, and some care for insane patients at the cost of the state.

History.—The territory now included in Kansas was first visited by Europeans in 1541, when Francisco de Coronado led his Spaniards from New Mexico across the buffalo plains in search of the wealth of "Quivira," a region located by Bandelier and other authorities in Kansas north-east of the Great Bend of the Arkansas. Thereafter, save for a brief French occupation, 1719-1725, and possibly slight explorations equally inconsequential, Kansas remained in undisturbed possession of the Indians until in 1803 it passed to the United States (all save the part west of 100° long. and south of the Arkansas river) as part of the Louisiana Purchase. The explorations for the United States of Z. M. Pike (1807) and S. H. Long (1819) tended to confirm old ideas of sandy wastes west of the Mississippi. But with the establishment of prairie commerce to Santa Fé (New Mexico), the waves of emigration to the Mormon land and to California, the growth of traffic to Salt Lake, and the explorations for a transcontinental railway, Kansas became well known, and was taken out of that mythical "Great American Desert," in which, thanks especially to Pike and to Washington Irving, it had been supposed to lie. The trade with Santa Fé began about 1804, although regular caravans were begun only about 1825. This trade is one of the most picturesque chapters in border history, and picturesque in retrospect, too, is the army of emigrants crossing the continent in "prairie schooners" to California or Utah, of whom almost all went through Kansas.

But this movement of hunters, trappers, traders, Mormons, miners and homeseekers left nothing to show of settlement in Kansas, for which, therefore, the succession of Territorial governments organized for the northern portion of the Louisiana Purchase had no real significance. Before 1854 Kansas was an Indian land, although on its Indian reservations (created in its east part for eastern tribes removed thither after 1830) some few whites resided: missionaries, blacksmiths, agents, farmers supposed to teach the Indians agriculture, and land "squatters,"—possibly 800 in all. Fort Leavenworth was established in 1827, Fort Scott in 1842, Fort Riley in 1853. There were Methodist (1829), Baptist, Quaker, Catholic and Presbyterian missions active by 1837. Importunities to Congress to institute a Territorial government began in 1852. This was realized by the Kansas-Nebraska Bill of 1854.

By that Act Kansas (which from 1854 to 1861 included a large part of Colorado) became, for almost a decade, the storm centre of national political passion, and her history of prime significance in the unfolding prologue of the Civil War. Despite the Missouri Compromise, which had prohibited slavery in the Louisiana Purchase N. of 36° 30′ N. lat. (except in Missouri), slaves were living at the missions and elsewhere, among Indians and whites, in 1854. The "popular sovereignty" principle of the Kansas-Nebraska Bill involved a sectional struggle for the new Territory. Time showed that the winning of Kansas was a question of the lightest-footed immigrant. Slaveholders were not footloose; they had all to lose if they should carry their blacks into Kansas and should nevertheless fail to make it a slave-state. Thus the South had to establish slavery by other than actual slaveholders, unless Missouri should act for her to establish it. But Missouri did not move her slaves; while her vicinity encouraged border partisans to seek such establishment even without residence—by intimidation, election frauds and outrage. This determined at once the nature of the Kansas struggle and its outcome; and after the South had played and lost in Kansas, "the war for the Union caught up and nationalized the verdict of the Territorial broil."

In the summer of 1854 Missouri "squatters" began to post claims to border lands and warn away intending anti-slavery settlers. The immigration of these from the North was fostered in every way, notably through the New England Emigrant Aid Company (see Lawrence, A. A.), whose example was widely imitated. Little organized effort was made in the South to settle the Territory; Lawrence (Wakarusa) and Topeka, free-state centres, and Leavenworth, Lecompton and Atchison, pro-slavery towns, were among those settled in 1854.

At the first election (Nov. 1854), held for a delegate to Congress, some 1700 armed Missourians invaded Kansas and stuffed the ballot boxes; and this intimidation and fraud was practised on a much larger scale in the election of a Territorial legislature in March 1855. The resultant legislature (at Pawnee, later at Shawnee Mission) adopted the laws of Missouri almost

en bloc, made it a felony to utter a word against slavery, made extreme pro-slavery views a qualification for office, declared death the penalty for aiding a slave to escape, and in general repudiated liberty for its opponents. The radical free-state men thereupon began the importation of rifles. All criticism of this is inconsequent; “fighting gear” was notoriously the only effective asset of Missourians in Kansas, every Southern band in Kansas was militarily organized and armed, and the free-state men armed only under necessity. Furthermore, a free-state “government” was set up, the “bogus” legislature at Shawnee being “repudiated.” Perfecting their organization in a series of popular conventions, they adopted (Dec. 1855) the Topeka Constitution—which declared the exclusion of negroes from Kansas—elected state officials, and sent a contestant delegate to Congress. The Topeka “government” was simply a craftily impressive organization, a standing protest. It met now and then, and directed sentiment, being twice dispersed by United States troops; but it passed no laws, and did nothing that conflicted with the Territorial government countenanced by Congress. On the other hand, the laws of the “bogus” legislature were generally ignored by the free-state partisans, except in cases (*e.g.* the service of a writ) where that was impossible without apparent actual rebellion against the authority of the legislature, and therefore of Congress.

Meanwhile the “border war” began. During the (almost bloodless) “Wakarusa War” Lawrence was threatened by an armed force from Missouri, but was saved by the intervention of Governor Shannon. Up to this time the initiative and the bulk of outrages lay assuredly heavily on the pro-slavery side; hereafter they became increasingly common and more evenly divided. In May 1856 another Missouri force entered Lawrence without resistance, destroyed its printing offices, wrecked buildings and pillaged generally. This was the day before the assault on Charles Sumner (*q.v.*) in the Senate of the United States. These two outrages fired Northern passion and determination. In Kansas they were a stimulus to the most radical elements. Immediately after the sack of Lawrence, John Brown and a small band murdered and mutilated five pro-slavery men, on Pottawatomie Creek; a horrible deed, showing a new spirit on the free-state side, and of ghastly consequence—for it contributed powerfully to widen further the licence of highway robbery, pillage and arson, the ruin of homes, the driving off of settlers, marauding expeditions, attacks on towns, outrages in short of every kind, that made the following months a welter of lawlessness and crime, until Governor Geary—by putting himself above all partisanship, repudiating Missouri, and using Federal troops—put an end to them late in 1856. (In the isolated south-eastern counties they continued through 1856-1858, mainly to the advantage of the “jay-hawkers” of free-state Kansas and to the terror of Missouri.)

The struggle now passed into another phase, in which questions of state predominate. But something may be remarked in passing of the leaders in the period of turbulence. John Brown wished to deal a blow against slavery, but did nothing to aid any conservative political organization to that end. James H. Lane was another radical, and always favoured force. He was a political adventurer, an enthusiastic, energetic, ambitious, ill-balanced man, shrewd and magnetic. He assuredly did much for the free-state cause; meek politics were not alone sufficient in those years in Kansas. The leader of the conservative free-soilers was Charles Robinson (1818-1894). He was born in Massachusetts, studied medicine at the Berkshire Medical School, and had had political experience in California, whither he had gone in 1849, and where in 1850-1852 he was a member of the legislature and a successful anti-slavery leader. In 1854 he had come to Kansas as an agent of the Emigrant Aid Company. He was the author of the Topeka government idea, or at least was its moving spirit, serving throughout as the “governor” under it; though averse to force, he would use it if necessary, and was first in command in the “Wakarusa War.” His partisans say that he saved Kansas, and regard Lane as a fomenter of trouble who accomplished nothing. Andrew H. Reeder (1807-1864), who showed himself a pro-slavery sympathizer as first Territorial governor, was removed from office for favouring the free-state party; he became a leader in the free-state cause. Every governor who followed him was forced by the logic of events and truth tacitly to acknowledge that right lay with the free-state party. Reeder and Shannon fled the Territory in fear of assassination by the pro-slavery party, with which at first they had had most sympathy. Among the pro-slavery leaders David Rice Atchison (1807-1886), United States Senator in 1843-1855, accompanied both expeditions against Lawrence; but he urged moderation, as always, at the end of what was a legitimate result of his radical agitation.

In June 1857 delegates were elected to a constitutional convention. The election Act did not provide for any popular vote upon the constitution they should form, and was passed over Governor John W. Geary’s veto. A census, miserably deficient (largely owing to free-state abstention and obstruction), was the basis of apportionment of delegates. The free-state party demanded a popular vote on the constitution. On the justice of this Governor Robert J. Walker and President Buchanan were at first unequivocally agreed, and the governor promised fairplay. Nevertheless only pro-slavery men voted, and the convention was thus pro-slavery. The document it framed is known as the Lecompton Constitution. Before the convention met, the free-state party, abandoning its policy of political inaction, captured the Territorial legislature. On the constitutional convention rested, then, all hope of saving Kansas for slavery; and that would be

impossible if they should submit their handiwork to the people. The convention declared slave property to be “before and higher than any constitutional sanction” and forbade amendments affecting it; but it provided for a popular vote on the alternatives, the “constitution with slavery” or the “constitution with no slavery.” If the latter should be adopted, slavery should cease “except” that the right to property in slaves in the Territory should not be interfered with. The free-state men regarded this as including the right to property in offspring of slaves, and therefore as pure fraud. Governor Walker stood firmly against this iniquitous scheme; he saw that slavery was, otherwise, doomed, but he thought Kansas could be saved to the Democratic party though lost to slavery. But President Buchanan, under Southern influence, repudiated his former assurances. There is reason to believe that the whole scheme was originated at Washington, and though Buchanan was not privy to it before the event, yet he adopted it. He abandoned Walker, who left Kansas; and he dismissed Acting-Governor Frederick P. Stanton for convoking the (now free-state) legislature. This body promptly ordered a vote on the third alternative, “Against the Constitution.”

The free-state men ignored the alternatives set by the Lecompton Convention; but they participated nevertheless in the provisional election for officers under the Lecompton government, capturing all offices, and then, the same day, voted overwhelmingly against the constitution (Jan. 4, 1858).

Nevertheless, Buchanan, against the urgent counsel of Governor Denver, urged on Congress (Feb. 2) the admission of Kansas under the Lecompton Constitution. He was opposed by Senator Stephen A. Douglas, the leader of the Northern Democracy. The Senate upheld the President; the House of Representatives voted down his policy; and finally both houses accepted the English Bill, by which Kansas was virtually offered some millions of acres of public lands if she should accept the Lecompton Constitution.[4] On the 21st of August 1858, by a vote of 11,300 to 1788, Kansas resisted this temptation. The plan of the Administration thus effectually miscarried, and its final result was a profound split in the Democratic party.

The free-state men framed an excellent anti-slavery constitution at Leavenworth in March-April 1858, but the origins of the convention were illegal and their work was still-born. On the 29th of July 1859 still another constitution was therefore framed at Wyandotte, and on the 4th of October it was ratified by the people. Meanwhile the Topeka “government” disappeared, and also, with its single purpose equally served, the free-state party, most of it (once largely Democratic) passing into the Republican party, now first organized in the Territory. On the 29th of January 1861 Kansas was admitted to the Union under the Wyandotte Constitution. The United States Census of 1860 gave her a population of 107,204 inhabitants. The struggle in Kansas, the first physical national struggle over slavery, was of paramount importance in the breaking up of the Whig party, the firm establishment of an uncompromisingly anti-slavery party, the sectionalization of the Democracy, and the general preparation of the country for the Civil War.

Drought and famine came in 1860, and then upon the impoverished state came the strain of the Civil War. Nevertheless Kansas furnished proportionally a very large quota of men to the Union armies. Military operations within her own borders were largely confined to a guerrilla warfare, carrying on the bitter neighbourhood strife between Kansas and Missouri. The Confederate officers began by repressing predatory plundering from Missouri; but after James H. Lane, with an undisciplined brigade, had crossed the border, sacking, burning and killing in his progress, Missouri “bushrangers” retaliated in kind. Freebooters trained in Territorial licence had a free hand on both sides. Kansas bands were long the more successful. But William C. Quantrell, after sacking various small Kansas towns along the Missouri river (1862-63), in August 1863 took Lawrence (*q.v.*) and put it mercilessly to fire and sword—the most ghastly episode in border history. In the autumn of 1864 the Confederate general, Sterling Price, aiming to enter Kansas from Missouri but defeated by General Pleasanton’s cavalry, retreated southward, zig-zagging on both sides of the Missouri-Kansas line. This ended for Kansas the border raids and the war. Lane was probably the first United States officer to enlist negroes as soldiers. Many of them (and Indians too) fought bravely for the state. Indian raids and wars troubled the state from 1864 to 1878. The tribes domiciled in Kansas were rapidly moved to Indian Territory after 1868.

After the Civil War the Republicans held uninterrupted supremacy in national elections, and almost as complete control in the state government, until 1892. From about 1870 onward, however, elements of reform and of discontent were embodied in a succession of radical parties of protest. Prohibition arose thus, was accepted by the Republicans, and passed into the constitution. Woman suffrage became a vital political issue. Much legislation has been passed to control the railways. General control of the media of commerce, economic co-operation, tax reform, banking reforms, legislation against monopolies, disposal of state lands, legislation in aid of the farmer and labourer, have been issues of one party or another. The movement of the Patrons of Industry (1874), growing into the Grange, Farmers’ Alliance, and finally into the People’s (Populist) party (see Farmers’ Movement), was perhaps of greatest importance. In conjunction with the Democrats the Populists controlled the State government in 1892-1894 and 1896-1898. These two parties decidedly outnumbered the Republicans at the polls from 1890-

1898, but they could win only by fusion. In 1892-1893, when the Populists elected the governor and the Senate, and the Republicans (as the courts eventually determined) the House of Representatives, political passion was so high as to threaten armed conflicts in the capital. The Australian ballot was introduced in 1893. In the decade following 1880, struggles in the western counties for the location of county seats (the bitterest local political fights known in western states) repeatedly led to bloodshed and the interference of state militia.

Territorial Governors[5]

Andrew H. Reeder	July 7,	1854-Aug. 16, ’55
Wilson Shannon	Sept. 7,	1855-Aug. 18, ’56
John W. Geary	Sept. 9,	1856-Mar. 12, ’57
Robert J. Walker	May 27,	1857-Nov. 16, ’57
James W. Denver	May 12,	1858-Oct. 10, ’58
Samuel Medary	Dec. 18,	1858-Dec. 17, ’60

Acting Governors[6]

			Aggregate	
Daniel Woodson	5	times	(164 days)	Apr. 17, 1855-Apr. 16, ’57
Frederick P. Stanton	2	”	(78 days)	Apr. 16, 1857-Dec. 21, ’57
James W. Denver	1	”	(23 days)	Dec. 21, 1857-May 12, ’58
Hugh S. Walsh	4(5?)	”	(177 days)	July 3, 1858-June 16, ’60
George M. Beebe	2	”	(131 days)	Sept. 11, 1860-Feb. 9, ’61

State Governors

Charles Robinson	Republican	1861-1863
Thomas Carney	”	1863-1865
Samuel J. Crawford	”	1865-1869
N. Green (to fill vacancy)	”	1869 (3 months)
James M. Harvey	”	1869-1873
Thomas A. Osborn	”	1873-1877
George T. Anthony	”	1877-1879
John P. St John	”	1879-1883
George W. Glick	Democrat	1883-1885
John A. Martin	Republican	1885-1889
Lyman U. Humphrey	”	1889-1893
Lorenzo D. Lewelling	Populist	1893-1895
Edmund N. Morrill	Republican	1895-1897
John W. Leedy	Democrat-Populist	1897-1899
W. E. Stanley	Republican	1899-1903
Willis J. Bailey	”	1903-1905
Edward W. Hoch	”	1905-1909
Walter R. Stubbs	”	1909-

Authorities.—Consult for physiographic descriptions general works on the United States, exploration, surveys, &c., also paper by George I. Adams in American Geographical Society, *Bulletin* 34 (1902), pp. 89-104. On climate see U.S. Department of Agriculture, *Kansas Climate and Crop Service* (monthly, since 1887). On soil and agriculture, see *Biennial Reports* (Topeka, 1877 seq.) of the State Board of Agriculture; *Experiment Station Bulletin* of the Kansas Agricultural College (Manhattan); and statistics in the United States *Statistical Abstract* (annual, Washington), and Federal Census reports. On manufactures see Federal Census reports; Kansas Bureau of Labor and Industry, *Annual Report* (1885 seq.); Kansas Inspector of Coal Mines, *Annual Report* (1887 seq.). On administration consult the *State of Kansas Blue Book* (Topeka, periodical), and reports of the various state officers (Treasurer, annual, then biennial since 1877-1878; Board of Trustees of State Charities and Corrections, biennial, 1877-1878 seq.; State Board of Health, founded 1885, annual, then biennial reports since 1901-1902; Bureau of Labor Statistics, founded 1885, annual reports; Irrigation Commission, organized 1895, annual reports, &c.). On taxation see *Report and Bill of the State Tax Commission, created* 1901 (Topeka, 1901). On the history of the state, see A. T. Andreas, *History of Kansas* (Chicago, 1883; compiled mainly by J. C. Hebbard); D. W. Wilder’s *Annals of Kansas* (Topeka, 1875 and later), indispensable for reference; L. W. Spring’s *Kansas* (Boston, 1885, in the American Commonwealth Series); Charles Robinson, *The Kansas Conflict* (New York, 1892); Eli Thayer, *The Kansas Crusade* (New York, 1889); the *Proceedings of the Kansas State Historical Society* (Topeka, 1891 seq.), full of the most valuable

material; W. E. Connelley, *Kansas Territorial Governors* (Topeka, 1900); W. E. Miller, *The Peopling of Kansas* (Columbus, O., 1906), a doctoral dissertation of Columbia University; and for the controversy touching John Brown, G. W. Brown's *The Truth at Last, Reminiscences of Old John Brown* (Rockford, Ill., 1880), and W. E. Connelley, *An Appeal to the Record ... Refuting ... Things Written for ... Charles Robinson and G. W. Brown* (Topeka, 1903). W. C. Webb's *Republican Election Methods in Kansas, General Election of 1892, and Legislative Investigations* (Topeka, 1893) may also be mentioned.

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1 For the thirty years 1877-1906 the mean rainfall for ten-year periods was: at Dodge, 22.8 in., 18.4 in. and 22.7 in.; and at Lawrence, 35.1 in., 39.2 in. and 36.7 in. for the first, second and third periods respectively.

2 All subsequent figures in this paragraph for manufactures in 1900 are given for establishments under the "factory system" only, so as to be comparable with statistics for 1905, which do not include minor establishments.

3 According to the state census Kansas had in 1905 a total population of 1,544,968; nearly 28% lived in cities of 2500 or more inhabitants; 13 cities had more than 10,000 inhabitants: Kansas City (67,614). Topeka (37,641), Wichita (31,110), Leavenworth (20,934), Atchison (18,159), Pittsburg (15,012), Coffeyville (13,196), Fort Scott (12,248), Parsons (11,720), Lawrence (11,708), Hutchinson (11,215), Independence (11,206), and Iola (10,287). Other cities of above 5000 inhabitants each were: Chanute (9704), Emporia (8974), Winfield (7845), Salina (7829), Ottawa (7727), Arkansas City (7634), Newton (6601), Galena (6449), Argentine (6053), Junction City (5264) and Cherryvale (5089).

4 The English Bill was not a bribe to the degree that it has usually been considered to be, inasmuch as it "reduced the grant of land demanded by the Lecompton Ordinance from 23,500,000 acres to 3,500,000 acres, and offered only the normal cession to new states." But this grant of 3,500,000 acres was conditioned on the acceptance of the Lecompton Constitution, and Congress made no promise of any grant if that Constitution were not adopted. The bill was introduced by William Hayden English (1822-1896), a Democratic representative in Congress in 1853-1861 (see Frank H. Hodder, "Some Aspects of the English Bill for the Admission of Kansas," in *Annual Report of the American Historical Association* for the Year 1906, i. 201-210).

5 Terms of actual service in Kansas, not period of commissions. The appointment was for four years. Reeder was removed, all the others resigned.

6 Secretaries of the Territory who served as governors in the interims of gubernatorial terms or when the governor was absent from the Territory. In the case of H. S. Walsh several dates cannot be fixed with exactness.

KANSAS CITY, a city and the county-seat of Wyandotte county, Kansas, U.S.A., on the W. bank of the Missouri River, at the mouth of the Kansas, altitude about 800 ft. It is separated from its greater neighbour, Kansas City, Missouri, only by the state line, and is the largest city in the state. Pop. (1890), 38,315; (1900), 51,418, of whom 6,377 were foreign-born and 6509 were negroes; (1910 census) 82,331. It is served by the Union Pacific, the Missouri Pacific, the Chicago, Rock Island & Pacific, and the Chicago Great Western railways, and by electric lines connecting with Leavenworth and with Kansas City, Missouri. There are several bridges across the Kansas river. The city covers the low, level bottom-land at the junction of the two rivers, and spreads over the surrounding highlands to the W., the principal residential district. Its plan is regular. The first effective steps toward a city park and boulevard system were taken in 1907, when a board of park commissioners, consisting of three members, was appointed by the mayor. The city has been divided into the South Park District and the North Park District, and at the close of 1908 there were 10 m. of boulevards and parks aggregating 160 acres. A massive steel and concrete toll viaduct, about 1¾ m. in length, extends from the bluffs of Kansas City, Kan., across the Kansas valley to the bluffs of Kansas City, Mo., and is used by pedestrians, vehicles and street cars. There is a fine public library building given by Andrew Carnegie. The charities of the city are co-ordinated through the associated charities. Among charitable state-aided institutions are the St Margaret's hospital (Roman Catholic), Bethany hospital (Methodist), a children's home (1893), and, for negroes, the Douglass hospital training school for nurses (1898) —the last the largest private charity of the state. The medical department of the Kansas state university, the other departments of which are in Lawrence, is in Kansas City; and among the other educational institutions of the city are the Western university and industrial school (a co-educational school for negroes), the Kansas City Baptist theological seminary (1902), and the Kansas City university (Methodist Protestant, 1896), which had 454 students in 1908-1909 and comprises Mather college (for liberal arts), Wilson high school (preparatory), a school of elocution and oratory (in Kansas City, Mo.), a Normal School, Kansas City Hahnemann Medical

College (in Kansas City, Mo.), and a school of theology. The city is the seat of the Kansas (State) school for the blind. Kansas City is one of the largest cities in the country without a drinking saloon. Industrially the city is important for its stockyards and its meat-packing interests. With the exception of Chicago, it is the largest livestock market in the United States. The product-value of the city's factories in 1905 was $96,473,050; 93.5% consisting of the product of the wholesale slaughtering and meat-packing houses. Especially in the South-west markets Kansas City has an advantage over Chicago, St Louis, and other large packing centres (except St Joseph), not only in freights, but in its situation among the "corn and beef" states; it shares also the extraordinary railway facilities of Kansas City, Missouri. There are various important manufactures, such as soap and candles, subsidiary to the packing industry; and the city has large flour mills, railway and machine shops, and foundries. A large cotton-mill, producing coarse fabrics, was opened in 1907. Natural gas derived from the Kansas fields became available for lighting and heating, and crude oil for fuel, in 1906.

Kansas City was founded in 1886 by the consolidation of "old" Kansas City, Armourdale and Wyandotte (in which Armstrong and Riverview were then included). Of these municipalities Wyandotte, the oldest, was originally settled by the Wyandotte Indians in 1843; it was platted and settled by whites in 1857; and was incorporated as a town in 1858, and as a city in 1859. At Wyandotte were made the first moves for the Territorial organization of Kansas and Nebraska. During the Kansas struggle Wyandotte was a pro-slavery town, while Quindaro (1856), a few miles up the Missouri, was a free-state settlement and Wyandotte's commercial rival until after the Civil War. The convention that framed the constitution, the Wyandotte Constitution, under which Kansas was admitted to the Union, met here in July 1859. "Old" Kansas City was surveyed in 1869 and was incorporated as a city in 1872. Armourdale was laid out in 1880 and incorporated in 1882. The packing interest was first established in 1867; the first large packing plant was that of Armour & Co., which was removed to what is now Kansas City in 1871. Kansas City adopted government by commission in 1909.

KANSAS CITY, a city and port of entry of Jackson county, Missouri, U.S.A., the second in size and importance in the state, situated at the confluence of the Missouri and Kansas rivers, adjoining Kansas City, Kansas, and 235 m. W. by N. of St Louis. Pop. (1890), 132,716; (1900), 163,752, of whom 18,410 were foreign born (German, 4816; Irish, 3507; Swedish, 1869; English, 1863; English-Canadian, 1369; Italian, 1034), and 17,567 were negroes; (1910 census) 248,381. Kansas City, the gateway to the South-west, is one of the leading railway centres of the United States. It is served by the Union Pacific, the Missouri Pacific, the 'Frisco System, the Chicago, Burlington & Quincy, the Atchison, Topeka & Santa Fé, the Chicago Great Western, the Chicago, Milwaukee & St Paul, the Chicago & Alton, the Wabash, the Kansas City Southern, the Chicago, Rock Island & Pacific, the Missouri, Kansas & Texas, the Leavenworth, Kansas & Western, the Kansas City, Mexico & Orient, the St Louis, Kansas City & Colorado, the Quincy, Omaha & Kansas City, and the St Joseph & Grand Island railways, and by steamboat lines to numerous river ports.

The present retail, office, and wholesale sections were once high bluffs and deep ravines, but through and across these well graded streets were constructed. South and west of this highland, along the Kansas river, is a low, level tract occupied chiefly by railway yards, stock yards, wholesale houses and manufacturing establishments; north and east of the highland is a flat section, the Missouri River bottoms, occupied largely by manufactories, railway yards, grain elevators and homes of employés. Much high and dry "made" land has been reclaimed from the river flood-plain. Two great railway bridges across the Missouri, many smaller bridges across the Kansas, and a great inter-state toll viaduct extending from bluff to bluff across the valley of the latter river, lie within the metropolitan area of the two cities. The streets of the Missouri city are generally wide and excellently paved. The city-hall (1890-1893), the courthouse (1888-1892), and the Federal Building (1892-1900) are the most imposing of the public buildings. A convention hall, 314 ft. long and 198 ft. wide, with a seating capacity of about 15,000, is covered by a steel-frame roof without a column for its support; the exterior of the walls is cut stone and brick. The building was erected within three months, to replace one destroyed by fire, for the National Democratic Convention which met here on the 4th of July 1900. The Public Library with walls of white limestone and Texas granite, contained (1908) 95,000 volumes. The Congregational, the Calvary Baptist, the Second Presbyterian, the Independence Avenue Christian, the Independence Avenue Methodist, and the Second Christian Science churches are the finest church buildings. The board of trade building, the building of the *Star* newspaper, and several large office buildings (including the Scarritt, Long, and New York Life Insurance buildings) are worthy of mention.

Kansas City has over 2000 acres in public parks; but Swope Park, containing 1354 acres, lies south of the city limits. The others are distributed with a design to give each section a recreation ground within easy walking distance, and all (including Swope) are connected by parkways, boulevards and street-car lines. The Paseo Parkway, 250 ft. wide, extends from N. to S. through the centre of the city for a distance of 2½ m., and adjoining it near its middle is the Parade, or principal playground. The city has eight cemeteries, the largest of which are Union, Elmwood, Mt Washington, St Mary's and Forest Hill. The charitable institutions and professional schools included in 1908 about thirty hospitals, several children's homes and homes for the aged, an industrial home, the Kansas City school of law, the University medical college, and the Scarritt training school. The city has an excellent public school system. A Methodist Episcopal institutional church, admirably equipped, was opened in 1906. The city has a juvenile court, and maintains a free employment bureau.

Kansas City is primarily a commercial centre, and its trade in livestock, grain and agricultural implements is especially large. The annual pure-bred livestock show is of national importance. The city's factory product increased from $23,588,653 in 1900 to $35,573,049 in 1905, or 50.8%. Natural gas and crude petroleum from Kansas fields became of industrial importance about 1906. Natural gas is used to light the residence streets and to heat many of the residences.

Kansas City is one of the few cities in the United States empowered to frame its own charter. The first was adopted in 1875 and the second in 1889. In 1905 a new charter, drawn on the lines of the model "municipal program" advocated by the National Municipal League, was submitted to popular vote, but was defeated by the influence of the saloons and other special interests. The charter of 1908 is a revision of this proposed charter of 1905 with the objectionable features eliminated; it was adopted by a large majority vote. Under the provisions of the charter of 1908 the people elect a mayor, city treasurer, city comptroller, and judges of the municipal court, each for a term of two years. The legislative body is the common council composed of two houses, each having as many members as there are wards in the city—14 in 1908. The members of the lower house are elected, one by each ward, in the spring of each even numbered year. The upper house members are elected by the city at large and serve four years. A board of public works, board of park commissioners, board of fire and water commissioners, a board of civil service, a city counsellor, a city auditor, a city assessor, a purchasing agent, and subordinate officers, are appointed by the mayor, without confirmation by the common council. A non-partisan board composed of citizens who must not be physicians has general control of the city's hospitals and health department. A new hospital at a cost of half a million dollars was completed in 1908. The charter provides for a referendum vote on franchises, which may be ordered by the council or by petition of the people, the signatures of 20% of the registered voters being sufficient to force such election. Public work may be prevented by remonstrance of interested property owners except in certain instances, when the city, by vote of the people, may overrule all remonstrances. A civic league attempts to give a non-partisan estimate of all municipal candidates. The juvenile court, the arts and tenement commissions, the municipal employment bureau, and a park board are provided for by the charter. All the members of the city board of election commissioners and a majority of the police board are appointed by the governor of the state; and the police control the grant of liquor licences. The city is supplied with water drawn from the Missouri river above the mouth of the Kansas or Kaw (which is used as a sewer by Kansas City, Kan.); the main pumping station and settling basins being at Quindaro, several miles up the river in Kansas; whence the water is carried beneath the Kansas, through a tunnel, to a high-pressure distributing station in the west bottoms. The waterworks (direct pressure system) were acquired by the city in 1895. All other public services are in private hands. The street-railway service is based on a universal 5-cent transfer throughout the metropolitan area. Some of the first overhead electric trolleys used in the United States were used here in 1885.

The first permanent settlement within the present limits of Kansas City, which took its name from Kansas river,[1] was established by French fur traders about 1821. Westport, a little inland town—platted 1833, a city 1857, merged in Kansas City in 1899—now a fashionable residence district of Kansas City—was a rival of Independence in the Santa Fé trade which she gained almost *in toto* in 1844 when the great Missouri flood (the greatest the river has known) destroyed the river landing utilized by Independence. Meanwhile, what is now Kansas City, and was then Westport Landing, being on the river where a swift current wore a rocky shore, steadily increased in importance and overshadowed Westport. But in 1838 lots were surveyed and the name changed to the Town of Kansas. It was officially organized in part in 1847, formally incorporated as a town in 1850, chartered under its present name in 1853, re-chartered in 1875, in 1889 and in 1908. Before 1850 it was practically the exclusive eastern terminus on the river for the Santa Fé trade,[2] and a great outfitting point for Californian emigrants. The history of this border trade is full of picturesque colour. During the Civil War both Independence and Westport were the scene of battles; Kansas City escaped, but her trade went to Leavenworth, where it had the protection of an army post and a quiet frontier. After the war the railways came, taking away the traffic to Santa Fé, and other cities farther up the Missouri river took over the trade to its upper valley. In 1866 Kansas City was entered by the first railway from St Louis; 1867 saw the

beginning of the packing industry; in 1869 a railway bridge across the Missouri assured it predominance over Leavenworth and St Joseph; and since that time—save for a depression shortly after 1890, following a real-estate boom—the material progress of the city has been remarkable; the population increased from 4418 in 1860 to 32,260 in 1870, 55,785 in 1880, and 132,716 in 1890.

See T. S. Case (ed.), *History of Kansas City, Missouri* (Syracuse, 1888); William Griffith, *History of Kansas City* (Kansas City, 1900); for industrial history, the *Greater Kansas City Yearbook* (1907 seq.); for all features of municipal interest, the *Kansas City Annual* (Kansas City, 1907 seq.), prepared for the Business Men's League.

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1 "Kansas"—in archaic variants of spelling and pronunciation, "Kansaw," and still called, locally and colloquially, the "Kaw."

2 Before Kansas City, first Old Franklin (opposite Boonville), then Ft. Osage, Liberty, Sibley, Lexington, Independence and Westport had successively been abandoned as terminals, as the transfer-point from boat to prairie caravan was moved steadily up the Missouri. Whisky, groceries, prints and notions were staples sent to Santa Fé; wool, buffalo robes and dried buffalo meat, Mexican silver coin, gold and silver dust and ore came in return. In 1860 the trade employed 3000 wagons and 7000 men, and amounted to millions of dollars in value.

KANSK, a town of eastern Siberia, in the government of Yeniseisk, 151 m. by rail E. of Krasnoyarsk, on the Kan River, a tributary of the Yenisei, and on the Siberian highway. Pop. (1897), 7504. It is the chief town of a district in which gold is found, but lies on low ground subject to inundation by the river.

KAN-SUH, a north-western province of China, bounded N. by Mongolia, E. by Shen-si, S. by Szech'uen, W. by Tibet and N.W. by Turkestan. The boundary on the N. remains undefined, but the province may be said to occupy the territory lying between 32° 30′40° N., and 108° and 98° 20′ E., and to contain about 260,000 sq. m. The population is estimated at 9,800,000. Western Kan-suh is mountainous, and largely a wilderness of sand and snow, but east of the Hwang-ho the country is cultivated. The principal river is the Hwang-ho, and in the mountains to the south of Lan-chow Fu rises the Wei-ho, which traverses Shen-si and flows into the Hwang-ho at Tung-kwan. The chief products of Kan-suh are cloth, horse hides, a kind of curd like butter which is known by the Mongols under the name of *wuta*, musk, plums, onions, dates, sweet melons and medicines. (See China.)

KANT, IMMANUEL (1724-1804), German philosopher, was born at Königsberg on the 22nd of April 1724. His grandfather was an emigrant from Scotland, and the name Cant is not uncommon in the north of Scotland, whence the family is said to have come. His father was a saddler in Königsberg, then a stronghold of Pietism, to the strong influence of which Kant was subjected in his early years. In his tenth year he was entered at the Collegium Fredericianum with the definite view of studying theology. His inclination at this time was towards classics, and he was recognized, with his school-fellow, David Ruhnken, as among the most promising classical scholars of the college. His taste for the greater Latin authors, particularly Lucretius, was never lost, and he acquired at school an unusual facility in Latin composition. With Greek authors he does not appear to have been equally familiar. During his university course, which began in 1740, Kant was principally attracted towards mathematics and physics. The lectures on classics do not seem to have satisfied him, and, though he attended courses on theology, and even preached on

one or two occasions, he appears finally to have given up the intention of entering the Church. The last years of his university studies were much disturbed by poverty. His father died in 1746, and for nine years he was compelled to earn his own living as a private tutor. Although he disliked the life and was not specially qualified for it—as he used to say regarding the excellent precepts of his *Pädagogik*, he was never able to apply them—yet he added to his other accomplishments a grace and polish which he displayed ever afterwards to a degree somewhat unusual in a philosopher by profession.

In 1755 Kant became tutor in the family of Count Kayserling. By the kindness of a friend named Richter, he was enabled to resume his university career, and in the autumn of that year he graduated as doctor and qualified as privatdocent. For fifteen years he continued to labour in this position, his fame as writer and lecturer steadily increasing. Though twice he failed to obtain a professorship at Königsberg, he steadily refused appointments elsewhere. The only academic preferment received by him during the lengthy probation was the post of under-librarian (1766). His lectures, at first mainly upon physics, gradually expanded until nearly all descriptions of philosophy were included under them.

In 1770 he obtained the chair of logic and metaphysics at Königsberg, and delivered as his inaugural address the dissertation *De mundi sensibilis et intelligibilis forma et principiis*. Eleven years later appeared the *Kritik of Pure Reason*, the work towards which he had been steadily advancing, and of which all his later writings are developments. In 1783 he published the *Prolegomena*, intended as an introduction to the *Kritik*, which had been found to stand in need of some explanatory comment. A second edition of the *Kritik*, with some modifications, appeared in 1787, after which it remained unaltered.

In spite of its frequent obscurity, its novel terminology, and its declared opposition to prevailing systems, the Kantian philosophy made rapid progress in Germany. In the course of ten or twelve years from the publication of the *Kritik of Pure Reason*, it was expounded in all the leading universities, and it even penetrated into the schools of the Church of Rome. Such men as J. Schulz in Königsberg, J. G. Kiesewetter in Berlin, Jakob in Halle, Born and A. L. Heydenreich in Leipzig, K. L. Reinhold and E. Schmid in Jena, Buhle in Göttingen, Tennemann in Marburg, and Snell in Giessen, with many others, made it the basis of their philosophical teaching, while theologians like Tieftrunk, Stäudlin, and Ammon eagerly applied it to Christian doctrine and morality. Young men flocked to Königsberg as to a shrine of philosophy. The Prussian Government even undertook the expense of their support. Kant was hailed by some as a second Messiah. He was consulted as an oracle on all questions of casuistry—as, for example, on the lawfulness of inoculation for the small-pox. This universal homage for a long time left Kant unaffected; it was only in his later years that he spoke of his system as the limit of philosophy, and resented all further progress. He still pursued his quiet round of lecturing and authorship, and contributed from time to time papers to the literary journals. Of these, among the most remarkable was his review of Herder's *Philosophy of History*, which greatly exasperated that author, and led to a violent act of retaliation some years after in his *Metakritik of Pure Reason*. Schiller at this period in vain sought to engage Kant upon his *Horen*. He remained true to the *Berlin Journal*, in which most of his criticisms appeared.

In 1792 Kant, in the full height of his reputation, was involved in a collision with the Government on the question of his religious doctrines. Naturally his philosophy had excited the declared opposition of all adherents of historical Christianity, since its plain tendency was towards a moral rationalism, and it could not be reconciled to the literal doctrines of the Lutheran Church. It would have been much better to permit his exposition of the philosophy of religion to enjoy the same literary rights as his earlier works, since Kant could not be interdicted without first silencing a multitude of theologians who were at least equally separated from positive Christianity. The Government, however, judged otherwise; and after the first part of his book, *On Religion within the Limits of Reason alone*, had appeared in the *Berlin Journal*, the publication of the remainder, which treats in a more rationalizing style of the peculiarities of Christianity, was forbidden. Kant, thus shut out from Berlin, availed himself of his local privilege, and, with the sanction of the theological faculty of his own university, published the full work in Königsberg. The Government, probably influenced as much by hatred and fear of the French Revolution, of which Kant was supposed to be a partisan, as by love of orthodoxy, resented the act; and a secret cabinet order was received by him intimating the displeasure of the king, Frederick William II., and exacting a pledge not to lecture or write at all on religious subjects in future. With this mandate Kant, after a struggle, complied, and kept his engagement till 1797, when the death of the king, according to his construction of his promise, set him free. This incident, however, produced a very unfavourable effect on his spirits. He withdrew in 1794 from society; next year he gave up all his classes but one public lecture on logic or metaphysics; and in 1797, before the removal of the interdict on his theological teaching, he ceased altogether his public labours, after an academic course of forty-two years. He previously, in the same year, finished his treatises on the *Metaphysics of Ethics*, which, with his *Anthropology*, completed in 1798, were the last considerable works that he revised with his own hand. His *Lectures on Logic*, on *Physical Geography*, on *Paedagogics*, were edited during his lifetime by his friends and pupils.

By way of asserting his right to resume theological disquisition, he also issued in 1798 his *Strife of the Faculties*, in which all the strongest points of his work on religion were urged afresh, and the correspondence that had passed between himself and his censors was given to the world.

From the date of his retirement from the chair Kant declined in strength, and gave tokens of intellectual decay. His memory began to fail, and a large work at which he wrought night and day, on the connexion between physics and metaphysics, was found to be only a repetition of his already published doctrines. After 1802, finding himself attacked with a weakness in the limbs attended with frequent fits of falling, he mitigated the Spartan severity of his life, and consented to receive medical advice. A constant restlessness oppressed him; his sight gave way; his conversation became an extraordinary mixture of metaphors; and it was only at intervals that gleams of his former power broke out, especially when some old chord of association was struck in natural science or physical geography. A few days before his decease, with a great effort he thanked his medical attendant for his visits in the words, “I have not yet lost my feeling for humanity.” On the 12th of February 1804 he died, having almost completed his eightieth year. His stature was small, and his appearance feeble. He was little more than five feet high; his breast was almost concave, and, like Schleiermacher, he was deformed in the right shoulder. His senses were quick and delicate; and, though of weak constitution, he escaped by strict regimen all serious illness.

His life was arranged with mechanical regularity; and, as he never married, he kept the habits of his studious youth to old age. His man-servant, who awoke him summer and winter at five o’clock, testified that he had not once failed in thirty years to respond to the call. After rising he studied for two hours, then lectured other two, and spent the rest of the forenoon, till one, at his desk. He then dined at a restaurant, which he frequently changed, to avoid the influx of strangers, who crowded to see and hear him. This was his only regular meal; and he often prolonged the conversation till late in the afternoon. He then walked out for at least an hour in all weathers, and spent the evening in lighter reading, except an hour or two devoted to the preparation of his next day’s lectures, after which he retired between nine and ten to rest. In his earlier years he often spent his evenings in general society, where his knowledge and conversational talents made him the life of every party. He was especially intimate with the families of two English merchants of the name of Green and Motherby, where he found many opportunities of meeting ship-captains, and other travelled persons, and thus gratifying his passion for physical geography. This social circle included also the celebrated J. G. Hamann, the friend of Herder and Jacobi, who was thus a mediator between Kant and these philosophical adversaries.

Kant’s reading was of the most extensive and miscellaneous kind. He cared comparatively little for the history of speculation, but his acquaintance with books of science, general history, travels and belles lettres was boundless. He was well versed in English literature, chiefly of the age of Queen Anne, and had read English philosophy from Locke to Hume, and the Scottish school. He was at home in Voltaire and Rousseau, but had little or no acquaintance with the French sensational philosophy. He was familiar with all German literature up to the date of his *Kritik*, but ceased to follow it in its great development by Goethe and Schiller. It was his habit to obtain books in sheets from his publishers Kanter and Nicolovius; and he read over for many years all the new works in their catalogue, in order to keep abreast of universal knowledge. He was fond of newspapers and works on politics; and this was the only kind of reading that could interrupt his studies in philosophy.

As a lecturer, Kant avoided altogether that rigid style in which his books were written. He sat behind a low desk, with a few jottings on slips of paper, or textbooks marked on the margin, before him, and delivered an extemporaneous address, opening up the subject by partial glimpses, and with many anecdotes or familiar illustrations, till a complete idea of it was presented. His voice was extremely weak, but sometimes rose into eloquence, and always commanded perfect silence. Though kind to his students, he refused to remit their fees, as this, he thought, would discourage independence. It was another principle that his chief exertions should be bestowed on the intermediate class of talent, as the geniuses would help themselves, and the dunces were beyond remedy.

Simple, honourable, truthful, kind-hearted and high-minded as Kant was in all moral respects, he was somewhat deficient in the region of sentiment. He had little enthusiasm for the beauties of nature, and indeed never sailed out into the Baltic, or travelled more than 40 miles from Königsberg. Music he disregarded, and all poetry that was more than sententious prose. His ethics have been reproached with some justice as setting up too low an ideal for the female sex. Though faithful in a high degree to the duties of friendship, he could not bear to visit his friends in sickness, and after their death he repressed all allusion to their memory. His engrossing intellectual labours no doubt tended somewhat to harden his character; and in his zeal for rectitude of purpose he forgot the part which affection and sentiment must ever play in the human constitution.

On the 12th of February 1904, the hundredth anniversary of Kant’s death, a Kantian society

(*Kantgesellschaft*) was formed at Halle under the leadership of Professor H. Vaihinger to promote Kantian studies. In 1909 it had an annual membership of 191; it supports the periodical *Kantstudien* (founded 1896; see Bibliography, *ad init.*).

The Writings of Kant

No other thinker of modern times has been throughout his work so penetrated with the fundamental conceptions of physical science; no other has been able to hold with such firmness the balance between empirical and speculative ideas. Beyond all question much of the influence which the critical philosophy has exercised and continues to exercise must be ascribed to this characteristic feature in the training of its great author.

The early writings of Kant are almost without exception on questions of physical science. It was only by degrees that philosophical problems began to engage his attention, and that the main portion of his literary activity was turned towards them. The following are the most important of the works which bear directly on physical science.

1. *Gedanken von der wahren Schätzung der lebendigen Kräfte* (1747); an essay dealing with the famous dispute between the Cartesians and Leibnitzians regarding the expression for the *amount of a force*. According to the Cartesians, this quantity was directly proportional to velocity; according to their opponents, it varied with the square of the velocity. The dispute has now lost its interest, for physicists have learned to distinguish accurately the two quantities which are vaguely included under the expression *amount of force*, and consequently have been able to show in what each party was correct and in what it was in error. Kant's essay, with some fallacious explanations and divisions, criticizes acutely the arguments of the Leibnitzians, and concludes with an attempt to show that both modes of expression are correct when correctly limited and interpreted.

2. *Whether the Earth in its Revolution has experienced some Change since the Earliest Times* (1754; ed. and trans., W. Hastie, 1900, *Kant's Cosmogony*; cf. Lord Kelvin in *The Age of the Earth*, 1897, p. 7). In this brief essay Kant throws out a notion which has since been carried out, in ignorance of Kant's priority, by Delaunay (1865) and Adams. He points out that the action of the moon in raising the waters of the earth must have a secondary effect in the slight retardation of the earth's motion, and refers to a similar cause the fact that the moon turns always the same face to the earth.

3. *Allgemeine Naturgeschichte und Theorie des Himmels*, published anonymously in 1755 (4th ed. 1808; republished H. Ebert, 1890). In this remarkable work Kant, proceeding from the Newtonian conception of the solar system, extends his consideration to the entire sidereal system, points out how the whole may be mechanically regarded, and throws out the important speculation which has since received the title of the nebular hypothesis. In some details, such *e.g.* as the regarding of the motion of the entire solar system as portion of the general cosmical mechanism, he had predecessors, among others Thomas Wright of Durham, but the work as a whole contains a wonderfully acute anticipation of much that was afterwards carried out by Herschel and Laplace. The hypothesis of the original nebular condition of the system, with the consequent explanation of the great phenomena of planetary formations and movements of the satellites and rings, is unquestionably to be assigned to Kant. (On this question see discussion in W. Hastie's *Kant's Cosmogony*, as above.)

4. *Meditalionum quarundam de igne succincta delineatio* (1755): an inaugural dissertation, containing little beyond the notion that bodies operate on one another through the medium of a uniformly diffused, elastic and subtle matter (ether) which is the underlying substance of heat and light. Both heat and light are regarded as vibrations of this diffused ether.

5. *On the Causes of Earthquakes* (1755); *Description of the Earthquake of 1755* (1756); *Consideration of some Recently Experienced Earthquakes* (1756).

6. *Explanatory Remarks on the Theory of the Winds* (1756). In this brief tract, Kant, apparently in entire ignorance of the explanation given in 1735 by Hadley, points out how the varying velocity of rotation of the successive zones of the earth's surface furnishes a key to the phenomena of periodic winds. His theory is in almost entire agreement with that now received. See the parallel statements from Kant's tract and Dove's essay on the influence of the rotation of the earth on the flow of its atmosphere (1835), given in Zöllner's work, *Ueber die Natur der Cometen*, pp. 477-482.

7. *On the Different Races of Men* (1775); *Determination of the Notion of a Human Race* (1785); *Conjectural Beginning of Human History* (1786): three tracts containing some points of interest as regards the empirical grounds for Kant's doctrine of teleology. Reference will be made to them in the notice of the *Kritik of Judgment*.

8. *On the Volcanoes in the Moon* (1785); *On the Influence of the Moon on the Weather* (1794). The second of these contains a remarkable discussion of the relation between the centre of the moon's figure and its centre of gravity. From the difference between these Kant is led to conjecture that the climatic conditions of the side of the moon turned from us must be altogether

unlike those of the face presented to us. His views have been restated by Hansen.

9. *Lectures on Physical Geography* (1822): published from notes of Kant's lectures, with the approval of the author.

Consideration of these works is sufficient to show that Kant's mastery of the science of his time was complete and thorough, and that his philosophy is to be dealt with as having throughout a reference to general scientific conceptions. For more detailed treatment of his importance in science, reference may be made to Zöllner's essay on "Kant and his Merits on Natural Science" contained in the work on the *Nature of Comets* (pp. 426-484); to Dietrich, *Kant and Newton*; Schultze, *Kant and Darwin*; Reuschle's careful analysis of the scientific works in the *Deutsche Vierteljahrs-Schrift* (1868); W. Hastie's introduction to *Kant's Cosmogony* (1900), which summarizes criticism to that date; and articles in *Kant-Studien* (1896 foll.).

The notice of the philosophical writings of Kant need not be more than bibliographical, as in the account of his philosophy it will be necessary to consider at some length the successive stages in the development of his thought. Arranged chronologically these works are as follows:—

1755. *Principiorum primorum cognitionis metaphysicae novae dilucidatio.*

1756. *Metaphysicae cum geometria junctae usus in philosophia naturali, cujus specimen I. continet monadologiam physicam.*

1762. *Die falsche Spitzfindigkeit der vier syllogistischen Figuren*, "The False Subtlety of the Four Syllogistic Figures" (trans. T. K. Abbott, *Kant's Introduction to Logic and his Essay on the Mistaken Subtilty of the Figures*, 1885).

1763. *Versuch den Begriff der negativen Grössen in die Weltweisheit einzuführen*, "Attempt to introduce the Notion of Negative Quantities into Philosophy."

1763. *Der einzig mögliche Beweisgrund zu einer Demonstration des Daseins Gottes*, "The only possible Foundation for a Demonstration of the Existence of God."

1764. *Beobachtungen über das Gefühl des Schönen und Erhabenen* (Riga, 1771; Königsberg, 1776).

1764. *Untersuchung über die Deutlichkeit der Grundsätze der natürlichen Theologie und Moral*, "Essay on the Evidence (Clearness) of the Fundamental Propositions of Natural Theology and Ethics."

1766. *Träume eines Geistersehers, erläutert durch Träume der Metaphysik*, "Dreams of a Ghost-seer (or Clairvoyant), explained by the Dreams of Metaphysic" (Eng. trans. E. F. Goerwitz, with introd. by F. Sewall, 1900).

1768. *Von dem ersten Grunde des Unterschiedes der Gegenden im Raum*, "Foundation for the Distinction of Positions in Space."

The above may all be regarded as belonging to the precritical period of Kant's development. The following introduce the notions and principles characteristic of the critical philosophy.

1770. *De mundi sensibilis et intelligibilis forma et principiis.*

1781. *Kritik der reinen Vernunft*, "Kritik of Pure Reason" (revised ed. 1787; ed. Vaihinger, 1881 foll. and B. Erdmann, 1900; Eng. trans., F. Max Müller, 1896, 2nd ed. 1907, and J. M. D. Meiklejohn, 1854).

1783. *Prolegomena zu einer jeden künftigen Metaphysik die als Wissenschaft wird auftreten können*, "Prolegomena to all Future Metaphysic which may present itself as Science" (ed. B. Erdmann, 1878; Eng. trans. J. P. Mahaffy and J. H. Bernard, 2nd ed. 1889; Belfort Bax, 1883 and Paul Carus, 1902; and cf. M. Apel, *Kommentar zu Kants Prolegomena*, 1908).

1784. *Idee zu einer allgemeinen Geschichte im weltbürgerlicher Absicht*, "Notion of a Universal History in a Cosmopolitan Sense." With this may be coupled the review of Herder in 1785.

1785. *Grundlegung zur Metaphysik der Sitten*, "Foundations of the Metaphysic of Ethics" (see T. K. Abbott, *Fundamental Principles of the Metaphysic of Ethics*, 3rd ed. 1907).

1786. *Metaphysische Anfangsgründe der Naturwissenschaft*, "Metaphysical Elements of Natural Science" (ed. A. Höfler, 1900; trans. Belfort Bax, *Prolegomena and Metaphysical Foundations*, 1883).

1788. *Ueber den Gebrauch teleologischer Prinzipien in der Philosophie*, "On the Employment of Teleological Principles in Philosophy."

1788. *Kritik der praktischen Vernunft*, "Kritik of Practical Reason" (trans. T. K. Abbott, ed. 1898).

1790. *Kritik der Urtheilskraft*, "Kritik of Judgment" (trans. with notes J. H. Bernard, 1892).

1790. *Ueber eine Entdeckung, nach der alle neue Kritik der reinen Vernunft durch eine ältere entbehrlich gemacht werden soll*, "On a Discovery by which all the recent Critique of Pure Reason is superseded by a more ancient" (*i.e.* by Leibnitz's philosophy).

1791. *Ueber die wirklichen Fortschritte der Metaphysik seit Leibnitz und Wolff*, "On the Real Advances of Metaphysics since Leibnitz and Wolff"; and *Ueber das Misslingen aller philosophischen Versuche in der Theodicee*.

1793. *Die Religion innerhalb der Grenzen der blossen Vernunft*, "Religion within the Bounds of Reason only" (Eng. trans. J. W. Semple, 1838).

1794. *Ueber Philosophie überhaupt*, "On Philosophy generally," and *Das Ende aller Dinge*.

1795. *Zum ewigen Frieden* (Eng. trans., M. Campbell Smith, 1903).

1797. *Metaphysische Anfangsgründe der Rechtslehre* (trans. W. Hastie), and *Metaphysische Anfangsgründe der Tugendlehre*.

1798. *Der Streit der Facultäten*, "Contest of the Faculties."

1798. *Anthropologie in pragmatischer Hinsicht*.

The Kantian Philosophy.[1]

Historians are accustomed to divide the general current of speculation into epochs or periods marked by the dominance of some single philosophic conception with its systematic evolution. Perhaps in no case is the character of an epoch more clearly apparent than in that of the critical philosophy. The great work of Kant absolutely closed the lines of speculation along which the philosophical literature of the 18th century had proceeded, and substituted for them a new and more comprehensive method of regarding the essential problems of thought, a method which has prescribed the course of philosophic speculation in the present age. The critical system has thus a twofold aspect. It takes up into itself what had characterized the previous efforts of modern thought, shows the imperfect nature of the fundamental notions therein employed, and offers a new solution of the problems to which these notions had been applied. It opens up a new series of questions upon which subsequent philosophic reflection has been directed, and gives to them the form, under which it is possible that they should be fruitfully regarded. A work of this kind is essentially epoch-making.

In any complete account of the Kantian system it is therefore necessary that there should be constant reference, on the one hand, to the peculiar character of the preceding 18th-century philosophy, and, on the other hand, to the problems left for renewed treatment to more modern thought. Fortunately the development of the Kantian system itself furnishes such treatment as is necessary of the former reference. For the critical philosophy was a work of slow growth. In the early writings of Kant we are able to trace with great definiteness the successive stages through which he passed from the notions of the preceding philosophy to the new and comprehensive method which gives its special character to the critical work. Scarcely any great mind, it has been said with justice, ever matured so slowly. In the early essays we find the principles of the current philosophies, those of Leibnitz and English empiricism, applied in various directions to those problems which serve as tests of their truth and completeness; we note the appearance of the difficulties or contradictions which manifest the one-sidedness or imperfection of the principle applied; and we can trace the gradual growth of the new conceptions which were destined, in the completed system, to take the place of the earlier method. To understand the Kantian work it is indispensable to trace the history of its growth in the mind of its author.

Of the two preceding stages of modern philosophy, only the second, that of Locke and Leibnitz, seems to have influenced practically the course of Kant's speculation. With the Cartesian movement as a whole he shows little acquaintance and no sympathy, and his own philosophic conception is never brought into relation with the systematic treatment of metaphysical problems characteristic of the Cartesian method. The fundamental question for philosophic reflection presented itself to him in the form which it had assumed in the hands of Locke and his successors in England, of Leibnitz and the Leibnitzian school in Germany. The transition from the Cartesian movement to this second stage of modern thought had doubtless been natural and indeed necessary. Nevertheless the full bearings of the philosophic question were somewhat obscured by the comparatively limited fashion in which it was then regarded. The tendency towards what may be technically called subjectivism, a tendency which differentiates the modern from the ancient method of speculation, is expressed in Locke and Leibnitz in a definite and peculiar fashion. However widely the two systems differ in details, they are at one in a certain fundamental conception which dominates the whole course of their philosophic construction. They are throughout individualist, *i.e.* they accept as given fact the existence of the concrete, thinking subject, and endeavour to show how this subject, as an individual conscious being, is related to the wider universe of which he forms part. In dealing with such a problem, there are evidently two lines along which investigation may proceed. It may be asked how the individual mind comes to know himself and the system of things with which he is connected, how the varied contents of his experience are to be accounted for, and what certainty attaches to his subjective consciousness of things. Regarded from the individualist point of view, this line of inquiry becomes purely psychological, and the answer may be presented, as it was presented by Locke, in the fashion of a natural history of the growth of conscious experience in the mind of the subject. Or, it may be further asked, how is the individual really connected with the system of things apparently disclosed to him in conscious experience? what is the precise significance of the existence which he ascribes both to himself and to the objects of experience? what is the nature

of the relation between himself as one part of the system, and the system as a whole? This second inquiry is specifically metaphysical in bearing, and the kind of answer furnished to it by Leibnitz on the one hand, by Berkeley on the other, is in fact prescribed or determined beforehand by the fundamental conception of the individualist method with which both begin their investigations. So soon as we make clear to ourselves the essential nature of this method, we are able to discern the specific difficulties or perplexities arising in the attempt to carry it out systematically, and thus to note with precision the special problems presented to Kant at the outset of his philosophic reflections.

Consider, first, the application of the method on its psychological side, as it appears in Locke. Starting with the assumption of conscious experience as the content or filling-in of the individual mind, Locke proceeds to explain its genesis and nature by reference to the real universe of things and its mechanical operation upon the mind. The result of the interaction of mind, *i.e.* the individual mind, and the system of things, is conscious experience, consisting of ideas, which may be variously compounded, divided, compared, or dealt with by the subjective faculties or powers with which the entity, Mind, is supposed to be endowed. Matter of fact and matter of knowledge are thus at a stroke dissevered. The very notion of relation between mind and things leads at once to the counter notion of the absolute restriction of mind to its own subjective nature. That Locke was unable to reconcile these opposed notions is not surprising; that the difficulties and obscurities of the Essay arise from the impossibility of reconciling them is evident on the slightest consideration of the main positions of that work. Of these difficulties the philosophies of Berkeley and Hume are systematic treatments. In Berkeley we find the resolute determination to accept only the one notion, that of mind as restricted to its own conscious experience, and to attempt by this means to explain the nature of the external reality to which obscure reference is made. Any success in the attempt is due only to the fact that Berkeley introduces alongside of his individualist notion a totally new conception, that of mind itself as not in the same way one of the matters of conscious experience, but as capable of reflection upon the whole of experience and of reference to the supreme mind as the ground of all reality. It is only in Hume that we have definitely and completely the evolution of the individualist notion as groundwork of a theory of knowledge; and it is in his writings, therefore, that we may expect to find the fundamental difficulty of that notion clearly apparent. It is not a little remarkable that we should find in Hume, not only the sceptical dissolution of all fixity of cognition, which is the inevitable result of the individualist method, but also the clearest consciousness of the very root of the difficulty. The systematic application of the doctrine that conscious experience consists only of isolated objects of knowledge, impressions or ideas, leads Hume to distinguish between truths reached by analysis and truths which involve real connexion of the objects of knowledge. The first he is willing to accept without further inquiry, though it is an error to suppose, as Kant seems to have supposed, that he regarded mathematical propositions as coming under this head (see HUME); with respect to the second, he finds himself, and confesses that he finds himself, hopelessly at fault. No real connexions between isolated objects of experience are perceived by us. No single matter of fact necessarily implies the existence of any other. In short, if the difficulty be put in its ultimate form, no existence thought as a distinct individual can transcend itself, or imply relation to any other existence. If the parts of conscious experience are regarded as so many distinct things, there is no possibility of connecting them other than contingently, if at all. If the individual mind be really thought as individual, it is impossible to explain how it should have knowledge or consciousness at all. “In short,” says Hume, “there are two principles which I cannot render consistent, nor is it in my power to renounce either of them, viz. *that all our distinct perceptions are distinct existences, and that the mind never perceives any real connexion among distinct existences*. Did our perceptions either inhere in something simple or individual, or did the mind perceive some real connexion among them, there would be no difficulty in the case” (App. to *Treatise of Human Nature*).

Thus, on the one hand, the individualist conception, when carried out to its full extent, leads to the total negation of all real cognition. If the real system of things, to which conscious experience has reference, be regarded as standing in casual relation to this experience there is no conceivable ground for the extension to reality of the notions which somehow are involved in thought. The same result is apparent, on the other hand, when we consider the theory of knowledge implied in the Leibnitzian individualism. The metaphysical conception of the monads, each of which is the universe *in nuce*, presents insuperable difficulties when the connexion or interdependence of the monads is in question, and these difficulties obtrude themselves when the attempt is made to work out a consistent doctrine of cognition. For the whole mass of cognisable fact, the *mundus intelligibilis*, is contained *impliciter* in each monad, and the several modes of apprehension can only be regarded as so many stages in the developing consciousness of the monad. Sense and understanding, real connexion of facts and analysis of notions, are not, therefore, distinct in kind, but differ only in degree. The same fundamental axioms, the logical principles of identity and sufficient reason, are applicable in explanation of all given propositions. It is true that Leibnitz himself did not work out any complete doctrine of knowledge, but in the hands of his successors the theory took definite shape in the principle that the whole work of cognition is in essence analytical. The process of analysis might be complete or incomplete. For finite intelligences there was an inevitable incompleteness so far as knowledge of matters of fact was concerned. In respect to them, the final result was found in a series of irreducible notions or categories, the *prima possibilia*, the analysis and elucidation of which was specifically the

business of philosophy or metaphysics.

It will be observed that, in the Leibnitzian as in the empirical individualism, the fundamental notion is still that of the abstract separation of the thinking subject from the materials of conscious experience. From this separation arise all the difficulties in the effort to develop the notion systematically, and in tracing the history of Kant's philosophical progress we are able to discern the gradual perception on his part that here was to be found the ultimate cause of the perplexities which became apparent in considering the subordinate doctrines of the system. The successive essays which have already been enumerated as composing Kant's precritical work are not to be regarded as so many imperfect sketches of the doctrines of the *Kritik*, nor are we to look in them for anticipations of the critical view. They are essentially tentative, and exhibit with unusual clearness the manner in which the difficulties of a received theory force on a wider and more comprehensive view. There can be no doubt that some of the special features of the *Kritik* are to be found in these precritical essays, *e.g.* the doctrine of the *Aesthetik* is certainly foreshadowed in the *Dissertation* of 1770; the *Kritik*, however, is no patchwork, and what appears in the *Dissertation* takes an altogether new form when it is wrought into the more comprehensive conception of the later treatise.

The particular problem which gave the occasion to the first of the precritical writings is, in an imperfect or particular fashion, the fundamental question to which the *Kritik* is an answer. What is the nature of the distinction between knowledge gained by analysis of notions and knowledge of matters of fact? Kant seems never to have been satisfied with the Wolffian identification of logical axioms and of the principle of sufficient reason. The tract on the *False Subtlety of the Four Syllogistic Figures*, in which the view of thought or reason as analytic is clearly expressed, closes with the significant division of judgments into those which rest upon the logical axioms of identity and contradiction and those for which no logical ground can be shown. Such immediate or indemonstrable judgments, it is said, abound in our experience. They are, in fact, as Kant presently perceived, the foundations for all judgments regarding real existence. It was impossible that the question regarding their nature and legitimacy and their distinction from analytic judgments should not present itself to him. The three tracts belonging to the years 1763-1764 bring forward in the sharpest fashion the essential opposition between the two classes of judgments. In the *Essay on Negative Quantities*, the fundamental thought is the total distinction in kind between logical opposition (the contradictoriness of notions, which Kant always viewed as formed, definite products of thought) and real opposition. For the one adequate explanation is found in the logical axiom of analytical thinking; for the other no such explanation is to be had. Logical ground and real ground are totally distinct. "I can understand perfectly well," says Kant, "how a consequence follows from its reason according to the law of identity, since it is discoverable by mere analysis of the notion contained in it.... But how something follows from another thing and not according to the law of identity, this I should gladly have made clear to me.... How shall I comprehend that, since something is, something else should be?" Real things, in short, are distinct existences, and, as distinct, not necessarily or logically connected in thought. "I have," he proceeds, "reflected on the nature of our knowledge in relation to our judgment of reason and consequent, and I intend to expound fully the result of my reflections. It follows from them that the relation of a real ground to that which is thereby posited or denied cannot be expressed by a judgment but only by means of a notion, which by analysis may certainly be reduced to yet simpler notions of real grounds, but yet in such a way that the final resort of all our cognition in this regard must be found in simple and irreducible notions of real grounds, the relation of which to their consequents cannot be made clear."

The striking similarity between Kant's expressions in this *Essay* and the remarks with which Hume introduces his analysis of the notion of cause has led to the supposition that at this period of his philosophical career Kant was definitely under the influence of the earlier empirical thinker. Consideration of the whole passage is quite sufficient to show the groundlessness of this supposition. The difficulty with which Kant is presented was one arising inevitably from reflection upon the Leibnitzian theory of knowledge, and the solution does not in any way go beyond that theory. It is a solution, in fact, which must have been impossible had the purport of Hume's empirical doctrine been present to Kant's mind. He is here at the point at which he remained for many years, accepting without any criticism certain fundamental notions as required for real cognition. His ideal of metaphysic is still that of complete analysis of given notions. No glimmering of the further question, Whence come these notions and with what right do we apply them in cognition? is yet apparent. Any direct influence from Hume must be referred to a later period in his career.

The prize essay *On the Principles of Natural Theology and Morals* brings forward the same fundamental opposition—though in a special form. Here, for the first time, appears definitely the distinction between synthesis and analysis, and in the distinction is found the reason for the superior certainty and clearness of mathematics as opposed to philosophy. Mathematics, Kant thinks, proceeds synthetically, for in it the notions are constructed. Metaphysics, on the other hand, is analytical in method; in it the notions are given, and by analysis they are cleared up. It is to be observed that the description of mathematics as synthetic is not an anticipation of the critical doctrine on the same subject. Kant does not, in this place, raise the question as to the reason for assuming that the arbitrary syntheses of mathematical construction have any reference to reality. The deeper significance of synthesis has not yet become apparent.

In the *Only Possible Ground of Proof for the Existence of God*, the argument, though largely Leibnitzian, advances one step farther towards the ultimate inquiry. For there Kant states as precisely as in the critique of speculative theology his fundamental doctrine that real existence is not a predicate to be added in thought to the conception of a possible subject. So far as subjective thought is concerned, possibility, not real existence, is contained in any judgment.

The year 1765 was marked by the publication of Leibnitz's posthumous *Nouveaux Essais*, in which his theory of knowledge is more fully stated than in any of his previous tracts. In all probability Kant gave some attention to this work, though no special reference to it occurs in his writings, and it may have assisted to give additional precision to his doctrine. In the curious essay, *Dreams of a Clairvoyant*, published 1766, he emphasizes his previously reached conclusion that connexions of real fact are mediated in our thought by ultimate notions, but adds that the significance and warrant for such notions can be furnished only by experience. He is inclined, therefore, to regard as the function of metaphysics the complete statement of these ultimate, indemonstrable notions, and therefore the determination of the limits to knowledge by their means. Even at this point, where he approximates more closely to Hume than to any other thinker, the difficulty raised by Hume does not seem to occur to him. He still appears to think that experience does warrant the employment of such notions, and when there is taken into account his correspondence with Lambert during the next few years, one would be inclined to say that the *Architektonik* of the latter represents most completely Kant's idea of philosophy.

On another side Kant had been shaking himself free from the principles of the Leibnitzian philosophy. According to Leibnitz, space, the order of coexisting things, resulted from the relations of monads to one another. But Kant began to see that such a conception did not accord with the manner in which we determine directions or positions in space. In the curious little essay, *On the Ground of distinguishing Particular Divisions in Space*, he pointed out that the idea of space as a whole is not deducible from the experience of particular spaces, or particular relations of objects in space, that we only cognize relations in space by reference to space as a whole, and finally that definite positions involve reference to space as a given whole.

The whole development of Kant's thought up to this point is intelligible when regarded from the Leibnitzian point of view, with which he started. There appears no reason to conclude that Hume at this time exercised any direct influence. One may go still further, and add that even in the *Dissertation* of 1770, generally regarded as more than foreshadowing the *Kritik*, the really critical question is not involved. A brief notice of the contents of this tract will suffice to show how far removed Kant yet was from the methods and principles of the critical or transcendental philosophy. Sense and understanding, according to the *Dissertation*, are the two sources of knowledge. The objects of the one are things of sense or *phenomena*; the objects of the other are *noumena*. These are absolutely distinct, and are not to be regarded as differing only in degree. In *phenomena* we distinguish *matter*, which is given by sense, and *form*, which is the law of the order of sensations. Such form is twofold—the order of space and time. Sensations formed by space and time compose the world of appearance, and this when treated by the understanding, according to logical rules, is *experience*. But the logical use of the understanding is not its only use. Much more important is the *real* use, by which are produced the pure notions whereby we think things as they are. These pure notions are the laws of the operation of the intellect; they are *leges intellectus*.

Apart, then, from the expanded treatment of space and time as subjective forms, we find in the *Dissertation* little more than the very precise and definite formulation of the slowly growing opposition to the Leibnitzian doctrines. That the pure intellectual notions should be defended as springing from the nature of intellect is not out of harmony with the statement of the *Träume eines Geistersehers*, for there the pure notions were allowed to exist, but were not held to have validity for actual things except on grounds of experience. Here they are supposed to exist, dissevered from experience, and are allowed validity as determinations of things in themselves.

The stage which Kant had now reached in his philosophical development was one of great significance. The doctrine of knowledge expressed in the *Dissertation* was the final form which the Wolffian rationalism could assume for him, and, though many of the elements of the *Kritik* are contained therein, it was not really in advance of the Wolffian theory. The doctrine of space and time as forms of sense-perception, the reference of both space and time and the pure intellectual notions to the laws of the activity of mind itself, the distinction between sense and understanding as one of kind, not of degree, with the correlative distinction between phenomena and noumena, —all of these reappear, though changed and modified, in the *Kritik*. But, despite this resemblance, it seems clear that, so far as the *Dissertation* is concerned, the way had only been prepared for the true critical inquiry, and that the real import of Hume's sceptical problem had not yet dawned upon Kant. From the manner, however, in which the doctrine of knowledge had been stated in the *Dissertation*, the further inquiry had been rendered inevitable. It had become quite impossible for Kant to remain longer satisfied with the ambiguous position assigned to a fundamental element of his doctrine of knowledge, the so-called pure intellectual notions. Those notions, according to the *Dissertation*, had no function save in relation to things-in-themselves, *i.e.* to objects which are not directly or immediately brought into relation to our faculty of cognition. They did not serve as the connecting links of formed experience; on the contrary, they were supposed to be absolutely dissevered from all experience which was possible for intelligence

like ours. In his previous essays, Kant, while likewise maintaining that such pure, irreducible notions existed, had asserted in general terms that they applied to experience, and that their applicability or justification rested on experience itself, but had not raised the question as to the ground of such justification. Now, from another side, the supreme difficulty was presented—how could such notions have application to any objects whatsoever? For some time the correlative difficulty, how *objects* of sense-perception were possible, does not seem to have suggested itself to Kant. In the *Dissertation* sense-perception had been taken as receptivity of representations of objects, and experience as the product of the treatment of such representations by the logical or analytical processes of understanding. Some traces of this confused fashion of regarding sense-perceptions are left even in the *Kritik*, specially perhaps in the *Aesthetik*, and they give rise to much of the ambiguity which unfortunately attaches to the more developed theory of cognition. So soon, however, as the critical question was put, On what rests the reference of representations in us to the object or thing? in other words, How do we come to have knowledge of objects at all? it became apparent that the problem was one of perfect generality, and applied, not only to cognition through the pure notions, but to sense-perceptions likewise. It is in the statement of this general problem that we find the new and characteristic feature of Kant's work.

There is thus no reason to doubt the substantial accuracy of Kant's reference to the particular occasion or cause of the critical inquiry. Up to the stage indicated by the *Dissertation* he had been attempting, in various ways, to unite two radically divergent modes of explaining cognition —that which would account for the content of experience by reference to affection from things without us, and that which viewed the intellect itself as somehow furnished with the means of pure, rational cognition. He now discovered that Hume's sceptical analysis of the notion of cause was really the treatment of one typical or crucial instance of the much more general problem. If experience, says Hume, consists solely of states of mind somehow given to us, each of which exists as an effect, and therefore as distinct from others, with what right do we make the common assumption that parts of experience are necessarily connected? The only possible answer, drawn from the premises laid down, must be that there is no warrant for such an assumption. Necessity for thought, as Kant had been willing to admit and as Hume also held, involves or implies something more than is given in experience—for that which is given is contingent—and rests upon an a priori or pure notion. But a priori notions, did they exist, could have no claim to regulate experience. Hume, therefore, for his part, rejected entirely the notion of cause as being fictitious and delusive, and professed to account for the habit of regarding experience as necessarily connected by reference to arbitrarily formed custom of thinking. Experience, as given, contingent material, had a certain uniformity, and recurring uniformities generated in us the habit of regarding things as necessarily connected. That such a resort to experience for explanation could lead to no valid conclusion has been already noted as evident to Hume himself.

The dogmatic or individualist conception of experience had thus proved itself inadequate to the solution of Hume's difficulty regarding the notion of cause,—a difficulty which Kant, erroneously, had thought to be the only case contemplated by his predecessor. The perception of its inadequacy in this respect, and the consequent generalization of Hume's problem, are the essential features of the new critical method. For Kant was now prepared to formulate his general inquiry in a definite fashion. His long-continued reflection on the Wolffian doctrine of knowledge had made clear to him that synthetic connexion, the essence of real cognition, was not contained in the products of thinking as a formal activity of mind operating on material otherwise supplied. On the other hand, Hume's analysis enabled him to see that synthetic connexion was not contained in experience regarded as given material. Thus neither the formal nor the material aspect of conscious experience, when regarded from the individualist point of view, supplied any foundation for real knowledge, whether a priori or empirical. An absolutely new conception of experience was necessary, if the fact of cognition was to be explained at all, and the various modes in which Kant expresses the business of his critical philosophy were merely different fashions of stating the one ultimate problem, differing according to the particular aspect of knowledge which he happened to have in view. To inquire how synthetic a priori judgments are possible, or how far cognition extends, or what worth attaches to metaphysical propositions, is simply to ask, in a specific form, what elements are necessarily involved in experience of which the subject is conscious. How is it possible for the individual thinking subject to connect together the parts of his experience in the mode we call cognition?

The problem of the critical philosophy is, therefore, the complete analysis of experience from the point of view of the conditions under which such experience is possible for the conscious subject. The central ideas are thus self-consciousness, as the supreme condition under which experience is subjectively possible, and the manifold details of experience as a varied and complex whole. The solution of the problem demanded the utmost care in keeping the due balance between these ideas; and it can hardly be said that Kant was perfectly successful. He is frequently untrue to the more comprehensive conception which dominates his work as a whole. The influence of his previous philosophical training, nay, even the unconscious influence of terminology, frequently induces in his statements a certain laxity and want of clearness. He selects definitely for his starting point neither the idea of self-consciousness nor the details of experience, but in his actual procedure passes from one to the other, rarely, if ever, taking into full consideration the weighty question of their relation to one another. Above all, he is continuously under the influence of the individualist notion which he had done so much to

explode. The conception of conscious experience, which is the net result of the *Kritik*, is indefinitely profounder and richer than that which had ruled the 18th century philosophizing, but for Kant such experience still appears as somehow the arbitrary product of the relation between the individual conscious subject and the realm of real facts. When he is actually analysing the conditions of knowledge, the influence of the individualist conception is not prominent; the conditions are stated as quite general, as conditions of knowledge. But so soon as the deeper, metaphysical problems present themselves, the shadow of the old doctrine reappears. Knowledge is regarded as a mechanical product, part furnished by the subject, part given to the subject, and is thus viewed as mechanically divisible into a priori and a posteriori, into pure and empirical, necessary and contingent. The individual as an agent, conscious of universal moral law, is yet regarded as in a measure opposed to experience, and the Kantian ethical code remains purely formal. The ultimate relation between intelligence and natural fact, expressed in the notion of end, is thought as problematic or contingent. The difficulties or obscurities of the Kantian system, of which the above are merely the more prominent, may all be traced to the one source, the false or at least inadequate idea of the individual. The more thorough explanation of the relation between experience as critically conceived and the individual subject was the problem left by Kant for his successors.

In any detailed exposition of the critical system it would be requisite in the first place to state with some fullness the precise nature of the problems immediately before Kant, and in the second place to follow with some closeness the successive stages of the system as presented in the three main works, the *Kritik of Pure Reason*, the *Kritik of Practical Reason* and the *Kritik of Judgment*, with the more important of the minor works, the *Metaphysic of Nature* and the *Metaphysic of Ethics*. It would be necessary, also, in any such expanded treatment, to bring out clearly the Kantian classification of the philosophical sciences, and to indicate the relation between the critical or transcendental investigation of the several faculties and the more developed sciences to which that investigation serves as introduction. As any detailed statement of the critical system, however compressed, would be beyond the limits of the present article, it is proposed here to select only the more salient doctrines, and to point out in connexion with them what advance had been effected by Kant, and what remained for subsequent efforts at complete solution of the problems raised by him. Much that is of interest and value must necessarily be omitted in any sketch of so elaborate a system, and for all points of special interpretation reference must needs be made to the many elaborate dissertations on or about the Kantian philosophy.

The doctrine from which Kant starts in his critical or transcendental investigation of knowledge is that to which the slow development of his thought had led him. The essence of cognition or knowledge was a synthetic act, an act of combining in thought the detached elements of experience. Now synthesis was explicable neither by reference to pure thought, the logical or elaborative faculty, which in Kant’s view remained analytic in function, nor by reference to the effects of external real things upon our faculties of cognition. For, on the one hand, analysis or logical treatment applied only to objects of knowledge as already given in synthetic forms, and, on the other hand, real things could yield only isolated effects and not the combination of these effects in the forms of cognitive experience. If experience is to be matter of knowledge for the conscious subject, it must be regarded as the conjoint product of given material and synthetic combination. Form and matter may indeed be regarded separably and dealt with in isolation for purposes of critical inquiry, but in experience they are necessarily and inseparably united. The problem of the *Kritik* thus becomes for Kant the complete statement of the elements necessarily involved in synthesis, and of the subjective processes by which these elements are realized in our individual consciousness. He is not asking, with Locke, whence the details of experience arise; he is not attempting a natural history of the growth of experience in the individual mind; but he is endeavouring to state exhaustively what conditions are necessarily involved in any fact of knowledge, *i.e.* in any synthetic combination of parts of experience by the conscious subject.

So far as the elements necessarily involved in conscious experience are concerned, these may be enumerated briefly thus:—given data of sense, inner or outer; the forms of perception, *i.e.* space and time; the forms of thought, *i.e.* the categories; the ultimate condition of knowledge, the identity of the pure ego or self. The ego or self is the central unity in reference to which alone is any part of experience cognizable. But the consciousness of self is the foundation of knowledge only when related to given material. The ego has not in itself the element of difference, and the essence of knowledge is the consciousness of unity in difference. For knowledge, therefore, it is necessary that difference should be *given* to the ego. The modes under which it is possible for such given difference to become portion of the conscious experience of the ego, the modes under which the isolated data can be synthetically combined so as to form a cognizable whole, make up the form of cognition, and upon this form rests the possibility of any a priori or rational knowledge.

The notion of the ego as a purely logical unity, containing in itself no element of difference, and having only analytical identity, is fundamental in the critical system, and lies at the root of all its difficulties and perplexities. To say that the ego as an individual does not *produce* the world of experience is by no means the same as to say that the ego is pure unity without element of difference. In the one case we are treating the ego as one of the objects of experience and denying of it productive efficacy; in the second case we are dealing with the unity of the ego as a

condition of knowledge, of any experience whatsoever. In this second sense, it is wholly wrong to assert that the ego is pure identity, pure unity. The unity and identity of the ego, so regarded, are taken in abstraction, *i.e.* as dissevered from the more complex whole of which they are necessary elements. When the ego is taken as a condition of knowledge, its unity is not more important than the difference necessarily correlated with it. That the ego as a thing should not produce difference is quite beside the mark. The consequences of the abstract separation which Kant so draws between the ego and the world of experience are apparent throughout his whole system. Assuming at the outset an opposition between the two, self and matter of knowledge, he is driven by the exigencies of the problem of reconciliation to insert term after term as means of bringing them together, but never succeeds in attaining a junction which is more than mechanical. To the end, the ego remains, partly the pure logical ego, partly the concrete individual spirit, and no explanation is afforded of the relation between them. It is for this reason that the system of forms of perception and categories appears so contingent and haphazard. No attempt is made to show how or why the difference supplied for the pure logical ego should present itself necessarily under these forms. They are regarded rather as portions of the subjective mechanism of the individual consciousness. The mind or self appears as though it were endowed with a complex machinery by which alone it could act upon the material supplied to it. Such a crude conception is far, indeed, from doing justice to Kant's view, but it undoubtedly represents the underlying assumption of many of his cardinal doctrines. The philosophy of Fichte is historically interesting as that in which the deficiencies of Kant's fundamental position were first discerned and the attempt made to remedy them.

Unfortunately for the consistency of the *Kritik*, Kant does not attempt to work out systematically the elements involved in knowledge before considering the subjective processes by which knowledge is realized in consciousness. He mixes up the two inquiries, and in the general division of his work depends rather upon the results of previous psychology than upon the lines prescribed by his own new conception of experience. He treats the elements of cognition separately in connexion with the several subjective processes involved in knowledge, viz. sense and understanding. Great ambiguity is the natural result of this procedure. For it was not possible for Kant to avoid the misleading connotation of the terms employed by him. In strictness, sense, understanding, imagination and reason ought to have had their functions defined in close relation to the elements of knowledge with which they are severally connected, and as these elements have no existence as separate facts, but only as factors in the complex organic whole, it might have been possible to avoid the error of supposing that each subjective process furnished a distinct, separately cognizable portion of a mechanical whole. But the use of separate terms, such as sense and understanding, almost unavoidably led to phraseology only interpretable as signifying that each furnished a specific kind of knowledge, and all Kant's previous training contributed to strengthen this erroneous view. Especially noteworthy is this in the case of the categories. Kant insists upon treating these as *Begriffe*, notions, and assigns to them certain characteristics of notions. But it is readily seen, and in the *Logik* Kant shows himself fully aware of the fact, that these pure connective links of experience, general aspects of objects of intelligible experience, do not resemble concepts formed by the so-called logical or elaborative processes from representations of completed objects. Nothing but harm can follow from any attempt to identify two products which differ so entirely. So, again, the *Aesthetik* is rendered extremely obscure and difficult by the prevalence of the view, already noted as obtaining in the *Dissertation*, that sense is a faculty receiving representations of objects. Kant was anxious to avoid the error of Leibnitz, who had taken sense and understanding to differ in degree only, not in kind; but in avoiding the one error he fell into another of no less importance.

The consideration of the several elements which in combination make up the fact of cognition, or perception, as it may be called, contains little or nothing bearing on the origin and nature of the given data of sense, inner or outer. The manifold of sense, which plays so important a part in the critical theory of knowledge, is left in an obscure and perplexed position. So much is clear, however, that according to Kant sense is not to be regarded as receptive of representations of objects. The data of sense are mere *stimuli*, not partial or confused representations. The sense-manifold is not to be conceived as having, *per se*, any of the qualities of objects as actually cognized; its parts are not cognizable *per se*, nor can it with propriety be said to be received successively or simultaneously. When we apply predicates to the sense-manifold regarded in isolation, we make that which is only a factor in the experience of objects into a separate, independent object, and use our predicates transcendently. Kant is not always in his language faithful to his view of the sense-manifold, but the theory as a whole, together with his own express definitions, is unmistakable. On the origin of the data of sense, Kant's remarks are few and little satisfactory. He very commonly employs the term *affection* of the faculty of sense as expressing the mode of origin, but offers no further explanation of a term which has significance only when interpreted after a somewhat mechanical fashion. Unquestionably certain of his remarks indicate the view that the origin is to be sought in things-in-themselves, but against hasty misinterpretations of such remarks there are certain cautions to be borne in mind. The relation between phenomena and noumena in the Kantian system does not in the least resemble that which plays so important a part in modern psychology—between the subjective results of sense affection and the character of the objective conditions of such affection. Kant has pointedly declared that it would be a gross absurdity to suppose that in his view separate, distinct things-in-themselves existed corresponding to the several objects of perception. And, finally, it is not at all

difficult to understand why Kant should say that the affection of sense originated in the action of things-in-themselves, when we consider what was the thing-in-itself to which he was referring. The thing-in-itself to which the empirical order and relations of sense-experience are referred is the divine order, which is not matter of knowledge, but involved in our practical or moral beliefs. Critics who limit their view to the *Kritik of Pure Reason*, and there, in all probability, to the first or constructive portion of the work, must necessarily fail to interpret the doctrines of the Kantian system, which do not become clear or definite till the system has been developed. Reason was, for Kant, an organic whole; the speculative and moral aspects are never severed; and the solution of problems which appear at first sight to belong solely to the region of speculative thought may be found ultimately to depend upon certain characteristics of our nature as practical.

Data of sense-affection do not contain in themselves synthetic combination. The first conditions of such combination are found by Kant in the universal forms under which alone sense-phenomena manifest themselves in experience. These universal forms of perception, space and time, are necessary, a priori, and in characteristic features resembling intuitions, not notions. They occupy, therefore, a peculiar position, and one section of the *Kritik*, the *Aesthetik*, is entirely devoted to the consideration of them. It is important to observe that it is only through the a priori character of these perceptive forms that rational science of nature is at all possible. Kant is here able to resume, with fresh insight, his previous discussions regarding the synthetic character of mathematical propositions. In his early essays he had rightly drawn the distinction between mathematical demonstration and philosophic proof, referring the certainty of the first to the fact that the constructions were synthetic in character and entirely determined by the action of constructive imagination. It had not then occurred to him to ask, With what right do we assume that the conclusions arrived at from arbitrary constructions in mathematical matter have applicability to objects of experience? Might not mathematics be a purely imaginary science? To this question he is now enabled to return an answer. Space and time, the two essential conditions of sense-perception, are not data given by things, but universal forms of intellect into which all data of sense must be received. Hence, whatever is true of space and time regarded by imagination as objects, *i.e.* quantitative constructions, must be true of the objects making up our sense-experience. The same forms and the same constructive activity of imagination are involved in mathematical synthesis and in the constitution of objects of sense-experience. The foundation for pure or rational mathematics, there being included under this the pure science of movement, is thus laid in the critical doctrine of space and time.

The *Aesthetik* isolates sense-perception, and considers its forms as though it were an independent, complete faculty. A certain confusion, arising from this, is noticeable in the *Analytik* when the necessity for justifying the position of the categories is under discussion, but the real difficulty in which Kant was involved by his doctrine of space and time has its roots even deeper than the erroneous isolation of sensibility. He has not in any way “deduced” space and time, but, proceeding from the ordinary current view of sense-experience, has found these remaining as residuum after analysis. The relation in which they stand to the categories or pure notions is ambiguous; and, when Kant has to consider the fashion in which category and data of sense are to be brought together, he merely places side by side as a priori elements the pure connective notions and the pure forms of perception, and finds it, apparently, only a matter of contingent convenience that they should harmonize with one another and so render cognition possible. To this point also Fichte was the first to call attention.

Affection of sense, even when received into the pure forms of perception, is not matter of knowledge. For cognition there is requisite synthetic combination, and the intellectual function through which such combination takes place. The forms of intellectual function Kant proceeds to enumerate with the aid of the commonly received logical doctrines. For this reference to logic he has been severely blamed, but the precise nature of the debt due to the commonly accepted logical classification is very generally misconceived. Synthetic combination, Kant points out, is formally expressed in a judgment, which is the act of uniting representations. At the foundation of the judgments which express the types of synthetic combination, through which knowledge is possible, lie the pure general notions, the abstract aspect of the conditions under which objects are cognizable in experience. General logic has also to deal with the union of representations, though its unity is analytic merely, not synthetic. But the same intellectual function which serves to give unity in the analytic judgments of formal logic serves to give unity to the synthetic combinations of real perception. It appeared evident, then, to Kant that in the forms of judgment, as they are stated in the common logic, there must be found the analogues of the types of judgment which are involved in transcendental logic, or in the theory of real cognition. His view of the ordinary logic was wide and comprehensive, though in his restriction of the science to pure form one can trace the influence of his earlier training, and it is no small part of the value of the critical philosophy that it has revived the study of logic and prepared the way for a more thorough consideration of logical doctrines. The position assigned to logic by Kant is not, in all probability, one which can be defended; indeed, it is hard to see how Kant himself, in consistency with the critical doctrine of knowledge, could have retained many of the older logical theorems, but the precision with which the position was stated, and the sharpness with which logic was marked off from cognate philosophic disciplines, prepared the way for the more thoughtful treatment of the whole question.

Formal logic thus yields to Kant the list of the general notions, pure intellectual predicates, or

categories, through which alone experience is possible for a conscious subject. It has already been noted how serious was the error involved in the description of these as notions, without further attempt to clear up their precise significance. Kant, indeed, was mainly influenced by his strong opposition to the Leibnitzian rationalism, and therefore assigns the categories to understanding, the logical faculty, without consideration of the question,—which might have been suggested by the previous statements of the *Dissertation*,—what relation these categories held to the empirical notions formed by comparison, abstraction and generalization when directed upon representations of objects. But when the categories are described as notions, *i.e.* formed products of thought, there rises of necessity the problem which had presented itself to Kant at every stage of his precritical thinking,—with what right can we assume that these notions apply to objects of experience? The answer which he proceeds to give altogether explodes the definition of the categories as formed products of thought, and enables us to see more clearly the nature of the new conception of experience which lies in the background of all the critical work.

The unity of the ego, which has been already noted as an element entering into the synthesis of cognition, is a unity of a quite distinct and peculiar kind. That the ego to which different parts of experience are presented must be the same ego, if there is to be cognition at all, is analytically evident; but the peculiarity is that the ego must be conscious of its own unity and identity, and this unity of self-consciousness is only possible in relation to difference not contained in the ego but given to it. The unity of apperception, then, as Kant calls it, is only possible in relation to synthetic unity of experience itself, and the forms of this synthetic unity, the categories, are, therefore, on the one hand, necessary as forms in which self-consciousness is realized, and, on the other hand, restricted in their application and validity to the data of given sense, or the particular element of experience. Thus experience presents itself as the organic combination of the particular of sense with the individual unity of the ego through the universal forms of the categories. Reference of representations to the unity of the object, synthetic unity of apperception, and subsumption of data of sense under the categories, are thus three sides or aspects of the one fundamental fact.

In this deduction of the categories, as Kant calls it, there appears for the first time an endeavour to connect together into one organic whole the several elements entering into experience. It is evident, however, that much was wanting before this essential task could be regarded as complete. Kant has certainly brought together self-consciousness, the system of the categories and data of sense. He has shown that the conditions of self-consciousness are the conditions of possible experience. But he has not shown, nor did he attempt to show, how it was that the conditions of self-consciousness are the very categories arrived at by consideration of the system of logical judgments. He does endeavour to show, but with small success, how the junction of category and data of sense is brought about, for according to his scheme these stood, to a certain extent at least, apart from and independent of one another. The failure to effect an organic combination of the several elements was the natural consequence of the false start which had been made.

The mode in which Kant endeavours to show how the several portions of cognition are subjectively realized brings into the clearest light the inconsistencies and imperfections of his doctrine. Sense had been assumed as furnishing the particular of knowledge, understanding as furnishing the universal; and it had been expressly declared that the particular was cognizable only in and through the universal. Still, each was conceived as somehow in itself complete and finished. Sense and understanding had distinct functions, and there was wanting some common term, some intermediary which should bring them into conjunction. Data of sense as purely particular could have nothing in common with the categories as purely universal. But data of sense had at least one universal aspect,—their aspect as the particular of the general forms, space and time. Categories were in themselves abstract and valueless, serviceable only when restricted to possible objects of experience. There was thus a common ground on which category and intuition were united in one, and an intermediate process whereby the universal of the category might be so far individualized as to comprehend the particular of sense. This intermediate process—which is really the junction of understanding and sense—Kant calls productive imagination, and it is only through productive imagination that knowledge or experience is actually realized in our subjective consciousness. The specific forms of productive imagination are called *schemata*, and upon the nature of the schema Kant gives much that has proved of extreme value for subsequent thought.

Productive imagination is thus the concrete element of knowledge, and its general modes are the abstract expression of the a priori laws of all possible experience. The categories are restricted in their applicability to the schema, *i.e.* to the pure forms of conjunction of the manifold in time, and in the modes of combination of schemata and categories we have the foundation for the rational sciences of mathematics and physics. Perception or real cognition is thus conceived as a complex fact, involving data of sense and pure perceptive forms, determined by the category and realized through productive imagination in the schema. The system of principles which may be deduced from the consideration of the mode in which understanding and sense are united by productive imagination is the positive result of the critical theory of knowledge, and some of its features are remarkable enough to deserve attention. According to his usual plan, Kant arranges these principles in conformity with the table of the categories, dividing the four classes, however, into two main groups, the mathematical and the dynamical. The mathematical principles are the

abstract expression of the necessary mode in which data of sense are determined by the category in the form of intuitions or representations of objects; the dynamical are the abstract expression of the modes in which the existence of objects of intuition is determined. The mathematical principles are constitutive, *i.e.* express determinations of the objects themselves; the dynamical are regulative, *i.e.* express the conditions under which objects can form parts of real experience. Under the mathematical principles come the general rules which furnish the ground for the application of quantitative reasoning to real facts of experience. For as data of sense are only possible objects when received in the forms of space and time, and as space and time are only cognized when determined in definite fashion by the understanding through the schema of number (quantity) or degree (quality), all intuitions are extensive quantities and contain a real element, that of sense, which has degree. Under the dynamical principles, the general modes in which the existence of objects are determined, fall the analogies of experience, or general rules according to which the existence of objects in relation to one another can be determined, and the postulates of experience, the general rules according to which the existence of objects for us or our own subjective existence can be determined. The analogies of experience rest upon the order of perceptions in time, *i.e.* their permanence, succession or coexistence, and the principles are respectively those of substance, causality and reciprocity. It is to be observed that Kant in the expression of these analogies reaches the final solution of the difficulty which had so long pressed upon him, the difficulty as to the relation of the pure connective notions to experience. These notions are not directly applicable to experience, nor do we find in experience anything corresponding to the pure intellectual notions of substance, cause and reciprocity. But experience is for us the combination of data of sense in the forms of productive imagination, forms determined by the pure intellectual notions, and accordingly experience is possible for us only as in modes corresponding to the notions. The permanent in time is substance in any possible experience, and no experience is possible save through the determination of all changes as in relation to a permanent in time. Determined sequence is the causal relation in any possible experience, and no experience is possible save through the determination of perceived changes as in relation to a determined order in time. So with coexistence and reciprocity.

The postulates of experience are general expressions of the significance of existence in the experience of a conscious subject. The element of reality in such experience must always be given by intuition, and, so far as determination of existence is assumed, external intuition is a necessary condition of inner intuition. The existence of external things is as certain as the existence of the concrete subject, and the subject cannot cognise himself as existing save in relation to the world of facts of external perception. Inner and outer reality are strictly correlative elements in the experience of the conscious subject.

Throughout the positive portion of his theory of cognition, Kant has been beset by the doctrine that the categories, as finished, complete notions, have an import or significance transcending the bounds of possible experience. Morever, the manner in which space and time had been treated made it possible for him to regard these as contingent forms, necessary for intelligences like ours, but not to be viewed as absolutely necessary. The real meaning of these peculiarities is hardly ever expressed by him, though it is clear that the solution of the matter is to be found in the inadequacy of the positive theory to meet the demands of reason for completed explanation. But the conclusion to which he was led was one of the greatest importance for the after development of his system. Cognition is necessarily limited. The categories are restricted in their application to elements of possible experience to that which is presented in intuition, and all intuition is for the ego contingent. But to assert that cognition is limited and its matter contingent is to form the idea of an intelligence for whom cognition would not be limited and for whom the data of intuition would not be given, contingent facts, but necessarily produced along with the pure categories. This idea of an intuitive understanding is the definite expression for the complete explanation which reason demands, and it involves the conception of a realm of objects for such an understanding, a realm of objects which, in opposition to the *phenomena* of our relative and limited experience, may be called *noumena* or things-in-themselves. The *noumenon*, therefore, is in one way the object of a non-sensuous intuition, but more correctly is the expression of the limited and partial character of our knowledge. The idea of a noumenon is thus a limiting notion.

Assuredly, the difficult section of the *Kritik*, on the ground of the distinction between phenomena and noumena, would not have led to so much misconception as it has done, had Kant then brought forward what lies at the root of the distinction, his doctrine of reason and its functions. Understanding, as has been seen, is the faculty of cognition strictly so called; and within its realm, that of space, time and matter, positive knowledge is attainable. But the ultimate conception of understanding, that of the world of objects, quantitatively determined, and standing in relation of mutual reciprocity to one another, is not a final ground of explanation. We are still able and necessitated to reflect upon the whole world of phenomena as thus cognized, and driven to inquire after its significance. In our reflection we necessarily treat the objects, not as phenomena, as matters of positive, scientific knowledge, but as things-in-themselves, as noumena. The distinction between phenomena and noumena is, therefore, nothing but the expression of the distinction between understanding and reason, a distinction which, according to Kant, is merely subjective.

The specific function of reason is the effort after completed explanation of the experience

presented in cognition. But in such effort there are no notions to be employed other than the categories, and these, as has already been seen, have validity only in reference to objects of possible experience. We may expect, then, to find the transcendent employment of the categories leading into various difficulties and inconsistencies. The criticism of reason in its specific aspect throws fresh light on the limits to human knowledge and the significance of experience.

Experience has presented itself as the complex result of relation between the ego or subject and the world of phenomena. Reason may therefore attempt a completed explanation either of the ego or of the world of phenomena or of the total relation between them. The three inquiries correspond to the subjects of the three ancient metaphysical sciences, rational psychology, rational cosmology, rational theology. It is readily seen, in regard to the first of them, that all attempts to determine the nature of the ego as a simple, perdurable, immaterial substance rest upon a confusion between the ego as pure logical unity and the ego as object of intuition, and involve a transcendent use of the categories of experience. It profits not to apply such categories to the soul, for no intuition corresponding to them is or can be given. The idea of the soul must be regarded as transcendent. So too when we endeavour, with the help of the categories of quantity, quality, relation and modality, to determine the nature and relation of parts of the world, we find that reason is landed in a peculiar difficulty. Any solution that can be given is too narrow for the demands of reason and too wide for the restrictions of understanding. The transcendent employment of the categories leads to antinomy, or equally balanced statements of apparently contradictory results. Due attention to the relation between understanding and reason enables us to solve the antinomies and to discover their precise origin and significance. Finally, the endeavour to find in the conception of God, as the supreme reality, the explanation of experience, is seen to lead to no valid conclusion. There is not any intuition given whereby we might show the reality of our idea of a Supreme Being. So far as knowledge is concerned, God remains a transcendental ideal.

The criticism of the transcendental ideas, which is also the examination of the claims of metaphysic to rank as a science, yields a definite and intelligible result. These ideas, the expression of the various modes in which unity of reason may be sought, have no objects corresponding to them in the sphere of cognition. They have not, therefore, like the categories, any *constitutive* value, and all attempts at metaphysical construction with the notions or categories of science must be resigned as of necessity hopeless. But the ideas are not, on that account, destitute of all value. They are supremely significant, as indicating the very essence of the function of reason. The limits of scientific cognition become intelligible, only when the sphere of understanding is subjected to critical reflexion and compared with the possible sphere of reason, that is, the sphere of rationally complete cognition. The ideas, therefore, in relation to knowledge strictly so called, have *regulative* value, for they furnish the general precepts for extension and completion of knowledge, and, at the same time, since they spring from reason itself, they have a real value in relation to reason as the very inmost nature of intelligence. Self-consciousness cannot be regarded as merely a mechanically determined result. Free reflection upon the whole system of knowledge is sufficient to indicate that the sphere of intuition, with its rational principles, does not exhaust conscious experience. There still remains, over and above the realm of nature, the realm of free, self-conscious spirit; and, within this sphere, it may be anticipated that the ideas will acquire a significance richer and deeper than the merely regulative import which they possess in reference to cognition.

Where, then, are we to look for this realm of free self-consciousness? Not in the sphere of cognition, where objects are mechanically determined, but in that of will or of reason as practical. That reason is practical or prescribes ends for itself is sufficiently manifest from the mere fact of the existence of the conception of morality or duty, a conception which can have no corresponding object within the sphere of intuition, and which is theoretically, or in accordance with the categories of understanding, incognizable. The presence of this conception is the datum upon which may be founded a special investigation of the conditions of reason as practical, a *Kritik* of pure practical reason, and the analysis of it yields the statement of the formal prescripts of morality.

The realization of duty is impossible for any being which is not thought as free, *i.e.* capable of self-determination. Freedom, it is true, is theoretically not an object of cognition, but its impossibility is not thereby demonstrated. The theoretical proof rather serves as useful aid towards the more exact determination of the nature and province of self-determination, and of its relation to the whole concrete nature of humanity. For in man self-determination and mechanical determination by empirical motives coexist, and only in so far as he belongs and is conscious of belonging both to the sphere of sense and to the sphere of reason does moral obligation become possible for him. The supreme end prescribed by reason in its practical aspect, namely, the complete subordination of the empirical side of nature to the prescripts of morality, demands, as conditions of its possible realization, the permanence of ethical progress in the moral agent, the certainty of freedom in self-determination, and the necessary harmonizing of the spheres of sense and reason through the intelligent author or ground of both. These conditions, the postulates of practical reason, are the concrete expressions of the three transcendental ideas, and in them we have the full significance of the ideas for reason. Immortality of the soul, positive freedom of will, and the existence of an intelligent ground of things are speculative ideas practically warranted, though theoretically neither demonstrable nor comprehensible.

Thus reason as self-determining supplies notions of freedom; reason as determined supplies categories of understanding. Union between the two spheres, which seem at first sight disparate, is found in the necessary postulate that reason shall be realized, for its realization is only possible in the sphere of sense. But such a union, when regarded *in abstracto*, rests upon, or involves, a notion of quite a new order, that of the adaptation of nature to reason, or, as it may be expressed, that of end in nature. Understanding and reason thus coalesce in the faculty of *judgment*, which mediates between, or brings together, the universal and particular elements in conscious experience. Judgment is here merely *reflective*; that is to say, the particular element is given, so determined as to be possible material of knowledge, while the universal, not necessary for cognition, is supplied by reason itself. The empirical details of nature, which are not determined by the categories of understanding, are judged as being arranged or ordered by intelligence, for in no other fashion could nature, in its particular, contingent aspect, be thought as forming a complete, consistent, intelligible whole.

The investigation of the conditions under which adaptation of nature to intelligence is conceivable and possible makes up the subject of the third great *Kritik*, the *Kritik of Judgment*, a work presenting unusual difficulties to the interpreter of the Kantian system. The general principle of the adaptation of nature to our faculties of cognition has two specific applications, with the second of which it is more closely connected than with the first. In the first place, the adaptation may be merely *subjective*, when the empirical condition for the exercise of judgment is furnished by the feeling of pleasure or pain; such adaptation is aesthetic. In the second place, the adaptation may be objective or logical, when empirical facts are given of such a kind that their possibility can be conceived only through the notion of the end realized in them; such adaptation is teleological, and the empirical facts in question are organisms.

Aesthetics, or the scientific consideration of the judgments resting on the feelings of pleasure and pain arising from the harmony or want of harmony between the particular of experience and the laws of understanding, is the special subject of the *Kritik of Judgment*, but the doctrine of teleology there unfolded is the more important for the complete view of the critical system. For the analysis of the teleological judgment and of the consequences flowing from it leads to the final statement of the nature of experience as conceived by Kant. The phenomena of organic production furnish data for a special kind of judgment, which, however, involves or rests upon a quite general principle, that of the contingency of the particular element in nature and its subjectively necessary adaptation to our faculty of cognition. The notion of contingency arises, according to Kant, from the fact that understanding and sense are distinct, that understanding does not determine the particular of sense, and, consequently, that the principle of the adaptation of the particular to our understanding is merely supplied by reason on account of the peculiarity or limited character of understanding. End in nature, therefore, is a subjective or problematic conception, implying the limits of understanding, and consequently resting upon the idea of an understanding constituted unlike ours—of an intuitive understanding in which particular and universal should be given together. The idea of such an understanding is, for cognition, transcendent, for no corresponding fact of intuition is furnished, but it is realized with practical certainty in relation to reason as practical. For we are, from practical grounds, compelled with at least practical necessity to ascribe a certain aim or end to this supreme understanding. The moral law, or reason as practical, prescribes the realization of the highest good, and such realization implies a higher order than that of nature. We must, therefore, regard the supreme cause as a moral cause, and nature as so ordered that realization of the moral end is in it possible. The final conception of the Kantian philosophy is, therefore, that of ethical teleology. As Kant expresses it in a remarkable passage of the *Kritik*, “The systematic unity of ends in this world of intelligences, which, although as mere nature it is to be called only the world of sense, can yet as a system of freedom be called an intelligible, *i.e.* moral world (*regnum gratiae*), leads inevitably to the teleological unity of all things which constitute this great whole according to universal natural laws, just as the unity of the former is according to universal and necessary moral laws, and unites the practical with the speculative reason. The world must be represented as having originated from an idea, if it is to harmonize with that use of reason without which we should hold ourselves unworthy of reason—viz. the moral use, which rests entirely on the idea of the supreme good. Hence all natural research tends towards the form of a system of ends, and in its highest development would be a physico-theology. But this, since it arises from the moral order as a unity grounded in the very essence of freedom and not accidentally instituted by external commands, establishes the teleology of nature on grounds which a priori must be inseparably connected with the inner possibility of things. The teleology of nature is thus made to rest on a transcendental theology, which takes the ideal of supreme ontological perfection as a principle of systematic unity, a principle which connects all things according to universal and necessary natural laws, since they all have their origin in the absolute necessity of a single primal being” (p. 538).

BIBLIOGRAPHY.—Editions and works of reference are exceedingly numerous. Since 1896 an indispensable guide is the periodical review *Kantstudien* (Hamburg and Berlin, thrice yearly), edited by Hans Vaihinger and Bruno Bauch, which contains admirable original articles and notices of all important books on Kant and Kantianism. It has reproduced a number of striking portraits of Kant. For books up to 1887 see Erich Adickes in *Philosophical Review* (Boston, 1892 foll.); for 1890-1894 R. Reicke’s *Kant Bibliographie* (1895). See also in general the latest edition of Ueberweg’s *Grundriss der Geschichte der Philosophie*.

EDITIONS.—Complete editions of Kant's works are as follows: (1) G. Hartenstein (Leipzig, 1838-1839, 10 vols.); (2) K. Rosenkranz and F. W. Schubert (Leipzig, 1838-1840, 12 vols., the 12th containing a history of the Kantian school); (3) G. Hartenstein, "in chronological order" (Leipzig, 1867-1869, 8 vols.); (4) Kirchmann (in the "Philosophische Bibliothek," Berlin, 1868-1873, 8 vols, and supplement); (5) under the auspices of the Königlich Preussische Akademie der Wissenschaften, a new collected edition was begun in 1900 (vol. ii., 1906) in charge of a number of editors. It was planned in four sections: Works, Letters, MSS. Remains and *Vorlesungen*. There are also useful editions of the three *Kritiks* by Kehrbach, and critical editions of the *Prolegomena* and *Kritik der reinen Vernunft* by B. Erdmann (see also his *Beiträge zur Geschichte und Revision des Textes von Kants Kritik der reinen Vernunft* (1900). A useful selection (in English) is that of John Watson, *The Philosophy of Kant* (Glasgow, 1888).

TRANSLATIONS.—There are translations in all the principal languages. The chief English translators are J. P. Mahaffy, W. Hastie, T. K. Abbott, J. H. Bernard and Belfort Bax. Their versions have been mentioned in the section on "Works" above.

BIOGRAPHICAL.—Schubert in the 11th vol. of Rosenkranz's edition; Borowski, *Darstellung des Lebens und Charakters Kants* (Königsberg, 1804); Wasianski, *Kant in seinen letzten Lebensjahren* (Königsberg, 1804); Stuckenberg, *The Life of Immanuel Kant* (1882); Rudolf Reicke, *Kants Briefwechsel* (1900). See also several of the critical works below. On Kant's portraits see D. Minden, *Ueber Portraits und Abbildungen Imm. Kants* (1868) and cf. frontispieces of *Kantstudien* (as above).

CRITICAL (in alphabetical order of authors).—R. Adamson, *Philosophy of Kant* (1879; Germ. trans., 1880); Felix Adler, *A Critique of Kant's Ethics* (1908); S. Aicher, *Kants Begriff der Erkenntnis verglichen mit dem des Aristoteles* (1907); M. Apel, *Immanuel Kant: Ein Bild seines Lebens und Denkens* (1904); Arnoldt, *Kritische Exkurse im Gebiete der Kantforschung* (1894); C. Bache, "*Kants Prinzip der Autonomie im Verhältnis zur Idee des Reichs der Zwecke*" (*Kantstudien*, 1909); B. Bauch, *Luther und Kant* (1904); Paul Boehm, *Die vorkritischen Schriften Kants* (1906); E. Caird, *Critical Philosophy of Kant* (2 vols., 1889); Chalybäus, *Historische Entwickelung der spekulativen Philosophie von Kant bis Hegel* (5th ed., 1860); H. S. Chamberlain, *Immanuel Kant* (1909); Cousin, *Leçons sur la philosophie de Kant* (4th ed., 1864); B. Erdmann, *Immanuel Kant, Kants Kritizismus in der 1 und 2 Auflage der "Kritik der reinen Vernunft"* (1877); O. Ewald, *Kants kritischer Idealismus als Grundlage von Erkenntnistheorie und Ethik* (1908) and *Kants Methodologie in ihren Grundzügen* (1906); Kuno Fischer, *Immanuel Kant* (4th ed., 1898-1899), *Die beiden Kantischen Schulen in Jena* (1862), and *Commentary on Kant's Kritik of Pure Reason* (1878); F. Förster, *Der Entwicklungsgang der Kantischen Ethik bis zur Kritik der reinen Vernunft* (1893); A. Fouillée, *Le Moralisme de Kant et l'amoralisme contemporaine* (1905); C. R. E. von Hartmann, *Kants Erkenntnistheorie und Metaphysik in den vier Perioden ihrer Entwickelung* (1894); A. Hegler, *Die Psychologie in Kants Ethik* (1891); G. D. Hicks, *Die Begriffe Phänomenon und Noumenon in ihrem Verhältniss zu einander bei Kant* (1897); G. Jacoby, *Herders und Kants Aesthetik* (1907); W. Kabitz, *Studien zur Entwickelungsgeschichte der Fichteschen Wissenschaftslehre aus der Kantischen Philosophie* (1902); M. Kelly, *Kant's Philosophy as rectified by Schopenhauer* (1909); W. Koppelmann, *I. Kant und die Grundlagen der christlichen Religion* (1890); M. Kronenberg, *Kant: Sein Leben und seine Lehre* (1897; 3rd ed., 1905); E. Kühnemann, *Kants und Schillers Begründung der Aesthetik* (1895) and *Die Kantischen Studien Schillers und die Komposition des Wallenstein* (1889); H. Levy, *Kants Lehre vom Schematismus der reinen Verstandesbegriffe* (1901); Arthur O. Lovejoy, *Kant and the English Platonists* (1908); J. P. Mahaffy, *Kant's Critical Philosophy for English Readers* (1872-1874); W. Mengel, *Kants Begründung der Religion* (1900); A. Messer, *Kants Ethik* (1904); H. Meyer-Benfey, *Herder und Kant* (1904); Morris, *Kant's Critique of Pure Reason* (Chicago, 1882); C. Oesterreich, *Kant und die Metaphysik* (1906); F. Paulsen, *Kant: Sein Leben und seine Lehre* (1898; 4th ed., 1904; Eng. 1902); Harold H. Prichard, *Kant's Theory of Knowledge* (1909); A. Seth Pringle-Pattison, *The Development from Kant to Hegel* (1882); and, on Kant's philosophy of religion, in *The Philosophic Radicals* (1907); F. Rademaker, *Kants Lehren vom innern Sinn in der Kritik der reinen Vernunft* (1908); R. Reininger, *Kants Lehre vom inneren Sinn und seine Theorie der Erfahrung* (1900); C. B. Renouvier, *Critique de la doctrine de Kant* (1906); H. Romundt, *Kants philosophische Religionslehre eine Frucht der gesammten Vernunftkritik* (1902); T. Ruyssen, *Kant* (1900); E. Saenger, *Kants Lehre vom Glauben* (1903); O. Schapp, *Kants Lehre vom Genie und die Entstehung der "Kritik der Urteilskraft"* (1901); Carl Schmidt, *Beiträge zur Entwickelung der Kant'schen Ethik* (1900); A. Schweitzer, *Die Religionsphilosophie Kants* (1899); H. Sidgwick, *Lectures on the Philosophy of Kant* (1905); J. H. Stirling, *Text Book to Kant* (1881); G. Simmel, *Kant und Goethe* (1906); L. Staehlin, *Kant, Lotze und Ritschl* (1889); O. Thon, *Die Grundprinzipien der Kantischen Moralphilosophie* (1895); T. Valentiner, *Kant und die platonische Philosophie* (1904); C. Vorländer, *Kant, Schiller, Goethe* (1907); G. C. Uphues, *Kant und sein Vorgänger* (1906); W. Wallace, *Kant* (1905); M. Wartenberg, *Kants Theorie der Kausalität* (1899); John Watson, *Philosophy of Kant Explained* (1908), *Kant and his English Critics* (1881); A. Weir, *A Student's Introduction to Critical Philosophy* (1906); G. A. Wyneken, *Hegel's Kritik Kants* (1898); W. Windelband, *Kuno Fischer und sein Kant* (1897).

On Kant's theory of education, see E. F. Büchner, *The Educational Theory of Immanuel Kant* (trans., ed., intro., 1904); trans. of *Ueber Pädagogik* by Annette Churton (1899); J. Geluk, *Kant* (1883).

1 See further Idealism; Metaphysics; Logic, &c., where Kant's relation to subsequent thought is discussed.

KANURI, or Beriberi, an African tribe of mixed origin, the dominant race of Bornu. They are large-boned and coarse-featured, but contain nevertheless a distinct strain of Fula blood. Beriberi (or Berberi) is the name given them by the Hausa (see Bornu).

KAOLIN, a pure white clay, know also as china-clay, since it is an essential ingredient in the manufacture of china, or porcelain. The word kaolin, formerly written by some authors caulin, is said to be a corruption of the Chinese *Kau-ling*, meaning "High Ridge," the name of a hill east of King-te-chen, whence the earliest samples of the clay sent to Europe were obtained by the Père d'Entrecolles, a French Jesuit missionary in China in the early part of the 18th century. His specimens, examined in Paris by R. A. Réaumur, showed that true porcelain, the composition of which had not previously been known in Europe, contained two essential ingredients, which came to be known—though it now appears incorrectly—as kaolin and petuntse, corresponding respectively to our china-clay and china-stone. The kaolin confers plasticity on the paste and secures retention of form for the ware when exposed to the heat of the kiln, whilst the petuntse gives the translucency so characteristic of porcelain. Some of the earliest discoveries of kaolin in Europe were at Aue, near Schneeberg in Saxony, and at St Yrieix, near Limoges in France. In England it was discovered in Cornwall about the year 1750 by William Cookworthy, of Plymouth; and in 1768 he took out his patent for making porcelain from moorstone or growan (china-stone) and growan clay (kaolin), the latter imparting "whiteness and infusibility" to the china. These raw materials were found first at Tregonning Hill, near Breage, and afterwards at St Stephen's in Brannel, near St Austell; and their discovery led to the manufacture of hard paste, or true porcelain, at Plymouth and subsequently at Bristol.

Kaolin is a hydrous aluminium silicate, having the formula $H_4Al_2Si_2O_9$, or $Al_2Si_2O_7{\cdot}2H_2O$, but in common clay this silicate is largely mixed with impurities. Certain clays contain pearly white hexagonal scales, usually microscopic, referable to the monoclinic system, and having the chemical composition of kaolin. This crystalline substance was termed kaolinite by S. W. Johnson and J. M. Blake in 1867, and it is now regarded as the basis of pure clay. The kaolinite of Amlwch in Anglesey has been studied by Allan Dick. The origin of kaolin may be traced to the alteration of certain aluminous silicates like feldspar, scapolite, beryl and topaz; but all large deposits of china-clay are due to the decomposition of feldspar, generally in granite, but sometimes in gneiss, pitchstone, &c. The turbidity of many feldspars is the result of partial "kaolinization," or alteration to kaolin. The china-clay rocks of Cornwall and Devon are granites in which the orthoclase has become kaolinized. These rocks are sometimes known as carclazite, a name proposed by J. H. Collins from a typical locality, the Carclaze mine, near St Austell. It has often been supposed that the alteration of the granite has been effected mainly by meteoric agencies, the carbonic acid having decomposed the alkaline silicate of the feldspar, whilst the aluminous silicate assumes a hydrated condition and forms kaolin. In many cases, however, it seems likely that the change has been effected by subterranean agencies, probably by heated vapours carrying fluorine and boron, since minerals containing these elements, like tourmaline, often occur in association with the china-clay. According to F. H. Butler the kaolinization of the west of England granite may have been effected by a solution of carbonic acid at a high temperature, acting from below.

The china-stone, or petuntse, is a granitic rock which still retains much of the unaltered feldspar, on which its fusibility depends. In order to prepare kaolin for the market, the china-clay rock is broken up, and the clay washed out by means of water. The liquid containing the clay in mechanical suspension is run into channels called "drags" where the coarser impurities subside, and whence it passes to another set of channels known as "micas," where the finer materials settle down. Thus purified, the clay-water is led into a series of pits or tanks, in which the finely

divided clay is slowly deposited; and, after acquiring sufficient consistency, it is transferred to the drying-house, or “dry,” heated by flues, where the moisture is expelled, and the kaolin obtained as a soft white earthy substance. The clay has extensive application in the arts, being used not only in ceramic manufacture but in paper-making, bleaching and various chemical industries.

Under the species “kaolinite” may be included several minerals which have received distinctive names, such as the Saxon mineral called from its pearly lustre nacrite, a name originally given by A. Brongniart to a nacreous mica; pholerite found chiefly in cracks of ironstone and named by J. Guillemin from the Greek φολίς, a scale; and lithomarge, the old German *Steinmark*, a compact clay-like body of white, yellow or red colour. Dr C. Hintze has pointed out that the word pholerite should properly be written pholidite (φολίς, φολίδος). Closely related to kaolinite is the mineral called halloysite, a name given to it by P. Berthier after his uncle Omalius d’Halloy, the Belgian geologist.

(F. W. R.*)

KAPUNDA, a municipal town of Light county, South Australia, 48 m. by rail N.N.E. of Adelaide. Pop. (1901), 1805. It is the centre of a large wheat-growing district. The celebrated copper mines discovered in 1843 were closed in 1879. There are quarries near the town, in which is found fine marble of every colour from dark blue to white. This marble was largely used in the Houses of Parliament at Adelaide.

KAPURTHALA, a native state of India, within the Punjab. Area, 652 sq. m.; pop. (1901), 314,341, showing an increase of 5% in the decade; estimated gross revenue, £178,000; tribute, £8700. The Kapurthala family is descended from Jassa Singh, a contemporary of Nadir Shah and Ahmad Shah, who by his intelligence and bravery made himself the leading Sikh of his day. At one time it held possessions on both sides of the Sutlej, and also in the Bari Doab. The cis-Sutlej estates and scattered tracts in the Bari Doab were forfeited owing to the hostility of the chief in the first Sikh war; but the latter were afterwards restored in recognition of the loyalty of Raja Randhir Singh during the mutiny of 1857, when he led a contingent to Oudh which did good service. He also received a grant of land in Oudh, 700 sq. m. in extent, yielding a gross rental of £89,000. In Oudh, however, he exercises no sovereign powers, occupying only the status of a large landholder, with the title of Raja-i-Rajagan. Raja Sir Jagatjit Singh, K.C.S.I., was born in 1872, succeeded his father in 1877, and attained his majority in 1890. During the Tirah expedition of 1897-98 the Kapurthala imperial service infantry took a prominent part. The territory is crossed by the railway from Jullundur to Amritsar. The state has a large export trade in wheat, sugar, tobacco and cotton. The hand-painted cloths and metal-work of Phagwara are well known. The town of Kapurthala is 11 miles from Jullundur; pop. (1901), 18,519.

KARACHI, or Kurrachee, a seaport and district of British India, in the Sind province of Bombay. The city is situated at the extreme western end of the Indus delta, 500 m. by sea from Bombay and 820 m. by rail from Lahore, being the maritime terminus of the North-Western railway, and the main gateway for the trade of the Punjab and part of central Asia. It is also the capital of the province of Sind. Pop. (1881), 73,500; (1891), 105,199; (1901), 115,407. Before 1725 no town appears to have existed here; but about that time some little trade began to centre upon the convenient harbour, and the silting up of Shahbandar, the ancient port of Sind, shortly afterwards drove much of its former trade and population to the rising village. Under the Kalhora princes, the khan of Kalat obtained a grant of the town, but in 1795 it was captured by the Talpur

Mirs, who built the fort at Manora, at the entrance to the harbour. They also made considerable efforts to increase the trade of the port and at the time of the British acquisition of the province the town and suburbs contained a population of 14,000. This was in 1843, from which time the importance of the place practically dates.

The harbour of Karachi has an extreme length and breadth of about 5 m. It is protected by the promontory of Manora Head; and the entrance is partially closed by rocks and by the peninsula (formerly an island) of Kiamari. On Manora Head, which is fortified, are the buildings of the port establishment, a cantonment, &c. Kiamari is the landing-place for passengers and goods, and has three piers and railway connexions. The harbour improvements were begun in 1854 with the building of the Napier Mole or causeway connecting Kiamari with the mainland. The entrance has a minimum depth of 25 ft.; and a large number of improvements and extensions have been carried out by the harbour board, which was created in 1880, and transformed in 1886 into the port trust.

The great extension of the canal colonies in the Punjab, entirely devoted to the cultivation of wheat, has immensely increased the export trade of Karachi. It now ranks as the third port of India, being surpassed only by Calcutta and Bombay. The principal articles of export, besides wheat, are oil-seeds, cotton, wool, hides and bones. The annual value of exports, including specie, amounts to about nine millions sterling. There are iron works and manufactures of cotton cloth, silk scarves and carpets. The fisheries and oyster beds are important.

Among the principal public buildings are government house, the Frere municipal hall, and the Napier barracks. The military cantonments, stretching north-east of the city, form the headquarters of a brigade in the 4th division of the southern army. An excellent water supply is provided by an underground aqueduct 18 m. in length. The chief educational institutions are the Dayaram Jethmal Arts College, with a law class; five high schools, of which two are for Europeans and one for Mahommedans; a convent school for girls; and an engineering class. The average rainfall for the year is about 5 in. The rainy months are July and August, but one or two heavy showers usually fall about Christmas. The end of May, beginning of June, and first fortnight in October are hot. November, December, January, February and March are delightfully cool and dry; the remaining months are damp with a constant cool sea breeze.

The District of Karachi has an area of 11,970 sq. m. Pop. (1901), 607,439, showing an increase of 6% in the decade. It consists of an immense tract of land stretching from the mouth of the Indus to the Baluch boundary. It differs in general appearance from the rest of Sind, having a rugged, mountainous region along its western border. The country gradually slopes away to the south-east, till in the extreme south the Indus delta presents a broad expanse of low, flat and unpicturesque alluvium. Besides the Indus and its mouths, the only river in the district is the Hab, forming the boundary between Sind and Baluchistan. The Manchhar lake in Sehwan sub-division forms the only considerable sheet of water in Sind. The hot springs at Pir Mangho are 6 m. N. of Karachi town. The principal crops are rice, millets, oil-seeds and wheat. In addition to Karachi, there are seaports at Sirgonda and Keti Bandar, which conduct a considerable coasting trade. Tatta was the old capital of Sind. Kotri is an important railway station on the Indus. The main line of the North-Western railway runs through the district. From Kotri downwards the line has been doubled to Karachi, and at Kotri a bridge has been constructed across the Indus opposite Hyderabad, to connect with the Rajputana railway system.

See A. F. Baillie, *Kurrachee: Past, Present and Future* (1890).

KARAGEORGE

(in Servian, *Karadyordye*) (*c.* 1766-1817), the leader of the Servians during their first revolution against the Turks (1804-13), and founder of the Servian dynasty Karageorgevich. His Christian name was George (Dyordye), but being not only of dark complexion but of gloomy, taciturn and easily excitable temper, he was nicknamed by the Servians “Tsrni Dyordye” and by the Turks “Karageorge,” both meaning “Black George,” the Turkish name becoming soon the generally adopted one. He was born in 1766 (according to some in 1768), the son of an extremely poor Servian peasant, Petroniye Petrovich. When quite a young man, he entered the service of a renowned Turkish brigand, Fazli-Bey by name, and accompanied his master on his adventurous expeditions. When twenty he married and started a small farm. But having killed a Turk, he left Servia for Syrmia, in Croatia-Slavonia, where the monks of the monastery Krushedol engaged him as one of their forest guards. He remained in the service of the monks nearly two years, then enlisted into an Austrian regiment, and as sergeant took part in the Austrian war against Turkey (1788-91). He deserted his regiment, returned to Servia, and

settled in the village of Topola, living sometimes as a peaceful farmer and sometimes again as the leader of a small band of “hayduks”—men who attacked, robbed and in most cases killed the travelling Turks in revenge for the oppression of their country.

The circumstances in which the Servians rose against the janissaries of the pashalik of Belgrade are related in the article on Servia. The leaders of the insurgents’ bands and other men of influence met about the middle of February 1804 at the village of Orashatz, and there elected Karageorge as the supreme leader (Vrhovni Vozd) of the nation. Under his command the Servians speedily cleared their country not only of the janissaries disloyal to the Sultan, but of all other Turks, who withdrew from the open country to the fortified places. Karageorge and his armed Servians demanded from the Sultan the privileges of self-government. The Porte, confronted by the chances of a war with Russia, decided in the autumn of 1806 to grant to the Servians a fairly large measure of autonomy. Unfortunately Karageorge was comparatively poor in political gifts and diplomatic tact. While the *hattisherif* granting the rights demanded by the Servians was on the way to Servia, Karageorge attacked the Turks in Belgrade and Shabats, captured the towns first and then also the citadels, and allowed the Turkish population of Belgrade to be massacred. At the same time the Russian headquarters in Bucharest informed Karageorge that Russia was at war with Turkey and that the Tsar counted on the co-operation of the Servians. Karageorge and his Servians then definitely rejected all the concessions which the Porte had granted them, and joined Russia, hoping thereby to secure the complete independence of Servia. The co-operation of the Servians with the Russians was of no great importance, and probably disappointing to both parties. But as the principal theatre of war was far away from Servia on the lower Danube, Karageorge was able to give more attention to the internal organization of Servia. The national assembly proclaimed Karageorge the hereditary chief and *gospodar* of the Servians (Dec. 26, 1808), he on his part promising under oath to govern the country “through and by the national council” (senate).

Karageorge’s hasty and uncompromising temper and imperious habits, as well as his want of political tact, soon made him many enemies amongst the more prominent Servians (voyvodes and senators). His difficulties were considerably increased by the intrigues of the Russian political agent to Servia, Rodophinikin. A crisis came during the summer months of the year 1813. The treaty of peace, concluded by the Russians somewhat hurriedly in Bucharest in 1812, did not secure efficiently the safety of the Servians. The Turks demanded from Karageorge, as a preliminary condition for peace, that the Servians should lay down their arms, and Karageorge refused to comply. Thereupon the entire Turkish army which fought against the Russians on the Danube, being disengaged, invaded Servia. After a few inefficient attempts to stem the invasion, Karageorge gave up the struggle, and with most of the voyvodes and chiefs of the nation left the country, and crossed to Hungary as a refugee (Sept. 20, 1813). From Hungary he went to Russia and settled in Khotin (Bessarabia), enjoying a pension from the Tsar’s government. But in the summer of 1817 he suddenly and secretly left Russia and reappeared quite alone in Servia in the neighbourhood of Semendria (Smederevo) on the Danube. The motives and the object of his return are not clear. Some believe that he was sent by the Hetaerists to raise up Servia to a new war with Turkey and thereby facilitate the rising of the Greek people. It is generally assumed, however, that, having heard that Servia, under the guidance of Milosh Obrenovich, had obtained a certain measure of self-government, he desired to put himself again at the head of the nation. This impression seems to have been that of Milosh himself, who at once reported to the Pasha of Belgrade the arrival of Karageorge. The pasha demanded that Karageorge, alive or dead, should be delivered to him immediately, and made Milosh personally responsible for the execution of that order. Karageorge’s removal could not unfortunately be separated from the personal interest of Milosh; already acknowledged as chief of the nation, Milosh did not like to be displaced by his old chief, who in a critical moment had left the country. Karageorge was killed (July 27, O.S., 1817) while he was asleep, and his head was sent to the pasha for transmission to Constantinople. It is impossible to exonerate Milosh Obrenovich from responsibility for the murder, which became the starting-point for a series of tragedies in the modern history of Servia.

Karageorge was one of the most remarkable Servians of the 19th century. No other man could have led the bands of undisciplined and badly-armed Servian peasants to such decisive victories against the Turks. Although he never assumed the title of prince, he practically was the first chief and master (*gospodar*) of the people of Servia. He succeeded, however, not because he was liked but because he was feared. His gloomy silence, his easily aroused anger, his habit of punishing without hesitation the slightest transgressions by death, spread terror among the people. He is believed to have killed his own father in a fit of anger when the old man refused to follow him in his flight to Hungary at the beginning of his career. In another fit of rage at the report that his brother Marinko had assaulted a girl, he ordered his men to seize his brother and to hang him there and then in his presence, and he forbade his mother to go into mourning for him. Even by his admirers he is admitted to have killed by his own hand no fewer than 125 men who provoked his anger. But in battles he is acknowledged to have been always admirable, displaying marvellous energy and valour, and giving proofs of a real military genius. The Servians consider him one of their greatest men. In grateful remembrance of his services to the national cause they

elected his younger son, Alexander, in 1842, to be the reigning prince of Servia, and again in 1903 they chose his grandson, Peter Karageorgevich (son of Alexander) to be the king of Servia.

See SERVIA; also Ranke, *Die serbische Revolution*; Stoyan Novakovich, *Vaskzhs srpske drzhave* (Belgrade, 1904); M. G. Milityevich, *Karadyordye* (Belgrade, 1904).

(C. MI.)

KARA-HISSAR ("Black Castle"). (1) AFIUM KARA-HISSAR (*q.v.*). (2) ICHJE, or ISCHA KARA-HISSAR (anc. *Docimium*), a small village about 14 m. N.E. of No. 1. Docimium was a Macedonian colony established on an older site. It was a self-governing municipality, striking its own coins, and stood on the Apamea-Synnada-Pessinus road, by which the celebrated marble called Synnadic, Docimian and Phrygian was conveyed to the coast. The quarries are 2½ m. from the village, and the marble was carried thence direct to Synnada (Chifut Kassaba). Some of the marble has the rich purple veins in which poets saw the blood of Atys.

See W. M. Ramsay, *Hist. Geog. of Asia Minor* (London, 1890); Murray, *Hbk. to Asia Minor* (1893).

KARA-HISSAR SHARKI [*i.e.* "eastern Kara-Hissar"], also called Shabin Kara-Hissar from the alum mines in its vicinity, the chief town of a sanjak of the same name in the Sivas vilayet of Asia Minor. Pop. about 12,000, two-thirds Mussulman. It is the Roman *Colonia*, which gradually superseded Pompey's foundation, *Nicopolis*, whose ruins lie at Purkh, about 12 m. W. (hence Kara-Hissar is called Nikopoli by the Armenians). In later Byzantine times it was an important frontier station, and did not pass into Ottoman hands till twelve years after the capture of Constantinople. The town, altitude 4860 ft., is built round the foot of a lofty rock, upon which stand the ruins of the Byzantine castle, *Maurocastron*, the Kara Hissar Daula of early Moslem chroniclers. It is connected with its port, Kerasund, and with Sivas, Erzingan and Erzerum, by carriage roads.

KARAISKAKIS, GEORGES (1782-1827), leader in the War of Greek Independence, was born at Agrapha in 1782. During the earlier stages of the war he served in the Morea, and had a somewhat discreditable share in the intrigues which divided the Greek leaders. But he showed a sense of the necessity for providing the country with a government, and was a steady supporter of Capo d'Istria. His most honourable services were performed in the middle and later stages of the war. He helped to raise the first siege of Missolonghi in 1823, and did his best to save the town in the second siege in 1826. In that year he commanded the patriot forces in Rumelia, and though he failed to co-operate effectually with other chiefs, or with the foreign sympathizers fighting for the Greeks, he gained some successes against the Turks which were very welcome amid the disasters of the time. He took a share in the unsuccessful attempts to raise the siege of Athens in 1827, and made an effort to prevent the disastrous massacre of the Turkish garrison of fort S Spiridion. He was shot in action on the 4th of May 1827. Finlay speaks of him as a capable partisan leader who had great influence over his men, and describes him as of "middle size, thin, dark-complexioned, with a bright expressive animal eye which indicated gipsy blood."

See G. Finlay, *History of the Greek Revolution* (London, 1861).

KARAJICH, VUK STEFANOVICH (1787-1864), the father of modern Servian literature, was born on the 6th of November 1787 in the Servian village of Trshich, on the border between Bosnia and Servia. Having learnt to read and write in the old monastery Tronosha (near his native village), he was engaged as writer and reader of letters to the commander of the insurgents of his district at the beginning of the first Servian rising against the Turks in 1804. Mostly in the position of a scribe to different voyvodes, sometimes as school-teacher, he served his country during the first revolution (1804-1813), at the collapse of which he left Servia, but instead of following Karageorge and other voyvodes to Russia he went to Vienna. There he was introduced to the great Slavonic scholar Yerney Kopitar, who, having heard him recite some Servian national ballads, encouraged him to collect the poems and popular songs, write a grammar of the Servian language, and, if possible, a dictionary. This programme of literary work was adhered to by Karajich, who all his life acknowledged gratefully what he owed to his learned teacher.

In the second half of the 18th and in the beginning of the 19th century all Servian literary efforts were written in a language which was not the Servian vernacular, but an artificial language, of which the foundation was the Old Slavonic in use in the churches, but somewhat Russianized, and mixed with Servian words forced into Russian forms. That language, called by its writers "the Slavonic-Servian," was neither Slavonic nor Servian. It was written in Old Cyrillic letters, many of which had no meaning in the Servian language, while there were several sounds in that language which had no corresponding signs or letters in the Old Slavonic alphabet. The Servian philosopher Dositey Obradovich (who at the end of the 18th century spent some time in London teaching Greek) was the first Servian author to proclaim the principle that the books for the Servian people ought to be written in the language of the people. But the great majority of his contemporaries were of opinion that the language of Servian literature ought to be evolved out of the dead Old Slavonic of the church books. The church naturally decidedly supported this view. Karajich was the great reformer who changed all this. Encouraged by Kopitar, he published in 1814 (2nd ed., 1815) in Vienna his first book, *Mala Prostonarodna Slaveno-Serbska Pyesmaritsa* ("A small collection of Slavonic-Servian songs of the common people"), containing a hundred lyric songs, sung by the peasant women of Servia, and six poems about heroes, or as the Servians call them *Yunachke pesme*, which are generally recited by the blind bards or by peasants. From that time Karajich's literary activity moved on two parallel lines: to give scientific justification and foundation to the adoption of the vernacular Servian as the literary language; and, by collecting and publishing national songs, folk-lore, proverbs, &c., to show the richness of the Servian people's poetical and intellectual gifts, and the wealth and beauty of the Servian language. By his reform of the Servian alphabet and orthography, his Servian grammar and his Servian dictionary, he established the fact that the Servian language contains thirty distinct sounds, for six of which the Old Slavonic alphabet had no special letters. He introduced new letters for those special sounds, at the same time throwing out of the Old Slavonic alphabet eighteen letters for which the Servian language had no use. This reform was strenuously opposed by the church and many conservative authors, who went so far as to induce the Servian government to prohibit the printing of books in new letters, a prohibition removed in 1859. Karajich's alphabet facilitated his reform of orthography, his principle being: *write as you speak, and read as it is written*! Hardly any other language in the civilized world has such a simple, logical, scientific spelling system and orthography as the Servian has in Karajich's system. His first grammatical essay was published in Vienna in 1814, *Pismenitsa Serbskoga yezika po govoru prostoga naroda* ("The grammar of the Servian language as spoken by the common people"). An improved edition appeared in Vienna in 1818, together with his great work *Srpski Ryechnik* (Lexicon Serbico-Germanico-Latinum). This dictionary—containing 26,270 words—was full of important contributions to folk-lore, as Karajich never missed an opportunity to add to the meaning of the word the description of the national customs or popular beliefs connected with it. A new edition of his dictionary, containing 46,270 words, was published at Vienna in 1852. Meanwhile he gave himself earnestly to the work of collecting the "creations of the mind of the Servian common people." He travelled through Servian countries (Servia, Bosnia, Herzegovina, Montenegro, Dalmatia, Syrmia, Croatia), and the result was shown in a largely augmented edition of his *Srpske Narodne Pyesme*, of which the first three volumes appeared at Leipzig in 1823 and 1824, the fourth volume appearing at Vienna in 1833. *Popular Stories and Enigmas* was published in 1821, and *Servian National Proverbs* in 1836. From 1826 to 1834 he was the editor of an annual, called *Danitsa* (The Morning Star), which he filled with important contributions concerning the ethnography and modern history of the Servian people. In 1828 he published a historical monograph, *Milosh Obrenovich, Prince of Servia*; in 1837, in German, *Montenegro and Montenegrins*; in 1867, *The Servian Governing Council of State*. He supplied Leopold Ranke with the materials for his *History of the Servian Revolution*. He also translated the New Testament into Servian, for the British and Foreign Bible Society (Vienna, 1847). Karajich died in Vienna on the 6th of February 1864; and his remains

were transferred to Belgrade in 1897 with great solemnity and at the expense of the government of Servia.

(C. Mɪ.)

KARA-KALPAKS (“Black Caps”), a Mongolo-Tatar people, originally dominant along the east coast of the Aral Sea, where they still number some thousands. They thus form geographically the transition between the northern Kirghiz and the southern Turkomans. Once a powerful nation, they are scattered for the most part in Astrakhan, Perm, Orenburg, in the Caucasian province of Kuban, and in Tobolsk, Siberia, numbering in all about 50,000. These emigrants have crossed much with the alien populations among whom they have settled; but the pure type on the Aral Sea are a tall powerful people, with broad flat faces, large eyes, short noses and heavy chins. Their women are the most beautiful in Turkestan. The name of “Black Caps” is given them in allusion to their high sheepskin hats. They are a peaceful agricultural folk, who have suffered much from their fierce nomad neighbours.

KARAKORUM (Turkish, “black stone débris”), the name of two cities in Mongolia. One of these, according to G. Potanin, was the capital of the Uighur kingdom in the 8th century, and the other was in the 13th century a capital of the steppe monarchy of Mongolia. The same name seems also to have been applied to the Khangai range at the headwaters of the Orkhon. (1) The Uighur Karakorum, also named Mubalik (“bad town”), was situated on the left bank of the Orkhon, in the Talal-khain-dala steppe, to the south-east of Ughei-nor. It was deserted after the fall of the Uighur kingdom, and in the 10th century Abaki, the founder of the Khitan kingdom, planted on its ruins a stone bearing a description of his victories. (2) The Mongolian KARAKORUM was founded at the birth of the Mongolian monarchy established by Jenghiz Khan. A palace for the khan was built in it by Chinese architects in 1234, and its walls were erected in 1235. Plano Carpini visited it in 1246, Rubruquis in 1253, and Marco Polo in 1275. Later, the fourth Mongolian king, Kublai, left Karakorum, in order to reside at Kai-pin-fu, near Peking. When the khan Arik-bog declared himself and Karakorum independent of Kublai-Khan, the latter besieged Karakorum, took it by famine, and probably laid it waste so thoroughly that the town was afterwards forgotten.

The exact sites of the two Mongolian capitals were only established in 1889-1891. Sir H. Yule (*The Book of Marco Polo*, 1871) was the first to distinguish two cities of this name. The Russian traveller Paderin in 1871 visited the Uighur capital (see Turks), named now by the Mongols Kara Balghasun (“black city”) or Khara-kherem (“black wall”), of which only the wall and a tower are in existence, while the streets and ruins outside the wall are seen at a distance of 1¾ m. Paderin’s belief that this was the old Mongol capital has been shown to be incorrect. As to the Mongolian Karakorum, it is identified by several authorities with a site on which towards the close of the 16th century the Buddhist monastery of Erdeni Tsu was built. This monastery lies about 25 m. south by east of the Uighur capital. North and north-east of the monastery are ruins of ancient buildings. Professor D. Pozdnéev, who visited Erdeni Tsu for a second time in 1892, stated that the earthen wall surrounding the monastery might well be part of the wall of the old city. The proper position of the two Karakorums was determined by the expedition of N. Yadrintsev in 1889, and the two expeditions of the Helsingfors Ugro-Finnish society (1890) and the Russian academy of science, under Dr W. Radlov (1891), which were sent out to study Yadrintsev’s discovery.

See *Works* (*Trudy*) *of the Orkhon Expedition* (St Petersburg, 1892); Yule’s *Marco Polo*, edition revised by Henri Cordier (of Paris), vol. i. ch. xlvi. (London, 1903). Cordier confines the use of Karakorum to the Mongol capital; Pozdnéev, *Mongolia and the Mongols*, vol. i. (St Petersburg, 1896); C. W. Campbell, “Journeys in Mongolia,” *Geog. Journ.* vol. xx. (1903), with map. Campbell’s report was printed as a parliamentary paper (*China No. 1, 1904*).

KARA-KUL, the name of two lakes (“Great” and “Little “) of Russian Turkestan, in the province of Ferghana, and on the Pamir plateau. Great Kara-kul, 12 m. long and 10 m. wide (formerly much larger), is under 39° N., to the south of the Trans-Alai range, and lies at an altitude of 13,200 ft.; it is surrounded by high mountains, and is reached from the north over the Kyzyl-art pass (14,015 ft.). A peninsula projecting from the south shore and an island off the north shore divide it into two basins, a smaller eastern one which is shallow, 42 to 63 ft., and a larger western one, which has depths of 726 to 756 ft. It has no drainage outlet. Little Kara-kul lies in the north-east Pamir, or Sarikol, north-west of the Mustagh-ata peak (25,850 ft.), at an altitude of 12,700 ft. It varies in depth from 79 ft. in the south to 50 to 70 ft. in the middle, and 1000 ft. or more in the north. It is a moraine lake; and a stream of the same name flows through it, but is named Ghez in its farther course towards Kashgar in East Turkestan.

KARA-KUM (“Black Sands”), a flat desert in Russian Central Asia. It extends to nearly 110,000 sq. m., and is bounded on the N.W. by the Ust-urt plateau, between the Sea of Aral and the Caspian Sea, on the N.E. by the Amu-darya, on the S. by the Turkoman oases, and on the W. it nearly reaches the Caspian Sea. Only part of this surface is covered with sand. There are broad 676 expanses (*takyrs*) of clay soil upon which water accumulates in the spring; in the summer these are muddy, but later quite dry, and merely a few Solanaceae and bushes grow on them. There is also *shor*, similar to the above but encrusted with salt and gypsum, and relieved only by Solanaceae along their borders. The remainder is occupied with sand, which, according to V. Mainov, assumes five different forms. (1) *Barkhans*, chiefly in the east, which are mounds of loose sand, 15 to 35 ft. high, hoof-shaped, having their gently sloping convex sides turned towards the prevailing winds, and a concave side, 30° to 40° steep, on the opposite slope. They are disposed in groups or chains, and the winds drive them at an average rate of 20 ft. annually towards the south and south-east. Some grass (*Stipa pennata*) and bushes of *saksaul* (*Haloxylon ammodendron*) and other steppe bushes (*e.g. Calligonium*, *Halimodendron* and *Atraphaxis*) grow on them. (2) Mounds of sand, of about the same size, but irregular in shape and of a slightly firmer consistence, mostly bearing the same bushes, and also *Artemisia* and *Tamarix*; they are chiefly met with in the east and south. (3) A sandy desert, slightly undulating, and covered in spring with grass and flowers (*e.g.* tulips, *Rheum*, various Umbelliferae), which are soon burned by the sun; they cover very large spaces in the south-east. (4) Sands disposed in waves from 50 to 70 ft., and occasionally up to 100 ft. high, at a distance of from 200 to 400 ft. from each other; they cover the central portion, and their vegetation is practically the same as in the preceding division. (5) Dunes on the shores of the Caspian, composed of moving sands, 35 to 80 ft. high and devoid of vegetation.

A typical feature of the Kara-kum is the number of “old river beds,” which may have been either channels of tributaries of the Amu and other rivers or depressions which contained elongated salt lakes. Water is only found in wells, 10 to 20 m. apart—sometimes as much as 100 m.—which are dug in the takyrs and give saline water, occasionally unfit to drink, and in pools of rain-water retained in the lower parts of the takyrs. The population of the Kara-kum, consisting of nomad Kirghiz and Turkomans, is very small. The region in the north of the province of Syr-darya, between Lake Aral and Lake Chalkarteniz, is also called Kara-kum.

(P. A. K.; J. T. Be.)

KARAMAN (anc. *Laranda*, a name still used by the Christian inhabitants), a town in the Konia vilayet of Asia Minor, situated in the plain north of Mount Taurus. Pop. 8000. It has few industries and little trade, but the medieval walls, well preserved castle and mosques are interesting, and the old Seljuk *medresse*, or college, is a beautiful building. Karaman is connected with Konia by railway, having a station on the first section of the Bagdad railway. Little is known of its ancient history except that it was destroyed by Perdiccas about 322 B.C., and afterwards became a seat of Isaurian pirates. It was occupied by Frederick Barbarossa in 1190; in 1466 it was captured by Mahommed II., and in 1486 by Bayezid II.

KARAMANIA, formerly an independent inland province in the south of Asia Minor, named after Karaman, the son of an Armenian convert to Islam, who married a daughter of Ala ed-Din Kaikobad, the Seljuk sultan of Rum, and was granted Laranda in fief, and made governor of Selefke, 1223-1245. The name Karaman is, however, Turkoman and that of a powerful tribe, settled apparently near Laranda. The Armenian convert must have been adopted into this. On the collapse of the Seljuk empire, Karaman's grandson, Mahmud, 1279-1319, founded a state, which included Pamphylia, Lycaonia and large parts of Cilicia, Cappadocia and Phrygia. Its capital, Laranda, superseded Konia. This state was frequently at war with the kings of Lesser Armenia, the Lusignan princes of Cyprus and the knights of Rhodes. It was also engaged in a long struggle for supremacy with the Osmanli Turks, which only ended in 1472, when it was definitely annexed by Mahommed II. The Osmanlis divided Karamania into Kharij north, and Ichili south, of the Taurus, and restored Konia to its metropolitan position. The name Karamania is now often given by geographers to Ichili only; but so far as it has had any exact significance in modern times, it has stood for the whole province of Konia. Before the present provincial division was made (1864), Karamania was the eyalet of which Konia was the capital, and it did not extend to the sea, the whole littoral from Adalia eastward being under the pasha of Adana. Nevertheless, in Levantine popular usage at the present day, "Karamania" signifies the coast from Adalia to Messina.

(D. G. H.)

KARAMNASA, a river of northern India, tributary to the Ganges on its right bank, forming the boundary between Bengal and the United Provinces. The name means "destroyer of religious merit," which is explained by more than one legend. To this day all high-caste Hindus have to be carried over without being defiled by the touch of its waters.

KARA MUSTAFA (d. 1683), Turkish vizier, surnamed "Merzifunli," was a son of Uruj Bey, a notable Sipahi of Merzifun (Marsovan), and brother-in-law to Ahmed Kuprili, whom he succeeded as grand vizier in 1676, after having for some years held the office of Kaimmakam or *locum tenens*. His greed and ostentation were equalled by his incapacity, and he behaved with characteristic insolence to the foreign ambassadors, from whom he extorted large bribes. After conducting a campaign in Poland which terminated unfortunately, he gave a ready response to the appeal for aid made by the Hungarians under Imre Thököly (*q.v.*) when they rose against Austria, his hope being to form out of the Habsburg dominions a Mussulman empire of the West, of which he should be the sultan. The plan was foiled in part by his own lack of military skill, but chiefly through the heroic resistance of Vienna and its timely relief by John Sobieski, king of Poland. Kara Mustafa paid for his defeat with his life; he was beheaded at Belgrade in 1683 and his head was brought to the sultan on a silver dish.

Another Kara Mustafa Pasha (d. 1643), who figures in Turkish history, was by birth a Hungarian, who was enrolled in the Janissaries, rose to be Kapudan Pasha under Murad IV., and after the capture of Bagdad was made grand vizier. He was severe, but just and impartial, and strove to effect necessary reforms by reducing the numbers of the Janissaries, improving the coinage, and checking the state expenditure. But the discontent of the Janissaries led to his dismissal and death in 1643.

KARAMZIN, NIKOLAI MIKHAILOVICH (1765-1826), Russian historian, critic, novelist and poet, was born at the village of Mikhailovka, in the government of Orenburg, and not at Simbirsk as many of his English and German biographers incorrectly state, on the 1st of December (old style) 1765. His father was an officer in the Russian army, of Tatar extraction. He was sent to Moscow to study under Professor Schaden, whence he afterwards removed to St Petersburg, where he made the acquaintance of Dmitriev, a Russian poet of some merit, and occupied himself with translating essays by foreign writers into his native language. After residing some time at St Petersburg, he went to Simbirsk, where he lived in retirement till induced to revisit Moscow. There, finding himself in the midst of the society of learned men, he again betook himself to literary work. In 1789 he resolved to travel, and visited Germany, France, Switzerland and England. On his return he published his *Letters of a Russian Traveller*, which met with great success. These letters were first printed in the *Moscow Journal*, which he edited, but were afterwards collected and issued in six volumes (1797-1801). In the same periodical Karamzin also published translations of some of the tales of Marmontel, and some original stories, among which may be mentioned *Poor Liza* and *Natalia the Boyar's Daughter*. In 1794 and 1795 Karamzin abandoned his literary journal, and published a miscellany in two volumes, entitled *Aglaia*, in which appeared, among other things, "The Island of Bornholm" and "Ilia Mourometz," a story based upon the adventures of the well-known hero of many a Russian legend. In 1797-1799 he issued another miscellany or poetical almanac, *The Aonides*, in conjunction with Derzhávin and Dmitriev. In 1798 he compiled *The Pantheon*, a collection of pieces from the works of the most celebrated authors ancient and modern, translated into Russian. Many of his lighter productions were subsequently printed by him in a volume entitled *My Trifles*. In 1802 and 1803 Karamzin edited the journal the *European Messenger*. It was not until after the publication of this work that he realized where his strength lay, and commenced his *History of the Russian Empire*. In order to accomplish the task, he secluded himself for two years; and, on the cause of his retirement becoming known to the emperor Alexander, Karamzin was invited to Tver, where he read to the emperor the first eight volumes of his history. In 1816 he removed to St Petersburg, where he spent the happiest days of his life, enjoying the favour of Alexander, and submitting to him the sheets of his great work, which the emperor read over with him in the gardens of the palace of Tzarskoë Selo. He did not, however, live to carry his work further than the eleventh volume, terminating it at the accession of Michael Romanov in 1613. He died on the 22nd of May (old style) 1826, in the Taurida palace. A monument was erected to his memory at Simbirsk in 1845.

> As an historian Karamzin has deservedly a very high reputation. Till the appearance of his work little had been done in this direction in Russia. The preceding attempt of Tatistchev was merely a rough sketch, inelegant in style, and without the true spirit of criticism. Karamzin was most industrious in accumulating materials, and the notes to his volumes are mines of curious information. The style of his history is elegant and flowing, modelled rather upon the easy sentences of the French prose writers than the long periodical paragraphs of the old Slavonic school. Perhaps Karamzin may justly be censured for the false gloss and romantic air thrown over the early Russian annals, concealing the coarseness and cruelty of the native manners; in this respect he reminds us of Sir Walter Scott, whose writings were at this time creating a great sensation throughout Europe, and probably had their influence upon him. Karamzin appears openly as the panegyrist of the autocracy; indeed, his work has been styled the "Epic of Despotism." He does not hesitate to avow his admiration of Ivan the Terrible, and considers him and his grandfather Ivan III. as the builders up of Russian greatness, a glory which in his earlier writings, perhaps at that time more under the influence of Western ideas, he had assigned to Peter the Great. In the battle-pieces (*e.g.* the description of the field of Koulikovo, the taking of Kazan, &c.) we find considerable powers of description; and the characters of many of the chief personages in the Russian annals are drawn in firm and bold lines. As a critic Karamzin was of great service to his country; in fact he may be regarded as the founder of the review and essay (in the Western style) among the Russians.

KARA SEA, a portion of the Arctic Ocean demarcated, and except on the north-west completely enclosed, by Novaya Zemlya, Vaygach Island and the Siberian coast. It is approached from the west by three straits—Matochkin, between the two islands of Novaya Zemlya, and Kara and Yugor to the north and south of Vaygach Island respectively. On the south-east Kara Bay penetrates deeply into the mainland, and to the west of this the short Kara river enters the sea.

The sea is all shallow, the deepest parts lying off Vaygach Island and the northern part of Novaya Zemlya. It had long the reputation of being almost constantly ice-bound, but after the Norwegian captain Johannesen had demonstrated its accessibility in 1869, and Nordenskiöld had crossed it to the mouth of the Yenisei in 1875, it was considered by many to offer a possible trade route between European Russia and the north of Siberia. But the open season is in any case very short, and the western straits are sometimes ice-bound during the entire year.

KARASU-BAZAR, a town of Russia, in the Crimea and government of Taurida, in 45° 3′ N. and 34° 26′ E., 25 m. E.N.E. of Simferopol. Pop. (1897), 12,961, consisting of Tatars, Armenians, Greeks, Qaraite Jews, and about 200 so-called Krymchaki, *i.e.* Jews who have adopted the Tatar language and dress, and who live chiefly by making morocco leather goods, knives, embroidery and so forth. The site is low, but the town is surrounded by hills, which afford protection from the north wind. The dirty streets full of petty traders, the gloomy bazaar with its multitude of tiny shops, the market squares, the blind alleys, the little gates in the dead courtyard walls, all give the place the stamp of a Tatar or Turkish town. Placed on the high road between Simferopol and Kerch, and in the midst of a country rich in corn land, vineyards and gardens, Karasu-Bazar used to be a chief seat of commercial activity in the Crimea; but it is gradually declining in importance, though still a considerable centre for the export of fruit.

The caves of Akkaya close by give evidence of early occupation of the spot. When in 1736 Khan Feta Ghirai was driven by the Russians from Bakhchi-sarai he settled at Karasu-Bazar, but next year the town was captured, plundered and burned by the Russians.

KARATEGHIN, a country of Central Asia, subject to Bokhara, and consisting of a highland district bounded on the N. by Samarkand and Ferghana (Khokand), on the E. by Ferghana, on the S. by Darvaz, and on the W. by Hissar and other Bokharian provinces. The plateau is traversed by the Surkhab or Vakhsh, a right-hand tributary of the Amu-darya (Oxus). On the N. border run the Hissar and Zarafshan mountains, and on the S. border the Peter I. (Periokhtan) range (24,900 ft.). The area is 8000 sq. m. and the population about 60,000—five-sixths Tajiks, the rest Kara-kirghiz. With the neighbouring lands Karateghin has no communication except during summer, that is, from May to September. The winter climate is extremely severe; snow begins to fall in October and it is May before it disappears. During the warmer months, however, the mountain sides are richly clothed with the foliage of maple, mountain ash, apple, pear and walnut trees; the orchards furnish, not only apples and pears, but peaches, cherries, mulberries and apricots; and the farmers grow sufficient corn to export. Both cattle and horses are of a small and hardy breed. Rough woollen cloth and mohair are woven by the natives, who also make excellent firearms and other weapons. Gold is found in various places and there are salt-pits in the mountains. The chief town, Harm or Garm, is a place of some 2000 inhabitants, situated on a hill on the right bank of the Surkhab.

The native princes, who claimed to be descended from Alexander the Great, were till 1868 practically independent, though their allegiance was claimed in an ineffective way by Khokand, but eventually Bokhara took advantage of their intestine feuds to secure their real submission in 1877.

KARAULI, or Kerowlee, a native state of India, in the Rajputana agency. Area, 1242 sq. m.; pop. (1901), 156,786; estimated revenue about £330,000. Almost the entire territory is composed of hills and broken ground, but there are no lofty peaks, the highest having an elevation of less

than 1400 ft. above sea-level. The Chambal river flows along the south-east boundary of the state. Iron ore and building stone comprise the mineral resources. The prevailing agricultural products are millets, which form the staple food of the people. The only manufactures consist of a little weaving, dyeing, wood-turning and stone-cutting. The principal imports are piece goods, salt, sugar, cotton, buffaloes and bullocks; the exports rice and goats. The feudal aristocracy of the state consists of Jadu Rajputs connected with the ruling house. They pay a tribute in lieu of constant military service, but in case of emergency or on occasions of state display they are bound to attend on the chief with their retainers. The maharaja is the head of the clan, which claims descent from Krishna. Maharaja Bhanwar Pal Deo, who was born in 1862 and succeeded in 1866, was appointed G.C.I.E. in 1897, on the occasion of Queen Victoria's diamond jubilee.

The town of KARAULI had a population in 1901 of 23,482. It dates from 1348, and is well situated in a position naturally defended by ravines on the north and east, while it is further protected by a great wall. The palace of the maharaja is a handsome block of buildings dating mainly from the middle of the 18th century.

KAREN, one of the chief hill races of Burma. The Karens inhabit the central Pegu Yoma range, forming the watershed between the Sittang and Irrawaddy rivers, the Paunglaung range between the Sittang and the Salween, and the eastern slopes of the Arakan Yoma mountains to the west of the Irrawaddy delta. They are supposed to be the descendants of Chinese tribes driven southwards by the pressure of the Shan races, before they were again made to retire into the hills by the expansion of the Môn power. Their own traditions ascribe their original home to the west of the sandy desert of Gobi stretching between China and Tibet. According to the census of 1901 they numbered in all 727,235 persons within British India, divided into the Sgaw, 86,434, the Pwo, 174,070, and the Bghai, 4936, while 457,355 are returned as "unspecified." The Sgaw and Pwo are collectively known as the "White Karens," and chiefly inhabit British territory. They take their name from the colour of their clothes. The Bghai, or "Red Karens," who are supposed by some to be an entirely distinct race, chiefly inhabit the independent hill state of Karen-ni (*q.v.*). The Karen is of a squarer build than the Burman, his skin is fairer, and he has more of the Mongolian obliquity of the eyes. In character also the people differ from the Burmese. They are singularly devoid of humour, they are stolid and cautious, and lack altogether the light gaiety and fascination of the Burmese. They are noted for truthfulness and chastity, but are dirty and addicted to drink. The White Karens furnish perhaps the most notable instance of conversion to Christianity of any native race in the British empire. Prepared by prophecies current among them, and by curious traditions of a biblical flavour, in addition to their antagonism to the dominant Burmese, they embraced with fervour the new creed brought to them by the missionaries, so that out of the 147,525 Christians in Burma according to the census of 1901 upwards of a hundred thousand were Karens. The Red Karens differ considerably from the White Karens. They are the wildest and most lawless of the so-called Karen tribes. Every male belonging to the clan used to have the rising sun tattooed in bright vermilion on his back. The men are small and wizened, but athletic, and have broad reddish-brown faces. Their dress consists of a short pair of breeches, usually of a reddish colour, with black and white stripes interwoven perpendicularly or like a tartan, and a handkerchief is tied round the head. The Karen language is tonal, and belongs to the Siamese-Chinese branch of the Indo-Chinese family.

See D. M. Smeaton, *The Loyal Karens of Burma* (1887); J. Nisbet, *Burma under British Rule* (1901); M. and B. Ferrars, *Burma* (1900); and O'Connor Scott, *The Silken East* (1904).

(J. G. SC.)

KAREN-NI, the country of the Red Karens, a collection of small states, formerly independent, but now feudatory to Burma. It is situated approximately between 18° 50′ and 19° 55′ N. and between 97° 10′ and 97° 50′ E. The tract is bounded on the N. by the Shan states of Möng Pai, Hsatung and Mawkmai; on the E. by Siam; on the S. by the Papun district of Lower Burma; and on the W. a stretch of mountainous country, inhabited by the Bre and various other small tribes, formerly in a state of independence, divides it from the districts of Toungoo and Yamethin. It is divided in a general way into eastern and western Karen-ni; the former consisting

of one state, Gantarawadi, with an approximate area of 2500 sq. m.; the latter of the four small states of Kyebogyi, area about 350 sq. m.; Bawlake, 200 sq. m.; Nammekon, 50 sq. m.; and Naungpale, about 30 sq. m. The small states of western Karen-ni were formerly all subject to Bawlake, but the subordination has now ceased. Karen-ni consists of two widely differing tracts of country, which roughly mark now, and formerly actually did mark, the division into east and west. Gantarawadi has, however, encroached westwards beyond the boundaries which nature would assign to it. The first of these two divisions is the southern portion of the valley of the Hpilu, or Balu stream, an open, fairly level plain, well watered and in some parts swampy. The second division is a series of chains of hills, intersected by deep valleys, through which run the two main rivers, the Salween and the Pawn, and their feeder streams. Many of the latter are dried up in the hot season and only flow freely during the rains. The whole country being hilly, the most conspicuous ridge is that lying between the Pawn and the Salween, which has an average altitude of 5000 ft. It is crossed by several tracks, passable for pack-animals, the most in use being the road between Sawlon, the capital of Gantarawadi and Man Maü. The principal peak east of the Salween is on the Loi Lan ridge, 7109 ft. above mean sea-level. Parts of this ridge form the boundary between eastern Karen-ni and Mawkmai on the west and Siam on the east. It falls away rapidly to the south, and at Pang Salang is crossed at a height of 2200 ft. by the road from Hsataw to Mehawnghsawn. West of the Balu valley the continuation of the eastern rim of the Myelat plateau rises in Loi Nangpa to about 5000 ft. The Nam Pawn is a large river, with an average breadth of 100 yds., but is unnavigable owing to its rocky bed. Even timber cannot be floated down it without the assistance of elephants. The Salween throughout Karen-ni is navigated by large native craft. Its tributary, the Me Pai, on the eastern bank, is navigable as far as Mehawnghsawn in Siamese territory. The Balu stream flows out of the Inle lake, and is navigable from that point to close on Lawpita, where it sinks into the ground in a marsh or succession of funnel holes. Its breadth averages 50 yds., and its depth is 15 ft. in some places.

The chief tribes are the Red Karens (24,043), Bres (3500), and Padaungs (1867). Total revenue, Rs. 37,000. An agent of the British government, with a guard of military police, is posted at the village of Loikaw. Little of the history of the Red Karens is known; but it appears to be generally admitted that Bawlake was originally the chief state of the whole country, east and west, but eastern Karen-ni under Papaw-gyi early became the most powerful. Slaving raids far into the Shan states brought on invasions from Burma, which, however, were not very successful. Eastern Karen-ni was never reduced until Sawlapaw, having defied the British government, was overcome and deposed by General Collett in the beginning of 1889. Sawlawi was then appointed myoza, and received a *sanad*, or patent of appointment, on the same terms as the chiefs of the Shan states. The independence of the Western Karen-ni states had been guaranteed by the British government in a treaty with King Mindon in 1875. They were, however, formally recognized as feudatories in 1892 and were presented with *sanads* on the 23rd of January of that year. Gantarawadi pays a regular tribute of Rs. 5000 yearly, whereas these chieflets pay an annual *kadaw*, or *nuzzur*, of about Rs. 100. They are forbidden to carry out a sentence of death passed on a criminal without the sanction of the superintendent of the southern Shan states, but otherwise retain nearly all their customary law.

Tin, or what is called tin, is worked in Bawlake. It appears, however, to be very impure. It is worked intermittently by White Karens on the upper waters of the Hkemapyu stream. Rubies, spinels and other stones are found in the upper Tu valley and in the west of Nammekon state, but they are of inferior quality. The trade in teak is the chief or only source of wealth in Karen-ni. The largest and most important forests are those on the left bank of the Salween. Others lie on both banks of the Nam Pawn, and in western Karen-ni on the Nam Tu. The yearly out-turn is estimated at over 20,000 logs, and forest officers have estimated that an annual out-turn of 9000 logs might be kept up without injury to the forests. Some quantity of cutch is exported, as also stick-lac, which the Red Karens graft so as to foster the production. Other valuable forest produce exists, but is not exported. Rice, areca-nuts, and betel-vine leaf are the chief agricultural products. The Red Karen women weave their own and their husbands' clothing. A characteristic manufacture is the *pa-si* or Karen metal drum, which is made at Ngwedaung. These drums are from 2½ to 3 ft. across the boss, with sides of about the same depth. The sound is out of proportion to the metal used, and is inferior to that of the Shan and Burmese gongs. It is thought that the population of Karen-ni is steadily decreasing. The birth-rate of the people is considered to exceed the death-rate by very little, and the Red Karen habit of life is most unwholesome. Numbers have enlisted in the Burma police, but there are various opinions as to their value.

(J. G. Sc.)

KARIKAL, a French settlement in India, situated on the south-east coast, within the limits of

Tanjore district, with an area of 53 sq. m., and a population (1901) of 56,595. The site was promised to the French by the Tanjore raja in 1738, in return for services rendered, but was only obtained by them by force in 1739. It was captured by the British in 1760, restored in 1765, again taken in 1768, and finally restored in 1817. The town is neatly built on one of the mouths of the Cauvery, and carries on a brisk trade with Ceylon, exporting rice and importing chiefly European articles and timber. A *chef de l'administration*, subordinate to the government at Pondicherry, is in charge of the settlement, and there is a tribunal of first instance.

KARLI, a village of British India, in the Poona district of the Bombay presidency, famous for its rock caves. Pop. (1901), 903. The great cave of Karli is said by Fergusson to be without exception the largest and finest *chaitya* cave in India; it was excavated at a time when the style was in its greatest purity, and is splendidly preserved. The great *chaitya* hall is 126 ft. long, 45 ft. 7 in. wide, and about 46 ft. high. A row of ornamental columns rises on either side to the ribbed teak roof, and at the far end of the nave is a massive *dagoba*. Dating from the beginning of the Christian era or earlier, this cave has a wooden roof, which repeats the pattern of the walls, and which Fergusson considers to be part of the original design. Since wood rapidly deteriorates in India owing to the climate and the ravages of white ants, the state of preservation of this roof is remarkable.

KARLOWITZ, or Carlowitz (Hungarian, *Karlóeza*; Croatian, Karlovci), a city of Croatia-Slavonia, in the county of Syrmia; on the right bank of the Danube, and on the railway from Peterwardein, 6 m. N.W. to Belgrade. Pop. (1900), 5643. Karlowitz is the seat of an Orthodox metropolitan, and has several churches and schools, and a hospital. The fruit-farms and vineyards of the Fruška Gora, a range of hills to the south, yield excellent plum brandy and red wine. An obelisk at Slankamen, 13 m. E. by S., commemorates the defeat of the Turks by Louis of Baden, in 1691. The treaty of Karlowitz, between Austria, Turkey, Poland and Venice, was concluded in 1699; in 1848-1849 the city was the headquarters of Servian opposition to Hungary. It was included, until 1881, in the Military Frontier.

KARLSKRONA [Carlscrona,] a seaport of Sweden, on the Baltic coast, chief town of the district (*län*) of Blekinge, and headquarters of the Swedish navy. Pop. (1900), 23,955. It is pleasantly situated upon islands and the mainland, 290 m. S.S.W. of Stockholm by rail. The harbour is capacious and secure, with a sufficient depth of water for the largest vessels. It has three entrances; the principal, and the only one practicable for large vessels, is to the south of the town, and is defended by two strong forts, at Drottningskär on the island of Aspö, and on the islet of Kungsholm. The dry docks, of great extent, are cut out of the solid granite. There is slip-accommodation for large vessels. Karlskrona is the seat of the Royal Naval Society, and has a navy-arsenal and hospital, and naval and other schools. Charles XI., the founder of the town as naval headquarters (1680), is commemorated by a bronze statue (1897). There are factories for naval equipments, galvanized metal goods, felt hats, canvas, leather and rice, and breweries and granite quarries. Exports are granite and timber; imports, coal, flour, provisions, hides and machinery.

KARLSRUHE, or Carlsruhe, a city of Germany, capital of the grand-duchy of Baden, 33 m. S.W. of Heidelberg, on the railway Frankfort-on-Main-Basel, and 39 m. N.W. of Stuttgart. Pop. (1895), 84,030; (1905), 111,200. It stands on an elevated plain, 5 m. E. of the Rhine and on the fringe of the Hardtwald forest. Karlsruhe takes its name from Karl Wilhelm, margrave of Baden, who, owing to disputes with the citizens of Durlach, erected here in 1715 a hunting seat, around which the town has been built. The city is surrounded by beautiful parks and gardens. The palace (Schloss), built in 1751-1776 on the site of the previous erection of 1715, is a plain building in the old French style, composed of a centre and two wings, presenting nothing remarkable except the octagon tower (*Bleiturm*), from the summit of which a splendid view of the city and surrounding country is obtained, and the marble saloon, in which the meridian of Cassini was fixed or drawn. In front of the palace is the Great Circle, a semicircular line of buildings, containing the government offices. From the palace the principal streets, fourteen in number, radiate in the form of an expanded fan, in a S.E., S. and S.W. direction, and are again intersected by parallel streets. This fan-like plan of the older city has, however, been abandoned in the more modern extensions. Karlsruhe has several fine public squares, the principal of which are the Schlossplatz, with Schwanthaler's statue of the grand duke Karl Friedrich in the centre, and market square (Marktplatz), with a fountain and a statue of Louis, grand duke of Baden. In the centre of the Rondelplatz is an obelisk in honour of the grand duke Karl Wilhelm. The finest street is the Kaiserstrasse, running from east to west and having a length of a mile and a half and a uniform breadth of 72 ft. In it are several of the chief public buildings, notably the technical high school, the arsenal and the post office. Among other notable buildings are the town hall; the theatre; the hall of representatives; the mint; the joint museum of the grand-ducal and national collections (natural history, archaeology, ethnology, art and a library of over 150,000 volumes); the palace of the heir-apparent, a late Renaissance building of 1891-1896; the imperial bank (1893); the national industrial hall, with an exhibition of machinery; the new law courts; and the hall of fine arts, which shelters a good picture gallery. The city has six Evangelical and four Roman Catholic Churches. The most noteworthy of these are the Evangelical town church, the burial-place of the margraves of Baden; the Christuskirche, and the Bernharduskirche. Karlsruhe possesses further the Zähringen museum of curiosities, which is in the left wing of the Schloss; an architectural school (1891); industrial art school and museum; cadet school (1892); botanical and electro-technical institutes; and horticultural and agricultural schools. Of its recent public monuments may be mentioned one to Joseph Victor von Scheffel (1826-1886); a bronze equestrian statue of the emperor William I. (1896); and a memorial of the 1870-71 war. Karlsruhe is the headquarters of the XIV. German army corps. Since 1870 the industry of the city has grown rapidly, as well as the city itself. There are large railway workshops; and the principal branches of industry are the making of locomotives, carriages, tools and machinery, jewelry, furniture, gloves, cement, carpets, perfumery, tobacco and beer. There is an important arms factory. Maxau, on the Rhine, serves as the river port of Karlsruhe and is connected with it by a canal finished in 1901.

See Fecht, *Geschichte der Haupt- und Residenzstadt Karlsruhe* (Karlsruhe, 1887); F. von Weech, *Karlsruhe, Geschichte der Stadt und ihrer Verwaltung* (Karlsruhe, 1893-1902); Naeher, *Die Umgebung der Residenz Karlsruhe* (Karlsruhe, 1888); and the annual *Chronik der Haupt- und Residenzstadt Karlsruhe.*

KARLSTAD [Carlstad], a town of Sweden, the capital of the district (*län*) of Vermland, on the island of Tingvalla under the northern shore of Lake Vener, 205 m. W. of Stockholm by the Christiania railway. Pop. (1900), 11,869. The fine Klar River here enters the lake, descending from the mountains of the frontier. To the north-west lies the Fryksdal or valley of the Nors River, containing three beautiful lakes and fancifully named the "Swedish Switzerland." In this and other parts of the district are numerous iron-works. Karlstad was founded in 1584. It is the seat of a bishop and has a cathedral. Trade is carried on by way of the lake and the Göta canal. There are mechanical works, match factories and stockinet factories, and a mineral spring rich in iron, the water of which is bottled for export. Under the constitution of united Sweden and Norway, in the event of the necessity of electing a Regent and the disagreement of the parliaments of the two countries, Karlstad was indicated as the meeting-place of a delegacy for the purpose. Here, on the 31st of August 1905 the conference met to decide upon the severance of the union between Sweden and Norway, the delegates concluding their work on the 23rd of September.

KARLSTADT or Carlstadt (Hungarian, *Károlyváros*; Croatian, *Karlovac*), a royal free city, municipality and garrison town in the county of Agram, Croatia-Slavonia; standing on hilly ground beside the river Kulpa, which here receives the Korana and the Dobra. Pop. (1900), 7396. Karlstadt is on the railway from Agram to Fiume. It consists of the fortress, now obsolete, the inner town and the suburbs. Besides the Roman Catholic and Orthodox churches, its chief buildings are the Franciscan monastery, law-courts and several large schools, including one for military cadets. Karlstadt has a considerable transit trade in grain, wine, spirits and honey, and manufactures the liqueur called *rosoglio*.

KARMA, sometimes written Karman, a Sanskrit noun (from the root *kri*, to do), meaning deed or action. In addition to this simple meaning it has also, both in the philosophical and the colloquial speech of India a technical meaning, denoting "a person's deeds as determining his future lot." This is not merely in the vague sense that on the whole good will be rewarded and evil punished, but that every single act must work out to the uttermost its inevitable consequences, and receive its retribution, however many ages the process may require. Every part of the material universe—man, woman, insect, tree, stone, or whatever it be—is the dwelling of an eternal spirit that is working out its destiny, and while receiving reward and punishment for the past is laying up reward and punishment for the future. This view of existence as an endless and concomitant sowing and reaping is accepted by learned and unlearned alike as accounting for those inequalities in human life which might otherwise lead men to doubt the justice of God. Every act of every person has not only a moral value producing merit or demerit, but also an inherent power which works out its fitting reward or punishment. To the Hindu this does not make heaven and hell unnecessary. These two exist in many forms more or less grotesque, and after death the soul passes to one of them and there receives its due; but that existence too is marked by desire and action, and is therefore productive of merit or demerit, and as the soul is thus still entangled in the meshes of karma it must again assume an earthly garb and continue the strife. Salvation is to the Hindu simply deliverance from the power of karma, and each of the philosophic systems has its own method of obtaining it. The last book of the Laws of Manu deals with *karmaphalam*, "the fruit of karma," and gives many curious details of the way in which sin is punished and merit rewarded. The origin of the doctrine cannot be traced with certainty, but there is little doubt that it is post-vedic, and that it was readily accepted by Buddha in the 6th century B.C. As he did not believe in the existence of soul he had to modify the doctrine (see Buddhism).

KÁRMÁN, JÓZSEF (1769-1795), Hungarian author, was born at Losoncz on the 14th of March 1769, the son of a Calvinist pastor. He was educated at Losoncz and Pest, whence he migrated to Vienna. There he made the acquaintance of the beautiful and eccentric Countess Markovics, who was for a time his mistress, but she was not, as has often been supposed, the heroine of his famous novel *Fanni Hagyománai* (Fanny's testament). Subsequently he settled in Pest as a lawyer. His sensibility, social charm, liberal ideas (he was one of the earliest of the Magyar freemasons) and personal beauty, opened the doors of the best houses to him. He was generally known as the Pest Alcibiades, and was especially at home in the salons of the Protestant magnates. In 1792, together with Count Ráday, he founded the first theatrical society at Buda. He maintained that Pest, not Pressburg, should be the literary centre of Hungary, and in 1794 founded the first Hungarian quarterly, *Urania*, but it met with little support and ceased to exist in 1795, after three volumes had appeared. Kármán, who had long been suffering from an incurable disease, died in the same year. The most important contribution to *Urania* was his

sentimental novel, *Fanni Hagyományai*, much in the style of *La nouvelle Héloïse* and *Werther*, the most exquisite product of Hungarian prose in the 18th century and one of the finest psychological romances in the literature. Kármán also wrote two satires and fragments of an historical novel, while his literary programme is set forth in his dissertation *Anemzet csinosodása*.

Kármán's collected works were published in Abafi's *Nemzeti Könyvtár* (Pest, 1878), &c., preceded by a life of Kármán. See F. Baráth, *Joseph Kármán* (Hung., Vas. Ujs, 1874); Zsolt Beöthy, article on Kármán in *Képes Irodalomtörtenet* (Budapest, 1894).

(R. N. B.)

KARNAK, a village in Upper Egypt (pop. 1907, 12,585), which has given its name to the northern half of the ruins of Thebes on the east bank of the Nile, the southern being known as Luxor (*q.v.*). The Karnak ruins comprise three great enclosures built of crude brick. The northernmost and smallest of these contained a temple of the god Mont, built by Amenophis III., and restored by Rameses II. and the Ptolemies. Except a well-preserved gateway dating from the reign of Ptolemy Euergetes I., little more than the plan of the foundations is traceable. Its axis, the line of which is continued beyond the enclosure wall by an avenue of sphinxes, pointed down-stream (N.E.). The southern enclosure contained a temple of the goddess Mūt, also built by Amenophis III., and almost as ruinous as the last, but on a much larger scale. At the back is the sacred lake in the shape of a horse-shoe. The axis of the temple runs approximately northward, and is continued by a great avenue of rams to the southern pylons of the central enclosure. This last is of vast dimensions, forming approximately a square of 1500 ft., and it contains the greatest of all known temples, the Karnak temple of Ammon (see ARCHITECTURE, sect. "Egyptian," with plan).

Inside and outside each of these enclosures there were a number of subsidiary temples and shrines, mostly erected by individual kings to special deities. The triad of Thebes was formed by Ammon, his wife Mūt and their son Khons. The large temple of Khons is in the enclosure of the Ammon temple, and the temple of Mūt, as already stated, is connected with the latter by the avenue of rams. The Mont temple, on the other hand, is isolated from the others and turned away from them; it is smaller than that of Khons. Mont, however, may perhaps be considered a special god of Thebes; he certainly was a great god from very ancient times in the immediate neighbourhood, his seats being about 4 m. N.E. at Medamot, the ancient Madu, and about 10 m. S.W. on the west bank at Hermonthis.

It is probable that a temple of Ammon existed at Karnak under the Old Kingdom, if not in the prehistoric age; but it was unimportant, and no trace of it has been discovered. Slight remains of a considerable temple of the Middle Kingdom survive behind the shrine of the great temple, and numbers of fine statues of the twelfth and later dynasties have been found; two of these were placed against the later seventh pylon, while a large number were buried in a great pit, in the area behind that pylon, which has yielded an enormous number of valuable and interesting monuments reaching to the age of the Ptolemies. The axis of the early temple lay from E. to W., and was followed by the main line of the later growth; but at the beginning of the eighteenth dynasty, Amenophis I. built a temple south of the west front of the old one, and at right angles to it, and thus started a new axis which was later developed in the series of pylons VII.-X., and the avenue to the temple of Mūt. The VIIIth pylon in particular was built by Hatshepsut, probably as an approach to this temple of Amenophis, but eventually Tethmosis III. cleared the latter away entirely. Thebes was then the royal residence, and Ammon of Karnak was the great god of the state. Tethmosis I. built a court round the temple of the Middle Kingdom, entered through a pylon (No. V.), and later added the pylon No. IV. with obelisks in front of it. Hatshepsut placed two splendid obelisks between the Pylons IV. and V., and built a shrine in the court of Tethmosis I., in front of the old temple. Tethmosis III., greatest of the Pharaohs, remodelled the buildings about the obelisks of his unloved sister with the deliberate intention of hiding them from view, and largely reconstructed the surroundings of the court. At a later date, after his wars were over, he altered Hatshepsut's sanctuary, engraving on the walls about it a record of his campaigns; to this time also is to be attributed the erection of a great festival hall at the back of the temple. The small innermost pylon (No. VI.) is likewise the work of Tethmosis III. Amenophis III., though so great a builder at Thebes, seems to have contented himself with erecting a great pylon (No. III.) at the west end. The closely crowded succession of broad pylons here suggests a want of space for westward expansion, and this is perhaps explained by a trace of a quay found by Legrain in 1905 near the southern line of pylons; a branch of the Nile or a large canal may have limited the growth. As has been stated, Tethmosis III. continued on the southern axis; he destroyed the temple of Amenophis I. and erected a larger pylon (No. VII.) to the north of Hatshepsut's No. VIII.

To these Haremheb added two great pylons and the long avenue of ram-figures, changing the axis slightly so as to lead direct to the temple of Mūt built by Amenophis III. All of these southern pylons are well spaced. In the angle between these pylons and the main temple was the great rectangular sacred lake. By this time the temple of Karnak had attained to little more than half of its ultimate length from east to west.

With the XIXth Dynasty there is a notable change perhaps due to the filling of the hypothetical canal. No more was added on the southern line of building, but westward Rameses I. erected pylon No. II. at an ample distance from that of Amenophis III., and Seti I. and Rameses II. utilized the space between for their immense Hall of Columns, one of the most celebrated achievements of Egyptian architecture. The materials of which the pylon is composed bear witness to a temple having stood near by of the heretic and unacknowledged kings of the XVIIIth Dynasty. Haremheb's pylon No. IX. was likewise constructed out of the ruins of a temple dedicated by Amenophis IV. (Akhenaten) to the sun-god Harmakhis. Rameses III. built a fine temple, still well preserved, to Ammon at right angles to the axis westward of pylon No. II.; Sheshonk I. (Dynasty XXII.) commenced a great colonnaded court in front of the pylon, enclosing part of this temple and a smaller triple shrine built by Seti II. In the centre of the court Tirhaka (Tirhaka, Dynasty XXV.) set up huge columns 64 ft. high, rivalling those of the central aisle in the Hall of Columns, for some building now destroyed. A vast unfinished pylon at the west end (No. I.), 370 ft. wide and 142½ ft. high, is of later date than the court, and is usually attributed to the Ptolemaic age. It will be observed that the successive pylons diminish in size from the outside inwards. Portions of the solid crude-brick scaffolding are still seen banked against this pylon. About 100 metres west of it is a stone quay, on the platform of which stood a pair of obelisks of Seti II.; numerous graffiti recording the height of the Nile from the XXIst to the XXVIth Dynasties are engraved on the quay. 681

Besides the kings named above, numbers of others contributed in greater or less measure to the building or decoration of the colossal temple. Alexander the Great restored a chamber in the festival hall of Tethmosis III., and Ptolemy Soter built the central shrine of granite in the name of Philip Arrhidaeus. The walls throughout, as usually in Egyptian temples, are covered with scenes and inscriptions, many of these, such as those which record the annals of Tethmosis III., the campaign of Seti I. in Syria, the exploit of Rameses II. at the battle of Kadesh and his treaty with the Hittites, and the dedication of Sheshonk's victories to Ammon, are of great historical importance. Several large stelae with interesting inscriptions have been found in the ruins, and statues of many ages of workmanship. In December 1903 M. Legrain, who has been engaged for several years in clearing the temple area systematically, first tapped an immense deposit of colossal statues, stelae and other votive objects large and small in the space between pylon No. VII. and the great hypostyle hall. After three seasons' work, much of it in deep water, 750 large monuments have been extracted, while the small figures, &c. in bronze and other materials amount to nearly 20,000. The value of the find, both from the artistic and historical standpoints, is immense. The purpose of the deposit is still in doubt; many of the objects are of the finest materials and finest workmanship, and in perfect preservation: even precious metals are not absent. Multitudes of objects in wood, ivory, &c., have decayed beyond recovery. That all were waste pieces seems incredible. They are found lying in the utmost confusion; in date they range from the XIIth Dynasty to the Ptolemaic period.

The inundation annually reaches the floor of the temple, and the saltpetre produced from the organic matter about the ruins, annually melting and crystallizing, has disintegrated the soft sandstone in the lower courses of the walls and the lower drums and bases of the columns. There is moreover no solid foundation in any part of the temple. Slight falls of masonry have taken place from time to time, and the accumulation of rubbish was the only thing that prevented a great disaster. Repairs, often on a large scale, have therefore gone on side by side with the clearance, especially since the fall of many columns in the great hall in 1899. All the columns which fell in that year were re-erected by 1908.

The temple of Khons, in the S.W. corner of the great enclosure, is approached by an avenue of rams, and entered through a fine pylon erected by Euergetes I. It was built by Rameses III. and his successors of the XXth Dynasty, with Hrihōr of Dynasty XXI. Excavations in the opposite S.E. corner have revealed flint weapons and other sepulchral remains of the earliest periods, proving that the history of Thebes goes back to a remote antiquity.

See Baedeker's *Handbook for Egypt*; also *Description de l'Égypte. Atlas, Antiquités* (tome iii.); A. Mariette, *Karnak, Étude topographique et archéologique*; L. Borchardt, *Zur Baugeschichte des Ammontempels von Karnak*; G. Legrain in *Recueil des travaux rélatifs à l'arch. Égypt.*, vol. xxvii. &c.; and reports in *Annales du service des antiquités de l'Égypte*.

(F. Ll. G.)

KARNAL, a town and district of British India, in the Delhi division of the Punjab. The town is 7 m. from the right bank of the Jumna, with a railway station 76 m. N. of Delhi. Pop. (1901), 23,559. There are manufactures of cotton cloth and boots, besides considerable local trade and an annual horse fair.

The District of Karnal stretches along the right bank of the Jumna, north of Delhi. It is entirely an alluvial plain, but is crossed by the low uplift of the watershed between the Indian Ocean and the Bay of Bengal. Area, 3153 sq. m.; pop. (1901), 883,225, showing an increase of nearly 3% in the decade. The principal crops are millets, wheat, pulse, rice, cotton and sugar-cane. There are several factories for ginning and pressing cotton. The district is traversed by the Delhi-Umballa-Kalka railway, and also by the Western Jumna canal. It suffered from famine in 1896-1897, and again to some extent in 1899-1900.

No district of India can boast of a more ancient history than Karnal, as almost every town or stream is connected with the legends of the *Mahabharata*. The town of Karnal itself is said to owe its foundation to Raja Karna, the mythical champion of the Kauravas in the great war which forms the theme of the national epic. Panipat, in the south of the district, is said to have been one of the pledges demanded from Duryodhana by Yudisthira as the price of peace in that famous conflict. In historical times the plains of Panipat have three times proved the theatre of battles which decided the fate of Upper India. It was here that Ibrahim Lodi and his vast host were defeated in 1526 by the veteran army of Baber; in 1556 Akbar reasserted the claims of his family on the same battlefield against the Hindu general of the house of Adil Shah, which had driven the heirs of Baber from the throne for a brief interval; and at Panipat too, on the 7th of January 1761, the Mahratta confederation was defeated by Ahmad Shah Durani. During the troublous period which then ensued the Sikhs managed to introduce themselves, and in 1767 one of their chieftains, Desu Singh, appropriated the fort of Kaithal, which had been built during the reign of Akbar. His descendants, the bhais of Kaithal, were reckoned amongst the most important Cis-Sutlej princes. Different portions of this district have lapsed from time to time into the hands of the British.

KÁROLYI, ALOYS, Count (1825-1889), Austro-Hungarian diplomatist, was born in Vienna on the 8th of August 1825. The greatness of the Hungarian family of Károlyi dates from the time of Alexander Károlyi (1668-1743), one of the generals of Francis Rákóczy II., who in 1711 negotiated the peace of Szatmár between the insurgent Hungarians and the new king, the emperor Charles VI., was made a count of the Empire in 1712, and subsequently became a field marshal in the imperial army. Aloys Károlyi entered the Austrian diplomatic service, and was attached successively to embassies at various European capitals. In 1858 he was sent to St Petersburg on a special mission to seek the support of Russia against Napoleon III. He was ambassador at Berlin in 1866 at the time of the rupture between Prussia and Austria, and after the Seven Weeks' War was charged with the negotiation of the preliminaries of peace at Nikolsburg. He was again sent to Berlin in 1871, acted as second plenipotentiary at the Berlin congress of 1878, and was sent in the same year to London, where he represented Austria for ten years. He died on the 2nd of December 1889 at Tótmegyer.

KAROSS, a cloak made of sheepskin, or the hide of other animals, with the hair left on. It is properly confined to the coat of skin without sleeves worn by the Hottentots and Bushmen of South Africa. These karosses are now often replaced by a blanket. Their chiefs wore karosses of the skin of the wild cat, leopard or caracal. The word is also loosely applied to the cloaks of leopard-skin worn by the chiefs and principal men of the Kaffir tribes. Kaross is probably either a genuine Hottentot word, or else an adaptation of the Dutch *kuras* (Portuguese *couraça*), a cuirass. In a vocabulary dated 1673 *karos* is described as a "corrupt Dutch word."

KARR, JEAN BAPTISTE ALPHONSE (1808-1890), French critic and novelist, was born in Paris, on the 24th of November 1808, and after being educated at the Collège Bourbon, became a teacher there. In 1832 he published a novel, *Sous les tilleuls*, characterized by an attractive originality and a delightful freshness of personal sentiment. A second novel, *Une heure trop tard*, followed next year, and was succeeded by many other popular works. His *Vendredi soir* (1835) and *Le Chemin le plus court* (1836) continued the vein of autobiographical romance with which he had made his first success. *Géneviève* (1838) is one of his best stories, and his *Voyage autour de mon jardin* (1845) was deservedly popular. Others were *Feu Bressier* (1848), and *Fort en thème* (1853), which had some influence in stimulating educational reform. In 1839 Alphonse Karr, who was essentially a brilliant journalist, became editor of *Le Figaro*, to which he had been a constant contributor; and he also started a monthly journal, *Les Guêpes*, of a keenly satirical tone, a publication which brought him the reputation of a somewhat bitter wit. His epigrams were frequently quoted; *e.g.* "plus ça change, plus c'est la même chose," and, on the proposal to abolish capital punishment, "je veux bien que messieurs les assassins commencent." In 1848 he founded *Le Journal*. In 1855 he went to live at Nice, where he indulged his predilections for floriculture, and gave his name to more than one new variety. Indeed he practically founded the trade in cut flowers on the Riviera. He was also devoted to fishing, and in *Les Soirées de Sainte-Adresse* (1853) and *Au bord de la mer* (1860) he made use of his experiences. His reminiscences, *Livre de bord*, were published in 1879-1880. He died at St Raphaël (Var), on the 29th of September 1890.

KARRER, FELIX (1825-1903), Austrian geologist, was born in Venice on the 11th of March 1825. He was educated in Vienna, and served for a time in the war department, but he retired from the public service at the age of thirty-two, and devoted himself to science. He made especial studies of the Tertiary formations and fossils of the Vienna Basin, and investigated the geological relations of the thermal and other springs in that region. He became an authority on the foraminifera, on which subject he published numerous papers. He wrote also a little book entitled *Der Boden der Hauptstädte Europas* (1881). He died in Vienna on the 19th of April 1903.

KARROO, two extensive plateaus in the Cape province, South Africa, known respectively as the Great and Little Karroo. Karroo is a corruption of *Karusa*, a Hottentot word meaning dry, barren, and its use as a place-name indicates the character of the plateaus so designated. They form the two intermediate "steps" between the coast-lands and the inner plateau which constitutes the largest part of South Africa. The Little (also called Southern) Karroo is the table-land nearest the southern coast-line of the Cape, and is bounded north by the Zwaarteberg, which separates it from the Great Karroo. From west to east the Little Karroo has a length of some 200 m., whilst its average width is 30 m. West of the Zwaarteberg the Little Karroo merges into the Great Karroo. Eastward it is limited by the hills which almost reach the sea in the direction of St Francis and Algoa Bays. The Great Karroo is of much larger extent. Bounded south, as stated, by the Zwaarteberg, further east by the Zuurberg (of the coast chain), its northern limit is the mountain range which, under various names, such as Nieuwveld and Sneeuwberg, forms the wall of the inner plateau. To the south-west and west it is bounded by the Hex River Mountains and the Cold Bokkeveld, eastward by the Great Fish River. West to east it extends fully 350 m. in a straight line, varying in breadth from more than 80 to less than 40 m. Whilst the Little Karroo is divided by a chain of hills which run across it from east to west, and varies in altitude from 1000 to 2000 ft., the Great Karroo has more the aspect of a vast plain and has a level of from 2000 to 3000 ft. The total area of the Karroo plateaus is stated to be over

100,000 sq. m. The plains are dotted with low ranges of *kopjes*. The chief characteristics of the Karroo are the absence of running water during a great part of the year and the consequent parched aspect of the country. There is little vegetation save stunted shrubs, such as the mimosa (which generally marks the river beds), wild pomegranate, and wax heaths, known collectively as Karroo bush. After the early rains the bush bursts into gorgeous purple and yellow blossoms and vivid greens, affording striking evidence of the fertility of the soil. Such parts of the Karroo as are under perennial irrigation are among the most productive lands in South Africa. Even the parched bush provides sufficient nourishment for millions of sheep and goats. There are also numerous ostrich farms, in particular in the districts of Oudtshoorn and Ladismith in the Little Karroo, where lucerne grows with extraordinary luxuriance. The Karroo is admirably adapted to sufferers from pulmonary complaints. The dryness of the air tempers the heat of summer, which reaches in January a mean maximum of 87° F., whilst July, the coldest month, has a mean minimum of 36° F. A marked feature of the climate is the great daily range (nearly 30°) in temperature; the Karroo towns are also subject to violent dust storms. Game, formerly plentiful, has been, with the exception of buck, almost exterminated. In a looser sense the term Karroo is also used of the vast northern plains of the Cape which are part of the inner table-land of the continent. (See Cape Colony.)

KARS, a province of Russian Transcaucasia, having the governments of Kutais and Tiflis on the N., those of Tiflis and Erivan on the E., and Asiatic Turkey on the S. and W. Its area amounts to 7410 sq. m. It is a mountainous, or rather a highland, country, being in reality a plateau, with ranges of mountains running across it. The northern border is formed by the Arzyan range, a branch of the Ajari Mts., which attains altitudes of over 9000 ft. In the south the Kara-dagh reach 10,270 ft. in Mount Ala-dagh, and the Agry-dagh 10,720 ft. in Mount Ashakh; and in the middle Allah-akhbar rises to 10,215 ft. The passes which connect valley with valley often lie at considerable altitudes, the average of those in the S.E. being 9000 ft. Chaldir-gol (altitude 6520 ft.) and one or two other smaller lakes lie towards the N.E.; the Chaldir-gol is overhung on the S.W. by the Kysyr-dagh (10,470 ft.). The east side of the province is throughout demarcated by the Arpa-chai, which receives from the right the Kars river, and as it leaves the province at its S.E. corner joins the Aras. The Kura rises within the province not far from the Kysyr-dagh and flows across it westwards, then eastwards and north-eastwards, quitting it in the north-east. The winters are very severe. The towns of Kaghyshman (4620 ft.) and Sarykamish (7800 ft.) have a winter temperature like that of Finland, and at the latter place, with an annual mean (35° F.) equal to that of Hammerfest in the extreme north of Norway, the thermometer goes down in winter to 40° below zero and rises in summer to 99°. The annual mean temperature at Kars is 40.5° and at Ardahan, farther north, 37°. The Alpine meadows (*yailas*) reach up to 1000 ft. and afford excellent pasturage in spring and summer. The province is almost everywhere heavily forested. Firs and birches flourish as high as 7000 ft., and the vine up to above 3000 ft. Cereals ripen well, and barley and maize grow up to considerable altitudes. Large numbers of cattle and sheep are bred. Extensive deposits of salt occur at Kaghyshman and Olty. The population was 167,610 in 1883 and 292,863 in 1897. The estimated population in 1906 was 349,100. It is mixed. In remote antiquity the province was inhabited by Armenians, the ruins of whose capital, Ani, attest the ancient prosperity of the country. To the Armenians succeeded the Turks, while Kurds invaded the Alpine pasturages above the valley of the Aras; and after them Kabardians, Circassians, Ossetes and Kara-papaks successively found a refuge in this highland region. After the Russo-Turkish War of 1877-78, when this region was transferred to Russia by the treaty of Berlin, some 82,750 Turks emigrated to Asia Minor, their places being taken by nearly 22,000 Armenians, Greeks and Russians. At the census of 1897 the population consisted principally of Armenians (73,400), Kurds (43,000), Greeks (32,600), Kara-papaks (30,000), Russians, Turks and Persians. The capital is Kars. The province is divided into four districts, the chief towns of which are Kars (*q.v.*), Ardahan (pop. 800 in 1897), Kaghyshman (3435) and Olty.

(J. T. Be.)

KARS, a fortified town of Russian Transcaucasia, in the province of Kars, formerly at the head of a sanjak in the Turkish vilayet of Erzerum. It is situated in 40° 37′ N. and 43° 6′ E., 185

m. by rail S.W. of Tiflis, on a dark basalt spur of the Soghanli-dagh, above the deep ravine of the Kars-chai, a sub-tributary of the Aras. Pop. (1878), 8672; (1897), 20,891. There are three considerable suburbs—Orta-kapi to the S., Bairam Pasha to the E., and Timur Pasha on the western side of the river. At the N.W. corner of the town, overhanging the river, is the ancient citadel, in earlier times a strong military post, but completely commanded by the surrounding eminences. The place is, however, still defended by a fort and batteries. There is a 10th century cathedral, Kars being the see of a bishop of the Orthodox Greek Church. Coarse woollens, carpets and felt are manufactured.

During the 9th and 10th centuries the seat of an independent Armenian principality, Kars was captured and destroyed by the Seljuk Turks in the 11th century, by the Mongols in the 13th, and by Timur (Tamerlane) in 1387. The citadel, it would appear, was built by Sultan Murad III. during the war with Persia, at the close of the 16th century. It was strong enough to withstand a siege by Nadir Shah of Persia, in 1731, and in 1807 it successfully resisted the Russians. After a brave defence it surrendered on the 23rd of June 1828 to the Russian general Count I. F. Paskevich, 11,000 men becoming prisoners of war. During the Crimean War the Turkish garrison, guided by General Williams (Sir W. Fenwick Williams of Kars) and other foreign officers, kept the Russians at bay during a protracted siege; but, after the garrison had been devastated by cholera, and food had utterly failed, nothing was left but to capitulate (Nov. 1855). The fortress was again stormed by the Russians in the war of 1877-78, and on its conclusion was transferred to Russia.

See Kmety, *The Defence of Kars* (1856), translated from the German; H. A. Lake, *Kars and our Captivity in Russia* (London, 1856); and *Narrative of the Defence of Kars* (London, 1857); Dr Sandwith, *Narrative of the Siege of Kars* (London, 1856); C. B. Norman, *Armenia and the Campaign of 1877* (London, 1878); Greene, *Russian Army and its Campaigns in Turkey* (1879).

KARSHI, a town of Bokhara, in Central Asia, situated 96 m. S.E. of the city of Bokhara, in a plain at the junction of two main confluents of the Kashka-darya. It is a large and straggling place, with a citadel, and the population amounts to 25,000. There are three colleges, and the Biki mosque is a fine building inlaid with blue and white tiles. Along the river stretches a fine promenade sheltered by poplars. Poppies and tobacco are largely grown, the tobacco being deemed the best in Central Asia. There is a considerable trade in grain; but the commercial prosperity of Karshi is mainly due to its being a meeting-point for the roads from Samarkand, Bokhara, Hissar, Balkh and Maimana, and serves as the market where the Turkomans and Uzbegs dispose of their carpets, knives and firearms. Its coppersmiths turn out excellent work. Karshi was a favourite residence of Timur (Tamerlane).

KARST, in physical geography, the region east of the northern part of the Adriatic. It is composed of high and dry limestone ridges. The country is excessively faulted by a long series of parallel fractures that border the N.E. Adriatic and continue inland that series of steps which descend beneath the sea and produce the series of long parallel islands off the coast of Triest and along the Dalmatian shore. It has been shown by E. Suess (*Antlitz der Erde*, vol. i. pt. 2, ch. iii.) that the N. Adriatic is a sunken dish that has descended along these fractures and folds, which are not uncommonly the scene of earthquakes, showing that these movements are still in progress. The crust is very much broken in consequence and the water sinks readily through the broken limestone rocks, which owing to their nature are also very absorbent. The result is that the scenery is barren and desolate, and as this structure always, wherever found, gives rise to similar features, a landscape of this character is called a Karst landscape. The water running in underground channels dissolves and denudes away the underlying rock, producing great caves as at Adelsberg, and breaking the surface with sinks, potholes and unroofed chasms. The barren nature of a purely limestone country is seen in the treeless regions of some parts of Derbyshire, while the underground streams and sinks of parts of Yorkshire, and the unroofed gorge formed by the Cheddar cliffs, give some indication of the action that in the high fractured mountains of the Karst produces a depressing landscape which has some of the features of the “bad lands” of America, though due to a different cause.

KARSTEN, KARL JOHANN BERNHARD (1782-1853), German mineralogist, was born at Bützow in Mecklenburg, on the 26th of November 1782. He was author of several comprehensive works, including *Handbuch der Eisenhüttenkunde* (2 vols., 1816; 3rd ed., 1841); *System der Metallurgie geschichtlich, statistisch, theoretisch und technisch* (5 vols. with atlas, 1831-1832); *Lehrbuch der Salinenkunde* (2 vols., 1846-1847). He was well known as editor of the *Archiv für Bergbau und Hüttenwesen* (20 vols., 1818-1831); and (with H. von Dechen) of the *Archiv für Mineralogie, Geognosie, Bergbau und Hüttenkunde* (26 vols., 1820-1854). He died at Berlin on the 22nd of August 1853. His son, Dr Hermann Karsten (1809-1877), was professor of mathematics and physics in the university of Rostock.

KARTIKEYA, in Hindu mythology, the god of war. Of his birth there are various legends. One relates that he had no mother but was produced by Siva alone, and was suckled by six nymphs of the Ganges, being miraculously endowed with six faces that he might simultaneously obtain nourishment from each. Another story is that six babes, miraculously conceived, were born of the six nymphs, and that Parvati, the wife of Siva, in her great affection for them, embraced the infants so closely that they became one, but preserved six faces, twelve arms, feet, eyes, &c. Kartikeya became the victor of giants and the leader of the armies of the gods. He is represented as riding a peacock. In southern India he is known as Subramanya.

KARUN, an important river of Persia. Its head-waters are in the mountain cluster known since at least the 14th century as Zardeh Kuh (13,000 ft.) and situated in the Bakhtiari country about 115 m. W. of Isfahan. In its upper course until it reaches Shushter it is called Ab i Kurang (also Kurand and Kuran), and in the *Bundahish*, an old cosmographical work in Pahlavi, it is named Kharāē.[1] From the junction of the two principal sources in the Zardeh Kuh at an altitude of about 8000 ft., the Ab i Kurang is a powerful stream, full, deep and flowing with great velocity for most of its upper course between precipices varying in height from 1000 to 3000 ft. The steepness and height of its banks make it in general useless for irrigation purposes. From its principal sources to Shushter the distance as the crow flies is only about 75 m., but the course of the river is so tortuous that it travels 250 m. before it reaches that city. Besides being fed on its journey through the Bakhtiari country by many mountain-side streams, fresh-water and salt, it receives various tributaries, the most important being the Ab i Bazuft from the right and the Ab i Barz from the left. At Shushter it divides into two branches, one the “Gerger,” an artificial channel cut in olden times and flowing east of the city, the other the “Shutait” flowing west. These two branches, which are navigable to within a few miles below Shushter, unite after a run of about 50 m. at Band i Kir, 24 m. S. of Shushter, and there also take up the Ab i Diz (river of Dizful). From Band i Kir to a point two miles above Muhamrah the river is called Karun (Rio Carom of the Portuguese writers of the 16th and 17th centuries) and is navigable all the way with the exception of about two miles at Ahvaz, where a series of cliffs and rocky shelves cross the river and cause rapids. Between Ahvaz and Band i Kir (46 m. by river, 24 m. by road) the river has an average depth of about 20 ft., but below Ahvaz down to a few miles above Muhamrah it is in places very shallow, and vessels with a draught exceeding 3 ft. are liable to ground. About 12 m. above Muhamrah and branching off to the left is a choked-up river bed called the “blind Karun,” by which the Karun found its way to the sea in former days. Ten miles farther a part of the river branches off to the left and due S. by a channel called Bahmashir (from Bahman-Ardashir, the name of the district in the early middle ages) which is navigable to the sea for vessels of little draught. The principal river, here about a quarter of a mile broad and 20 to 30 ft. deep, now flows west, and after passing Muhamrah enters into the Shatt el Arab about 20 m.

below Basra. This part of the river, from the Bahmashir to the Shatt, is a little over three miles in length and, as its name, Hafar ("dug") implies, an artificial channel. It was dug *c.* A.D. 980 by Azud ed-Dowleh to facilitate communication by water between Basra and Ahvaz, as related by the Arab geographer Mukaddasi A.D. 986. The total length of the river is 460 to 470 m. while the distance from the sources to its junction with the Shatt el Arab is only 160 m. as the crow flies. The Karun up to Ahvaz was opened to international navigation on the 30th of October 1888, and Messrs Lynch of London established a fortnightly steamer service on it immediately after.

To increase the water supply of Isfahan Shah Tahmasp I. (1524-1576) and some of his successors, notably Shah Abbas I. (1587-1629), undertook some works for diverting the Kurang into a valley which drains into the Zayendeh-rud, the river of Isfahan, by tunnelling, or cutting through a narrow rocky ridge separating the two river systems. The result of many years' work, a cleft 300 yds. long, 15 broad and 18 deep, cut into the rock, probably amounting to no more than one-twentieth of the necessary work, can be seen at the junction of the two principal sources of the Kurang.

On the upper Karun see Mrs Bishop, *Journeys in Persia and Kurdistan* (London, 1891); Lord Curzon, *Persia and the Persian Question* (London, 1892); Lieut.-Colonel H. A. Sawyer, "The Bakhtiari Mountains and Upper Elam," *Geog. Journal* (Dec. 1894).

(A. H.-S.)

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1 The *real* principal source of the river has been correctly located at ten miles above the *reputed* principal source, but the name Kurang has been erroneously explained as standing for Kuh i rang and has been given to the mountain with the real principal source. Kuh i rang has been wrongly explained as meaning the "variegated mountain."

KARWAR, or CARWAR, a seaport of British India, administrative headquarters of North Kanara district in the Bombay presidency; 295 m. S. of Bombay city. Pop. (1901), 16,847. As early as 1660 the East India Company had a factory here, with a trade in muslin and pepper; but it suffered frequently from Dutch, Portuguese and native attacks, and in 1752 the English agent was withdrawn. Old Karwar fell into ruins, but a new town grew up after the transfer of North Kanara to the Bombay presidency. It is the only safe harbour all the year round between Bombay and Cochin. In the bay is a cluster of islets called the Oyster Rocks, on the largest of which is a lighthouse. Two smaller islands in the bay afford good shelter to native craft during the strong north-west winds that prevail from February to April. The commercial importance of Karwar has declined since the opening of the railway to Marmagao in Portuguese territory.

KARWI, a town of British India, in the Banda district of the United Provinces, on a branch of the Indian Midland railway; pop. (1901), 7743. Before the Mutiny it was the residence of a Mahratta noble, who lived in great state, and whose accumulations constituted the treasure afterwards famous as "the Kirwee and Banda Prize Money."

KARYOGAMY (Gr. κάρυον, nut or kernel, thus "nucleus," and γάμος, marriage), in biology: (1) the fusion of nuclei to form a single nucleus in syngamic processes (see REPRODUCTION); (2) the process of pairing in Infusoria (*q.v.*), in which two migratory nuclei are interchanged and fuse with two stationary nuclei, while the cytoplasmic bodies of the two mates are in intimate temporary union.

KASAI, or Cassai, a river of Africa, the chief southern affluent of the Congo. It enters the main stream in 3° 10′ S., 16° 16′ E. after a course of over 800 m. from its source in the highlands which form the south-western edge of the Congo basin—separating the Congo and Zambezi systems. The Kasai and its many tributaries cover a very large part of the Congo basin. The Kasai rises in about 12° S., 19° E. and flows first in a north-easterly direction. About 10° 35′ S., 22° 15′ E. it makes a rectangular bend northward and then takes a north-westerly direction. Five rivers—the Luembo, Chiumbo, Luijimo or Luashimo, Chikapa and Lovua or Lowo—rise west of the Kasai and run in parallel courses for a considerable distance, falling successively into the parent stream (between 7° and 6° S.) as it bends westward in its northern course. The Luembo and Chiumbo join and enter the Kasai as one river. A number of rapids occur in these streams. A few miles below the confluence of the Lowo, the last of the five rivers named to join the Kasai, the main stream is interrupted by the Wissmann Falls which, though not very high, bar further navigation from the north. Below this point the river receives several right-hand (eastern) tributaries. These also have their source in the Zambezi-Congo watershed, rising just north of 12° S., flowing north in parallel lines, and in their lower course bending west to join the Kasai. The chief of these affluents are the Lulua and the Sankuru, the Lulua running between the Kasai and the Sankuru. The Sankuru makes a bold curve westward on reaching 4° S., following that parallel of latitude a considerable distance. Its waters are of a bright yellow colour. After the junction of the two rivers (in 4° 17′ S., 20° 15′ E.), the united stream of the Kasai flows N.W. to the Congo. From the south it is joined by the Loange and the Kwango. The Kwango is a large river rising a little north of 12° S., and west of the source of the Kasai. Without any marked bends it flows north—is joined from the east by the Juma, Wamba and other streams—and has a course of 600 m. before joining the Kasai in 3° S., 18′ E. The lower reaches of the Kwango are navigable; the upper course is interrupted by rapids. On the north (in 3° 8′ S., 17° E.) the lower Kasai is joined by the Lukenye or Ikatta. This river, the most northerly affluent of the Kasai, rises between 24° and 25° E., and about 3° S. in swampy land through which the Lomami (another Congo affluent) flows northward. The Lukenye has an east to west direction flowing across a level country once occupied by a lake, of which Lake Leopold II. (*q.v.*), connected with the lower course of the Lukenye, is the scanty remnant. Below the lake the Lukenye is known as the Mfini. Near its mouth the Kasai, in its lower course generally a broad stream strewn with islands, is narrowed to about half a mile on passing through a gap in the inner line of the West African highlands, by the cutting of which the old lake of the Kasai basin must have been drained. The Kasai enters the Congo with a minimum depth of 25 feet and a breadth of about 700 yards, at a height of 942 ft. above the sea. The confluence is known as the Kwa mouth, Kwa being an alternative name for the lower Kasai. The volume of water entering the Congo averages 321,000 cub. ft. per second: far the largest amount discharged by any of the Congo affluents. In floodtime the current flows at the rate of 5 or 6 m. an hour. The Kasai and its tributaries are navigable for over 1500 m. by steamer.

The Kwango affluent of the Kasai was the first of the large affluents of the Congo known to Europeans. It was reached by the Portuguese from their settlements on the west coast in the 16th century. Of its lower course they were ignorant. Portuguese travellers in the 18th century are believed to have reached the upper Kasai, but the first accurate knowledge of the river basin was obtained by David Livingstone, who reached the upper Kasai from the east and explored in part the upper Kwango (1854-1855). V. L. Cameron and Paul Pogge crossed the upper Kasai in the early “seventies.” The Kwa mouth was seen by H. M. Stanley in his journey down the Congo in 1877, and he rightly regarded it as the outlet of the Kwango, though not surmising it was also the outlet of the Kasai. In 1882 Stanley ascended the river to the Kwango-Kasai confluence and thence proceeding up the Mfini discovered Lake Leopold II. In 1884 George Grenfell journeyed up the river beyond the Kwango confluence. The systematic exploration of the main stream and its chief tributaries was, however, mainly the work of Hermann von Wissmann, Ludwig Wolf, Paul Pogge and other Germans during 1880-1887. (See Wissmann’s books, especially *Im Innern Afrikas*, Leipzig, 1888.) On his third journey, 1886, Wissmann was accompanied by Grenfell. Major von Mechow, an Austrian, explored the middle Kwango in 1880, and its lower course was subsequently surveyed by Grenfell and Holman Bentley, a Baptist missionary. In 1899-1900 a Belgian expedition under Captain C. Lemaire traced the Congo-Zambezi watershed, obtaining valuable information concerning the upper courses of the southern Kasai tributaries. The upper Kasai basin and its peoples were further investigated by a Hungarian traveller, E. Torday, in 1908-1909. (See Torday’s paper in *Geog. Jour.*, 1910; also Congo and the authorities there cited.)

KASBEK (Georgian, *Mkin-vari*; Ossetian, *Urs-khokh*), one of the chief summits of the Caucasus, situated in 42° 42′ N. and 44° 30′ E., 7 m. as the crow flies from a station of the same name on the high road to Tiflis. Its altitude is 16,545 ft. It rises on the range which runs north of the main range (main water-parting), and which is pierced by the gorges of the Ardon and the Terek. It represents an extinct volcano, built up of trachyte and sheathed with lava, and has the shape of a double cone, whose base lies at an altitude of 5800 ft. Owing to the steepness of its slopes, its eight glaciers cover an aggregate surface of not more than 8 sq. m., though one of them, Maliev, is 36 m. long. The best-known glacier is the Dyevdorak, or Devdorak, which creeps down the north-eastern slope into a gorge of the same name, reaching a level of 7530 ft. At its eastern foot runs the Georgian military road through the pass of Darial (7805 ft.). The summit was first climbed in 1868 by D. W. Freshfield, A. W. Moore, and C. Tucker, with a Swiss guide. Several successful ascents have been made since, the most valuable in scientific results being that of Pastukhov (1889) and that of G. Merzbacher and L. Purtscheller in 1890. Kasbek has a great literature, and has left a deep mark in Russian poetry.

See D. W. Freshfield in *Proc. Geog. Soc.* (November 1888) and *The Exploration of the Caucasus* (2nd ed., 2 vols., 1902); Hatisian's "Kazbek Glaciers" in *Izvestia Russ. Geog. Soc.* (xxiv., 1888); Pastukhov in *Izvestia of the Caucasus Branch of Russ. Geog. Soc.* (x. 1, 1891, with large-scale map).

KASHAN, a small province of Persia, situated between Isfahan and Kum. It is divided into the two districts *germsir*, the "warm," and *sardsir*, the "cold," the former with the city of Kashan in the plains, the latter in the hills. It has a population of 75,000 to 80,000, and pays a yearly revenue of about £18,000. KASHAN (Cashan) is the provincial capital, in 34° 0′ N. and 51° 27′ E., at an elevation of 3190 ft., 150 m. from Teheran; pop. 35,000, including a few hundred Jews occupied as silk-winders, and a few Zoroastrians engaged in trade. Great quantities of silk stuffs, from raw material imported from Gilan, and copper utensils are manufactured at Kashan and sent to all parts of Persia. Kashan also exports rose-water made in villages in the hilly districts about 20 m. from the city, and is the only place in Persia where cobalt can be obtained, from the mine at Kamsar, 19 m. to the south. At the foot of the hills 4 m. W. of the city are the beautiful gardens of Fin, the scene of the official murder, on the 9th of January 1852, of Mirza Taki Khan, Amir Nizam, the grand vizier, one of the ablest ministers that Persia has had in modern times.

KASHGAR, an important city of Chinese Turkestan, in 39° 24′ 26″ N. lat., 76° 6′ 47″ E. long., 4043 ft. above sea-level. It consists of two towns, Kuhna Shahr or "old city," and Yangi Shahr or "new city," about five miles apart, and separated from one another by the Kyzyl Su, a tributary of the Tarim river. It is called Su-lēh by the Chinese, which perhaps represents an original Solek or Sorak. This name seems to be older than Kashgar, which is said to mean "variegated houses." Situated at the junction of routes from the valley of the Oxus, from Khokand and Samarkand, Almati, Aksu, and Khotan, the last two leading from China and India, Kashgar has been noted from very early times as a political and commercial centre. Like all other cities of Central Asia, it has changed hands repeatedly, and was from 1864-1887 the seat of government of the Amir Yakub Beg, surnamed the Atalik Ghazi, who established and for a brief period ruled with remarkable success a Mahommedan state comprising the chief cities of the Tarim basin from Turfan round along the skirt of the mountains to Khotan. But the kingdom collapsed with his death and the Chinese retook the country in 1877 and have held it since.

Kuhna Shahr is a small fortified city on high ground overlooking the river Tuman. Its walls are lofty and supported by buttress bastions with loopholed turrets at intervals; the fortifications, however, are but of hard clay and are much out of repair. The city contains about 2500 houses. Beyond the bridge, a little way off, are the ruins of ancient Kashgar, which once covered a large

extent of country on both sides of the Tuman, and the walls of which even now are 12 feet wide at the top and twice that in height. This city—Aski Shahr (Old Town) as it is now called—was destroyed in 1514 by Mirza Ababakar (Abubekr) on the approach of Sultan Said Khan's army. About two miles to the north beyond the river is the shrine of Hazrat Afak, the saint king of the country, who died and was buried here in 1693. It is a handsome mausoleum faced with blue and white glazed tiles, standing under the shade of some magnificent silver poplars. About it Yakub Beg erected a commodious college, mosque and monastery, the whole being surrounded by rich orchards, fruit gardens and vineyards. The Yangi Shahr of Kashgar is, as its name implies, modern, having been built in 1838. It is of oblong shape running north and south, and is entered by a single gateway. The walls are lofty and massive and topped by turrets, while on each side is a projecting bastion. The whole is surrounded by a deep and wide ditch, which can be filled from the river, at the risk, however, of bringing down the whole structure, for the walls are of mud, and stand upon a porous sandy soil. In the time of the Chinese, before Yakub Beg's sway, Yangi Shahr held a garrison of six thousand men, and was the residence of the *amban* or governor. Yakub erected his *orda* or palace on the site of the amban's residence, and two hundred ladies of his harem occupied a commodious enclosure hard by. The population of Kashgar has been recently estimated at 60,000 in the Kuhna Shahr and only 2000 in the Yangi Shahr.

With the overthrow of the Chinese rule in 1865 the manufacturing industries of Kashgar declined. Silk culture and carpet manufacture have flourished for ages at Khotan, and the products always find a ready sale at Kashgar. Other manufactures consist of a strong coarse cotton cloth called *kham* (which forms the dress of the common people, and for winter wear is padded with cotton and quilted), boots and shoes, saddlery, felts, furs and sheepskins made up into cloaks, and various articles of domestic use. A curious street sight in Kashgar is presented by the hawkers of meat pies, pastry and sweetmeats, which they trundle about on hand-barrows just as their counterparts do in Europe; while the knife-grinder's cart, and the vegetable seller with his tray or basket on his head, recall exactly similar itinerant traders further west.

The earliest authentic mention of Kashgar is during the second period of ascendancy of the Han dynasty, when the Chinese conquered the Hiungnu, Yutien (Khotan), Sulei (Kashgar), and a group of states in the Tarim basin almost up to the foot of the Tian Shan mountains. This happened in 76 B.C. Kashgar does not appear to have been known in the West at this time but Ptolemy speaks of Scythia beyond the Imaus, which is in a *Kasia Regio*, possibly exhibiting the name whence Kashgar and Kashgaria (often applied to the district) are formed. Next ensues a long epoch of obscurity. The country was converted to Buddhism and probably ruled by Indo-Scythian or Kushan kings. Hsüan Tswang passed through Kashgar (which he calls Ka-sha) on his return journey from India to China. The Buddhist religion, then beginning to decay in India, was working its way to a new growth in China, and contemporaneously the Nestorian Christians were establishing bishoprics at Herat, Merv and Samarkand, whence they subsequently proceeded to Kashgar, and finally to China itself. In the 8th century came the Arab invasion from the west, and we find Kashgar and Turkestan lending assistance to the reigning queen of Bokhara, to enable her to repel the enemy. But although the Mahommedan religion from the very commencement sustained checks, it nevertheless made its weight felt upon the independent states of Turkestan to the north and east, and thus acquired a steadily growing influence. It was not, however, till the 10th century that Islam was established at Kashgar, under the Uighur kingdom (see TURKS). The Uighurs appear to have been the descendants of the people called Tölas and to have been one of the many Turkish tribes who migrated westwards from China. Boghra Khan, the most celebrated prince of this line, was converted to Mahommedanism late in the 10th century and the Uighur kingdom lasted until 1120 but was distracted by complicated dynastic struggles. The Uighurs employed an alphabet based upon the Syriac and borrowed from the Nestorian missionaries. They spoke a dialect of Turkish preserved in the Kudatku Bilik, a moral treatise composed in 1065. Their kingdom was destroyed by an invasion of the Kara-Kitais, another Turkish tribe pressing westwards from the Chinese frontier, who in their turn were swept away in 1219 by Jenghiz Khan. His invasion gave a decided check to the progress of the Mahommedan creed, but on his death, and during the rule of the Jagatai Khans, who became converts to that faith, it began to reassert its ascendancy. Marco Polo visited the city, which he calls Cascar, about 1275 and left some notes on it.

In 1389-1390 Timur ravaged Kashgar, Andijan and the intervening country. Kashgar passed through a troublous time, and in 1514, on the invasion of the Khan Sultan Said, was destroyed by Mirza Ababakar, who with the aid of ten thousand men built the new fort with massive defences higher up on the banks of the Tuman. The dynasty of the Jagatai Khans collapsed in 1572 by the dismemberment of the country between rival representatives; and soon after two powerful Khoja factions, the White and Black Mountaineers (*Ak* and *Kara Taghluk*), arose, whose dissensions and warfares, with the intervention of the Kalmucks of Dzungaria, fill up the history till 1759, when a Chinese army from Ili (Kulja) invaded the country, and, after perpetrating wholesale massacres, finally consolidated their authority by settling therein Chinese emigrants, together with a Manchu garrison. The Chinese had thoughts of pushing their conquests towards western Turkestan and Samarkand, the chiefs of which sent to ask assistance of the Afghan king Ahmed Shah. This monarch despatched an embassy to Peking to demand the restitution of the Mahommedan states of Central Asia, but the embassy was not well received, and Ahmed Shah was too much engaged

with the Sikhs to attempt to enforce his demands by arms. The Chinese continued to hold Kashgar, with sundry interruptions from Mahommedan revolts—one of the most serious occurring in 1827, when the territory was invaded and the city taken by Jahanghir Khoja; Chang-lung, however, the Chinese general of Ili, recovered possession of Kashgar and the other revolted cities in 1828. A revolt in 1829 under Mahommed Ali Khan and Yusuf, brother of Jahanghir, was more successful, and resulted in the concession of several important trade privileges to the Mahommedans of the district of Alty Shahr (the "six cities"), as it was then named. Until 1846 the country enjoyed peace under the just and liberal rule of Zahir-ud-din, the Chinese governor, but in that year a fresh Khoja revolt under Kath Tora led to his making himself master of the city, with circumstances of unbridled licence and oppression. His reign was, however, brief, for at the end of seventy-five days, on the approach of the Chinese, he fled back to Khokand amid the jeers of the inhabitants. The last of the Khoja revolts (1857) was of about equal duration with the previous one, and took place under Wali-Khan, a degraded debauchee, and the murderer of the lamented traveller Adolf Schlagintweit.

The great Tungani (Dungani) revolt, or insurrection of the Chinese Mahommedans, which broke out in 1862 in Kan-suh, spread rapidly to Dzungaria and through the line of towns in the Tarim basin. The Tungani troops in Yarkand rose, and (10th of August 1863) massacred some seven thousand Chinese, while the inhabitants of Kashgar, rising in their turn against their masters, invoked the aid of Sadik Beg, a Kirghiz chief, who was reinforced by Buzurg Khan, the heir of Jahanghir, and Yakub Beg, his general, these being despatched at Sadik's request by the ruler of Khokand to raise what troops they could to aid his Mahommedan friends in Kashgar. Sadik Beg soon repented of having asked for a Khoja, and eventually marched against Kashgar, which by this time had succumbed to Buzurg Khan and Yakub Beg, but was defeated and driven back to Khokand. Buzurg Khan delivered himself up to indolence and debauchery, but Yakub Beg, with singular energy and perseverance, made himself master of Yangi Shahr, Yangi-Hissar, Yarkand and other towns, and eventually became sole master of the country, Buzurg Khan proving himself totally unfitted for the post of ruler. Kashgar and the other cities of the Tarim basin remained under Yakub Beg's rule until 1877, when the Chinese regained possession of their ancient dominion.

(C. E. D. B.; C. EL.)

KASHI,

or KASI, formerly the Persian word for all glazed and enamelled pottery irrespectively; now the accepted term for certain kinds of enamelled tile-work, including brick-work and tile-mosaic work, manufactured in Persia and parts of Mahommedan India, chiefly during the 16th and 17th centuries.[1]

Undoubtedly originating in the Semitic word for glass, *kas*, it is quite possible that the name *kashi* is immediately derived from Kashan, a town in Persia noted for its *faïence*. This ancient pottery site, in turn, probably receives its name from the old-time industry; as a "city of the plain" it would obviously have no claim to the farther-eastern suffix *shan*, meaning a mountain. Sir George Birdwood wisely considers that "the art of glazing earthenware has, in Persia, descended in an almost unbroken tradition from the period of the greatness of Chaldaea and Assyria ... the name *kas*, by which it is known in Arabic and Hebrew, carries us back to the manufacture of glass and enamels for which great Sidon was already famous 1500 years before Christ ... the designs used in the decoration of Sind and Punjab glazed pottery also go to prove how much these Indian wares have been influenced by Persian examples and the Persian tradition of the much earlier art of Nineveh and Babylon" (*The Industrial Arts of India*, 1880). The two native names for glass, *kanch* and *shisha*, common to Persia and India, are, seemingly, modifications of kashi. The Indian tradition of Chinese potters settling in bygone days at Lahore and Hala respectively, still lingers in the Punjab and Sind provinces, and evidently travelled eastward from Persia with the Moguls. Howbeit in Lahore the name Chíní is sometimes wrongly applied to *kashi* work; and the so-called Chíní-ka-Rauza mausoleum at Agra is an instance of this misuse. It now seems an established fact that a colony of Chinese ceramic experts migrated to Isfahan during the 16th century (probably in the reign, and at the invitation, of Shah Abbas I.), and there helped to revive the jaded pottery industry of that district.

Kashi work consisted of two kinds: (*a*) Enamel-faced tiles and bricks of strongly fired red earthenware, or terra-cotta; (*b*) Enamel-faced tiles and tesserae of lightly fired "lime-mortar," or sandstone. Tile-mosaic work is described by some authorities as the true *kashi*. From examination of figured tile-mosaic patterns, it would appear that, in some instances, the shaped tesserae had been cut out of enamelled slabs or tiles after firing; in other examples to have been cut into shape before receiving their facing of coloured enamel. Mosaic panels in the fort at Lahore are described by J. L. Kipling as "showing a *gul dasta*, or foliated pattern of a branching tree, each leaf of which is a separate piece of pottery." Conventional representations of foliage, flowers and

fruit, intricate geometrical figures, interlacing arabesques, and decorative calligraphy—inscriptions in Arabic and Persian—constitute the ordinary *kashi* designs. The colours chiefly used were cobalt blue, copper blue (turquoise colour), lead-antimoniate yellow (mustard colour), manganese purple, iron brown and tin white. A colour-scheme, popular with Mogul and contemporary Persian *kashigars*, was the design, in cobalt blue and copper blue, reserved on a ground of deep mustard yellow. Before applying the enamel colours, the rough face of the tile, or the tesserae, received a thin coating of slip of variable composition. It is probably owing to some defect in this part of the process, or to imperfect firing, that the enamelled tile surfaces on many old buildings, particularly on the south side, have weathered and flaked away.

In India the finest examples of *kashi* work are in the Punjab and Sind provinces. At Lahore, amongst many beautiful structures, the most notable are the mosque of Wazir Khan (A.D. 1634) and the gateways of three famous pleasure gardens, the Shalamar Bagh (A.D. 1637), the Gulabi Bagh (A.D. 1640), and the Charburji (*c.* A.D. 1665). At Tatta the Jami Masjid, built by Shah Jahan (*c.* A.D. 1645), is a splendid illustration; whilst in that "vast cemetery of six square miles" on the adjacent Malki plateau, are numerous Mahommedan tombs (A.D. 1570-1640) with extraordinary *kashi* ornamentation. Delhi, Multan, Jullundur, Shahdara, Lahore cantonment, Agra and Hyderabad (Sind), all possess excellent monuments of the best period viz. those erected during the reigns of Akbar and Jahangir (A.D. 1556-1628).

In Persia, at Isfahan, Kashan, Meshed and Kerman are a few buildings and ruins showing the old *kashi* work; the palace of Chehel Sitùn in Isfahan, built during the reign of Shah Abbas I. (*c.* A.D. 1600), is a magnificent specimen of this art.

Occasional revivals of the manufacture have taken place both in India and Persia. Mahommed Sharíf, a potter of Jullundur in the Punjab, reproduced the Mogul enamelled tile-work in 1885, and there is a manuscript record of a certain Ustad Ali Mahommed, of Isfahan, who revived the Persian processes in 1887.

(W. B.*; C. S. C.)

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1 Káshí, the Hindu name for the sacred city of Benares, has no ceramic significance.

KASHMIR, or CASHMERE, a native state of India, including much of the Himalayan mountain system to the north of the Punjab. It has been fabled in song for its beauty (*e.g.* in Moore's *Lalla Rookh*), and is the chief health resort for Europeans in India, while politically it is important as guarding one of the approaches to India on the north-west frontier. The proper name of the state is Jammu and Kashmir, and it comprises in all an estimated area of 80,900 sq. m., with a population (1901) of 2,905,578, showing an increase of 14.21% in the decade. It is bounded on the north by some petty hills chiefships and by the Karakoram mountains; on the east by Tibet; and on the south and west by the Punjab and North-West Frontier provinces. The state is in direct political subordination to the Government of India, which is represented by a resident. Its territories comprise the provinces of Jammu (including the jagir of Punch), Kashmir, Ladakh, Baltistan and Gilgit; the Shin states of Yaghistan, of which the most important are Chilas, Darel and Tangir, are nominally subordinate to it, and the two former pay a tribute of gold dust. The following are the statistics for the main divisions of the state:— 687

	Area in sq. m.	Pop. in 1901.
Jammu	5,223	1,521,307
Kashmir	7,922	1,157,394
Frontier Districts	443	226,877

The remainder of the state consists of uninhabited mountains, and its only really important possessions are the districts of Jammu and Kashmir.

Physical Conformation.—The greater portion of the country is mountainous, and with the exception of a strip of plain on the south-west, which is continuous with the great level of the Punjab, may be conveniently divided into the following regions:

(1) The outer hills and the central mountains of Jammu district.

(2) The valley of Kashmir.

(3) The far side of the great central range, including Ladakh, Baltistan and Gilgit.

The hills in the outer region of Jammu, adjoining the Punjab plains, begin with a height of 100 to

200 ft., followed by a tract of rugged country, including various ridges running nearly parallel, with long narrow valleys between. The average height of these ridges is from 3000 to 4000 ft. The central mountains are commonly 8000 to 10,000 ft., covered with pasture or else with forest. Then follow the more lofty mountain ranges, including the region of perpetual snow. A great chain of snowy mountains branching off south-east and north-west divides the drainage of the Chenab and the Jhelum rivers from that of the higher branches of the Indus. It is within spurs from this chain that the valley of Kashmir is enclosed amid hills which rise from 14,000 to 15,000 ft., while the valley itself forms a cup-like basin at an elevation of 5000 to 6000 ft. All beyond that great range is a wide tract of mountainous country, bordering the north-western part of Tibet and embracing Ladakh, Baltistan and Gilgit.

The length of the Kashmir valley, including the inner slopes of its surrounding hills, is about 120 m. from north-west to south-east with a maximum width of about 75 m. The low and comparatively level floor of the basin is 84 m. long and 20 to 24 m. broad.

The hills forming the northern half-circuit of the Kashmir valley, and running beyond, include many lofty mountain masses and peaks, the most conspicuous of which, a little outside the confines of Kashmir, is Nanga Parbat, the fourth highest mountain in the world, 26,656 ft. above the sea, with an extensive area of glacier on its eastern face. The great ridge which is thrown off to the south-west by Nanga Parbat rises, at a distance of 12 m., to another summit 20,740 ft. in height, from which run south-west, and south-east the ridges which are the northern watershed boundary of Kashmir. The former range, after running 70 m. south-west, between the valleys of the Kishenganga and the Kunhar or Nain-sukh, turns southward, closely pressing the river Jhelum, after it has received the Kishenganga, with a break a few miles farther south which admits the Kunhar. This range presents several prominent summits, the highest two 16,487 and 15,544 ft. above the sea. The range which runs south-east from the junction peak above mentioned divides the valley of the Kishenganga from that of the Astor and other tributaries of the Indus. The highest point on this range, where it skirts Kashmir, is 17,202 ft. above the sea. For more than 50 m. from Nanga Parbat there are no glaciers on this range; thence eastward they increase; one, near the Zoji-la pass, is only 10,850 ft. above the sea. The mountains at the east end of the valley, running nearly north and south, drain inwards to the Jhelum, and on the other side to the Wardwan, a tributary of the Chenab. The highest part of this eastern boundary is 14,700 ft. There no are glaciers. The highest point on the Panjal range, which forms the south and south-west boundary, is 15,523 ft. above the sea.

The river Jhelum (*q.v.*) or Behat (Sanskrit (*Vitasta*)—the Hydaspes of Greek historians and geographers—flows north-westward through the middle of the valley. After a slow and winding course it expands about 25 m. below Srinagar, over a slight depression in the plain, and forms the Wular lake and marsh, which is about 12½ m. by 5 m. in extent, and surrounded by the lofty mountains which tower over the north and north-east of the valley. Leaving the lake on the south-west side, near the town of Sopur, the river pursues its sluggish course south-westward, about 18 m. to the gorge at Baramulla. From this point the stream is more rapid through the narrow valley which conducts it westward 75 m. to Muzaffarabad, where it turns sharply south, joined by the Kishenganga. At Islamabad, about 40 m. above Srinagar, the river is 5400 ft. above sea-level, and at Srinagar 5235 ft. It has thus a fall of about 4 ft. per mile in this part of its course. For the next 24 m. to the Wular lake, and thence to Baramulla, its fall is only about 2¼ ft. in the mile. On the 80 m. of the river in the flat valley between Islamabad and Baramulla, there is much boat traffic; but none below Baramulla, till the river comes out into the plains.

On the north-east side of this low narrow plain of the Jhelum is a broad hilly tract between which and the higher boundary range runs the Kishenganga River. Near the east end of this interior hilly tract, and connected with the higher range, is one summit 17,839 ft. Around this peak and between the ridges which run from it are many small glaciers. These heights look down on one side into the beautiful valley of the Sind River, and on another into the valley of the Lidar, which join the Jhelum. Among the hills north of Srinagar rises one conspicuous mountain mass, 16,903 ft. in height, from which on its north side descend tributaries of the Kishenganga, and on the south the Wangat River, which flows into the Sind. By these rivers and their numerous affluents the whole valley of Kashmir is watered abundantly.

Around the foot of many spurs of the hills which run down on the Kashmir plain are pieces of low table-land, called karéwa. These terraces vary in height at different parts of the valley from 100 to 300 ft. above the alluvial plain. Those which are near each other are mostly about the same level, and separated by deep ravines. The level plain in the middle of the Kashmir valley consists of fine clay and sand, with water-worn pebbles. The karewas consist of horizontal beds of clay and sand, the lacustrine nature of which is shown by the shells which they contain.

Two passes lead northward from the Kashmir valley, the Burzil (13,500 ft.) and the Kamri (14,050). The Burzil is the main pass between Srinagar and Gilgit via Astor. It is usually practicable only between the middle of July and the middle of September. The road from Srinagar to Lehin Ladakh follows the Sind valley to the Zoji-la-pass (11,300 ft.) Only a short piece of the road, where snow accumulates, prevents this pass being used all the year. At the south-east end of the valley are three passes, the Margan (11,500 ft.), the Hoksar (13,315) and the Marbal (11,500), leading to the valleys of the Chenab and the Ravi. South of Islamabad, on the direct

route to Jammu and Sialkot, is the Banihal pass (9236 ft.). Further west on the Panjal range is the Pir Panjal or Panchal pass (11,400 ft.), with a second pass, the Rattan Pir (8200 ft.), across a second ridge about 15 m. south-west of it. Between the two passes is the beautifully situated fort of Baramgali. This place is in the domain of the raja of Punch, cousin and tributary of the maharaja of Kashmir. At Rajaori, south of these passes, the road divides: one line leads to Bhimber and Gujrat, the other to Jammu and Sialkot by Aknur. South-west of Baramulla is the Haji Pir pass (8500 ft.), which indicates the road to Punch. From Punch one road leads down to the plains at the town of Jhelum, another eastward through the hills to the Rattan Pir pass and Rajaori. Lastly, there is the river pass of the Jhelum, which is the easy route from the valley westward, having two ways down to the plains, one by Muzaffarabad and the Hazara valley to Hasan Abdal, the other by the British hill station of Murree to Rawalpindi.

Geology.—The general strike of the beds, and of the folds which have affected them, is from N.W. to S.E., parallel to the mountain ranges. Along the south-western border lies the zone of Tertiary beds which forms the Sub-Himalayas. Next to this is a great belt of Palaeozoic rocks, through which rise the granite, gneiss and schist of the Zanskar and Dhauladhar ranges and of the Pir Panjal. In the midst of the Palaeozoic area lie the alluvium and Pleistocene deposits of the Srinagar valley, and the Mesozoic and Carboniferous basin of the upper part of the Sind valley. Beyond the great Palaeozoic belt is a zone of Mesozoic and Tertiary beds which commences at Kargil and extends south-eastward past the Kashmir boundary to Spiti and beyond. Finally, in Baltistan and the Ladakh range there is a broad zone composed chiefly of gneiss and schist of ancient date.

The oldest fossils found belong either to the Ordovician or Silurian systems. But it is not until the Carboniferous is reached that fossils become at all abundant (so far as is yet known). The Mesozoic deposits belong chiefly to the Trias and Jura, but Cretaceous beds have been found near the head of the Tsarap valley. The Tertiary system includes representatives of all the principal divisions recognized in other parts of the Himalayas.

Climate.—The valley of Kashmir, sheltered from the south-west monsoon by the Panjal range, has not the periodical rains of India. Its rainfall is irregular, greatest in the spring months. Occasional storms in the monsoon pass over the crests of the Panjal and give heavy rain on the elevated plateaus on the Kashmir side. And again clouds pass over the valley and are arrested by the higher hills on the north-east side. Snow falls on the surrounding hills at intervals from October to March. In the valley the first snow generally falls about the end of December, but never to any great amount. The hottest months are July, August and the greater part of September, during which the noon shade temperature varies from 85º to 90° and occasionally 95º at Srinagar, probably the hottest place in the valley. The coldest months are January and February, when for several weeks the average minimum temperature is about 15º below freezing. As a health resort the province, excluding Srinagar, which is insanitary and relaxing, has no rival anywhere in the neighbourhood of India. Its climate is admirably adapted to the European constitution, and in consequence of the varied range of temperature and the facility of moving about the visitor is enabled with ease to select places at elevations most congenial to him. Formerly only 200 passes a year were issued by the government, but now no restriction is placed on visitors, and their number increases annually. European sportsmen and travellers, in addition to residents of India, resort there freely. The railway to Rawalpindi, and a driving road thence to Srinagar make the valley easy of access. When the temperature in Srinagar rises at the beginning of June, there is a general exodus to Gulmarg, which has become a fashionable hill-station. This great influx of visitors has resulted in a corresponding diminution of game. Special game preservation rules have been introduced, and *nullahs* are let out for stated periods with a restriction on the number of head to be shot. The wild animals of the country include ibex, markhor, oorial, the Kashmir stag, and black and brown bears. Many sportsmen now cross into Ladakh and the Pamirs.

People.—The great majority of the inhabitants of Kashmir are professedly Mahommedans, but their conversion to the faith of Islam is comparatively recent and they are still strongly influenced by their ancient superstitions. At the census of 1901 out of a total population in the whole state of 2,905,578, there were 2,154,695 Mahommedans, 689,073 Hindus, 35,047 Buddhists and 25,828 Sikhs. The Hindus are mostly found in Jammu, and the Buddhists are confined to Ladakh. In Kashmir proper the few Hindus (60,682) are almost all Brahmans, known as Pundits. Superstition has made the Kashmiri timid; tyranny has made him a liar; while physical disasters have made him selfish and pessimistic. Up to recent times the cultivator lived under a system of *begar*, which entitled an official to take either labour or commodities free of payment from the villages. Having no security of property, the people had no incentive to effort, and with no security for life they lost the independence of free men. But the land settlement of 1889 swept all these abuses away. Restrictive monopolies, under which bricks, lime, paper and certain other manufactures were closed to private enterprise, were abolished. The results of the settlement are thus enumerated by Sir Walter Lawrence: “Little by little, confidence has sprung up. Land which had no value in 1889 is now eagerly sought after by all classes. Cultivation has extended and improved. Houses have been rebuilt and repaired, fields fenced in, orchards planted, vegetable gardens well stocked and new mills constructed. Women no longer are seen toiling in the fields, for their husbands are now at home to do the work, and the long journeys to Gilgit are a thing of

the past. When the harvest is ripe the peasant reaps it at his own good time, and not a soldier ever enters the villages." In consequence of this improvement in their conditions of life and of the influx of wealth into the country brought by visitors, the Kashmiri grows every year in material prosperity and independence of character. The Kashmir women have a reputation for beauty which is not altogether deserved, but the children are always pretty.

The language spoken in Kashmir is akin to that of the Punjab, though marked by many peculiarities. It possesses an ancient literature, which is written in a special character (see KASHMIRI).

Natural Calamities.—The effect of physical calamities partly incidental to the climate of Kashmir, upon the character of its inhabitants has been referred to. The list includes fires, floods, earthquakes, famines and cholera. The ravages of fire are chiefly felt in Srinagar, where the wood houses and their thatched roofs fall an easy prey to the flames. The national habit of carrying a *kangar*, or small brazier, underneath the clothes for the purpose of warming the body, is a fruitful cause of fires. Srinagar is said to have been burnt down eighteen times. Many disastrous floods are recorded, the greatest being the terrible inundation which followed the slipping of the Khadanyar mountain below Baramula in A.D. 879. The channel of the Jhelum river was blocked and a large part of the valley submerged. In 1841 a serious flood caused great damage to life and property; there was another in 1893, when six out of the seven bridges in Srinagar were washed away, 25,426 acres under crops were submerged and 2225 houses were wrecked; another flood occurred in July 1903, when the bund between the Dal Lake and the canal gave way, and the lake rose 10 ft. in half an hour. Between two and three thousand houses in and around Srinagar collapsed, while over 40 miles of the tonga road were submerged. Since the 15th century eleven great earthquakes have occurred, all of long duration and accompanied by great loss of life. During the 19th century there were four severe earthquakes, the last two occurring in 1864 and 1885, when some 3500 people were killed. Native historians record nineteen great famines, the last two occurring in 1831 and 1877. In 1878 it was reported that only two-fifths of the total population of the valley survived. During the 19th century also there were ten epidemics of cholera, all more or less disastrous, while the worst (in 1892) was probably the last. During that year 5781 persons died in Srinagar and 5931 in the villages. The centre of infection is generally supposed to be the squalid capital of Srinagar, and some efforts to improve its sanitation have been made of recent years.

Crops.—The staple crop of the valley is rice, which forms the chief food of the people. Indian corn comes next; wheat, barley and oats are also grown. Every kind of English vegetable thrives well, especially asparagus, artichoke, seakale, broad beans, scarlet-runners, beetroot, cauliflower and cabbage. Fruit trees are met with all over the valley, wild but bearing fruit, and the cultivated orchards yield pears, apples, peaches, cherries, &c., equal to the best European produce. The chief trees are deodar, firs and pines, chenar or plane, maple, birch and walnut. There are state departments of viticulture, hops, horticulture and sericulture. A complete list of the flora and fauna of the valley will be found in Sir Walter Lawrence's book on Kashmir.

Industries.—The chief industry of Srinagar was formerly the weaving of the celebrated Kashmir shawl, which dates back to the days of the emperor Baber. These shawls first became fashionable in Europe in the reign of Napoleon, when they fetched from £10 to £100; but the industry received a blow at the time of the Franco-German War, and the famine of 1877 scattered the weavers. The place of the Kashmir shawl has to some extent been taken by the Kashmir carpet, but the most thriving industry now is that of silk-weaving. Srinagar is also celebrated for its silver-work, papier mâché and wood-carving. The minerals and metals of the Jammu district are promising, and a company has been formed to work them. Coal of fair quality has been found, but the difficulties of transport interfere with its working.

History.—The metrical chronicle of the kings of Kashmir, called *Rajatarangini*, was pronounced by Professor H. H. Wilson to be the only Sanskrit composition yet discovered to which the title of history can with any propriety be applied. It first became known to the Mahommedans when, on Akbar's invasion of Kashmir in 1588, a copy was presented to the emperor. A translation into Persian was made by his order, and a summary of its contents, from this Persian translation, is given by Abu'l Fazl in the *Á'ín-i-Akbarī*. The *Rajataranginī*, the first of a series of four Sanskrit histories, was written about the middle of the 12th century by P. Kalhana. His work, in six books, makes use of earlier writings now lost. Commencing with traditional history of very early times, it comes down to the reign of Sangrama Deva, 1006; the second work, by Jonaraja, takes up the history in continuation of Kalhana's, and, entering the Mahommedan period, gives an account of the reigns down to that of Zain-ul-ab-ad-din, 1412. P. Srivara carried on the record to the accession of Fah Shah, 1486. And the fourth work, called *Rājāvalipataka*, by Prajnia Bhatta, completes the history to the time of the incorporation of Kashmir in the dominions of the Mogul emperor Akbar, 1588.

In the *Rājātarangini* it is stated that the valley of Kashmir was formerly a lake, and that it was drained by the great *rishi* or sage, Kasyapa, son of Marichi, son of Brahma, by cutting the gap in the hills at Baramulla (Varaha-mula). When Kashmir had been drained, he brought in the Brahmans to occupy it. This is still the local tradition, and in the existing physical condition of the

country we may see some ground for the story which has taken this form. The name of Kasyapa is by history and tradition connected with the draining of the lake, and the chief town or collection of dwellings in the valley was called Kasyapa-pur—a name which has been plausibly identified with the Κασπάπυρος of Hecataeus (Steph. Byz., *s.v.*) and Κασπάπυρος of Herodotus (iii. 102, iv. 44). Kashmir is the country meant also by Ptolemy's Κασπήρια. The ancient name Kasyapa-pur was applied to the kingdom of Kashmir when it comprehended great part of the Punjab and extended beyond the Indus. In the 7th century Kashmir is said by the Chinese traveller Hsüan Tsang to have included Kabul and the Punjab, and the hill region of Gandhara, the country of the Gandarae of classical geography.

At an early date the Sanskrit name of the country became *KásmÍr*. The earliest inhabitants, according to the *Rajatarangini*, were the people called Naga, a word which signifies "snake." The history shows the prevalence in early times of tree and serpent worship, of which some sculptured stones found in Kashmir still retain the memorials. The town of Islamabad is called also by its ancient name Anant-nag ("eternal snake"). The source of the Jhelum is at Vir-nag (the powerful snake), &c. The other races mentioned as inhabiting this country and the neighbouring hills are Gandhari, Khasa and Daradae. The Khasa people are supposed to have given the name Kasmir. In the *Mahabharata* the Kasmira and Daradae are named together among the Kshattriya races of northern India. The question whether, in the immigration of the Aryans into India, Kashmir was taken on the way, or entered afterwards by that people after they had reached the Punjab from the north-west, appears to require an answer in favour of the latter view (see vol. ii. of Dr J. Muir's *Sanskrit Texts*). The Aryan races of Kashmir and surrounding hills, which have at the present time separate geographical distribution, are given by Mr Drew as *Kashmírí* (mostly Mahommedan), in the Kashmir basin and a few scattered places outside; *Dard* (mostly Mahommedan) in Gilgit and hills north of Kashmir; *Dogra* (Hindu) in Jamma; *Dogra* (Mahommedan, called *Chibāli*) in Punch and hill country west of Kashmir; *Pahāri* or mountaineers (Hindu) in Kishtwar, east of Kashmir, and hills about the valley of the Chenab.

In the time of Asoka, about 245 B.C., one of the Indian Buddhist missions was sent to Kashmir and Gandhara. After his death Brahmanism revived. Then in the time of the three Kushan princes, Huvishḳa, Jushka and Kanishka, who ruled over Kashmir about the beginning of the Christian era, Buddhism was to a great extent restored, though for several centuries the two religions existed together in Kashmir, Hinduism predominating. Yet Kashmir, when Buddhism was gradually losing its hold, continued to send Buddhist teachers to other lands. In this Hindu-Buddhist period, and chiefly between the 5th and 10th centuries of the Christian era, were erected the Hindu temples in Kashmir. In the 6th and 7th centuries Kashmir was visited by some of the Chinese Buddhist pilgrims to India. The country is called *Shie-mi* in the narrative of To Yeng and Sung Yun (578). One of the Chinese travellers of the next century was for a time an elephant-tamer to the king of Kashmir. Hsüan Tsang spent two years (631-633) in Kashmir (*Kia-chí-mí-lo*). He entered by Baramula and left by the Pir Panjal pass. He describes the hill-girt valley, and the abundance of flowers and fruits, and he mentions the tradition about the lake. He found in Kashmir many Buddhists as well as Hindus. In the following century the kings of Kashmir appear to have paid homage and tribute to China, though this is not alluded to in the Kashmir chronicle. Hindu kings continued to reign till about 1294, when Udiana Deva was put to death by his Mahommedan vizier, Amir Shah, who ascended the throne under the name of Shams-ud-din.

Of the Mahommedan rulers mentioned in the Sanskrit chronicles, one, who reigned about the close of the 14th century, has made his name prominent by his active opposition to the Hindu religion, and his destruction of temples. This was Sikandar, known as *But-shikan*, or the "idol-breaker." It was in his time that India was invaded by Timur, to whom Sikandar made submission and paid tribute. The country fell into the hands of the Moguls in 1588. In the time of Alamgir it passed to Ahmad Shah Durani, on his third invasion of India (1756); and from that time it remained in the hands of Afghans till it was wrested from them by Ranjit Singh, the Sikh monarch of the Punjab, in 1819. Eight Hindu and Sikh governors under Ranjit Singh and his successors were followed by two Mahommedans similarly appointed, the second of whom, Shekh Imam-ud-din, was in charge when the battles of the first Sikh war 1846 brought about new relations between the British Government and the Sikhs.

Gulab Singh, a Dogra Rajput, had from a humble position been raised to high office by Ranjit Singh, who conferred on him the small principality of Jammu. On the final defeat of the Sikhs at Sobraon (February 1846), Gulab Singh was called to take a leading part in arranging conditions of peace. The treaty of Lahore (March 9, 1846) sets forth that, the British Government having demanded, in addition to a certain assignment of territory, a payment of a crore and a half of rupees (1½ millions sterling), and the Sikh government being unable to pay the whole, the maharaja (Dhulip Singh) cedes, as equivalent for one crore, the hill country belonging to the Punjab between the Beas and the Indus, including Kashmir and Hazara. The governor-general, Sir Henry Hardinge, considered it expedient to make over Kashmir to the Jammu chief, securing his friendship while the British government was administering the Punjab on behalf of the young maharaja. Gulab Singh was well prepared to make up the payment in default of which Kashmir

was ceded to the British; and so, in consideration of his services in restoring peace, his independent sovereignty of the country made over to him was recognized, and he was admitted to a separate treaty. Gulab Singh had already, after several extensions of territory east and west of Jammu, conquered Ladakh (a Buddhist country, and till then subject to Lhasa), and had then annexed Skardo, which was under independent Mahommedan rulers. He had thus by degrees half encircled Kashmir, and by this last addition his possessions attained nearly their present form and extent. Gulab Singh died in 1857, and was succeeded by his son, Ranbir Singh, who died in 1885. The next ruler, Maharaja Partab Singh, G.C.S.I. (b. 1850), immediately on his accession inaugurated the settlement reforms already described. His rule was remarkable for the reassertion of the Kashmir sovereignty over Gilgit (*q.v.*). Kashmir imperial service troops participated in the Black Mountain expedition of 1891, the Hunza Nagar operations of 1891, and the Tirah campaign of 1897-1898. The total revenue of the state is about £666,000.

See Drew, *Jammu and Kashmir* (1875); M. A. Stein, *Kalhana's Rajatarangini* (1900); W. R. Lawrence, *The Valley of Kashmir* (1895); Colonel A. Durand, *The Making of a Frontier* (1899); R. Lydekker, "The Geology of the Kashmir and Chamba Territories," *Records of the Geological Survey of India*, vol. xxii. (1883); J. Duke, *Kashmir Handbook* (1903).

(T. H. H.*)

KASHMIRI (properly *Kāśmīrī*), the name of the vernacular language spoken in the valley of Kashmir (properly *Kaśmīr*) and in the hills adjoining. In the Indian census of 1901 the number of speakers was returned at 1,007,957. By origin it is the most southern member of the Dard group of the Piśāca languages (see Indo-Aryan Languages). The other members of the group are Shīnā, spoken to its north in the country round Gilgit, and Kōhistānī, spoken in the hill country on both sides of the river Indus before it debouches on to the plains of India. The Piśāca languages also include Khōwār, the vernacular of Chitral, and the Kāfir group of speeches, of which the most important is the Bashgali of Kafiristan. Of all these forms of speech Kashmiri is the only one which possesses a literature, or indeed an alphabet. It is also the only one which has been dealt with in the census of India, and it is therefore impossible to give even approximate figures for the numbers of speakers of the others. The whole family occupies the three-sided tract of country between the Hindu-Kush and the north-western frontier of British India.

As explained in Indo-Aryan Languages, the Piśāca languages are Aryan, but are neither Iranian nor Indo-Aryan. They represent the speech of an independent Aryan migration over the Hindu-Kush directly into their present inhospitable seats, where they have developed a phonetic system of their own, while they have retained unchanged forms of extreme antiquity which have long passed out of current use both in Persia and in India. Their speakers appear to have left the main Aryan body after the great fission which resulted in the Indo-Aryan migration, but before all the typical peculiarities of Iranian speech had fully developed. They are thus representatives of a stage of linguistic progress later than that of Sanskrit, and earlier than that which we find recorded in the Iranian Avesta.

The immigrants into Kashmir must have been Shīns, speaking a language closely allied to the ancestor of the modern Shīnā. They appear to have dispossessed and absorbed an older non-Aryan people, whom local tradition now classes as Nāgas, or Snake-gods, and, at an early period, to have come themselves under the influence of Indo-Aryan immigrants from the south, who entered the valley along the course of the river Jhelam. The language has therefore lost most of its original Piśāca character, and is now a mixed one. Sanskrit has been actively studied for many centuries, and the Kashmiri vocabulary, and even its grammar, are now largely Indian. So much is this the case that, for convenience' sake, it is now frequently classed (see Indo-Aryan Languages) as belonging to the north-western group of languages, instead of as belonging to the Piśāca family as its origin demands. It cannot be said that either classification is wrong.

Kashmiri has few dialects. In the valley there are slight changes of idiom from place to place, but the only important variety is Kishtwārī, spoken in the hills south-west of Kashmir. Smaller dialects, such as Pogul and Rāmbanī of the hills south of the Banihāl pass, may also be mentioned. The language itself is an old one. Pure Kashmiri words are preserved in the Sanskrit *Rājataraṅgiṇī* written by Kalhaṇa in the 12th century A.D., and, judging from these specimens, the language does not appear to have changed materially since his time.

General Character of the Language.—Kashmiri is a language of great philological interest. The two principal features which at once strike the student are the numerous epenthetic changes of vowels and consonants and the employment of pronominal suffixes. In both cases the phenomena are perfectly plain, cause and effect being alike presented to the eye in the somewhat

complicated systems of declension and conjugation. The Indo-Aryan languages proper have long ago passed through this stage, and many of the phenomena now presented by them are due to its influence, although all record of it has disappeared. In this way a study of Kashmiri explains a number of difficulties found by the student of Indo-Aryan vernaculars.[1]

In the following account the reader is presumed to be in possession of the facts recorded in the articles INDO-ARYAN LANGUAGES and PRAKRIT, and the following contractions will be employed: Ksh. = Kashmiri; Skr. = Sanskrit; P. = Piśāca; Sh. = Shīnā.

A. *Vocabulary.* The vocabulary of Kashmiri is, as has been explained, mixed. At its basis it has a large number of words which are also found in the neighbouring Shīnā, and these are such as connote the most familiar ideas and such as are in most frequent use. Thus, the personal pronouns, the earlier numerals, the words for "father," "mother," "fire," "the sun," are all closely connected with corresponding Shīnā words. There is also a large Indian element, consisting partly of words derived from Sanskrit vocables introduced in ancient times, and partly of words borrowed in later days from the vernaculars of the Punjab. Finally, there is a considerable Persian (including Arabic) element due to the long Mussulman domination of the Happy Valley. Many of these have been considerably altered in accordance with Kashmiri phonetic rules, so that they sometimes appear in strange forms. Thus the Persian *lagām*, a bridle, has become *lākam*, and the Arabic *bābat*, concerning, appears as *bāpat*. The population speaking Kashmiri is mainly Mussulman, there being, roughly speaking, nine Mahommedan Kashmiris to less than one Hindu. This difference of religion has strongly influenced the vocabulary. The Mussulmans use Persian and Arabic words with great freedom, while the Hindus, or "Pandits" as they are called, confine their borrowings almost entirely to words derived from Sanskrit. As the literary class is mostly Hindu, it follows that Kashmiri literature, taken as a whole, while affording most interesting and profitable study, hardly represents the actual language spoken by the mass of the people. There are, however, a few good Kashmiri works written by Mussulmans in their own dialect.

B. *Written Characters.* Mussulmans and Christian missionaries employ an adaptation of the Persian character for their writings. This alphabet is quite unsuited for representing the very complex Kashmiri vowel system. Hindus employ the Sāradā alphabet, of Indian origin and akin to the well-known Nāgarī. Kashmiri vowel sounds can be recorded very successfully in this character, but there is, unfortunately, no fixed system of spelling. The Nagari alphabet is also coming into use in printed books, no Śāradā types being yet in existence.

C. *Phonetics.* Comparing the Kashmiri with the Sanskrit alphabet (see SANSKRIT), we must first note a considerable extension of the vowel system. Not only does Ksh. possess the vowels *a*, *ā*, *i*, *ī*, *u*, *ū*, *r*, *ē*, *ai*, *ō*, *au*, and the *anunāsika* or nasal symbol ~, but it has also a flat *ă* (like the *a* in "hat") a flat *ĕ* (like the *e* in "met"), a short *ŏ* (like the *o* in "hot") and a broad *å* (like the *a* in "all"). It also has a series of what natives call "*mātrā*-vowels," which are represented in the Roman character by small letters above the line, viz. ^{a}, ^{i}, ^{ū}, ^{u}. Of these, ^{a} is simply a very short indeterminate sound something like that of the Hebrew *sh^{a}wā mobile*, except that it may sometimes be the only vowel in a word, as in *ts^{a}h*, thou. The ^{i} is a hardly audible *i*, while ^{ū} and ^{u} are quite inaudible at the end of a syllable. When ^{i} or ^{u} is followed by a consonant in the same syllable ^{i} generally and ^{u} always becomes a full *i* or *u* respectively and is so pronounced. On the other hand, in similar circumstances, ^{ū} remains unchanged in writing, but is pronounced like a short German *ü*. It should be observed that this ^{ū} always represents an older *ī*, and is still considered to be a palatal, not, like ^{u}, a labial vowel. Although these mātrā-vowels are so slightly heard, they exercise a great influence on the sound of a preceding syllable. We may compare the sound of *a* in the English word "mar." If we add *e* to the end of this word we get "mare," in which the sound of the *a* is altogether changed, although the *e* is not itself pronounced in its proper place. The back-action of these mātrā-vowels is technically known as *umlaut* or "epenthesis," and is the most striking feature of the Kashmiri language, the structure of which is unintelligible without a thorough knowledge of the system. In the following pages when a vowel is epenthetically affected by a mātrā-vowel the fact will be denoted by a dot placed under it, thus *kạr^{u}*. This is not the native system, according to which the change is indicated sometimes by a diacritical mark and sometimes by writing a different letter. The changes of pronunciation effected by each mātrā-vowel are shown in the following table. If natives employ a different letter to indicate the change the fact is mentioned. In other cases they content themselves with diacritical marks. When no entry is made, it should be understood that the sound of the vowel remains unaltered:—

Preceding Vowel.	*Pronunciation when followed by*			
	a-mātrā	*i-mātrā*	*ū-mātrā*	*u-mātrā*
ạ	*ạ* (*ạd^{a}r*, be moist) (some thing like a short German *ö*)	*a^{i}* (*kạr^{i}*, pr. *ka^{i}r^{i}*, made, plural masc.)	*ü* (as in German: *kạr^{ū}*, pr. *kür*, made, fem. sing.)	*o* (like first *o* in "promote"; *kar^{u}*, pr. *kor*, made, masc. sing.)
ạ̄	*ö* (*kạ̄ñ^{a}r*, pr. *köñ^{a}r*, makeone-eyed) (like a	*ö^{i}* (German *ö*; *mạ̄r^{i}*, pr. *mö^{i}r^{i}*, killed, masc.	*ö* (*mạ̄r^{ū}*, pr. *mör*, killed, fem. sing.)	*å* (*mạ̄r^{u}*, pr. *mår*, written, *mōr^{u}*, killed, masc.

	long German *ö*)	plur.)		sing.)
ị	—	—	*yü* (*lịv*^{ū}, pr. *lyüv*, plastered, fem. sing.)	*yu* (*lịv*^{ū}, pr. *lyuv*, written *lyuv*^{u}, plastered, masc. sing.)
ị̄	—	—	—	*yū* (*nīl*^{u}, pr. *nyūl*, written *nyūl*^{u}, blue, masc. sing.)
ụ	—	*u*^{i} (*gụr*^{i}, pr. *gu*^{i}*r*^{i}, horses)	—	—
ụ̄	—	*ū*^{i} (*gụ̄r*^{i}, pr. *gū*^{i}*r*^{i}, cowherds)	—	—
ḛ	*i* (*lḛd*^{a}*r*, pr. *lid*^{a}*r*, be yellow)	—	*yü* (*tsḛl*^{ū}, pr. *tsyül*, squeezed, fem. sing.)	*yu* (*tsḛl*^{u}, pr. *tsyul*, written *tsyul*^{u}, squeezed, masc. sing.)
ḛ̄	—	*ī* (*phḛ̄r*^{i}, pr. and written *phīr*^{i}, turned, masc. plur.)	*ī* (*phḛ̄r*^{ū}, pr. *phīr*, written, *phīr*^{ū}, turned, fem. sing.)	*yū* (*phḛ̄r*^{u}, pr. *phyūr*, written *phyūr*^{u}, turned, masc. sing.)
ọ	*u* (*họkh*^{a}*r*, pr. *hukh*^{a}*r*, make dry)	*ŏ*^{i} (*wọth*^{i}, pr. *wŏ*^{i}*th*^{i}, arisen, masc. plur.)	*ū* (*wọth*^{ū}, pr. *wüth*, arisen, fem. sing.)	*o* (*wọth*^{u}, pr. *woth*, arisen, masc. sing.)
ọ̄	—	*ū*^{i} (*bū*^{i}*z*^{i}, pr. *bū*^{i}*z*^{i}, written *būz*^{i}, heard. masc. plur.)	*ū* (*bọ̄z*^{ū}, pr. *būz*, written, *būz*^{ū}, heard, fem. sing.)	*ū* (*bōz*^{u}, pr. *būz*, written *būz*^{u}, heard, masc. sing.)

The letters *u* and *i*, even when not *u*-mātrā or *i*-mātrā, often change a preceding long *ā* to *å*, which is usually written *ō*, and *ạ̄* respectively. Thus *rāwukh*, they have lost, is pronounced *råwukh*, and, in the native character, is written *rōwukh*. Similarly *mālis* becomes *mạ̄lis* (*mölis*). 691 The diphthong *ai* is pronounced *ö* when it commences a word; thus, *aiṭh*, eight, is pronounced *öṭh*. When *i* and *u* commence a word they are pronounced *yi* and *wu* respectively. With one important exception, common to all Piśāca languages, Kashmiri employs every consonant found in the Sanskrit alphabet. The exception is the series of aspirated consonants, *gh, jh, ḍh, dh* and *bh*, which are wanting in Ksh., the corresponding unaspirated consonants being substituted for them. Thus, Skr. *ghōṭakas*, but Ksh. *gur*^{u}, a horse; Skr. *bhavati*, Ksh. *bŏvi*, he will be. There is a tendency to use dental letters where Hindī employs cerebrals, as in Hindi *uṭh*, Ksh. *wŏth*, arise. Cerebral letters are, however, owing to Sanskrit influence, on the whole better preserved in Ksh. than in the other Piśāca languages. The cerebral *ṣ* has almost disappeared, *ś* being employed instead. The only common word in which it is found is the numeral *ṣah*, six, which is merely a learned spelling for *śah*, due to the influence of the Skr. *ṣaṭ*. From the palatals *c, ch, j*, a new series of consonants has been formed, viz. *ts, tsh* (aspirate of *ts*—*i.e. ts* + *h*, not *t* + *sh*), and *z* (as in English, not *dz*). Thus, Skr. *cōras*, Ksh. *tsūr*, a thief; Skr. *chalayati*, Ksh. *tshali*, he will deceive; Skr. *jalam*, Ksh. *zal*, water. The sibilant *ś*, and occasionally *s*, are frequently represented by *h*. Thus, Skr. *daśa*, Ksh. *dah*, ten; Skr. *śiras*, Ksh. *hīr*, a head. We may compare with this the Persian word *Hind*, India (compare the Greek Ἰνδός, an Indian), derived from the Skr. *Sindhus*, the river Indus. When such an *h* is followed by a palatal letter the *ś* returns; thus, from the base *hiś-*, like this, we have the nominative masculine *hịḥ*^{u}, but the feminine *hiś*^{ū}, and the abstract noun *hiśyar*, because ^{ū} and *y* are palatal letters.

The palatal letters *i, e, ū-mātrā* and *y* often change a preceding consonant. The modifications will be seen from the following examples: *rāt-*, night; nom. plur. *rạ̄ts*^{ū}; *wŏth*, arise; *wọtsh*^{ū}, she arose: *lad*, build; *lạz*^{ū}, she was built: *ran*, cook; *rạñ*^{ū}, she was cooked; *pạṭ*^{ū}, a tablet; Ag. sing. *paci*: *kāth-*, a stalk; nom. plur. *kāchĕ: baḍ-*, great; nom. plur. fem. *bajĕ*: *batuk*^{u}, a duck; fem. *bat*$^{a.}$*c*^{ū}: *họkh*^{u}, dry; fem. *họch*^{ū}; *srọg*^{u}, cheap; *srọ̈jyar*, cheapness: *wạ̄l*^{u}, a ring; fem. *wạ̄j*^{ū}, a small ring; *lōs*, be weary; *lọ̄s*^{ū} or *lọ̄ts*^{ū}, she was weary. These changes are each subject to certain rules. Cerebral letters (*ṭ, ṭh, ḍ*) change only before *i, ĕ or y*, and not before *ū-mātrā*. The others, on the contrary, do not change *i*, but do change before *ĕ, y* or *ū-mātrā*.

No word can end in an unaspirated surd consonant. If such a consonant falls at the end of a word it is aspirated. Thus, *ak*, one, becomes *akh* (but acc. *akis*); *kaṭ*, a ram, becomes *kaṭh*; and hat, a hundred, *hath*.

D. *Declension*. If the above phonetic rules are borne in mind, declension in Kashmiri is a fairly simple process. If attention is not paid to them, the whole system at once becomes a field of inextricable confusion. In the following pages it will be assumed that the reader is familiar with them.

Nouns substantive and adjective have two genders, a masculine and a feminine. Words referring to males are masculine, and to females are feminine. Inanimate things are sometimes masculine and sometimes feminine. Pronouns have three genders, arranged on a different principle. One gender refers to male living beings, another to female living beings, and a third (or neuter) to all inanimate things whether they are grammatically masculine or feminine. Nouns ending in ^{u} are masculine, and most, but not all, of those ending in ^{i}, ^{u}, *ĕ* or *ñ* are feminine. Of nouns ending in consonants, some are masculine, and some are feminine. No rule can be formulated regarding these, except that all abstract nouns ending in *ar* (a very numerous class) are masculine. There are four declensions. The first consists of masculine nouns ending in a consonant, in *a, ĕ* or $^{\bar{u}}$ (very few of these last two). The second consists of the important class of masculine nouns in ^{u}; the third of feminine nouns in ^{i}, $^{\bar{u}}$, or *ñ* (being the feminines corresponding to the masculine nouns of the second declension); and the fourth of feminine nouns ending in ^{a}, *ĕ* or a consonant.

The noun possesses two numbers, a singular and a plural, and in each number there are, besides the nominative, three organic cases, the accusative, the case of the agent (see below, under “verbs”), and the ablative. The accusative, when not definite, may also be the same in form as the nominative. The following are the forms which a noun takes in each declension, the words chosen as examples being: First declension, *tsūr*, a thief; second declension, *mạ̄l*^{u}, a father; third declension, *maj^ū*, a mother; fourth declension, *(a) māl*, a garland, *(b) rāt-*, night.

	First Declension.	Second Declension.	Third Declension.	Fourth Declension. a.	b.
Sing.:					
Nom.	*tsūr*	*mạl*^{u} *(pr. mål)*	*mạ̄j*$^{\bar{u}}$ *(möj)*	*māl*	*rāth*
Acc.	*tsūras*	*mạ̄lis (mölis)*	*mājĕ*	*māli*	*rạ̄ts*$^{\bar{u}}$ *(röts)*
Ag.	*tsūran*	*mạ̄l*^{i} *(mö*^{i}*l*^{i}*)*	*māji*	*māli*	*rạ̄ts*$^{\bar{u}}$ *(röts)*
Abl.	*tsūra*	*māli*	*māji*	*māli*	*rạ̄ts*$^{\bar{u}}$ *(röts)*
Plur.:					
Nom	*tsūr*	*mạl*^{i} *(mö*^{i}*l*^{i}*)*	*mājĕ*	*māla*	*rạ̄ts*$^{\bar{u}}$ *(röts)*
Acc.	*tsūran*	*mālĕn*	*mājĕn*	*mālan*	*rạ̄ts*$^{\bar{u}}$*n (rötsün)*
Ag. and Abl.	*tsūrau*	*mālyau*	*mājyau*	*mālau*	*rạ̄ts*$^{\bar{u}}$*v (rötsüv)*

The declension *4b* is confined to certain nouns in *t, th, d, n, h* and *l*, in which the final consonant is liable to change owing to a following *ū-mātrā*.

Other cases are formed (as in true Indo-Aryan languages) by the addition of postpositions, some of which are added to the accusative, while others are added to the ablative case. To the former are added *manz*, in; *kịt*^{u}, to or for; *sụ̄tin*, with, and others. To the ablative are added *sụ̄tin*, when it signifies “by means of”; *putshy*, for; *pĕṭh*^{a}, from, and others. For the genitive, masculine nouns in the singular, signifying animate beings, take *sạnd*^{u}, and if they signify things without life, take *k*^{u}. All masculine plural nouns and all feminine nouns whether singular or plural take *hạnd*^{u}. *Sạnd*^{u} and *hạnd*^{u} are added to the accusative, which drops a final *s*, while *k*^{u} is added to the ablative. Thus, *tsūra sạnd*^{u}, of the thief; *mạ̄l*^{i} *sạnd*^{u}, of the father; *sŏnạk*^{u} (usually written *sŏnuk*^{u}), of gold (*sŏn*, abl. sing. *sŏna*); *tsūran nạnd*^{u}, of thieves; *karĕn hạnd*^{u}, of bracelets (second declension); *mājĕ hạnd*^{u}, of the mother; *mājĕn hạnd*^{u}, of the mothers. Masculine proper names, however, take *n*^{u} in the singular, as in *Rādhākrṣṇạn*^{u} of Rādhākrishna. These genitive terminations, and also the dative termination *kịt*^{u}, are adjectives, and agree with the governing noun in gender, number and case. Thus, *tsūra sạnd*^{u} *nĕcịv*^{u}, the son of the thief; *tsūra sạnd*^{i} *nĕciv*^{i}, by the son of the thief; *tsūra sạnz*$^{\bar{u}}$ *kōr*^{u}, the daughter of the thief; *kulịk*^{u} *lang*, a bough of the tree; *kulic*$^{\bar{u}}$ *lạṇd*$^{\bar{u}}$, a twig of the tree. *Sạnd*^{u}, has fem. sing. *sạnz*^{u}, masc. plur. *sạnd*^{i}, fem. plur. *sanza*. Similarly *hạnd*^{u}. *K*^{u} has fem. sing. *c*$^{\bar{u}}$, masc. plur. *k*^{i}, fem. plur. *cĕ*; *n*^{u}, fem. sing. *ñ*, masc. plur. *n*^{i}, fem. plur. *ñĕ*. Similarly for the dative we have the following forms: *mạ̄lis kịt*^{u} *pạ̄ñ*^{u}, water (masc.) for the father; *mạ̄lis kits*$^{\bar{u}}$ *gāv*, a cow for the father; mạ̄lis kit^{i} rav, blankets (masc. plur.) for the father; *mạ̄lis kitsa pōthĕ*, books (fem. plur.) for the father. All these postpositions of the genitive and *kịt*^{u} of the dative are declined regularly as substantives, the masculine ones belonging to the second declension and the feminine ones to the third. Note that the feminine plural of *sạnd*^{u} is *sanza*, not *sanzĕ*, as we might expect; so also feminine nouns in *ts*^{u}, *tsh*^{u}, *z*$^{\bar{u}}$ and *s*$^{\bar{u}}$.

Adjectives ending in ^{u} (second declension) form the feminine in *^ū*, with the usual changes of the preceding consonant. Thus *tạt*^{u}, hot, fem. *tạts*$^{\bar{u}}$ (pronounced *tüts*). Other adjectives do not change for gender. All adjectives agree with the qualified noun in gender, number and case, the postposition, if any, being added to the latter word of the two. Take, for example, *chạt*^{u}, white, and *gur*^{u}, a horse. From these we have *chạt*^{u} *gur*^{u}, a white horse; acc. sing. *chatis guris*; nom. plur. *chạt*^{i} *gụr*^{i}; and *chatyau guryau sụ̄tin*, by means of white horses.

The first two personal pronouns are *bŏh*, I; *mĕ*, me, by me; *ạs*^{i}, we; *asĕ*, us, by us; and *ts*^{a}*h*, thou; *tsĕ*, thee, by thee; *tọ̆h*^{i}, ye; *tŏhĕ* you, by you. Possessive pronouns are employed instead of the genitive. Thus, *myạ̄n*^{u}, my; *sạ̄n*^{u}, our; *cyạ̄n*^{u}, thy; *tuhạnd*^{u}, your. For the third person, we have sing. masc. *suh*, fem. *sŏh*, neut. *tih*; acc. sing. (masc. or fem.) *tamis* or *tas*, neut. *tath*; agent sing.

masc. neut. *tạmⁱ*, fem. *tami*. The plural is of common gender throughout. Nom. *tim*; acc. *timan*; ag. *timau*. The possessive pronoun is *tasạndᵘ*, of him, of her; *tamyukⁿ*, of it; *tihạndᵘ*, of them. The neuter gender is used for all things without life.

Other pronouns are:—This: *yih* (com. gen.); acc. masc. fem. *yimis*, or *nŏmis*, neut, *yith*, *nŏth*; ag. masc. neut., *yimⁱ*, *nọ̆mⁱ*, fem. *yimi*, *nŏmi*; nom. plur. *yim*, fem. *yima*, and so on.

That (within sight): masc. neut. *huh*, fem. *hŏh*; acc. masc. fem. *humis* or *amis*, neut. *huth*, and so on; nom. plur. masc *hum*.

Who, masc. *yus*, fem. *yŏssa*, neut. *yih*; acc. masc. fem. *yĕmis*, *yĕs*, neut. *yĕth*; ag. masc. neut. *yĕmⁱ*, fem. *yĕmi*; nom. plur. masc. *yim*, and so on.

Who? masc. *kus*, fem. *kŏssa*, neut. *kyāh*; acc. masc. fem. *kamis*, *kas*, neut. *kath*; ag. masc. neut. *kamⁱ*, fem. *kami*; nom. plur. masc. *kam*.

Self, *pāna*. Anyone, someone, *kãh*, *kũh*, or *kãtshāh*, neut. *kẽtshāh*.

Kashmiri makes very free use of pronominal suffixes, which are added to verbs to supply the place of personal terminations. These represent almost any case, and are as follows:—

	First Person.	Second Person.	Third Person.
Sing.—			
Nom.	*s*	*kh*, *h*	none
Acc.	*m*	*th*, *y*	*s*
Dat.	*m*	*y*	*s*
Ag.	*m*	*th*, *y*	*n*
Plur.—			
Nom.	none	*wa*	none
Other cases	none	*wa*	*kh*, *h*

Before these the verbal terminations are often slightly changed for the sake of euphony, and, when necessary for the pronunciation, the vowel *a* is inserted as a junction vowel.

In this connexion we may mention another set of suffixes also commonly added to verbs, with an adverbial force. Of these *na* negatives the verb, as in *chuh*, he is; *chuna*, he is not; *ā* asks a question, as in *chwā*, is he? *ti* adds emphasis, as in *chuti*, he is indeed; and *tyā* asks a question with emphasis, as in *chutyā*, is he indeed?

Two or three suffixes may be employed together, as in *kạrᵘ*, was made, *kạru-m*, was made by me, *kạrᵘ-m-akh*, thou wast made by me; *kạrᵘ-m-akh-ā*, wast thou made by me? The two *kh* suffixes become *h* when they are followed by a pronominal suffix commencing with a vowel, as in *kạrᵘ-h-as* (for *kạrᵘ-kh-as*), I was made by them.

E. *Conjugation.* As in the case of the modern Indo-Aryan vernaculars, the conjugation of the verb is mainly participial. Three only of the old tenses, the present, the future and the imperative have survived, the first having become a future, and the second a past conditional. These three we may call radical tenses. The rest, viz. the Kashmiri present, imperfect, past, aorist, perfect and other past tenses are all participial.

The verb substantive, which is also used as an auxiliary verb, has two tenses, a present and a past. The former is made by adding the pronominal suffixes of the nominative to a base *chu(h)*, and the latter by adding the same to a base *a̅sᵘ*. Thus:—

	Singular		*Plural*	
	Masculine	Feminine	Masculine	Feminine
1	*chu-s*, I am	*chĕ-s*, I am	*chih*, we are	*chĕh*, we are
2	*chu-kh*, thou art	*chĕ-kh*, thou art	*chi-wa*, you are	*chĕ-wa*, you are
3	*chuh*, he is	*chĕh*, she is	*chih*, they are	*chĕh*, they are
1	*a̅su-s*, I was	*a̅sᵘ-s*, I was	*a̅sⁱ*, we were	*āsa*, we were
2	*a̅su-kh*, thou wast	*a̅sᵘ-kh*, thou wast	*a̅sⁱ-wa*, you were	*āsa-wa*, you were
3	*a̅sᵘ*, he was	a̅sᵘ, she was	*a̅sⁱ*, they were	*āsa*, they were

As for the finite verb, the modern future (old present), and the past conditional (old future) do not change for gender, and do not employ suffixes, but retain relics of the old personal terminations of the tenses from which they are derived. They are thus conjugated, taking the verbal root *kar*, as the typical verb.

	Future, I shall make, &c.		Past Conditional, (if) I had made, &c.	
	Singular	*Plural*	*Singular*	*Plural*
1	*kara*	*karav*	*karahå*	*karahåv*
2	*karakh*	*kariv*	*karahåkh*	*kạrⁱhīv*

3	*kari*	*karan*	*karihē*	*karahån*

For the imperative we have 2nd person singular, *kar*, plur. *kariv*; third person singular and plural *karin*.

Many of the above forms will be intelligible from a consideration of the closely allied Sanskrit, although they are not derived from that language; but some (*e.g.* those of the second person singular) can only be explained by the analogy of the Iranian and of the Piśāca languages.

The present participle is formed by adding *ān* to the root; thus, *karān*, making. It does not change for gender. From this we get a present and an imperfect, formed by adding respectively the present and past tenses of the auxiliary verb. Thus, *kāran chus*, I (masculine) am making, I make; *karān chĕs*, I (feminine) am making, I make; *karān a̱sus*, I (masculine) was making; and so on.

There are several past participles, all of which are liable to change for gender, and are utilized in conjugation. We have:—

	Singular		*Plural*	
	Masculine	Feminine	Masculine	Feminine
Weak past participle	*kạr*^{u}	*kạr*^{u}	*kạr*^{i}	*karĕ*
Strong past participle	*karyōv*	*karyēya*	*karyēy*	*karyēya*
Pluperfect participle	*karyāv*	*karyēya*	*karēyēy*	*karyēya*
Compound past participle	*kạr*^{u}*mạt*^{u}	*kạr*^{u}*mạts*^{u}	*kạr*^{i}*mạ̄t*^{i}	*karĕmatsa*

In the strong past participle and the pluperfect participle, the final *v* and *y* (like the final *h* of *chuh* quoted above) are not parts of the original words, but are only added for the sake of euphony. The true words are *karyō*, *karyē*, *karyā* and *karyēyē*. There are three conjugations. The first includes all transitive verbs. These have both the weak and the strong past participles. The second conjugation consists of sixty-six common intransitive verbs, which also have both of these participles. The third conjugation consists of the remaining intransitive verbs. These have only the strong past participle. The weak past participle in the first two conjugations refers to something which has lately happened, and is used to form an immediate past tense. The strong past participle is more indefinite, and is employed to form a tense corresponding to the Greek aorist. The pluperfect participle refers to something which happened a long time ago, and is used to form the past tense of narration. As the third conjugation has no weak past participle, the strong past participle is employed to make the immediate past, and the pluperfect participle is employed to make the aorist past, while the new pluperfect participle is formed to make the tense of narration. Thus, from the root *wuph*, fly (third conjugation) we have *wuphyōv*, he flew just now, while *karyōv* (first conjugation) means "he was made at some indefinite time"; *wuphyāv*, he flew at some indefinite time, but *karyāv*, he was made a long time ago; finally, the new participle of the third conjugation, *wuphiyāv*, he flew a long time ago.

The corresponding tenses are formed by adding pronominal suffixes to the weak, the strong, or the pluperfect participle. In the last two the final *v* and *y*, being no longer required by euphony, are dropped. In the case of transitive verbs the participles are passive by derivation and in signification, and hence the suffix indicating the subject must be in the agent case. Thus *kạr*^{u} means "made." For "I made" we must say "made by me," *kạru-m*; for "thou madest," *kạru-th*, made by thee, and so on. If the thing made is feminine the participle must be feminine, and similarly if it is plural it must be plural. Thus, *kạru-m*, I made him; *kạr*^{u}*-m*, I made her; *kạri-m*, I made them (masculine); and *karĕ-m*, I made them (feminine). Similarly from the other two participles we have *karyō-m*, I made him; *karyēya-m*, I made her; *karyā-m*, I made him (a long time ago). The past participles of intransitive verbs are not passive, and hence the suffix indicating the subject must be in the nominative form. Thus *tsạl*^{u}, escaped (second conjugation); *tsạlu-s*, escaped-I, I (masculine) escaped; *tsạj*^{ü}*-s*, I (feminine) escaped, and so on. Similarly for the third conjugation, *wuphyōv*, flew; *wuphyō-s*, I (masculine) flew; *wuphyēya-s*, I (feminine) flew, &c.

As explained above, these suffixes may be piled one on another. As a further example we may give *kạr*^{u}, made; *kạru-n*, made by him, he made; *kạru-n-as*, made by him I, he made me, or (as *-s* also means "for him") he made for him; *kạru-n-as-ā*, did he make me? or, did he make for him? and so on.

Tenses corresponding to the English perfect and pluperfect are formed by conjugating the auxiliary verb, adding the appropriate suffixes, with the compound past participle. Thus *kạr*^{u}*mạt*^{u} *chu-n-as*, made am-by-him-I, he has made me; *tsạl*^{u}*mạt*^{u} *chu-kh*, escaped art thou, thou hast escaped; *wuphyōmạt*^{u} *chu-s*, flown am-I, I have flown. Similarly for the pluperfect, *kạr*^{u}*mạt*^{u} *a̱su-n-as*, made was-by-him-I, he had made me, and so on.

Many verbs have irregular past participles. Thus *mar*, die, has *mūd*^{u}; *di*, give, has *dịt*^{u}; *khi*, eat, has *khyauv* for its weak, and *khĕyōv* for its strong participle, while *ni*, take, has *nyūv* and *niyōv*, respectively. Others must be learnt from the regular grammars.

The infinitive is formed by adding *-un* to the root; thus *kar-un*, to make. It is declined like a

somewhat irregular noun of the first declension, its accusative being *karanas*. There are three forms of the noun of agency, of which typical examples are *kar-awun*^{u}, *kar-an-wa̤l*^{u}, and *kar-an-grākh*, a maker.

The passive is formed by conjugating the verb *yi*, come, with the ablative of the infinitive. Thus, *karana yiwān chuh*, it is coming by making, or into making, *i.e.* it is being made. A root is made active or causal by adding *-anaw*, *-āw*, or *-*^{a}*rāw*. Thus, *kar-anāw*, cause to make; *kumal*, be tender, *kumal-āw*, make tender; *kal*, be dumb, *kal-*^{a}*rāw*, make dumb. Some verbs take one form and some another, and there are numerous irregularities, especially in the case of the last.

F. *Indeclinables.* Indeclinables (adverbs, prepositions, conjunctions and interjections) must be learnt from the dictionary. The number of interjections is very large, and they are distinguished by minute rules depending on the gender of the person addressed and the exact amount of respect due to him.

Literature.—Kashmiri possesses a somewhat extensive literature, which has been very little studied. The missionary William Carey published in 1821 a version of the New Testament (in the Śāradā character), which was the first book published in the language. In 1885 the Rev. J. Hinton Knowles published at Bombay a collection of Kashmiri proverbs and sayings, and K. F. Burkhard in 1895 published an edition of Maḥmūd Gāmī's poem on Yūsuf and Zulaikhā. This, with the exception of later translations of the Scriptures in the Persian character and a few minor works, is all the literature that has been printed or about which anything has been written. Maḥmūd Gāmī's poem is valuable as an example of the Kashmiri used by Mussulmans. For Hindu literature, we may quote a history of Krishna by Dīnanātha. The very popular *Lallā-vākya*, a poem on Śaiva philosophy by a woman named *Lālladēvī*, is said to be the oldest work in the language which has survived. Another esteemed work is the *Śiva Pariṇaya* of Kṛṣṇa Rājānaka, a living author. These and other books which have been studied by the present writer have little independent value, being imitations of Sanskrit literature. Nothing is known about the dates of most of the authors.

Authorities.—The scientific study of Kashmiri is of very recent date. The only printed lexicographical work is a short vocabulary by W. J. Elmslie (London, 1872). K. F. Burkhard brought out a grammar of the Mussulman dialect in the *Proceedings of the Royal Bavarian Academy of Science* for 1887-1889, of which a translation by G. A. Grierson appeared in the *Indian Antiquary* of 1895 and the following years (reprinted as a separate publication, Bombay, 1897). T. R. Wade's Grammar (London, 1888) is the merest sketch, and the only attempt at a complete work of the kind in English is G. A. Grierson's *Essays on Kāçmīrī Grammar* (London and Calcutta, 1899). A valuable native grammar in Sanskrit, the *Kaśmīraśabdāmrta* of Īśvara Kaula, has been edited by the same writer (Calcutta, 1888). For an examination of the origin of Kashmiri grammatical forms and the Piśāca question generally, see G. A. Grierson's "On Certain Suffixes in the Modern Indo-Aryan Vernaculars" in the *Zeitschrift für Vergleichende Sprachforschung auf dem Gebiete der Indogermanischen Sprachen* for 1903 and *The Piśāca Languages of North-Western India* (London, 1906).

The only important text which has been published is Burkhard's edition, with a partial translation, of Mahmūd Gāmī's "Yūsuf and Zulaikhā" in the *Zeitschrift der Deutschen Morgenländischen Gesellschaft* for 1895 and 1899. The text of the *Siva Pariṇaya*, edited by G. A. Grierson, is in course of publication by the Asiatic Society of Bengal.

(G. A. Gr.)

1 See G. A. Grierson, "On Pronominal Suffixes in the Kāçmīrī Languages," and "On the Radical and Participial Tenses of the Modern Indo-Aryan Languages," in *Journal of the Asiatic Society of Bengal*, vol. lxiv. (1895), pt. i. pp. 336 and 352.

KASHUBES (sing. *Kaszub*, plur. *Kaszebe*), a Slavonic people numbering about 200,000, and living on the borders of West Prussia and Pomerania, along the Baltic coast between Danzig and Lake Garden, and inland as far as Konitz. They have no literature and no history, as they consist of peasants and fishermen, the educated classes being mostly Germans or Poles. Their language has been held to be but a dialect of Polish, but it seems better to separate it, as in some points it is quite independent, in some it offers a resemblance to the language of the Polabs (*q.v.*). This is most seen in the western dialect of the so-called Slovinci (of whom there are about 250 left) and Kabatki, whereas the eastern Kashube is more like Polish, which is encroaching upon and assimilating it. Lorentz calls the western dialect a language, and distinguishes 38 vowels. The chief points of Kashube as against Polish are that all its vowels can be nasal instead of a and e only, that it has preserved quantity and a free accent, has developed several special vowels, *e.g.*

ö, œ, ü, and has preserved the original order, *e.g. gard* as against *grod*. The consonants are very like Polish. (See also SLAVS.)

AUTHORITIES.—F. Lorentz, *Slovinzische Grammatik* (St Petersburg, 1903) and "Die gegenseitigen Verhältnisse der sogen. Lechischen Sprachen," in *Arch. f. Slav. Phil.* xxiv. (1902); J. Baudouin de Courtenay, "Kurzes Resumé der Kaschubischen Frage," ibid. xxvi. (1904); G. Bronisch, *Kaschubische Dialektstudien* (Leipzig, 1896-1898); S. Ramult, *Stownik jezyka pomorskiego czyli kaszubskiego, i.e.* "Dictionary of the Seacoast (Pomeranian) or Kashube Language" (Cracow, 1893).

(E. H. M.)

KASIMOV, a town of Russia, in the government of Ryazañ, on the Oka river, in 54° 56′ N. and 41° 3′ E., 75 m. E.N.E. of Ryazañ. Pop. (1897), 13,545, of whom about 1000 were Tatars. It is famed for its tanneries and leather goods, sheepskins and post-horse bells. Founded in 1152, it was formerly known as Meshcherski Gorodets. In the 15th century it became the capital of a Tatar khanate, subject to Moscow, and so remained until 1667. The town possesses a cathedral, and a mosque supposed to have been built by Kasim, founder of the Tatar principality. Near the mosque stands a mausoleum built by Shah-Ali in 1555. Lying on the direct road from Astrakhan to Moscow and Nizhniy-Novgorod, Kasimov is a place of some trade, and has a large annual fair in July. The waiters in the best hotels of St Petersburg are mostly Kasimov Tatars.

See Veliaminov-Zernov, *The Kasimov Tsars* (St Petersburg, 1863-1866).

KASSA (Germ. *Kaschau*; Lat. *Cassovia*), the capital of the county of Abauj-Torna, in Hungary, 170 m. N.E. of Budapest by rail. Pop. (1900), 35,856. Kassa is one of the oldest and handsomest towns of Hungary, and is pleasantly situated on the right bank of the Hernád. It is surrounded on three sides by hills covered with forests and vineyards, and opens to the S.E. towards a pretty valley watered by the Hernád and the Tarcza. Kassa consists of the inner town, which was the former old town surrounded with walls, and of three suburbs separated from it by a broad glacis. The most remarkable building, considered the grandest masterpiece of architecture in Hungary, is the Gothic cathedral of St Elizabeth. Begun about 1270 by Stephen V., it was continued (1342-1382) by Queen Elizabeth, wife of Charles I., and her son Louis I., and finished about 1468, in the reign of Matthias I. (Corvinus). The interior was transformed in the 18th century to the Renaissance style, and the whole church thoroughly restored in 1877-1896. The church of St Michael and the Franciscan or garrison church date from the 13th century. The royal law academy, founded in 1659, and sanctioned by golden bull of King Leopold I. in 1660, has an extensive library; there are also a museum, a Roman Catholic upper gymnasium and seminary for priests, and other schools and benevolent institutions. Kassa is the see of a Roman Catholic bishopric. It is the chief political and commercial town of Upper Hungary, and the principal *entrepôt* for the commerce between Hungary and Galicia. Its most important manufactures are tobacco, machinery, iron, furniture, textiles and milling. About 3 m. N.W. of the town are the baths of Bankó, with alkaline and ferruginous springs, and about 12 m. N.E. lies Ránk-Herlein, with an intermittent chalybeate spring. About 20 m. W. of Kassa lies the famous Premonstratensian abbey of Jászó, founded in the 12th century. The abbey contains a rich library and valuable archives. In the neighbourhood is a fine stalactite grotto, which often served as a place of refuge to the inhabitants in war time.

Kassa was created a town and granted special privileges by Béla IV. in 1235, and was raised to the rank of a royal free town by Stephen V. in 1270. In 1290 it was surrounded with walls. The subsequent history presents a long record of revolts, sieges and disastrous conflagrations. In 1430 the plague carried off a great number of the inhabitants. In 1458 the right of minting money according to the pattern and value of the Buda coinage was granted to the municipality by King Matthias I. The bishopric was established in 1804. In the revolutionary war of 1848-49 the Hungarians were twice defeated before the walls of Kassa by the Austrians under General Schlick, and the town was held successively by the Austrians, Hungarians and Russians.

KASSALA, a town and *mudiria* of the Anglo-Egyptian Sudan. The town, a military station of some importance, lies on the river Gash (Mareb) in 15° 28′ N., 36° 24′ E., 260 m. E.S.E. of Khartum and 240 m. W. of Massawa, the nearest seaport. Pop. about 20,000. It is built on a plain, 1700 ft. above the sea, at the foot of the Abyssinian highlands 15 m. W. of the frontier of the Italian colony of Eritrea. Two dome-shaped mountains about 2600 ft. high, jebels Mokram and Kassala, rise abruptly from the plain some 3 m. to the east and south-east. These mountains and the numerous gardens Kassala contains give to the place a picturesque appearance. The chief buildings are of brick, but most of the natives dwell in grass *tukls*. A short distance from the town is Khatmia, containing a tomb mosque with a high tower, the headquarters of the Morgani family. The sheikhs El Morgani are the chiefs of a religious brotherhood widely spread and of considerable influence in the eastern Sudan. The Morgani family are of Afghan descent. Long settled in Jidda, the head of the family removed to the Sudan about 1800 and founded the Morgani sect. Kassala was founded by the Egyptians in 1840 as a fortified post from which to control their newly conquered territory near the Abyssinian frontier. In a few years it grew into a place of some importance. In November 1883 it was besieged by the dervishes. The garrison held out till the 30th of July 1885 when owing to lack of food they capitulated. Kassala was captured from the dervishes by an Italian force under Colonel Baratieri on the 17th of July 1894 and by the Italians was handed over on Christmas day 1897 to Egypt. The bulk of the inhabitants are Hallenga “Arabs.”

Kassala *mudiria* contains some of the most fertile land in the Anglo-Egyptian Sudan. It corresponds roughly with the district formerly known as Taka. It is a region of light rainfall, and cultivation depends chiefly on the Gash flood. The river is however absolutely dry from October to June. White durra of excellent quality is raised.

KASSASSIN, a village of Lower Egypt 22 m. by rail W. of Ismailia on the Suez Canal. At this place, on the 28th of August and again on the 9th of September 1882 the British force operating against Arabi Pasha was attacked by the Egyptians—both attacks being repulsed (see EGYPT: *Military Operations*).

KASSITES, an Elamite tribe who played an important part in the history of Babylonia. They still inhabited the north-western mountains of Elam, immediately south of Holwan, when Sennacherib attacked them in 702 B.C. They are the Kossaeans of Ptolemy, who divides Susiana between them and the Elymaeans; according to Strabo (xi. 13, 3, 6) they were the neighbours of the Medes. Th. Nöldeke (*Gött. G. G.*, 1874, pp. 173 seq.) has shown that they are the Kissians of the older Greek authors who are identified with the Susians by Aeschylus (*Choeph.* 424, Pers. 17, 120) and Herodotus (v. 49, 52). We already hear of them as attacking Babylonia in the 9th year of Samsu-iluna the son of Khammurabi, and about 1780 B.C. they overran Babylonia and founded a dynasty there which lasted for 576 years and nine months. In the course of centuries, however, they were absorbed into the Babylonian population; the kings adopted Semitic names and married into the royal family of Assyria. Like the other languages of the non-Semitic tribes of Elam that of the Kassites was agglutinative; a vocabulary of it has been handed down in a cuneiform tablet, as well as a list of Kassite names with their Semitic equivalents. It has no connexion with Indo-European, as has erroneously been supposed. Some of the Kassite deities were introduced into the Babylonian pantheon, and the Kassite tribe of Khabirā seems to have settled in the Babylonian plain.

See Fr. Delitzsch, *Die Sprache der Kossäer* (1884).

(A. H. S.)

KASTAMUNI, or KASTAMBŪL. (1) A vilayet of Asia Minor which includes Paphlagonia and parts of Pontus and Galatia. It is divided into four sanjaks—Kastamuni, Boli, Changra and Sinope—is rich in mineral wealth, and has many mineral springs and extensive forests, the timber being used for charcoal and building and the bark for tanning. The products are chiefly cereals, fruits, opium, cotton, tobacco, wool, ordinary goat-hair and mohair, in which there is a large trade. There are coal-mines at and near Eregli (anc. *Heracleia*) which yield steam coal nearly as good in quality as the English, but they are badly worked. Its population comprises about 993,000 Moslems and 27,000 Christians. (2) The capital of the vilayet, the ancient *Castamon*, altitude 2500 ft., situated in the narrow valley of the Geuk Irmak (*Amnias*), and connected by a carriage road, 54 m., with its port Ineboli on the Black Sea. The town is noted for its copper utensils, but the famous copper mines about 36 m. N., worked from ancient times to the 19th century, are now abandoned. There are over 30 mosques in the town, a dervish monastery, and numerous theological colleges (*medresses*), and the Moslem inhabitants have a reputation for bigotry. The climate though subject to extremes of heat and cold is healthy; in winter the roads are often closed by snow. The population of 16,000 includes about 2500 Christians. Castamon became an important city in later Byzantine times. It lay on the northern trunk-road to the Euphrates and was built round a strong fortress whose ruins crown the rocky hill west of the town. It was taken by the Danishmand Amirs of Sivas early in the 12th century, and passed to the Turks in 1393.

(J. G. C. A.)

KASTORIA (Turkish *Kesrie*), a city of Macedonia, European Turkey, in the vilayet of Monastir, 45 m. S. by W. of Monastir (Bitolia). Pop. (1905), about 10,000, one-third of whom are Greeks, one-third Slavs, and the remainder Albanians or Turks. Kastoria occupies part of a peninsula on the western shore of Lake Kastoria, which here receives from the north its affluent the Zhelova. The lake is formed in a deep hollow surrounded by limestone mountains, and is drained on the south by the Bistritza, a large river which flows S.E. nearly to the Greek frontier, then sharply turns N.E., and finally enters the Gulf of Salonica. The lake has an area of 20 sq. m., and is 2850 ft. above sea-level. Kastoria is the seat of an Orthodox archbishop. It is usually identified with the ancient *Celetrum*, captured by the Romans under Sulpicius, during the first Macedonian campaign, 200 B.C., and better known for the defence maintained by Bryennius against Alexis I. in 1084. A Byzantine wall with round towers runs across the peninsula.

KASUR, a town of British India, in the Lahore district of the Punjab, situated on the north bank of the old bed of the river Beas, 34 m. S.E. of Lahore. Pop. (1901), 22,022. A Rajput colony seems to have occupied the present site before the earliest Mahommedan invasion; but Kasur does not appear in history until late in the Mussulman period, when it was settled by a Pathan colony from beyond the Indus. It has an export trade in grain and cotton, and manufactures of cotton and leather goods.

KATAGUM, the sub-province of the double province of Kano in the British protectorate of

Northern Nigeria. It lies approximately between 11° and 13° N. and 8° 20′ and 10° 40′ E. It is bounded N. by the French Sudan, E. by Bornu, S. by Bauchi, and W. by Kano. Katagum consists of several small but ancient Mahommedan emirates—Katagum, Messau, Gummel, Hadeija, Machena, with a fringe of Bedde pagans on its eastern frontier towards Bornu, and other pagans on the south towards Bauchi. The Waube flows from Kano through the province via Hadeija and by Damjiri in Bornu to Lake Chad, affording a route for the transport of goods brought by the Zungeru-Zaria-Kano railway to the headquarters of Katagum and western Bornu. Katagum is a fertile province inhabited by an industrious people whose manufactures rival those of Kano.

In ancient times the province of Katagum formed the debateable country between Bornu and the Hausa states. Though Mahommedan it resisted the Fula invasion. Its northern emirates were for a long time subject to Bornu, and its customs are nearly assimilated to those of Bornu. The province was taken under administrative control by the British in October 1903. In 1904 the capitals of Gummel, Hadeija, Messau and Jemaari, were brought into touch with the administration and native and provincial courts established. At the beginning of 1905 Katagum was incorporated as a sub-province with the province of Kano, and the administrative organization of a double province was extended over the whole. Hadeija, which is a very wealthy town and holds an important position both as a source of supplies and a centre of trade, received a garrison of mounted infantry and became the capital of the sub-province.

Hadeija was an old Habe town and its name, an evident corruption of Khadija, the name of the celebrated wife and first convert of Mahomet, is a strong presumption of the incorrectness of the Fula claim to have introduced Islam to its inhabitants. The ruling dynasty of Hadeija was, however, overthrown by Fula usurpation towards the end of the 18th century, and the Fula ruler received a flag and a blessing from Dan Fodio at the beginning of his sacred war in the opening years of the 19th century. Nevertheless the habit of independence being strong in the town of Hadeija the little emirate held its own against Sokoto, Bornu and all comers. Though included nominally within the province at Katagum it was the boast of Hadeija that it had never been conquered. It had made nominal submission to the British in 1903 on the successful conclusion of the Kano-Sokoto campaign, and in 1905, as has been stated, was chosen as the capital of the sub-province. The emir's attitude became, however, in the spring of 1906 openly antagonistic to the British and a military expedition was sent against him. The emir with his disaffected chiefs made a plucky stand but after five hours' street fighting the town was reduced. The emir and three of his sons were killed, and a new emir, the rightful heir to the throne, who had shown himself in favour of a peaceful policy, was appointed. The offices of the war chiefs in Hadeija were abolished and 150 yards of the town wall were broken down.

Slave dealing is at an end in Katagum. The military station at Hadeija forms a link in the chain of British forts which extends along the northern frontier of the protectorate. (See Nigeria.)

(F. L. L.)

KATANGA, a district of Belgian Congo, forming the south-eastern part of the colony. Area, approximately, 180,000 sq. m.; estimated population 1,000,000. The natives are members of the Luba-Lunda group of Bantus. It is a highly mineralized region, being specially rich in copper ore. Gold, iron and tin are also mined. Katanga is bounded S. and S.E. by Northern Rhodesia, and British capital is largely interested in the development of its resources, the administration of the territory being entrusted to a committee on which British members have seats. Direct railway communication with Cape Town and Beira was established in 1909. There is also a rail and river service via the Congo to the west coast. (See Congo Free State.)

KATER, HENRY (1777-1835), English physicist of German descent, was born at Bristol on the 16th of April 1777. At first he purposed to study law; but this he abandoned on his father's death in 1794, and entered the army, obtaining a commission in the 12th regiment of foot, then stationed in India, where he rendered valuable assistance in the great trigonometrical survey. Failing health obliged him to return to England; and in 1808, being then a lieutenant, he entered on a distinguished student career in the senior department of the Royal Military College at

Sandhurst. Shortly after he was promoted to the rank of captain. In 1814 he retired on half-pay, and devoted the remainder of his life to scientific research. He died at London on the 26th of April 1835.

His first important contribution to scientific knowledge was the comparison of the merits of the Cassegrainian and Gregorian telescopes, from which (*Phil. Trans.*, 1813 and 1814) he deduced that the illuminating power of the former exceeded that of the latter in the proportion of 5 : 2. This inferiority of the Gregorian he explained as being probably due to the mutual interference of the rays as they crossed at the principal focus before reflection at the second mirror. His most valuable work was the determination of the length of the second's pendulum, first at London and subsequently at various stations throughout the country (*Phil. Trans.*, 1818, 1819). In these researches he skilfully took advantage of the well-known property of reciprocity between the centres of suspension and oscillation of an oscillating body, so as to determine experimentally the precise position of the centre of oscillation; the distance between these centres was then the length of the ideal simple pendulum having the same time of oscillation. As the inventor of the floating collimator, Kater rendered a great service to practical astronomy (*Phil. Trans.*, 1825, 1828). He also published memoirs (*Phil. Trans.*, 1821, 1831) on British standards of length and mass; and in 1832 he published an account of his labours in verifying the Russian standards of length. For his services to Russia in this respect he received in 1814 the decoration of the order of St. Anne; and the same year he was elected a fellow of the Royal Society.

His attention was also turned to the subject of compass needles, his Bakerian lecture "On the Best Kind of Steel and Form for a Compass Needle" (*Phil. Trans.*, 1821) containing the results of many experiments. The treatise on "Mechanics" in Lardner's *Cyclopaedia* was partly written by him; and his interest in more purely astronomical questions was evidenced by two communications to the Astronomical Society's *Memoirs* for 1831-1833—the one on an observation of Saturn's outer ring, the other on a method of determining longitude by means of lunar eclipses.

KATHA, a district in the northern division of Upper Burma, with an area of 6994 sq. m., 3730 of which consists of the former separate state of Wuntho. It is bounded N. by the Upper Chindwin, Bhamo and Myitkyina districts, E. by the Kaukkwe River as far as the Irrawaddy, thence east of the Irrawaddy by the Shan State of Möng Mit (Momeik), and by the Shweli River, S. by the Ruby Mines district and Shwebo, and W. by the Upper Chindwin district. Three ranges of hills run through the district, known as the Minwun, Gangaw and Mangin ranges. They separate the three main rivers—the Irrawaddy, the Mèza and the Mu. The Minwun range runs from north to south, and forms for a considerable part of its length the dividing line between the Katha district proper and what formerly was the Wuntho state. Its average altitude is between 1500 and 2000 ft. The Gangaw range runs from the north of the district for a considerable portion of its length close to and down the right bank of the Irrawaddy as far as Tigyaing, where the Myatheindan pagoda gives its name to the last point. Its highest point is 4400 ft., but the average is between 1500 and 2000 ft. The Katha branch of the railway crosses it at Petsut, a village 12 miles west of Katha town. The Mangin range runs through Wuntho (highest peak, Maingthôn, 5450 ft.).

Gold, copper, iron and lead are found in considerable quantities in the district. The Kyaukpazat gold-mines, worked by an English company, gave good returns, but the quartz reef proved to be a mere pocket and is now worked out. The iron, copper and lead are not now worked. Jade and soapstone also exist, and salt is produced from brine wells. There are three forest reserves in Katha, with a total area of 1119 sq. m. The population in 1901 was 176,223, an increase of 32% in the decade. The number of Shans is about half that of Burmese, and of Kadus half that of Shans. The Shans are mostly in the Wuntho sub-division. Rice is the chief crop in the plains, tea, cotton, sesamum and hill rice in the hills. The valley of the Mèza, which is very malarious, was used as a convict settlement under Burmese rule. The district was first occupied by British troops in 1886, but it was not finally quieted till 1890, when the Wuntho sawbwa was deposed and his state incorporated in Katha district.

KATHA is the headquarters of the district. The principal means of communication are the Irrawaddy Flotilla steamers, which run between Mandalay and Bhamo, and the railway which communicates with Sagaing to the south and Myitkyina to the north. A ferry-steamer plies between Katha and Bhamo.

KATHIAWAR, or KATTYWAR, a peninsula of India, within the Gujarat division of Bombay, giving its name to a political agency. Total area, about 23,400 sq. m.; pop. (1901), 2,645,805. These figures include a portion of the British district of Ahmedabad, a portion of the state of Baroda, and the small Portuguese settlement of Diu. The peninsula is bounded N. by the Runn of Cutch, E. by Ahmedabad district and the Gulf of Cambay, and S. and W. by the Arabian Sea. The extreme length is 220 m.; the greatest breadth about 165 m. Generally speaking, the surface is undulating, with low ranges running in various directions. With the exception of the Tangha and Mandav hills, in the west of Jhalawar, and some unimportant hills in Hallar, the northern portion of the country is flat; but in the south, from near Gogo, the Gir range runs nearly parallel with the coast, and at a distance of about 20 m. from it, along the north of Babriawar and Sorath, to the neighbourhood of Girnar. Opposite this latter mountain is the solitary Osam hill, and then still farther west is the Barada group, between Hallar and Barada, running about 20 m. north and south from Gumli to Ranawao. The Girnar group of mountains is an important granitic mass, the highest peak of which rises to 3500 ft. The principal river is the Bhadar, which rises in the Mandav hills, and flowing S.W. falls into the sea at Navi-Bandar; it is everywhere marked by highly cultivated lands adjoining its course of about 115 m. Other rivers are the Aji, Machhu and Satrunji—the last remarkable for romantic scenery. Four of the old races, the Jaitwas, Churasamas, Solunkis and Walas still exist as proprietors of the soil who exercised sovereignty in the country prior to the immigration of the Jhalas, Jadejas, Purmars, Kathis, Gohels, Jats, Mahommedans and Mahrattas, between whom the country is now chiefly portioned out. Kathiawar has many notable antiquities, comprising a rock inscription of Asoka, Buddhist caves, and fine Jain temples on the sacred hill of Girnar and at Palitana.

The political agency of Kathiawar has an area of 20,882 sq. m. In 1901 the population was 2,329,196, showing a decrease of 15% in the decade due to the results of famine. The estimated gross revenue of the several states is £1,278,000; total tribute (payable to the British, the gaekwar of Baroda and the nawab of Junagarh), £70,000. There are altogether 193 states of varying size and importance, of which 14 exercise independent jurisdiction, while the rest are more or less under British administration. The eight states of the first class are Junagaw, Nawanagar, Bhaunagar, Porbandar, Dhrangadra, Morvi, Gondal and Jafarabad. The headquarters of the political agent are at Rajkot, in the centre of the peninsula, where also is the Rajkumar college, for the education of the sons of the chiefs. There is a similar school for *girasias*, or chiefs of lower rank, at Gondal. An excellent system of metre-gauge railways has been provided at the cost of the leading states. Maritime trade is also very active, the chief ports being Porbandar, Mangrol and Verawal. In 1903-1904 the total sea-borne exports were valued at £1,300,000, and the imports at £1,120,000. The progressive prosperity of Kathiawar received a shock from the famine of 1899-1900, which was felt everywhere with extreme severity.

KATKOV, MICHAEL NIKIFOROVICH (1818-1887), Russian journalist, was born in Moscow in 1818. On finishing his course at the university he devoted himself to literature and philosophy, and showed so little individuality that during the reign of Nicholas I. he never once came into disagreeable contact with the authorities. With the Liberal reaction and strong reform movement which characterized the earlier years of Alexander II.'s reign (1855-1881) he thoroughly sympathized, and for some time he warmly advocated the introduction of liberal institutions of the British type, but when he perceived that the agitation was assuming a Socialistic and Nihilist tinge, and that in some quarters of the Liberal camp indulgence was being shown to Polish national aspirations, he gradually modified his attitude until he came to be regarded by the Liberals as a renegade. At the beginning of 1863 he assumed the management and editorship of the *Moscow Gazette*, and he retained that position till his death in 1887. During these twenty-four years he exercised considerable influence on public opinion and even on the Government, by representing with great ability the moderately Conservative spirit of Moscow in opposition to the occasionally ultra-Liberal and always cosmopolitan spirit of St Petersburg. With the Slavophils he agreed in advocating the extension of Russian influence in south-eastern Europe, but he carefully kept aloof from them and condemned their archaeological and

ecclesiastical sentimentality. Though generally temperate in his views, he was extremely incisive and often violent in his modes of expressing them, so that he made many enemies and sometimes incurred the displeasure of the press-censure and the ministers, against which he was more than once protected by Alexander III. in consideration of his able advocacy of national interests. He is remembered chiefly as an energetic opponent of Polish national aspirations, of extreme Liberalism, of the system of public instruction based on natural science, and of German political influence. In this last capacity he helped to prepare the way for the Franco-Russian alliance.

KATMANDU (less correctly KHATMANDU), the capital of the state of Nepal, India, situated on the bank of the Vishnumati river at its confluence with the Baghmati, in 27° 36′ N., 85° 24′ E. The town, which is said to have been founded about 723, contains a population estimated at 70,000, occupying 5000 houses made of brick, and usually from two to four storeys high. Many of the houses have large projecting wooden windows or balconies, richly carved. The maharaja's palace, a huge, rambling, ungainly building, stands in the centre of the town, which also contains numerous temples. One of these, a wooden building in the centre of the town, gives it its name (*kat* = wood). The streets are extremely narrow, and the whole town very dirty. A British resident is stationed about a mile north of the town.

KATO, TAKA-AKIRA (1859-), Japanese statesman, was born at Nagoya, and commenced life as an employee in the great firm of Mitsu Bishi. In 1887 he became private secretary to Count Okuma, minister of state for foreign affairs. Subsequently he served as director of a bureau in the finance department, and from 1894 to 1899 he represented his country at the court of St James. He received the portfolio of foreign affairs in the fourth Ito cabinet (1900-1901), which remained in office only a few months. Appointed again to the same position in the Saionji cabinet (1906), he resigned after a brief interval, being opposed to the nationalization of the private railways, which measure the cabinet approved. He then remained without office until 1908, when he again accepted the post of ambassador in London. He was decorated with the grand cross of St Michael and St George, and earned the reputation of being one of the strongest men among the junior statesmen.

KATRINE, LOCH, a fresh-water lake of Scotland, lying almost entirely in Perthshire. The boundary between the counties of Perth and Stirling runs from Glengyle, at the head of the lake, down the centre to a point opposite Stronachlachar from which it strikes to the south-western shore towards Loch Arklet. The loch, which has a south-easterly trend, is about 8 m. long, and its greatest breadth is 1 m. It lies 364 ft. above the sea-level. It occupies an area of 4¾ square miles and has a drainage basin of 37½ square miles. The average depth is 142 ft., the greatest depth being 495 ft. The average annual rainfall is 78 inches. The mean temperature at the surface is 56.4° F., and at the bottom 41° F. The scenery has been immortalized in Sir Walter Scott's *Lady of the Lake*. The surrounding hills are of considerable altitude, the most remarkable being the head of Ben A'an (1750 ft.) and the grassy craigs and broken contour of Ben Venue (2393 ft.). It is fed by the Gyle and numerous burns, and drained by the Achray to Loch Achray and thence by the Black Avon to Loch Vennacher. Since 1859 it has formed the chief source of the water-supply of Glasgow, the aqueduct leaving the lake about 1½ m. S.E. of Stronachlachar. By powers obtained in 1885 the level of the lake was increased by 5 ft. by a system of sluices regulating the outflow of the Achray. One result of this damming up has been to submerge the Silver Strand and to curtail the dimensions of Ellen's Isle. The principal points on the shores are Glengyle, formerly a fastness of the Macgregors, the Trossachs, the Goblins' Cave on Ben Venue, and

Stronachlachar (Gaelic, “the mason’s nose”), from which there is a ferry to Coilachra on the opposite side. A road has been constructed from the Trossachs for nearly six miles along the northern shore. During summer steamers ply between the Trossachs and Stronachlachar and there is a daily service of coaches from the Trossachs to Callander (about 10 m.) and to Aberfoyle (9 m.), and between Stronachlachar, to Inversnaid on Loch Lomond (about 4½ m.). The road to Inversnaid runs through the Macgregors’ country referred to in Scott’s *Rob Roy*.

KATSENA, an ancient state of the western Sudan, now included in the province of Kano in the British protectorate of Northern Nigeria. Katsena was amongst the oldest of the Hausa states. There exist manuscripts which carry back its history for about 1000 years and tradition ascribes the origin of the Hausa population, which is known also by the name of Habe or Habeche, to the union of Bajibda of Bagdad with a prehistoric queen of Daura. The conquest of the Habe of Katsena by the Fula about the beginning of the 19th century made little difference to the country. The more cultivated Habe were already Mahommedan and the new rulers adopted the existing customs and system of government. These were in many respects highly developed and included elaborate systems of taxation and justice.

The capital of the administrative district is a town of the same name, in 13° N., 7° 41′ E., being 160 m. E. by S. of the city of Sokoto, and 84 m. N.W. of Kano. The walls of Katsena have a circuit of between 13 and 14 miles, but only a small part of the enclosed space is inhabited. In the 17th and 18th centuries it appears to have been the largest town in the Hausa countries, and its inhabitants at that time numbered some 100,000. The date of the foundation of the present town must be comparatively modern, for it is believed to have been moved from its ancient site and at the time of Leo Africanus (*c.* 1513) there was no place of any considerable size in the province of Katsena. Before that period Katsena boasted of being the chief seat of learning throughout the Hausa states and this reputation was maintained to the time of the Fula conquest. In the beginning of the 19th century the town fell into the hands of the Fula, but only after a protracted and heroic defence. In March 1903 Sir F. Lugard visited Katsena on his way from Sokoto and the emir and chiefs accepted British suzerainty without fighting. The Katsena district has since formed an administrative district in the double province of Kano and Katagum. The emir was unfaithful to his oath of allegiance to the British crown, and was deposed in 1904. His successor was installed and took the oath of allegiance in December of the same year. Katsena is a rich and populous district.

See the *Travels* of Heinrich Barth (new ed., London, 1890, chs. xxiii. and xxiv.). Consult also the *Annual Reports* on Northern Nigeria issued by the Colonial Office, London, particularly the Report for 1902.

Katsena is also the name of a town in the district of Katsena-Allah, in the province of Muri, Northern Nigeria. This district is watered by a river of the same name which takes its rise in the mountains of the German colony of Cameroon, and flows into the Benue at a point above Abinsi.

KATSURA, TARO, Marquess (1847-), Japanese soldier and statesman, was born in 1847 in Choshu. He commenced his career by fighting under the Imperial banner in the civil war of the Restoration, and he displayed such talent that he was twice sent at public expense to Germany (in 1870 and 1884) to study strategy and tactics. In 1886 he was appointed vice-minister of war, and in 1891 the command of division devolved on him. He led the left wing of the Japanese army in the campaign of 1894-95 against China, and made a memorable march in the depth of winter from the north-east shore of the Yellow Sea to Haicheng, finally occupying Niuchwang, and effecting a junction with the second army corps which moved up the Liaotung peninsula. For these services he received the title of viscount. He held the portfolio of war from 1898 to 1901, when he became premier and retained office for four and a half years, a record in Japan. In 1902 his cabinet concluded the first *entente* with England, which event procured for Katsura the rank of count. He also directed state affairs throughout the war with Russia, and concluded the offensive and defensive treaty of 1905 with Great Britain, receiving from King

Edward the grand cross of the order of St Michael and St George, and being raised by the mikado to the rank of marquess. He resigned the premiership in 1905 to Marquess Saionji, but was again invited to form a cabinet in 1908. Marquess Katsura might be considered the chief exponent of conservative views in Japan. Adhering strictly to the doctrine that ministries were responsible to the emperor alone and not at all to the diet, he stood wholly aloof from political parties, only his remarkable gift of tact and conciliation enabling him to govern on such principles.

KATTERFELTO (or KATERFELTO), GUSTAVUS (d. 1799), quack doctor and conjurer, was born in Prussia. About 1782 he came to London, where his advertisements in the newspapers, headed “Wonders! Wonders! Wonders!” enabled him to trade most profitably upon the credulity of the public during the widespread influenza epidemic of that year. His public entertainment, which, besides conjuring, included electrical and chemical experiments and demonstrations with the microscope, extracted a flattering testimonial from the royal family, who witnessed it in 1784. The poet William Cowper refers to Katterfelto in *The Task*; he became notorious for a long tour he undertook, exciting marvel by his conjuring performances.

KATTOWITZ, a town in the Prussian province of Silesia, on the Rawa, near the Russian frontier, 5 m. S.E. from Beuthen by rail. Pop. (1875), 11,352; (1905), 35,772. There are large iron-works, foundries and machine shops in the town, and near it zinc and anthracite mines. The growth of Kattowitz, like that of other places in the same district, has been very rapid, owing to the development of the mineral resources of the neighbourhood. In 1815 it was a mere village, and became a town in 1867. It has monuments to the emperors William I. and Frederick III.

See G. Hoffmann, *Geschichte der Stadt Kattowitz* (Kattowitz, 1895).

KATWA, or CUTWA, a town of British India, in Burdwan district, Bengal, situated at the confluence of the Bhagirathi and Ajai rivers. Pop. (1901), 7220. It was the residence of many wealthy merchants, but its commercial importance has declined as it is without railway communication and the difficulties of the river navigation have increased. It was formerly regarded as the key to Murshidabad. The old fort, of which scarcely a vestige remains, is noted as the scene of the defeat of the Mahrattas by Ali Vardi Khan.

KATYDID, the name given to certain North American insects, belonging to the family *Locustidae*, and related to the green or tree grasshoppers of England. As in other members of the family, the chirrup, alleged to resemble the words “Katydid,” is produced by the friction of a file on the underside of the left forewing over a ridge on the upperside of the right. Several species, belonging mostly to the genera *Microcentonus* and *Cyrtophallus*, are known.

KAUFBEUREN, a town in the kingdom of Bavaria, on the Wertach, 55 m. S.W. of Munich by rail. Pop. (1905), 8955. Kaufbeuren is still surrounded by its medieval walls and presents a picturesque appearance. It has a handsome town hall with fine paintings, an old tower (the Hexenturm, or witches' tower), a museum and various educational institutions. The most interesting of the ecclesiastical buildings is the chapel of St Blasius, which was restored in 1896. The chief industries are cotton spinning, weaving, bleaching, dyeing, printing, machine building and lithography, and there is an active trade in wine, beer and cheese. Kaufbeuren is said to have been founded in 842, and is first mentioned in chronicles of the year 1126. It appears to have become a free imperial city about 1288, retaining the dignity until 1803, when it passed to Bavaria. It was formerly a resort of pilgrims, and Roman coins have been found in the vicinity.

See F. Stieve, *Die Reichsstadt Kaufbeuren und die bayrische Restaurationspolitik* (Munich, 1870); and Schröder, *Geschichte der Stadt und Katholischen Pfarrei Kaufbeuren* (Augsburg, 1903).

KAUFFMANN, [MARIA ANNA] ANGELICA (1741-1807), the once popular artist and Royal Academician, was born at Coire in the Grisons, on the 30th of October 1741. Her father, John Josef Kauffmann, was a poor man and mediocre painter, but apparently very successful in teaching his precocious daughter. She rapidly acquired several languages, read incessantly, and showed marked talents as a musician. Her greatest progress, however, was in painting; and in her twelfth year she had become a notability, with bishops and nobles for her sitters. In 1754 her father took her to Milan. Later visits to Italy of long duration appear to have succeeded this excursion; in 1763 she visited Rome, returning to it again in 1764. From Rome she passed to Bologna and Venice, being everywhere fêted and caressed, as much for her talents as for her personal charms. Writing from Rome in August 1764 to his friend Franke, Winckelmann refers to her exceptional popularity. She was then painting his picture, a half-length, of which she also made an etching. She spoke Italian as well as German, he says; and she also expressed herself with facility in French and English—one result of the last-named accomplishment being that she painted all the English visitors to the Eternal City. "She may be styled beautiful," he adds, "and in singing may vie with our best virtuosi." While at Venice, she was induced by Lady Wentworth, the wife of the English ambassador to accompany her to London, where she appeared in 1766. One of her first works was a portrait of Garrick, exhibited in the year of her arrival at "Mr Moreing's great room in Maiden Lane." The rank of Lady Wentworth opened society to her, and she was everywhere well received, the royal family especially showing her great favour.

Her firmest friend, however, was Sir Joshua Reynolds. In his pocket-book her name as "Miss Angelica" or "Miss Angel" appears frequently, and in 1766 he painted her, a compliment which she returned by her "Portrait of Sir Joshua Reynolds," aetat. 46. Another instance of her intimacy with Reynolds is to be found in the variation of Guercino's "Et in Arcadia ego" produced by her at this date, a subject which Reynolds repeated a few years later in his portrait of Mrs Bouverie and Mrs Crewe. When, about November 1767, she was entrapped into a clandestine marriage with an adventurer who passed for a Swedish count (the Count de Horn) Reynolds befriended her, and it was doubtless owing to his good offices that her name is found among the signatories to the famous petition to the king for the establishment of the Royal Academy. In its first catalogue of 1769 she appears with "R.A." after her name (an honour which she shared with another lady and compatriot, Mary Moser); and she contributed the "Interview of Hector and Andromache," and three other classical compositions. From this time until 1782 she was an annual exhibitor, sending sometimes as many as seven pictures, generally classic or allegorical subjects. One of the most notable of her performances was the "Leonardo expiring in the Arms of Francis the First," which belongs to the year 1778. In 1773 she was appointed by the Academy with others to decorate St Paul's, and it was she who, with Biagio Rebecca, painted the Academy's old lecture room at Somerset House. It is probable that her popularity declined a little in consequence of her unfortunate marriage; but in 1781, after her first husband's death (she had been long separated from him), she married Antonio Zucchi (1728-1795), a Venetian artist then resident in England. Shortly afterwards she retired to Rome, where she lived for twenty-five years with much of her old prestige. In 1782 she lost her father; and in 1795—the year in which she painted the picture of Lady Hamilton—her husband. She continued at intervals to contribute to the Academy, her last

exhibit being in 1797. After this she produced little, and in November 1807 she died, being honoured by a splendid funeral under the direction of Canova. The entire Academy of St Luke, with numerous ecclesiastics and virtuosi, followed her to her tomb in S. Andrea delle Fratte, and, as at the burial of Raphael, two of her best pictures were carried in procession.

The works of Angelica Kauffmann have not retained their reputation. She had a certain gift of grace, and considerable skill in composition. But her drawing is weak and faulty; her figures lack variety and expression; and her men are masculine women. Her colouring, however, is fairly enough defined by Waagen's term "cheerful." Rooms decorated by her brush are still to be seen in various quarters. At Hampton Court is a portrait of the duchess of Brunswick; in the National Portrait Gallery, a portrait of herself. There are other pictures by her at Paris, at Dresden, in the Hermitage at St Petersburg, and in the Alte Pinakothek at Munich. The Munich example is another portrait of herself; and there is a third in the Uffizi at Florence. A few of her works in private collections have been exhibited among the "Old Masters" at Burlington House. But she is perhaps best known by the numerous engravings from her designs by Schiavonetti, Bartolozzi and others. Those by Bartolozzi especially still find considerable favour with collectors. Her life was written in 1810 by Giovanni de Rossi. It has also been used as the basis of a romance by Léon de Wailly, 1838; and it prompted the charming novel contributed by Mrs Richmond Ritchie to the *Cornhill Magazine* in 1875 under the title of "Miss Angel."

(A. D.)

KAUFMANN, CONSTANTINE PETROVICH (1818-1882), Russian general, was born at Maidani on the 3rd of March 1818. He entered the engineer branch in 1838, served in the campaigns in the Caucasus, rose to be colonel, and commanded the sappers and miners at the siege of Kars in 1855. On the capitulation of Kars he was deputed to settle the terms with General Sir W. Fenwick Williams. In 1861 he became director-general of engineers at the War Office, assisting General Milutin in the reorganization of the army. Promoted lieut.-general in 1864, he was nominated aide-de-camp-general and governor of the military conscription of Vilna. In 1867 he became governor of Turkestan, and held the post until his death, making himself a name in the expansion of the empire in central Asia. He accomplished a successful campaign in 1868 against Bokhara, capturing Samarkand and gradually subjugating the whole country. In 1873 he attacked Khiva, took the capital, and forced the khan to become a vassal of Russia. Then followed in 1875 the campaign against Khokand, in which Kaufmann defeated the khan, Nasr-ed-din. Khokand north of the Syrdaria was annexed to Russia, and the independence of the rest of the country became merely nominal. This rapid absorption of the khanates brought Russia into close proximity to Afghanistan, and the reception of Kaufmann's emissaries by the Amir was a main cause of the British war with Afghanistan in 1878. Although Kaufmann was unable to induce his government to support all his ambitious schemes of further conquest, he sent Skobeleff in 1880 and 1881 against the Akhal Tekkés, and was arranging to add Merv to his annexations when he died suddenly at Tashkend on the 15th of May 1882.

KAUKAUNA, a city of Outagamie county, Wisconsin, U.S.A., on the Fox river 7 m. N.E. of Appleton and about 100 m. N. of Milwaukee. Pop. (1900), 5115, of whom 1044 were foreign-born (1905) 4991; (1910) 4717. Kaukauna is served by the Chicago & North-Western railway (which has car-shops here), by inter-urban electric railway lines connecting with other cities in the Fox river, valley, and by river steamboats. It has a Carnegie library, a hospital and manufactories of pulp, paper, lumber and woodenware. Dams on the Fox River furnish a good water-power. The city owns its waterworks. A small settlement of Indian traders was made here as early as 1820; in 1830 a Presbyterian mission was established, but the growth of the place was slow, and the city was not chartered until 1885.

KAULBACH, WILHELM VON (1805-1874), German painter, was born in Westphalia on the 15th of October 1805. His father, who was poor, combined painting with the goldsmith's trade, but means were found to place Wilhelm, a youth of seventeen, in the art academy of Düsseldorf, then becoming renowned under the directorship of Peter von Cornelius. Young Kaulbach contended against hardships, even hunger. But his courage never failed; and, uniting genius with industry, he was ere long foremost among the young national party which sought to revive the arts of Germany. The ambitious work by which Louis I. sought to transform Munich into a German Athens afforded the young painter an appropriate sphere. Cornelius had been commissioned to execute the enormous frescoes in the Glyptothek, and his custom was in the winters, with the aid of Kaulbach and others, to complete the cartoons at Düsseldorf, and in the summers, accompanied by his best scholars, to carry out the designs in colour on the museum walls in Munich. But in 1824 Cornelius became director of the Bavarian academy. Kaulbach, not yet twenty, followed, took up his permanent residence in Munich, laboured hard on the public works, executed independent commissions, and in 1849, when Cornelius left for Berlin, succeeded to the directorship of the academy, an office which he held till his death on the 7th of April 1874. His son Hermann (1846-1909) also became a distinguished painter.

Kaulbach matured, after the example of the masters of the Middle Ages, the practice of mural or monumental decoration; he once more conjoined painting with architecture, and displayed a creative fertility and readiness of resource scarcely found since the era of Raphael and Michelangelo. Early in the series of his multitudinous works came the famous Narrenhaus, the appalling memories of a certain madhouse near Düsseldorf; the composition all the more deserves mention for points of contact with Hogarth. Somewhat to the same category belong the illustrations to *Reineke Fuchs*. These, together with occasional figures or passages in complex pictorial dramas, show how dominant and irrepressible were the artist's sense of satire and enjoyment of fun; character in its breadth and sharpness is depicted with keenest relish, and at times the sardonic smile bursts into the loudest laugh. Thus occasionally the grotesque degenerates into the vulgar, the grand into the ridiculous, as in the satire on "the Pigtail Age" in a fresco outside the New Pinakothek. Yet these exceptional extravagances came not of weakness but from excess of power. Kaulbach tried hard to become Grecian and Italian; but he never reached Phidias or Raphael; in short the blood of Dürer, Holbein and Martin Schongauer ran strong in his veins. The art products in Munich during the middle of the 19th century were of a quantity to preclude first-rate quality, and Kaulbach contracted a fatal facility in covering wall and canvas by the acre. He painted in the Hofgarten, the Odeon, the Palace and on the external walls of the New Pinakothek. His perspicuous and showy manner also gained him abundant occupation as a book illustrator: in the pages of the poets his fancy revelled; he was glad to take inspiration from Wieland, Goethe, even Klopstock; among his engraved designs are the Shakespeare gallery, the Goethe gallery and a folio edition of the Gospels. With regard to these examples of "the Munich school," it was asserted that Kaulbach had been unfortunate alike in having found Cornelius for a master and King Louis for a patron, that he attempted "subjects far beyond him, believing that his admiration for them was the same as inspiration"; and supplied the lack of real imagination by "a compound of intellect and fancy."

Nevertheless in such compositions as the Destruction of Jerusalem and the Battle of the Huns Kaulbach shows creative imagination. As a dramatic poet he tells the story, depicts character, seizes on action and situation, and thus as it were takes the spectator by storm. The manner may be occasionally noisy and ranting, but the effect after its kind is tremendous. The cartoon, which, as usual in modern German art, is superior to the ultimate picture, was executed in the artist's prime at the age of thirty. At this period, as here seen, the knowledge was little short of absolute; subtle is the sense of beauty; playful, delicate, firm the touch; the whole treatment artistic.

Ten or more years were devoted to what the Germans term a "cyclus"—a series of pictures depicting the Tower of Babel, the Age of Homer, the Destruction of Jerusalem, the Battle of the Huns, the Crusades and the Reformation. These major tableaux, severally 30 ft. long, and each comprising over one hundred figures above life-size, are surrounded by minor compositions making more than twenty in all. The idea is to congregate around the world's historic dramas the prime agents of civilization; thus here are assembled allegoric figures of Architecture and other arts, of Science and other kingdoms of knowledge, together with lawgivers from the time of Moses, not forgetting Frederick the Great. The chosen situation for this imposing didactic and theatric display is the Treppenhaus or grand staircase in the new museum, Berlin; the surface is a granulated, absorbent wall, specially prepared; the technical method is that known as "water-glass," or "liquid flint," the infusion of silica securing permanence. The same medium was adopted in the later wall-pictures in the Houses of Parliament, Westminster.

The painter's last period brings no new departure; his ultimate works stand conspicuous by exaggerations of early characteristics. The series of designs illustrative of Goethe, which had an immense success, were melodramatic and pandered to popular taste. The vast canvas, more than 30 ft. long, the Sea Fight at Salamis, painted for the Maximilianeum, Munich, evinces wonted

imagination and facility in composition; the handling also retains its largeness and vigour; but in this astounding scenic uproar moderation and the simplicity of nature are thrown to the winds, and the whole atmosphere is hot and feverish.

> Kaulbach's was a beauty-loving art. He is not supreme as a colourist; he belongs in fact to a school that holds colour in subordination; but he laid, in common with the great masters, the sure foundation of his art in form and composition. Indeed, the science of composition has seldom if ever been so clearly understood or worked out with equal complexity and exactitude; the constituent lines, the relation of the parts to the whole, are brought into absolute agreement; in modern Germany painting and music have trodden parallel paths, and Kaulbach is musical in the melody and harmony of his compositions. His narrative too is lucid, and moves as a stately march or royal triumph; the sequence of the figures is unbroken; the arrangement of the groups accords with even literary form; the picture falls into incident, episode, dialogue, action, plot, as a drama. The style is eclectic; in the Age of Homer the types and the treatment are derived from Greek marbles and vases; then in the Tower of Babel the severity of the antique gives place to the suavity of the Italian renaissance; while in the Crusades the composition is let loose into modern romanticism, and so the manner descends into the midst of the 19th century. And yet this scholastically compounded art is so nicely adjusted and smoothly blended that it casts off all incongruity and becomes homogeneous as the issue of one mind. But a fickle public craved for change; and so the great master in later years waned in favour, and had to witness, not without inquietude, the rise of an opposing party of naturalism and realism.
>
> (J. B. A.)

KAUNITZ-RIETBURG, WENZEL ANTON, Prince von (1711-1794), Austrian

chancellor and diplomatist, was born at Vienna on the 2nd of February 1711. His father, Max Ulrich, was the third count of Kaunitz, and married an heiress, Maria Ernestine Franziska von Rietburg. The family was ancient, and was believed to have been of Slavonic origin in Moravia. Wenzel Anton, being a second son, was designed for the church, but on the death of his elder brother he was trained for the law and for diplomacy, at Vienna, Leipzig and Leiden, and by travel. His family had served the Habsburgs with some distinction, and Kaunitz had no difficulty in obtaining employment. In 1735 he was a *Reichshofrath*. When the Emperor Charles VI. died in 1740, he is said to have hesitated before deciding to support Maria Theresa. If so, his hesitation did not last long, and left no trace on his loyalty. From 1742 to 1744 he was minister at Turin, and in the latter year was sent as minister with the Archduke Charles of Lorraine, the governor of Belgium. He was therefore an eye-witness of the campaigns in which Marshal Saxe overran Belgium. At this time he was extremely discouraged, and sought for his recall. But he had earned the approval of Maria Theresa, who sent him as representative of Austria to the peace congress of Aix-la-Chapelle in 1748. His tenacity and dexterity established his reputation as a diplomatist. He confirmed his hold on the regard and confidence of the empress by the line he took after the conclusion of the peace. In 1749 Maria Theresa appealed to all her counsellors for advice as to the policy Austria ought to pursue in view of the changed conditions produced by the rise of Prussia. The great majority of them, including her husband Francis I., were of opinion that the old alliance with the sea Powers, England and Holland, should be maintained. Kaunitz, either because he was really persuaded that the old policy must be given up, or because he saw that the dominating idea in the mind of Maria Theresa was the recovery of Silesia, gave it as his opinion that Frederick was now the "most wicked and dangerous enemy of Austria," that it was hopeless to expect the support of Protestant nations against him, and that the only way of recovering Silesia was by an alliance with Russia and France. The empress eagerly accepted views which were already her own, and entrusted the adviser with the execution of his own plans. An ambassador to France from 1750 to 1752, and after 1753 as "house, court and state chancellor," Kaunitz laboured successfully to bring about the alliance which led to the Seven Years' War. It was considered a great feat of diplomacy, and established Kaunitz as the recognized master of the art. His triumph was won in spite of personal defects and absurdities which would have ruined most men. Kaunitz had manias rarely found in company with absolute sanity. He would not hear of death, nor approach a sick man. He refused to visit his dying master Joseph II. for two whole years. He would not breathe fresh air. On the warmest summer day he kept a handkerchief over his mouth when out of doors, and his only exercise was riding under glass, which he did every morning for exactly the same number of minutes. He relaxed from his work in the company of a small dependent society of sycophants and buffoons. He was consumed by a solemn, garrulous and pedantic vanity. When in 1770 he met Frederick the Great at Mährisch-Neustadt, he came with a summary of political principles, which he called a catechism, in his pocket, and assured the king that he must be allowed to speak without interruption. When Frederick, whose interest it was to humour him, promised to listen quietly, Kaunitz rolled his mind out for two

hours, and went away with the firm conviction that he had at last enlightened the inferior intellect of the king of Prussia as to what politics really were. Within a very short time Frederick had completely deceived and out-manœuvred him. With all his pomposity and conceit, Kaunitz was astute, he was laborious and orderly; when his advice was not taken he would carry out the wishes of his masters, while no defeat ever damped his pertinacity.

To tell his history from 1750 till his retirement in 1792 would be to tell part of the internal history of Austria, and all the international politics of eastern and central Europe. His governing principle was to forward the interests of "the august house of Austria," a phrase sometimes repeated at every few lines of his despatches. In internal affairs he in 1758 recommended, and helped to promote, a simplification of the confused and subdivided Austrian administration. But his main concern was always with diplomacy and foreign policy. Here he strove with untiring energy, and no small measure of success, to extend the Austrian dominions. After the Seven Years' War he endeavoured to avoid great risks, and sought to secure his ends by alliances, exchanges and claims professing to have a legal basis, and justified at enormous length by arguments both pedantic and hypocritical. The French Revolution had begun to alter all the relations of the Powers before his retirement. He never understood its full meaning. Yet the circular despatch which he addressed to the ambassadors of the emperor on the 17th of July 1794 contains the first outlines of Metternich's policy of "legitimacy," and the first proposal for the combined action of the powers, based on the full recognition of one another's rights, to defend themselves against subversive principles. Kaunitz died at his house, the Garten Palast, near Vienna, on the 27th of June 1794. He married on the 6th of May 1736, Maria Ernestine von Starhemberg, who died on the 6th of September 1754. Four sons were born of the marriage.

See Hormayr, *Oesterreichischer Plutarch* (Vienna, 1823), for a biographical sketch based on personal knowledge. Also see Brunner, *Joseph II.: Correspondance avec Cobenzl et Kaunitz* (Mayence, 1871); A. Beer, *Joseph II., Leopold II. und Kaunitz* (Vienna, 1873).

KAUP, JOHANN JAKOB (1803-1873), German naturalist, was born at Darmstadt on the 10th of April 1803. After studying at Göttingen and Heidelberg he spent two years at Leiden, where his attention was specially devoted to the amphibians and fishes. He then returned to Darmstadt as an assistant in the grand ducal museum, of which in 1840 he became inspector. In 1829 he published *Skizze zur Entwickelungsgeschichte der europäischen Thierwelt*, in which he regarded the animal world as developed from lower to higher forms, from the amphibians through the birds to the beasts of prey; but subsequently he repudiated this work as a youthful indiscretion, and on the publication of Darwin's *Origin of Species* he declared himself against its doctrines. The extensive fossil deposits in the neighbourhood of Darmstadt gave him ample opportunities for palaeontological inquiries, and he gained considerable reputation by his *Beiträge zur näheren Kenntniss der urweltlichen Säugethiere* (1855-1862). He also wrote *Classification der Säugethiere und Vögel* (1844), and, with H. G. Brown (1800-1862) of Heidelberg, *Die Gavial-artigen Reste aus dem Lias* (1842-1844). He died at Darmstadt on the 4th of July 1873.

KAURI PINE, in botany, *Agathis australis*, a conifer native of New Zealand where it is abundant in forests in the North Island between the North Cape and 38° south latitude. The forests are rapidly disappearing owing to use as timber and to destruction by fires. It is a tall resiniferous tree, usually ranging from 80 to 100 ft. in height, with a trunk 4 to 10 ft. in diameter, but reaching 150 ft., with a diameter of 15 to 22 ft.; it has a straight columnar trunk and a rounded bushy head. The thick resiniferous bark falls off in large flat flakes. The leaves, which persist for several years, are very thick and leathery; on young trees they are lance-shaped 2 to 4 in. long and ¼ to ½ in. broad, becoming on mature trees linear-oblong or obovate-oblong and ¾ to 1½ in. long. The ripe cones are almost spherical, erect, and 2 to 3 in. in diameter; the broad, flat, rather thin cone-scales fall from the axis when ripe. Each scale bears a single compressed seed with a membranous wing. The timber is remarkable for its strength, durability and the ease with which it is worked. The resin, kauri-gum, is an amber-like deposit dug in large quantities

from the sites of previous forests, in lumps generally varying in size from that of a hen's egg to that of a man's head. The colour is of a rich brown or amber yellow, or it may be almost colourless and translucent. It is of value for varnish-making.

KAVA (Cava or Ava), an intoxicating, but non-alcoholic beverage, produced principally in the islands of the South Pacific, from the roots or leaves of a variety of the pepper plant (*Piper methysticum*). The method of preparation is somewhat peculiar. The roots or leaves are first chewed by young girls or boys, care being taken that only those possessing sound teeth and excellent general health shall take part in this operation. The chewed material is then placed in a bowl, and water or coco-nut milk is poured over it, the whole is well stirred, and subsequently the woody matter is removed by an ingenious but simple mechanical manipulation. The resulting liquid, which has a muddy or *café-au-lait* appearance, or is of a greenish hue if made from leaves, is now ready for consumption. The taste of the liquid is at first sweet, and then pungent and acrid. The usual dose corresponds to about two mouthfuls of the root. Intoxication (but this apparently only applies to those not inured to the use of the liquor) follows in about twenty minutes. The drunkenness produced by kava is of a melancholy, silent and drowsy character. Excessive drinking is said to lead to skin and other diseases, but *per contra* many medicinal virtues are ascribed to the preparation. There appears to be little doubt that the active principle in this beverage is a poison of an alkaloidal nature. It seems likely that this substance is not present as such (*i.e.* as a free alkaloid) in the plant, but that it exists in the form of a glucoside, and that by the process of chewing this glucoside is split up by one of the ferments in the saliva into the free alkaloid and sugar.

See *Pharm. Journ.* iii. 474; iv. 85; ix. 219; vii. 149; *Comptes Rendus*, l. 436, 598; lii. 206; *Journ. de Pharm.* (1860) 20; (1862) 218; Seeman, *Flora Vitiensis*, 260; Beachy, *Voyage of the "Blossom,"* ii. 120.

KAVADH (Kabades, Kauades), a Persian name which occurs first in the mythical history of the old Iranian kingdom as Kai Kobadh (Kaikobad). It was borne by two kings of the Sassanid dynasty.

(1) Kavadh I., son of Pērōz, crowned by the nobles in 488 in place of his uncle Balash, who was deposed and blinded. At this time the empire was utterly disorganized by the invasion of the Ephthalites or White Huns from the east. After one of their victories against Pērōz, Kavadh had been a hostage among them during two years, pending the payment of a heavy ransom. In 484 Pērōz had been defeated and slain with his whole army. Balash was not able to restore the royal authority. The hopes of the magnates and high priests that Kavadh would suit their purpose were soon disappointed. Kavadh gave his support to the communistic sect founded by Mazdak, son of Bamdad, who demanded that the rich should divide their wives and their wealth with the poor. His intention evidently was, by adopting the doctrine of the Mazdakites, to break the influence of the magnates. But in 496 he was deposed and incarcerated in the "Castle of Oblivion (Lethe)" in Susiana, and his brother Jamasp (Zamaspes) was raised to the throne. Kavadh, however, escaped and found refuge with the Ephthalites, whose king gave him his daughter in marriage and aided him to return to Persia. In 499 he became king again and punished his opponents. He had to pay a tribute to the Ephthalites and applied for subsidies to Rome, which had before supported the Persians. But now the emperor Anastasius refused subsidies, expecting that the two rival powers of the East would exhaust one another in war. At the same time he intervened in the affairs of the Persian part of Armenia. So Kavadh joined the Ephthalites and began war against the Romans. In 502 he took Theodosiopolis in Armenia, in 503 Amida (Diarbekr) on the Tigris. In 505 an invasion of Armenia by the western Huns from the Caucasus led to an armistice, during which the Romans paid subsidies to the Persians for the maintenance of the fortifications on the Caucasus. When Justin I. (518-527) came to the throne the conflict began anew. The Persian vassal, Mondhir of Hira, laid waste Mesopotamia and slaughtered the monks and nuns. In 531 Belisarius was beaten at Callinicum. Shortly afterwards Kavadh died, at the age of eighty-two, in September 531. During his last years his favourite son Chosroes had had great influence over him and had been

proclaimed successor. He also induced Kavadh to break with the Mazdakites, whose doctrine had spread widely and caused great social confusion throughout Persia. In 529 they were refuted in a theological discussion held before the throne of the king by the orthodox Magians, and were slaughtered and persecuted everywhere; Mazdak himself was hanged. Kavadh evidently was, as Procopius (*Pers.* i. 6) calls him, an unusually clear-sighted and energetic ruler. Although he could not free himself from the yoke of the Ephthalites, he succeeded in restoring order in the interior and fought with success against the Romans. He built some towns which were named after him, and began to regulate the taxation.

(2) Kavadh II. Sheroe (Siroes), son of Chosroes II., was raised to the throne in opposition to his father in February 628, after the great victories of the emperor Heraclius. He put his father and eighteen brothers to death, began negotiations with Heraclius, but died after a reign of a few months.

(Ed. M.)

KAVALA, or Cavalla, a walled town and seaport of European Turkey in the vilayet of Salonica, on the Bay of Kavala, an inlet of the Aegean Sea. Pop. (1905), about 5000. Kavala is built on a promontory stretching south into the bay, and opposite the island of Thasos. There is a harbour on each side of the promontory. The resident population is increased in summer by an influx of peasantry, of whom during the season 5000 to 6000 are employed in curing tobacco and preparing it for export. The finest Turkish tobacco is grown in the district, and shipped to all parts of Europe and America, to the annual value of about £1,250,000. Mehemet Ali was born here in 1769, and founded a Turkish school which still exists. His birthplace, an unpretentious little house in one of the tortuous older streets, can be distinguished by the tablet which the municipal authorities have affixed to its front wall. Numerous Roman remains have been found in the neighbourhood, of which the chief is the large aqueduct on two tiers of arches which still serves to supply the town and dilapidated citadel with water from Mount Pangeus.

Kavala has been identified with Neapolis, at which St Paul landed on his way from Samothrace to Philippi (Acts xvi. 11). Neapolis was the port of Philippi, as Kavala now is of Seres; in the bay on which it stands the fleet of Brutus and Cassius was stationed during the battle of Philippi. Some authorities identify Neapolis with Datum (Δάτον), mentioned by Herodotus as famous for its gold mines.

KAVANAGH, ARTHUR MACMORROUGH (1831-1889), Irish politician, son of Thomas Kavanagh, M.P., who traced his descent to the ancient kings of Leinster, was born in Co. Carlow, Ireland, on the 25th of March 1831. He had only the rudiments of arms and legs, but in spite of these physical defects had a remarkable career. He learnt to ride in the most fearless way, strapped to a special saddle, and managing the horse with the stumps of his arms; and also fished, shot, drew and wrote, various mechanical contrivances being devised to supplement his limited physical capacities. He travelled extensively in Egypt, Asia Minor, Persia and India between 1846 and 1853, and after succeeding to the family estates in the latter year, he married in 1855 his cousin, Miss Frances Mary Leathley. Assisted by his wife, he was a most philanthropic landlord, and was an active county magistrate and chairman of the board of guardians. A Conservative and a Protestant, he sat in Parliament for Co. Wexford from 1866 to 1868, and for Co. Carlow from 1868 to 1880. He was opposed to the disestablishment of the Irish Church, but supported the Land Act of 1870, and sat on the Bessborough Commission. In 1886 he was made a member of the Privy Council in Ireland. He died of pneumonia on the 25th of December 1889, in London. It is supposed that his extraordinary career suggested the idea of “Lucas Malet’s” novel, *The History of Sir Richard Calmady*.

KAVANAGH, JULIA (1824-1877), British novelist, was born at Thurles in Tipperary, Ireland, in 1824. She was the daughter of Morgan Peter Kavanagh (d. 1874), author of various worthless philological works and some poems. Julia spent several years of her early life with her parents in Normandy, laying there the foundation of a mastery of the French language and insight into French modes of thought, which was perfected by her later frequent and long residences in France. Miss Kavanagh's literary career began with her arrival in London about 1844, and her uneventful life affords few incidents to the biographer. Her first book was *Three Paths* (1847), a story for the young; but her first work to attract notice was *Madeleine, a Tale of Auvergne* (1848). Other books followed: *A Summer and Winter in the Two Sicilies* (1858); *French Women of Letters* (1862); *English Women of Letters* (1862); *Woman in France during the 18th Century* (1850); and *Women of Christianity* (1852). The scenes of her stories are almost always laid in France, and she handles her French themes with fidelity and skill. Her style is simple and pleasing rather than striking; and her characters are interesting without being strongly individualized. Her most popular novels were perhaps *Adèle* (1857), *Queen Mab* (1863), and *John Dorrien* (1875). On the outbreak of the Franco-German War Julia Kavanagh removed with her mother from Paris to Rouen. She died at Nice on the 28th of October 1877.

KAVASS, or CAVASS (adapted from the Turkish *qawwas*, a bow-maker; Arabic *qaws*, a bow), a Turkish name for an armed police-officer; also for a courier such as it is usual to engage when travelling in Turkey.

KAVIRONDO, a people of British East Africa, who dwell in the valley of the Nzoia River, on the western slopes of Mount Elgon, and along the north-east coast of Victoria Nyanza. Kavirondo is the general name of two distinct groups of tribes, one Bantu and the other Nilotic. Both groups are immigrants, the Bantu from the south, the Nilotic from the north. The Bantu appear to have been the first comers. The Nilotic tribes, probably an offshoot of the Acholi (*q.v.*), appear to have crossed the lake to reach their present home, the country around Kavirondo Gulf. Of the two groups the Bantu now occupy a more northerly position than their neighbours, and "are practically the most northerly representatives of that race" (Hobley). Their further progress north was stopped by the southward movement of the Nilotic tribes, while the Nilotic Kavirondo in their turn had their wanderings arrested by an irruption of Elgumi people from the east. The Elgumi are themselves probably of Nilotic origin. Both groups of Kavirondo are physically fine, the Nilotic stock appearing more virile than the Bantu. The Bantu Kavirondo are divided into three principal types—the Awa-Rimi, the Awa-Ware and the Awa-Kisii. By the Nilotic Kavirondo their Bantu neighbours are known as Ja-Mwa. The generic name for the Nilotic tribes is Ja-Luo. The Bantu Kavirondo call them Awa-Nyoro. The two groups have many characteristics in common. A characteristic feature of the people is their nakedness. Among the Nilotic Kavirondo married men who are fathers wear a small piece of goat-skin, which though practically useless as a covering must be worn according to tribal etiquette. Even among men who have adopted European clothing this goat-skin must still be worn underneath. Contact with whites has led to the adoption of European clothing by numbers of the men, but the women, more conservative, prefer nudity or the scanty covering which they wore before the advent of Europeans. Among the Bantu Kavirondo married women wear a short fringe of black string in front and a tassel of banana fibre suspended from a girdle behind, this tassel having at a distance the appearance of a tail. Hence the report of early travellers as to a tailed race in Africa. The Nilotic Kavirondo women wear the tail, but dispense with the fringe in front. For "dandy" they wear a goat-skin slung over the shoulders. Some of the Bantu tribes practise circumcision, the Nilotic tribes do not. Patterns are tattooed on chest and stomach for ornament. Men, even husbands, are forbidden to touch the women's tails, which must be worn even should any other clothing be wrapped round the body. The Kavirondo are noted for their independent and pugnacious nature, their honesty and their sexual morality, traits particularly marked among the Bantu tribes. There are more women than men, and thus the Kavirondo are naturally inclined towards polygamy. Among the Bantu tribes a man has the refusal of all the younger sisters of his wife as they attain puberty. Practically no

woman lives unmarried all her life, for if no suitor seeks her, she singles out a man and offers herself to him at a “reduced price,” an offer usually accepted, as the women are excellent agricultural labourers. The Nilotic Kavirondo incline to exogamy, endeavouring always to marry outside their clan. Girls are betrothed at six or seven, and the husband-elect continually makes small presents to his father-in-law-elect till the bride reaches womanhood. It is regarded as shameful if the girl be not found a virgin on her wedding day. She is sent back to her parents, who have to return the marriage price, and pay a fine. The wife’s adultery was formerly punished with death, and the capital penalty was also inflicted on young men and girls guilty of unchastity. Among the Bantu Kavirondo the usual minimum price for a wife is forty hoes, twenty goats and one cow, paid in instalments. The Nilotic Kavirondo pay twenty sheep and two to six cows; the husband-elect can claim his bride when he has made half payment. If a woman dies without bearing children, the amount of her purchase is returnable by her father, unless the widower consents to replace her by another sister. The women are prolific and the birth of twins is common. This is considered a lucky event, and is celebrated by feasting and dances. Among the Bantu Kavirondo the mother of twins must remain in her hut for seven days. Among the Nilotic Kavirondo the parents and the infants must stay in the hut for a whole month. If a Bantu mother has lost two children in succession the next child born is taken out at dawn and placed on the road, where it is left till a neighbour, usually a woman friend who has gone that way on purpose, picks it up. She takes it to its mother who gives a goat in return. A somewhat similar custom prevails among the Nilotic tribes. Names are not male and female, and a daughter often bears her father’s name.

The Kavirondo bury their dead. Among one of the Bantu tribes, the Awa-Kisesa, a chief is buried in the floor of his own hut in a sitting position, but at such a depth that the head protrudes. Over the head an earthenware pot is placed, and his principal wives have to remain in the hut till the flesh is eaten by ants or decomposes, when the skull is removed and buried close to the hut. Later the skeleton is unearthed, and reburied with much ceremony in the sacred burial place of the tribe. Married women of the Bantu tribes are buried in their hut lying on their right side with legs doubled up, the hut being then deserted. Among the Nilotic tribes the grave is dug beneath the verandah of the hut. Men of the Bantu tribes are buried in an open space in the midst of their huts; in the Nilotic tribes, if the first wife of the deceased be alive he is buried in her hut, if not, beneath the verandah of the hut in which he died. A child is buried near the door of its mother’s hut. A sign of mourning is a cord of banana fibre worn round the neck and waist. A chief chooses, sometimes years before his death, one of his sons to succeed him, often giving a brass bracelet as insignia. A man’s property is divided equally among his children.

The Kavirondo are essentially an agricultural people: both men and women work in the fields with large iron hoes. In addition to sorghum, *Eleusine* and maize, tobacco and hemp are both cultivated and smoked. Both sexes smoke, but the use of hemp is restricted to men and unmarried women, as it is thought to injure child-bearing women. Hemp is smoked in a hubble-bubble. The Kavirondo cultivate sesamum and make an oil from its seeds which they burn in little clay lamps. These lamps are of the ancient saucer type, the pattern being, in Hobley’s opinion, introduced into the country by the coast people. While some tribes live in isolated huts, those in the north have strongly walled villages. The walls are of mud and formerly, among the Nilotic tribes, occasionally of stone. Since the advent of the British the security of the country has induced the Kavirondo to let the walls fall into disrepair. Their huts are circular with conical thatched roof, and fairly broad verandah all round. A portion of the hut is partitioned off as a sleeping-place for goats, and the fowls sleep indoors in a large basket. Skins form the only bedsteads. In each hut are two fireplaces, about which a rigid etiquette prevails. Strangers or distant relatives are not allowed to pass beyond the first, which is near the door, and is used for cooking. At the second, which is nearly in the middle of the hut, sit the hut owner, his wives, children, brothers and sisters. Around this fireplace the family sleep. Cooking pots, water pots and earthenware grain jars are the only other furniture. The food is served in small baskets. Every full grown man has a hut to himself, and one for each wife. The huts of the Masaba Kavirondo of west Elgon have the apex of the roof surmounted by a carved pole which Sir H. H. Johnston says is obviously a phallus. Among the Bantu Kavirondo a father does not eat with his sons, nor do brothers eat together. Among the Nilotic tribes father and sons eat together, usually in a separate hut with open sides. Women eat apart and only after the men have finished. The Kavirondo keep cattle, sheep, goats, fowls and a few dogs. Women do not eat sheep, fowls or eggs, and are not allowed to drink milk except when mixed with other things. The flesh of the wild cat and leopard is esteemed by most of the tribes. From *Eleusine* a beer is made. The Kavirondo are plucky hunters, capturing the hippopotamus with ropes and traps, and attacking with spears the largest elephants. Fish, of which they are very fond, are caught by line and rod or in traps. Bee-keeping is common, and where trees are scarce the hives are placed on the roof of the hut. Among the Bantu Kavirondo goats and sheep are suffocated, the snout being held until the animal dies. Though a peaceful people the Kavirondo fight well. Their weapons are spears with rather long flat blades without blood-courses, and broad-bladed swords. Some use slings, and most carry shields. Bows and arrows are also used; firearms are however displacing other weapons. Kavirondo warfare was mainly defensive and intertribal, this last a form of vendetta. When a man had killed his enemy in battle he shaved his head on his return and he was rubbed with “medicine” (generally goat’s dung), to defend him from the spirit of the dead man. This

custom the Awa-Wanga abandoned when they obtained firearms. The young warriors were made to stab the bodies of their slain enemies. Kavirondo industries are salt-making, effected by burning reeds and water-plants and passing water through the ashes; the smelting of iron ore (confined to the Bantu tribes); pottery and basket-work.

The Kavirondo have many tribes, divided, Sir H. H. Johnston suspects, totemically. Their religion appears to be a vague ancestor-worship, but the northern tribes have two gods, Awafwa and Ishishemi, the spirits of good and evil. To the former cattle and goats are sacrificed. The Kavirondo have great faith in divination from the entrails of a sheep. Nearly everybody and everything is to the Kavirondo ominous of good or evil. They have few myths or traditions; the ant-bear is the chief figure in their beast-legends. They believe in witchcraft and practise trial by ordeal. As a race the Kavirondo are on the increase. This is due to their fecundity and morality. Those who live in the low-lying lands suffer from a mild malaria, while abroad they are subject to dysentery and pneumonia. Epidemics of small-pox have occurred. Native medicine is of the simplest. They dress wounds with butter and leaves, and for inflammation of the lungs or pleurisy pierce a hole in the chest. There are no medicine-men—the women are the doctors. Certain of the incisor teeth are pulled out. If a man retains these he will, it is thought, be killed in warfare. Among certain tribes the women also have incisor teeth extracted, otherwise misfortune would befall their husbands. For the same reason the wife scars the skin of her forehead or stomach. A Kavirondo husband, before starting on a perilous journey, cuts scars on his wife's body to ensure him good luck. Of dances the Kavirondo have four—the birth dance, the death dance, that at initiation and one of a propitiatory kind in seasons of drought. Their music is plaintive and sometimes pretty, produced by a large lyre-shaped instrument. They use also various drums.

The Ja-Luo women use for ear ornaments small beads attached to pieces of brass. Like the aggry beads of West Africa these beads are not of local manufacture nor of recent introduction. They are ancient, in colour generally blue, occasionally yellow or green, and are picked up in certain districts after heavy rain. By the natives they are supposed to come down with the rain. They are identical in shape and colour with ancient Egyptian beads and other beads obtained from ancient cities in Baluchistan.

See C. W. Hobley, *Eastern Uganda, an Ethnological Survey* (Anthrop. Inst., *Occasional Papers*, No. 1, London, 1902); Sir H. H. Johnston, *Uganda Protectorate* (1902); J. F. Cunningham, *Uganda and its Peoples* (1905); Paul Kollmann, *The Victoria Nyanza* (1899).

(T. A. J.)

KAW, or KANSA, a tribe of North American Indians of Siouan stock. They were originally an offshoot of the Osages. Their early home was in Missouri, whence they were driven to Kansas by the Dakotas. They were moved from one reservation to another, till in 1873 they were settled in Indian Territory; they have since steadily decreased, and now number some 200.

KAWARDHA, a feudatory state of India, within the Central Provinces; area, 798 sq. m.; pop. (1901), 57,474, showing a decrease of 37% in the decade, due to famine; estimated revenue, £7000. Half the state consists of hill and forest. The residence of the chief, who is a Raj Gond, is at Kawardha (pop. 4772), which is also the headquarters of the Kabirpanthi sect (see KABIR).

KAY, JOHN (1742-1826), Scottish caricaturist, was born near Dalkeith, where his father was a mason. At thirteen he was apprenticed to a barber, whom he served for six years. He then went to Edinburgh, where in 1771 he obtained the freedom of the city by joining the corporation of barber-surgeons. In 1785, induced by the favour which greeted certain attempts of his to etch in aquafortis, he took down his barber's pole and opened a small print shop in Parliament Square.

There he continued to flourish, painting miniatures, and publishing at short intervals his sketches and caricatures of local celebrities and oddities, who abounded at that period in Edinburgh society. He died on the 21st of February 1826.

Kay's portraits were collected by Hugh Paton and published under the title *A series of original portraits and caricature etchings by the late John Kay, with biographical sketches and illustrative anecdotes* (Edin., 2 vols. 4to, 1838; 8vo ed., 4 vols., 1842; new 4to ed., with additional plates, 2 vols., 1877), forming a unique record of the social life and popular habits of Edinburgh at its most interesting epoch.

KAY, JOSEPH (1821-1878), English economist, was born at Salford, Lancashire, on the 27th of February 1821. Educated privately and at Trinity College, Cambridge, he was called to the bar at the Inner Temple in 1848. He was appointed judge of the Salford Hundred court of record in 1862 and in 1869 was made a queen's counsel. He is best known for a series of works on the social condition of the poor in France, Switzerland, Holland, Germany and Austria, the materials for which he gathered on a four years' tour as travelling bachelor of his university. They were *The Education of the Poor in England and Europe* (London, 1846); *The Social Condition of the People in England and Europe* (London, 1850, 2 vols.); *The Condition and Education of Poor Children in English and in German Towns* (Manchester, 1853). He was also the author of *The Law relating to Shipmasters and Seamen* (London, 1875) and *Free Trade in Land* (1879, with a memoir). He died at Dorking, Surrey, on the 9th of October 1878.

KAYAK, or CAYAK, an Eskimo word for a fishing boat, in common use from Greenland to Alaska. It has been erroneously derived from the Arabic *caique*, supposed to have been applied to the native boats by early explorers. The boat is made by covering a light wooden framework with sealskin. A hole is pierced in the centre of the top of the boat, and the *kayaker* (also dressed in sealskin) laces himself up securely when seated to prevent the entrance of water. The kayak is propelled like a canoe by a double-bladed paddle. The name *kayak* is properly only applied to the boat used by an Eskimo man—that used by a woman is called an *umiak*.

KAYASTH, the writer caste of Northern India, especially numerous and influential in Bengal. In 1901 their total number in all India was more than two millions. Their claim to be Kshattriyas who have taken to clerical work is not admitted by the Brahmans. Under Mahommedan rule they learnt Persian, and filled many important offices. They are now eager students of English, and have supplied not only several judges to the high court but also the first Hindu to be a member of the governor-general's council. In Bombay their place is taken by the Prabhus, and in Assam by the Kalitas (Kolitas); in Southern India there is no distinct clerical caste.

KAYE, SIR JOHN WILLIAM (1814-1876), English military historian, was the son of Charles Kaye, a solicitor, and was educated at Eton and the Royal Military College, Addiscombe.

From 1832 to 1841 he was an officer in the Bengal Artillery, afterwards spending some years in literary pursuits both in India and in England. In 1856 he entered the civil service of the East India Company, and when the government of India was transferred to the British crown succeeded John Stuart Mill as secretary of the political and secret department of the India office. In 1871 he was made a K.C.S.I. He died in London on the 24th of July 1876. Kaye's numerous writings include *History of the Sepoy War in India* (London, 1864-1876), which was revised and continued by Colonel G. B. Malleson and published in six volumes in 1888-1889; *History of the War in Afghanistan* (London, 1851), republished in 1858 and 1874; *Administration of the East India Company* (London, 1853); *The Life and Correspondence of Charles, Lord Metcalfe* (London, 1854); *The Life and Correspondence of Henry St George Tucker* (London, 1854); *Life and Correspondence of Sir John Malcolm* (London, 1856); *Christianity in India* (London, 1859); *Lives of Indian Officers* (London, 1867); and two novels, *Peregrine Pultney* and *Long engagements*. He also edited several works dealing with Indian affairs; wrote *Essays of an Optimist* (London, 1870); and was a frequent contributor to periodicals.

KAYSER, FRIEDRICH HEINRICH EMANUEL (1845-), German geologist and palaeontologist, was born at Königsberg, on the 26th of March 1845. He was educated at Berlin where he took his degree of Ph.D. in 1870. In 1882 he became professor of geology in the university at Marburg. He investigated fossils of various ages and from all parts of the world, but more especially from the Palaeozoic formations, including those of South Africa, the Polar regions, and notably the Devonian fossils of Germany, Bohemia and other parts of Europe.

Among his separate works are *Lehrbuch der Geologie* (2 vols., ii.), *Geologische Formationskunde* 1891 (2nd ed., 1902), and i. *Allgemeine Geologie* (1893), vol. ii. (the volume first issued) was translated and edited by P. Lake, 1893, under the title *Textbook of Comparative Geology*. Another work is *Beiträge zur Kenntniss der Fauna der Siegenschen Grauwacke* (1892).

KAY-SHUTTLEWORTH, SIR JAMES PHILLIPS, Bart. (1804-1877), English politician and educationalist, was born at Rochdale, Lancashire, on the 20th of July 1804, the son of Robert Kay. At first engaged in a Rochdale bank, in 1824 he became a medical student at Edinburgh University. Settling in Manchester about 1827, he worked for the Ancoats and Ardwick Dispensary, and the experience which he thus gained of the conditions of the poor in the Lancashire factory districts, together with his interest in economic science, led to his appointment in 1835 as poor law commissioner in Norfolk and Suffolk and later in the London districts. In 1839 he was appointed first secretary of the committee formed by the Privy Council to administer the Government grant for the public education in Great Britain. He is remembered as having founded at Battersea, London, in conjunction with E. Carleton Tufnell, the first training college for school teachers (1839-1840); and the system of national school education of the present day, with its public inspection, trained teachers and its support by state as well as local funds, is largely due to his initiative. In 1842 he married Lady Janet Shuttleworth, assuming by royal licence his bride's name and arms. A breakdown in his health led him to resign his post on the committee in 1849, but subsequent recovery enabled him to take an active part in the working of the central relief committee instituted under Lord Derby, during the Lancashire cotton famine of 1861-1865. He was created a baronet in 1849. Until the end of his life he interested himself in the movements of the Liberal party in Lancashire, and the progress of education. He died in London on the 26th of May 1877. His *Physiology, Pathology and Treatment of Asphyxia* became a standard textbook, and he also wrote numerous papers on public education.

His son, Sir Ughtred James Kay-Shuttleworth (b. 1844), became a well-known Liberal politician, sitting in parliament for Hastings from 1869 to 1880 and for the Clitheroe division of Lancashire from 1885 till 1902, when he was created Baron Shuttleworth. He was chancellor of the duchy of Lancaster in 1886, and secretary to the Admiralty in 1892-1895.

KAZALA, or Kazalinsk, a fort and town in the Russian province of Syr-darya in West Turkestan, at the point where the Kazala River falls into the Syr-darya, about 50 m. from its mouth in Lake Aral, in 45° 45′ N. and 62° 7′ E., “at the junction,” to quote Schuyler, “of all the trade routes in Central Asia, as the road from Orenburg meets here with the Khiva, Bokhara and Tashkent roads.” Besides carrying on an active trade with the Kirghiz of the surrounding country, it is of growing importance in the general current of commerce. Pop. (1897), 7600. The floods in the river make it an island in spring; in summer it is parched by the sun and hot winds, and hardly a tree can be got to grow. The streets are wide, but the houses, as well as the fairly strong fort, are built of mud bricks.

KAZAÑ, a government of middle Russia, surrounded by the governments of Vyatka, Ufa, Samara, Simbirsk, Nizhniy-Novgorod and Kostroma. Area 24,601 sq. m. It belongs to the basins of the Volga and its tributary the Kama, and by these streams the government is divided into three regions; the first, to the right of the main river, is traversed by deep ravines sloping to the north-east, towards the Volga, and by two ranges of hills, one of which (300 to 500 ft.) skirts the river; the second region, between the left bank of the Volga and the left bank of the Kama, is an open steppe; and the third, between the left bank of the Volga and the right bank of the Kama, resembles in its eastern part the first region, and in its western part is covered with forest. Marls, limestones and sandstones, of Permian or Triassic age, are the principal rocks; the Jurassic formation appears in a small part of the Tetyúshi district in the south; and Tertiary rocks stretch along the left bank of the Volga. Mineral springs (iron, sulphur and petroleum) exist in several places. The Volga is navigable throughout its course of 200 m. through Kazañ, as well as the Kama (120 m.); and the Vyatka, Kazanka, Rutka, Tsivyl, Greater Kokshaga, Ilet, Vetluga and Mesha, are not without value as waterways. About four hundred small lakes are enumerated within the government; the upper and lower Kaban supply the city of Kazañ with water.

The climate is severe, the annual mean temperature being 37.8° F. The rainfall amounts to 16 in. Agriculture is the chief occupation, and 82% of the population are peasants. Out of 7,672,600 acres of arable land, 4,516,500 are under crops—chiefly rye and oats, with some wheat, barley, buckwheat, lentils, flax, hemp and potatoes. But there generally results great scarcity, and even famine, in bad years. Live stock are numerous. Forests cover 35% of the total area. Bee-keeping is an important industry. Factories employ about 10,000 persons and include flour-mills, distilleries, factories for soap, candles and tallow, and tanneries. A great variety of petty trades, especially those connected with wood, are carried on in the villages, partly for export. The fairs are well attended. There is considerable shipping on the Volga, Kama, Vyatka and their tributaries. Kazañ is divided into twelve districts. The chief town is Kazañ (*q.v.*). The district capitals, with their populations in 1897 are: Cheboksary (4568), Chistopol (20,161), Kozmodemyansk (5212), Laishev (5439), Mamadyzh (4213), Spask (2779), Sviyazhsk (2363), Tetyushi (4754). Tsarevokokshaisk (1654), Tsivylsk (2337) and Yadrin (2467). Population (1879), 1,872,437; (1897), 2,190,185, of whom 1,113,555 were women, and 176,396 lived in towns. The estimated population in 1906 was 2,504,400. It consists principally of Russians and Tatars, with a variety of Finno-Turkish tribes: Chuvashes, Cheremisses, Mordvinians, Votyaks, Mescheryaks, and some Jews and Poles. The Russians belong to the Orthodox Greek Church or are Nonconformists; the Tatars are Mussulmans; and the Finno-Turkish tribes are either pagans or belong officially to the Orthodox Greek Church, the respective proportions being (in 1897): Orthodox Greek, 69.4% of the whole; Nonconformists, 1%; Mussulmans, 28.8%.

(P. A. K.; J. T. Be.)

KAZAÑ (called by the Cheremisses *Ozon*), a town of eastern Russia, capital of the government of the same name, situated in 55° 48′ N. and 49° 26″ E., on the river Kazanka, 3 m. from the Volga, which however reaches the city when it overflows its banks every spring. Kazañ lies 650 m. E. from Moscow by rail and 253 m. E. of Nizhniy-Novgorod by the Volga. Pop. (1883), 140,726; (1900), 143,707, all Russians except for some 20,000 Tatars. The most striking feature of the city is the *kreml* or citadel, founded in 1437, which crowns a low hill on the N.W. Within its wall, capped with five towers, it contains several churches, amongst them the cathedral of the Annunciation, founded in 1562 by Gury, the first archbishop of Kazañ, Kazañ being an archiepiscopal see of the Orthodox Greek Church. Other buildings in the kreml are a magnificent monastery, built in 1556; an arsenal; the modern castle in which the governor resides; and the red brick Suyumbeka tower, 246 ft. high, which is an object of great veneration to the Tatars as the reputed burial-place of one of their saints. A little E. of the kreml is the Bogoroditski convent, built in 1579 for the reception of the Black Virgin of Kazañ, a miracle-working image transferred to Moscow in 1612, and in St Petersburg since 1710. Kazañ is the intellectual capital of eastern Russia, and an important seat of Oriental scholarship. Its university, founded in 1804, is attended by nearly 1000 students. Attached to it are an excellent library of 220,000 vols., an astronomical observatory, a botanical garden and various museums. The ecclesiastical academy, founded in 1846, contains the old library of the Solovetsk (Solovki) monastery, which is of importance for the history of Russian religious sects. The city is adorned with bronze statues of Tsar Alexander II., set up facing the kreml in 1895, and of the poet G. R. Derzhavin (1743-1816); also with a monument commemorating the capture of Kazañ by Ivan the Terrible. The central parts of the city consist principally of small one-storeyed houses, surrounded by gardens, and are inhabited chiefly by Russians, while some 20,000 Tatars dwell in the suburbs. Kazañ is, further, the intellectual centre of the Russian Mahommedans, who have here their more important schools and their printing-presses. Between the city and the Volga is the Admiralty suburb, where Peter the Great had his Caspian fleet built for his campaigns against Persia. The more important manufactures are leather goods, soap, wax candles, sacred images, cloth, cottons, spirits and bells. A considerable trade is carried on with eastern Russia, and with Turkestan and Persia. Previous to the 13th century, the present government of Kazañ formed part of the territory of the Bulgarians, the ruins of whose ancient capital, Bolgari or Bolgary, lie 60 m. S. of Kazañ. The city of Kazañ itself stood, down to the 13th century, 30 m. to the N.E., where traces of it can still be seen. In 1438 Ulugh Mahommed (or Ulu Makhmet), khan of the Golden Horde of the Mongols, founded, on the ruins of the Bulgarian state, the kingdom of Kazañ, which in its turn was destroyed by Ivan the Terrible of Russia in 1552 and its territory annexed to Russia. In 1774 the city was laid waste by the rebel Pugachev. It has suffered repeatedly from fires, especially in 1815 and 1825. The Kazañ Tatars, from having lived so long amongst Russians and Finnish tribes, have lost a good many of the characteristic features of their Tatar (Mongol) ancestry, and bear now the stamp of a distinct ethnographic type. They are found also in the neighbouring governments of Vyatka, Ufa, Orenburg, Samara, Saratov, Simbirsk, Tambov and Nizhniy-Novgorod. They are intelligent and enterprising, and are engaged principally in trade.

See Pineghin's *Kazañ Old and New* (in Russian); Velyaminov-Zernov's *Kasimov Tsars* (3 vols., St Petersburg, 1863-1866); Zarinsky's *Sketches of Old Kazañ* (Kazañ, 1877); Trofimov's *Siege of Kazañ in* 1552 (Kazañ, 1890); Firsov's books on the history of the native population (Kazañ, 1864 and 1869); and Shpilevski, on the antiquities of the town and government, in *Izvestia i Zapiski* of the Kazañ University (1877). A bibliography of the Oriental books published in the city is printed in *Bulletins* of the St Petersburg Academy (1867). Compare also L. Leger's "Kazañ et les tartares," in *Bibl. Univ. de Genève* (1874).

(P. A. K.; J. T. Be.)

KĀZERŪN, a district and town of the province of Fars in Persia. The district is situated between Shiraz and Bushire. In its centre is the Kāzerūn Valley with a direction N.W. to S.E., a fertile plain 30 m. long and 7 to 8 m. broad, bounded S.E. by the Parishān Lake (8 m. long, 3 m. broad) N.W. by the Boshavir River, with the ruins of the old city of Beh-Shahpur (Beshāver, Boshāvir, also, short, Shāpūr) and Sassanian bas-reliefs on its banks. There also, in a cave, is a statue of Shapur. The remainder of the district is mostly hilly country intersected by numerous streams, plains and hills being covered with zizyphus, wild almond and oak. The district is divided into two divisions: town and villages, the latter being called Kuh i Marreh and again subdivided into (1) Pusht i Kuh; (2) Yarrūk; (3) Shakān. It has forty-six villages and a population of about 15,000; it produces rice of excellent quality, cotton, tobacco and opium, but very little corn, and bread made of the flour of acorns is a staple of food in many villages. Wild almonds are exported.

Kāzerūn, the chief place of the district, is an unwalled town situated in the midst of the central

plain, in 29° 37′ N., 51° 43′ E. at an elevation of 2800 ft., 70 m. from Shiraz, and 96 m. from Bushire. It has a population of about 8000, and is divided into four quarters separated by open spaces. Adjoining it on the W. is the famous Nazar garden, with noble avenues of orange trees planted by a former governor, Hajji Ali Kuli Khan, in 1767. A couple of miles N. of the city behind a low range of hills are the imposing ruins of a marble building said to stand over the grave of Sheik Amin ed din Mahommed b. Zia ed din Mas'ūd, who died A.H. 740 (A.D. 1339). S.E. of the city on a huge mound are ruins of buildings with underground chambers, popularly known as Kal'eh i Gabr, "castle of the fire-worshippers."

KAZINCZY, FERENCZ (1750-1831), Hungarian author, the most indefatigable agent in the regeneration of the Magyar language and literature at the end of the 18th and beginning of the 19th century, was born on the 27th of October 1759, at Ér-Semlyén, in the county of Bihar, Hungary. He studied law at Kassa and Eperies, and in Pest, where he also obtained a thorough knowledge of French and German literature, and made the acquaintance of Gideon Ráday, who allowed him the use of his library. In 1784 Kazinczy became subnotary for the county of Abaúj; and in 1786 he was nominated inspector of schools at Kassa. There he began to devote himself to the restoration of the Magyar language and literature by translations from classical foreign works, and by the augmentation of the native vocabulary from ancient Magyar sources. In 1788, with the assistance of Baróti Szabó and John Bacsányi, he started at Kassa the first Magyar literary magazine, *Magyar Muzeum*; the *Orpheus*, which succeeded it in 1790, was his own creation. Although, upon the accession of Leopold II, Kazinczy, as a non-Catholic, was obliged to resign his post at Kassa, his literary activity in no way decreased. He not only assisted Gideon Ráday in the establishment and direction of the first Magyar dramatic society, but enriched the repertoire with several translations from foreign authors. His *Hamlet*, which first appeared at Kassa in 1790, is a rendering from the German version of Schröder. Implicated in the democratic conspiracy of the abbot Martinovics, Kazinczy was arrested on the 14th of December 1794, and condemned to death; but the sentence was commuted to imprisonment. He was released in 1801, and shortly afterwards married Sophia Török, daughter of his former patron, and retired to his small estate at Széphalom or "Fairhill," near Sátor-Ujhely, in the county of Zemplén. In 1828 he took an active part in the conferences held for the establishment of the Hungarian academy in the historical section of which he became the first corresponding member. He died of Asiatic cholera, at Széphalom, on the 22nd of August 1831.

> Kazinczy, although possessing great beauty of style, cannot be regarded as a powerful and original thinker; his fame is chiefly due to the felicity of his translations from the masterpieces of Lessing, Goethe, Wieland, Klopstock, Ossian, La Rochefoucauld, Marmontel, Molière, Metastasio, Shakespeare, Sterne, Cicero, Sallust, Anacreon, and many others. He also edited the works of Baróczy (Pest, 1812, 8 vols.) and of the poet Zrinyi (1817, 2 vols.), and the poems of Dayka (1813, 3 vols.) and of John Kis, (1815, 3 vols.). A collective edition of his works (*Szép Literatura*), consisting for the most part of translations, was published at Pest, 1814-1816, in 9 vols. His original productions (*Eredeti Mukái*), largely made up of letters, were edited by Joseph Bajza and Francis Toldy at Pest, 1836-1845, in 5 vols. Editions of his poems appeared in 1858 and in 1863.

KAZVIN, a province and town of Persia. The province is situated N.W. of Teheran and S. of Gilan. On the W. it is bounded by Khamseh. It pays a yearly revenue of about £22,000, and contains many rich villages which produce much grain and fruit, great quantities of the latter being dried and exported.

Kazvin, the capital of the province, is situated at an elevation of 4165 ft., in 36° 15′ N. and 50° E., and 92 m. by road from Teheran. The city is said to have been founded in the 4th century by the Sassanian king Shapur II (309-379). It has been repeatedly damaged by earthquakes. Many of its streets and most of the magnificent buildings seen there by Chardin in 1674 and other travellers during the 17th century are in ruins. The most remarkable remains are the palace of the Safawid shahs and the mosque with its large blue dome. In the 16th century Shah Tahmasp I. (1524-1576) made Kazvin his capital, and it remained so till Shah Abbas I. (1587-1629)

transferred the seat of government to Isfahán. The town still bears the title Dar es Salteneh, “the seat of government.” Kazvin has many baths and cisterns fed by underground canals. The system of irrigation formerly carried on by these canals rendered the plain of Kazvin one of the most fertile regions in Persia; now most of the canals are choked up. The city has a population of about 50,000 and a thriving transit trade, particularly since 1899 when the carriage road between Resht and Teheran with Kazvin as a half-way stage was opened under the auspices of the Russian “Enzeli-Teheran Road Company.” Great quantities of rice, fish and silk are brought to it from Gilan for distribution in Persia and export to Turkey.

KEAN, EDMUND (1787-1833), was born in London on the 17th of March[1] 1787. His father was probably Edmund Kean, an architect’s clerk; and his mother was an actress, Ann Carey, grand-daughter of Henry Carey. When in his fourth year Kean made his first appearance on the stage as Cupid in Noverre’s ballet of *Cymon*. As a child his vivacity and cleverness, and his ready affection for those who treated him with kindness, made him a universal favourite, but the harsh circumstances of his lot, and the want of proper restraint, while they developed strong self-reliance, fostered wayward tendencies. About 1794 a few benevolent persons provided the means of sending him to school, where he mastered his tasks with remarkable ease and rapidity; but finding the restraint intolerable, he shipped as a cabin boy at Portsmouth. Discovering that he had only escaped to a more rigorous bondage, he counterfeited both deafness and lameness with a histrionic mastery which deceived even the physicians at Madeira. On his return to England he sought the protection of his uncle Moses Kean, mimic, ventriloquist and general entertainer, who, besides continuing his pantomimic studies, introduced him to the study of Shakespeare. At the same time Miss Tidswell, an actress who had been specially kind to him from infancy, taught him the principles of acting. On the death of his uncle he was taken charge of by Miss Tidswell, and under her direction he began the systematic study of the principal Shakespearian characters, displaying the peculiar originality of his genius by interpretations entirely different from those of Kemble. His talents and interesting countenance induced a Mrs Clarke to adopt him, but the slight of a visitor so wounded his pride that he suddenly left her house and went back to his old surroundings. In his fourteenth year he obtained an engagement to play leading characters for twenty nights in York Theatre, appearing as Hamlet, Hastings and Cato. Shortly afterwards, while he was in the strolling troupe belonging to Richardson’s show, the rumour of his abilities reached George III., who commanded him to recite at Windsor. He subsequently joined Saunders’s circus, where in the performance of an equestrian feat he fell and broke his legs—the accident leaving traces of swelling in his insteps throughout his life. About this time he picked up music from Charles Incledon, dancing from D’Egville, and fencing from Angelo. In 1807 he played leading parts in the Belfast theatre with Mrs Siddons, who began by calling him “a horrid little man” and on further experience of his ability said that he “played very, very well,” but that “there was too little of him to make a great actor.” An engagement in 1808 to play leading characters in Beverley’s provincial troupe was brought to an abrupt close by his marriage (July 17) with Miss Mary Chambers of Waterford, the leading actress. For several years his prospects were very gloomy, but in 1814 the committee of Drury Lane theatre, the fortunes of which were then so low that bankruptcy seemed inevitable, resolved to give him a chance among the “experiments” they were making to win a return of popularity. When the expectation of his first appearance in London was close upon him he was so feverish that he exclaimed “If I succeed I shall go mad.” His opening at Drury Lane on the 26th of January 1814 as Shylock roused the audience to almost uncontrollable enthusiasm. Successive appearances in Richard III., Hamlet, Othello, Macbeth and Lear served to demonstrate his complete mastery of the whole range of tragic emotion. His triumph was so great that he himself said on one occasion, “I could not feel the stage under me.” On the 29th of November 1820 Kean appeared for the first time in New York as Richard III. The success of his visit to America was unequivocal, although he fell into a vexatious dispute with the press. On the 4th of June 1821 he returned to England.

Probably his irregular habits were prejudicial to the refinement of his taste, and latterly they tended to exaggerate his special defects and mannerisms. The adverse decision in the divorce case of Cox v. Kean on the 17th of January 1825 caused his wife to leave him, and aroused against him such bitter feeling, shown by the almost riotous conduct of the audiences before which he appeared about this time, as nearly to compel him to retire permanently into private life. A second visit to America in 1825 was largely a repetition of the persecution which, in the name of morality, he had suffered in England. Some cities showed him a spirit of charity; many audiences submitted him to the grossest insults and endangered his life by the violence of their disapproval. In Quebec he was much impressed with the kindness of some Huron Indians who

attended his performances, and he was made chief of the tribe, receiving the name Alanienouidet. Kean's last appearance in New York was on the 5th of December 1826 in Richard III., the rôle in which he was first seen in America. He returned to England and was ultimately received with all the old favour, but the contest had made him so dependent on the use of stimulants that the gradual deterioration of his gifts was inevitable. Still, even in their decay his great powers triumphed during the moments of his inspiration over the absolute wreck of his physical faculties, and compelled admiration after his gait had degenerated into a weak hobble, and the lightning brilliancy of his eyes had become dull and bloodshot, and the tones of his matchless voice marred by rough and grating hoarseness. His appearance in Paris was a failure owing to a fit of drunkenness. His last appearance on the stage was at Covent Garden, on the 25th of March 1833 when he played Othello to the Iago of his son Charles. At the words "Villain, be sure," in scene 3 of act iii., he suddenly broke down, and crying in a faltering voice "O God, I am dying. Speak to them, Charles," fell insensible into his son's arms. He died at Richmond on the 15th of May 1833.

It was in the impersonation of the great creations of Shakespeare's genius that the varied beauty and grandeur of the acting of Kean were displayed in their highest form, although probably his most powerful character was Sir Giles Overreach in Massinger's *A New Way to Pay Old Debts*, the effect of his first impersonation of which was such that the pit rose *en masse*, and even the actors and actresses themselves were overcome by the terrific dramatic illusion. His only personal disadvantage as an actor was his small stature. His countenance was strikingly interesting and unusually mobile; he had a matchless command of facial expression; his fine eyes scintillated with the slightest shades of emotion and thought; his voice, though weak and harsh in the upper register, possessed in its lower range tones of penetrating and resistless power, and a thrilling sweetness like the witchery of the finest music; above all, in the grander moments of his passion, his intellect and soul seemed to rise beyond material barriers and to glorify physical defects with their own greatness. Kean specially excelled as the exponent of passion. In Othello, Iago, Shylock and Richard III., characters utterly different from each other, but in which the predominant element is some form of passion, his identification with the personality, as he had conceived it, was as nearly as possible perfect, and each isolated phase and aspect of the plot was elaborated with the minutest attention to details, and yet with an absolute subordination of these to the distinct individuality he was endeavouring to portray. Coleridge said, "Seeing him act was like reading Shakespeare by flashes of lightning." If the range of character in which Kean attained supreme excellence was narrow, no one except Garrick has been so successful in so many great impersonations. Unlike Garrick, he had no true talent for comedy, but in the expression of biting and saturnine wit, of grim and ghostly gaiety, he was unsurpassed. His eccentricities at the height of his fame were numerous. Sometimes he would ride recklessly on his horse Shylock throughout the night. He was presented with a tame lion with which he might be found playing in his drawing-room. The prizefighters Mendoza and Richmond the Black were among his visitors. Grattan was his devoted friend. In his earlier days Talma said of him, "He is a magnificent uncut gem; polish and round him off and he will be a perfect tragedian." Macready, who was much impressed by Kean's Richard III. and met the actor at supper, speaks of his "unassuming manner ... partaking in some degree of shyness" and of the "touching grace" of his singing. Kean's delivery of the three words "I answer—NO!" in the part of Sir Edward Mortimer in *The Iron Chest*, cast Macready into an abyss of despair at rivalling him in this rôle. So full of dramatic interest is the life of Edmund Kean that it formed the subject for a play by the elder Dumas, entitled *Kean on désordre et génie*, in which Frederick-Lemaître achieved one of his greatest triumphs.

See Francis Phippen, *Authentic Memoirs of Edmund Kean* (1814); B. W. Procter (Barry Cornwall), *The Life of Edmund Kean* (1835); F. W. Hawkins, *The Life of Edmund Kean* (1869); J. Fitzgerald Molloy, *The Life and Adventures of Edmund Kean* (1888); Edward Stirling, *Old Drury Lane* (1887).

His son, Charles John Kean (1811-1868), was born at Waterford, Ireland, on the 18th of January 1811. After preparatory education at Worplesdon and at Greenford, near Harrow, he was sent to Eton College, where he remained three years. In 1827 he was offered a cadetship in the East India Company's service, which he was prepared to accept if his father would settle an income of £400 on his mother. The elder Kean refused to do this, and his son determined to become an actor. He made his first appearance at Drury Lane on the 1st of October 1827 as Norval in Home's *Douglas*, but his continued failure to achieve popularity led him to leave London in the spring of 1828 for the provinces. At Glasgow, on the 1st of October in this year, father and son acted together in Arnold Payne's *Brutus*, the elder Kean in the title-part and his son as Titus. After a visit to America in 1830, where he was received with much favour, he appeared in 1833 at Covent Garden as Sir Edmund Mortimer in Colman's *The Iron Chest*, but his success was not pronounced enough to encourage him to remain in London, especially as he had already won a high position in the provinces. In January 1838, however, he returned to Drury Lane, and played Hamlet with a success which gave him a place among the principal tragedians of his time. He was married to the actress Ellen Tree (1805-1880) on the 29th of January 1842, and paid a

second visit to America with her from 1845 to 1847. Returning to England, he entered on a successful engagement at the Haymarket, and in 1850, with Robert Keeley, became lessee of the Princess Theatre. The most noteworthy feature of his management was a series of gorgeous Shakespearian revivals. Charles Kean was not a great tragic actor. He did all that could be done by the persevering cultivation of his powers, and in many ways manifested the possession of high intelligence and refined taste, but his defects of person and voice made it impossible for him to give a representation at all adequate of the varying and subtle emotions of pure tragedy. But in melodramatic parts such as the king in Boucicault's adaptation of Casimir Delavigne's *Louis XI.*, and Louis and Fabian dei Franchi in Boucicault's adaptation of Dumas's *The Corsican Brothers*, his success was complete. From his "tour round the world" Kean returned in 1866 in broken health, and died in London on the 22nd of January 1868.

See *The Life and Theatrical Times of Charles Kean*, by John William Cole (1859).

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1 This date is apparently settled by a letter from Kean in 1829, to Dr Gibson (see *Rothesay Express* for the 28th of June 1893, where the letter is printed and vouched for), inviting him to dinner on the 17th of March to celebrate Kean's birthday; various other dates have been given in books of reference, the 4th of November having been formerly accepted by this Encyclopaedia.

KEANE, JOHN JOSEPH (1839-), American Roman Catholic archbishop, was born in Ballyshannon, Co. Donegal, Ireland, on the 12th of September 1839. His family settled in America when he was seven years old. He was educated at Saint Charles's College, Ellicott City, Maryland, and at Saint Mary's Seminary, Baltimore, and in 1866 was ordained a priest and made curate of St Patrick's, Washington, D.C. On the 25th of August 1878 he was consecrated Bishop of Richmond, to succeed James Gibbons, and he had established the Confraternity of the Holy Ghost in that diocese, and founded schools and churches for negroes before his appointment as rector of the Catholic University, Washington, D.C., in 1886, and his appointment in 1888 to the see of Ajasso. He did much to upbuild the Catholic University, but his democratic and liberal policy made him enemies at Rome, whence there came in 1896 a request for his resignation of the rectorate, and where he spent the years 1897-1900 as canon of St John Lateran, assistant bishop at the pontifical throne, and counsellor to the Propaganda. In 1900 he was consecrated archbishop of Dubuque, Iowa. He took a prominent part in the Catholic Young Men's National Union and in the Total Abstinence Union of North America; and was in general charge of the Catholic delegation to the World's Parliament of Religions held at the Columbian Exposition in 1893. He lectured widely on temperance, education and American institutions, and in 1890 was Dudleian lecturer at Harvard University.

A selection from his writings and addresses was edited by Maurice Francis Egan under the title *Onward and Upward: A Year Book* (Baltimore, 1902).

KEARNEY, a city and the county-seat of Buffalo county, Nebraska, U.S.A., about 130 m. W. of Lincoln. Pop. (1890), 8074; (1900), 5634 (650 foreign-born); (1910), 6202. It is on the main overland line of the Union Pacific, and on a branch of the Burlington & Missouri River railroad. The city is situated in the broad, flat bottom-lands a short distance N. of the Platte River. Lake Kearney, in the city, has an area of 40 acres. The surrounding region is rich farming land, devoted especially to the growing of alfalfa and Indian corn. At Kearney are a State Industrial School for boys, a State Normal School, the Kearney Military Academy, and a Carnegie library. Good water-power is provided by a canal from the Platte River about 17 m. above Kearney, and the city's manufactures include foundry and machine-shop products, flour and bricks. Kearney Junction, as Kearney was called from 1872 to 1875, was settled a year before the two railways actually formed their junction here, where the city was planned. Kearney became a town in 1873, a city of the second class and the county seat in 1874, and a city of the first class in 1901. It is to be distinguished from an older and once famous prairie city, popularly known as "Dobey Town" (*i.e.* Adobe), founded in the early 'fifties on the edge of the reservation of old Fort Kearney (removed in 1848 from Nebraska City), in Kearney county, on the S. shore of the Platte about 6

m. S.E. of the present Kearney; here in 1861 the post office of Kearney City was established. In the days of the prairie freighting caravans Dobey Town was one of the most important towns between Independence, Missouri, and the Pacific coast, and it had a rough, wild, picturesque history; but it lost its immense freighting interests after the Union Pacific had been extended through it in 1866. The site of Dobey Town, together with the Fort, was abandoned in 1871. Fort Kearney and the city too were named in honour of General Stephen W. Kearny, and the name was at first correctly spelt without a second “e.”

KEARNY, PHILIP (1815-1862), American soldier, was born in New York on the 2nd of June 1815, and was originally intended for the legal profession. He graduated at Columbia University (1833), but his bent was decidedly towards soldiering, and in 1837 he obtained a commission in the cavalry regiment of which his uncle, (General) Stephen Watts Kearny (1794-1848), was colonel and Lieutenant Jefferson Davis adjutant. Two years later he was sent to France to study the methods of cavalry training in vogue there. Before his return to the United States in 1840 he had served, on leave, in Algeria. He had inherited a large fortune, but he remained in the service, and his wide experience of cavalry work caused him to be employed on the headquarters staff of the army. After six more years’ service Kearny left the army, but almost immediately afterwards he rejoined, bringing with him a company of cavalry, which he had raised and equipped chiefly at his own expense, to take part in the Mexican war. In December 1846 he was promoted captain. In leading a brilliant cavalry charge at Churubusco he lost his left arm, but he remained at the front, and won the brevet of major for his gallantry at Contreras and Churubusco. In 1851 he again resigned, to travel round the world. He saw further active service with his old comrades of the French cavalry in the Italian war of 1859, and received the cross of the Legion of Honour for his conduct at Solferino. Up to the outbreak of the American Civil War he lived in Paris, but early in 1861 he hastened home to join the Federal army. At first as a brigade commander and later as a divisional commander of infantry in the Army of the Potomac, he infused into his men his own cavalry spirit of dash and bravery. At Williamsburg, Seven Pines, and Second Bull Run, he displayed his usual romantic courage, but at Chantilly (Sept. 1, 1862), after repulsing an attack of the enemy, he rode out in the dark too far to the front, and mistaking the Confederates for his own men was shot dead. His body was sent to the Federal lines with a message from General Lee, and was buried in Trinity Churchyard, New York. His commission as major-general of volunteers was dated July 4, 1862, but he never received it.

See J. W. de Peyster, *Personal and Military History of Philip Kearny* (New York, 1869).

KEARNY, a town of Hudson county, New Jersey, U.S.A., between the Passaic and Hackensack rivers, adjoining Harrison, and connected with Newark by bridges over the Passaic. Pop. (1900), 10,896, of whom 3597 were foreign-born; (1910 census), 18,659. The New York & Greenwood Lake division of the Erie railroad has a station at Arlington, the principal village (in the N.W. part), which contains attractive residences of Newark, Jersey City and New York City business men. The town covers an area of about 7 sq. m., including a large tract of marsh-land. In Kearny are railway repair shops of the Pennsylvania system, and a large abattoir; and there are numerous manufactures. The value of the town’s factory products increased from $1,607,002 in 1900 to $4,427,904 in 1905, or 175.5%. Among its institutions are the State Soldiers’ Home, removed here from Newark in 1880, a Carnegie library, two Italian homes for orphans, and a Catholic Industrial School for boys.

The neck of land between the Passaic and the Hackensack rivers, for 7 m. N. from where they unite, was purchased from the proprietors of East Jersey and from the Indians by Captain William Sandford in 1668 and through Nathaniel Kingsland, sergeant-major of Barbadoes, received the name “New Barbadoes.” After the town under this name had been extended considerably to the northward, the town of Lodi was formed out of the S. portion in 1825, the town of Harrison was founded out of the S. portion of Lodi in 1840, and in 1867 a portion of Harrison was set apart as a township and named in honour of General Philip Kearny, a former resident. Kearny was incorporated as a town in 1895.

KEARY, ANNIE (1825-1879), English novelist, was born near Wetherby, Yorkshire, on the 3rd of March 1825, the daughter of an Irish clergyman. She was the author of several children's books and novels, of which the best known is *Castle Daly*, an Irish story. She also wrote an *Early Egyptian History* (1861) and *The Nation Around* (1870). She died at Eastbourne on the 3rd of March 1879.

KEATE, JOHN (1773-1852), English schoolmaster, was born at Wells, Somersetshire, in 1773, the son of Prebendary William Keate. He was educated at Eton and King's College, Cambridge, where he had a brilliant career as a scholar; taking holy orders, he became, about 1797, an assistant master at Eton College. In 1809 he was elected headmaster. The discipline of the school was then in a most unsatisfactory condition, and Dr Keate (who took the degree of D.D. in 1810) took stern measures to improve it. His partiality for the birch became a by-word, but he succeeded in restoring order and strengthening the weakened authority of the masters. Beneath an outwardly rough manner the little man concealed a really kind heart, and when he retired in 1834, the boys, who admired his courage, presented him with a handsome testimonial. A couple of years before he had publicly flogged eighty boys on one day. Keate was made a canon of Windsor in 1820. He died on the 5th of March 1852 at Hartley Westpall, Hampshire, of which parish he had been rector since 1824.

See Maxwell Lyte, *History of Eton College* (3rd ed., 1899); Collins, *Etoniana*; Harwood, *Alumni Etonienses*; *Annual Register* (1852); *Gentleman's Magazine* (1852).

KEATS, JOHN (1795-1821), English poet, was born on the 29th or 31st of October 1795 at the sign of the Swan and Hoop, 24 The Pavement, Moorfields, London. He published his first volume of verse in 1817, his second in the following year, his third in 1820, and died of consumption at Rome on the 23rd of February 1821 in the fourth month of his twenty-sixth year. (For the biographical facts see the later section of this article.)

In Keats's first book there was little foretaste of anything greatly or even genuinely good; but between the marshy and sandy flats of sterile or futile verse there were undoubtedly some few purple patches of floral promise. The style was frequently detestable—a mixture of sham Spenserian and mock Wordsworthian, alternately florid and arid. His second book, *Endymion*, rises in its best passages to the highest level of Barnfield and of Lodge, the two previous poets with whom, had he published nothing more, he might most properly have been classed; and this, among minor minstrels, is no unenviable place. His third book raised him at once to a foremost rank in the highest class of English poets. Shelley, up to twenty, had written little or nothing that would have done credit to a boy of ten; and of Keats also it may be said that the merit of his work at twenty-five was hardly by comparison more wonderful than its demerit at twenty-two. His first book fell as flat as it deserved to fall; the reception of his second, though less considerate than on the whole it deserved, was not more contemptuous than that of immeasurably better books published about the same time by Coleridge, Landor and Shelley. A critic of exceptional carefulness and candour might have noted in the first book so singular an example of a stork among the cranes as the famous and notable sonnet on Chapman's Homer; a just judge would have indicated, a partial advocate might have exaggerated, the value of such golden grain amid a garish harvest of tares as the hymn to Pan and the translation into verse of Titian's Bacchanal which glorify the weedy wilderness of *Endymion*. But the hardest thing said of that poem by the *Quarterly* reviewer was unconsciously echoed by the future author of *Adonais*—that it was all but absolutely impossible to read through; and the obscener insolence of the "Blackguard's

Magazine," as Landor afterwards very justly labelled it, is explicable though certainly not excusable if we glance back at such a passage as that where Endymion exchanges fulsome and liquorish endearments with the "known unknown *from whom his being sips such darling (!) essence*." Such nauseous and pitiful phrases as these, and certain passages in his correspondence, make us understand the source of the most offensive imputations or insinuations levelled against the writer's manhood; and, while admitting that neither his love-letters, nor the last piteous outcries of his wailing and shrieking agony, would ever have been made public by merciful or respectful editors, we must also admit that, if they ought never to have been published, it is no less certain that they ought never to have been written; that a manful kind of man or even a manly sort of boy, in his love-making or in his suffering, will not howl and snivel after such a lamentable fashion. One thing hitherto inexplicable a very slight and rapid glance at his amatory correspondence will amply suffice to explain: how it came to pass that the woman so passionately beloved by so great a poet should have thought it the hopeless attempt of a mistaken kindness to revive the memory of a man for whom the best that could be wished was complete and compassionate oblivion. For the side of the man's nature presented to her inspection, this probably was all that charity or reason could have desired. But that there was a finer side to the man, even if considered apart from the poet, his correspondence with his friends and their general evidence to his character give more sufficient proof than perhaps we might have derived from the general impression left on us by his works; though indeed the preface to *Endymion* itself, however illogical in its obviously implied suggestion that the poem published was undeniably unworthy of publication, gave proof or hint at least that after all its author was something of a man. And the eighteenth of his letters to Miss Brawne stands out in bright and brave contrast with such as seem incompatible with the traditions of his character on its manlier side. But if it must be said that he lived long enough only to give promise of being a man, it must also be said that he lived long enough to give assurance of being a poet who was not born to come short of the first rank. Not even a hint of such a probability could have been gathered from his first or even from his second appearance; after the publication of his third volume it was no longer a matter of possible debate among judges of tolerable competence that this improbability had become a certainty. Two or three phrases cancelled, two or three lines erased, would have left us in *Lamia* one of the most faultless as surely as one of the most glorious jewels in the crown of English poetry. *Isabella*, feeble and awkward in narrative to a degree almost incredible in a student of Dryden and a pupil of Leigh Hunt, is overcharged with episodical effects of splendid and pathetic expression beyond the reach of either. *The Eve of St Agnes*, aiming at no doubtful success, succeeds in evading all casual difficulty in the line of narrative; with no shadow of pretence to such interest as may be derived from stress of incident or depth of sentiment, it stands out among all other famous poems as a perfect and unsurpassable study in pure colour and clear melody—a study in which the figure of Madeline brings back upon the mind's eye, if only as moonlight recalls a sense of sunshine, the nuptial picture of Marlowe's Hero and the sleeping presence of Shakespeare's Imogen. Beside this poem should always be placed the less famous but not less precious *Eve of St Mark*, a fragment unexcelled for the simple perfection of its perfect simplicity, exquisite alike in suggestion and in accomplishment. The triumph of *Hyperion* is as nearly complete as the failure of *Endymion*; yet Keats never gave such proof of a manly devotion and rational sense of duty to his art as in his resolution to leave this great poem unfinished; not, as we may gather from his correspondence on the subject, for the pitiful reason assigned by his publishers, that of discouragement at the reception given to his former work, but on the solid and reasonable ground that a Miltonic study had something in its very scheme and nature too artificial, too studious of a foreign influence, to be carried on and carried out at such length as was implied by his original design. Fortified and purified as it had been on a first revision, when much introductory allegory and much tentative effusion of sonorous and superfluous verse had been rigorously clipped down or pruned away, it could not long have retained spirit enough to support or inform the shadowy body of a subject so little charged with tangible significance. The faculty of assimilation as distinguished from imitation, than which there can be no surer or stronger sign of strong and sure original genius, is not more evident in the most Miltonic passages of the revised *Hyperion* than in the more Shakespearian passages of the unrevised tragedy which no radical correction could have left other than radically incorrigible. It is no conventional exaggeration, no hyperbolical phrase of flattery with more sound than sense in it, to say that in this chaotic and puerile play of *Otho the Great* there are such verses as Shakespeare might not without pride have signed at the age when he wrote and even at the age when he rewrote the tragedy of *Romeo and Juliet*. The dramatic fragment of *King Stephen* shows far more power of hand and gives far more promise of success than does that of Shelley's *Charles the First*. Yet we cannot say with any confidence that even this far from extravagant promise would certainly or probably have been kept; it is certain only that Keats in these attempts did at least succeed in showing a possibility of future excellence as a tragic or at least a romantic dramatist. In every other line of high and serious poetry his triumph was actual and consummate; here only was it no more than potential or incomplete. As a ballad of the more lyrical order, *La Belle dame sans merci* is not less absolutely excellent, less triumphantly perfect in force and clearness of impression, that as a narrative poem is *Lamia*. In his lines on Robin Hood, and in one or two other less noticeable studies of the kind, he has shown thorough and

easy mastery of the beautiful metre inherited by Fletcher from Barnfield and by Milton from Fletcher. The simple force of spirit and style which distinguishes the genuine ballad manner from all spurious attempts at an artificial simplicity was once more at least achieved in his verses on the crowning creation of Scott's humaner and manlier genius—Meg Merrilies. No little injustice has been done to Keats by such devotees as fix their mind's eye only on the more salient and distinctive notes of a genius which in fact was very much more various and tentative, less limited and peculiar, than would be inferred from an exclusive study of his more specially characteristic work. But within the limits of that work must we look of course for the genuine credentials of his fame; and highest among them we must rate his unequalled and unrivalled odes. Of these perhaps the two nearest to absolute perfection, to the triumphant achievement and accomplishment of the very utmost beauty possible to human words, may be that to Autumn and that on a Grecian Urn; the most radiant, fervent and musical is that to a Nightingale; the most pictorial and perhaps the tenderest in its ardour of passionate fancy is that to Psyche; the subtlest in sweetness of thought and feeling is that on Melancholy. Greater lyrical poetry the world may have seen than any that is in these; lovelier it surely has never seen, nor ever can it possibly see. From the divine fragment of an unfinished ode to Maia we can but guess that if completed it would have been worthy of a place beside the highest. His remaining lyrics have many beauties about them, but none perhaps can be called thoroughly beautiful. He has certainly left us one perfect sonnet of the first rank and as certainly he has left us but one.

Keats has been promoted by modern criticism to a place beside Shakespeare. The faultless force and the profound subtlety of his deep and cunning instinct for the absolute expression of absolute natural beauty can hardly be questioned or overlooked; and this is doubtless the one main distinctive gift or power which denotes him as a poet among all his equals, and gives him a right to rank for ever beside Coleridge and Shelley. As a man, the two admirers who did best service to his memory were Lord Houghton and Matthew Arnold. These alone, among all of their day who have written of him without the disadvantage or advantage of a personal acquaintance, have clearly seen and shown us the manhood of the man. That ridiculous and degrading legend which imposed so strangely on the generous tenderness of Shelley, while evoking the very natural and allowable laughter of Byron, fell to dust at once for ever on the appearance of Lord Houghton's biography, which gave perfect proof to all time that "men have died and worms have eaten them" but not for fear of critics or through suffering inflicted by reviews. Somewhat too sensually sensitive Keats may have been in either capacity, but the nature of the man was as far as was the quality of the poet above the pitiful level of a creature whose soul could "let itself be snuffed out by an article"; and, in fact, owing doubtless to the accident of a death which followed so fast on his early appearance and his dubious reception as a poet, the insolence and injustice of his reviewers in general have been comparatively and even considerably exaggerated. Except from the chief fountain-head of professional ribaldry then open in the world of literary journalism, no reek of personal insult arose to offend his nostrils; and the tactics of such unwashed malignants were inevitably suicidal; the references to his brief experiment of apprenticeship to a surgeon which are quoted from *Blackwood*, in the shorter as well as in the longer memoir by Lord Houghton, could leave no bad odour behind them save what might hang about men's yet briefer recollection of his assailant's unmemorable existence. The false Keats, therefore, whom Shelley pitied and Byron despised would have been, had he ever existed, a thing beneath compassion or contempt. That such a man could have had such a genius is almost evidently impossible; and yet more evident is the proof which remains on everlasting record that none was ever further from the chance of decline to such degradation than the real and actual man who made that name immortal.

(A. C. S.)

Subjoined are the chief particulars of Keats's life.

He was the eldest son of Thomas Keats and his wife Frances Jennings, and was baptized at St Botolph's, Bishopsgate, on the 18th of December 1795. The entry of his baptism is supplemented by a marginal note stating that he was born on the 31st of October. Thomas Keats was employed in the Swan and Hoop livery stables, Finsbury Pavement, London. He had married his master's daughter, and managed the business on the retirement of his father-in-law. In April 1804 Thomas Keats was killed by a fall from his horse, and within a year of this event Mrs Keats married William Rawlings, a stable-keeper. The marriage proved an unhappy one, and in 1806 Mrs Rawlings, with her children John, George, Thomas and Frances Mary (afterwards Mrs Llanos, d. 1889), went to live at Edmonton with her mother, who had inherited a considerable competence from her husband. There is evidence that Keats's parents were by no means of the commonplace type that might be hastily inferred from these associations. They had desired to send their sons to Harrow, but John Keats and his two brothers were eventually sent to a school kept by John Clarke at Enfield, where he became intimate with his master's son, Charles Cowden Clarke. His vivacity of temperament showed itself at school in a love of fighting, but in the last year of his school life he developed a great appetite for reading of all sorts. In 1810 he left school to be apprenticed to Mr Thomas Hammond, a surgeon in Edmonton. He was still within easy reach of his old school, where he frequently borrowed books, especially the works of Spenser and the Elizabethans. With

Hammond he quarrelled before the termination of his apprenticeship, and in 1814 the connexion was broken by mutual consent. His mother had died in 1810, and in 1814 Mrs Jennings. The children were left in the care of two guardians, one of whom, Richard Abbey, seems to have made himself solely responsible. John Keats went to London to study at Guy's and St Thomas's hospitals, living at first alone at 8 Dean Street, Borough, and later with two fellow students in St Thomas's Street. It does not appear that he neglected his medical studies, but his chief interest was turned to poetry. In March 1816 he became a dresser at Guy's, but about the same time his poetic gifts were stimulated by an acquaintance formed with Leigh Hunt. His friendship with Benjamin Haydon, the painter, dates from later in the same year. Hunt introduced him to Shelley, who showed the younger poet a constant kindness. In 1816 Keats moved to the Poultry to be with his brothers George and Tom, the former of whom was then employed in his guardian's counting-house, but much of the poet's time was spent at Leigh Hunt's cottage at Hampstead. In the winter of 1816-1817 he definitely abandoned medicine, and in the spring appeared *Poems by John Keats* dedicated to Leigh Hunt, and published by Charles and James Ollier. On the 14th of April he left London to find quiet for work. He spent some time at Shanklin, Isle of Wight, then at Margate and Canterbury, where he was joined by his brother Tom. In the summer the three brothers took lodgings in Well Walk, Hampstead, where Keats formed a fast friendship with Charles Wentworth Dilke and Charles Armitage Brown. In September of the same year (1817) he paid a visit to his friend, Benjamin Bailey, at Oxford, and in November he finished *Endymion* at Burford Bridge, near Dorking. His youngest brother had developed consumption, and in March John went to Teignmouth to nurse him in place of his brother George, who had decided to sail for America with his newly married wife, Georgiana Wylie. In May (1818) Keats returned to London, and soon after appeared *Endymion: A Poetic Romance* (1818), bearing on the title-page as motto "The stretched metre of an antique song." Late in June Keats and his friend Armitage Brown started on a walking tour in Scotland, vividly described in the poet's letters. The fatigue and hardship involved proved too great a strain for Keats, who was forbidden by an Inverness doctor to continue his tour. He returned to London by boat, arriving on the 18th of August. The autumn was spent in constant attendance on his brother Tom, who died at the beginning of December. There is no doubt that he resented the attacks on him in *Blackwood's Magazine* (August 1818), and the *Quarterly Review* (April 1818, published only in September), but his chief preoccupations were elsewhere. After his brother's death he went to live with his friend Brown. He had already made the acquaintance of Fanny Brawne, a girl of seventeen, who lived with her mother close by. For her Keats quickly developed a consuming passion. He was in indifferent health, and, owing partly to Mr Abbey's mismanagement, in difficulties for money. Nevertheless his best work belongs to this period. In July 1819 he went to Shanklin, living with James Rice. They were soon joined by Brown. The next two months Keats spent with Brown at Winchester, enjoying an interval of calmness due to his absence from Fanny Brawne. At Winchester he completed *Lamia* and *Otho the Great*, which he had begun in conjunction with Brown, and began his historical tragedy of *King Stephen*. Before Christmas he had returned to London and his bondage to Fanny. In January 1820 his brother George paid a short visit to London, but received no confidence from him. The fatal nature of Keats's illness showed itself on the 3rd of February, but in March he recovered sufficiently to be present at the private view of Haydon's picture of "Christ's Entry into Jerusalem." In May he removed to a lodging in Wesleyan Place, Kentish Town, to be near Leigh Hunt who eventually took him into his house. In July appeared his third and last book, *Lamia, Isabella, The Eve of St Agnes and other Poems* (1820). Keats left the Hunts abruptly in August in consequence of a delay in receiving one of Fanny Brawne's letters which had been broken open by a servant. He went to Wentworth Place, where he was taken in by the Brawnes. The suggestion that he should spend the winter in Italy was followed up by an invitation from Shelley to Pisa. This, however, he refused. But on the 18th of September 1820 he set out for Naples in company with Joseph Severn, the artist, who had long been his friend. The travellers settled in the Piazza de Spagna, Rome. Keats was devotedly tended by Dr (afterwards Sir) James Clarke and Severn, and died on the 23rd of February 1821. He was buried on the 27th in the old Protestant cemetery, near the pyramid of Cestius.

Bibliography.—Keats's friends provided the material for the authoritative biography of the poet by Richard Monckton Milnes (afterwards Lord Houghton) entitled *Life, Letters and Literary Remains of John Keats* (1848; revised ed., 1867). *The Poetical Works of John Keats* were issued with a memoir by R. M. Milnes in 1854, 1863, 1865, 1866, 1867, and in the Aldine edition, 1876. The standard edition of Keats is *The Poetical Works and other Writings of John Keats now first brought together, including Poems and numerous Letters not before published, edited with notes and appendices* by Harry Buxton Forman (4 vols., 1883; re-issue with corrections and additions, 1889). Of the many other editions of Keats's poems may be mentioned that in the Muses' Library, *The Poems of John Keats* (1896), edited by G. Thorn Drury with an introduction by Robert Bridges, and another by E. de Sélincourt, 1905. *The Letters of John Keats to Fanny Brawne* (1889) were edited with introduction and notes by H. Buxton Forman, and the *Letters of John Keats to his Family and Friends* (1891) by Sidney Colvin, who is also the author of the monograph, *Keats* (1887), in the English Men of Letters Series. See also *The Papers of a Critic. Selected from the Writings of the late Charles Wentworth Dilke* (1875), and for further bibliographical information and particulars of MS. sources the "Editor's Preface," &c. to a reprint

edited by H. Buxton Forman (Glasgow, 1900). A facsimile of Keats's autograph MS. of "Hyperion," purchased by the British Museum in 1904, was published by E. de Sélincourt (Oxford, 1905).

(M. Br.)

KEBLE, JOHN (1792-1866), English poet and divine, the author of the *Christian Year*, was born on St Mark's Day (April 25), 1792, at Fairford, Gloucestershire. He was the second child of the Rev. John Keble and his wife Sarah Maule. Descended from a family which had attained some legal eminence in the time of the Commonwealth, John Keble, the father of the poet, was vicar of Coln St Aldwyn, but lived at Fairford, about 3 m. distant from his cure. He was a clergyman of the old High Church school, whose adherents, untouched by the influence of the Wesleys, had moulded their piety on the doctrines on the non-jurors and the old Anglican divines. Himself a good scholar, he did not send his son to any school, but educated him and his brother at home so well that both obtained scholarships at Corpus Christi College, Oxford. John was elected scholar of Corpus in his fifteenth, and fellow of Oriel in his nineteenth year, April 1811. In Easter term 1810 he had obtained double first class honours, a distinction which had been obtained only once before, by Sir Robert Peel. After his election to the Oriel fellowship Keble gained the University prizes, both for the English essay and also for the Latin essay. But he was more remarkable for the rare beauty of his character than even for academic distinctions. Sir John Taylor Coleridge, his fellow scholar at Corpus and his life-long friend, says of him, after their friendship of five and fifty years had closed, "It was the singular happiness of his nature, remarkable even in his undergraduate days, that love for him was always sanctified by reverence—reverence that did not make the love less tender, and love that did but add intensity to the reverence." Oriel College was, at the time when Keble became a fellow, the centre of all the finest ability in Oxford. Copleston, Davison, Whately, were among the fellows who elected Keble; Arnold, Pusey, Newman, were soon after added to the society. In 1815 Keble was ordained deacon, and priest in 1816. His real bent and choice were towards a pastoral cure in a country parish; but he remained in Oxford, acting first as a public examiner in the schools, then as a tutor in Oriel, till 1823. In summer he sometimes took clerical work, sometimes made tours on foot through various English counties, during which he was composing poems, which afterwards took their place in the *Christian Year*. He had a rare power of attracting to himself the finest spirits, a power which lay not so much in his ability or his genius as in his character, so simple, so humble, so pure, so unworldly, yet wanting not that severity which can stand by principle and maintain what he holds to be the truth. In 1823 he returned to Fairford, there to assist his father, and with his brother to serve one or two small and poorly endowed curacies in the neighbourhood of Coln. He had made a quiet but deep impression on all who came within his influence in Oxford, and during his five years of college tutorship had won the affection of his pupils. But it was to pastoral work, and not to academic duty, that he thenceforth devoted himself, associating with it, and scarcely placing on a lower level, the affectionate discharge of his duties as a son and brother. Filial piety influenced in a quite unusual degree his feelings and his action all life through. It was in 1827, a few years after he settled at Fairford, that he published the *Christian Year*. The poems which make up that book had been the silent gathering of years. Keble had purposed in his own mind to keep them beside him, correcting and improving them, as long as he lived, and to leave them to be published only "when he was fairly out of the way." This resolution was at length overcome by the importunities of his friends, and above all by the strong desire of his father to see his son's poems in print before he died. Accordingly they were printed in two small volumes in Oxford, and given to the world in June 1827, but with no name on the title-page. The book continued to be published anonymously, but the name of the author soon transpired.

Between 1827 and 1872 one hundred and fifty-eight editions had issued from the press, and it has been largely reprinted since. The author, so far from taking pride in his widespread reputation, seemed all his life long to wish to disconnect his name with the book, and "as if he would rather it had been the work of some one else than himself." This feeling arose from no false modesty. It was because he knew that in these poems he had painted his own heart, the best part of it; and he doubted whether it was right thus to exhibit himself, and by the revelation of only his better self, to win the good opinion of the world.

Towards the close of 1831 Keble was elected to fill the chair of the poetry professorship in Oxford, as successor to his friend and admirer, Dean Milman. This chair he occupied for ten eventful years. He delivered a series of lectures, clothed in excellent idiomatic Latin (as was the rule), in which he expounded a theory of poetry which was original and suggestive. He looked on poetry as a vent for overcharged feeling, or a full imagination, or some imaginative regret, which had not found their natural outlet in life and action. This suggested to him a distinction between

what he called primary and secondary poets—the first employing poetry to relieve their own hearts, the second, poetic artists, composing poetry from some other and less impulsive motive. Of the former kind were Homer, Lucretius, Burns, Scott; of the latter were Euripides, Dryden, Milton. This view was set forth in an article contributed to the *British Critic* in 1838 on the life of Scott, and was more fully developed in two volumes of *Praelectiones Academicae*.

His regular visits to Oxford kept him in intercourse with his old friends in Oriel common room, and made him familiar with the currents of feeling which swayed the university. Catholic emancipation and the Reform Bill had deeply stirred, not only the political spirit of Oxford, but also the church feeling which had long been stagnant. Cardinal Newman writes, “On Sunday July 14, 1833, Mr Keble preached the assize sermon in the University pulpit. It was published under the title of *National Apostasy*. I have ever considered and kept the day as the start of the religious movement of 1833.” The occasion of this sermon was the suppression, by Earl Grey’s Reform ministry, of ten Irish bishoprics. Against the spirit which would treat the church as the mere creature of the state Keble had long chafed inwardly, and now he made his outward protest, asserting the claim of the church to a heavenly origin and a divine prerogative. About the same time, and partly stimulated by Keble’s sermon, some leading spirits in Oxford and elsewhere began a concerted and systematic course of action to revive High Church principles and the ancient patristic theology, and by these means both to defend the church against the assaults of its enemies, and also to raise to a higher tone the standard of Christian life in England. This design embodied itself in the Tractarian movement, a name it received from the famous *Tracts for the Times*, which were the vehicle for promulgating the new doctrines. If Keble is to be reckoned, as Newman would have it, as the primary author of the movement, it was from Pusey that it received one of its best known names, and in Newman that it soon found its genuine leader. To the tracts Keble made only four contributions:—No. 4, containing an argument, in the manner of Bishop Butler, to show that adherence to apostolical succession is the safest course; No. 13, which explains the principle on which the Sunday lessons in the church service are selected; No. 40, on marriage with one who is unbaptized; No. 89, on the mysticism attributed to the early fathers of the church. Besides these contributions from his own pen, he did much for the series by suggesting subjects, by reviewing tracts written by others, and by lending to their circulation the weight of his personal influence.

In 1835 Keble’s father died at the age of ninety, and soon after this his son married Miss Clarke, left Fairford, and settled at Hursley vicarage in Hampshire, a living to which he had been presented by his friend and attached pupil, Sir William Heathcote, and which continued to be Keble’s home and cure for the remainder of his life.

In 1841 the tracts were brought to an abrupt termination by the publication of Newman’s tract No. 90. All the Protestantism of England was in arms against the author of the obnoxious tract. Keble came forward at the time, desirous to share the responsibility and the blame, if there was any; for he had seen the tract before it was published, and approved it. The same year in which burst this ecclesiastical storm saw the close of Keble’s tenure of the professorship of poetry, and thenceforward he was seen but rarely in Oxford. No other public event ever affected Keble so deeply as the secession of Newman to the Church of Rome in 1845. It was to him both a public and a private sorrow, which nothing could repair. But he did not lose heart; at once he threw himself into the double duty, which now devolved on himself and Pusey, of counselling the many who had hitherto followed the movement, and who, now in their perplexity, might be tempted to follow their leader’s example, and at the same time of maintaining the rights of the church against what he held to be the encroachments of the state, as seen in such acts as the Gorham judgment, and the decision on *Essays and Reviews*. In all the ecclesiastical contests of the twenty years which followed 1845, Keble took a part, not loud or obtrusive, but firm and resolute, in maintaining those High Anglican principles with which his life had been identified. These absorbing duties, added to his parochial work, left little time for literature. But in 1846 he published the *Lyra Innocentium*; and in 1863 he completed a life of Bishop Wilson.

In the late autumn of the latter year, Keble left Hursley for the sake of his wife’s health, and sought the milder climate of Bournemouth. There he had an attack of paralysis, from which he died on the 29th of March 1866. He was buried in his own churchyard at Hursley; and in little more than a month his wife was laid by her husband’s side.

> Keble also published *A Metrical Version of the Psalter* (1839), *Lyra Innocentium* (1846), and a volume of poems was published posthumously. But it is by the *Christian Year* that he won the ear of the religious world. It was a happy thought that dictated the plan of the book, to furnish a meditative religious lyric for each Sunday of the year, and for each saint’s day and festival of the English Church. The subject of each poem is generally suggested by some part of the lessons or the gospel or the epistle for the day. One thing which gives these poems their strangely unique power is the sentiment to which they appeal, and the saintly character of the poet who makes the appeal, illumining more or less every poem.
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> The intimacy with the Bible which is manifest in the pages of the *Christian Year*; and the unobtrusive felicity with which Biblical sentiments and language are introduced have done much

to endear these poems to all Bible readers. “The exactness of the descriptions of Palestine, which Keble had never visited, have been noted, and verified on the spot,” by Dean Stanley. He points to features of the lake of Gennesareth, which were first touched in the *Christian Year*; and he observes that throughout the book “the Biblical scenery is treated graphically as real scenery, and the Biblical history and poetry as real history and poetry.”

As to its style, the *Christian Year* is calm and grave in tone, and subdued in colour, as beseems its subjects and sentiments. The contemporary poets whom Keble most admired were Scott, Wordsworth and Southey; and of their influence traces are visible in his diction. Yet he has a style of language and a cadence of his own, which steal into the heart with strangely soothing power. Some of the poems are faultless, after their kind, flowing from the first stage to the last, lucid in thought, vivid in diction, harmonious in their pensive melody. In others there are imperfections in rhythm, conventionalities of language, obscurities or over-subtleties of thought, which mar the reader’s enjoyment. Yet even the most defective poems commonly have, at least, a single verse, expressing some profound thought or tender shade of feeling, for which the sympathetic reader willingly pardons artistic imperfections in the rest.

Keble’s life was written by his life-long friend Mr Justice J. T. Coleridge. The following is a complete list of his writings:—1. Works published in Keble’s lifetime: *Christian Year* (1827); *Psalter* (1839); *Praelectiones Academicae* (1844); *Lyra Innocentium* (1846); *Sermons Academical* (1848); *Argument against Repeal of Marriage Law*, and *Sequel* (1857); *Eucharistical Adoration* (1857); *Life of Bishop Wilson* (1863); *Sermons Occasional and Parochial* (1867). 2. Posthumous publications: *Village Sermons on the Baptismal Service* (1868); *Miscellaneous Poems* (1869); *Letters of Spiritual Counsel* (1870); *Sermons for the Christian Year, &c.* (11 vols., 1875-1880); *Occasional Papers and Reviews* (1877); *Studia Sacra* (1877); *Outlines of Instruction or Meditation* (1880).

KECSKEMÉT, a town of Hungary, in the county of Pest-Pilis-Solt-Kiskun, 65 m. S.S.E. of Budapest by rail. Pop. (1900), 56,786. Kecskemét is a poorly built and straggling town, situated in the extensive Kecskemét plain. It contains monasteries belonging to the Piarist and Franciscan orders, a Catholic (founded in 1714), a Calvinistic and a Lutheran school. The manufacture of soap and leather are the principal industries. Besides the raising of cereals, fruit is extensively cultivated in the surrounding district; its apples and apricots are largely exported, large quantities of wine are produced, and cattle-rearing constitutes another great source of revenue. Kecskemét was the birthplace of the Hungarian dramatist József Katona (1792-1830), author of the historical drama, *Bánk-Bán* (1815).

KEDDAH (from Hindu *Khedna*, to chase), the term, used in India for the enclosure constructed to entrap elephants. In Ceylon the word employed in the same meaning is *corral*.

KEDGEREE (Hindostani, *khichri*), an Indian dish, composed of boiled rice and various highly-flavoured ingredients. Kedgeree is of two kinds, white and yellow. The white is made with grain, onions, ghee (clarified butter), cloves, pepper and salt. Yellow kedgeree includes eggs, and is coloured by turmeric. Kedgeree is a favourite and universal dish in India; among the poorer classes it is frequently made of rice and pulse only, or rice and beans. In European cookery kedgeree is a similar dish usually made with fish.

KEEL, the bottom timber or combination of plates of a ship or boat, extending longitudinally from bow to stern, and supporting the framework (see SHIP-BUILDING). The origin of the word has been obscured by confusion of two words, the Old Norwegian *kjole* (cf. Swedish *köl*) and a Dutch and German *kiel*. The first had the meaning of the English "keel," the other of ship, boat. The modern usage in Dutch and German has approximated to the English. The word *kiel* is represented in old English by *céol*, a word applied to the long war galleys of the Vikings, in which sense "keel" or "keele" is still used by archaeologists. On the Tyne "keel" is the name given to a flat-bottomed vessel used to carry coals to the colliers. There is another word "keel," meaning to cool, familiar in Shakespeare (*Love's Labour Lost*, v. ii. 930), "while greasy Joan doth keel the pot," *i.e.* prevents a pot from boiling over by pouring in cold water, &c., stirring or skimming. This is from the Old English *célan*, to cool, a common Teutonic word, cf. German *kühlen*.

KEELEY, MARY ANNE (1806-1899), English actress, was born at Ipswich on the 22nd of November 1805 or 1806. Her maiden name was Goward, her father being a brazier and tinman. After some experience in the provinces, she first appeared on the stage in London on the 2nd of July 1825, in the opera *Rosina*. It was not long before she gave up "singing parts" in favour of the drama proper, where her powers of character-acting could have scope. In June 1829 she married Robert Keeley (1793-1869), an admirable comedian, with whom she had often appeared. Between 1832 and 1842 they acted at Covent Garden, at the Adelphi with Buckstone, at the Olympic with Charles Mathews, and at Drury Lane with Macready. In 1836 they visited America. In 1838 she made her first great success as Nydia, the blind girl, in a dramatized version of Bulwer Lytton's *The Last Days of Pompeii*, and followed this with an equally striking impersonation of Smike in *Nicholas Nickleby*. In 1839 came her decisive triumph with her picturesque and spirited acting as the hero of a play founded upon Harrison Ainsworth's *Jack Sheppard*. So dangerous was considered the popularity of the play, with its glorification of the prison-breaking felon, that the lord chamberlain ultimately forbade the performance of any piece upon the subject. It is perhaps mainly as Jack Sheppard that Mrs Keeley lived in the memory of playgoers, despite her long subsequent career in plays more worthy of her remarkable gifts. Under Macready's management she played Nerissa in *The Merchant of Venice*, and Audrey in *As You Like It*. She managed the Lyceum with her husband from 1844 to 1847; acted with Webster and Kean at the Haymarket; returned for five years to the Adelphi; and made her last regular public appearance at the Lyceum in 1859. A public reception was given her at this theatre on her 90th birthday. She died on the 12th of March 1899.

See Walter Goodman, *The Keeleys on the Stage and off* (London, 1895).

KEELING ISLANDS (often called COCOS and COCOS-KEELING ISLANDS), a group of coral islands in the Indian Ocean, between 12° 4′ and 12° 13′ S., and 96° 49′-57′ E., but including a smaller island in 11° 50′ N. and 96° 50′ E. The group furnished Charles Darwin with the typical example of an atoll or lagoon island. There are altogether twenty-three small islands, 9½ m. being the greatest width of the whole atoll. The lagoon is very shallow and the passages between many of the islands are fordable on foot. An opening on the northern side of the reef permits the entrance of vessels into the northern part of the lagoon, which forms a good harbour known as Port Refuge or Port Albion. The coco-nut (as the name Cocos Islands indicates) is the characteristic product and is cultivated on all the islands. The flora is scanty in species. One of the commonest living creatures is a monstrous crab which lives on the coco-nuts; and in some places also there are great colonies of the pomegranate crab. The group was visited by Dr H. O.

Forbes in 1878, and later, at the expense of Sir John Murray, by Dr Guppy, Mr Ridley and Dr Andrews. The object of their visits was the investigation of the fauna and flora of the atoll, more especially of the formation of the coral reefs. Dr Guppy was fortunate in reaching North Keeling Island, where a landing is only possible during the calmest weather. The island he found to be about a mile long, with a shallow enclosed lagoon, less than 3 ft. deep at ordinary low water, with a single opening on its east or weather side. A dense vegetation of iron-wood (*Cordia*) and other trees and shrubs, together with a forest of coco-nut palms, covers its surface. It is tenanted by myriads of sea-fowl, frigate-birds, boobies, and terns (*Gygis candida*), which find here an excellent nesting-place, for the island is uninhabited, and is visited only once or twice a year. The excrement from this large colony has changed the carbonate of lime in the soil and the coral nodules on the surface into phosphates, to the extent in some cases of 60-70%, thus forming a valuable deposit, beneficial to the vegetation of the island itself and promising commercial value. The lagoon is slowly filling up and becoming cultivable land, but the rate of recovery from the sea has been specially marked since the eruption of Krakatoa, the pumice from which was washed on to it in enormous quantity, so that the lagoon advanced its shores from 20 to 30 yards. Forbes's and Guppy's investigations go to show that, contrary to Darwin's belief, there is no evidence of upheaval or of subsidence in either of the Keeling groups.

The atoll has an exceedingly healthy climate, and might well be used as a sanatorium for phthisical patients, the temperature never reaching extremes. The highest annual reading of the thermometer hardly ever exceeds 89° F. or falls beneath 70°. The mean temperature for the year is 78.5° F., and as the rainfall rarely exceeds 40 in. the atmosphere never becomes unpleasantly moist. The south-east trade blows almost ceaselessly for ten months of the year. Terrific storms sometimes break over the island; and it has been more than once visited by earthquakes. A profitable trade is done in coco-nuts, but there are few other exports. The imports are almost entirely foodstuffs and other necessaries for the inhabitants, who form a patriarchal colony under a private proprietor.

The islands were discovered in 1609 by Captain William Keeling on his voyage from Batavia to the Cape. In 1823 Alexander Hare, an English adventurer, settled on the southernmost island with a number of slaves. Some two or three years after, a Scotchman, J. Ross, who had commanded a brig during the English occupation of Java, settled with his family (who continued in the ownership) on Direction Island, and his little colony was soon strengthened by Hare's runaway slaves. The Dutch Government had in an informal way claimed the possession of the islands since 1829; but they refused to allow Ross to hoist the Dutch flag, and accordingly the group was taken under British protection in 1856. In 1878 it was attached to the government of Ceylon, and in 1882 placed under the authority of the governor of the Straits Settlements. The ownership and superintendency continued in the Ross family, of whom George Clunies Ross died in 1910, and was succeeded by his son Sydney.

See C. Darwin, *Journal of the Voyage of the "Beagle,"* and *Geological Observations on Coral Reefs*; also Henry O. Forbes, *A Naturalist's Wanderings in the Eastern Archipelago* (London, 1884); H. B. Guppy, "The Cocos-Keeling Islands," *Scottish Geographical Magazine* (vol. v., 1889).

KEEL-MOULDING, in architecture, a round on which there is a small fillet, somewhat like the keel of a ship. It is common in the Early English and Decorated styles.

KEENE, CHARLES SAMUEL (1823-1891), English black-and-white artist, the son of Samuel Browne Keene, a solicitor, was born at Hornsey on the 10th of August 1823. Educated at the Ipswich Grammar School until his sixteenth year, he early showed artistic leanings. Two years after the death of his father he was articled to a London solicitor, but, the occupation proving uncongenial, he was removed to the office of an architect, Mr Pilkington. His spare time was now spent in drawing historical and nautical subjects in water-colour. For these trifles his mother, to whose energy and common sense he was greatly indebted, soon found a purchaser, through whom he was brought to the notice of the Whympers, the wood-engravers. This led to his

being bound to them as apprentice for five years. His earliest known design is the frontispiece, signed “Chas. Keene,” to *The Adventures of Dick Boldhero in Search of his Uncle*, &c. (Darton & Co., 1842). His term of apprenticeship over, he hired as studio an attic in the block of buildings standing, up to 1900, between the Strand and Holywell Street, and was soon hard at work for the *Illustrated London News*. At this time he was a member of the “Artists’ Society” in Clipstone Street, afterwards removed to the Langham studios. In December 1851 he made his first appearance in *Punch* and, after nine years of steady work, was called to a seat at the famous table. It was during this period of probation that he first gave evidence of those transcendent qualities which make his work at once the joy and despair of his brother craftsmen. On the starting of *Once a Week*, in 1859, Keene’s services were requisitioned, his most notable series in this periodical being the illustrations to Charles Reade’s *A Good Fight* (afterwards rechristened *The Cloister and the Hearth*) and to George Meredith’s *Evan Harrington*. There is a quality of conventionality in the earlier of these which completely disappears in the later. In 1858 Keene, who was endowed with a fine voice and was an enthusiastic admirer of old-fashioned music, joined the “Jermyn Band,” afterwards better known as the “Moray Minstrels.” He was also for many years a member of Leslie’s Choir, the Sacred Harmonic Society, the Catch, Glee and Canon Club, and the Bach Choir. He was also an industrious performer on the bagpipes, of which instrument he brought together a considerable collection of specimens. About 1863 the Arts Club in Hanover Square was started, with Keene as one of the original members. In 1864 John Leech died, and Keene’s work in *Punch* thenceforward found wider opportunities. It was about this time that the greatest of all modern artists of his class, Menzel, discovered Keene’s existence, and became a subscriber to *Punch* solely for the sake of enjoying week by week the work of his brother craftsman. In 1872 Keene, who, though fully possessed of the humorous sense, was not within measurable distance of Leech as a jester, and whose drawings were consequently not sufficiently “funny” to appeal to the laughter-loving public, was fortunate enough to make the acquaintance of Mr Joseph Crawhall, who had been in the habit for many years of jotting down any humorous incidents he might hear of or observe, illustrating them at leisure for his own amusement. These were placed unreservedly at Keene’s disposal, and to their inspiration we owe at least 250 of his most successful drawings in the last twenty years of his connexion with *Punch*. A list of more than 200 of these subjects is given at the end of *The Life and Letters of Charles Keene of “Punch.”* In 1879 Keene removed to 239 King’s Road, Chelsea, which he occupied until his last illness, walking daily to and from his house, 112 Hammersmith Road. In 1881 a volume of his *Punch* drawings was published by Messrs Bradbury & Agnew, with the title *Our People*. In 1883 Keene, who had hitherto been a strong man, developed symptoms of dyspepsia and rheumatism. By 1889 these had increased to an alarming degree, and the last two years of his life were passed in acute suffering borne with the greatest courage. He died unmarried, after a singularly uneventful life, on the 4th of January 1891, and his body lies in Hammersmith cemetery.

Keene, who never had any regular art training, was essentially an artists’ artist. He holds the foremost place amongst English craftsmen in black and white, though his work has never been appreciated at its real value by the general public. No doubt the main reason for this lack of public recognition was his unconventionality. He drew his models exactly as he saw them, not as he knew the world wanted to see them. He found enough beauty and romance in all that was around him, and, in his *Punch* work, enough subtle humour in nature seized at her most humorous moments to satisfy him. He never required his models to grin through a horse collar, as Gillray did, or to put on their company manners, as was du Maurier’s wont. But Keene was not only a brilliant worker in pen and ink. As an etcher he has also to be reckoned with, notwithstanding the fact that his plates numbered not more than fifty at the outside. Impressions of them are exceedingly rare, and hardly half a dozen of the plates are now known to be in existence. He himself regarded them only as experiments in a difficult but fascinating medium. But in the opinion of the expert they suffice to place him among the best etchers of the 19th century. Apart from the etched frontispieces to some of the *Punch* pocket-books, only three, and these by no means the best, have been published. Writing in *L’Artiste* for May 1891 of a few which he had seen, Bracquemond says: “By the freedom, the largeness of their drawing and execution, these plates must be classed amongst modern etchings of the first rank.” A few impressions are in the British Museum, but in the main they were given away to friends and lie hidden in the albums of the collector.

AUTHORITIES.—G. S. Layard, *Life and Letters of Charles Keene of “Punch”*; *The Work of Charles Keene*, with an introduction and notes by Joseph Pennell, and a bibliography by W. H. Chesson; M. H. Spielmann, *The History of “Punch”*; M. Charpentier, *La Vie Moderne*, No. 14 (1880); M. H. Spielmann, *Magazine of Art* (March 1891); M. Bracquemond, *L’Artiste* (May 1891); G. S. Layard, *Scribner’s* (April 1892); Joseph Pennell, *Century* (Oct. 1897); George du Maurier, *Harper’s* (March 1898).

(G. S. I.)

KEENE, LAURA (*c.* 1820-1873), Anglo-American actress and manager, whose real name was Mary Moss, was born in England. In 1851, in London, she was playing Pauline in *The Lady of Lyons*. She made her first appearance in New York on the 20th of September 1852, on her way to Australia. She returned in 1855 and till 1863 managed Laura Keene's theatre, in which was produced, in 1858, *Our American Cousin*. It was her company that was playing at Ford's theatre, Washington, on the night of Lincoln's assassination. Miss Keene was a successful melodramatic actress, and an admirable manager. She died at Montclair, New Jersey, on the 4th of November 1873.

See John Creahan's *Life of Laura Keene* (1897).

KEENE, a city and the county-seat of Cheshire county, New Hampshire, U.S.A., on the Ashuelot river, about 45 m. S.W. of Concord, N.H., and about 92 m. W.N.W. of Boston. Pop. (1900), 9165, of whom 1255 were foreign-born; (1910 census), 10,068. Area, 36.5 sq. m. It is served by the Boston & Maine railroad and by the Fitchburg railroad (leased by the Boston & Maine). The site is level, but is surrounded by ranges of lofty hills—Monadnock Mountain is about 10 m. S.E. Most of the streets are pleasantly shaded. There are three parks, with a total area of about 219 acres; and in Central Square stands a soldiers' and sailors' monument designed by Martin Milmore and erected in 1871. The principal buildings are the city hall, the county buildings and the city hospital. The Public Library had in 1908 about 16,300 volumes. There are repair shops of the Boston & Maine railroad here, and manufactures of boots and shoes, woollen goods, furniture (especially chairs), pottery, &c. The value of the factory product in 1905 was $2,690,967. The site of Keene was one of the Massachusetts grants made in 1733, but Canadian Indians made it untenable and it was abandoned from 1746 until 1750. In 1753 it was incorporated and was named Keene, in honour of Sir Benjamin Keene (1697-1757), the English diplomatist, who as agent for the South Sea Company and Minister in Madrid, and as responsible for the commercial treaty between England and Spain in 1750, was in high reputation at the time; it was chartered as a city in 1874.

KEEP, ROBERT PORTER (1844-1904), American scholar, was born in Farmington, Connecticut, on the 26th of April 1844. He graduated at Yale in 1865, was instructor there for two years, was United States consul at the Piraeus in Greece in 1869-1871, taught Greek in Williston Seminary, Easthampton, Massachusetts, in 1876-1885, and was principal of Norwich Free Academy, Norwich, Conn., from 1885 to 1903, the school owing its prosperity to him hardly less than to its founders. In 1903 he took charge of Miss Porter's school for girls at Farmington, Conn., founded in 1844 and long controlled by his aunt, Sarah Porter. He died in Farmington on the 3rd of June 1904.

KEEP (corresponding to the French *donjon*), in architecture the inmost and strongest part of a medieval castle, answering to the citadel of modern times. The arrangement is said to have originated with Gundulf, bishop of Rochester (d. 1108), architect of the White Tower. The Norman keep is generally a very massive square tower. There is generally a well in a medieval keep, ingeniously concealed in the thickness of a wall or in a pillar. The most celebrated keeps of Norman times in England are the White Tower in London, those at Rochester Arundel and Newcastle, Castle Hedingham, &c. When the keep was circular, as at Conisborough and Windsor,

it was called a “shell-keep” (see CASTLE). The verb “to keep,” from which the noun with its particular meaning here treated was formed, appears in O.E. as *cépan*, of which the derivation is unknown; no words related to it are found in cognate languages. The earliest meaning (*c.* 1000) appears to have been to lay hold of, to seize, from which its common uses of to guard, observe, retain possession of, have developed.

KEEWATIN, a district of Canada, bounded E. by Committee Bay, Fox Channel, and Hudson and James bays, S. and S.W. by the Albany and English rivers, Manitoba, Lake Winnipeg, and Nelson river, W. by the 100th meridian, and N. by Simpson and Rae straits and gulf and peninsula of Boothia; thus including an area of 445,000 sq. m. Its surface is in general barren and rocky, studded with innumerable lakes with intervening elevations, forest-clad below 60° N., but usually bare or covered with moss or lichens, forming the so-called “barren lands” of the north. With the exception of a strip of Silurian and Devonian rocks, 40 to 80 m. wide, extending from the vicinity of the Severn river to the Churchill, and several isolated areas of Cambrian and Huronian, the district is occupied by Laurentian rocks. The principal river is the Nelson, which, with its great tributary, the Saskatchewan, is 1450 m. long; other tributaries are the Berens, English, Winnipeg, Red and Assiniboine. The Hayes, Severn and Winisk also flow from the south-west into Hudson Bay, and the Ekwan, Attawapiskat and Albany, 500 m. long, into James Bay. The Churchill, 925 m., Thlewliaza, Maguse, and Ferguson rivers discharge into Hudson Bay on the west side; the Kazan, 500 m., and Dubawnt, 660 m., into Chesterfield Inlet; and Back’s river, rising near Aylmer Lake, flows north-eastwards 560 m. to the Arctic Ocean. The principal lakes are St Joseph and Seul on the southern boundary; northern part of Lake Winnipeg, 710 ft. above the sea; Island; South Indian; Etawney; Nueltin; Yathkyed, at an altitude of 300 ft.; Maguse; Kaminuriak; Baker, 30 ft.; Aberdeen, 130 ft.; and Garry. The principal islands are Southampton, area 17,800 sq. m.; Marble Island, the usual wintering place for whaling vessels; and Bell and Coats Islands, in Hudson Bay; and Akimiski, in James Bay.

A few small communities at the posts of the Hudson Bay Company constitute practically the whole of the white population. In 1897 there were 852 Indians in the Churchill and Nelson rivers district, but no figures are available for the district as a whole. The principal posts in Keewatin are Norway House, near the outlet of Lake Winnipeg; Oxford House, on the lake of the same name; York Factory, at the mouth of Hayes river; and Forts Severn and Churchill, at the mouths of the Severn and Churchill rivers respectively. In 1905 the district of Keewatin was included in the North-West Territories and the whole placed under an administrator or acting governor. The derivation of the name is from the Cree—the “north wind.”

KEF, more correctly El-Kef (the Rock), a town of Tunisia, 125 m. by rail S.S.W. of the capital, and 75 m. S.E. of Bona in Algeria. It occupies the site of the Roman colony of Sicca Veneria, and is built on the steep slope of a rock in a mountainous region through which flows the Mellegue, an affluent of the Mejerda. Situated at the intersection of main routes from the west and south, Kef occupies a position of strategic importance. Though distant some 22 m. from the Algerian frontier it was practically a border post, and its walls and citadel were kept in a state of defence by the Tunisians. The town with its half-dozen mosques and tortuous, dirty streets, is still partly walled. The southern part of the wall has however been destroyed by the French, and the remainder is being left to decay. Beyond the part of the wall destroyed is the French quarter. The *kasbah*, or citadel, occupies a rocky eminence on the west side of the town. It was built, or rebuilt, by the Turks, the material being Roman. It has been restored by the French, who maintain a garrison here.

The Roman remains include fragments of a large temple dedicated to Hercules, and of the baths. The ancient cisterns remain, but are empty, being used as part of the barracks. The town is however supplied by water from the same spring which filled the cisterns. The Christian cemetery is on the site of a basilica. There are ruins of another Christian basilica, excavated by the French, the apse being intact and the narthex serving as a church. Many stones with Roman inscriptions are built into the walls of Arab houses. The modern town is much smaller than the

Roman colony. Pop. about 6000, including about 100 Europeans (chiefly Maltese).

The Roman colony of Sicca Veneria appears from the character of its worship of Venus (Val. Max. ii. 6, § 15) to have been a Phoenician settlement. It was afterwards a Numidian stronghold, and under the Caesars became a fashionable residential city and one of the chief centres of Christianity in North Africa. The Christian apologist Arnobius the Elder lived here.

See H. Barth, *Die Küstenländer des Mittelmeeres* (1849); *Corpus Inscript. Lat.*, vol. viii.; Sombrun in *Bull. de la soc. de géog. de Bordeaux* (1878). Also Cardinal Newman's Callista: *a Sketch of the Third Century* (1856), for a "reconstruction" of the manner of life of the early Christians and their oppressors.

KEHL, a town in the grand-duchy of Baden, on the right bank of the Rhine, opposite Strassburg, with which it is connected by a railway bridge and a bridge of boats. Pop. 4000. It has a considerable river trade in timber, tobacco and coal, which has been developed by the formation of a harbour with two basins. The chief importance of Kehl is its connexion with the military defence of Strassburg, to the strategic area of which it belongs. It is encircled by the strong forts Bose, Blumenthal and Kirchbach of that system. In 1678 Kehl was taken from the imperialists by the French, and in 1683 a new fortress, built by Vauban, was begun. In 1697 it was restored to the Empire and was given to Baden, but in 1703 and again in 1733 it was taken by the French, who did not however retain it for very long. In 1793 the French again took the town, which was retaken by the Austrians and was restored to Baden in 1803. In 1808 the French, again in possession, restored the fortifications, but these were dismantled in 1815, when Kehl was again restored to Baden. In August 1870, during the Franco-German War, the French shelled the defenceless town.

KEIGHLEY (locally KEITHLEY), a municipal borough in the Keighley parliamentary division of the West Riding of Yorkshire, England, 17 m. W.N.W. of Leeds, on branches of the Great Northern and Midland railways. Pop. (1901), 41,564. It is beautifully situated in a deep valley near the junction of the Worth with the Aire. A canal between Liverpool and Hull affords it water communication with both west and east coasts. The principal buildings are the parish church of St Andrew (dating from the time of Henry I., modernized in 1710, rebuilt with the exception of the tower in 1805, and again rebuilt in 1878), and the handsome Gothic mechanics' institute and technical school (1870). A grammar school was founded in 1713, the operations of which have been extended so as to embrace a trade school (1871) for boys, and a grammar school for girls. The principal industries are manufactures of woollen goods, spinning, sewing and washing machines, and tools. The town was incorporated in 1882, and the corporation consists of a mayor, 6 aldermen and 18 councillors.

KEI ISLANDS [*Ke*, *Key*, *Kii*, &c.; native, *Ewab*], a group in the Dutch East Indies, in the residency of Amboyna, between 5° and 6° 5′ S. and 131° 50′ and 133° 15′ E., and consisting of four parts: Nuhu-Iut or Great Kei, Roa or Little Kei, the Tayanda, and the Kur group. Great Kei differs physically in every respect from the other groups. It is of Tertiary formation (Miocene), and has a chain of volcanic elevations along the axis, reaching a height of 2600 ft. Its area is 290 sq. m., the total land area of the group being 572 sq. m. All the other islands are of post-Tertiary formation and of level surface. The group has submarine connexion, under relatively shallow sea, with the Timorlaut group to the south-west and the chain of islands extending north-west towards Ceram; deep water separates it on the east from the Aru Islands and on the west from the inner

islands of the Banda Sea. Among the products are coco-nuts, sago, fish, trepang, timber, copra, maize, yams and tobacco. The population is about 23,000, of whom 14,900 are pagans, and 8300 Mahommedans.

The inhabitants are of three types. There is the true Kei Islander, a Polynesian by his height and black or brown wavy hair, with a complexion between the Papuan black and the Malay yellow. There is the pure Papuan, who has been largely merged in the Kei type. Thirdly, there are the immigrant Malays. These (distinguished by the use of a special language and by the profession of Mohammedanism) are descendants of natives of the Banda islands who fled eastward before the encroachments of the Dutch. The pagans have rude statues of deities and places of sacrifice indicated by flat-topped cairns. The Kei Islanders are skilful in carving and celebrated boat-builders.

See C. M. Kan, “Onze geographische kennis der Keij-Eilanden,” in *Tijdschrift Aardrijkskundig Genootschap* (1887); Martin, “Die Kei-inseln u. ihr Verhältniss zur Australisch-Asiatischen Grenzlinie,” ibid. part vii. (1890); W. R. van Hoëvell, “De Kei-Eilanden,” in *Tijdschr. Batavian. Gen.* (1889); “Verslagen van de wetenschappelijke opnemingen en onderzoekingen op de Keij-Eilanden” (1889-1890), by Planten and Wertheim (1893), with map and ethnographical atlas of the south-western and south-eastern islands by Pleyte; Langen, *Die Key- oder Kii-Inseln* (Vienna, 1902).

KEIM, KARL THEODOR (1825-1878), German Protestant theologian, was born at Stuttgart on the 17th of December 1825. His father, Johann Christian Keim, was headmaster of a gymnasium. Here Karl Theodor received his early education, and then proceeded to the Stuttgart Obergymnasium. In 1843 he went to the university of Tübingen, where he studied philosophy under J. F. Reiff, a follower of Hegel, and Oriental languages under Heinrich Ewald and Heinrich Meier. F. C. Baur, the leader of the new Tübingen school, was lecturing on the New Testament and on the history of the church and of dogma, and by him in particular Keim was greatly impressed. The special bent of Keim’s mind is seen in his prize essay, *Verhältniss der Christen in den ersten drei Jahrhunderten bis Konstantin zum römischen Reiche* (1847). His first published work was *Die Reformation der Reichstadt Ulm* (1851). In 1850 he visited the university of Bonn, where he attended some of the lectures of Friedrich Bleek, Richard Rothe, C. M. Arndt and Isaak Dorner. He taught at Tübingen from June 1851 until 1856, when, having become a pastor, he was made deacon at Esslingen, Württemberg. In 1859 he was appointed archdeacon; but a few months later he was called to the university of Zürich as professor of theology (1859-1873), where he produced his important works. Before this he had written on church history (*e.g. Schwäbische Reformationsgeschichte bis zum Augsburger Reichstag*, 1855). His inaugural address at Zürich on the human development of Jesus, *Die menschliche Entwicklung Jesu Christi* (1861), and his *Die geschichtliche Würde Jesu* (1864) were preparatory to his chief work, *Die Geschichte Jesu von Nazara in ihrer Verkettung mit dem Gesamtleben seines Volkes* (3 vols., 1867-1872; Eng. trans., *Jesus of Nazareth, and the National Life of Israel*, 6 vols.), 1873-1882. In 1873 Keim was appointed professor of theology at Giessen. This post he resigned, through ill-health, shortly before his death on the 17th of November 1878. He belonged to the “mediation” school of theology.

Chief works, besides the above: *Reformationsblätter der Reichsstadt Esslingen* (1860); *Ambrosius Blarer, der Schwäbische Reformator* (1860); *Der Übertritt Konstantins d. Gr. zum Christenthum* (1862); his sermons, *Freundesworte zur Gemeinde* (2 vols., 1861-1862); and *Celsus’ wahres Wort* (1873). In 1881 H. Ziegler published one of Keim’s earliest works, *Rom und das Christenthum*, with a biographical sketch. See also Ziegler’s article in Herzog-Hauck, *Realencyklopädie*.

KEITH, the name of an old Scottish family which derived its name from the barony of Keith in East Lothian, said to have been granted by Malcolm II., king of Scotland, to a member of the house for services against the Danes. The office of great marishal of Scotland, afterwards hereditary in the Keith family, may have been conferred at the same time; for it was confirmed,

together with possession of the lands of Keith, to Sir Robert Keith by a charter of King Robert Bruce, and appears to have been held as annexed to the land by the tenure of grand serjeanty. Sir Robert Keith commanded the Scottish horse at Bannockburn, and was killed at the battle of Neville's Cross in 1346. At the close of the 14th century Sir William Keith, by exchange of lands with Lord Lindsay, obtained the crag of Dunnottar in Kincardineshire, where he built the castle of Dunnottar, which became the stronghold of his descendants. He died about 1407. In 1430 a later Sir William Keith was created Lord Keith, and a few years afterwards earl marishal, and these titles remained in the family till 1716. William, fourth earl marishal (d. 1581), was one of the guardians of Mary queen of Scots during her minority, and was a member of her privy council on her return to Scotland. While refraining from extreme partisanship, he was an adherent of the Reformation; he retired into private life at Dunnottar Castle about 1567, thereby gaining the sobriquet "William of the Tower." He was reputed to be the wealthiest man in Scotland. His eldest daughter Anne married the regent Murray. His grandson George, 5th earl marishal (*c.* 1553-1623), was one of the most cultured men of his time. He was educated at King's College, Aberdeen, where he became a proficient classical scholar, afterwards studying divinity under Theodore Beza at Geneva. He was a firm Protestant, and took an active part in the affairs of the kirk. His high character and abilities procured him the appointment of special ambassador to Denmark to arrange the marriage of James VI. with the Princess Anne. He was subsequently employed on a number of important commissions; but he preferred literature to public affairs, and about 1620 he retired to Dunnottar, where he died in 1623. He is chiefly remembered as the founder in 1593 of the Marischal College in the university of Aberdeen, which he richly endowed. From an uncle he inherited the title of Lord Altrie about 1590. William, 7th earl marishal (*c.* 1617-1661), took a prominent part in the Civil War, being at first a leader of the covenanting party in north-east Scotland, and the most powerful opponent of the marquess of Huntly. He co-operated with Montrose in Aberdeenshire and neighbouring counties against the Gordons. With Montrose he signed the Bond of Cumbernauld in August 1640, but took no active steps against the popular party till 1648, when he joined the duke of Hamilton in his invasion of England, escaping from the rout at Preston. In 1650 Charles II. was entertained by the marishal at Dunnottar; and in 1651 the Scottish regalia were left for safe keeping in his castle. Taken prisoner in the same year, he was committed to the Tower and was excluded from Cromwell's Act of Grace. He was made a privy councillor at the Restoration and died in 1661. Sir John Keith (d. 1714), brother of the 7th earl marishal, was, at the Restoration, given the hereditary office of knight marishal of Scotland, and in 1677 was created earl of Kintore, and Lord Keith of Inverurie and Keith-Hall, a reward for his share in preserving the regalia of Scotland, which were secretly conveyed from Dunnottar to another hiding-place, when the castle was besieged by Cromwell's troops, and which Sir John, perilously to himself, swore he had carried abroad and delivered to Charles II., thus preventing further search. From him are descended the earls of Kintore.

George, 10th earl marishal (*c.* 1693-1778), served under Marlborough, and like his brother Francis, Marshal Keith (*q.v.*), was a zealous Jacobite, taking part in the rising of 1715, after which he escaped to the continent. In the following year he was attainted, his estates and titles being forfeited to the Crown. He lived for many years in Spain, where he concerned himself with Jacobite intrigues, but he took no part in the rebellion of 1745, proceeding about that year to Prussia, where he became, like his brother, intimate with Frederick the Great. Frederick employed him in several diplomatic posts, and he is said to have conveyed valuable information to the earl of Chatham, as a reward for which he received a pardon from George II., and returned to Scotland in 1759. His heir male, on whom, but for the attainder of 1716, his titles would have devolved, was apparently his cousin Alexander Keith of Ravelston, to whom the attainted earl had sold the castle and lands of Dunnottar in 1766. From Alexander Keith was descended, through the female line, Sir Patrick Keith Murray of Ochtertyre, who sold the estates of Dunnottar and Ravelston. After the attainder of 1716 the right of the Keiths of Ravelston to be recognized as the representatives of the earls marishal was disputed by Robert Keith (1681-1757), bishop of Fife, a member of another collateral branch of the family. The bishop was a writer of some repute, his chief work, *The History of the Affairs of the Church and State of Scotland* (Edinburgh, 1734), being of considerable value for the reigns of James V., James VI., and Mary Queen of Scots. He also published a *Catalogue of the Bishops of Scotland* (Edinburgh, 1755), and other less important historical and theological works.

Robert Keith (d. 1774), descended from a younger son of the 2nd earl marishal, was British minister in Vienna in 1748, and subsequently held other important diplomatic appointments, being known to his numerous friends, among whom were the leading men of letters of his time, as "Ambassador Keith." His son, Sir Robert Murray Keith (1730-1795), was on Lord George Sackville's staff at the battle of Minden. He became colonel of a regiment (the 87th foot) known as Keith's Highlanders, who won distinction in the continental wars, but were disbanded in 1763; he was then employed in the diplomatic service, in which he achieved considerable success by his honesty, courage, and knowledge of languages. In 1781 he became lieutenant-general; in 1789 he was made a privy councillor.

From the Keith family through the female line was descended George Keith Elphinstone, Baron

Keith of Stonehaven, Marishal and afterwards Viscount Keith (*q.v.*), whose titles became extinct at the death of his daughter Margaret, Baroness Keith, in 1867.

See *Calendar of Documents relating to Scotland*, edited by J. Bain (4 vols., Edinburgh, 1881-1888); Peter Buchan, *An Account of the Ancient and Noble Family of Keith* (Edinburgh, 1828); *Memoirs and Correspondence of Sir Robert Murray Keith*, edited by Mrs. Gillespie Smyth (London, 1849); John Spalding, *Memorialls of the Trubles in Scotland, 1624-1645* (2 vols., Spalding Club Publ. 21, 23, Aberdeen, 1850-1851); Sir Robert Douglas, *The Peerage of Scotland* (Edinburgh, 1813); G.E.C., *Complete Peerage*, vol. iv. (London, 1892).

(R. J. M.)

KEITH, FRANCIS EDWARD JAMES (1696-1758), Scottish soldier and Prussian field marshal, was the second son of William, 9th earl marishal of Scotland, and was born on the 11th of June 1696 at the castle of Inverugie near Peterhead. Through his careful education under Robert Keith, bishop of Fife, and subsequently at Edinburgh University in preparation for the legal profession, he acquired that taste for literature which afterwards secured him the esteem of the most distinguished savants of Europe; but at an early period his preference for a soldier's career was decided. The rebellion of 1715, in which he displayed qualities that gave some augury of his future eminence, compelled him to seek safety on the Continent. After spending two years in Paris, chiefly at the university, he in 1719 took part in the ill-starred expedition of the Pretender to the Highlands of Scotland. He then passed some time at Paris and Madrid in obscurity and poverty, but eventually obtained a colonelcy in the Spanish army, and, it is said, took part in the siege of Gibraltar (1726-27). Finding his Protestantism a barrier to promotion, he obtained from the king of Spain a recommendation to Peter II. of Russia, from whom he received (1728) the command of a regiment of the guards. He displayed in numerous campaigns the calm, intelligent and watchful valour which was his chief characteristic, obtaining the rank of general of infantry and the reputation of being one of the ablest officers in the Russian service as well as a capable and liberal civil administrator. Judging, however, that his rewards were not commensurate with his merits, he in 1747 offered his services to Frederick II. of Prussia, who at once gave him the rank of field marshal, in 1749 made him governor of Berlin, and soon came to cherish towards him, as towards his brother, the 10th earl marishal, a strong personal regard. In 1756 the Seven Years' War broke out. Keith was employed in high command from the first, and added to his Russian reputation on every occasion by resolution and promptitude of action, not less than by care and skill. In 1756 he commanded the troops covering the investment of Pirna, and distinguished himself at Lobositz. In 1757 he commanded at the siege of Prague; later in this same campaign he defended Leipzig against a greatly superior force, was present at Rossbach, and, while the king was fighting the campaign of Leuthen, conducted a foray into Bohemia. In 1758 he took a prominent part in the unsuccessful Moravian campaign, after which he withdrew from the army to recruit his broken health. He returned in time for the autumn campaign in the Lausitz, and was killed on the 14th of October 1758 at the battle of Hochkirch. His body was honourably buried on the field by Marshal Daun and General Lacy, the son of his old commander in Russia, and was shortly afterwards transferred by Frederick to the garrison church of Berlin. Many memorials were erected to him by the king, Prince Henry, and others. Keith died unmarried, but had several children by his mistress, Eva Mertens, a Swedish prisoner captured by him in the war of 1741-43. In 1889 the 1st Silesian infantry regiment No. 22 of the German army received his name.

See K. A. Varnhagen von Ense, *Biographische Denkmale*, part 7 (1844); *Fragment of a Memoir of Field-Marshal James Keith, written by himself* (1714-1734; edited by Thomas Constable for the Spalding Club, 1843); T. Carlyle, *Frederick the Great, passim*; V. Paczynaski-Tenczyn, *Leben des G. F. M. Jakob Keith* (Berlin, 1889); Peter Buchan, Account of the Family of Keith (Edinburgh, 1878); Anon., *Memoir of Marshal Keith* (Peterhead, 1869); Pauli, *Leben grosser Helden*, part iv.

KEITH, GEORGE (*c.* 1639-1716), British divine, was born at Aberdeen about 1639 and was educated for the Presbyterian ministry at Marischal College in his native city. In 1662 he became a Quaker and worked with Robert Barclay (*q.v.*). After being imprisoned for preaching in

1676 he went to Holland and Germany on an evangelistic tour with George Fox and William Penn. Two further terms of imprisonment in England induced him (1684) to emigrate to America, where he was surveyor-general in East New Jersey and then a schoolmaster at Philadelphia. He travelled in New England defending Quakerism against the attacks of Increase and Cotton Mather, but after a time fell out with his own folk on the subject of the atonement, accused them of deistic views, and started a community of his own called "Christian Quakers" or "Keithians." He endeavoured to advance his views in London, but the Yearly Meeting of 1694 disowned him, and he established a society at Turner's Hall in Philpot Lane, where he so far departed from Quaker usage as to administer the two sacraments. In 1700 he conformed to the Anglican Church, and from 1702 to 1704 was an agent of the Society for the Propagation of the Gospel in America. He died on the 27th of March 1716 at Edburton in Sussex, of which parish he was rector. Among his writings were *The Deism of William Penn and his Brethren* (1699); *The Standard of the Quakers examined; or, an Answer to the Apology of Robert Barclay* (1702); *A Journal of Travels* (1706). Gilbert Burnet, bishop of Salisbury, a fellow-Aberdonian, speaks of him as "the most learned man that ever was in that sect, and well versed in the Oriental tongues, philosophy and mathematics."

KEITH, GEORGE KEITH ELPHINSTONE, Viscount (1746-1823), British admiral, fifth son of the 10th Lord Elphinstone, was born in Elphinstone Tower, near Stirling, on the 7th of January 1746. Two of his brothers went to sea, and he followed their example by entering the navy in 1761, in the "Gosport," then commanded by Captain Jervis, afterwards Earl St Vincent. In 1767 he made a voyage to the East Indies in the Company's service, and put £2000 lent him by an uncle to such good purpose in a private trading venture that he laid the foundation of a handsome fortune. He became lieutenant in 1770, commander in 1772, and post captain in 1775. During the war in America he was employed against the privateers, and with a naval brigade at the occupation of Charleston, S.C. In January 1781, when in command of the "Warwick" (50), he captured a Dutch 50-gun ship which had beaten off an English vessel of equal strength a few days before. After peace was signed he remained on shore for ten years, serving in Parliament as member first for Dumbartonshire, and then for Stirlingshire. When war broke out again in 1793 he was appointed to the "Robust" (74), in which he took part in the occupation of Toulon by lord Hood. He particularly distinguished himself by beating a body of the French ashore at the head of a naval brigade of English and Spaniards. He was entrusted with the duty of embarking the fugitives when the town was evacuated. In 1794 he was promoted rear-admiral, and in 1795 he was sent to occupy the Dutch colonies at the Cape of Good Hope and in India. He had a large share in the capture of the Cape in 1795, and in August 1796 captured a whole Dutch squadron in Saldanha Bay. In the interval he had gone on to India, where his health suffered, and the capture at Saldanha was effected on his way home. When the Mutiny at the Nore broke out in 1797 he was appointed to the command, and was soon able to restore order. He was equally successful at Plymouth, where the squadron was also in a state of effervescence. At the close of 1798 he was sent as second in command to St Vincent. It was for a long time a thankless post, for St Vincent was at once half incapacitated by ill-health and very arbitrary, while Nelson, who considered that Keith's appointment was a personal slight to himself, was peevish and insubordinate. The escape of a French squadron which entered the Mediterranean from Brest in May 1799 was mainly due to jarrings among the British naval commanders. Keith followed the enemy to Brest on their retreat, but was unable to bring them to action. He returned to the Mediterranean in November as commander-in-chief. He co-operated with the Austrians in the siege of Genoa, which surrendered on the 4th of June 1800. It was however immediately afterwards lost in consequence of the battle of Marengo, and the French made their re-entry so rapidly that the admiral had considerable difficulty in getting his ships out of the harbour. The close of 1801 and the beginning of the following year were spent in transporting the army sent to recover Egypt from the French. As the naval force of the enemy was completely driven into port, the British admiral had no opportunity of an action at sea, but his management of the convoy carrying the troops, and of the landing at Aboukir, was greatly admired. He was made a baron of the United Kingdom—an Irish barony having been conferred on him in 1797. On the renewal of the war in 1803 he was appointed commander-in-chief in the North Sea, which post he held till 1807. In February 1812 he was appointed commander-in-chief in the Channel, and in 1814 he was raised to a viscounty. During his last two commands he was engaged first in overlooking the measures taken to meet a threatened invasion, and then in directing the movements of the numerous small squadrons and private ships employed on the coasts of Spain and Portugal, and in protecting trade. He was at Plymouth when Napoleon surrendered and was brought to England in the "Bellerophon" by Captain Maitland (1777-1839). The decisions of the British

government were expressed through him to the fallen Emperor. Lord Keith refused to be led into disputes, and confined himself to declaring steadily that he had his orders to obey. He was not much impressed by the appearance of his illustrious charge, and thought that the airs of Napoleon and his suite were ridiculous. Lord Keith died on the 10th of March 1823 at Tullyallan, his property in Scotland, and was buried in the parish church. A portrait of him by Owen is in the Painted Hall in Greenwich. He was twice married: in 1787 to Jane Mercer, daughter of Colonel William Mercer of Aldie; and in 1808 to Hester Maria Thrale, who is spoken of as "Queenie" in Boswell's *Life of Johnson* and Mme. D'Arblay's *Diary*. He had a daughter by each marriage, but no son. Thus the viscounty became extinct on his death, but the English and Irish baronies descended to his elder daughter Margaret (1788-1867), who married the Comte de Flahault de la Billarderie, only to become extinct on her death.

There is a panegyrical *Life of Lord Keith* by Alex. Allardyce (Edinburgh, 1882); and biographical notices will be found in John Marshall's *Royal Naval Biography*, i. 43 (1823-1835), and the *Naval Chronicle*, X. 1.

(D. H.)

KEITH, a police burgh of Banffshire, Scotland, on the Isla, 53¼ m. N.W. of Aberdeen by the Great North of Scotland railway. Pop. (1901), 4753. A branch of the Highland railway also gives access to Elgin, and there is a line to Buckie and Portessie on the Moray Firth. The burgh includes Old Keith and New Keith on the east bank of the Isla, and Fife-Keith on the west bank. Though Old Keith has a charter dating from William the Lion it fell into gradual decay; New Keith, founded in the 18th century by the second earl of Seafield, being better situated for the growth of a town. Fife-Keith has sprung up since 1816. The principal public buildings include the Turner memorial hospital, the Longmore hall, and the Institute. In the Roman Catholic church there is a painting of the "Incredulity of St Thomas," presented by Charles X. of France. The industries include manufactures of tweeds, blankets, agricultural implements, and boots and shoes; there are also distilleries, breweries, flour mills, and lime and manure works. But the main importance of Keith lies in the fact that it is the centre of the agricultural trade of the shire. The "Summer Eve Fair" held in September is the largest cattle and horse fair in the north of Scotland; the town is also the headquarters of the dressed-meat trade in the north.

KEJ, or Kech, the chief place in a district of the province of Makran in Baluchistan, which has given its name to Kej-Makran, as distinguished from Persian Makran. There is no town, but a number of small villages dominated by a fort built upon a rock, on the eastern bank of the Kej River. This fort, like many others similarly placed throughout the country, is supposed to be impregnable, but is of no strength except against the matchlocks of the surrounding tribes. Kej (or Kiz) was an important trade centre in the days of Arab supremacy in Sind, and the rulers of Kalat at various times marched armies into the province with a view to maintaining their authority. At the beginning of the 19th century it had the reputation of a commercial centre, trading through Panjgur with Kandahar, with Karachi via Bela, and with Muscat and the Persian Gulf by the seaport of Gwadar, distant about 80 m. The present Khan of Kalat exercises but a feeble sway over this portion of his dominion, although he appoints a governor to the province. The principal tribe residing around Kej is that of the Gichki, who claim to be of Rajput origin, and to have settled in Makran during the 17th century, having been driven out of Rajputana. The climate during summer is too hot for Europeans. During winter, however, it is temperate. The principal exports consist of dates, which are considered of the finest quality. A local revolt against Kalat rendered an expedition against Kej necessary in 1898. Colonel Mayne reduced the fortress and restored order in the surrounding districts.

KEKULÉ, FRIEDRICH AUGUST (1829-1896), German chemist, was born at Darmstadt on the 7th of September 1829. While studying architecture at Giessen he came under the influence of Liebig and was induced to take up chemistry. From Giessen he went to Paris, and then, after a short sojourn in Switzerland, he visited England. Both in Paris and in England he enjoyed personal intercourse with the leading chemists of the period. On his return to Germany he started a small chemical laboratory at Heidelberg, where, with a very slender equipment, he carried out several important researches. In 1858 he was appointed professor of chemistry at Ghent, and in 1865 was called to Bonn to fill a similar position, which he held till his death in that town on the 13th of June 1896. Kekulé's main importance lies in the far-reaching contributions which he made to chemical theory, especially in regard to the constitution of the carbon compounds. The doctrine of atomicity had already been enunciated by E. Frankland, when in 1858 Kekulé published a paper in which, after giving reasons for regarding carbon as a tetravalent element, he set forth the essential features of his famous doctrine of the linking of atoms. He explained that in substances containing several carbon atoms it must be assumed that some of the affinities of each carbon atom are bound by the affinities of the atoms of other elements contained in the substance, and some by an equal number of the affinities of the other carbon atoms. The simplest case is when two carbon atoms are combined so that one affinity of the one is tied to one affinity of the other; two, therefore, of the affinities of the two atoms are occupied in keeping the two atoms together, and only the remaining six are available for atoms of other elements. The next simplest case consists in the mutual interchange of two affinity units, and so on. This conception led Kekulé to his "closed-chain" or "ring" theory of the constitution of benzene which has been called the "most brilliant piece of prediction to be found in the whole range of organic chemistry," and this in turn led in particular to the elucidation of the constitution of the "aromatic compounds," and in general to new methods of chemical synthesis and decomposition, and to a deeper insight into the composition of numberless organic bodies and their mutual relations. Professor F. R. Japp, in the Kekulé memorial lecture he delivered before the London Chemical Society on the 15th of December 1897, declared that three-fourths of modern organic chemistry is directly or indirectly the product of Kekulé's benzene theory, and that without its guidance and inspiration the industries of the coal-tar colours and artificial therapeutic agents in their present form and extension would have been inconceivable.

Many of Kekulé's papers appeared in the *Annalen der Chemie*, of which he was editor, and he also published an important work, *Lehrbuch der organischen Chemie*, of which the first three volumes are dated 1861, 1866 and 1882, while of the fourth only one small section was issued in 1887.

KELLER, ALBERT (1845-), German painter, was born at Gais, in Switzerland; he studied at the Munich Academy under Lenbach and Ramberg, and must be counted among the leading colourists of the modern German school. Travels in Italy, France, England and Holland, and a prolonged sojourn in Paris, helped to develop his style, which is marked by a sense of elegance and refinement all too rare in German art. His scenes of society life, such as the famous "Dinner" (1890), are painted with thoroughly Parisian *esprit*, and his portraits are marked by the same elegant distinction. He is particularly successful in the rendering of rustling silk and satin dresses and draperies. His historical and imaginative works are as modern in spirit and as unacademical as his portraits. At the Munich Pinakothek is his painting "Jairi Töchterlein" (1886), whilst the Königsberg Museum contains his "Roman Bath," and the Liebieg collection in Reichenberg the "Audience with Louis XV.," the first picture that drew attention to his talent. Among other important works he painted "Faustina in the Temple of Juno at Praeneste," "The Witches' Sleep" (1888), "The Judgment of Paris," "The Happy Sister," "Temptation" (1892), "Autumn" (1893), "An Adventure" (1896), and "The Crucifixion."

KELLER, GOTTFRIED (1819-1890), German poet and novelist, was born at Zürich on the 19th of July 1819. His father, a master joiner, dying while Gottfried was young, his early education was neglected; he, however, was in 1835 apprenticed to a landscape painter, and

subsequently spent two years (1840-1842) in Munich learning to paint. Interest in politics drew him into literature, and his talents were first disclosed in a volume of short poems, *Gedichte* (1846). This obtained him recognition from the government of his native canton, and he was in 1848 enabled to take a short course of philosophical study at the university of Heidelberg. From 1850 to 1855 he lived in Berlin, where he wrote his most important novel, *Der grüne Heinrich* (1851-1853; revised edition 1879-1880), remarkable for its delicate autographic portraiture and the beautiful episodes interwoven with the action. This was followed by *Die Leute von Seldwyla* (1856), studies of Swiss provincial life, including in *Romeo und Julia auf dem Dorfe* one of the most powerful short stories in the German language, and in *Die drei gerechten Kammmacher*, almost as great a masterpiece of humorous writing. Returning to his native city with a considerable reputation, he received in 1861 the appointment of secretary to the canton. For a time his creative faculty seemed paralysed by his public duties, but in 1872 appeared *Sieben Legenden*, and in 1874 a second series of *Die Leute von Seldwyla*, in both of which books he displayed no abatement of power and originality. He retired from the public service in 1876 and employed his leisure in the production of *Züricher Novellen* (1878), *Das Sinngedicht*, a collection of short stories (1881), and a novel, *Martin Salander* (Berlin, 1886). He died on the 15th of July 1890 at Hottingen. Keller's place among German novelists is very high. Few have united such fancy and imagination to such uncompromising realism, or such tragic earnestness to such abounding humour. As a lyric poet, his genius is no less original; he takes rank with the best German poets of this class in the second half of the 19th century.

Keller's *Gesammelte Werke* were published in 10 vols. (1889-1890), to which was added another volume, *Nachgelassene Schriften und Dichtungen*, containing the fragment of a tragedy (1893). In English appeared, *G. Keller: A Selection of his Tales translated with a Memoir by Kate Freiligrath-Kroeker* (1891). For a further estimate of Keller's life and works cf. O. Brahm (1883); E. Brenning, *G. Keller nach seinem Leben und Dichten* (1892); F. Baldensperger, *G. Keller; sa vie et ses oeuvres* (1893); A. Frey, *Erinnerungen an Gottfried Keller* (1893); J. Baechtold, *Kellers Leben. Seine Briefe und Tagebücher* (Berlin, 1894-1897); A. Köster, *G. Keller* (1900; 2nd ed., 1907); and for his work as a painter, H. E. von Berlepsch, *Gottfried Keller als Maler* (1895).

KELLER, HELEN ADAMS (1880-), American blind deaf-mute, was born at Tuscumbia, Alabama, in 1880. When barely two years old she was deprived of sight, smell and hearing, by an attack of scarlet fever. At the request of her parents, who were acquainted with the success attained in the case of Laura Bridgman (*q.v.*), one of the graduates of the Perkins Institution at Boston, Miss Anne M. Sullivan, who was familiar with the teachings of Dr S. G. Howe (*q.v.*), was sent to instruct her at home. Unfortunately an exact record of the steps in her education was not kept; but from 1888 onwards, at the Perkins Institution, Boston, and under Miss Sarah Fuller at the Horace Mann school in New York, and at the Wright Humason school, she not only learnt to read, write, and talk, but became proficient, to an exceptional degree, in the ordinary educational curriculum. In 1900 she entered Radcliffe College, and successfully passed the examinations in mathematics, &c. for her degree of A.B. in 1904. Miss Sullivan, whose ability as a teacher must be considered almost as marvellous as the talent of her pupil, was throughout her devoted companion. The case of Helen Keller is the most extraordinary ever known in the education of blind deaf-mutes (see Deaf and Dumb *ad fin.*), her acquirements including several languages and her general culture being exceptionally wide. She wrote *The Story of My Life* (1902), and volumes on *Optimism* (1903), and *The World I Live in* (1908), which both in literary style and in outlook on life are a striking revelation of the results of modern methods of educating those who have been so handicapped by natural disabilities.

KELLERMANN, FRANÇOIS CHRISTOPHE DE (1735-1820), duke of Valmy and marshal of France, came of a Saxon family, long settled in Strassburg and ennobled, and was born there on the 28th of May 1735. He entered the French army as a volunteer, and served in the Seven Years' War and in Louis XV.'s Polish expedition of 1771, on returning from which he was made a lieutenant-colonel. He became brigadier in 1784, and in the following year *maréchal-de-camp*. In 1789 Kellermann enthusiastically embraced the cause of the Revolution, and in 1791

became general of the army in Alsace. In April 1792 he was made a lieutenant-general, and in August of the same year there came to him the opportunity of his lifetime. He rose to the occasion, and his victory of Valmy (see French Revolutionary Wars) over the Prussians, in Goethe's words, "opened a new era in the history of the world." Transferred to the army on the Moselle, Kellermann was accused by General Custine of neglecting to support his operations on the Rhine; but he was acquitted at the bar of the Convention in Paris, and placed at the head of the army of the Alps and of Italy, in which position he showed himself a careful commander and excellent administrator. Shortly afterwards he received instructions to reduce Lyons, then in revolt against the Convention, but shortly after the surrender he was imprisoned in Paris for thirteen months. Once more honourably acquitted, he was reinstated in his command, and did good service in maintaining the south-eastern border against the Austrians until his army was merged into that of General Bonaparte in Italy. He was then sixty-two years of age, still physically equal to his work, but the young generals who had come to the front in these two years represented the new spirit and the new art of war, and Kellermann's active career came to an end. But the hero of Valmy was never forgotten. When Napoleon came to power Kellermann was named successively senator (1800), honorary marshal of France (1803), and duke of Valmy (1808). He was frequently employed in the administration of the army, the control of the line of communications, and the command of reserve troops, and his long and wide experience made him one of Napoleon's most valuable assistants. In 1814 he voted for the deposition of the emperor and became a peer under the royal government. After the "Hundred Days" he sat in the Chamber of Peers and voted with the Liberals. He died at Paris on the 23rd of September 1820.

See J. G. P. de Salve, *Fragments historiques sur M. le maréchal de Kellermann* (Paris, 1807), and De Botidoux, *Esquisse de la carrière militaire de F. C. Kellermann, duc de Valmy* (Paris, 1817).

His son, François Étienne de Kellermann, duke of Valmy (1770-1835), French cavalry general, was born at Metz and served for a short time in his father's regiment of Hussars previous to entering the diplomatic service in 1791. In 1793 he again joined the army, serving chiefly under his father's command in the Alps, and rising in 1796 to the rank of *chef de brigade*. In the latter part of Bonaparte's celebrated Italian campaign of 1796-97 the younger Kellermann attracted the future emperor's notice by his brilliant conduct at the forcing of the Tagliamento. He was made general of brigade at once, and continued in Italy after the peace of Campo Formio, being employed successively in the armies of Rome and Naples under Macdonald and Championnet. In the campaign of 1800 he commanded a cavalry brigade under the First Consul, and at Marengo (*q.v.*) he initiated and carried out one of the most famous cavalry charges of history, which, with Desaix's infantry attack, regained the lost battle and decided the issue of the war. He was promoted general of division at once, but as early as the evening of the battle he resented what he thought to be an attempt to belittle his exploit. A heated controversy followed as to the influence of Kellermann's charge on the course of the battle, and in this controversy he displayed neither tact nor forbearance. However, his merits were too great for his career to be ruined either by his conduct in the dispute or by the frequent scandals, and even by the frauds, of his private life. Unlike his father's, his title to fame did not rest on one fortunate opportunity. Though not the most famous, he was perhaps the ablest of all Napoleon's cavalry leaders, and distinguished himself at Austerlitz (*q.v.*), in Portugal under Junot (on this occasion as a skilful diplomatist), at the brilliant cavalry combat of Tormes (Nov. 28, 1809), and on many other occasions in the Peninsular War. His rapacity was more than ever notorious in Spain, yet Napoleon met his unconvincing excuses with the words, "General, whenever your name is brought before me, I think of nothing but Marengo." He was on sick leave during the Russian expedition of 1812, but in 1813 and 1814 his skill and leading were as conspicuous as ever. He retained his rank under the first Restoration, but joined Napoleon during the Hundred Days, and commanded a cavalry corps in the Waterloo campaign. At Quatre Bras he personally led his squadrons in the famous cavalry charge, and almost lost his life in the mêlée, and at Waterloo he was again wounded. He was disgraced at the second Restoration, and, on succeeding to his father's title and seat in the Chamber of Peers in 1820, at once took up and maintained till the fall of Charles X. in 1830 an attitude of determined opposition to the Bourbons. He died on the 2nd of June 1835.

His son François Christophe Edmond de Kellermann, duke of Valmy (1802-1868), was a distinguished statesman, political historian, and diplomatist under the July Monarchy.

KELLGREN, JOHAN HENRIK (1751-1795), Swedish poet and critic, was born at

Floby in West Gothland, on the 1st of December 1751. He studied at the university of Åbo, and had already some reputation as a poet when in 1774 he there became a “docent” in aesthetics. Three years later he removed to Stockholm, where in conjunction with Assessor Carl Lenngren he began in 1778 the publication of the journal *Stockholmsposten*, of which he was sole editor from 1788 onwards. Kellgren was librarian to Gustavus III. from 1780, and from 1785 his private secretary. On the institution of the Swedish Academy in 1786 he was appointed one of its first members. He died at Stockholm on the 20th of April 1795. His strong satiric tendency led him into numerous controversies, the chief that with the critic Thomas Thorild, against whom he directed his satire *Nyt försök till orimmad vers*, where he sneers at the “raving of Shakespeare” and “the convulsions of Goethe.” His lack of humour detracts from the interest of his polemical writings. His poetical works are partly lyrical, partly dramatic; of the plays the versification belongs to him, the plots being due to Gustavus III. The songs interspersed in the four operas which they produced in common, viz., *Gustaf Vasa*, *Gustaf Adolf och Ebba Brahe*, *Aeneas i Kartago*, and *Drottning Kristina*, are wholly the work of Kellgren. From about the year 1788 a higher and graver feeling pervades Kellgren’s verses, partly owing to the influence of the works of Lessing and Goethe, but probably more directly due to his controversy with Thorild. Of his minor poems written before that date the most important are the charming spring-song *Vinterns välde lyktar*, and the satirical *Mina löjen* and *Man eger ej snille för det man är galen*. The best productions of what is called his later period are the satire *Ljusets fiender*, the comic poem *Dumboms lefverne*, the warmly patriotic *Kantat d.* 1. *jan.* 1789, the ode *Till Kristina*, the fragment *Sigwart och Hilma*, and the beautiful song *Nya skapelsen*, both in thought and form the finest of his works. Among his lyrics are the choicest fruits of the Gustavian age of Swedish letters. His earlier efforts, indeed, express the superficial doubt and pert frivolousness characteristic of his time; but in the works of his riper years he is no mere “poet of pleasure,” as Thorild contemptuously styled him, but a worthy exponent of earnest moral feeling and wise human sympathies in felicitous and melodius verse.

His *Samlade skrifter* (3 vols., 1796; a later edition, 1884-1885) were revised by himself. His correspondence with Rosenstein and with Clewberg was edited by H. Schück (1886-1887 and 1894). See Wieselgren, *Sveriges sköna litteratur* (1833-1849); Atterbom, *Svenska siare och skalder* (1841-1855); C. W. Böttiger in *Transactions of the Swedish Academy*, xlv. 107 seq. (1870); and Gustaf Ljunggren’s *Kellgren, Leopold, och Thorild, and his Svenska vitterhetens häfder* (1873-1877).

KELLOGG, CLARA LOUISE (1842-), American singer, was born at Sumterville, South Carolina, in July 1842, and was educated in New York for the musical profession, singing first in opera there in 1861. Her fine soprano voice and artistic gifts soon made her famous. She appeared as prima donna in Italian opera in London, and at concerts, in 1867 and 1868; and from that time till 1887 was one of the leading public singers. She appeared at intervals in London, but was principally engaged in America. In 1874 she organized an opera company which was widely known in the United States, and her enterprise and energy in directing it were remarkable. In 1887 she married Carl Strakosch, and retired from the profession.

KELLS, a market town of county Meath, Ireland, on the Blackwater, 9¾ m. N.W. of Navan on a branch of the Great Northern railway. Pop. of urban district (1901), 2428. The prosperity of the town depends chiefly upon its antiquarian remains. The most notable is St Columbkille’s house, originally an oratory, but afterwards converted into a church, the chancel of which was in existence in 1752. The present church is modern, with the exception of the bell-tower, rebuilt in 1578. Near the church there is a fine though imperfect specimen of the ancient round tower, 99 ft. in height; and there are several ancient crosses, the finest being that now erected in the market-place. Kells was originally a royal residence, whence its ancient name *Ceanannus*, meaning the *dun* or circular northern fort, in which the king resided, and the intermediate name *Kenlis*, meaning head fort. Here Conn of the Hundred Fights resided in the 2nd century; and here was a palace of Dermot, king of Ireland, in 544-565. The other places in Ireland named Kells are probably derived from *Cealla*, signifying church. In the 6th century Kells, it is said, was granted

to St Columbkille. Of the monastery which he is reported to have founded there are no remains, and the town owes its chief ecclesiastical importance to the bishopric founded about 807, and united to Meath in the 13th century. The ecclesiastical establishment was noted as a seat of learning, and a monument of this remains in the *Book of Kells* an illuminated copy of the Gospels in Latin, containing also local records, dating from the 8th century, and preserved in the library of Trinity College, Dublin. The illumination is executed with extraordinary delicacy, and the work is asserted to be the finest extant example of early Christian art of this kind. Neighbouring antiquities are the church of Dulane, with a fine doorway, and the *dun* or fortification of Dimor, the principal erection of a series of defences on the hills about 6 m. W. of Kells. Among several seats in the vicinity is that of the Marquess of Headfort. Kells returned two members to the Irish parliament before the Union.

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