

for the improvement of breeds of sheep; and in 1793 he circulated a plan for a board of agriculture and internal improvement. When the board was shortly afterwards established by a charter from the crown he was nominated its first president. From the agricultural reports published by this society he compiled his *Code of Agriculture*, published in 1819. About 1790 he conceived a plan for a *Statistical Account of Scotland*, and the work was published in twenty-one volumes, 1791-1799.

Sir John Sinclair was also the author of a number of tracts on naval and military subjects; and in 1794 he raised for the defence of the kingdom a regiment of a thousand men, at first called the "Caithness Fencibles," afterwards the "Rothesay and Caithness Fencibles;" a second battalion of a thousand men was raised by him in 1795, which took part in suppressing the rebellion in Ireland in 1798. Though originally a supporter in parliament of the war policy of Pitt, he afterwards joined the "armed neutrality" party, which advocated retrenchment and reform. In 1805 he was appointed by Pitt a commissioner for superintending the construction of roads and bridges in the north of Scotland. He was a member of most of the agricultural societies of the Continent, and held as many as twenty-five foreign diplomas. He was a fellow of the Royal Societies of London and Edinburgh, a fellow of the Antiquarian Society of London, and president of the Highland Society of London. No man of his time took a more comprehensive and enlightened interest in the general welfare of the country or conferred on it more substantial benefits. He enjoyed the esteem and intimate friendship of many eminent contemporaries both at home and abroad, with several of whom he kept up an extensive correspondence. He died 21st December 1835.

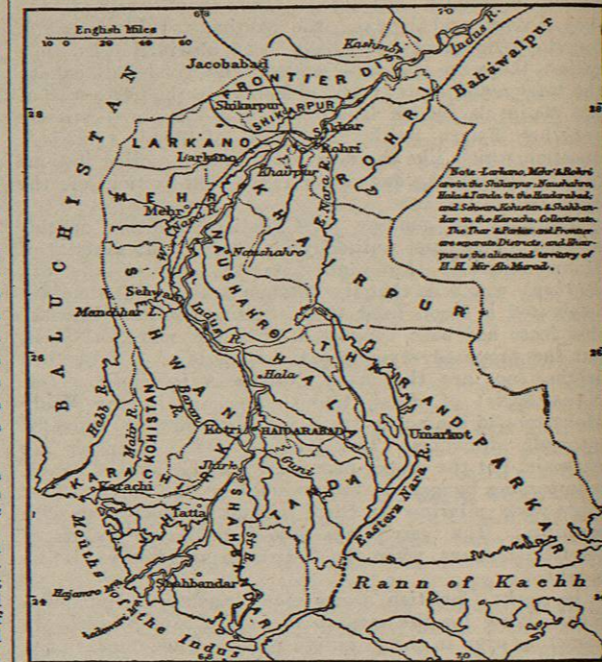
By his first wife, a daughter of Alexander Maitland of Stoke Newington near London, he had two daughters, of whom the elder, Hannah, was the authoress of a work on the *Principles of the Christian Faith*. By his second wife, the Hon. Diana Macdonald, only daughter of Alexander, first Lord Macdonald, he had thirteen children, of whom the eldest son, George (1790-1860), who succeeded to the baronetcy, was a schoolfellow of Byron and Peel at Harrow, and is styled by Byron the "prodigy of our school days"; the third son, John (1797-1875), became archdeacon of Middlesex, and, besides the *Memoirs* of his father, wrote several theological works; and the fourth daughter, Catherine (1800-1864), who for many years acted as his secretary, after his death achieved some distinction as an authoress, her principal works being *Modern Accomplishments*, 1836; *Scotland and the Scotch*, 1840; *Modern Flirtation*, 1841; and *Popular Legends and Bible Truths*, 1852.

See *Correspondence of the Right Hon. Sir John Sinclair, Bart., with Reminiscences of Distinguished Characters*, 2 vols., London, 1831; and *Memoirs of the Life and Works of the Right Hon. Sir John Sinclair*, 2 vols., Edinburgh, 1837.

SIND, the westernmost territorial subdivision of India, and a frontier province of considerable importance in a geographical and political aspect, lies between the 23d and 28th parallels of N. latitude and between the 66th and 71st meridians of E. longitude. Its length from north to south is estimated at 360 miles, and the average of its breadth from east to west at 170. On the north it is bounded by the Khelat state (see BALUCHISTAN), the Punjab, and Bahawalpur; on the E. by Jaisalmer and Mulani, or generally the more desert tracts of Western Rajputana; on the S. by the Rann of Cutch (Rann of Kachh) and the Indian Ocean; and on the W. by Khelat, which overlaps it on the north. Including the alienated district of Khairpur and the extensive tract to the south called the political superintendency of the Thar and Parkar, its area is set down as between 56,000 and 57,000 square miles.

The one great geographical feature in Sind is the lower Indus, passing, as it does, through the entire length of the province, first in a south-westerly direction, then turning somewhat to the east, then returning to a line more directly south, and finally inclining to the west, to seek an

outlet at the sea. Though there is much similarity in the appearance of the landscape on the two sides of the broad river, the distant line of mountains between Sakhar and Sehwan, the steep pass overhanging the water at Lakki, and the hill country below Sehwan give a distinctive character to the right bank, and lend it special attraction when contrasted with the flat lowlands, merging into desert, on the left. Sind has been aptly likened to Egypt. If the one depends for life and fertility on the Nile, so does the other on the Indus. The cities and towns are not so readily to be compared. Hyderabad, notwithstanding its remarkable fortress and handsome tombs, can



Map of Sind.

scarcely vie in interest as a native capital with Cairo; nor can Kurrachee, as a Europeanized capital, be said to have attained the celebrity of Alexandria. Yet there are some respects in which this particular province would not be wholly eclipsed, even in its outside pictures. It contains many monuments of archaeological and architectural interest, and to the traveller descending the river from the Punjab, or ascending it from Kotri, the *coup d'œil* on the approach to Rohri is at times singularly striking. The beautiful little island of Khwaja Kidhr is a gem in itself; and there is at certain seasons undoubted poetry in the very dreariness of Sakhar and Bakhar.

Owing to the deficiency of rain, the continuance of hot weather in Sind is exceptional. Lying between two monsoons, it just escapes the influence of both. The south-west monsoon stops short at Lakhpat Bandar, the north-west monsoon at Kurrachee, and even here the annual rainfall is not reckoned at more than six or eight inches. At times there is no rainfall for two or three years, while at others there is a whole season's rainfall in one or two days. The average temperature of the summer months rises to 95° F., and the winter average is 60°, the summer maximum being 120° and the winter minimum 32°. The temperature on the sea-coast is much more equable than elsewhere. In Northern Sind we find frost in winter, while both there and in Lower Sind the summer heat is extreme and prolonged. This great heat, combined with the poisonous exhalations from the pools left after the annual inundation and the decaying vegetable deposits, produces the fever and ague with which the name of the country is associated, and to which even the natives themselves fall a prey.

The soil is largely dependent on the river overflow. This grand provision of nature is, however, uncertainly exercised; and not only is the actual volume of water supplied from the upper Indus liable to fluctuation, but the particular lands inundated or untouched by inundation vary according to the caprices of the river. Questions of alluvion and diluvion are therefore of frequent occurrence; and it is often as hard to say whether newly-thrown-up lands belong to the state or an individual proprietor as it is to decide who is the loser in the case of lands newly submerged. In the lands which, as a rule, are reached annually and in fair proportion by the inundation, the soil is so rich as to produce two crops or even more in the year without the assistance of manure. Salt is present in great quantity. The two principal yearly crops are the vernal, known as *rabi*, sown in autumn and reaped in spring, and the autumnal, known as *kharif*, sown in summer while the river is high and reaped from October to December. In some districts there is a distinct third crop called *pehras*, sown in March and reaped in July and August. The implements of husbandry are the plough (*haar*), drawn by two bullocks; the harrow (*sahar*), a heavy log of wood drawn by four bullocks, a man standing on each end; the seed-sower (*nari*), a tube fixed to the plough with a wooden funnel on the top, used while the ground is being ploughed for the last time; a curved hook (*datro*) with teeth like a saw, for reaping; and a hoe (*kuriak*), for weeding.

The principal products are *bajri* (a well-known Indian grain), and *judri* (the Indian millet), rice, cotton, sugar-cane, tobacco, oil-seeds, wheat, barley, and indigo. Of these, wheat may be considered the staple produce of Upper, and *bajri* and *judri* of Middle and Lower Sind. Dates, plantains, mangoes, limes, oranges, pomegranates, citrons, figs, grapes, apples, tamarinds, mulberries, and melons are said to be fruits common to the country; and it is added that of late years nectarines, peaches, apricots, and other fruit trees have been successfully introduced, but the statement must be received with some reservation in respect of quantity and quality. There is no doubt that the fruits imported by the Afghan traders find more favour than any home products.

Among the chief manufactures may be mentioned the gold, silver, and silk embroideries, carpets, cloths, lacquered ware, horse-trappings and other leather-work, paper, pottery, tiles, swords, and matchlocks, and the boxes and other articles of inlaid work introduced more than a century ago from Shiraz. The lac work, a widely extended industry in India, is also in vogue in Sind. Various coloured lac is laid in succession on the boxes, &c., while turning on the lathe, and the design is then cut through the different colours. Hyderabad has long been famous for its silks and cottons, silver and gold work, and lacquered ornaments, and the district could once boast of skilled workmen in arms and armour; but, unless the demand for the products of its industries increase, it is to be feared that its old reputation will not long be maintained. In the cloths called *sudi*, silk is woven with the striped cotton—a practice possibly due to the large Mohammedan population of the country, as no Moslem can wear a garment of pure silk without infringement of the law. As regards the carpets, Sir George Birdwood states that those from Sind are the cheapest, coarsest, and least durable of all made in India. Formerly they were fine in design and colouring, but of late years they have greatly deteriorated. The cheap rugs, which sell for about 9s each, are made with the pile (if not altogether) of cow hair, woven upon a common cotton foundation, with a rough hempen shoot. The patterns are bold and suited to the material, and the dyes good and harmonious.

In 1837 the zoology of Sind was reported by Burnes to comprise of genera and species 20 mammals, 191 birds, 36 fishes, 11 reptiles, besides 200 in other departments of natural history. Of wild animals we find the tiger (in the jungles of Upper Sind), the hyena, the *garkhar* or wild ass (in the south part of the Thar and Parkar district), the wolf, jackal, fox, wild hog, antelope, *pharho* or hog deer, hares, and porcupines. Of birds of prey, the vulture and several varieties of falcon may be mentioned. The flamingo, pelican, stork, crane, and Egyptian ibis frequent the shores of the delta. Besides these there are the *ubara* (bustard) or *tibir*, the rock-grouse, quail, partridge, and various kinds of parrots. Waterfowl are plentiful; in the cold season the lakes or *dhanahs* are covered with wild geese, *kulang*, ducks, teal, curlew, and snipe. Among other animals to be noted are scorpions, lizards, centipedes, and many snakes.

The domestic animals include camels (one-humped), buffaloes, sheep and goats, horses and asses (small but hardy), mules, and bullocks. Of fish there are, on the sea-coast, sharks, saw-fish, rays, and skate; cod, *sir*, *cavalho*, red-snapper, *gassir*, *begti*, *dangara*, and *buru* abound. A kind of sardine also frequents the coast. In the Indus, the finest flavoured and most plentiful fish is the *palo*, generally identified with the *hilsa* fish of the Ganges. *Dambhro* (*Labeo rohita*) and mullet, *morako* (*Cirrhinia mrigala*), *gandan* (*Notopterus kapirati*), *khago* or catfish (*Pila buchhanani*), *yopri* (*Barius sarana*), *shaktir*, *jerkho*, and *singhari* (*Macrones aor*) are also found. Otter, turtle, and porpoise are frequently met with; so too are long-snouted alligators and water-snakes.

The extent of forest land is relatively small. The forests (about eighty-seven in number) are situated for the most part on the banks of the Indus, and extend southward from Ghotki in the Rohri deputy collectorate to the middle delta. They are described as narrow strips of land, from two to three miles in length, and ranging from two furlongs to two miles in breadth. The largest are between 9000 and 10,000 acres in area, but are subject to diminution owing to the encroachments of the stream. The wood is principally *babul* (*Acacia arabica*), *bahan* (*Populus euphratica*), and *kandi* (*Prosopis spicigera*). The *tali* (*Dalbergia Sissu*) grows to some extent in Upper Sind; the iron-wood tree (*Tocoma undulata*) is found near the hills in the Mehar districts. There are, besides, the *nim* (*Melia Azadirachta*), the *pipal* (*Ficus religiosa*), the *ber* (*Zizyphus Jujuba*). The delta has no forests, but its shores abound with mangrove trees. Of trees introduced by the forest department we have the tamarind (*Tamarindus indica*), several Australian wattle trees, the water-chestnut (*Tropa natans*), the *avla* (*Emblica officinalis*), the *bahera* (*Terminalia Bellerica*), the carob tree (*Ceratonia Siliqua*), the China tallow (*Stillingia sebifera*), the *bc*, *Egls Marmelos*, and the *manah* (*Bassia latifolia*). There is a specially organized forest department.

For administrative purposes the province has five well-understood divisions:—(1) *Frontier, Upper Sind*, of which the principal town is Jacobabad, named after the late General John Jacob, C.B., its founder; the hamlet which occupied its site in 1843 was a mere speck in the desert, and its name, Khangarh, can hardly be associated with the fine canal and abundant vegetation now marking the locality; (2) *Shikarpur*, with its capital of the same name and Sakhar, both notable places on the right bank of the Indus; in this division also are the towns of Larkhana and Rohri, the last on the left bank of the river; (3) *Hyderabad* (*Hydarabad*), of which the chief town, having the same name, was the capital of the province prior to the British occupation; (4) *Kurrachee* (*Karachi*), with its modern Europeanized capital and harbour and Tatta, a town of interesting local associations; (5) *Thar and Parkar*, an outlying district on the south-east, more or less part of the desert tract extending far and wide in that particular quarter. Besides these there is the territory of Mir 'Ali Murad, Talpur, greatly curtailed of its original dimensions, but still forming a large lanc alienation in Upper Sind.

Where cultivation depends so much on the character of the year's inundation, it is natural that the revenue should be uncertain. In 1833-34, for instance, the river was abnormally low. Consequently the area of cultivation was contracted, and, while considerable remissions had to be granted, collections were with difficulty carried out. The rainfall, moreover, except in the Thar and Parkar district, was not only scanty but unseasonable. In Thar and Parkar the rainfall was especially favourable, and owing to an early inundation and wise preparations lands never before cultivated were brought under the plough.

The gross canal revenue in Sind amounted in 1833-34 to Rs. 3,686,754, and the land revenue to Rs. 1,171,925. In round numbers and English figures—without reference to the deterioration of the rupee—the total is about £487,000, of which three-fourths is due to canal irrigation.

The population may be roughly reckoned at two millions and a half, an estimate which is borne out by the census of 1881. Kurrachee is now the most populous of the capitals, and its numbers far exceed those of Shikarpur and Hyderabad. But the character of its inhabitants differs from that of other large towns in Sind. They are for the most part foreign and migratory, and do not represent the true Sindis.

Of the two great divisions of the people in Sind the Mohammedans comprise about two-thirds of the whole, the Hindus the remaining third. The Mohammedans may be divided into two great bodies—the Sindis proper and the naturalized Sindis. The Sindis proper is a descendant of the original Hindu. In religion he is a Sini, though some of the Sindis belong to the Shia sect. There are probably more than three hundred families or clans among the Sindis. There is, as a rule, no distinction of caste, except that followers of certain vocations—such as weavers, leather-workers, sweepers, huntsmen—are considered low and vile. The six different classes of naturalized Sindis are—the four families of the Saiyids (the Bokhari, Mathari, Shirazi, and Lakhriyati); the Afghans, from Khorasan; the Baluchis; the slaves or Sidis—originally Africans; the Memans; and the Khwajas. The Hindu population of Sind may be divided into the following principal castes:—the Brahmans, Kshatrias, Waishias, and Sudras, with their subdivisions. Besides these there are the Sikhs, and the religious mendicants—the Sanasi, Jogi, Gosain, and Ogar,—all of Brahman origin.

The educational progress made in Sind during the quarter of a century succeeding the mutiny has been very great. In 1858 there was but one Government English school; with 82 boys, at Kurrachee, and one with 25 boys at Hyderabad; and of the 82 only 8 of the pupils were Sindi. In 1884-85 Sind could boast of a Government high school at Kurrachee with 400 pupils, of another high school at

Hyderabad with 338 pupils, and of a third at Shikarpur with 228 boys. The three passed 39 out of 43 candidates for matriculation at the Bombay university. Of vernacular or Sindi-Persian schools under native masters there were 34 which came under Government supervision in 1858, whereas there were in 1884-85 no less than 23 middle schools—teaching the vernacular and English—with 1165 pupils; and in the primary schools the number of pupils was nearly 20,000.

Captain (now Sir Richard) Burton has given a clear and instructive account of the language and literature of Sind. The large proportion of Sanskrit and Arabic words admitted, the anomalous structure of the grammar, and the special sounds of certain letters of its alphabet render the first remarkable; and the original romantic poems and translations of Arabic religious works command the attention of scholars to the second. Among the more celebrated of the native writers are Makhdum Hashim, Makhdum Abdullah, and Saiyid Abdull-Latif.

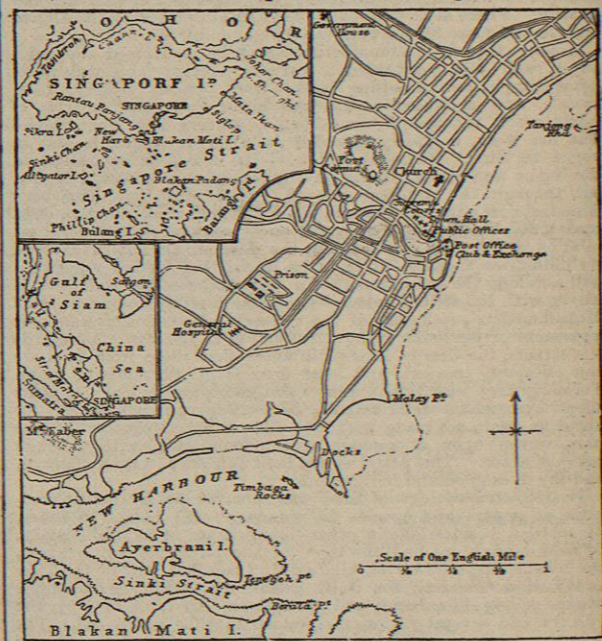
The leading features of the two years' campaign of Alexander the Great in the Punjab and Sind have been touched on elsewhere (see INDIA, vol. xii. p. 737). About 711 A.D. the Hindus of Sind were conquered by Muhammad Kasim, the young general of the caliph Walid, but his successors were unable to hold their ground. In reality it was the overwhelming irruption of Mahmud of Ghazni three centuries later which finally subjugated the province. Nearly six centuries later still, Sind was annexed by the great Akbar to Delhi. In the meanwhile it had been governed by princes and petty chiefs, all of whom are celebrated in local history. After Akbar, and up to the time of Nadir Shah's invasion of India, there is little historically important to distinguish the province, separated from the other divisions of the Mughal empire, though its governors possessed a certain delegated power which might well have tempted the more ambitious to revolt. When Nadir took possession of the lands west of the Indus, one Nur Muhammad Kalhora was the quasi ruler in Sind. The tribe to which he belonged claimed lineal descent from Abbas, uncle of the prophet, and had a widely-spread repute for sanctity. Their political influence had been, moreover, increasing for many years, and in the person of one or two of their stronger chiefs they had on sundry occasions risen in arms against the imperial troops. In 1701, or thirty-eight years before the Persian invasion, Yar Muhammad Kalhora had obtained possession of Shikarpur, and managed to get from the Mughal emperor a firman conferring upon him the "subahdari" of the Dera districts, with the title of "Khuda Yar Khan." On his death in 1719 he had extended his territory by the acquisition of the Kandiyara and Larkhana districts, and of Sibi, a vast tract of country then including within its limits Sakhar as well as Shikarpur. He was succeeded by his son Nur Muhammad, who, as above shown, was in the unenviable position of having to account for his actions to no less notable an antagonist than Nadir himself. The latter was eventually appeased by an annual tribute of 20 lakhs of rupees, and on his return to Persia conferred upon the Kalhora prince the title of "Shah Kuli Khan." On Nadir's death the Sind lands of Nur Muhammad became tributary to Ahmad Shah of Kandahar, the transfer being sealed by the bestowal of a new title, "Shah Nawaz Khan." This occurred in 1743, from which date till 1783—when Abdul Nabi, the last of the Kalhora princes, was defeated by Mir Fath Ali Khan, and the ruling dynasty forcibly superseded by the Talpur Baluch chiefs—the local history is a mere record of conflicts and reconciliations, treaties and evasions of treaty, as regards outside powers, and of revolution and bloodshed within. The seat of government had become established at Hyderabad, founded by Ghulam Shah Kalhora in 1768. We now come to the Talpurs. These Baluchis had immigrated to Sind from their native hills under a Mir Shahdad in the early part of the 18th century, and had taken service under Nur Muhammad Kalhora. Shahdad, raised to rank and influence, died, leaving four sons, the third of whom, Mir Bahram, succeeded as head of the tribe. His murder by a grandson of Nur Muhammad was one of the main causes of the ill-feeling which had culminated in bitter hostility when later acts of treachery and barbarism sealed the fate of the tyrant rulers. The Talpurs entered Hyderabad as conquerors; but unfortunately for the consolidation of their sovereignty the suspicious nature of Mir Fath Ali, the head of the house, alarmed his near relatives. His nephew Sohrab fled to Upper Sind, and founded the principality of Khairpur, while Tara, moving eastward, became the independent chief of Mirpur. Later on, Mir Fath Ali, undeterred by divisions which he had no power to prevent, admitted to a share of his own government of Hyderabad his three younger brothers, Ghulam Ali, Karm Ali, and Murad Ali. On the death of Fath Ali in 1801 the three continued to rule together; and when Ghulam Ali was killed in 1811 the duumvirate remained supreme; but, on the death of Karm Ali in 1823 and Murad Ali a few years later, the old system was revived, and a government of four again instituted. Such was the state of things when British relations with the province had become necessarily an urgent consideration, owing to the Afghan expedition of 1838 (see vol. xii. p. 807).

During this crisis of Anglo-Indian history the political officers in

Sind and Baluchistan had a difficult task to perform, and if it infinitely to their credit that more mischief did not ensue in these countries from the many and heavy British disasters in the north. But the amirs of Sind were to be dealt with for infractions of treaty if not for open hostility; and Sir Charles Napier had to call them to account soon after his arrival at Sakhar in the autumn of 1842. The long and complex narrative need not be here repeated. Suffice it to state that the outcome was the conquest of Sind,—the immediate result of the battle of Miani, fought in the vicinity of Hyderabad in February 1843. A course of wise, firm, and kindly administration inaugurated by Sir Charles Napier himself, and continued by Messrs Pringle, Frere, Inverarity, Gen. John Jacob, Sir W. Merewether, and later commissioners, has since made the province an important section of the western presidency of India. The story of the eight years' rule of Sir Bartle Frere in Sind has yet to be written, but his name is associated with numerous matters of paramount importance,—in relation especially to the position and fortunes of the deposed amirs, the rights and immunities of the old privileged landholders, the organization of municipal institutions, the promotion of systematic education, the due administration of justice, and the erection of public works of utility.

See Hughes's *Gazetteer of Sind*; Burton's *History of Sind*; *Bombay Government Records*, No. xvii.; *Bombay Educational Report, 1885*; *Annual Report on Administration of Sind*; *Report of Director of Public Instruction, Bombay, 1887-88*; *Birdwood's Handbook to Indian Courts, Paris, 1873.*

SINGAN, a form of the name SE-GAN FOO (*q.v.*). SINGAPORE, a British dependency, commercially and administratively the most important of the STRAITS SETTLEMENTS (*q.v.*), which form a separate colonial government. It consists principally of an island 27 miles long by 14 broad, lying off the south end of the Malay Peninsula, but also includes upwards of 70 insignificant islets



to the south and west within a radius of 10 miles. From the mainland of Johor, as this part of the peninsula is called, Singapore island is separated by a strait, Salat Tabras or Tambrosch, less than half a mile wide at the narrowest point, which was formerly the main channel of navigation to the Chinese seas. The name of Singapore Strait is given to the much wider channel which separates the island on the south from the various islands of Butang, Batang, Bintang, &c., belonging to the Dutch East Indies. The surface of Singapore is undulating, and diversified by hills ranging from 70 to rather less than 400 feet, the highest point being Bukit Timah, to the north-west of the town (about 519 feet). Geologically

the core of the island consists of crystalline rocks; but in the west there are shales, conglomerates, and sandstones; and all round the island the valleys are filled with alluvial deposits on a much more extensive scale than might be looked for where none of the streams have a course of more than six miles, or attain to any considerable size except after heavy rains (see details in J. R. Logan's "Local and Relative Geology of Singapore," in *Jour. Beng. Asi. Soc.*, vol. xvi., and "The Geology of the Straits of Singapore," in *Lond. Geol. Jour.*, 1851, vol. vii.). The south-western shores are fringed with coral reefs, and living coral fields are found in many parts of the strait. Being chiefly composed of red clays and laterite, the soil is not generally rich, and requires careful and liberal husbandry to make it really productive. When it was first occupied by the English the whole island was covered with forest and jungle; and, although this was largely cleared off subsequent to 1837, when a mania for nutmeg plantations set in, the moisture and warmth of the climate have kept it clothed with luxuriant and perpetual verdure, in which palms, ferns, and orchids are conspicuous forms. "Near the shore, by the mouths of creeks, are grouped quaint dwellings of fishermen, built of wood or palm leaf standing on piles over the water. In the smooth sandy bays coconut palms shelter picturesque Malay houses. More inland we find groves of fruit trees, small patches of sugar-cane, Chinese gardens, tapioca and indigo fields. Neat bungalows—the residences of officials, merchants, and rich Chinese and Arabs—diversify the scene, particularly in the vicinity of the town. In the remote parts of the island more especially there are waste spaces which were formerly gambier plantations and are now covered with coarsealang grass" (Governor Wild). The nutmeg trees which had for twenty years been a main source of wealth were blighted in 1860; the plantations were completely given up; and, though many of the abandoned trees recovered and nutmegs can still be gathered in Singapore, they have never again been cultivated. Cotton-planting was next tried, but without success, and though cinnamon grows well the labour necessary for its cultivation and manufacture is too expensive. Gutta percha, originally introduced to England from Singapore, was so much run upon that all the trees of that kind in the island were exterminated. Gambier and pepper, both at one time largely grown, have for many years been of little account. Liberian coffee, pine-apples, cocoa-nuts, and aloes are now the most important objects of cultivation. Quite recently districts have been enclosed for reforestation and the eucalyptus and other trees have been planted. Almost all kinds of fruits do well in the island,—the custard-apple, pine-apple, sour-sop, lime, orange, and plantain being in season nearly all the year, and the durian, blimbing, duku, langsung, mangosteen, rambutan, tarrup, tampang, &c., in July and August and also for all or some of the months between November and February. The botanical and zoological gardens at Singapore, connected with the Agri-Horticultural Society, have been devoted to the introduction of economic plants, such as China and Assam tea, salt-bush or *Rhagodia*, which forms excellent fodder, &c.

In climate Singapore is wonderfully fortunate for a country within one degree of the equator. There is hardly any seasonal change, and the annual range of temperature is generally only from 70° to 90°. "The nights especially are very cool and refreshing, and enable people to sleep without difficulty." The atmosphere is almost uniformly serene, and the face of the ocean is only disturbed by the swell of distant tempests in the China Sea or the Bay of Bengal. The north-east monsoon is the master wind from November to April, but is generally neither persistent nor powerful, and the south-west monsoon is even less regular in its action. The southerly winds in May and June known as Java winds have very much the character of land and sea breezes, but are considered very enervating in spite of the pleasant feeling of freshness which they

at first produce. Rapid squalls (sumatras) also occur during the south-west monsoon and beneficially clear the air. Instead of periodical rains there are (on a sixteen years' average) 167 wet days distributed throughout the year. The annual rainfall is 82.27 inches; 1885, a very dry year, showed only 69 inches, according to Dr Rowell's report. The mean maximum temperature in the shade is 86°.7, the mean minimum in the shade 73°. The highest temperature observed during the sixteen years was 94° in April 1878, and the lowest 65° in February 1874. Most of the domestic animals of Europe have been introduced, but not in great numbers. Deer, wild hogs, sloths, monkeys, and squirrels are the more noteworthy mammals; and tigers, which formerly committed serious depredations among the natives, still occasionally find their way across the strait from the mainland. When the first census was taken in 1824 the settlement of Singapore was found to contain 10,603 inhabitants, and by 1850 this number had increased to nearly 60,000. The following figures show the more important components of the population in 1860, 1871, and 1881,—the totals for those years being 80,792, 97,111, and 139,208 respectively:—

	1860.	1871.	1881.
Europeans and Eurasians.	2,445	3,207	2,769
Malays.....	10,888	19,250	22,155
Klings, &c. ....	...	10,244	12,058
Chinese.....	50,043	54,098	86,766
Javanese.....	3,408	3,239	5,881

The total is estimated to be now well over 150,000. The preponderance and rapid increase of the Chinese is a most striking feature, mainly due, however, to a steady stream of immigration. The death-rate in Singapore is very much higher than the birth-rate—4473 being the average number of deaths in 1881-83 against 1919 births. This is largely to be ascribed to the paucity of women—33,785 females to 105,423 males in 1881. In the small number of Europeans proper—1283—there are nineteen nationalities represented.

The only town in the settlement is the city of Singapore, the general capital of the Straits Settlements. It lies on the south side of the island in 1° 16' N. lat. and 103° 53' E. long., a bright, picturesque, prosperous, and progressive place, with a sea-frontage extending for about 6 miles from New Harbour north-east to the Rochore and Kallang suburbs. Under the control of its municipality, which has a yearly revenue of more than 300,000 dollars, a great variety of improvements have been effected—the river dredged and deepened, foreshores reclaimed, bridges built, trees planted, and public buildings erected—within the last six or seven years. The principal churches, the court-house, and the European quarters generally are situated on the north side of the river, while on the south side extend the warehouses and shops of the European and Chinese traders. On Peel Hill, 170 feet high, stands a citadel; and on Government Hill is the Government house—a palatial residence in park-like grounds. The cosmopolitan character of the population gives great brightness of colour to the crowded streets and is reflected in the architectural peculiarities of the native quarters—where Mohammedan mosques, Chinese joss-houses, and Hindu temples are equally at home. Among the more important European edifices are St Andrew's cathedral (first consecrated in 1838, present building erected in 1861, became cathedral in 1870), the Roman Catholic cathedral, the supreme court-house, the new post office (1883-84), the new police courts (1884), the European hospital, the jail, the Tanglin barracks, and the Raffles school (dating from 1823). The Raffles public library and museum had 320 subscribers in 1885 and 34,250 visitors, the books issued numbering 16,343. Several English papers, as well as one Chinese and one Malay, are published at Singapore. As a trading-port Singapore has great advantages over and above its position on the Straits. The harbour is safe and has good anchorage, and it can be approached without the assistance of pilots from three directions. New Harbour is the name of the channel which lies between the southern projection of the main island and the small island of Blakan Mati, and is divided by the still smaller island of Ayer Brazi. It is there that the Peninsular and Oriental Steam Navigation Company and the Messageries Maritimes have their docks and depôts. At Tanjong Pagar there are two graving docks,—Victoria Dock having a length of 450 feet, a breadth of 65 feet, and a sill-depth at spring-tides of 20 feet, and the corresponding figures for Albert Dock being 470 feet, 60 feet, and 21 feet. The two New Harbour Docks are respectively 415 and 459 feet long, and 42 and 62 feet broad, and have sill-depths of 14-15½ and 19-20 feet. At Pulo Brani, Bon Accord Dock has a length of 330 feet, a breadth of 50, and a sill-depth of 17. A large admiralty dock for the use of ships of the British navy is being constructed. Opposite Singapore proper the sea shallows to a few fathoms. The tides (tables of which were first published in 1884) are as yet imperfectly registered, but in general they consist of a principal high-water and low-water succeeded by a secondary high water and low water of the most limited range.

The commercial movement of the port has rapidly attained vast dimensions. While in 1851-52 the total exports and imports amounted to £5,739,556, they reached £10,371,300 in 1859-60, £18,292,180 in 1870, £23,050,943 in 1880, and £25,931,930 in 1883. There is no railway in the island; but in 1886 a steam tramway was opened from Tanjong Pagar to Elgin Bridge. Till quite recently the town was practically without defences; but since 1885 the colony has constructed a series of batteries at Serapong, Blakan Mati, Mount Palmer, &c., at a cost of £75,000, and the home Government has expended £90,000 on the ordnance.

The name Singapore or Sinhapura, i.e., Lion City, was originally given to a town founded by Hinduized Malay or Javanese settlers from Sumatra at an early date in the Christian era. The commercial importance of the place in the 14th century is attested by Barros, but the Sanskrit origin of the name had by his time been forgotten, and he was taught to derive it from Malay words. Not long afterwards the town must have fallen into decay, and at the beginning of the present century the only trace of its existence was certain rock-inscriptions in a very old character, and the whole island had not more than 150 inhabitants. Alexander Scott recognized the excellent position of the island in the 18th century, and Sir Stamford Raffles, whose attention was called to it by Captains Ross and Crawford of the Bombay marine, fixed on it as the site of the great commercial emporium which he determined to found for the encouragement of British trade in the East. In 1819 permission was obtained to build a British factory on the south coast; and in 1824 the island was purchased from the sultan of Johor for 60,000 Spanish dollars (£13,500) and a life annuity of 24,000 dollars (£5400). The city became the capital of the Straits Settlements instead of Prince of Wales Island in 1832.

See Belcher, *Voyage of the Samarang*; Collingwood's *Naturalist's Rambles in the Chinese Seas*; *The Directory of the Straits Settlements for 1886*; the *Journal of the Straits Branch of the Royal Asiatic Society*, published at Singapore; and other works quoted under the heading STRAITS SETTLEMENTS.

SINGBHUM, a British district in the lieutenant-governorship of Bengal, lying between 21° 59' and 22° 53' N. lat. and between 85° 2' and 86° 56' E. long. It has an area of 3753 square miles, and is bounded on the N. by the districts of Lohárdagá and Mánbhúm, on the E. by Midnapur, on the S. by the tributary states of Orissa, and on the W. by Lohárdagá and the tributary states of Chutiá Nágpur. Its central portion consists of a long undulating tract of country, running east and west, and enclosed by great hill ranges. The depressions lying between the successive ridges comprise the most fertile part, which varies in elevation above sea-level from 400 feet near the Subarnarekhá on the east to 750 feet around the station of Cháibásá. South of this an elevated plateau of 700 square miles rises to upwards of 1000 feet. In the west of the district is an extensive mountainous tract, sparsely inhabited by the wildest of the Kols; while in the extreme south-west corner is a still grander mass of mountains, known as "Saranda of the seven hundred hills," rising to a height of 3500 feet. From the Layadá range on the north-west of Singbhúm many rocky spurs strike out into the district, the more prominent of them attaining an elevation of 2900 feet. Among other ranges and peaks are the Chaitanpur range, reaching an elevation of 2529 feet, and the Kápargádi range, a conspicuous ridge rising abruptly from the plain and running in a south-easterly direction until it culminates in Tuiligár Hill (2492 feet). The principal rivers are the Subarnarekhá, which with its affluents flows through the eastern portion of the district; the Koel, which rises west of Ranchi, and drains the Saranda region; and the Baitarani, which touches the southern border for 8 miles. About two-thirds of Singbhúm district is covered with primeval forest, containing some valuable timber trees; in the forests tigers, leopards, bears, buffaloes, and several kinds of deer abound, and small herds of elephants occasionally wander from the Meghásani Hills in Morbhanj. The climate is dry, and the hot season is extremely trying, the thermometer frequently registering 106° F. in the shade; the average annual rainfall is about 57 inches.

The census of 1881 disclosed a population of 453,775 (226,681 males and 227,094 females); Hindus numbered 447,810, Mohammedans 2329, and Christians 2988. The only town containing a

population of more than 5000 is Cháibásá, the civil station and administrative headquarters of the district, with 6006 inhabitants. The staple crop of Singbhúm is rice, and the other chief crops are wheat, Indian corn, peas, gram, mustard, sugar-cane, cotton, and tobacco. The principal manufactures are coarse cotton cloths, brass and earthenware cooking utensils, and soapstone platters. Cereals, pulses, oil-seeds, stick-lac, and iron comprise the chief exports; and the imports include salt, cocten thread, English cloth goods, tobacco, and brass utensils.

Colonel Dalton, in his *Ethnology of Bengal*, says that the Singbhúm Rajput chiefs have been known to the British Government since 1803, when the marquis of Wellesley was governor-general of India; but there does not appear to have been any intercourse between British officials and the people of the Kolhán previous to 1819. The Hos or Larka Kols, the characteristic aboriginal race of Singbhúm district, would allow no stranger to settle in, or even pass through, the Kolhán; they were, however, subjugated in 1836, when the head-men entered into engagements to bear true allegiance to the British Government. The country remained tranquil and prosperous until 1857, when a rebellion took place among the Kols under Parahat Rájá. After a tedious campaign they surrendered in 1859, and the capture of the raja put a stop to their disturbances.

SINGING. See VOICE.

SINHALESE. See CEYLON.

SINIGAGLIA, or SENIGALLIA (the official form), a city of Italy, in the province of Ancona, in 43° 43' 16" N. lat., on the coast of the Adriatic, 17 miles by rail north of Ancona. It is well built, with broad and well-paved streets, and has the general appearance of a thriving commercial town. A modern cathedral, erected subsequent to 1787, a large Jewish synagogue, a theatre, the communal buildings, and the old palace of the dukes of Urbino are the more notable buildings. The communal library was founded by Cardinal Nicola Antonelli in 1767; and the principal hospital and one of the orphanages date from 1534. The port is formed by the lower reaches of the Misa, a small stream which flows through the town between solid embankments constructed of Istrian marble. Between July 20 and August 8 Sinigaglia annually holds one of the largest fairs in Italy, which dates originally from 1200, when Sergius, count of Sinigaglia, received from the count of Marseilles, to whose daughter he was affianced, certain relics of Mary Magdalene. The fair has diminished in importance since the opening of the railway, but formerly it used to be visited by merchants from France, Switzerland, Austria, Germany, and especially the Levant. The population, exclusive of the suburbs, was 10,501 in 1861 and 6634 (commune 22,499) in 1881.

Sinigaglia is the ancient *Sena* (Σήνη) or (to distinguish it from Sena Julia, i.e., Siena) *Sena Gallica*, a town of the Galli Senones (Σήνωνες), whose name appears as Senogallia as early as Pliny. Sena was made a Roman colony immediately after the conquest of the Senones in 289 B.C. It was the rendezvous of the consuls Lavius and Nero before the battle of the Metaurus, also known as the battle of Sena, in which Hasdrubal was defeated (207 B.C.). The sack of the town by Pompey, Sulla's lieutenant, in 82 B.C., is the only other notable fact in its ancient annals. Ravaged by Alaric, fortified by the exarch Longinus, and again laid waste by the Lombards in the 8th century and by the Saracens in the 9th, Sinigaglia was at length brought so low by the Gulf and Ghibelline wars, and especially by the severities of Guido de Montefeltro, that it was chosen by Dante as the typical instance of a ruined city. In the 15th century it was captured and recaptured again and again by the Malatesta and their opponents. Sigismond Malatesta of Rimini erected strong fortifications round the town in 1450-1455. The lordship of Sinigaglia was bestowed by Pius II. on his nephew Antonio Piccolomini, but the people of the town in 1464 placed themselves anew under Paul II., and Giacomo Piccolomini in 1472 failed in his attempt to seize the place. Sixtus VI. assigned the lordship to the Della Rovere family, from whom it was transferred to Lorenzo di Medici in 1516. After 1624 it formed part of the legation of Urbino.

SINKING FUND. See NATIONAL DEBT, vol. xvii. p. 245.

SINOPE, or in Turkish SİNOB, a town and seaport on the north coast of Asia Minor, on the isthmus and peninsula of Boztepeh, which forms part of the most northerly projection of the Anatolian seaboard. Though

it possesses the finest natural harbour save one in the Black Sea, defective communication with the interior, and the consequent rivalry of Ineboli (since about 1848), have prevented Sinope taking its natural position as a great commercial centre. But between 1882 and 1885 roads have been constructed which give direct access southward to Cæsarea and even to Tarsus, near the south coast. The town still bears the stamp of its former importance. On the isthmus stands a huge but for the most part ruined castle, originally Byzantine and afterwards strengthened by the Seljuk sultans; and the old town is surrounded by Byzantine walls. Of early Roman or Greek antiquities there is little trace; but the ancient local coinage furnishes a very beautiful and interesting series of types (see M. J. P. Six's paper in *The Numismatic Chronicle*, 1885). The population has not greatly changed since 1868, when it was found to be 9668 inhabitants, of whom 7299 were Mohammedans and 2369 Greeks and others.

Sinope (Σινώπη), whose origin was mythically assigned by its own ancient inhabitants to Autolycus, a companion of Hercules, was colonized by the Milesians, and ultimately became the most flourishing Greek settlement on the coast of the Euxine. In the 5th century B.C. it received a colony of Athenians; and by the 4th it had extended its authority over a considerable tract of country and become itself the mother of several colonies—Cerasus (Kerasün), Trapezus (Trebizond), Cotyora, &c. Its fleet was practically dominant in the Euxine, except towards the west, where it shared the field with Byzantium. When in 220 B.C. Sinope was for the first time attacked by the king of Pontus, the assistance of the Rhodians enabled it to maintain its independence. But where Mithradates IV. failed Pharnaces succeeded; and the city, taken by surprise in 183 B.C., became the capital of the Pontian monarchy. Under Mithradates the Great, who was born in Sinope, it had just been raised to the highest degree of prosperity, with fine buildings, naval arsenals, and well-built harbours, when the Romans under Lucullus and Pompey effected the subjugation of Pontus. In 64 B.C. the body of the murdered Mithradates was brought home to the royal mausoleum. Under Julius Cæsar the city received a Roman colony. In the Middle Ages it became subject to Trebizond, and in 1470 it passed into the hands of the Turks. In November 1853 the Russian vice-admiral Nakhimoff destroyed here a division of the Turkish fleet and reduced a good part of the town to ashes.

SIOUX CITY, a city of the United States, the capital of Woodbury county, Iowa, lies 156 miles north-west of Des Moines, on the sloping banks of the Missouri river. It is a great railway centre (Chicago, Milwaukee, and St Paul Railway, Sioux City and Pacific Railway, &c.), has an extensive trade, and contains an opera house, foundry and machine shops, pork-packing factories, and mills. The population of the city (which was laid out in 1854 and incorporated in 1857) was 3401 in 1870 and 7366 in 1880 (township 7845).

SIPHANTO, SIPHENO, or SIPHNO (ancient Greek Σίφνος), an island of the Greek Archipelago, in the nomarchy of the Cyclades, 30 miles south-west of Syra. It has an area of 28 square miles, and the population in 1879 was 5762. A ridge of limestone hills—whose principal summits, Mount Elias and St Simeon, are crowned by old Byzantine churches—runs through the island; for about 2 miles along the western slope stretches a series of villages, each white-washed house with its own garden and orchard. Apollonia, one of the five (so called because built on the site of a temple to Apollo), is the modern capital; formerly this rank belonged to Kastro (also called Seraglio), an "old-world Italian town" with mediæval castle and fortifications, and an old town-hall bearing date 1365. Inscriptions found on the spot show that Kastro stands on the site of the ancient city of Siphnos; and Mr Bent identifies the other ancient town of Minoa (see Stephanos) with the place on the coast where a Hellenic white marble tower is distinguished as the Pharos or lighthouse and another as the tower of St John. Churches and convents of Byzantine architecture are

scattered about the island. One building of this class is especially interesting—the school of the Holy Tomb or school of Siphnos, founded by Greek refugees from Byzantium at the time of the iconoclastic persecutions, and afterwards a great centre of intellectual culture for the Hellenic world. The endowments of the school are now made over to the gymnasium of Syra. In ancient times Siphnos was famous for its gold and silver mines, the site of which is still easily recognized by the excavations and refuse-heaps. A French company has started mining operations at Kamara. As in antiquity so now the potters the island are known throughout the Archipelago.

The wealth of the ancient Siphniotes was shown by their treasury at Delphi, where they deposited the tenth of their gold and silver; but, says the legend, they once sent Apollo a gilded and not a golden bull, and he in his anger flooded their mines. That the mines were invaded by the sea is still evident; and by Strabo's time the inhabitants of the island were noted for their poverty. During the Venetian period it was ruled first by the Da Corogna family and after 1456 by the Gazzadini, who were expelled by the Turks in 1617.

SIPHON, or SYPHON, an instrument usually in the form of a bent tube for conveying liquid over the edge of a vessel and delivering it at a lower level, or in a position of less hydrostatic pressure. The principle on which it acts (see HYDROMECHANICS) may be understood from the accompanying diagram. ABC is a tube filled with liquid, the shorter limb dipping under the surface of the liquid in jar *a*, the longer in jar *b*. The pressure in the tube at A is atmospheric pressure minus that of the vertical column AB', while that at C is atmospheric pressure minus that of the column CB'. When CB' is longer than AB' the pressure at C is of course less than that at A, and a current flows in the direction ABC through the siphon. When AB' = B'C, that is, when the liquid stands at the same level, pressure is equal in the two limbs, and the current ceases. The siphon has practically a certain minimum diameter for each liquid, as capillarity prevents a fluid from flowing out of tubes of very small bore unless under the influence of electricity, heat, or great pressure. The instrument is largely employed for chemical work, both in the laboratory and in manufacturing processes; it is formed of glass, india-rubber, lead, or other substance, according to the purpose for which it is intended. The simple siphon (see fig.) is used by filling it with the liquid to be decanted, closing the longer limb with the finger and plunging the shorter into the liquid, and it must be filled for each time of using. Innumerable forms have been devised adapted for all purposes, and provided with arrangements for filling the tube, or for keeping it full and starting it into action automatically when required. The former purpose is usually effected by blowing into the vessel through a second opening in the stopper through which the siphon passes, or by means of a sucking or blowing tube attached to the longer limb, or by pouring in liquid through a flexible tube attached at the bend. The second plan is frequently realized by having a stopcock on the longer limb and a valve opening upwards on the shorter, or by having both limbs of equal length and each standing in a cup, in which case when the level changes in either cup the siphon tends to equalize it by conveying liquid from the higher to the lower. Many other forms are in constant use in the arts, and the siphon is also employed in some of its modifications in surgery, in engineering, and in other sciences.

SIRACHIDES. See JESUS, THE SON OF STRACH.

SIRAJGANJ, a town in the district of Pabna, Bengal,

