

this time therefore Samos became a mere dependency of Athens, and continued in this subordinate condition throughout the Peloponnesian War; but after the victory of the Spartans at Ægospotami, the city was besieged and taken by Lysander (404), and as usual an oligarchy was set up under Spartan control. Other revolutions, however, quickly followed. The victory of Conon at Cnidus in 394 restored the democracy, but the peace of Antalcidas shortly afterwards (387) placed the island under the government of a Persian satrap, and thus exposed it to the attacks of the Athenians, who sent an expedition against it under Timotheus, one of their ablest generals, who after a siege of eleven months reduced the whole island and took the capital city. A large part of the inhabitants were expelled, and their place supplied by Athenian emigrants (366).

From this time we hear but little of Samos. It passed without resistance under the yoke of Alexander the Great, and retained a position of nominal autonomy under his successors, though practically dependent, sometimes on the kings of Egypt, sometimes on those of Syria. After the defeat of Antiochus the Great at the battle of Magnesia (190), it passed with the rest of Ionia to the kings of Pergamum, but, having in an evil hour espoused the cause of the pretender Aristonicus, it was deprived of its freedom, and was united with the Roman province of Asia (129). Henceforth it of course held only a subordinate position, but it seems to have always continued to be a flourishing and opulent city. We find it selected by Antony as the headquarters of his fleet, and the place where he spent his last winter with Cleopatra, and a few years later it became the winter quarters of Augustus (21–20), who in return restored its nominal freedom. Its autonomy, however, as in many other cases under the Roman empire, was of a very fluctuating and uncertain character, and after 70 A.D. it lapsed into the ordinary condition of a Roman provincial town. Its coins, however, attest its continued importance during more than two centuries, and it was even able to contest with Smyrna and Ephesus the proud title of the "first city of Ionia." It still figures prominently in the description of the Byzantine empire by Constantine Porphyrogenitus, but little is known of it during the Middle Ages.

During the Greek War of Independence Samos bore a conspicuous part, and it was in the strait between the island and Mount Mycale that Canaris achieved one of his most celebrated exploits by setting fire to and blowing up a Turkish frigate, in the presence of the army that had been assembled for the invasion of the island, a success that led to the abandonment of the enterprise, and Samos held its own to the very end of the war. On the conclusion of peace the island was indeed again handed over to the Turks, but since 1835 has held an exceptionally advantageous position, being in fact self-governed, though tributary to the Turkish empire, and ruled by a Greek governor nominated by the Porte, who bears the title of "Prince of Samos," but is supported and controlled by a Greek council and assembly. The prosperity of the island bears witness to the wisdom of this arrangement. It now contains a population of above 40,000 inhabitants, and its trade has rapidly increased. Its principal article of export is its wine, which was celebrated in ancient times, and still enjoys a high reputation in the Levant. It exports also silk, oil, raisins, and other dried fruits.

The ancient capital, which bore the name of the island, was situated on the south coast, directly opposite to the promontory of Mycale, the town itself adjoining the sea and having a large artificial port, the remains of which are still visible, as are the ancient walls that surrounded the summit of a hill which rises immediately above it, and now bears the name of Astypalæa. This formed the acropolis of the ancient city, which in its flourishing times occupied a wide extent, covering the slopes of Mount Ampelus down to the shore. From thence a road led direct to the far-famed temple of Hera (Juno), which was situated close to the shore, where its site is still marked by a single column, but even that bereft of its capital. This miserable fragment, which has given to the neighbouring headland the name of Capo Colonna, is all that remains of the temple that was extolled by Herodotus as the largest he had ever seen, and which vied in splendour as well as in celebrity with that of Diana at Ephesus. But, like the Ephesian Artemis, the goddess worshipped at Samos was really a very different divinity from the one that presided over Argos and other

purely Greek cities, and was unquestionably in the first instance a native Asiatic deity, who was identified, on what grounds we know not, with the Hera of the Olympic mythology. Her image as we learn from coins, much resembled that of the Ephesian goddess, and was equally remote from any Greek conception of the beautiful and stately Hera. Though so little of the temple remains, the plan of it has been ascertained, and its dimensions found fully to verify the assertion of Herodotus, as compared with all other Greek temples existing in his time, though it was afterwards surpassed by the later temple at Ephesus.

The modern capital of the island was, until a recent period, at a place called Khora, about two miles from the sea, and the same distance from the site of the ancient city; but since the change in the political condition of Samos the capital has been transferred to Vathy, situated at the head of a deep bay on the north coast, which has become the residence of the prince and the seat of government. Here a new town has grown up, well built and paved, with a convenient harbour, and already numbers a population of 6000.

Samos was celebrated in ancient times as the birth-place of Pythagoras, who, however, spent the greater part of his life at a distance from his native country. His name and figure are found on coins of the city of imperial date. It was also conspicuous in the history of art, having produced in early times a school of sculptors, commencing with Rhæcus and Theodoros, who are said to have invented the art of casting statues in bronze, and to have introduced many other technical improvements. The architect Rhæcus also, who built the temple of Hera, was a native of the island. At a later period Samos was noted for the manufacture of a particular kind of red earthenware, so much valued by the Romans for domestic purposes that specimens of it generally occur wherever there are remains of Roman settlements.

All the particulars that are recorded concerning Samos in ancient times are collected by Panofka (*Res Samiorum*, Berlin, 1822). A full description of the island, as it existed in his time, will be found in Tournefort (*Voyage du Levant*, 4to, Paris, 1717), and more recent accounts in the works of Ross (*Reisen auf den Griechischen Inseln*, vol. II., Stuttgart, 1813) and Guérin (*Palmas et Samos*, Paris, 1856).

SAMOTHRACE was the ancient name of an island in the northern part of the Ægean Sea, nearly opposite to the mouth of the Hebrus, and lying north of Imbros and north-east of Lemnos. It is still called Samothraki, and though of small extent is, next to Mount Athos, by far the most important natural feature in this part of the Ægean, from its great elevation—the group of mountains which occupies almost the whole island rising to the height of 5240 feet. The highest summit, named by Pliny Sacoce, is estimated by him at an elevation of 10 Roman miles. Its conspicuous character is attested by a well-known passage in the *Iliad* (xiii. 12), where the poet represents Poseidon as taking post on this lofty summit to survey from thence the plain of Troy and the contest between the Greeks and the Trojans. This mountainous character and the absence of any tolerable harbour—Pliny, in enumerating the islands of the Ægean, calls it "importuosissima omnium"—prevented it from ever attaining to any political importance, but it enjoyed great celebrity from its connexion with the worship of the CABIRI (*q.v.*), a mysterious triad of divinities, concerning whom very little is really known, but who appear, like all the similar deities venerated in different parts of Greece, to have been a remnant of a previously existing Pelasgic mythology, wholly distinct from that of the Greeks. Herodotus expressly tells us that the "orgies" which were celebrated at Samothrace were derived from the Pelasgians (ii. 51). These mysteries, and the other sacred rites connected therewith, appear to have attracted a large number of visitors, and thus imparted to the island a degree of importance which it would not otherwise have attained. The only occasion on which its name is mentioned in history is during the expedition of Xerxes (B.C. 480), when the Samothracians sent a contingent to the Persian fleet, one ship of which bore a conspicuous part in the battle of Salamis (Herod., viii. 90). But the island appears to have always enjoyed the advantage of autonomy, probably on account of its sacred character, and even in the time of Pliny it ranked as a free state. Such was still the reputation of its mysteries that Germanicus endeavoured to visit the island, but was driven off by adverse winds (*Tac., Ann., ii. 54*).

No modern traveller appears to have visited Samothrace till the year 1858, when it was fully explored by Conze, who published an account of it, as well as the larger neighbouring islands, in 1860. The ancient city, of which the ruins are called Paleopolis, was situated on the north side of the island close to the sea; its site is clearly marked, and considerable remains still exist of the ancient walls, which were built in massive Cyclopean style, but no vestiges are found of temples or other public buildings. The modern village is on the hill above. The island is at the present day very poor and thinly peopled, and has scarcely any trade; but a considerable sponge fishery is carried on around its coasts by traders from Smyrna (Conze, *Reise auf den Inseln des Thrakischen Meeres*, Hanover, 1860).

The similarity of name naturally led to the supposition that Samothrace was peopled by a colony from Samos in Ionia, and this is stated as an historical fact by some Greek writers, but is rejected by Strabo, who considers that in both cases the name was derived from the physical conformation of the islands, Samos being an old word for any lofty height (Strabo, x. 2, p. 457). The same characteristic is found in Cephallenia, which was also called Samos in the time of Homer.

SAMOYEDES, a Ural-Altai stock, scattered in small groups over an immense area, from the Altai Mountains down the basins of the Obi and Yenisei, and along the shores of the Arctic Ocean from the mouth of the latter river to the White Sea. They may be subdivided into two main groups. (A) Those inhabiting the southern parts of the governments of Tomsk and Yeniseisk have been so much under Tartar influence as to be with difficulty separated from the Tartars; their sub-groups are the Kamasin Tartars, the Kaibals, the Motors, the Beltirs, the Karagasses, and the Samoyedes of the middle Obi. (B) Those inhabiting the subarctic region form three separate sub-groups:—(a) the Yuraks in the coast-region from the Yenisei to the White Sea; (b) the Tavghli Samoyedes, between the Yenisei and the Khatanga; (c) the Ostiak Samoyedes, intermingled with Ostiaks, to the south of the others, in the forest regions of Tobolsk and Yeniseisk. Their whole number may be estimated at from 20,000 to 25,000.

The proper place of the Samoyedes among the Ural-Altaians is very difficult to determine. As to their present name, signifying in its present Russian spelling "self-eaters," many ingenious theories have been advanced, but the current one, proposed by Schrenk, who derived the name "Samo-yedes" from "Syroyadtsy," or "raw-eaters," leaves much to be desired. Perhaps the etymology ought to be sought in quite another direction, namely, in the likeness to Suomi. The names assumed by the Samoyedes themselves are Hazovo and Nyányáz. The Ostiaks know them under the names of Orghoy, or Workho, both of which recall the Ugrians; the name of Hui is also in use among the Ostiaks, and that of Yaron among the Zyrians.

The language now spoken by the Samoyedes is, like the Finnish languages, agglutinative, but in both lexicon and grammar it differs so widely from these that Prof. Ahlqvist does not regard the similarity as greater than, for instance, that between Swedish and Persian. Much remains to be done for the study of Samoyedic, but it may be regarded as the most remote cousin of the Ugrian. It is a sonorous speech, pleasant to the ear. No fewer than three separate dialects and a dozen sub-dialects are known in it.

The conclusions deducible from their anthropological features—apart from the general difficulty of arriving at safe conclusions on this ground alone, on account of the variability of the ethnological type under various conditions of life—are also rather indefinite. The Samoyedes are recognized as having the face more flattened than undoubtedly Finnish stocks; their eyes are narrower, their complexion and hair darker. Zuyeff describes them as like the Tunguses, with flattened nose, thick lips, little beard, and black, hard hair. At first sight they may be mistaken for Ostiaks, especially on the Obi; but they are undoubtedly different. Castrén considers them as a mixture of Ugrians with Mongolians, and M. Zograf as brachycephalic Mongolians. Quatrefages classes them, together with the Voguls, as two families of the Ugrian sub-branch, this last, together with the Sabmis (Laponians), forming part of the Ugrian or Boreal branch of the yellow or Mongolic race.

It is certain that formerly the Samoyedes occupied the Altai Mountains, whence they were driven northwards by Turco-Tartars—probably at the time of the rise of the empire of the Huns, that is, before the present era. Their further and later migration towards the north may be said to be going on still. Thus, the Kaibals left the Sayan Mountains and took possession of the Abakan steppe (Minusinsk region), abandoned by the Kirghizes,

in the earlier years of last century, and in north-eastern Russia the Zyrians are still driving the Samoyedes farther north, towards the Arctic coast. Since the researches of Schrenk it may be considered as settled that in historical times the Samoyedes were inhabitants of the so-called Ugria in the Northern Urals, while it would result from M. Radloff's extensive researches that the numberless graves containing remains of the Bronze Period which are scattered throughout West Siberia, on the Altai, and on the Yenisei in the Minusinsk region, are relics of a nation which he considers as Ugro-Samoyedes. This nation, very numerous at that epoch,—which preceded the Iron-Period civilization of the Turco-Tartars,—were pretty well acquainted with mining; the remains of their mines, sometimes 50 feet deep, and of the furnaces where they melted copper, tin, and gold, are very numerous; their weapons of a hard bronze, their pots (one of which weighs 75 lb), and their melted and polished bronze and golden decorations testify to a high development of artistic feeling and industrial skill, strangely contrasting with the low level reached by their earthenware. They were not nomads, but husbandmen, and their irrigation canals are still to be seen. They kept horses (though in small numbers), sheep, and goats, but no traces of their rearing horned cattle have yet been found. The Turkish invasion of southern Siberia by the Tulus, Khagases, and Ugurs, which took place in the 5th century, drove them farther north and probably reduced most of them to slavery,—these slaves seeming to have taught mining to their masters.

At present they are disappearing, and have almost entirely lost their earlier civilization. M. Polyakoff quite rightly observes that the Samoyedes, who now maintain themselves by hunting and fishing on the lower Obi, partly mixed in the south with Ostiaks, recall the condition of the inhabitants of France and Germany at the epoch of the reindeer. Clothed in skins, like the troglodytes of the Weser, they make use of the same implements in bone and stone, eat carnivorous animals—the wolf included—and cherish the same superstitions (of which those regarding the teeth of the bear are perhaps the most characteristic) as were current among the Stone-Period inhabitants of western Europe. Their heaps of reindeer horns and skulls—memorials of religious ceremonies—are exactly similar to those dating from the similar period of civilization in northern Germany. Their huts often resemble the well-known stone huts of the Esquimaux; their graves are mere boxes left in the tundra. The religion is fetichism mixed with Shamanism, the shaman (*ladji-bet*) being a representative of the great divinity, the Num. The Yalmal peninsula, where they find so great facilities for hunting, is especially venerated by the Obi Ostiak Samoyedes, and there they have one of their chief idols, Khese. They are more independent than the Ostiaks, less yielding in character, although as hospitable as their neighbours. Reduced almost to slavery by Russian merchants, and brought to the extreme of misery by the use of ardent spirits, they are disappearing rapidly, small-pox completing the work of destruction. They still maintain the high standard of honesty mentioned by historical documents; and, while the Russians plunder even the stores of their shamans, the Samoyedes never will take anything left in the tundra or about the houses by their "civilized" neighbours. The Yurak Samoyedes are courageous and warlike; they offered armed resistance to the Russian invaders, and it is only since the beginning of the century that they have paid tribute. The exact number of the Ostiak Samoyedes is not known; the Tavghli Samoyedes may number about 1000, and the Yuraks, mixed with the former, are estimated at 6000 in Obdorsk (about 150 settled), 5000 in European Russia in the tundras of the Mezen, and about 350 in Yeniseisk.

Of the southern Samoyedes, who are completely Tartarized, the Beltirs (3070 in 1859) live by agriculture and cattle-breeding in the Abakan steppe. They profess Christianity, and speak a language closely resembling that of the Sagai Tartars. The Kaibals, or Koibals, can hardly be distinguished from the Minusinsk Tartars, and support themselves by rearing cattle. Castrén considers that three of their stems are of Ostiak origin, the remainder being Samoyedic. The Kamasins, in the Kansk district of Yeniseisk, are either herdsmen or agriculturists. They speak the Samoyede language, with an admixture of Tartar words, and some of their stems contain a large Tartar element. The very interesting nomadic tribe of Karagasses, in the Sayan Mountains, is quite disappearing; the few representatives of this formerly much more numerous stem are rapidly losing their anthropological features, their Turkish language, and their distinctive dress. The Motors are now little more than a memory. One portion of the tribe emigrated to China and was there exterminated; the remainder have disappeared among the Tuba Tartars and the Soyotes. The Samoyedes on the Obi in Tomsk may number about 7000; they have adopted the Russian manner of life, but have difficulty in carrying on agriculture, and are a poverty-stricken population with little prospect of holding their own.

SAMPIERDARENA (population in 1881, 19,501). See GENOA, vol. x. p. 157.

SAMSON (Hebrew, *Shimshôn*), the great enemy of the Philistines, is reckoned as one of the judges of Israel in two editorial notes which belong to the chronological scheme of the book of Judges (xv. 20, xvi. 31); but his story itself, which is a self-contained narrative by a single hand (Jud. xiii. 2-16, 31a), represents him not as a judge but as a popular hero of vast strength and sarcastic humour, who has indeed been consecrated from his birth as the deliverer of Israel, and is not unaware of his vocation, but who yet is inspired by no serious religious or patriotic purpose, and becomes the enemy of the Philistines only from personal motives of revenge, the one passion which is stronger in him than the love of women. In his life, and still more in his death, he inflicts great injury on the oppressors of Israel, but he is never the head of a national uprising against them, nor do the Israelites receive any real deliverance at his hands. The story of his exploits is plainly taken from the mouths of the people, and one is tempted to conjecture that originally his Nazarite vow was conceived simply as a vow of revenge, which is the meaning it would have in an Arab story. Our narrator, however, conceives his life as a sort of prelude to the work of Saul (xiii. 5), and brings out its religious and national significance in this respect in the opening scene (ch. xiii.), which is closely parallel to the story of Gideon, and in the tragic close (ch. xvi.); while yet the character of Samson, who generally is quite forgetful of his mission, remains much as it had been shaped in rude popular tale in a circle which, like Samson himself, was but dimly conscious of the national and religious vocation of Israel.

The name of Samson (*Shamshôn*, of which the Massoretic *Shimshôn* is a more modern pronunciation, and later than the LXX., who write *Σαμφών*) means "solar," but neither the name nor the story lends any solid support to Steinthal's fantastic idea that the hero is a solar myth (compare Wellhausen-Bleek, p. 196). He is a member of an undoubtedly historical family of those Danites who had their standing camp near Zorah, not far from the Philistine border, before they moved north and seized Laish (compare xiii. 25 with xviii. 8, 11, 12). The family of Manoah had an hereditary sepulchre at Zorah, where Samson was said to lie (xvi. 31), and their name continued to be associated with Zorah even after the exile, when it appears that the Manahethites of Zorah were reckoned as Calibbites. The name had remained though the race changed (1 Chron. ii. 52, 54). One of Samson's chief exploits is associated with a rock called from its shape "the Ass's Jawbone," from which sprung a fountain called En-hakkore, "the spring of the partridge," and these names have influenced the form in which the exploit is told. The narrative of Samson's marriage and riddle is of peculiar interest as a record of manners; specially noteworthy is the custom of the wife remaining with her parents after marriage (cf. Gen. ii. 24).

SAMUEL (שמואל, *Shēmūel*),¹ a seer and "judge" of Israel in the time of the Philistine oppression. His history, as told in the first book of Samuel (compare Psalm xcix. 5; Eccles. xlvi. 13 sq.), is too familiar to call for repetition here, and a critical estimate of his place in Hebrew history has been given in ISRAEL, vol. xiii. p. 403. There remain, however, one or two points of detail which may be noticed here. His birthplace was Ramah, or, as it is called in the Hebrew text of 1 Sam. i. 1, Ha-Ramathaim (Ramathem, 1 Macc. xi. 34; Arimathæa, Mat. xxvii. 57); the identity

¹ This is one of an obscure class of proper names (שמואל, שמואל, &c.), the analogy of which seems to exclude the idea that it is softened from שמואל, "heard of God." It seems rather to mean "name of El," i.e., "manifestation of God's power or will." Compare the title Shem Baal, "name of Baal," given to Astarte on the epitaph of Eshmunazar.

of the two names is supported by the Septuagint, which has Arimathaim for Ramah in several passages. Ramah, which appears in 1 Kings xv. 17 as a stronghold on the frontier of the kingdoms of Ephraim and Judah, is probably identical with the modern El-Râm, about 5 miles north of Jerusalem, on a hill on the east side of the main road to Shechem and the north. Ramah was also the place where Samuel usually resided in his later days, and from which he made a yearly circuit through a very limited district in the immediate neighbourhood, "judging Israel" (1 Sam. vii. 16). None of the cities which he visited is more than a few miles from Ramah. Ramah, according to 1 Sam. i. 1 (where the text is to be corrected by the Septuagint), was a town in the district of Zuph, belonging to the tribe of Ephraim (comp. 1 Sam. ix. 5 and 1 Sam. x. 2, where the grave of Rachel lies on the frontier between Ephraim and Benjamin; a different localization is given in Gen. xxxv. 19, 20, unless the identification of Bethlehem and Ephrath there is a later gloss).

The original text of 1 Sam. i. 1 does not seem to say explicitly that Samuel's father was an Ephrathite (i.e., of the tribe of Ephraim), though his city was Ephrathite; and 1 Chron. vi. 28, 33 [vi. 13, 18] makes him a Levite, apparently because a post-exile family of singers traced their stock from him. The old accounts certainly represent Samuel even as a child as doing priestly service at Shiloh, girt with the ephod and wearing the priestly robe (*mē'ûl*, E. V. "coat," 1 Sam. ii. 18 sq.), but at that early date priesthood was by no means confined to Levites, and the story certainly implies that it was not by birth but only by his mother's vow that he was dedicated to the service of the sanctuary. On Samuel's relation to the prophets, see vol. xix. p. 815. Compare also SAMUEL, BOOKS OF.

SAMUEL, BOOKS OF. The Hebrew Book of Samuel, like the Hebrew Book of Kings, is in modern Bibles divided into two books, after the Septuagint and Vulgate, whose four books of "kingdoms" answer to the Hebrew books of Samuel and Kings. The connexion between the books of Samuel and Kings has been spoken of in the article **KINGS** (q.v.). These two books, together with Judges, are made up of a series of extracts and abstracts from various sources worked over from time to time by successive editors, and freely handled by copyists down to a comparatively late date, as the variations between the Hebrew text and the Septuagint show. The main redaction of Judges and Kings has plainly been made under the influence of the ideas of the book of Deuteronomy, and it was in connexion with this redaction that the history from the accession of Solomon onwards was marked off as a separate book (see **KINGS**). In Samuel the Deuteronomistic hand is much less prominent, but in 1 Sam. vii. 2-4, and in the speech of Samuel, ch. xii., its characteristic pragmatism is clearly recognizable; the nature of the old narrative did not invite frequent insertions of this kind throughout the story. So, too, the chronological system which runs through Judges and Kings is not completely carried out in Samuel, though its influence can be traced (1 Sam. iv. 18, vii. 2, xiii. 1 sq., xxvii. 7, 2 Sam. ii. 10 sq., v. 4 sq.). In 1 Sam. xiii. 1, in the note "Saul was — years old when he became king and reigned [two] years over Israel" (lacking in LXX.), one of the numbers has been left blank and the other has been falsely filled up by a mere error of the text; the similar note in 2 Sam. ii. 10 seems also to have been filled up at random; it contradicts and disturbs the context. But, though the book of Samuel has been much less systematically edited than Kings, unsystematic additions to and modifications of the oldest narratives were made from time to time on a very considerable scale, and

in this book, as in Judges, we not seldom find two accounts of the same events which not only differ in detail but plainly are of very different date.

The book as a whole may be divided into three main sections:—(1) *Samuel and Saul*, 1 Sam. i.-xiv.; (2) *The rise and kingdom of David*, 1 Sam. xv.-2 Sam. viii.; (3) *The personal history of David's court at Jerusalem* (mainly from a single source, which also includes 1 Kings i., ii.), 2 Sam. ix.-xx. Finally, the appendix, 2 Sam. xxi.-xxiv., must have been added after the book of Kings had been separated from the context to which 1 Kings i., ii. originally belonged. As the greater part of the book of Samuel is occupied with the history of David, which has been discussed at length in his article, and with that of Samuel and Saul, the chief points of which have been critically examined in the article ISRAEL, a very brief resumé of the contents of each of the main sections must here suffice.

I. The story of Samuel's birth, consecration to the service of the sanctuary at Shiloh, and prophetic calling (1 Sam. i.-iii.), connects itself through the prophecy of the rejection of the house of Eli (iii. 11 sq.) with the history of the disaster of Ebenezer and the capture and restoration of the ark (iv. 1-vii. 1). But the second of these two sections does not seem to have been originally written as the sequel to chaps. i.-iii.; in it we lose sight of Samuel and his prophecy altogether. The song of Hannah (ii. 1-10) and the prophecy of the nameless man of God (ii. 27-36) are later insertions (see Wellhausen-Bleek, *Einl.*, p. 207).

Chap. vii., with its Deuteronomistic introduction (verses 2-4) and its account of a victory at Ebenezer (the counterpart of the defeat in chap. iv.) which delivered Israel from the Philistines during all the days of Samuel, is inconsistent with the position of the Philistines power at the accession of Saul. The chapter in its present form must be late, though hardly post-exilic, and it is the necessary introduction to the later and less authentic account of the way in which Saul came to the kingdom (chaps. viii., x. 17-27, xii.). It should be noted, however, that, though Samuel is taken by the late narrator to have a widespread authority, inconsistent with the facts disclosed in the older narrative of the choice of Saul, the sphere assigned to him in vii. 16, 17 is very narrow and agrees with chap. ix.

Of the beginnings of the kingship of Saul we have a twofold account, the older being that in ix. 1-x. 16, xi. The relative value of the two accounts has been already discussed in ISRAEL, vol. xiii. p. 403. The older history is continued in chaps. xiii., xiv., but here xiii. 7b-15—a doublette of the account of the rejection of Saul in chap. xiv.—is certainly foreign to the original context. The summary of Saul's exploits in xiv. 47 sq. is written by an admirer, who appears to ascribe to him some of David's victories. But this does not affect the value of the preceding more detailed narrative, which is plainly based on a full and authentic tradition.

II. The account of the campaign against Amalek (chap. xv.) does not merely supply details supplementary to xiv. 48 but puts the war with Agag in quite a different light by laying the chief weight on Saul's disobedience to Samuel and rejection by the prophet. This passage is closely allied to 1 Sam. xxviii. 3-25, which, however, is no part of the original story of Saul's defeat and death, as appears by comparing the position of the two armies in xxviii. 4 and xxix. 1. Chap. xv., in like manner, is probably no original part of the narrative of David's rise, to which it now forms the introduction, and both passages, though relatively ancient additions, represent a type of religious thought and a view of prophecy which can hardly be older than the epoch of Elisha (comp. **PROPHET**, vol. xix. p. 816). The anointing of David (xvi. 1-13) presupposes chap. xv., and is consistent with what follows only if we suppose that the meaning of Samuel's act was not understood at the time. The older history repeatedly indicates that David's kingship was predicted by a divine oracle, but would hardly lead us to place the prediction so early (1 Sam. xxv. 30, 2 Sam. iii. 9, v. 2 compared with 1 Sam. xvii. 28, xviii. 28).

The story of David's introduction to Saul is told in two forms (xvi. 14-28; xvii. 1-xviii. 5). In the former David is already a man of approved courage and parts when he is attracted to the court; in the latter he is an obscure and untried shepherd lad (as in chap. xvi.) when he volunteers to meet Goliath. In the Hebrew text the contradiction between the two accounts is absolute, but the Septuagint omits xvii. 12-31, xviii. 55-xviii. 5, which greatly lessens if it does not entirely remove the difficulty.¹ The rise of Saul's jealousy against David (xviii. 6-30) and the open breach between them, with David's flight from the court (xix., xx.), are very confused in the Hebrew text. Some serious difficulties are escaped

¹ A further difficulty is caused by 2 Sam. xxi. 19, which makes Elhanan the Bethlehemite slayer of Goliath.

by following the Septuagint recension, but others remain, and there is a good deal of confusion also in the accounts of David's life as an outlaw (xxi.-xxvi.) and with Achish (xxvii.). For details see DAVID, vol. vi. p. 838 sq. The narrative is largely made up of detached anecdotes, and sometimes there were two divergent anecdotes based on a single incident. This is clear as regards the two stories of David's generosity to Saul (xxiv., xxvi.) and still more clear where the LXX. omits one of two parallel anecdotes (see DAVID, *ut supra*), while the same account may perhaps be given of the twofold narrative of David's flight from Saul and of his betaking himself to Achish. At the same time there is sufficient connexion to show that the doublets and additions are strung on an original thread of continuous history—a history of David, which becomes more free from foreign accretions at the point when the outlaw and refugee acquires, through the death of Saul, a position of commanding importance. Saul's defeat and death (1 Sam. xxviii. 1, 2, xxx.) are related as part of the history of David, which runs on from this point with little evidence of editorial additions to the close of 2 Sam. v. The summary account of David's war and government in 2 Sam. viii. appears to be the continuation of the same document; chaps. vi. and vii., on the other hand, seem to have an independent source.

III. The history of David's court, a vivid picture of events which must be referred in substance if not in form to a contemporary observer, is in its origin a distinct book from the life of David that closes with 2 Sam. viii. It extends over 2 Sam. ix.-1 Kings ii. with very little appearance of interpolation except the great appendix, 2 Sam. xxi.-xxiv., and is throughout one of the most admirable remains of ancient history.

The appendix is made up of various pieces,—chap. xxiv. appearing to attach itself directly to xxi. 1-14, while xxi. 15 sq. is akin in subject to xxiii. 8 sq.; the two poems, chap. xxii. (Psalm xviii.) and xxiii. 1-7, have no relation to the context, so that we can only say of them that they were accepted as Davidic at the time—posterior to the Deuteronomistic redaction—when the miscellaneous matter of the appendix was incorporated with our book.

In this rapid sketch it has not been attempted to notice all the minor marks of editorial retouching found in one or both of the two great recensions of the text. For all details the reader must refer principally to Wellhausen's repeated studies of the book, first in his *Text der Bücher Samuels*, 1871, then in the fourth edition of *Bleek's Einleitung*, 1878, and finally in his *Prolegomena to the History of Israel* (Eng. tr., 1886). Of earlier works on the subject the relative parts of Ewald's *Geschichte* are the most important. The commentaries of Thellus (1st ed. 1842, 2d ed. 1864) and Kell (1864, Eng. tr. 1866) are not very satisfactory. In English Prof. Kirkpatrick's short commentary (in the Cambridge Bible for Schools) will be found useful. See also F. H. Woods in *Studia Biblica*, Oxford, 1885.

SANAA (SAN'Á), the capital of Yemen in Arabia, and seat of the Turkish governor of that province, is situated in 15° 22' N. lat. and 44° 31' E. long., in a well-watered upland valley, 4000 feet above the sea and six to nine miles broad, running north and south between two tablelands. The western tableland, over which lies the road to the port of Hodaida on the Red Sea; rises 1200 feet above the town, the eastern (J. Nokom) is some 300 feet higher, and crowned by the ruins of the fortress Birásh, which local tradition connects with the name of Shem, son of Noah, to whom the foundation of the city is attributed by Hamdání, *Jazirat*, p. 55. Under Mount Nokom in the valley is the hill Ghomdán with the citadel, which Halévy in 1870 found in ruins. The ancient fortress of Ghomdán, which is often referred to by poets, and is described in extravagant terms by later writers, is said to have been destroyed by the caliph Othmán. The city proper, which is walled, extends from the citadel on the east to the garden and ruined palace of the imám Motawakkil on the west. Beyond this is the quarter known as Bir al-'Azab, where the imáms had their pleasure gardens, adjoining which, to the south, is the ancient Jewish settlement (Ká' al-Yáhúd). In Niebuhr's time (1763) the two last were open suburbs, but they have since been walled in. Though Sanaa is a very old town, the earliest buildings now standing are perhaps those which date from the Turkish occupation (1570-1630)—some mosques, parts of the fortifications, the aqueduct. In last century, under the independent imáms of Yemen, as the capital of the coffee country and the most fertile region of Arabia, it was, with its palaces and gardens, its mosques, caravanserais, and good private houses, by much the first city of the peninsula. The Wahhábi movement and Turko-Egyptian intervention in the affairs of Yemen shook the power of

the imáms and diminished the prosperity of their capital, but Cruttenden in 1836 still estimated the population at 40,000, or, with the three neighbouring towns of Rauda, Jiráf, and Wády Dahr, at not less than 70,000. In 1870, when the imamate had been extinct for twenty years, and the town was governed by an elected sheikh and had lost its provinces, Halévy found it much decayed, with many of the palaces and public buildings demolished or used as quarries, but still presenting a comely aspect, with good streets, houses, and mosques. In 1872, having been hard pressed by the Bedouins for several years, Sanaa opened its gates to the Turks, who were then engaged in the reconquest of Yemen. In the following year Millingen estimated the population at only 20,000.

The climate is good, though the extreme dryness of the air is trying. Rain usually falls in January and June, and more copiously in the end of July; the markets are well supplied with grain and fruit; vineyards were formerly numerous, but were largely given up after an attack of vine disease some thirty years ago.

Arabic writers give many discordant and fabulous traditions about the oldest history of Sanaa and its connexion with the ancient kingdom of Himyar. But most agree that its oldest name was Azál, which seems to be the same word with Uzal in Gen. x. 27. A Himyarite nation of Anzalites occurs in a Syriac writer of the 6th century. The better-informed Arab writers knew also that the later name is due to the Abyssinian conquerors of Yemen, and that it meant in their language "fortified" (Bakri, p. 606; Noldeke, *Gesch. d. Pers. u. Arab.*, p. 187). Sanaa became the capital of the Abyssinian Abraha (c. 530 A.D.) who built here the famous church (*Kalís*), of whose splendour the Arabs give exaggerated pictures, and which was destroyed two centuries later by order of the caliph Mansúr (Azraqí, p. 91).

SANÁ'Í. Abulmajd Majdúd b. Ádam, commonly known as the *hakím* or philosopher Saná'í, the earliest among the great *Šúfic* poets of Persia, was a native of Ghazna or Ghaznín (in the present Afghánistán), and flourished in the reigns of the Ghaznawid sultáns Ibráhím (1059–1099, 451–492 A.H.), his son Mas'úd (1099–1114), and his grandson Bahrámsáh, who, after some years of desperate struggle among members of his own family, ascended the throne in 1118 (512 A.H.) and died after a long and prosperous reign in 1152 (547 A.H.). The exact dates of the poet's birth and death are uncertain, Persian authorities giving the most conflicting statements. At any rate, he must have been born in the beginning of the second half of the 11th century and have died between 1131 and 1150 (525 and 545 A.H.). He gained already at an early age the reputation of a very learned and pious man and of an accomplished minstrel. Like his contemporaries Mas'úd b. Sa'd b. Salmán (died 1131), Hasan of Ghazna (died 1179), and Uthmán Mukhtárí (died 1149 or 1159), who was his master in the poetical art, he composed chiefly *qasidas* in honour of his sovereign and the great men of the realm, but a peculiar incident made him for ever abandon the highly remunerative although often perilous career of a court-pansyrist, and turn his poetical aspirations to higher and less worldly aims. One day, when he was proceeding to the royal palace to present an encomiastic song to Sultán Ibráhím, he was taunted by a half-mad but witty jester, who proposed a toast to the poet's blindness, because with all his learning and piety he had as yet only succeeded in flattering kings and princes, who were mere mortals like himself, and entirely misinterpreted God's motive in creating him. Saná'í was so struck with the appropriateness of this satirical remark that he forthwith gave up all the luxuries of court-life, retired from the world, and devoted himself after the due performance of the pilgrimage exclusively to devotional exercises, pious meditations, and the composition of *Šúfic* poetry in praise of the Godhead and the divine unity. For forty years he led a life of retirement

and poverty, and, although Sultán Bahrámsáh offered him not only a high position at court, but also his own sister in marriage, he remained faithful to the austere and solitary life he had chosen. But, partly to show his gratitude to the king, partly to leave a lasting monument of his genius behind him, that might act as a stimulus to all disciples of the pantheistic creed, he began to write his great double-rhymed poem on ethics and religious life, which has served as model to Farid-uddín 'Attár's and Jalál-uddín Rúm's *Šúfic* masterpieces, the *Hadíkat-ál-hakíkat*, or "Garden of Truth" (also called *Alkitáb al-fakhrí*), in ten cantos, dealing with the following topics:—unity of the Godhead, the divine word, the excellence of the prophet, reason, knowledge and faith, love, the soul, worldly occupation and inattention to higher duties, stars and spheres and their symbolic lore, friends and foes, separation from the world, &c. One of Saná'í's earliest disciples, who wrote a preface to this work, 'Alí al-Raffá, *alias* Muhammed b. 'Alí Raqqám, assigns to its composition the date 1131 (525 A.H.), which in a considerable number of copies appears as 1140 (535 A.H.), and states besides that the poet died immediately after the completion of his task. Now, Saná'í cannot possibly have died in 1131, as another of his mathnawís, the *Farík-i-tahkík*, or "Path to the Verification of Truth," was composed, according to a chronogram in its last verses, in 1134 (528 A.H.), nor even in 1140, if he really wrote, as the *Átashkada* says, an elegy on the death of Amír Mu'izzí; for this court-poet of Sultán Sanjar lived till 1147 or 1148 (542 A.H.). It seems, therefore, that Takí Káshí, the most accurate among Persian biographers, is right after all in fixing Saná'í's death in 1150 (545 A.H.), the more so as 'Alí al-Raffá himself distinctly says in his preface that the poet breathed his last on the 11th of Sha'bán, "which was a Sunday," and it is only in 1150 that this day happened to be the first of the week. Saná'í left, besides the *Hadíkah* and the *Farík-i-tahkík*, several other *Šúfic* mathnawís of similar purport:—for instance, the *Sáir ul-ibád ul-álmá'ád*, or "Man's Journey towards the Other World" (also called *Kumáz-ur-rumúz*, "The Treasures of Mysteries"); the *Íshk-náma*, or "Book of Love"; the *Ákhl-náma*, or "Book of Intellect"; the *Kárm-náma*, or "Record of Stirring Deeds," &c.; and an extensive *dáwán* or collection of lyrical poetry. His tomb, called the "Mecca" of Ghazna, is still visited by numerous pilgrims.

Saná'í's *Hadíkah* still lacks a critical edition, for which 'Abd-ullatif al-'Abbási's commentary (completed 1632 and preserved in a somewhat abridged form in several copies of the India Office Library) would form an excellent basis. See, on the poet's life and works, Onseley, *Biogr. Notices*, pp. 184–187; Rieu's and Flügel's *Catalogues*, &c.

SAN ANTONIO, a city of the United States, incorporated in 1873, the county-seat of Bexar (Bejar) county and the principal centre of western Texas, is situated in the fertile plain watered by the head-streams of the San Antonio river, which, after a course of 200 miles, falls into the Gulf of Mexico at Espíritu Santo Bay. It is an important junction for several of the Texan railways, lying on the main routes from the States to Mexico, 153 miles north of the frontier at Laredo. San Antonio proper, or the business part of the city, lies between the San Antonio and the San Pedro, and has been nearly all rebuilt since 1860. Chihuahua (formerly San Antonio de Valero), west of the San Pedro, is still almost exclusively Mexican; and Alamo, on somewhat higher ground to the east of the San Antonio, is largely inhabited by Germans. The total population of the city was in 1870 12,256 (1957 coloured) and 20,550 (3036) in 1880. Newspapers are published in English, German, and Spanish. Flour, beer, meat-extract, ice, candles, and soap are the local manufactures.

On the site of Chihuahua a fort, San Fernando, was erected by the Spaniards in 1714, and four years later the mission of the Alamo (poplar tree) was established in its vicinity. Both fort and mission were afterwards transferred to the other side of the San Pedro,—the fort taking the name of the mission, which was thus destined to become famous in the Texan war, when in 1836 a garrison attacked by a superior Mexican force perished rather than surrender. German immigration began about 1845.

SANCHEZ. Three persons of this name once enjoyed considerable literary celebrity:—(1) FRANCISCO SANCHEZ (Sanctius) (1523–1601), successively professor of Greek and of rhetoric at Salamanca, whose *Minerva*, first printed at that town in 1587, was long the standard work on Latin grammar; (2) FRANCISCO SANCHEZ, a Portuguese physician of Jewish parentage, professor of philosophy and physic at Toulouse, where he died at the age of seventy in 1632, whose ingenious but sophistical writings (*Quod nihil scitur*, 1581) mark the high-water of reaction against the dogmatism of the traditional schools of his time; (3) THOMAS SANCHEZ of Cordova (1551–1610), Jesuit and casuist, whose treatise *De Matrimonio* (Genoa, 1592) is more notorious for its repulsive features than celebrated for its real learning and ability.

SANCHO I. (1154–1211) and SANCHO II. (1208–1248), kings of Portugal from 1185 and 1223 respectively. See PORTUGAL, vol. xix. p. 541–2.

SANCHUNIATHON, (that is, סנחניון, "the god Sak-kun hath given") is the name of the pretended author of the Phœnician writings said to have been used by PHILO BYBLIUS (*q.v.*). See also PHœNICIA, vol. xviii. p. 802.

SAN CRISTOBAL DE LOS LLANOS, otherwise known as CIUDAD REAL, chief town of the Mexican state of Chiapas, stands in a fertile valley on the eastern slope of the central mountain range 450 miles east-south-east from the city of Mexico. It was founded in 1528 under the name of Villa Real, and received its present name in 1829. Its inhabitants, variously estimated as numbering from 8000 to 12,000, are chiefly employed in rearing cattle. Coarse woollen and cotton stuffs, and also common earthenware, are manufactured.

SANCROFT, WILLIAM (1616–1693), archbishop of Canterbury, was born at Fressingfield in Suffolk 30th January 1616, and entered Emmanuel College, Cambridge, in July 1634. He became M.A. in 1641 and fellow in 1642, but was ejected in 1649 for refusing to accept the "Engagement." He then remained abroad till the Restoration, after which he was chosen one of the university preachers, and in 1663 he was nominated to the deanery of York. In 1664 he was installed dean of St Paul's. In this situation he set himself with unwearied diligence to repair the cathedral, till the fire of London in 1666 necessitated the rebuilding of it, towards which he gave £1400. He also rebuilt the deanery, and improved its revenue. In 1668 he was admitted archdeacon of Canterbury upon the king's presentation, but he resigned the post in 1670. In 1677, being now prolocutor of the Convocation, he was unexpectedly advanced to the archbishopric of Canterbury. He attended Charles II. upon his deathbed, and "made to him a very weighty exhortation, in which he used a good degree of freedom." He wrote with his own hand the petition presented in 1687 against the reading of the Declaration of Indulgence, which was signed by himself and six of his suffragans. For this they were all committed to the Tower, but after a trial for misdemeanour they were acquitted. Upon the withdrawal of James II. he concurred with the Lords in a declaration to the prince of Orange for a free parliament, and due indulgence to the Protestant dissenters. But, when that prince and his consort were declared king and queen, he refused to take the oath to them, and was accordingly suspended and deprived. From 5th August 1691 till his death on Novem-

ber 24, 1693, he lived a very retired life in his native place. He was buried in the churchyard of Fressingfield, where there is a Latin epitaph to his memory.

He published *Far Prædestinatus* (1651), *Modern Politics* (1652), and *Three Sermons* (1694). *Nineteen Familiar Letters to Mr North* (afterwards Sir Henry North) appeared in 1757. He is characterized by Macaulay as "an honest, pious, narrow-minded man."

SANCTUARY is the Christian representative of the classical ASYLUM (*q.v.*), and was no doubt suggested in the first instance by the cities of refuge of the Levitical law. Originally every church or churchyard was a sanctuary for criminals. In England about thirty churches, from a real or pretended antiquity of the privilege, acquired special reputation as sanctuaries, *e.g.*, Westminster Abbey and Beverley Minster. "The precincts of the Abbey," says Dean Stanley, "were a vast cave of Adullam for all the distressed and discontented in the metropolis who desired, according to the phrase of the time, to take Westminster." The sanctuary seats at Hexham and Beverley, and the sanctuary knocker at Durham are still in existence. The protection afforded by a sanctuary at common law was this:—a person accused of felony might fly for the safeguard of his life to sanctuary, and there before the corner, within forty days, confess the felony and take an oath of abjuration entailing perpetual banishment into a foreign Christian country. The sanctuary being the privilege of the church, it is not surprising to find that it did not extend to the crime of sacrilege, nor was it held to extend to high or petit treason. The law of abjuration and sanctuary was regulated by numerous and intricate statutes. A list of them will be found in Coke, *Institutes*, vol. iii. p. 115. Finally it was enacted by 21 Jac. I. c. 28, § 7, that no sanctuary or privilege of sanctuary should be admitted or allowed in any case. The privilege of sanctuary as protecting from civil process extended to certain places, parts or supposed parts of royal palaces, such as White Friars or Alsatia, the Savoy, and the Mint. The privilege of these places was abolished by 8 and 9 Will. III. c. 27, and 9 Geo. I. c. 28. (See Stephen, *Hist. of the Crim. Law*, vol. i. c. xiii.)

In Scotland religious sanctuaries were abolished at the Reformation. But the debtor still finds sanctuary from diligence in Holyrood House and its precincts. The sanctuary does not protect criminals, or even all debtors, *e.g.*, not crown debtors or fraudulent bankrupts; and a *medietio fugæ* warrant may be executed within the sanctuary. After twenty-four hours' residence the debtor must enter his name in the record of the Abbey Court in order to entitle him to further protection. Under the Act 1696, c. 5, insolvency concurring with retreat to the sanctuary constitutes notour bankruptcy (see Bell, *Commentaries*, vol. ii. p. 461).

SAND, GEORGE. See DUDEVANT.

SANDALWOOD, a fragrant wood obtained from various trees of the natural order *Santalaceæ* and from the genera *Santalum* and *Fusanus*. The principal commercial source of sandalwood is *Santalum album*, L., a native of India, but it is also yielded by *S. Freycinetianum*, Gaud., and *S. pyrularium*, A. Gray, in the Hawaiian Islands, *S. Homei*, Seem., and *S. austro-caledonicum*, Viell., in New Caledonia, and *S. insulare*, Bert., in Tahiti. The wood of *S. latifolium*, Benth., and also that of *Fusanus spicatus*, R. Br., have been exported from south-west Australia, and that of *Eremophila Mitchellii*, of the natural order *Myoporinæ*, from Queensland, but these have little odour and are chiefly used for cabinet work. Sandalwood is also said to be produced in Nossi-Bé, and has been imported into London from Zanzibar, and into Germany from Venezuela, but of the botanical source of these varieties little is at present known. The use of sandalwood dates as far back at least as the 5th century B.C., for the wood is mentioned under its Sanskrit name "chandana" in the *Nirukta*, the earliest extant Vedic commentary. It is still extensively used in India and China, wherever Buddhism prevails, being em-

employed in funeral rites and religious ceremonies; comparatively poor people often spend as much as 50 rupees on sandalwood for a single cremation. Until the middle of the 18th century India was the only source of sandalwood. The discovery of a sandalwood in the islands of the Pacific led to a considerable trade of a somewhat piratical nature, resulting in difficulties with the natives, often ending in bloodshed, the celebrated missionary John Williams, amongst others, having fallen a victim to an indiscriminate retaliation by the natives on white men visiting the islands. The loss of life in this trade was at one time even greater than in that of whaling, with which it ranked as one of the most adventurous of callings. About the year 1810 as much as 400,000 dollars is said to have been received annually for sandalwood by Kamehameha, king of Hawaii. The trees consequently have become almost extinct in all the well-known islands, except New Caledonia, where the wood is now cultivated. Sandalwood of inferior quality derived from *Fusanus acuminatus* was exported from south-west Australia in 1884 to the extent of 2620 tons, valued at an average of about £8 per ton, genuine sandalwood being worth in China from £12 to £40 per ton.

In India sandalwood is largely used in the manufacture of boxes, fans, and other ornamental articles of inlaid work, and to a limited extent in medicine as a domestic remedy for all kinds of pains and aches. The oil is largely used as a perfume, few native Indian attars or essential oils being free from admixture with it. In the form of powder or paste the wood is employed in the pigments used by the Brahmans for their distinguishing caste-marks.

During the last few years oil of sandalwood has largely replaced copaiba, both in the United Kingdom and on the Continent, in the treatment of various diseases of the mucous membrane. Three varieties are distinguished in trade—East-Indian, Macassar, and West-Indian. The first-named is derived from *S. album*, the second probably from another species of *Santalum*, and the third from a wood imported from Puerto Cabello in Venezuela. *Bucida capitata*, a Combretaceous plant, is known in the West Indies as sandalwood; but the odour of the wood as well as of the oil, which is quite distinct from that of the true sandalwood, has more resemblance to that of a *Myroxylon*. Inferior qualities of the oil are said to be adulterated in Germany with the oil of red cedar wood (*Juniperus virginiana*).

In India sandalwood is produced in the dry tracts of country in Mysore and Coimbatore, north and north-west of the Nilgiri Hills, also farther eastward in the districts of Salem and North Arcot, where the tree grows from the sea-level up to an elevation of 3000 feet. In the first-named district the wood is a Government monopoly and can only be felled by the proper officers, this privilege having been retained since 1770, when it was conferred by treaty with Hyder Ali on the East India Company. The Mysore sandalwood is shipped from Mangalore to the extent of about 700 tons annually, valued at £27,000. In the Madras Presidency—although there is now no monopoly—sandalwood, by the careful management of the forest department, has been made to yield an increasing revenue to the Government, as much as 547½ tons having been furnished by the reserved forests in 1872-3. The tree is propagated by seeds, which, however, must be placed where they are intended to grow, since the seedlings will not bear transplantation, probably on account of deriving their nourishment parasitically by means of tuberculous swellings attached to the roots of other plants. The trees are cut down when between eighteen and twenty-five years old, at which period they have attained their maturity, the trunks being then about one foot in diameter. The felling takes place at the end of the year, and the trunk is allowed to remain on the ground for several months, during which time the white ants eat away the valueless sapwood but leave the fragrant heartwood untouched. The heartwood is then sawn into billets about 2 or 2½ feet long. These are afterwards more carefully trimmed at the forest depôts, and left to dry slowly in a close warehouse for some weeks, by which the odour is improved and

the tendency of the wood to split obviated. An annual auction of the wood takes place, at which merchants from all parts of India congregate. The largest pieces are chiefly exported to China, the small pieces to Arabia; and those of medium size are retained for use in India. China imported into the treaty ports 66,237 piculs (of 133½ lb) of sandalwood in 1872. As much as 700 tons are annually imported into Bombay from the Malabar coast, of which about 450 tons are again exported. The oil, which is distilled chiefly at Mangalore from the roots and chips, is also imported into Bombay to the extent of 12,000 lb annually.

Red Sandalwood, known also as *Red Sanders Wood*, is the product of a small Leguminous tree, *Pterocarpus santalinus*, native of Southern India, Ceylon, and the Philippine Islands. The wood is obtained principally from Madras, in certain parts of which province it is regularly cultivated, coming into the market in the form of irregular billets of heartwood, 3 or 4 feet in length. A fresh surface of the wood has a rich deep red colour, which on exposure, however, assumes a dark brownish tint. Under the influence of alkaline solutions, alcohol, or strong acetic acid, red sandalwood yields up to 16 per cent. of a resinoid body, santalin or santalic acid $C_{15}H_{14}O_2$ (?), which substance is the tinctorial principle of the wood. Santalin is quite insoluble in cold water; it neutralizes alkalies, and with them forms uncrystallizable salts. In its pure condition santalin forms minute prismatic crystals of a beautiful ruby colour. The wood also contains small proportions of colourless crystalline principles—santal, $C_8H_8O_2$, and pterocarpin, $C_{17}H_{16}O_2$ —and of an amorphous body having the formula $C_{17}A_{15}O_2$. In mediaeval times red sandalwood possessed a high reputation in medicine, and it was valued as a colouring ingredient in many dishes. Now it is a little used as a colouring agent in pharmacy, its principal application being in wool-dyeing and calico-printing. Several other species of *Pterocarpus*, notably *P. indicus*, contain the same dyeing principle and can be used as substitutes for red sandalwood. The barwood and camwood of the Guinea Coast of Africa, presumably the produce of one tree, *Baphia nitida* (*Pterocarpus angolensis* of De Candolle), called santal rouge d'Afrique by the French, are also in all respects closely allied to the red sandalwood of Oriental countries.

See Seemann, *Flora Vitiensis*, pp. 210-215; *Pharm. Journ. and Trans.*, 1885-86; *Pharmacographia*, 2d ed., p. 299; Dymock, *Materia Medica of Western India*, p. 617; *Jour. Soc. Arts*, 1875, p. 641; Seemann, *Voyage of the "Herald"*, 1853, p. 83; Seemann, *Jour. Botany*, 1864, p. 218; Erskine, *Islands of the W. Pacific*, 1853, p. 143, 326, 330, and Appendix, p. 478, 486; Martin, *Notes of the Tonga Islands*, 1817, pp. 319-323; Lirdwood, *Bombay Products*, p. 306; *Madras Jury Reports*, 1857; Hawkes, *Report on Oils of India*, p. 38.

SANDARACH is a resinous body obtained from the small Coniferous tree *Callitris quadrivalvis*, native of the north-west regions of Africa, and especially characteristic of the Atlas Mountains. The resin, which is procured as a natural exudation on the stems, and also obtained by making incisions in the bark of the trees, comes into commerce in the form of small round balls or elongated tears, transparent, and having a delicate yellow tinge. It is a little harder than mastic, for which it is sometimes substituted, and does not soften in the mouth like that resin; but, being very brittle, it breaks with a clean glassy fracture. Sandarach has a faintly bitter resinous taste, and a pleasant balsamic odour. It consists of a mixture of three distinct resins, the first readily soluble in alcohol, constituting 67 per cent. of the mass, while the second dissolves with more difficulty, and the third is soluble only in hot alcohol. Sandarach is imported chiefly from Mogador, and is an important ingredient in spirit varnishes. It is also used as incense, and by the Arabs medicinally as a remedy for diarrhoea. An analogous resin is procured in China from *Callitris sinensis*, and in South Australia, under the name of pine gum, from *C. Reissii*.

SANDBACH, a town and urban sanitary district of Cheshire, is situated on the Trent and Mersey Canal, and on the London and North-Western Railway, at the junction for Northwich, 25 miles east-south-east of Chester and 5 north-east of Crewe. In the market-place are two ancient obelisks, dating, according to some, from the 7th century. The principal public buildings are the parish church of St Mary, in the Perpendicular style, with a tower rebuilt 1847-9, the grammar school, the public reading rooms, and the town-hall. Anciently the town was celebrated for its ale. The principal industry was formerly silk throwing, but this is now discontinued, and the inhabitants are chiefly employed in the salt-works and

alkali-works. The population of the urban sanitary district (area 2694 acres) in 1871 was 5259, and in 1881 it was 5493.

SAND-BLAST. The erosive influence of driven sand is turned to useful account for several industrial purposes by means of an apparatus devised, about 1870, by Mr B. C. Tilghman of Philadelphia. Tilghman's sand-blast consists of a contrivance for impelling, with graduated degrees of velocity, a jet or column of sand, by means of compressed air or steam, against the object or surface to be acted on. The apparatus is principally adapted for obscuring, engraving, and ornamenting glass, but according to the velocity with which the sand is impelled it may be used to carve deep patterns in granite, marble, and other hard stones, to bite into steel, &c., and even to cut and perforate holes through these and other most refractory materials. Sheets of glass 4 feet wide are obscured at the rate of 3 feet per minute, with a blast of air having a pressure of 1 lb per inch. With the aid of tough elastic stencils, patterns and letters are engraved on flashed glass, globes for lamps and gaslights are ornamented, druggists' bottles are lettered, &c.¹ Driven with moderate velocity against a metal surface, the sand produces by its impact a fine uniform pitted appearance without removing the metal; and in this way it is used for "frosting" plated goods. A strong blast is largely used for sharpening files, which, as they leave the cutter, have always a slight backward curve or "burr" on their cutting edges which blunts their biting effect. By directing a blast of very fine sand, mixed with water into a thin mud, with steam pressure of 70 lb, at an angle against the back of the teeth, this burr is ground off, the shape of the teeth is improved, and the file is rendered very keen. While the use of steam for impelling the sand-blast is most simple and economical, many practical difficulties have hitherto been found in the way of its employment, and consequently for obtaining high pressure of air costly apparatus was required, thus limiting the applications of the agency. In 1884 Mr Mathewson patented an apparatus in which, by an ingenious exhaust arrangement, the impelling steam is swept away, leaving only cool, dry sand to strike against the object acted on; and the success of this device has already opened up a wider field for the employment of the sand-blast.

SANDBY, PAUL (1725-1809), founder of the English school of water-colour painting, was descended from a branch of the Sandbys of Babworth, and was born at Nottingham in 1725. After commencing his artistic studies in London, in 1746 he was appointed by the duke of Cumberland draughtsman to the survey of the Highlands. In 1752 he quitted this post, and retired to Windsor, where he occupied himself with the production of water-colour drawings of scenery and picturesque architecture, which brought him under the notice of Sir Joseph Banks, who gave him his patronage, and subsequently commissioned him to bring out in aquatinta (a method of engraving then peculiar to Sandby) forty-eight plates drawn during a tour in Wales. Sandby displayed considerable power as a caricaturist in his attempt to ridicule the opposition of Hogarth to the plan for creating a public academy for the arts. He was chosen a foundation-member of the Royal Academy in 1768, and the same year was appointed chief drawing-master to the Royal Military Academy at Woolwich. He held this situation till 1799, and during that time he trained many artists

¹ In 1875 inscriptions were cut by means of the blast on 150,000 tombstones of soldiers killed in the American Civil War. Cast-iron letters were fastened by shellac on the marble, the sand was driven by steam pressure of 90 lb, and the stone was cut, in four minutes, to a depth of a quarter of an inch, leaving the letters in relief.

who afterwards gained a name in their profession. Sandby will be best remembered, however, by his water-colour paintings. They are topographical in character, and, while they want the richness and brilliancy of modern water-colour, he nevertheless impressed upon them the originality of his mind. In his later pieces, in particular, decided progress is observable in richness and in harmony of tinting, and they also show a measure of poetic feeling, due, in great part, to the influence of Cozens. His etchings, such as the *Cries of London* and the illustrations to Ramsay's *Gentle Shepherd*, and his plates, such as those to Tasso's *Jerusalem Delivered*, are both numerous and carefully executed. He died in London on the 9th November 1809.

SANDEAU, LÉONARD SYLVAIN JULES (1811-1882), a French novelist of much grace and not a little power, was born at Aubusson (Creuse) on February 9, 1811. He made acquaintance as an art student with Madame Dudevant (George Sand), who had just taken to an unrestrained literary life at Paris. The intimacy did not last long, but it produced *Rose et Blanche* (1831), a novel written in common, and from it George Sand took the idea of the famous *nom de guerre* by which she is and always will be known. Sandeau's subsequent work showed that he could run alone, and for nearly fifty years he continued to produce novels and to collaborate in plays. His best works are *Marianna* (1839), *Le Docteur Herbeau* (1841), *Cathérine* (1845), *Mademoiselle de la Seiglière* and *Madeleine* (1848), *La Chasse au Roman* (1849), *Sacs et Parchemins* (1851), *La Maison de Penarvan* (1858), *La Roche aux Mouettes* (1871). The famous play of *Le Gendre de M. Poirier* is only one of several which he wrote with Émile Angier,—the novelist usually contributing the story and the dramatist the theatrical working up. Meanwhile Sandeau, who had accepted the empire, but who never took any active part in politics, had been made conservateur of the Mazarin library in 1853, elected to the Academy in 1858, and next year appointed librarian of St Cloud. At the suppression of this latter office, after the fall of the empire, he was pensioned. He died on the 24th of April 1882. He was never a very popular novelist, judging by the sale of his works; and the peculiar quiet grace of his style, as well as his abstinence from sensational incident, and his refusal to pander to the French taste in fictitious morals, may be thought to have disqualified him for popularity. But his literary ability has always been recognized by competent judges. His skill in construction was very great; his character-drawing, though pure, is eminently free from feebleness and commonplace; and of one particular situation—the tragical clashing of aristocratic feeling with modern tendencies—he had an extraordinary mastery, which he showed without any mere repetition, but in many different studies.

SANDEC. See NEU-SANDEC.

SAND-EEL or SAND-LAUNCE. The fishes known under these names form a small isolated group (*Ammodytina*), distantly related to the cod-fishes. Their body is of an elongate-cylindrical shape, with the head terminating in a long conical snout, the projecting lower jaw forming the pointed end. A low long dorsal fin, in which no distinction between spines and rays can be observed, occupies nearly the whole length of the back, and a long anal, composed of similar short and delicate rays, commences immediately behind the vent, which is placed about midway between the head and caudal fin. The caudal is forked and the pectorals are short. The total absence of ventral fins indicates the burrowing habits of these fishes. The scales, when present, are very small; but generally the development of scales has only preceded to the formation of oblique folds of the integuments.