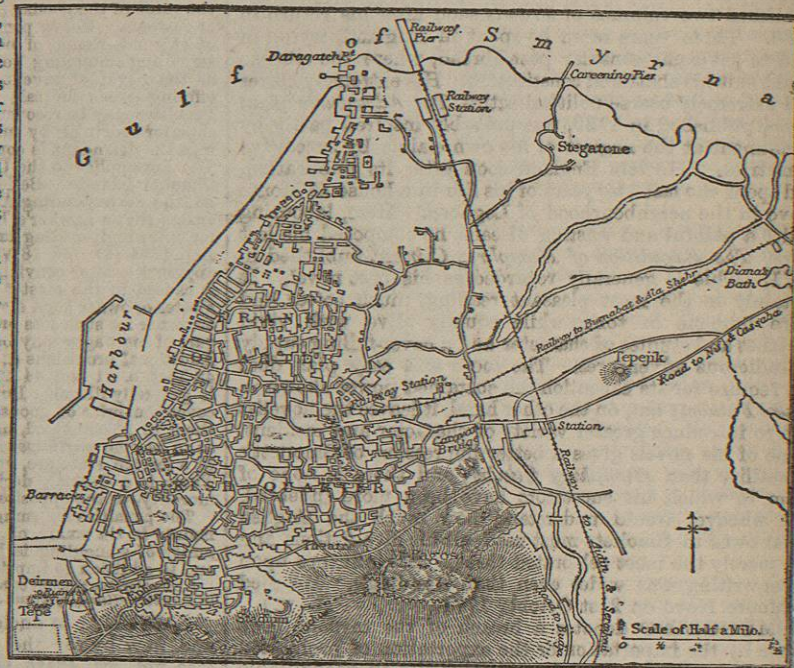


Olympia, but it was probably then a recent event. The Colophonian conquest is mentioned by Minnermus (before 600 B.C.), who counts himself equally a Colophonian and a Smyrnan. The Æolic form of the name, *Σμύρνα*, was retained even in the Attic dialect, and the epithet "Æolian Smyrna" remained long after the conquest. The favourable situation of Smyrna on the path of commerce between Lydia and the west raised it during the 7th century to the height of power and splendour. It lay at the eastern end of an arm of the sea, which reached far inland and admitted the Greek trading ships into the heart of Lydia. One of the great trade routes which cross Anatolia from east to west descends the Hermus valley past Sardis, and then diverging from the valley passes south of Mount Sipylus and crosses a low pass into the little valley, about 7 miles long and 2 broad, where Smyrna lies between the mountains and the sea. Miletus, and at a later time Ephesus, situated at the sea end of the other great trade route across Anatolia, competed for a time successfully with Smyrna for the conveyance of traffic from the interior; but both Ephesus and Miletus have long ago lost their harbours, and Smyrna now remains without a rival. It was of necessity in close relation with the Lydians, and when the Mermnad kings raised the Lydian power and aggressiveness it was one of the first points of attack. Gyges (687-653) was, however, defeated in a great battle on the banks of the Hermus; the situation of the battlefield shows that the power of Smyrna extended far to the east, and probably included the valley of Nymphæum (Nif). A strong fortress, the ruins of whose ancient and massive walls are still imposing, on a hill in the pass between Smyrna and Nymphæum, was probably built by the Smyrnan Ionians to command the valley of Nymphæum. According to the poet Theognis (about 500 B.C.), "pride destroyed Smyrna." Minnermus laments the degeneracy of the citizens of his day, who could no longer stem the Lydian advance. Finally, Alyattes (610-563) conquered the city, and Smyrna for 300 years lost its place in the list of Greek cities. It did not entirely cease to exist, but the Greek life and political unity were destroyed, and the Smyrnan state was organized on the village system (*ἑκαῖρο κομυδόν*). It is mentioned in a fragment of Pindar, about 500 B.C., and in an inscription of 388 B.C. A small fortification of early style, rudely but massively built, on the lowest slope of a hill behind Burnabat, is perhaps a fortified village of this period. Alexander the Great conceived the idea of restoring the Greek city; the two Nemeses who were worshipped at Smyrna are said to have suggested the idea to him in a dream. The scheme was, according to Strabo, carried out by Antigonus (316-301), and Lysimachus enlarged and fortified the city (301-281). The acropolis of the ancient city had been on a steep peak about 1250 feet high, which overhangs the north-eastern extremity of the gulf; its ruins still exist, probably in much the same condition as they were left by Alyattes. The later city was founded on the site which it still occupies, partly on the slopes of a rounded hill called Pagus near the south-east end of the gulf, partly on the low

ground between the hill and the sea. The beauty of the city when seen from the sea, clustering on the low ground and rising tier over tier on the hillside, is frequently praised by the ancients and is celebrated on its coins; the same impression still strikes the spectator, and must in ancient times have been much stronger, when magnificent buildings, an imposing acropolis, and the wide circle of massive walls combined with the natural scenery in one splendid picture. Smyrna is shut in on the west by a hill now called Deirmen Tepe, with the ruins of a temple on the summit. The walls of Lysimachus crossed the summit of this hill, and the acropolis occupied the top of Pagus. Between the two the road from Ephesus entered the city by the "Ephesian gate," near which was a gymnasium. Closer to the acropolis the outline of the stadium is still visible, and the theatre was situated on the northern slopes of Pagus. The line of the walls on the eastern side is



Plan of Smyrna.

unknown; but they certainly embraced a greater area than is included by the Byzantine wall, which ascends the castle hill (Pagus) from the Basmakhané railway station. Smyrna possessed two harbours,—the outer, which was simply the gulf, and the inner, which was a small basin, with a narrow entrance closed by a rope in case of need, about the place now occupied by bazaars. The inner harbour was partially filled up by Timur in 1402, but it had not entirely disappeared till the beginning of the 19th century. The modern quay has encroached considerably on the sea, and the coast-line of the Greek time was about 90 yards farther to the south. The streets were broad, well paved, and regularly laid out at right angles; many were named after temples; the main street, called the Golden, ran across the city from west to east, beginning probably from the temple on Deirmen Tepe, and continuing towards Tepejik outside the city on the east, where probably the temple of Cybele, the Metroon, stood. Cybele, worshipped under the name of Meter Sipylene, from Mount Sipylus, which bounds the Smyrna valley on the north,

was the tutelary goddess of the city. The plain towards the sea was too low to be properly drained, and hence in rainy weather the streets were deep with mud and water.

The river Meles, which flowed by Smyrna, is famous in literature and was worshipped in the valley. The most common and consistent tradition connects Homer with the valley of Smyrna and the banks of the Meles; his figure was one of the stock types on Smyrnan coins, one class of which was called Homeric; the epithet "Melesigenes" was applied to him; the cave where he was wont to compose his poems was shown near the source of the river; his temple, the Homereum, stood on its banks. The steady equable flow of the Meles, alike in summer and winter, neither swollen after rain nor dry during drought, its pleasant water, its short course, beginning and ending near the city, are celebrated by Aristides and Himerius. The description applies admirably to the stream which rises from abundant fountains, now known as Diana's Bath, some way to the east of the city, and flows into the south-eastern extremity of the gulf. The common belief that the torrent, dry except after rains, which flows by Caravan Bridge is the ancient Meles flatly contradicts the ancient descriptions.

In the Roman period Smyrna was the seat of a *conventus* which included southern Æolis and great part of the Hermus valley. It vied with Ephesus and Pergamum for the title "First city of Asia." A Christian church existed here from a very early time, having its origin in the considerable Jewish colony. POLYCARP (*q.v.*) was bishop of Smyrna. The bishops of Smyrna were originally subject to the metropolitan of Ephesus; afterwards they became independent (*αὐτοκέφαλοι*), and finally were honoured with metropolitan rank, having under them the bishops of Phocæa, Magnesia ad Sipylum, Clazomenæ, Sosandrus (Nymphæum?), Archangelus (Témnos?), and Petra (Ménemen?).

When Constantinople became the seat of government the trade between Anatolia and the west lost in importance, and Smyrna declined apace. A Turkish freebooter named Tsacha seized Smyrna in 1084 and maintained himself there for some time, but it was recovered by the generals of Alexius Comnenus. The city was several times afterwards ravaged by the Turks, and had become quite ruinous when the emperor John Ducas Vatatzes about 1222 rebuilt it. The famous chieftain Aidin conquered it about 1330 and made his son Amur governor. Soon afterwards the knights of Saint John established themselves in the town, but failed to conquer the citadel. In 1402 Timur stormed the town and massacred almost all the inhabitants. The Mongol conquest was only temporary, but Smyrna has remained till the present day in Mohammedan hands. It is now the greatest commercial city in the Levant; its population is about 200,000, of whom nearly half are Greeks. It is the terminus of the railway system which is gradually spreading over Anatolia. Two lines start from Smyrna: one ascends the Hermus valley by Magnesia and Sardis to Alashehr (Philadelphia), about 110 miles; the other goes south by Ephesus to the Meander valley beside Magnesia on the Meander and then ascends the valley to the neighbourhood of Laodicea on the Lycus, 143 miles. Since the revival of the Levant trade by the Genoese and Venetians Smyrna has been the emporium for the whole produce of Anatolia; the chief raw products exported are valonea, figs, raisins, opium, madder, liquorice, cotton, sponges, emery, &c.; almost the only articles of native manufacture which are exported from Smyrna are the carpets woven at Geurdiz, Coula, Ushak, and other places in the interior. Smyrna has frequently been partially destroyed by earthquakes; that of 178 A.D. is the most famous, and in 1658, 1768, and 1880 the town suffered severely.

(W. M. RA.)

SNAIL. In England the word "snail" in popular language is associated with Gasteropods which inhabit land or fresh water and which possess large conspicuous spiral shells; terrestrial Gasteropods in which the shell is rudimentary and concealed are distinguished as "slugs." In Scotland the word "slug" is absent from the vernacular vocabulary, both shell-bearing and shell-less inland molluscs being known as snails. Marine Gasteropods are occasionally termed "sea-snails," and the compounds "pond-snails," "river-snails," "water-snails" are in common use. The commonest land-snails are those species which constitute the family *Helicidae*, order *Pulmonata*, sub-order *Stylommatophora*. The other two families of the same sub-order, *Limacidae* and *Onchidiidae*, include all the slugs. In the first of these are comprised all the slugs known in Great Britain, and indeed in Europe. The *Onchidiidae* are entitled to the name "sea-slugs," as they are shell-less Pulmonates living on the seashore, though not actually in the sea. The term "water-snails" includes the whole of the remaining sub-order of the *Pulmonata*, namely, the *Basommatophora*, in which the eyes are sessile. This division comprises two families, *Limnæidae* and *Auriculidae*; some of the members of the first are amphibious, some entirely aquatic; the snails of the second family are found near but not in the water. Thus the whole of the *Pulmonata* which breathe air, are destitute of gill-plumes and operculum, and have a complicated hermaphrodite reproductive system, are either snails or slugs. But there are a considerable number of snails, both terrestrial and aquatic, which are not Pulmonates. The land-snails which have no gill-plume in the mantle-chamber and breathe air, but have the sexes separated, and possess an operculum belong to the order *Azygobranchia*, of which they form a distinct sub-order, the *Pneumonochlamyda*, containing three families, *Cyclostomidae*, *Helicinidae*, and *Aciculidae*. The fresh-water snails which are not Pulmonates are the *Paludinidae*, *Valvatidae*, and *Ampullaridae*, together with *Neritina*, a genus of the *Neritidae*. These all possess a fully developed gill-plume and are typical Azygobranchiates of the sub-order *Holochlamyda*, most of the members of which are marine.

The family *Helicidae* has a world-wide distribution. In *Helix* the spire forms a more or less obtuse-angled cone; there are above 1200 species, of which 24 are British. *Helix nemoralis*, L., of which *H. hortensis* is a variety, is one of the commonest forms. *Helix pomatia*, L., is the largest species, and is known as the "edible snail"; it is commonly eaten in France and Italy, together with other species. It was formerly believed to have been introduced into Britain by the Romans, but there is no doubt that it is a native. In *Succinea* the cone of the spire is acute-angled; three species are British. In *Vitrina* the spire is very flat and the surface glassy. In *Bulimus* the spire is elongated with a pointed apex. *Pupa* is named from its resemblance to a chrysalis, the apex being rounded. The shell of *Clausilia* is sinistral and its aperture is provided with a hinged plate. The commoner European slugs of small size all belong to the genus *Limax*, in which the opening of the mantle-chamber is posterior. *L. flavus* is the cellar slug. *L. agrestis*, *L. arborum*, *L. maximus*, occur in gardens and fields. The larger black slugs are species of *Arion*, of which two are British, *A. ater* and *A. hortensis*. *Testacella haliotidea* is common in Great Britain and throughout Europe.

The *Limnæidae* occur in all parts of the world. *Limnæus* contains the largest species. *L. pereger*, Müller, is ubiquitous in Great Britain and common all over Europe. All the species are usually infested with *Cercaria* and *Redia*, the larval forms of Trematode parasites of vertebrates. *L. truncatulus* harbours the *Cercaria* of *Fasciola hepatica*, the liver-fluke, which causes rot in sheep. *Ancylus*, which occurs in rivers, has a minute limpet-like shell. *Planorbis* has the spire of the shell in one plane. *Physa* is smaller than *Limnæus* and has the upper part of the spire much shorter. In the *Auriculidae* the aperture is denticulated. *Auricula* is confined to the East Indies and Peru. *Carychium minimum* is British.

Of the *Cyclostomidae* only one species, *Cyclostoma elegans*, Müller, is British; it hides under stones and roots. The *Helicinidae* are exotic, ranging from the West Indies to the Philippines. Of the *Aciculidae*, which are all minute, *Acicula lineata* is British.

The *Ampullaridae* are confined to the tropics. *Ampullaria* has very long tentacles and a long siphon formed by the mantle.

Valvata is common in fresh waters throughout Britain; the gill when the animal is expanded is protruded beyond the mantle-chamber. The *Paludinidae* are common in the northern hemisphere. *Paludina* and *Bithynia* are both British genera. In *Paludina* the whorls of the spiral are very prominent; the genus is viviparous. *Bithynia* is smaller and the shell smoother.

Neritina has a very small spire, the terminal portion of the shell containing nearly the whole animal.

For the morphology and classification of snails, see *Mollusca*, vol. xvi. p. 648 sp. A history of the British forms is given in Gwyn Jeffreys's *British Conchology*, 1862, and by Forbes and Hanley in *British Mollusca*. For speleographical details, see Woodward's *Manual of the Mollusca*, 1876, and Bronn's *Thierreich* (Weichthiere). For *Fasciola hepatica*, see Thomas, *Quart. Journ. Mic. Sci.*, 1882.

SNAKE-BIRD, to use the name commonly given to it by the English in North America, because of its "long slender head and neck," which, its body being submerged as it swims, "appear like a snake rising erect out of the water" (Bartram's MS., quoted by Ord in Wilson's *Am. Ornithology*, ix. p. 81), the "Darter" of many authors, and the *Plotus ankinga*¹ of ornithology, is the type of a small but very well-marked family of birds, *Plotidae*, belonging to the group *Steganopodes* (the *Dysporomorphæ* of Prof. Huxley), and consisting of but a single genus and three or four species. They bear a general resemblance both outwardly and in habits to Cormorants (see vol. vi. p. 407), but are much more slender in form and have both neck and tail much elongated. The bill also, instead of being tipped with a maxillary hook, has its edges beset with serratures directed backwards, and is sharply pointed,—in this respect, as well as in the attenuated neck, likening the Snake-birds to the Herons (see vol. xi. p. 760); but the latter do not generally transfix their prey as do the former.

The male of the American species, which ranges from Illinois to the south of Brazil, is in full breeding-plumage a very beautiful bird, with crimson irides, the bare skin round the eyes apple-green



Indian snake-bird (from Col. Tickell's drawing in the library of the Zoological Society).

and that of the chin orange, the head, neck, and most part of the body clothed in black glossed with green; but down each side of the neck runs a row of long hair-like white feathers, tinged with pale lilac. The much elongated scapulars and the small upper wing-coverts bear each a median white mark, which on the former is a stripe pointed at either end, and on the latter a broad ovate patch.² The larger wing-coverts are dull white, but the quill-feathers of the wings and tail are black, the last broadly tipped with brownish-red, passing into greyish-white, and forming a conspicuous band when the tail is spread in form of a fan, as it often

¹ "Ankinga," according to Marcgrave, who first described this bird (*Hist. Rer. Nat. Brasiliæ*, p. 218), was the name it bore among the natives.

² These feathers are very characteristic of each species of the genus, and in India, says Jerdon, are among the Khasias a badge of royalty.

is under water.³ The hen differs much in appearance from the cock, having the head, neck, and breast of a more or less deep buff, bounded beneath by a narrow chestnut band; but otherwise her plumage is like that of her mate, only not so bright in colour. The habits of this species have been repeatedly described by American writers, and those of its congeners, to be immediately mentioned, seem to be essentially the same. The Snake-bird frequents the larger rivers or back-waters connected with them, where it may be seen resting motionless on some neighbouring tree, generally choosing a dead branch, or on a "snag" projecting from the bottom, whence it plunges beneath the surface, in pursuit of its fishy prey, to emerge, in the manner before related, showing little more than its slender head and neck. Its speed and skill under water are almost beyond exaggeration, and it exhibits these qualities even in captivity, taking—apparently without effort—fish after fish that may be introduced into its tank, however rapidly they may swim and twist, and only returning to its perch when its voracious appetite is for the moment appeased or its supply of food temporarily exhausted. Then, after adjusting its plumage with a few rapid passes of its bill, and often expanding its wings, as though, Cormorant-fashion, to dry them, it abandons itself to the pleasurable and passive process of digestion, reawaking to activity at the call of hunger. Yet at liberty it will indulge in long flights, and those of the male at the breeding-season are ostentatiously performed in the presence of his mate, around whom he plays in irregular zigzag courses. The nest is variously placed, but almost always in trees or bushes overhanging the water's edge, and is a large structure of sticks, roots, and moss, in which are laid four eggs with the white chalky shell that is so characteristic of most *Steganopodous* birds. Not unfrequently several or even many nests are built close together, and the locality that suits the Snake-bird suits also many of the Herons, so that these, its distant relatives, are often also its near neighbours.⁴ The African Snake-bird, *P. congensis* (or *teuillanti* of some authors), inhabits the greater part of that continent from Natal northwards; but, though met with on the White Nile, it is not known to have occurred in Egypt, a fact the more remarkable seeing that Canon Tristram found it breeding in considerable numbers on the Lake of Antioch, to which it is a summer visitor, and it can hardly reach its home without passing over the intervening country. The male bird is easily distinguishable from the American species by its rufous coronal patch, its buff throat and its chestnut greater wing-coverts. A third species, *P. melanogaster*, ranges from Madagascar to India, Ceylon, Borneo, Java, and China. This so closely resembles the last-mentioned that the differences between them cannot be briefly expressed. The Australian region also has its Snake-bird, which is by some regarded as forming a fourth species, *P. novæ-hollandiæ*; but others unite it to that last-mentioned, which is perhaps somewhat variable, and it would seem (*P. Z. S.*, 1877, p. 349) that examples from New Guinea differ somewhat from those inhabiting Australia itself.

The anatomy of the genus *Plotus* has been dealt with more fully than that of most forms. Beside the excellent description of the American bird's alimentary canal furnished to Audubon by Macgillivray, other important points in its structure have been well set forth by Garrod and Forbes in the *Zoological Proceedings* (1876, pp. 335-345, pls. xxvi.-xxviii.; 1878, pp. 679-681; and 1882, pp. 208-212), showing among other things that there is an appreciable anatomical difference between the species of the New World and of the Old; while the osteology of *P. melanogaster* has been admirably described and illustrated by Prof. Milne-Edwards in M. Grandidier's great *Oiseaux de Madagascar* (pp. 691-695, pls. 284, 285). In all the species the neck affords a feature which seems to be unique. The first seven of the cervical vertebrae form a continuous curve with its concavity forward, but the eighth articulates with the seventh nearly at a right angle and, when the bird is at rest, lies horizontally. The ninth is directed downwards almost as abruptly, and those which succeed present a gentle forward convexity. The muscles moving this curious framework are as curiously specialized, and the result of the whole piece of mechanism is to enable the bird to spear with facility its fishy prey. (A. N.)

³ This peculiarity, first pointed out to the writer by Mr. Bartlett, who observed it in birds in the Zoological Society's possession, doubtless suggested the name of "Water-Turkey" by which in some places *Plotus ankinga* is said to be known.

⁴ The curious but apparently well-attested fact of the occurrence in England, near Poole, in June 1851, of a male bird of this species (*Zoologist*, pp. 3601, 3654) has been overlooked by several writers who profess to mention all cases of a similar character.

SNAKE-ROOT. In most countries where snakes abound some root or herb is used by the natives as an antidote for the bites of venomous species, and many herbs have consequently received the name of snake-root. Botanically speaking, the name properly belongs to *Ophiorrhiza Mungos*, L., a plant of the Cinchona family, used in the East Indies for the purpose above indicated. In medicine, however, the roots of *Aristolochia Serpentaria*, L., *Polygala Senega*, L., or *Cimicifuga racemosa*, Elliott, are alike understood by this name, being distinguished respectively as the Virginian, Seneka, and Black Snake-roots. The first is now employed as an aromatic antiseptic tonic in typhoid fever, the second as a stimulant expectorant in bronchitis, and the third as a sedative in rheumatic or inflammatory affections, especially in muscular rheumatism and lumbago. The root of *Aristolochia reticulata*, Nutt., which is known in the United States as Red River or Texan Snake-root, is the kind most frequently met with in the United Kingdom as Serpentine or Virginian Snake-root. (See GUACO.)

The roots or rhizome of *Liatris spicata*, Willd., *Eryngium aquaticum*, L., and *Eupatorium altissimum*, L., have all been used in North America for snake-bites, the first two being known as Button Snake-root and the last as White Snake-root. The rhizome of *Asarum canadense*, L., passes under the name of Canadian Snake-root. All of these contain acrid or aromatic principles which, when a warm decoction of the drug is taken, exercise a powerfully diaphoretic or, in some cases, diuretic action, to which any benefit that may be derived from their use must be attributed.

SNAKES constitute an order (*Ophidia*) in the class of Reptiles which is characterized by an exceedingly elongate body, cylindrical or sub-cylindrical, and terminating in a tapering tail. The integuments are folded into flat imbricate scales, which are rarely tubercular or granular. The spinal column consists of a very great number of vertebrae, with which the numerous ribs are movably articulated. Limbs are entirely absent, or only rudiments of the posterior occur more or less hidden below the skin; there is no sternum. The bones of the palate and jaws are movable; the mandibles are united in front by an elastic ligament and are very distensible. Generally both jaws and the palate are toothed, the teeth being thin and needle-like. There are no eyelids, no ear-opening. The vent is a transverse slit.

Great as is the difference in appearance between a typical snake and a typical lizard, the two orders of Ophidians and Lacertilians are nearly allied; the former is probably merely a specialized descendant of the latter or of the pythonomorphous reptiles, or perhaps of both. Moreover, the living Lacertilians include forms which approach the Ophidians by having a greatly increased number of vertebrae, a much advanced degradation of the scapular and pelvic arches and limbs, a simple dentition, and the absence of eyelids and external ear-opening. And on the other hand we find Ophidians with a greatly diminished flexibility of the vertebral column, with closely adherent, smooth and polished scales, with a narrow mouth—totally unlike the enormous gape of the typical snakes—and even without that longitudinal fold in the median line of the chin which is so characteristic of the order (*Typhlopidae*). Thus of the Ophidian characters as given above only that taken from the loose connexion of the bones of the skull remains as a sharp line of separation between snakes and lizards. The mandibular symphysis is not by suture but by an elastic band; the intermaxillary, palatine, and pterygoid bones are so loosely attached to the cranium that they can be easily pressed outwards and forwards, and the maxillary and mandibular of one side can be moved in those directions independently of their fellows opposite. The intermaxillary is small, generally toothless, and coalesces

with the nasals and vomer into a single movable bone; finally, the suspensory is much elongate and movable at both ends. This arrangement ensures an extraordinary degree of mobility and elasticity of all parts of the gape, which, however, varies in the different families of the order. For the other characteristic points of their structure and for their distribution, see REPTILES.

The number of known species of snakes has been given as 1500 by some authorities and as 1800 by others. The limits of their distribution seem to be the 70th parallel N. lat. in Europe, the 54th in British Columbia, and the 40th parallel S. lat. in the southern hemisphere. The number of species and of individuals in a species is small in the temperate zones, but increases as the tropics are approached. In the tropical zone they are abundant, especially where a well-watered soil nourishes a rich vegetation, with glades open to the sun, and where a variety of small animals serve as an abundant and easily obtained prey. It is in the tropics also that the largest (boas, pythons) and the most specialized kinds occur (tree snakes, sea snakes, the large poisonous snakes). On the other hand, every variety of soil is tenanted by some kind of snakes: they form a contingent in every desert fauna. In accordance with this general distribution snakes show a great amount of differentiation with regard to their mode of life and general organization; and from the appearance alone of a snake a safe conclusion can be drawn as to its habits. The following categories may be distinguished.

(1) Burrowing snakes, which live under ground and but rarely appear on the surface. They have a cylindrical rigid body, covered with generally smooth and polished scales; a short strong tail; a short rounded or pointed head with narrow mouth; teeth few in number; small or rudimentary eye; no abdominal scutes or only narrow ones. They feed chiefly on invertebrate animals, and none are poisonous. (2) Ground snakes, living chiefly on the ground, and rarely ascending bushes or entering water. Their body is cylindrical, flexible in every part, covered with smooth or keeled scales, and provided with broad ventral and subcaudal scutes. All the various parts of their body and head are well proportioned; the non-poisonous kinds of ground snakes are in fact the typical and least specialized snakes, and more numerous than any of the other kinds. They feed chiefly on terrestrial vertebrates. The majority are non-poisonous; but the majority of poisonous snakes must be referred to this category. (3) Tree snakes, which are able to climb bushes or trees with facility or pass even the greater part of their existence on trees. Their body is rarely cylindrical, generally compressed and slender; their broad ventral scutes are often carinate on the sides. Those kinds which have a less elongate and cylindrical body possess a distinctly prehensile tail. The eye is generally large. Their coloration consists often of bright hues, and sometimes resembles that of their surroundings. They feed on animals which likewise lead an arboreal life, rarely on eggs. Poisonous as well as innocuous snakes are represented in this category. (4) Freshwater snakes, living in or frequenting fresh waters; they are excellent swimmers and divers. The nostrils are placed on the top of the snout and can be closed whilst the animal is under water. Their body is cylindrical, moderately long, provided with narrow ventral scutes; the tail tapering; head flat, rather short; and the eyes of small size. They feed on fish, frogs, and other aquatic animals, and are innocuous and viviparous. (5) Sea snakes are distinguished by the compressed, rudder-shaped tail, supported by erect neural and hæmal spines. They never leave the sea (with the exception of one genus) and are unable to move on land. They feed on fishes, are viviparous and poisonous.