

VENOMOUS SERPENTS.—I.

BY RANDOLPH I. GEARE.

It is probably safe to say that the average person cannot tell a venomous from a non-venomous snake, by mere observation, and knows but little as to the character of the venom, or how snake-bites should be treated. Many a life might have been saved, had specific knowledge on these points been generally disseminated.

At the outset it may be well to state that, so far as North American snakes are concerned, nearly all those whose scales on the under side, from the vent backward, extend in one row across the body are poisonous; whereas, those which have a dividing (median) line, and a row of scales on each side of it, are non-poisonous.

In North America, omitting Mexico, there are about one hundred and sixty-five species of snakes, of which some twenty (counting the several kinds of rattlesnakes) are venomous. These include the Elpids, or Coral Snakes; the Copperhead (*Agkistrodon contortrix*); the Water Moccasin (*Agkistrodon piscivorus*); two species of *Sistrurus* (*Sistrurus miliarium* or Ground Rattler, and *Sistrurus catenatus* or *Massasauga*); and a number of species of Rattlesnake (*Crotalus*), such as the Dog-faced Rattlesnake (*Crotalus molossus*), the Banded Rattlesnake (*Crotalus horridus*), the Diamond Rattlesnake (*Crotalus adamanteus*), the Texas Rattlesnake (*Crotalus atrox*), the Red Diamond Rattlesnake (*Crotalus atrox ruber*), the Pacific Rattlesnake (*Crotalus lucifer*), the Tiger Rattlesnake (*Crotalus tigris*), the Horned Rattlesnake (*Crotalus cerastes*), the Green Rattlesnake (*Crotalus lepidus*), the White Rattlesnake (*Crotalus mitchellii*), the Red Rattlesnake (*Crotalus mitchellii pyrrhus*), and Price's Rattlesnake (*Crotalus pricei*).

The Coral snakes are very retiring in their habits, and are possessed of a gentle and amiable temperament, but when greatly provoked, they can inflict a bite much more venomous than that of a rattlesnake or moccasin of the same size.

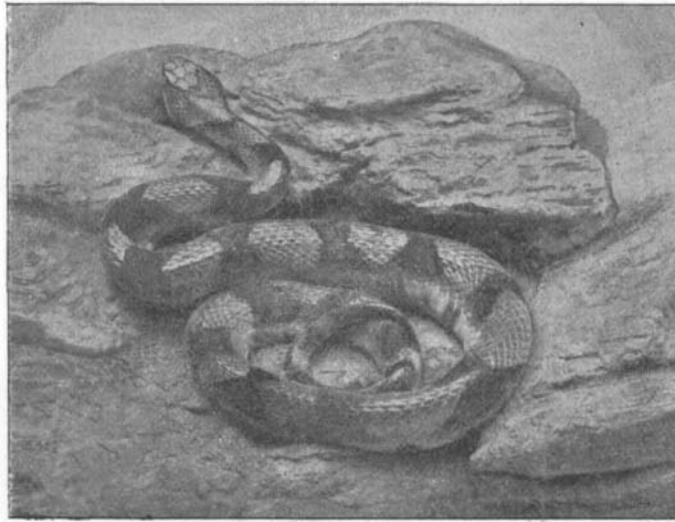
The habits of the Sonoran Coral Snake are not yet well known. It belongs to the "Lower Sonoran" province, but seems restricted to the regions east of the Great Colorado River and west of the Continental Divide. It has been found as far north as Fort Whipple and at certain points in southern Arizona, extending south into Mexico, at least as far as Batopilas, in the State of Chihuahua, in the interior, and to Guaymas, Sonora, on the Gulf of California. The fore part of the head of this snake is black. Back of this is a yellow or creamy white ring, and behind this, a broad light brick-red ring involving eleven scales. Next to this is another creamy-white ring, followed by a black ring eight scales wide. Behind this come black and red rings, alternately, these being separated by white rings. In brief, there are eleven black and eleven red rings on the body, separated by twice as many white ones. The tail is ringed with black and white, without any red.

Strange to say, the Coral snakes are closely related morphologically with the Cobra of India (*Naja tripudians*); that is to say, they agree closely with that deadly group of serpents in external and internal structure, although so utterly dissimilar in general appearance.

Apart from the Coral Snakes, all other North American venomous snakes may be classed under the name of Pit Vipers or Crotalids. The word "pit" relates to the deep depression found in rattlesnakes, copperheads, and moccasins on both sides of the face between the nostril and the eye. Furthermore, this characteristic applies only to the Crotalids, and its presence at once places the serpent in the "dangerous" category. The true use of this "pit," which extends into the maxillary bone, does not seem to have been definitely discovered, but Prof. Leydig regards it as the organ of a sixth sense, from the fact that he found it was supplied with a thick nerve, somewhat analogous to that of the retina of the eye or the labyrinth of the ear. Of late years there

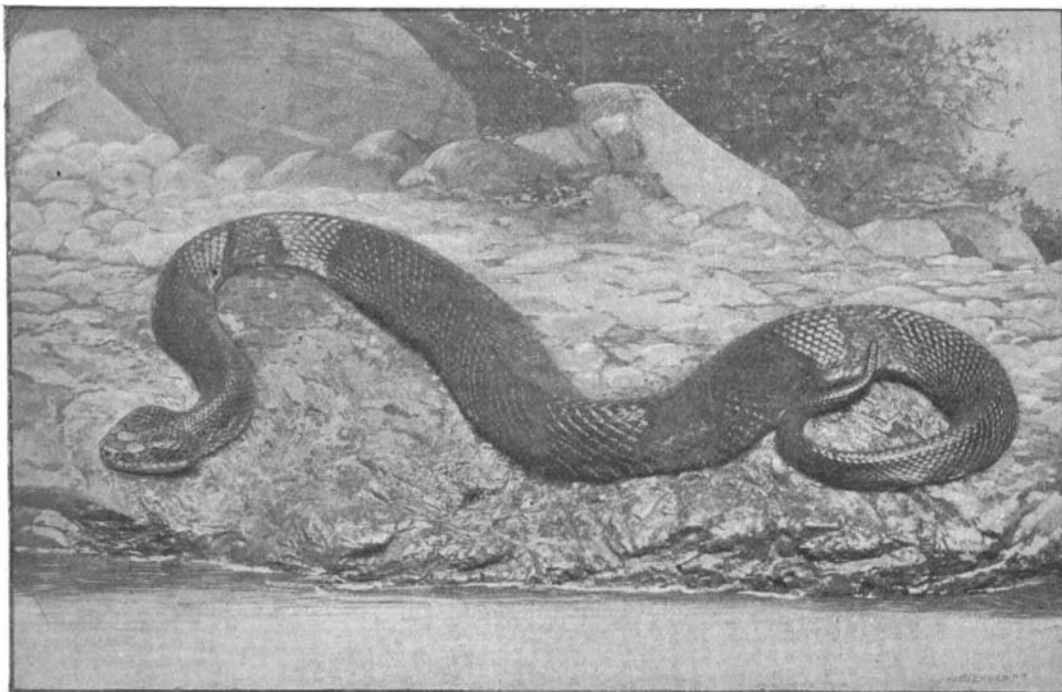
has grown up quite a strong tendency to regard the "pit" as an auxiliary auditory organ.

The Copperhead, also known in different localities by the names Upland Moccasin, Chunkhead, Deaf Adder, Pilot Snake, etc., is perhaps to be more dreaded



A COPPERHEAD.

than any other American snake. Not having a rattle, it cannot sound an alarm, even if it wanted to, and its danger is increased by the fact that its movements are rapid—much more so than those of the rattlesnake, than which it is also much more aggressive. There is some comfort in the assurance that its poison, in proportion to the quantity, is less virulent



ADULT WATER MOCCASIN.

and its bite less dangerous than that of the Rattlesnake. The body of the Copperhead, which species seldom exceeds three feet in length, is strong and thick, ending in a short tail provided underneath with a row of shields. The color of the upper parts is a beautiful coppery brown, becoming lighter on the sides, with dark-brown spots of a characteristic

hourglass-shaped form. It generally inhabits low ground and is found from the 45th parallel of north latitude to the extreme south of the eastern United States. It produces its young alive, like all other crotalids, the average number of the members of a family ranking from seven to nine.

The Water Moccasin (*Agkistrodon piscivorus*), which seldom exceeds four feet in length, is a very venomous snake, and is more to be dreaded than the Rattlesnake, as it will attack anything and everything on sight, and without apparent provocation. With its mouth wide open, it erects itself boldly and darts forward with a rapid spring. Its color is a greenish brown, and it may be recognized by a number of dark bands somewhat similar to those of the Copperhead. Its range extends southward from North Carolina; over the whole of North America, and westward as far as the Rocky Mountains. This serpent is especially plentiful near rivers, marshes, and in swampy lands. According to one authority it delights in climbing trees—apparently for the pleasure of basking in the sun. It is reported that some specimens in the Zoological Garden in Berlin became very tame and gentle toward their keeper, who finally handled them without fear. They would take their food—fishes or even raw meat—from the forceps held in his hand. Toward other snakes they were very savage, and it is stated that their bite is dangerous to other poisonous snakes, although not injurious to others of the same species.

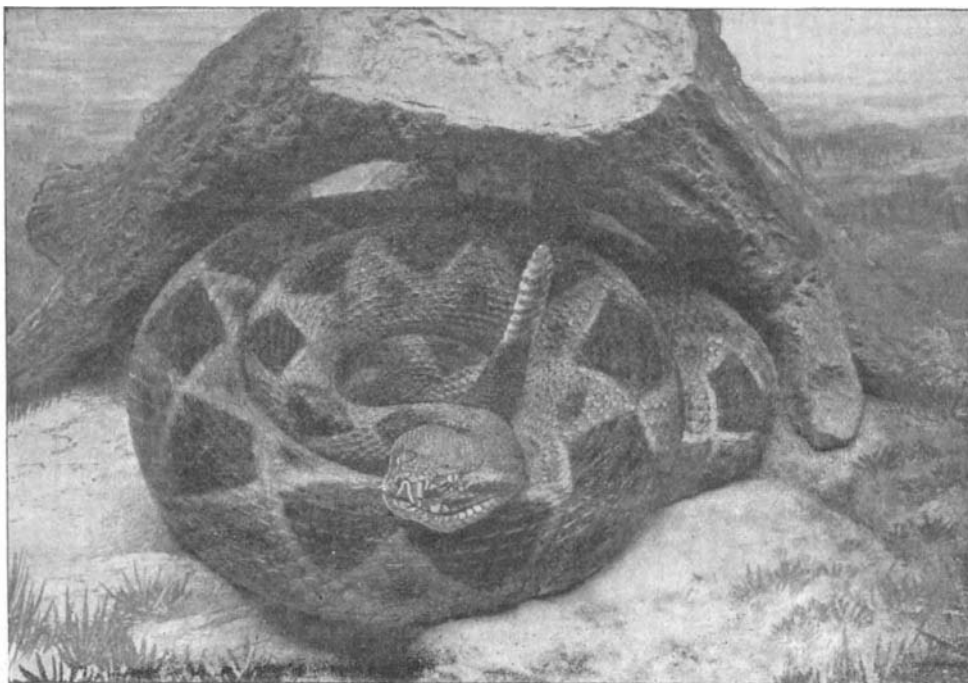
Most conspicuous among the Pit Vipers (*Crotalids*), which are common to Asia and America, are the dreaded Rattlesnakes. These latter, however, are confined to America. They are distinguished by the jointed, horny appendage at the end of the tail, commonly known as the "rattle." In young specimens the tail ends in a simple "button," which is the last joint of the tail. By the time the snake has reached maturity, twenty or more rings may have been interpolated between it and the scaly portion of the tail.

There are so many kinds of rattlesnakes in this country that it would be tedious to the reader, and superfluous indeed, to attempt a description of them all. The most prominent American species are the "Banded," also known as the "Northern" or "Timber," and the "Diamond" rattlesnake, and only these two species will be treated at length in this article.

The Diamond rattlesnake (*Crotalus adamanteus*) sometimes attains the length of eight feet. This is strictly a southern species, its range being confined to the seaboard below the Carolinas. Its favorite haunts are damp, shady places. It differs from the common rattlesnake in

its coloration. The ground color is a beautiful greenish, or occasionally golden brown; upon this is a triple lozenge-shaped chain-pattern on each side of the back, the golden yellow lines of which stand out in marked contrast to the dark diamonds of the ground color. A blackish-brown band runs from the muzzle through each eye to the corner of the mouth; and the top of the head is either uniformly colored, or ornamented with irregular markings.

(To be continued.)



THE DIAMOND RATTLESNAKE (CROTALUS ADAMANTEUS).

The excavations that have been carried on for some time past for the discovery of the Temple of Venus on the ridge of Mount Kotilyon, in Arcadia, have resulted in partial success, by the unearthing of a portion of the edifice. Pausanias speaks highly of this temple, and its discovery is of great importance from the archaeological point of view. A marble slab bearing the inscription "Pan, Artemis, and Apollo" has been brought to light in the course of the excavations, which were made under the superintendence of M. Kourounioti, inspector of antiquities, and sent to the Ministry for Public Instruction. It is assumed from this inscription that, besides the Temple of Venus, of which Pausanias speaks, another temple dedicated to these ancient deities, must have existed in close proximity.