

GENERAL ZOOLOGY

or

SYSTEMATIC NATURAL HISTORY

by

GEORGE SHAW, M.D. F.R.S. &c.

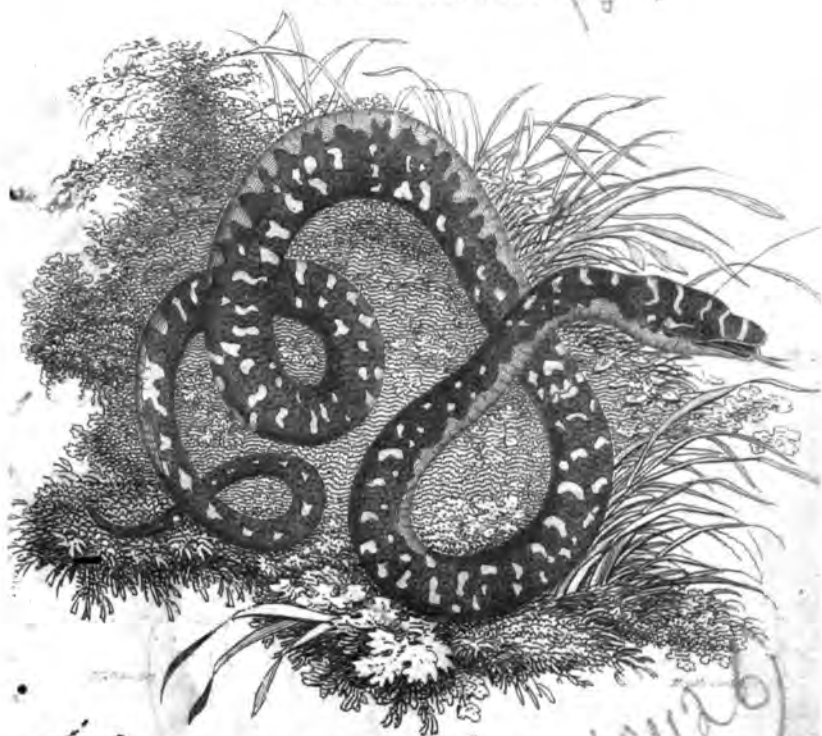
WITH PLATES

from the first Authorities and most select specimens

*Engraved principally by*

MR. HEATH.

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AMPHIBIA.

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*AMPHIBIA.*

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## ERRATA.—VOL. III. PART II.

P. 449, l. 1. for *punctato* read *punctatis*.P. 482, l. 1. for *dorsal* read *dorsali*.

# *Directions for placing the Plates in vol. III. part II.*

The Vignette represents a species of Australasian Snake not yet fully described: it has the habit of a Boa, is covered with very small scales, and varied with irregular yellow spots on a blackish ground: length about 14 inches. See *White's*

*Voyage* p. 259. pl. 46.

Plate 87 to face page 314

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# AMPHIBIA.

ORDER

SERPENTES.

THESE animals are sufficiently distinguished from the preceding tribes of Amphibia by their total want of feet, moving by the assistance of their scales, and their general powers of contortion.

The distinction of species in this numerous tribe is often peculiarly difficult. Linnæus persuaded himself that an infallible criterion might be found in the number of scaly plates on the abdomen and beneath the tail; and, accordingly, attempted in the *Systema Naturæ* to discriminate the species by this mark alone: experience, however, has sufficiently shown that, though often highly useful in the investigation of these animals, it is yet by much too uncertain and variable to be permitted to stand as an established specific test; and it is to be lamented that Linnæus should have so little availed himself of other more ob-

vious characters. The colour is indeed often variable, but the pattern, or general distribution of markings in each species, appears to be more constant: the relative size of the head, the length of the body and tail, the size, smoothness, or roughness of the scales, as well as their shape in different parts of the animal, often afford pretty certain specific marks.

The distinction of Serpents into poisonous and innoxious can only be known by an accurate examination of their teeth; the fangs or poisoning teeth being always of a tubular structure, and calculated for the conveyance or injection of the poisonous fluid from a peculiar reservoir communicating with the fang on each side of the head: the fangs are always situated in the anterior and exterior part of the upper jaw, and are generally, but not always, of much larger size than the other teeth; they are also frequently accompanied by some smaller or subsidiary fangs, apparently destined to supply the principal ones when lost either by age or accident. The fangs are situated in a peculiar bone, so articulated with the rest of the jaw as to elevate or depress them at the pleasure of the animal: in a quiescent state they are recumbent, with their points directed inwards or backwards; but when the animal is inclined to use them as weapons of offence, their position is altered by the peculiar mechanism of the above-mentioned bone in which they are rooted, and they become almost perpendicular.

Head of poisonous Snake

of innocuous Snake

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Tail of Coluber



Carinated Scale



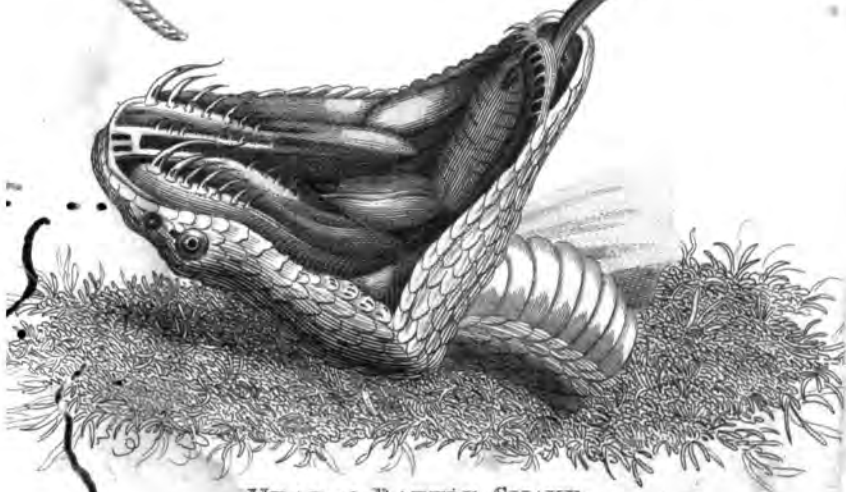
Plain Scale



Fang



Tail of Boa



HEAD of RATTLE-SNAKE.

A general rule for the determination of the existence or non-existence of these organs in any species of Serpent is proposed in a paper relative to the Amphibia by Dr. Gray, and published in the Philosophical Transactions for the year 1788. The fangs, according to Dr. Gray, may be distinguished with great ease, and, as he believes also, with great certainty, by the following simple method. When it is discovered that there is something like teeth in the anterior and exterior part of the upper jaw, which situation he considers as the only one in which venomous fangs are ever found, let a pin or other hard body be drawn from that part of the jaw to the angle of the mouth; (which operation may, for greater certainty, be tried on each side). If no more teeth be felt in that line, it may, he thinks, be fairly concluded that those first discovered are fangs, and that the serpent is consequently venomous: if, on the contrary, the teeth first discovered be observed not to stand alone, but to be only a part of a complete row, it may as certainly be concluded that the serpent is not venomous. This rule, however, like most others, may have its exceptions, and perhaps the most legitimate test of real fangs in a serpent is their tubular structure, which may always be easily detected by the assistance of a proper magnifier. It is to be observed, that all serpents, whether poisonous or not, have besides the teeth (whether fangs or simple teeth), in the sides of the upper jaw, two additional or interior rows, which are generally much smaller than the rest,

and frequently scarce visible: the general rule, therefore, is, that all venomous serpents have only two rows of true or proper teeth in the upper jaw, and that all others have four.

A head entirely covered with small scales is in some degree a character, but by no means a universal one, of poisonous serpents; as are also carinated scales on the head and body, or such as are furnished with a prominent middle line.

All Serpents are in the habit of casting their skin at certain periods; in temperate regions annually; in the warmer perhaps more frequently. The serpents of the temperate and cold climates also conceal themselves, during the winter, in cavities beneath the surface of the ground, or in any other convenient places of retirement, and pass the winter in a state more or less approaching, in the different species, to complete torpidity. It may be added, that some serpents are viviparous, as, the Rattle-Snake, the Viper, and many others of the poisonous kind, while the Common Snake, and probably the major part of the innoxious serpents, are oviparous, depositing their eggs in a kind of string or chain in any warm and close situation, where they are afterwards hatched.

The broad undivided laminæ or scaly plates on the bellies of Serpents are termed *scuta*, and the smaller or divided plates beneath the tail are called *squamæ subcaudales*, or subcaudal scales, and from these different kinds of laminæ the Linnæan genera of Serpents are chiefly instituted.

BANDED RATTLE SNAKE.



## CROTALUS. RATTLE-SNAKE.

*Generic Character.*

<i>Scuta abdominalia.</i>	<i>Scuta on the abdomen.</i>
<i>Scuta Squamæque subcaudales.</i>	<i>Scuta and Squamæ beneath the tail.</i>
<i>Crepitaculum terminale caudæ.</i>	<i>Rattle terminating the tail.</i>

## BANDED RATTLE-SNAKE.

*Crotalus Horridus.* *C. fusco-flavescens, fasciis transversis nigricantibus.*

Yellowish-brown Rattle-Snake, with blackish transverse bands.

*Crotalus horridus.* *Lin. Syst. Nat. p. 372.*

*Vipera caudisona Americana.* *Catesb. Car. 2. t. 41.*

Abdominal scuta 167, subcaudal 23.

THE genus *Crotalus*, or Rattle-Snake, affords the most signal examples of the powerfully destructive poison with which some of the serpent tribe are furnished; instances having frequently occurred in which the bite of these snakes has proved fatal to mankind in the space even of a very few minutes.

Till the discovery of the Western Hemisphere the knowledge of these serpents was concealed from the rest of the world, and philosophers then first beheld with amazement a reptile of the most



fatal nature, furnished, as if by a peculiar institution of Providence, with an instrument capable, in general, of warning mankind of their danger in too near an approach.

The different species of Rattle-Snakes seem to have been generally confounded with each other; and even Catesby, who travelled in those parts of North America where it is found, seems to have been unacquainted with one of the most remarkable species, and to have particularly described the Banded Rattle-Snake only, which he has also figured with sufficient clearness to prevent its being confounded with any other kind, though not with that minute attention to all the particulars which the more improved state of Natural History at present demands.

This species is found, in general, from three to four or five feet in length, and is of a yellowish brown colour, marked throughout its whole length with several transverse and somewhat irregular fasciæ of deep brown, and from the head to some distance down the neck run two or three longitudinal stripes of the same colour; the head is large, flat, and covered with small scales; the rest of the upper parts with moderately large oval ones, all strongly carinated or furnished with a prominent line down the middle: the under parts are of a dingy yellowish brown colour, marked here and there with numerous dusky variegations and freckles: at the extremity of the tail is situated the rattle, consisting of several hard, dry, horny processes, the peculiar structure of which will be



more amply described hereafter, and which, on the least disturbance or irritation, is elevated and shaken in such a manner as to cause a strong or brisk rattling sound.

"The largest Rattle-Snake," says Catesby, "which I ever saw, was about eight feet in length, and weighing between eight and nine pounds. This monster was sliding into the house of Colonel Blake of Carolina, and had certainly taken up his abode there undisturbed, had not the domestic animals alarmed the family with their repeated outcries: the hogs\*, dogs, and poultry, united in their hatred to him, shewing the greatest consternation, by erecting their bristles and feathers, and expressing their wrath and indignation, surrounded him, but carefully kept their distance; while he, regardless of their threats, glided slowly along." "It is not uncommon," adds Mr. Catesby, "to have them come into houses; a very extraordinary instance of which happened to myself in the same gentleman's house, in the month of February, 1723; the servant in making the bed in a ground room (but few minutes after I left it) on turning down the sheets, discovered a rattle-snake coiled between the sheets in the middle of the bed." "They are the most inactive and slow moving snake," adds this author, "of all others, and are never the aggressors, ex-

\* Hogs, however, are, in general, said to be so little afraid of the rattle-snake, that they prey on it occasionally with great eagerness; seizing it in such a manner as to prevent it from doing them any injury, and devouring it.

cept in what they prey upon; for unless they are disturbed they will not bite, and when provoked they give warning by shaking their rattles. These are commonly believed to be the most deadly serpent of any in these parts of America. I believe they are so, as being generally the largest, and making a deeper wound, and injecting a greater quantity of poison. The most successful remedy the Indians seem to have, is to suck the wound, which in a slight bite has sometimes a good effect; though the recovered person never fails of having annual pains\* at the time they were bit. They have likewise some roots which they pretend will effect a cure, particularly a kind of *Asarum*, commonly called Heart-Snake-Root, a kind of *Chrysanthemum*, called *St. Anthony's Cross*, and some others: but that which they rely on the most, and which most of the Virginian and Carolina Indians carry dry in their pockets, is a small tuberous root, which they procure from the remote parts of the country. This they chew, and swallow the juice, applying some to the wound. Having, by travelling much with the Indians, had frequent opportunities of seeing the direful effects of the bites of these snakes, it always seemed and was apparent to me, that the good effect usually attributed to these their remedies, is owing more to the force of Nature, or the slowness of the bite of a small snake in a muscular part, &c.

\* This may perhaps be considered as doubtful, or may depend on other circumstances than the bite of the Rattle-Snake.

The person thus bitten I have known to survive without any assistance for many hours; but where a Rattle-Snake with full force penetrates with his deadly fangs, and pricks a vein or an artery, inevitable death ensues, and that, as I have often seen, in less than two minutes. The Indians know their destiny the minute they are bit, and when they perceive it mortal, apply no remedy; concluding all efforts in vain: if the bite happeneth in a fleshy part, they immediately cut it, to stop the current of the poison."

"The colour of the head of this Rattle-Snake is brown, the eye red, the upper part of the body of a brownish yellow, transversely marked with irregular broad black lists. The rattle is usually of a brown colour, composed of several horny membranous cells, of an undulated pyramidal figure, which are articulated one within another, so that the point of the first cell reaches as far as the basis or protuberant ring of the third, and so on; which articulation being very loose, gives liberty to the parts of the cells that are inclosed within the outward rings, to strike against the sides of them, and so to cause the rattling noise which is heard when the snake shakes its tail."

"The charming, as it is commonly called, or attractive power this snake is said to have, of drawing to it small animals, and devouring them, is generally believed in America; as for my own part I never saw the action, but a great many from whom I had it related, all agree in the manner of the process; which is, that the animals,

particularly birds and squirrels (which principally are their prey), no sooner spy the snake, than they skip from spray to spray, hovering and approaching gradually nearer to their enemy, regardless of any other danger; but with distracted gestures and outcries, descend, though from the top of the loftiest trees, to the mouth of the snake, who openeth his jaws, takes them in, and in an instant swallows them."

On this subject Dr. Mead, in his work on poisons, expresses himself as follows:

"With respect to the use of the Rattle, a vulgar error has obtained, even among the learned, about it. It is commonly said that it is a kind contrivance of divine Providence, to give warning to passengers by the noise which this part makes when the creature moves, to keep out of the way of its mischief. Now this is a mistake. It is beyond all dispute that wisdom and goodness shine forth in all the works of the Creation; but the contrivance here is of another kind than is imagined. All the parts of animals are made either for the preservation of the individual, or for the propagation of its species: this before us is for the service of the individual. This snake lives chiefly upon squirrels and birds, which a reptile can never catch without the advantage of some management to bring them within its reach. The way is this. The Snake creeps to the foot of a tree, and, by shaking his rattle, awakens the little creatures which are lodged in it. They are so frightened at the sight of their enemy, who fixes his

lively piercing eyes upon one or other of them, that they have no power to get away, but leap about, from bough to bough, till they are quite tired, and at last, falling to the ground, they are snapped into his mouth. This is by the people of the country called *charming* the squirrels and birds."

Dr. Barton, professor of natural history in the University of Pennsylvania, in a memoir on the supposed fascinating power of the Rattle-Snake, imagines the whole to be no more than the fluttering of old birds in defence of their young, and which are themselves occasionally caught by the Rattle-Snake in consequence of too near an approach.

"Of the fascinating power of the Rattle-Snake," says Mr. Pennant\*, "it is difficult to speak: authors of credit describe the effects. Birds have been seen to drop into its mouth, squirrels descend from their trees, and leverets run into its jaws. Terror and amazement seem to lay hold on these little animals: they make violent efforts to get away, still keeping their eyes fixed on those of the snake; at length, wearied with their movements, and frightened out of all capacity of knowing the course they ought to take, become at length the prey of the expecting devourer; probably in their last convulsive motion." The same author observes, that Rattle-Snakes in general swarm in the less inhabited parts of North America; but are now almost ex-

\* Arct. Zool. suppl. 88.

tirpated in the more populous parts. None are found farther north than the mountains near lake *Champlain*; but infest South America, even as far as Brasil. They love woods and lofty hills, especially where the strata are rocky or chalky: the pass near *Niagara* abounds with them. Being slow of motion, they frequent the sides of rills, to make prey of frogs, or such animals as resort there to quench their thirst: are generally found during summer in pairs; in winter collecting in multitudes, and retiring under ground, beyond the reach of frost: tempted by the warmth of a spring day, they are often observed to creep out weak and languid: a person has seen a piece of ground covered with them, and killed with a rod between sixty and seventy; till overpowered with the stench, he was obliged to retire\*.

The Rattle-Snake is a viviparous animal; producing its young in the month of June, generally about twelve in number; and which by September acquire the length of twelve inches. It is said to practise the same extraordinary mode of preserving its young from danger which is attributed to the Viper in Europe, viz. of receiving them into its mouth and swallowing them. Of this we have the attestation of M. de Beauvois †, who declares himself an eye-witness of the process. This gentleman saw a large Rattle-Snake, which he happened to disturb in his walks, and which immediately coiled itself up, opened its jaws, and

\* Arct. Zool. suppl. p. 88. † American Phil. Trans, vol. iv.



instantly five small ones, which were lying by it, rushed into its mouth. The author retired and watched the snake, and in a quarter of an hour saw her again discharge them. He then approached it a second time, when the young retired into its mouth with greater celerity than before, and the snake immediately moved off among the grass and escaped. This happened at a place called *Pine-Log*, where M. de Beauvois staid some time with the Indians during an illness with which he was seized. M. de Beauvois adds, that in winter the Rattle-Snake retires into deep mossy loose soils beneath trees, &c. as well as in holes under ground.

From experiments made in Carolina by Captain Hall, and related in the Philosophical Transactions, it appears that a Rattle-Snake of about four feet long, being fastened to a stake fixed in the ground, bit three dogs, the first of which died in less than a quarter of a minute: the second, which was bitten a short time afterwards, in about two hours, in convulsions; and the third, which was bitten about half an hour afterwards, shewed the visible effects of the poison in about three hours, and died likewise. Four days after this, another dog was bitten, which died in half a minute, and then another, which died in four minutes. A cat which was bitten was found dead the next day. Eight days after this a frog was bitten, which died in two minutes, and a chicken of three months old in three minutes. The experiments having been discontinued some time for

want of subjects, a common black snake was procured, which was healthy and vigorous, and about three feet long. It was brought to the Rattle-Snake, when they bit each other, the black snake biting the Rattle-Snake so as to make it bleed. They were then separated, and in less than eight minutes the black snake died; while the Rattle-Snake, on the contrary, shewed no signs of indisposition, appearing as well as before. Lastly, in order to try whether the Rattle-Snake could poison itself, it was provoked to bite itself. The experiment succeeded, and the animal expired in less than twelve minutes.

According to experiments made by Mr. Vosmaer at the Hague, with a lively young Rattle-Snake which he received from Surinam, small birds, such as Sparrows, Greenfinches, &c. died sometimes in four, sometimes in ten, and sometimes in twenty minutes after having been bitten, and a mouse in a minute and half.


The anatomy of the Rattle-Snake is detailed with much exactness by Dr. Tyson in the *Philosophical Transactions*; and it appears that its internal structure in almost all respects resembles that of the Viper. The chief particulars are the following:

The wind-pipe, as in the Viper, as soon as it enters the lungs, consists of semi-annular cartilages, which, being joined at both ends to the membrane of the lungs, constitute a free or open channel, thus immediately transmitting the air to the vesicles of those organs, which are of very



great length, beginning near the throat, and running down three feet in length: the upper part of them, for the distance of about a foot from their origin, is composed of small vesiculæ or cells, as in the lungs of a Frog; and which, from the frequent branchings of the blood-vessels, appear of a florid red: this part tapers, proportionally to the body: the lowest part of it, near the heart, being moderately blown, is about five inches and a half in circumference: a little lower, for the space of about four inches, the cells gradually disappear, so that they seem at last to form only a reticular compages of *valvulæ conniventes* on the inside of the membrane of the lungs: the greatest circumference here is about six inches: the remaining part of the organ is merely a large bladder, without any cellular subdivisions, and consists of a strong, transparent membrane, the circumference of which, when inflated, is about eight inches and a half. The lungs in the Water-Newt, and some other animals, are divided into two large lobes or simple bladders, without cellular subdivisions; in the frog, crocodile, &c. of two large lobes with cellular subdivisions; while in the Rattle-Snake, Viper, &c. both these kinds of structure are comprised; the fore part of the organ being filled with numerous internal vesicular subdivisions, while the remaining part is a mere lengthened bladder.

The œsophagus or gullet was two feet three inches in length, and marked by two distinct swellings or enlargements of very great size, so



as to represent two preparatory stomachs, as it were; nor was the real or proper stomach capable of so much distension as these: the length of the true stomach or third enlargement was nearly similar to that of the second enlargement of the œsophagus; it was much thicker than that part, and resembled in its fabric that of the Viper. From the pylorus the duct straitened again for about half an inch, and then formed a large intestine, the weaved rugæ of its internal coat presenting a curious and pleasing spectacle: this intestine, after some small windings, terminated in the rectum, which was of much smaller diameter. "In the promiscuous food which serpents take in (adds Dr. Tyson), which they always swallow whole, and in which there are always some parts unfit for digestion, and which must, therefore, be returned, the œsophagus here being very long, Nature has provided the above-mentioned swellings or enlargements of that part, where they may be respited, during the efforts made use of by the animal for that purpose, till collecting its force, it gives them, as it were, another and another lift, and at length ejects them; and if what is confidently affirmed be true, that, on occasion of danger, they receive their young into their mouths, these are fit places for receiving them."

The heart was placed near the bottom or base of the trachea, on the right side of it: its length was an inch and a half, and its figure rather flat than round; encompassed with a pericardium;

the auricle being larger than the heart itself. It had only one ventricle, the valves being small and fleshy, and the inside of the ventricle distinguished by four or five cross furrows.

A little below the heart lay the liver, which was about an inch wide in the largest place, and seemed divided on one side by the vena cava into two lobes of unequal length; that on the left side being about ten inches, and that on the right a foot long. Its colour was a brown red, and its use, no doubt, the secreting of the gall, which was contained in a bladder, seated at some distance below it.

The fat in this animal was very plentiful, and the membrane to which it adhered seemed to be the omentum, which encompassed all the parts contained in the lower belly, and was joined to both sides of the ribs, running from thence to the rectum, and forming a bag which enveloped the parts there, but was free, and not conjoined towards the belly: there was no diaphragm or separation between the heart and lungs and the abdominal viscera.

The kidneys, which lay towards the back, on each side of the spine, were not very firmly conjoined, and were about seven inches in length; that on the right side somewhat exceeding that of the left: each were about an inch in diameter, and though forming one continued body, yet plainly distinguishable into several smaller kidneys, to the number of fifteen; all so curiously contrived, with such an elegant compages of

blood-vessels and tubes, as to compose so many regularly-formed bodies, which could not be viewed without admiration.

The tongue was in all respects like that of a Viper, being composed of two long and round bodies, contiguous, and joined together from the root to half its length: this part may be darted out or retracted with great agility by the animal, the part which is thrown out being of a black colour, while the remainder or sheathed portion is red.

The teeth are of two sorts, viz. the smaller, which are seated in each jaw, and serve for the catching and retaining the food; and, secondly, the fangs or poisonous teeth, which kill the prey, and are placed without the upper jaw, and are all canini or apprehensores; for since snakes do not chew or bruise their food, but swallow it whole, they have no need of molares or grinders.

Of the first sort of teeth are two rows on each side, viz. five in a row, the inward less than the outward, there being twenty in all. In the upper jaw there are only sixteen, viz. five on each side, placed backward, and six before. These do no harm, which was known of old to mountebanks, who, to give a proof of the efficacy of their antidotes, would suffer themselves to be bitten by Vipers, but first took care to spoil them of their fangs.

The fangs are placed without the upper jaws, towards the fore part of the mouth, not fastened to the maxillæ, as the other teeth, but the two

outmost and largest fangs were fixed to that bone which (if any) may be thought to be the ear-bone: the other fangs, or smaller ones, seemed not fixed to any bone, but rather to muscles and tendons. The fangs were not to be perceived on first opening the mouth, lying couched under a strong membrane or sheath; but so as to make a large rising there on the outside of the smaller teeth of the maxilla; but at pleasure, when alive, the animal can raise them to do execution with, as a cat or lion does its claws. These fangs were hooked and bent, like the tusks of the Babyroussa, but some of the smaller ones were bent at right angles: on each side we meet with about six or seven of these. In all these teeth was a pretty large foramen or hole towards the root of it, and towards the point was a plainly visible large slit, sloping like the cut of a pen; the part from the slit being perfectly hollow; and on pressing gently with the finger on the side of the gum, the poison, which was of a yellowish colour, was readily perceived to issue from the hollow of the tooth through the slit.

The vertebræ, according to the figure of the body, were smallest towards both extremes, and largest in the middle. From the neck to the vent there were as many vertebræ as scales on the belly, viz. 168; but from the vent to the setting on of the rattle were twenty-nine more in number than the scales.

The rattle is well described by Dr. Grew, who

observes that it consists of hollow, hard, dry, and semitransparent bones, nearly of the same size and figure; resembling in some degree the shape of the human os sacrum; for although only the last or terminal one seems to have a rigid epiphysis joined to it, yet have every one of them the like; so that the tip of every uppermost bone runs within two of the bones below it; by which artifice they have not only a moveable coherence, but also make a more multiplied sound: each bone hitting against two others at the same time.

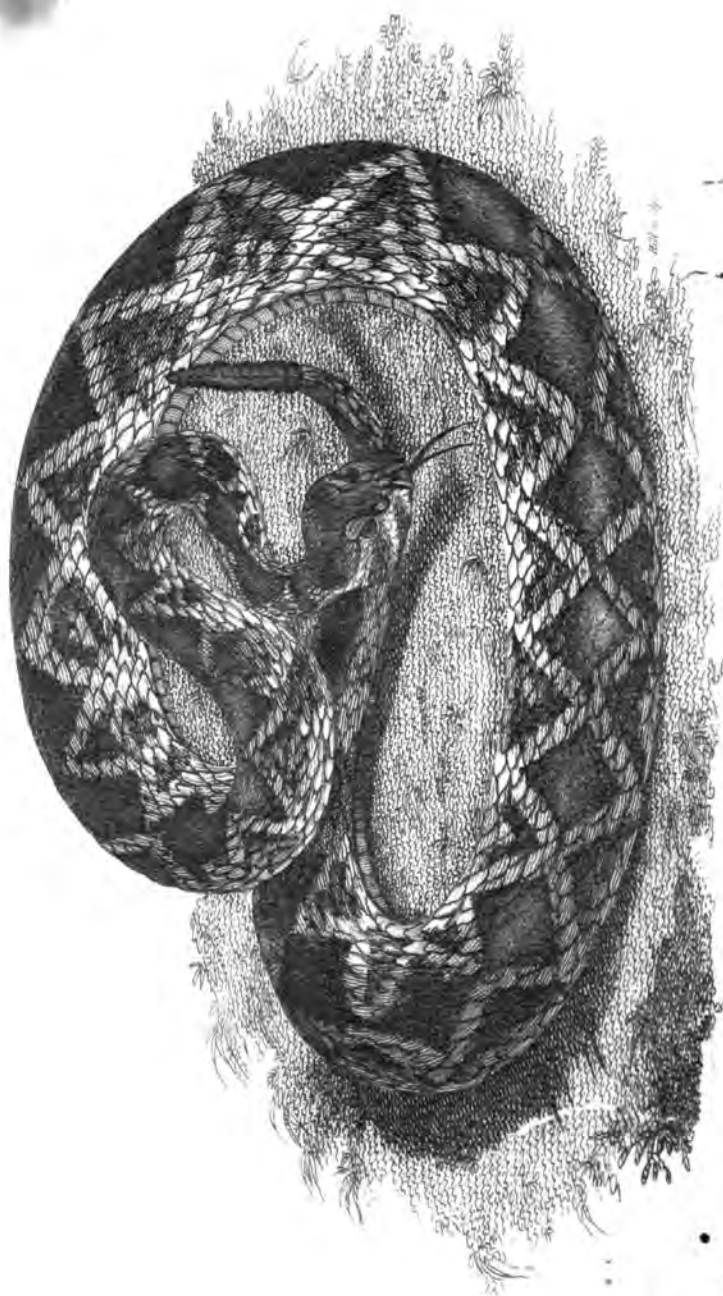
The rattle is placed with the broad part perpendicular to the body, and not horizontal; and the first joint is fastened to the last vertebra of the tail by means of a thick muscle under it, as well as by the membranes which unite it to the skin: all the remaining joints are so many extraneous bodies, as it were, or perfectly unconnected to the tail by any other means than their curious insertions into each other.

The number of joints in the rattle of different individuals is very various, from five to twelve, fifteen, twenty, or even, according to some accounts, as many as forty. The pieces of which it consists are successively formed, each having been once attached to the muscle of the last vertebra of the tail, and driven on by the gradual formation of a young or immature one beneath it; but as it is not known whether these successive formations of new joints in the rattle correspond with the general changes of the skin, and as the

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STRIPED RATTLE-SNAKE.



part is also liable from its nature to occasional mutilations, it cannot be considered as a proper test of the animal's age.

The length of the individual dissected by Dr. Tyson, was four feet five inches; the girth of the body in the largest part six inches and a half; that of the neck three inches, and of the extremity of the tail, near the rattle, two inches.

From his description of its colour, it should rather seem to have been the *Crotalus Durissus* or next species, than the present, since he tells us the scales on the back made a curious chequer or dapping by the intermixture of its colours. The number of abdominal scuta was 168. Beyond the vent were two half-scales, and thence nineteen scuta or whole scales; while from thence to the rattle itself were six orders or rows of smaller scales.

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STRIPED RATTLE-SNAKE.

*Crotalus Durissus. C. fuscus, striis rhombeatis subflavis.*

Brown Rattle-Snake, with yellowish rhomboid stripes.

*Crotalus Durissus. Lin. Syst. Nat. p. 372.*

Abdominal scuta 172, subcaudal 21.

THIS species may, in general, be readily distinguished from the former by the different disposition of its colours, being of a deep brown above, with a very regularly conducted pattern of pale-yellow streaks, so disposed as to form a continued series of large rhombs or lozenges down the back,

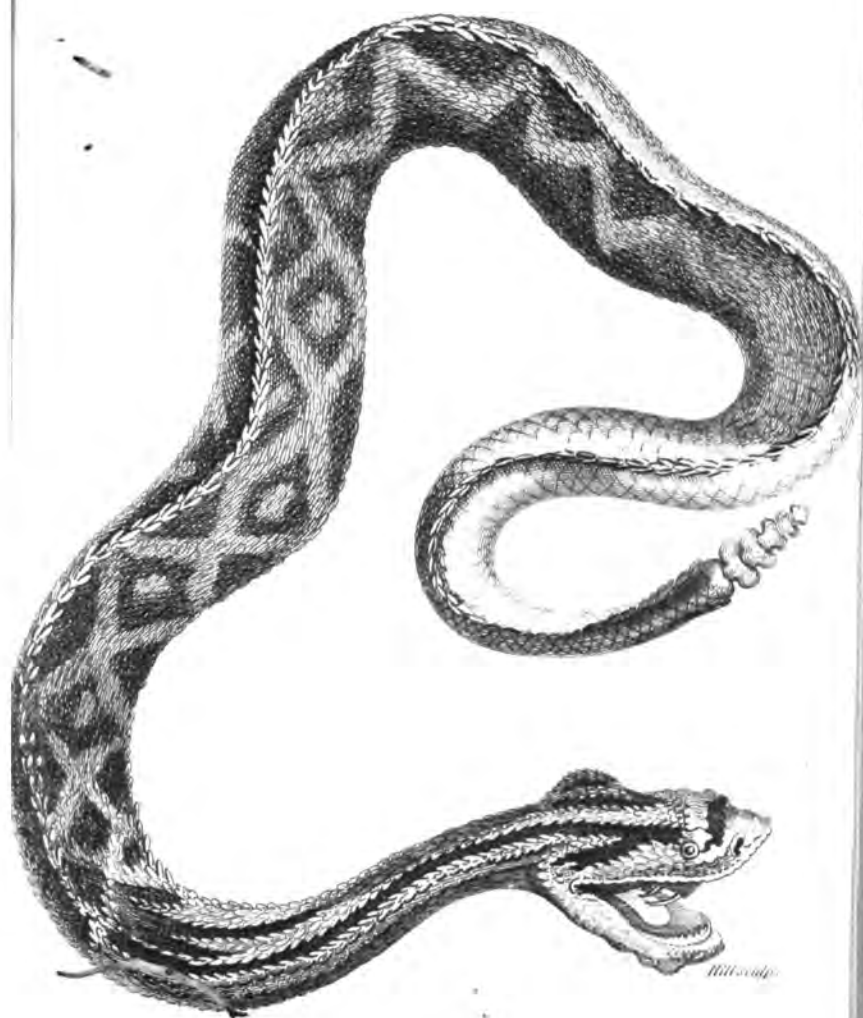


the stripes growing somewhat less distinct as they descend on the sides, where they are continued into a less perfect repetition of the dorsal pattern: the neck is marked by a longitudinal streak on each side, and the under parts of the body resemble in colour those of the former species, being of a dusky yellowish brown, with numerous small dark spots and patches. The size and general proportions of the animal resemble those of the former, with which indeed it appears to have been very frequently confounded. It is also a native of the same parts of America, but seems to have been unknown to Catesby, who has not introduced it into his History of Carolina. Its bite, so far as can be ascertained by experiments made with such specimens as have been transported into Europe, appears to be equally fatal\* with that of the former species.

\* In the spring of the present year a Rattle-Snake of this species, which had been kept many months in confinement, bit a healthy half-grown Rabbet, which was placed in its cage, on the loins: the Rabbet instantly fell down; became quite paralytic in the hind limbs, and soon afterwards in the fore also, and died in the space of twenty-five minutes† from the bite, without any convulsive motions.

† According to the observations of Sir Thomas Cullum, bart. in whose presence the experiment was made.

STRIPED RATTLE-SNAKE.  
*var 2*



*from Vosmaer.*



*Bothrops*

*Bothrops lanceolatus* (L.) (Bothrops lanceolatus) (Bothrops lanceolatus)

## WOOD RATTLE-SNAKE.

*Crotalus Dryinas. C. griseus, subluteo variatus.*

Greyish Rattle-Snake, with yellowish variegations.

*Crotalus Dryinas. Lin. Syst. Nat. p. 372.*

*Vipera caudisona Ceilanica. Seb. 2. t. 95. f. 3.*

*Vipera Orientalis maxima caudisona. Seb. 2. t. 96. f. 1.*

Abdominal scuta 165, subcaudal 30.

A GENUINE description of the particular colour of this species, in a living state, seems yet wanting; authors having described it from specimens preserved in spirits, in which, after a certain period, the colours of most serpents are greatly changed and faded. It is said, however, to be of a paler or lighter tinge than the two former species, and to be variegated with yellowish marks on the back: some individuals figured by Seba, and which are generally referred to this animal, are of a rufous or ferruginous tinge, with a cast of yellow accompanied by a few dusky variegations on the upper parts: the rattle is, in these specimens, of much greater length than is usually seen in the preceding kinds, the number in one of them amounting to no less than forty. Seba imagined his specimens to have been natives of Ceylon, and therefore distinguishes them by the title of Oriental Rattle-Snakes; but it is generally supposed that this is a mistaken idea, and that the whole genus is confined to the American continent.

## MILIARY RATTLE-SNAKE.

*Crotalus Miliarius.* *C. cinereus*, *maculis nigris triplici ordine longitudinali, macula rubra inter singulas dorsales.*

Grey Rattle-Snake, with a triple row of black spots, and a red spot between each of the dorsal ones.

*Crotalus Miliarius.* *Lin. Syst. Nat. p. 572.*

Small Rattle-Snake. *Catesb. Car. 2. pl. 42.*

Abdominal scuta 132, subcaudal 32.

Mr. CATESBY, the first describer of this animal, seems to entertain some doubts whether it really differs from the common rattle-snake, in any other respect than in colour, its prevailing tinge being grey-brown, shaded on the back with red, and marked by large black spots with white indented edges. It appears, however, to be a truly distinct species, differing not only in colour but in the smaller number of its abdominal scuta: there are generally three rows of black dorsal spots, of which the middle range is the largest, and is distinguished by a red spot interposed between each of the black ones, which are also commonly tinged with red on the middle: this is the smallest species of Rattle-Snake yet known, rarely exceeding the length of two feet. In its general habits it resembles the preceding kinds.

## BOA. BOA.

*Generic Character.*

<i>Scuta</i> abdominalia & sub-caudalia.		<i>Scuta</i> or undivided plates both on the abdomen and beneath the tail.
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## CONSTRUCTOR BOA.

Boa Constrictor. *B. griseo-flavescens, catena dorsali castanea, maculis lateralibus subtrigonis.*

Yellowish-grey Boa, with large chesnut-coloured chain-like pattern down the back, and subtrigonal spots on the sides.

Boa Constrictor. *Lin. Syst. Nat. p. 373.*

Serpens Ceilonica spadicea Manballa dicta. *Seb. 2. t. 99. f. 1.*

Serpens excellens ac speciosa Brasiliensis. *Ib. t. 99. f. 2.*

Serpens blanda Ceilonica Polonga dicta. *Ib. t. 101.*

Serpens Americana arborea. *Seb. 1. t. 53.*

Le Devin. *Cepede ovip. 2. p. 338.*

Boa Constrictor. Great Boa. *Nat. Misc. vol. 2. pl. 51.*

Abdominal scuta 240, subcaudal 60.

THE genus Boa is remarkable for the vast and almost unlimited size of some of the principal species, which in India, Africa, and South America, are occasionally found of not less than twenty, thirty, and even thirty-five feet in length, and of a strength so prodigious as to be able to destroy

cattle, deer, &c. by twisting around them in such a manner as to crush them to death by continued pressure\*, after which they swallow them in a very gradual manner; and when thus gorged with their prey, become almost torpid with repletion, and if discovered in this state, may without much difficulty be destroyed by shooting or other methods. There is reason to suppose that these gigantic serpents are become less common now than some centuries backwards, and that in proportion as cultivation and population have increased, the larger species of noxious animals have been ex-

\* This practice of the larger serpents seems to have been well known to the ancients: thus Lucan, speaking of the monstrous African snakes (which he also represents as furnished with wings), tells us they destroy Oxen, and even Elephants, by writhing around and crushing them to death.

*" Vos quoque, qui cunctis innoxia numina terris  
Serpitis, aurato nitidi fulgore Dracones,  
Pestiferos ardens facit Africa, ducitis altum  
Aera cum pennis, armentaque tota secuti  
Rumpitis ingentes amplexi verberare tauros.  
Nec tutus spatium est Elephas: datis omnia leto:  
Nec vobis opus est ad noxia fata veneno."*

Ye too, in other climes who harmless rove  
In gilded scales, the guardians of the grove,  
In horrid Afric's pestilential air  
Acquire new natures from the burning glare:  
Ride thro' the blaze of noon on sable wing,  
Quick on th' affrighted herds with fury spring;  
And gathering all your folds in writhings dire,  
Bid the huge Ox beneath your crush expire:  
Th' enormous Elephant by force can slay,  
And need no poison to secure your prey.

The tale of Laocoon in Virgil might be also adduced as an example of this particular.





CONSTRUCTOR BOA.

pelled from the haunts of mankind, and driven into more distant and uncultivated tracts: they are still, however, occasionally seen, and sometimes approach the plantations and gardens of the districts nearest to their residence.

Of all the larger Boæ the most conspicuous is the Boa Constrictor, which is at once preeminent from superiority of size and beauty of colours: in this respect indeed it appears to be subject to considerable variation from age, sex, and climate, but may be distinguished in every state from the rest of its tribe by the peculiar pattern or disposition of its variegations. The ground-colour of the whole animal, in the younger specimens, is a yellowish grey, and some times even a bright yellow, on which is disposed along the whole length of the back a series of large, chain-like, reddish-brown, and sometimes perfectly red variegations, leaving large open oval spaces of the ground colour at regular intervals: the largest or principal marks composing the chain-like pattern above mentioned are of a squarish form, accompanied on their exterior sides by large triangular spots, with their points directed downwards: between these larger marks are disposed many smaller ones of uncertain forms, and more or less numerous in different parts: the ground-colour itself is also scattered over by a great many small specks of the same colour with the variegations: the exterior edges of all the larger spots and markings are commonly blackish, or of a much deeper cast than the middle part, and the ground-colour immediately accompany-

ing the outward edges of the spots is, on the contrary, lighter than on other parts, or even whitish, thus constituting a general richness of pattern, of which nothing but an actual view of a highly-coloured specimen of the animal itself can convey a complete idea. In the larger specimens the yellow tinge is often lost in an uniform grey cast, and the red tinge of the variegations sinks into a deep chesnut; and in some the general regularity of the pattern before described is disturbed by a kind of confluent appearance: the head is always marked above by a large longitudinal dark band, and by a narrower lateral band passing across the eyes towards the neck.

The Boa Constrictor is a native of Africa, India, the larger Indian islands, and South America, where it chiefly resides in the most retired situations in woody and marshy regions.

It was, in all probability, an enormous specimen of this very serpent that once diffused so violent a terror amongst the most valiant of mankind, and threw a whole Roman army into dismay. Historians relate this surprising event in terms of considerable luxuriance. Valerius Maximus thus mentions it from Livy, in one of the lost books of whose history it was related more at large.

“And since we are on the subject of uncommon phænomena, we may here mention the serpent so eloquently and accurately recorded by Livy; who says, that near the river Bagrada in Africa, a snake was seen of so enormous a magni-



C. O. S. T. H. E. R. P. O. R. T. A. N. T.

tude as to prevent the army of Attilius Regulus from the use of the river; and after snatching up several soldiers with its enormous mouth, and devouring them, and killing several more by striking and squeezing them with the spires of its tail, was at length destroyed by assailing it with all the force of military engines and showers of stones, after it had withstood the attack of their spears and darts: that it was regarded by the whole army as a more formidable enemy than even Carthage itself; and that the whole adjacent region being tainted with the pestilential effluvia proceeding from its remains, and the waters with its blood, the Roman army was obliged to remove its station: he also adds, that the skin of the monster, measuring 120 feet in length, was sent to Rome as a trophy."

The learned Frienshemius, in his *Supplementa Liviana*, has attempted a more ample and circumstantial narrative of the same event, and it cannot be unacceptable to the reader to receive a quotation from an author who has so happily imitated the manner of the great historian.

"Interea M. Regulus, &c."

"In the mean time Regulus, every where victorious, led his army into a region watered by the river Bagrada, near which an unlooked-for misfortune awaited them, and at once affected the Roman camp with considerable loss, and with apprehensions still more terrible; for a serpent of prodigious size attacked the soldiers who were sent for water, and while they were overwhelmed

with terror, and unequal to the conflict, engulfed several of them in its enormous mouth, and killed others by writhing round them with its spires, and bruising them with the strokes of its tail: and some were even destroyed by the pestilential effluvia proceeding from its breath: it caused so much trouble to Regulus, that he found it necessary to contest the possession of the river with it by employing the whole force of his army; during which a considerable number of soldiers were lost, while the serpent could neither be vanquished nor wounded; the strong armour of its scales easily repelling the force of all the weapons that were directed against it; upon which recourse was had to battering engines, with which the animal was attacked in the manner of a fortified tower, and was thus at length overpowered. Several discharges were made against it without success, till its back being broken by an immense stone, the formidable monster began to lose its powers, and was yet with difficulty destroyed; after having diffused such a horror among the army, that they confessed they would rather attack Carthage itself than such another monster: nor could the camp continue any longer in the same station, but was obliged to fly; the water and the whole adjacent region being tainted with the pestiferous effluvia. A most mortifying humiliation to human pride! Here at least was an instance of a whole Roman army, under the command of Regulus, and universally victorious both by sea and land, opposed by a single snake, which

conflicted with it when living, and even when dead obliged it to depart. The proconsul, therefore, thought it no diminution to his dignity to send the spoils of such an enemy to Rome, and to confess at once the greatness of his victory and his terror by this public memorial: for he caused the skin of the snake to be taken off and sent to the city; which is said to have measured 120 feet: it was suspended in a temple, and remained till the time of the Numantine war."

Of the two figures selected for the illustration of this species, one represents the animal in its most regular state of variegation, the other with the less regular or confluent pattern.

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SPOTTED BOA.

Boa Scytale. *B. cinerea maculis dorsalibus magnis orbiculatis nigris, lateralibus annulatis disco albo.*

Cinereous Boa, with large orbicular black dorsal spots, and annulated lateral ones, with white centres.

Boa Scytale. *Lin. Syst. Nat. p. 274. Boddaert Nov. Act. Cæs. 7. p. 17. Scheuchzer Phys. Sacr. t. 737. f. 1.*

Abdominal scuta 250, subcaudal 70.

THE spotted Boa is sometimes scarcely inferior in size to the Constrictor, and is of similar manners, destroying, like that animal, goats, sheep, deer, &c. it is described as being generally of a grey or glaucous colour, marked with large orbicular black spots on the back, and with smaller



ones of similar form, but with white centres, on the sides, while on the abdomen are scattered several oblong spots and marks, interspersed with smaller specks and variegations. It is a native of several parts of South America, and, like other large snakes, is occasionally eaten by the Indians.

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 RINGED BOA.

Boa Cenchris. *B. rufescens, annulis magnis dorsalibus nigricantibus, maculis reniformibus lateralibus fuscis medio albidis.*

Rufescent Boa, with large dusky dorsal rings, and blackish kidney-shaped lateral spots with white centres.

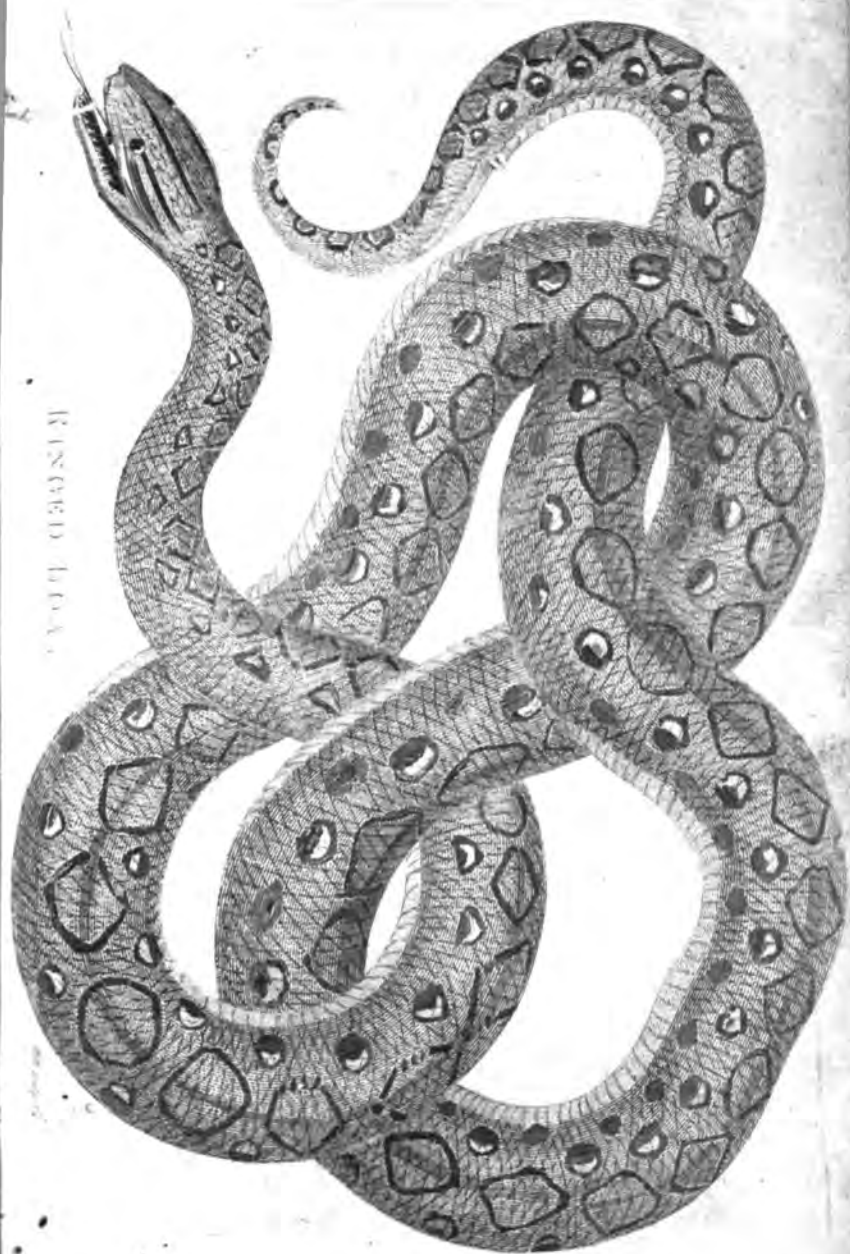
Boa Cenchris. *Lin. Syst. Nat. p. 274.*

Tamacuilla Huilia, seu Serpens Oculea Mexicana fœmina.  
*Seb. 2. t. 98.*

Abdominal scuta 265, subcaudal scuta 57.

THIS also grows to a large size, though not equal to either of the former species, from which, as well as from most others, it may be easily distinguished by the regular distribution of its colours; the general cast being ferruginous, darkest on the back, where it is marked by a continued series of very large blackish circles from head to tail; while along the sides are interspersed several kidney-shaped blackish spots with white centres: the head is a lengthened form, and is marked by a black longitudinal and two lateral bands. This animal is a native of South America, and is extremely well figured in the work of Seba. In the British and Leverian Museums are specimens preserved in spirits.

LONGERED BOA



## WATER BOA

Boa Enydris. *B. colore griseo variegata.* Boddaert Nov. Act.

Cæs. 7. p. 18.

Boa with grey variegations.

Boa Enydris. *Lin. Syst. Nat.* p. 274.

Abdominal scuta 270, subcaudal 105.

THIS species, according to Linnæus, is variegated with different shades of grey; the teeth in the lower jaw are longer than usual in this genus; the number of abdominal scuta is 270, and of the subcaudal ones 105. Linnæus described it from a specimen in the collection of Baron Degeer. It is greatly allied in general appearance to the *Hortulana*, having a compressed body, and a nearly similar pattern.

## BROWN BOA.

Boa Ophryas. *B. corpore fusco.*

Boa with brown body.

Boa Ophryas. *Lin. Syst. Nat.* p. 274.

Abdominal scuta 281, subcauda 84.

MENTIONED by Linnæus from a specimen in the Museum of Degeer: has the general habit of the *B. Constrictor*, but is of a dark or dusky colour, and has 281 abdominal and 84 subcaudal scuta.

## CANINE BOA.

Boa Canina. *B. viridis, fasciis dorsalibus transversis undulatis albis.*

Green Boa, with transverse, undulated, white dorsal bands.

Boa Canina. *Lin. Syst. Nat. p. 373. Mus. Ad. Frid. p. 39. t. 3.*

Serpens *Bojobi Brasiliensis, &c. Seb. 2. t. 96. and var. Serpens*

*Bojobi Ceilanica. t. 81.*

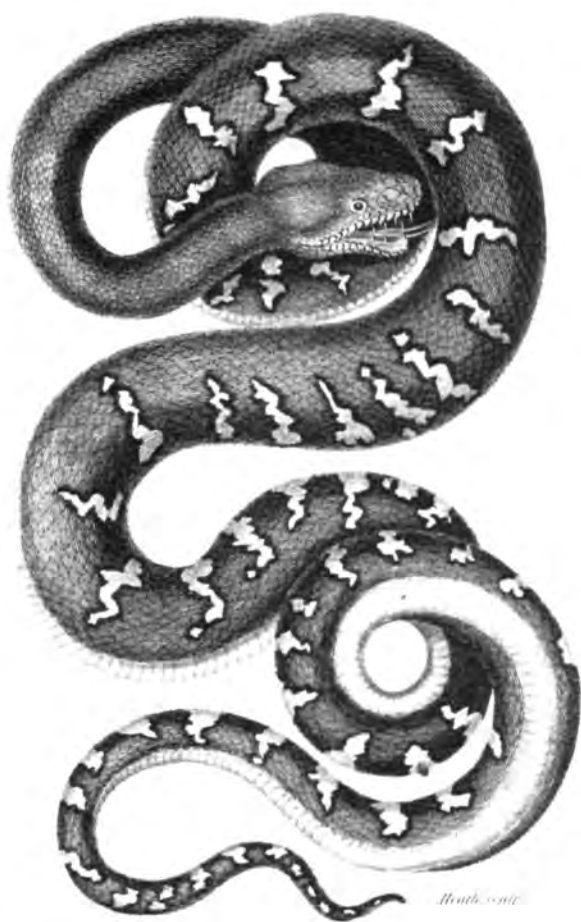
Abdominal scuta 203, subcaudal 77.

A HIGHLY beautiful snake; measuring about four feet in length, and being of moderate size or thickness in proportion: the head is large, and shaped like that of a dog: the colour of the whole animal on the upper parts is a most beautiful saxon-green, with several short, undulating, transverse white bars down the back, the edges of which are of a deeper or stronger green than the ground-colour of the body: the under or abdominal part is white. This species is a native of South America. In the British Museum is an elegant specimen.

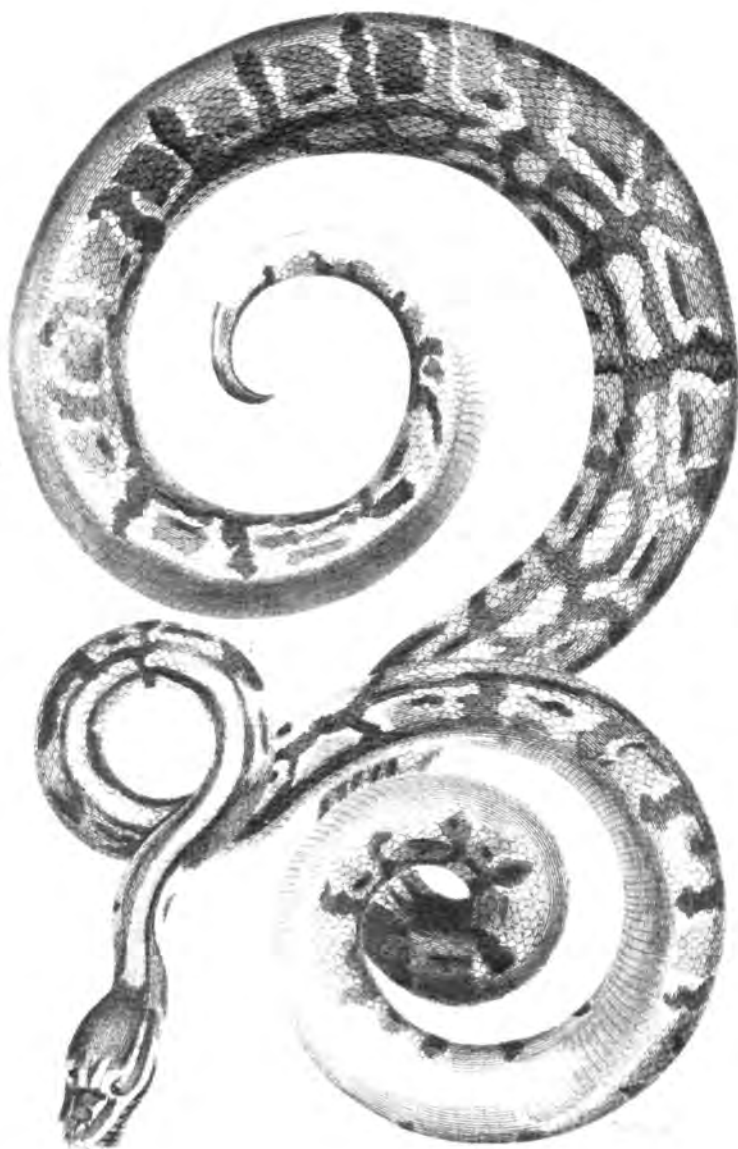
## VAR. ?

SEBA describes and figures a remarkable variety of this animal, in which the ground-colour is bright orange, the dorsal bands pale yellow edged with red, and the abdomen pale yellow. It is a native of the East Indies, differing merely in colour from the former.

CANINE BOA.



ROYAL BOA



## ROYAL BOA.

Boa Regia. *B. alba, collo longitudinaliter fasciato, corpore fusco griseoque, vel aurantio roseoque variato.*

White Boa, with longitudinally striped neck, and body variegated either with brown and grey, or orange and rose-colour. Serpens *Phyticus* Africanus prodigiosus, ab indigenis divino honore cultus. Seb. 1. t. 62. f. 1.

Serpens Arabica Brasiliensibus *Ibiboboca* & *Boiguacu* dictis. Seb. 2. t. 102.

THIS species, which does not appear to have been described by any author except Seba, is in the form of its head, and the general shape of the body, most allied to the *Canina* and *Phrygia*. In its colour it appears to vary, the ground-colour being white, but the variegations sometimes dusky or chesnut, and sometimes of a most elegant orange-red, accompanied by a tinge of blossom-colour on the lighter parts of the pattern: the top of the head is filled by a large patch, from which run two long parallel stripes to a considerable distance on each side the neck, leaving a wider stripe of the ground-colour along the upper part, and which afterwards ceasing, forms a part of the general variegation, which consists of a large and somewhat chain-like dorsal band, running down on each side at moderately distant intervals, into obtuse processes or sinuations regularly bordered by the white ground-colour, the intervening lateral spaces being much lighter, and each marked by a dusky patch on the upper part: the under parts of the body and tail are white:



the head is covered in front with large scales: the tail is extremely short, and tapers pretty suddenly.

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EMBROIDERED BOA.

Boa Phrygia. *B. alba, dorso subgriseo, corpore nigro elegantissime limbo.*

White Boa, with a greyish cast on the back; the body most elegantly marked with black lace-like variegations.

Serpens Phyticus Orientalis Gerende dictus. Seb. 1. t. 62. f. 2.

AMONG the whole Serpent tribe it may be doubted whether there exists a species more truly elegant than the present. Its general size seems to be nearly that of the Boa canina, but its length is rather greater in proportion: the ground-colour of the whole animal is white, with a very slight cast of yellowish-brown on the back, while along the whole upper part is disposed a continued series of black variegations, so conducted as to bear a striking resemblance to an embroidery in needlework: the head is of the same form with that of the Boa canina, and marked by three narrow black streaks, which, running along the top of the head and the cheeks, as shewn in the figure, join with the embroidered pattern of the back: the lower surface is entirely white: it seems singular that so remarkable a species should not have been attended to by Linnæus. It is, according to Seba, a native of the East Indies: he adds, that it is called by the title of *Gerende*, and that in some



places divine honours are paid to it. In the Leverian Museum are fine specimens of this snake, one of which appears to have swallowed some species of Oppossum of about the size of a common rat, the head of which is purposely drawn out from an opening made in the abdomen. In the Museum of the late Dr. William Hunter is also a very beautiful specimen. As this species can never be mistaken for any other yet known, it is the less necessary to particularize the exact number of its abdominal and subcaudal scuta, which, in specimens preserved in covered glasses, is not very easy to investigate: the only circumstance in which it appears to vary is in the intensity of colour in the embroidered pattern, which in some is black, and in others deep chesnut.

## VAR.?

SEBA describes and figures two snakes which appear to me to be varieties of this species: one of a purplish-ferruginous, the other of a yellow-ferruginous colour: the abdomen in the former pale purple, in the latter yellowish white: the general variegations the same as in the first described kind: the purplish variety is said to be from Japan, the other from New Spain. See *Seba*, vol. 2. pl. 79 and 80. Yet, if we may trust to the accuracy of the engraving, they should seem rather to belong to the genus *Coluber*, the tails in both being represented with divided squamæ; but this may perhaps be an inaccuracy on the part of the artist.

## GARDEN BOA.

Boa Hortulana. *B. griseo-flavescens fusco variegata, capite lim-  
bato, corpore subcompresso, maculis lateralibus cuneiformibus.*

Yellowish-grey Boa, with brown variegations; those on the head resembling lace: the body subcompressed, and the sides marked by wedge-shaped spots.

Boa Hortulana. *Lin. Syst. Nat. p. 274. Mus. Ad. Frid. p. 37.*  
Abdominal scuta 290, subcaudal 123.

THIS very elegant serpent, which is of moderate size, measuring only a few feet in length, and being of a slender form, has obtained its Linnæan title from the singular pattern of the variegations on the head, which are of a blackish brown on a pale ferruginous or yellowish ground, and in some degree represent the form of a parterre in an old-fashioned garden: the variegations on the body are of similar colour, and are disposed into large circular, and sometimes angular patches on the sides, the centres of some being open, and of others marked by an oblong spot: besides these are interspersed others of smaller size and of different forms: the abdomen is commonly yellowish, with dusky specks and patches: the ground-colour of the whole snake is sometimes pale violet, and the variegations dark purplish brown, but in all its varieties this species may be easily distinguished by the rich embroidered appearance of the pattern, and more particularly by that on the top of the head: the head is also rather broader, and the neck more slender in proportion than in most other Boæ, the body slightly compressed, and the

MAGNIFICENT SNAKE



tail slender. It is a native of South America. Seba figures what appears to be a variety of this species, of a sea-green colour above, with deep chesnut variegations, and pale yellow beneath, with reddish spots.

It is remarkable that Linnaeus, in the Museum Adolphi Friderici, appears to describe the *Boa hortulana* as a species of *Coluber*, having the habit or general aspect of a Boa.

## RAT BOA.

*Boa Murina.* *B. grisea maculis rotundatis nigris, lateralibus albidio-cellatis.*

Grey Boa, with round black spots, those on the sides ocellated with white.

*Boa murina.* *Lin. Syst. Nat. p. 274.*

*Serpens testudinea Americana, murium insidiator. Seb. 1. t. 29.*

Abdominal scuta 254, subcaudal 65.

THIS is a middle-sized species, measuring about two feet and a half or three feet in length, and being of a moderately thick form: the colour of the whole upper part is grey or blueish-brown, with several moderately large round black spots dispersed in a somewhat irregular manner along the back and sides; those on the sides being marked with a white patch, so as to appear ocellated: some smaller spots of different forms are also interspersed: the abdomen is of a yellowish white or pale colour, with a few scattered dusky spots: the head is marked on each side by two

longitudinal black stripes: this species is said to feed principally on rats, and to be found in South America.

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CROTALINE BOA.

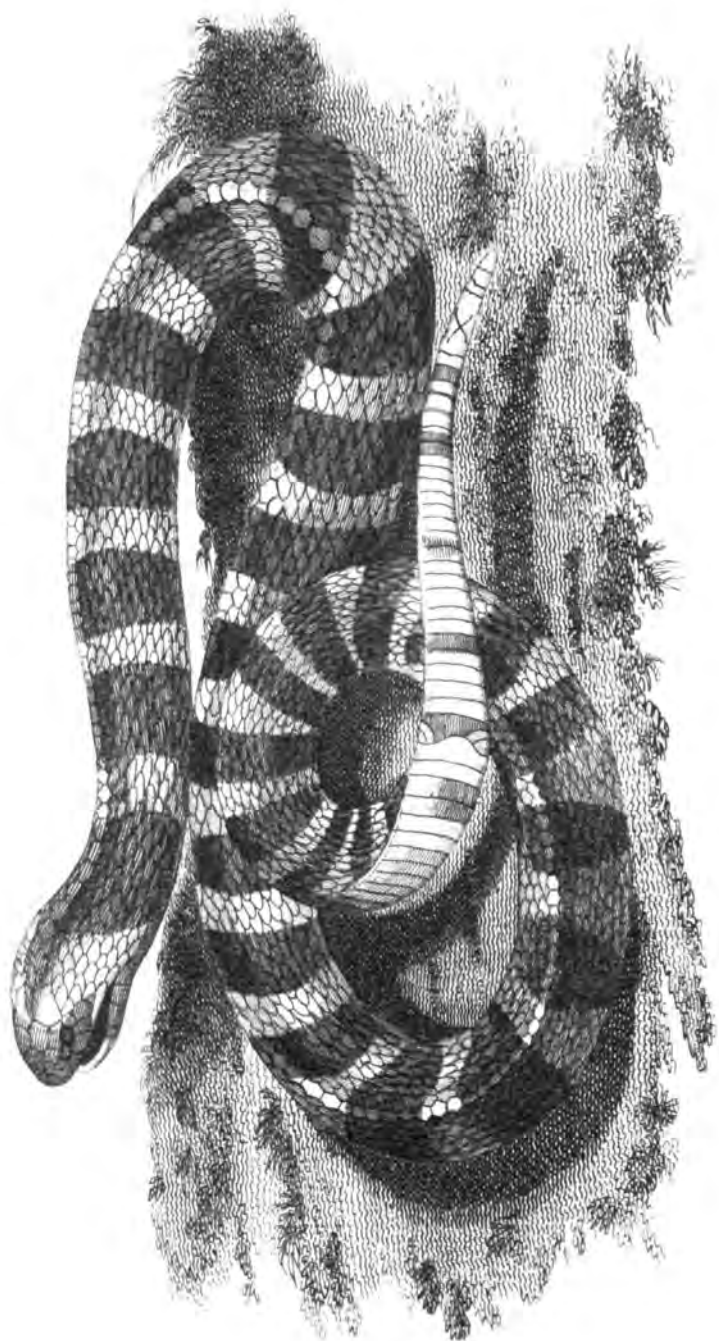
*Boa maculis nigris rhombeatis dorsalibus, cauda subtus serie quadruplici squamarum terminata.*

Boa with black rhomboid dorsal spots, and tail terminated beneath by four rows of scales.

*Crotalus mutus.* Lin. *Syst. Nat.* p. 373.

THIS snake Linnæus was induced to place in the genus *Crotalus*, from its habit, and from a certain peculiar disposition of the scales at the tip of the tail, which are distributed into four series, seeming as it were to supply the place of the rattle in the genuine *Crotali*; but since the particular organ itself, which so strikingly distinguishes those serpents, is wanting, it, of course, cannot properly belong to the same genus: it is a native of Surinam, and is a large species, marked on the back by a chain of black rhomboid spots, and is furnished with very large and strong fangs.





## FASCIATED BOA.

Boa Fasciata. *B. flava, corpore subtriangulo caeruleo annulato.*

Yellow Boa, with subtriangular body annulated with blue.

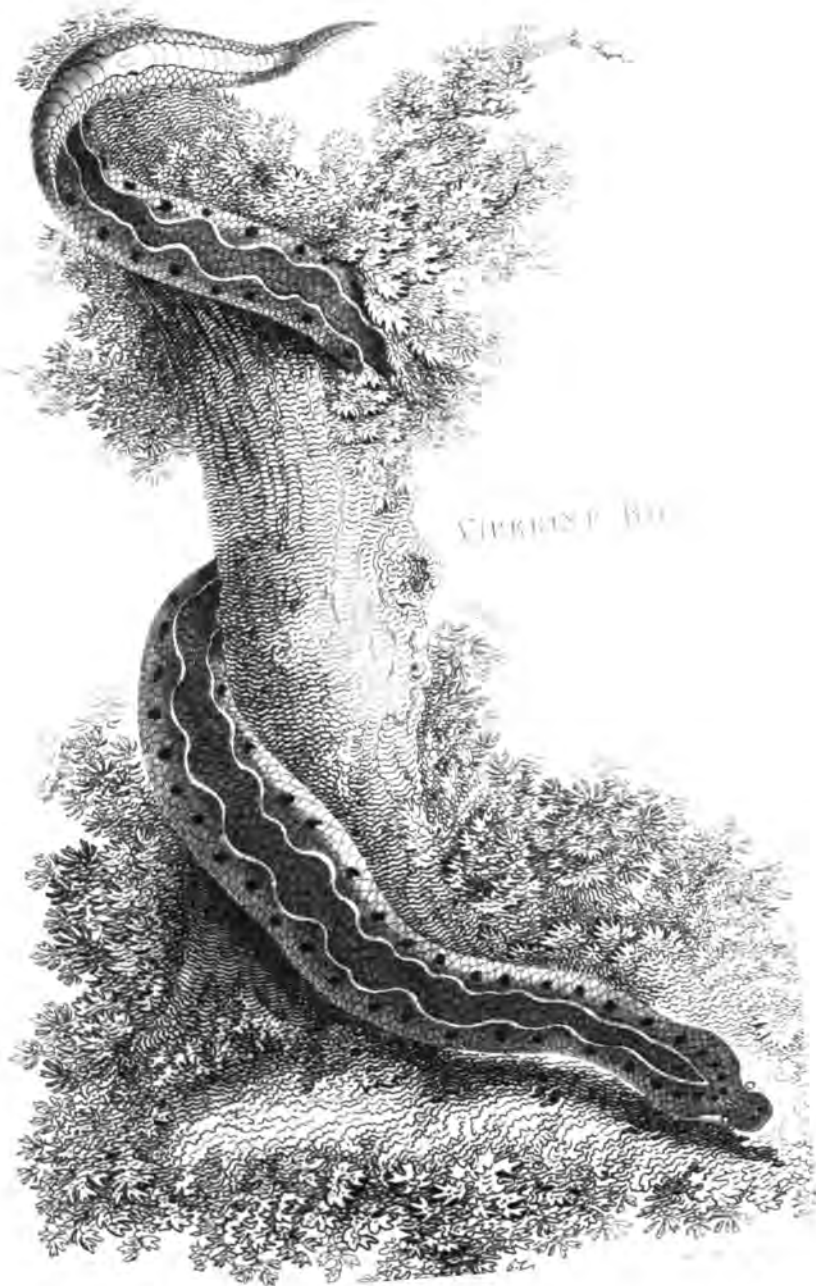
Bungarum Pamah. *Russ. Ind. Serp. p. 3. pl. 3.*

Abdominal scuta 233, subcaudal 36.

It is to Dr. Patrick Russel that we owe the knowledge of this remarkable species, which is a native of India, and is said to be most frequent in the country of Bengal. It is of a yellow colour, marked with pretty numerous dusky-blue transverse bands, continued, at equal distances, throughout the whole length of the animal, each band completely investing or surrounding the body, but being rather paler beneath than above: the head is rather small than large, and covered in front with large scales: the body is of a trigonal form, the sides sloping very considerably: along the ridge of the back runs a continued series of hexagonal scales, those on the rest of the body being of the usual subovate form: the scuta or lamellæ of the under parts are very broad, and finely ciliated on their margins: the length of the whole animal is something more than five feet, the diameter, in the thickest part, being nearly five inches: the length of the tail five inches only, and its termination rather obtuse.

This snake is among the number of poisonous species, and its bite is considered by the Indians as inevitably fatal. A specimen was brought to Dr. Russel in the month of November, 1788, in

an apparently weak and languid state, having been bruised in taking. Being set at liberty in a room, it crept slowly towards an obscure corner, where a chicken being presented to him he took no particular notice of it, and even suffered the bird to stand on his back. As he shewed no disposition to bite, his jaws were forcibly opened, and the thigh of the chicken being placed between them, the mouth was so closed over it as to oblige the fangs to act. The bird, when disengaged, shewed immediate symptoms of poison, and after several ineffectual efforts to rise, rested with the beak on the ground, the head being seized with trembling. In the space of twenty minutes it lay down on one side, and convulsions soon supervening, it expired within twenty-six minutes from the bite. This was the only experiment made; the snake itself dying in the course of the next day; but from the languid state in which it appeared, and the effect of its bite on the chicken, it may be concluded that, when in full vigour, it must be an animal of a highly dangerous nature. Dr. Russel observes, that the fangs are very short for the size of the snake, and that two are visible on each side.



## VIPERINE BOA.

Boa Viperina. *B. grisea, fascia dorsali undulata nigra albido marginata, lateribus nigro maculatis.*

Grey Boa, with black undulating dorsal band edged with white, and sides spotted with black.

Padain Cootoo. *Russ. Ind. Serp. p. 5. t. 4.*

Abdominal scuta 209, subcaudal 19.

THIS also is an Indian species, first described in the work of Dr. Russel. It is about a foot and half in length, and of a moderately deep brown colour, the back being marked throughout the whole length by a broad undulating black band, with a narrow yellowish white margin, while along the sides runs a row of somewhat irregular roundish black spots: the under part of the animal is of a pearl-colour. The head is hardly broader than the neck, oblong, roundish, depressed, subtruncate, and covered with small scales: the teeth are small and numerous, and as there is a marginal row in the upper jaw, there are of course no fangs: the trunk or body is round, of nearly equal thickness, and coated with small, orbicular, close-set, carinated scales: the tail is only an inch and half in length, and is thick, tapering to a sharp point: the vent is longitudinal: and the scuta very short, scarce extending from side to side more than a third part of the diameter of the abdomen.

This snake, Dr. Russel informs us, is said to produce by its bite a slow wasting of the fingers and toes, similar to what happens in some leprous

cases. A living specimen, however, which he obtained in Dec. 1788, from Ganjam, enabled him to make some experiments with it on chickens; but though it arrived to excellent order, and bit ferociously, the bite was followed by no symptoms of poison.



Boa Lineata. *B. atrocaerulea lineis transversis arcuatis albopunctatis, abdomine albid.*

Blackish-blue Boa, with white-dotted transverse arcuated lines, and whitish abdomen.

Geedi Paragoodoo. *Russ. Ind. Ser. p. 1. t. 1.*

Abdominal scuta 209, subcaudal 47.

THE *Geedi Paragoodoo* is of a slender form, with the general appearance of a *Coluber* rather than a Boa. It is of an extremely dark blue colour, so as to appear almost black in certain lights, and is marked throughout the whole length of the upper part by several transverse curved and dotted white lines at somewhat unequal distances, and varying in number in different individuals from about forty-two to fifty: they are so disposed as almost to represent so many large spotted circles, if viewed from above: the sides of the body, near the scuta, are dun-coloured, and the whole range of scuta, both abdominal and subcaudal, yellowish-white: the head is covered with large scales; the body with small ovate ones, and down the back runs a row of hexagonal scales: the tail is about

three inches and a half long, and tapers to a slender point.

This snake is not uncommon at *Vizagapatam*, as well as at *Boni*, &c. and some young ones were sent to Dr. Russel from *Masulapatam*, under the name of *Cobra Moril*. The natives of India, who generally exaggerate the noxious character of their serpents, assert that the bite of this animal produces immediate death. The experiments of Dr. Russel, however, prove that it is seldom fatal to chickens in less than half an hour, and to dogs in less than an hour and ten minutes. Its poison was also observed to cause less violent convulsions in the animals infected by it than that of the *Cobra de Capello* and another highly poisonous Indian snake called *Katuka Rekula Poda*; but produced a greater degree of stupor.

On the first of August, 1788, a snake of this species was received by Dr. R. from *Bimlipatam*, after a journey of seven hours, in so languid a state that it was with much difficulty made to bite a chicken on the breast: a little speck of blood was visible on the skin of the chicken, but without any mark of the fangs having acted; notwithstanding which, in about twenty-five minutes the bird began to droop, and in a few minutes more, growing rapidly worse, expired, without any considerable convulsion, in about forty minutes from the bite.

At the distance of five days, the same snake was found in high vigour and beauty, having in that interval cast its skin; and a chicken bitten on



the pinion was soon seized with apparent stupor, though it continued to walk; but in ten minutes it was unable to stand, and within a quarter of an hour lay along the ground, as if asleep. In twenty minutes it made several ineffectual efforts to rise; was soon afterwards faintly convulsed, and at the end of the first hour expired.

A *Crocodi Paragoodo* which had been caught at *Casem Cottah* the day before, was made to bite a large, stout dog on the thigh near the groin: it held fast for more than twenty seconds; but the fangs seemed to have penetrated no deeper than the skin, there being barely the appearance of blood; and some of the poison was found about the supposed place of puncture. The dog, when first wounded, howled much, but on being set at liberty, walked about without any symptoms of poison: in ten minutes he drew up the wounded thigh, still continuing on his legs: but in a quarter of an hour he couched and howled, and the thigh became more paralytic, though he was still able to raise himself: in twenty-five minutes both thighs were observed to be paralytic: in the course of the second hour he grew manifestly disordered; became torpid, and lay panting on his side; and at the end of the second hour expired, without any remarkable appearance of convulsions. The part bitten, being examined about four hours after death, was observed to be scarcely swelled or discoloured; a circumstance different from what is commonly observed in the bites of other poisonous serpents.

Another dog, of much smaller size, bitten by the same snake, expired in one hour and ten minutes; having for the last ten minutes been affected with strong convulsions. In this case about a quarter of an hour elapsed before the animal shewed symptoms of being infected; but towards the end of the hour both the hind legs were become paralytic.

It appears, therefore, that this species of Boa is of a highly poisonous nature.

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 HORATTA BOA.

Boa Horatta. *B. atrofusca, fascia utrinque laterali undulata maculisque spinalibus flavis.*

Dark-brown Boa, with a waving yellow band on each side, and a row of dorsal spots.

Horatta Pam. *Russ. Ind. Serp. p. 2. t. 2.*

Abdominal scuta 150, subcaudal 25.

THIS is a small species, measuring only about fifteen inches in length. Its colour is a dark brown, with a row of spots on the ridge of the back, from the neck to the end of the tail, varying a little in size and figure, but all of a dull yellowish colour edged with black: along each side runs a conspicuous waving fillet of the same colour, and on the head are four remarkable dark spots, the largest of which bears some resemblance to the shape of a horse-shoe: the scuta are yellowish-white, and all the abdominal ones are marked with three or four dusky spots: the head is rather small

than large, and is entirely covered with small carinated scales; the body with somewhat larger ones: the tail tapers suddenly, and is an inch and half in length. Specimens of different sizes were found to vary very little in colour, still less in spots, and very little in the number of scuta. The fangs or poisoning organs of this snake show it to be noxious; but in what degree could not be ascertained by Dr. Russel, who could not meet with a living subject to make the necessary experiments with. It is reported, however, to be one of the most fatal of serpents.

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 SIAMESE BOA.

Boa Hipnale. *B. flava, supra maculis magnis irregularibus subtransversis albis fusco-marginatis fasciata.*

Yellow Boa, fasciated above by large irregular subtransverse white spots with brown edges.

Serpens, s. *Vipera Siamensis perelegans.* Seb. 1. t. 34.

Abdominal scuta 179, subcaudal 120.

A SMALL species, but very long in proportion to its breadth; the circumference of the body being scarce more than an inch and half, and the length from two to three feet: the head shaped like that of the Boa canina: the colour of the whole animal pale yellow above, with pretty numerous transverse broken bars of white, with black or deep brown edges: the abdomen yellow. This species is said to be a native of the East Indies, and particularly of the kingdom of Siam.

## HOG-NOSED BOA.

Boa Contortrix. *B. grisea, fusco maculata, corpore crasso brevi, naso simo.*

Grey Boa, spotted with black, with short thick body, and turned-up nose.

Hog-nosed Snake. *Catech. Car. 2. p. 56.*

Boa Contortrix. *Lin. Syst. Nat. p. 373.*

Abdominal scuta 150, subcaudal 40.

A SMALL species, seldom exceeding the length of about fifteen inches: head large, with the cheeks swelling out like those of vipers; the nose turning up, like that of a hog: body very thick towards the head: colour pale brown, with several large black spots or patches disposed along the back and sides: towards the lower part of the back the spots form a kind of black bars over that part, the ground-colour between them being yellowish: the abdomen is of a dusky white with small blackish spots. This species is a native of North America, and is of a poisonous nature: it is slow in its motions, and has a malevolent aspect: the tail is nearly a third of the length of the whole animal.

## PALPEBRAL BOA.

Boa Palpebrosa. *B. Albida, glauco fasciata, palpebris erectantibus*  
Whitish Boa, obscurely fasciated with grey, with prominent  
eyelids.

Schlingende Natter. *Merrem Baytr. Zur Naturg.* 2. p. 20. t. 3.  
Abdominal scuta 112. Subcaudal 51.

LENGTH about fifteen inches: head rather large, and covered in front with large scales: eyebrows remarkably prominent: body thick in proportion to its length: colour pearly grey above, with obscure transverse dusky or blueish undulations: beneath pale yellow-brown, with a small transverse oval black spot at the edge of every abdominal scutum, and a middle range of similar spots from the vent to the end of the tail, the extremity of which, for about the length of half an inch, is furnished with divided scales: native country unknown: described by Mr. Merrem. This snake I have arranged among the Boæ rather than the Colubri, on account of the vast predominancy of the *Scuta* over the *Squamæ* on the under surface of the tail.

## ANNULATED BOA.

Reo Annulata. *B. subferruginea, maculis dorsalibus orbiculatis nigris annulo inclusis, lateralibus reniformibus ocellatis, abdomine fusco undulato.*

Subferruginous Boa, with black oracular dorsal spots included in rings, reniform ocellated lateral spots, and abdomen undulated with dusky variegations.

*Mer. Surin. t. 5.*

THIS is rather a small species, measuring about two feet in length: the head is rather large, as in the *Boa hortulana* and *Enydris*, to which this animal is considerably allied, in its general appearance, but the back is marked with moderately large round black spots almost encircled by a narrow zone of the same colour, including in consequence an interior circle of the ground-colour, which is yellow ferruginous: along the sides runs a row of large reniform black spots, accompanied by a small round one between each: the abdomen, which is cinereous, is variegated by dusky undulations and spots in a somewhat transverse direction.

This species occurs in the Museum of Dr. William Hunter. The only author who has figured the animal seems to be Madam Merian, who has introduced it as an ornament to her fifth plate of the *Surinam Insects*: it is, therefore a native of South America.

## COLUBER. SNAKE.

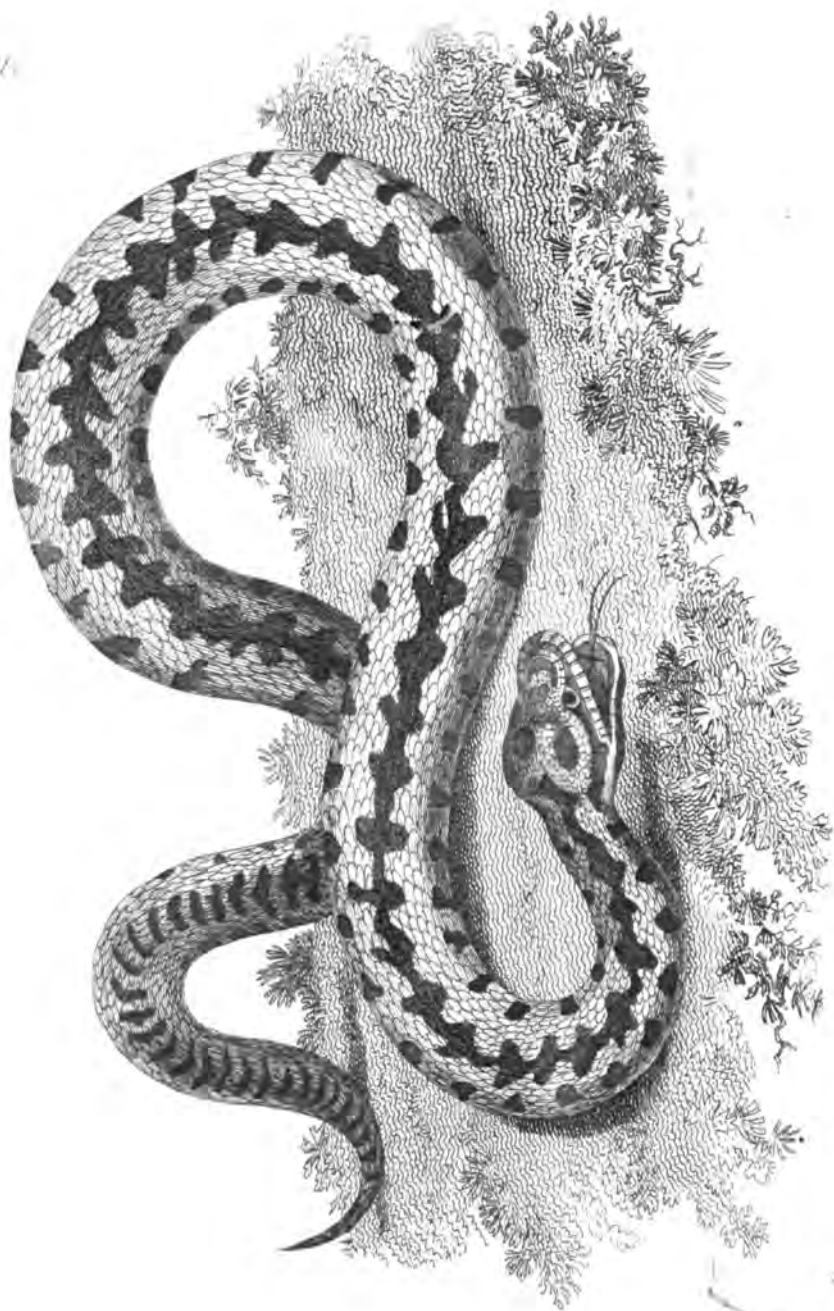
*Generic Character.*

*Scuta* abdominalia.  
*Squamæ* subcaudales.

*Scuta* or undivided lamellæ  
 under the abdomen.  
 Broad alternate *Scales* under  
 the tail.

**T**HIS is by far the most numerous of all the Linnæan genera of Serpents, and the species differ greatly in size and habit, according to their respective tribes; some, as the Vipers, having large, flattish, and subcordate heads, with rather short than long bodies and tails; while others, as the major part of the harmless serpents, have, in general, small heads, with longer bodies and tails in proportion. In some few species, exclusive of the usual subcaudal scales, are a few *scuta* or undivided lamellæ, either at the beginning, or towards the tip of the tail. It is to be observed, that in the investigation of this genus the *subcaudal scales*, though alternate, are reckoned by pairs, so that the number marked under the respective species is always to be understood to mean so many pair.





## COMMON VIPER.

Coluber Berus. *C. cinereus, macula capitis biloba, vitta dorsali atra dentato-repanda.*

Cinereous Viper, with a bilobate spot on the head, and a black flexuous or zigzag band down the back.

Coluber Berus. *Lin. Syst. Nat. p. 377.*

The Viper. *Penn. Brit. Zool. 4. p. 25.*

Vipera. *Gesn. Aldrov. Raj. &c. &c.*

Abdominal scuta 146, subcaudal scales 39.

THE Viper, which appears to be pretty generally diffused over the whole ancient continent, and which is by no means uncommon in our own island, has been known from times of remote antiquity, though all the particulars relative to its nature and manners are even yet not fully understood. It appears to vary considerably in colour, from a pale or yellow-ferruginous to a deep or dull brown, but all these varieties agree in being marked by a continued chain or series of confluent rhomboid blackish spots, which commencing at the back of the head, are continued to the extremity of the tail, growing proportionally wider and more confluent as they approach that part, forming a kind of transversely barred pattern on its surface: the head is broad, somewhat flattened, and bulges out more or less on each side at the back part: the front of the head is blackish, and on the upper part is a large divided and somewhat heart-shaped mark, or spot, the obtuse divisions of which are directed backwards: the lips are somewhat barred or variegated with black and light grey or whitish, and along each side of the

body runs a row of roundish or rather obscurely subtrigonal dusky spots, continuing to the end of the tail: the scales on the whole upper part of the animal, are carinated: the under surface is of a dusky or blackish colour, with a blueish gloss somewhat resembling that of polished steel: the general length of the Viper is about a foot and half, or two feet, though some have been seen of much greater length, measuring near three feet: the fangs are situated, as in other poisonous serpents, on each side the fore part of the upper jaw, and are generally two in number, with a few smaller ones lying near the principal or large fangs, as if intended by Nature to supply the place of the former when lost either by age or accident.

The Viper has always been considered as the most poisonous of the European serpents, and innumerable are the cases recorded by medical and other writers of the fatality of its bite: yet the instances, in our own island at least, seem to be far less frequent than generally supposed; and though the bite of this animal produces a painful and troublesome swelling, yet it is rarely of any other bad consequence. No doubt the case must differ, as in the bite of every other poisonous serpent, according to the nature of the part bitten, the constitution of the person, the strength and vigour of the animal, the season of the year, &c. &c. and if the bite happens directly on a vein, it may perhaps be productive of the most alarming symptoms, and even sometimes prove fatal: yet

*Fontana*, even in the warm climate of Italy, seems to doubt whether any well-attested instance could be adduced in which the viper had killed any person by its bite: but so discordant are the testimonies of authors on the subject, that the judgement is necessarily left suspended, not only relative to the effect of the bite, but to the nature of the poison itself, and its effect on the animal frame either when injected into the blood, or received into the stomach. The poison of the Viper, according to Dr. Mead, and his associates in the experiment, is, "when diluted with a little warm water, very sharp and fiery when tasted with the tip of the tongue, as if the tongue had been struck through with something scalding or burning: this sensation went off in two or three hours; and one gentleman, who would not be satisfied without trying a large drop undiluted, found his tongue swelled, with a little inflammation; and the soreness lasted two days." On the contrary, the Abbé Fontana and some others describe it as of no particular acrimony of taste, but rather resembling oil or gum; and Dr. Russel, in his work on Indian Serpents, affirms the same even of the poison of the Cobra de Capello. Nearly equal contradictions take place relative to the effect of the viperine poison taken into the stomach; Boerhaave quoting the well-known case of Jacob Sozzi, who at the court of the Duke of Tuscany is said to have swallowed three drams of this poison without experiencing any ill effect; while Fontana, on the

contrary, affirms, that this cannot be done with impunity, though it may not produce symptoms like those of the bite. Some of the older writers equally disagree on this point; Matthiolus affirming, that when sucked out of the wound it has proved fatal, while others have admitted the general opinion of the ancients, that it was harmless when thus received; and on this supposition depended the practice of the *Psylli*, African tribes who followed this mode of curing those who were bitten by serpents, and who were employed, according to Lucan, by Cato, in his march through the Lybian deserts, for the recovery of his wounded soldiers. Cato is also said to have assured his men, who feared to drink of the fountains, lest they should be infected by the poison of serpents, that, however noxious the bites of those animals might be, yet the poison must lose its effect when mixed with the water and drank.

“ Jam spissior ignis,

Et plaga, quam nullam Superi mortalibus ultra

A medio fecere die, calcatur, et unda

Rarior: inventus mediis fons unus arenis

Largus aquæ: sed quem serpentum turba tenebat

Vix capiente loco: stabant in margine siccæ

Aspides, in mediis sitiebant Dipsades undis.

Ductor, ut aspexit perituros fonte relicto,

Alloquitur: Vana specie conterritæ leti

Ne dubita miles tutos haurire liquores:

Noxia serpentum est admisto sanguine pestis:

Morsu virus habent, et fatum dente minantur:

Pocula morte carent: dixit, dubiumque venenum

Hausit.”

And now with fiercer heat the desert glows,  
And mid-day gleamings aggravate their woes :  
When lo ! a spring amid the sandy plain  
Shews its clear mouth to cheer the fainting train.  
But round the guarded brink in thick array  
Dire aspics roll'd their congregated way ;  
And thirsting in the midst the torrid Dipsas lay.  
Blank horror seiz'd their veins ; and at the view  
Back from the fount the troops recoiling flew :  
When, wise above the crowd, by cares unquell'd,  
Their awful leader thus their dread dispell'd :  
Let not vain terrors thus your minds enslave ;  
Nor dream the serpent brood can taint the wave :  
Urg'd by the fatal fang their poison kills ;  
But mixes harmless with the bubbling rills.  
Dauntless he spoke, and bending as he stood,  
Drank with cool courage the suspected flood.

“The symptoms,” says Dr. Mead, “which follow the bite of a Viper, when it fastens either one or both its greater teeth in any part of the body, are an acute pain in the place wounded, with a swelling, at first red, but afterwards livid, which by degrees spreads farther to the neighbouring parts ; with great faintness, and a quick, though low, and sometimes interrupted, pulse ; great sickness at the stomach, with bilious, convulsive vomitings, cold sweats, and sometimes pain about the navel ; and if the cure be not speedy, death itself, unless the strength of nature prove sufficient to overcome these disorders : and though it does, the swelling still continues inflamed for some time ; nay, in some cases, more considerably upon the abating of the other symptoms than at the beginning ; and often from the small wound runs a

sanious liquor, and little pustules are raised about it: the colour of the whole skin, in less than an hour, is changed yellow, as if the patient had the jaundice. These mischiefs (although different climates, season of the year more or less hot, the greater or lesser rage of the Viper, the animal itself of a larger or smaller size, and consequently able to communicate more or less venom, the wound made deeper, in a part more nervous or tendinous, and therefore receiving more of the poisonous liquor, and the like circumstances may variously heighten or abate them), yet usually discover themselves much after the same manner in all; unless the bite happen not to be accompanied with the effusion of that liquor which is the main instrument and cause of this violent and shocking disturbance."

Dr. Mead caused several animals, viz. dogs, cats, and pigeons, to be bitten by an enraged Viper; which animals generally died, some in a longer, and some in a shorter space of time; but it was observed that they all, immediately after being bitten, exhibited signs of acute pain, as if affected with sickness, faintings, convulsions, &c. The head of a large Viper lay three hours after it was cut off: it was perfectly flaccid, and without motion: a pigeon, wounded on the thigh by the fangs of this head, was presently convulsed, &c. as from the bite of the living animal, and died in seven hours.

The poison of the Viper was in ancient times collected by barbarian nations as a poison for their



arrows, the Scythians, according to Pliny, using it for that purpose mixed with human blood: the poison of other serpents is used in a similar manner by savage nations at the present day\*.

"The viperine poison," says Boerhaave, "is rendered inactive by digestion in the stomach and bowels, so that it will not afterwards exert its sad effects on the blood; for a whole ounce of the viperine venom taken by the mouth will not kill an animal; when at the same time a small needle only, dipped in the same fluid, taking up perhaps no more than a hundredth part of a drop, and then thrust into the blood of the living animal, almost infallibly kills."

"A Viper," says the same author, "being enraged by the members of the Tuscan Academy, and then suffered to bite the nose of a strong bull, the animal died in a short time, and being opened by the most expert anatomists, no uncommon alteration could be perceived either in the solid or fluid parts of the beast."

The most established application for the bite of a Viper is common olive oil, thoroughly rubbed on the wounded part: this the Viper-Catchers† use, as is pretended, with perfect success; and all other applications, as volatile alkali, &c. &c. seem of far less certain efficacy.

\* In this theory of poisoning darts there appears nothing improbable when we consider the effects of the variolous matter dried on the point of a lancet and used in inoculation.

† See the case of Isaac Oliver, in the Philosophical Transactions.

The Viper, though so much dreaded on account of its bite, has been very highly esteemed, both by the ancients and moderns, in a medical view, and used as a restorative and strengthening diet. This idea seems to have originated from the animal's casting its skin, like other snakes, and thus appearing, as it were, in a state of renovated youth; and the Snake being made the emblem of health, and consecrated to Æsculapius, must have depended on the same idea. The ancients used the flesh of the Viper in leprous and other cases. The Greek physician Craterus, mentioned so often by Cicero in his epistles to Atticus, cured, as Porphyrius relates, a miserable slave, whose skin in a strange manner fell off from his bones, by advising him to feed on Viper's flesh in the manner of fish. Antonius Musa, physician to Octavius Cæsar (Augustus), is said by Pliny to have ordered the eating of Vipers in the case of otherwise incurable ulcers, which by this method were quickly healed. Galen says that those who are afflicted with Elephantiasis are wonderfully relieved by eating Viper's flesh dressed like eels; and relates very remarkable cures of this disease performed by means of viper wine. Aretæus, who probably lived about the same time with Galen, and who of all the ancients has most accurately described the above disorder, commends, as Craterus did, the eating of Vipers instead of fish in the same diseases. Lopez, in his History of Congo, says the negroes eat roasted adders, and account them a most delicious food. In India the Cobra de Capello is said

to be successfully given to be eaten by persons in long wastings and declines. In France and Italy the broth, jelly, and flesh of Vipers is in much esteem as a restorative medicine\*. Dr. Mead thinks the best method is to boil them like fish, “and if this will not go down, though it is really delicious fare,” to make use of wine in which they have been digested two or three days in a gentle heat, from which, he says, he has seen very good effects in obstinate lepras.

Though from these attestations it sufficiently appears that the flesh of the Viper is really nutritive and good, yet, such are the revolutions of medical as well as of common taste, that Viper's flesh has now lost a great part of its former credit, and is very rarely prescribed in modern practice.

The apparatus of poison in the Viper is the same as in the Rattle-Snake and all other poisonous serpents, and will be found described anatomically under that article, &c.

The Viper, as before observed, is subject to vary much in colour, being sometimes of a fine pale grey, or pale ferruginous, with very deep and distinct markings or pattern: sometimes dull brown with less distinct ditto; and, lastly, black, with scarce perceptible pattern, which latter variety has

\* The above account of the supposed virtues of Viper's flesh is chiefly from Dr. Mead. It may be added, that the celebrated Sir Kenelm Digby, for the recovery of his beloved wife, the Lady Venetia Digby, from a consumption, caused her to feed on capons fattened with vipers.

been called *Vipera Anglica nigrans*, and is by some considered as a distinct species.

The Viper is viviparous, producing its young towards the close of summer. "On the 4th of August, 1755," says Mr. White\*, "we surprised a large female Viper, which seemed very heavy and bloated, as it lay on the grass, basking in the sun. When we came to cut it up, we found that the abdomen was crowded with young, fifteen in number; the shortest of which measured full seven inches, and were about the size of full-grown earthworms. This little fry issued into the world with the true viper spirit about them, shewing great alertness as soon as disengaged from the belly of the dam: they twisted and wriggled about, and set themselves up, and gaped very wide when touched with a stick, shewing manifest tokens of menace and defiance, though as yet they had no manner of fangs that we could find, even with the help of our glasses." Mr. White, in another part of his work, informs us, that in the month of May a female Viper was opened, which had in it a chain of eleven eggs, about the size of those of a blackbird; but not so far advanced as to shew the rudiments of the young.

"Several intelligent folks," adds Mr. White, "assure me that they have seen the Viper open her mouth, and admit her helpless young down her throat on sudden surprises, just as the Opos-

\* White's Selburne.

sum does her brood into the pouch under her belly upon the like emergencies; and yet the London Viper-Catchers insist on it to Mr. Barrington that no such thing ever happens."

Sir Thomas Brown, however, seems inclined to believe this circumstance. "The young," says he, "supposed to break through the belly of the dam, will upon any fright, for protection, run into it; for then the old one receives them in at her mouth, which way, the fright being past, they will return again, which is a peculiar way of refuge, and although it seem strange, is avowed by frequent experience and undeniable testimony."

I must add, that I have myself received on this subject the information of a gentleman of great accuracy of observation, and who assures me of the truth of this particular in the natural history of the Viper.

## VAR. ?

## BLACK VIPER.

Coluber Prester. *C. niger, vitta dorsali dentata nigerrima.*

Black Viper, with jet-black dentated dorsal band.

Coluber Prester. *Lin. Syst. Nat. p. 337.*

Vipera Anglica nigrans. *Petiv. Mus. p. 17. n. 104.*

Abdominal scuta 152, subcaudal squamæ 32.

THIS Viper is found in some parts of England, and is said likewise to occur in Austria, and in some of the northern regions of Asia. It resembles the common Viper in every particular except

colour; being of a deep black, with an indistinct appearance of the dorsal band of a still more intense colour: the edges of the lips are bordered with whitish specks, and in some specimens the neck and tail are marked with a few indistinct yellowish spots. Mr. Pennant, in the *British Zoology*, considers it as a mere variety of the common viper; but by others, and particularly by *Laurenti*, it is regarded as a distinct species; and is ranked as such in the *Systema Naturæ* of *Linnaeus*. It is generally supposed to be equally poisonous with the common Viper: yet if the Austrian Black Viper of *Laurenti* be really the same kind with that found in other parts of Europe, it should seem to be innoxious: but perhaps the specimens which he made use of in conducting his experiments had either not arrived at their full size and vigour, or had previously discharged their poison by biting other animals: since the pigeons and chickens which he exposed to its fury, were no otherwise injured than by mere puncture, without suffering any symptoms of poison.

AMERICAN BLACK VIPER.



Am. Mus. Nat. Hist.



### AMERICAN BLACK VIPER.

Coluber Cacodæmon. *C. ater, capite lato tumido, corpore crasso.*

Black Viper, with broad tumid head, and thick body.

Black Viper. *Catesb. Carol. 2. pl. 44.*

THIS, according to Catesby, appears to be about the size of the Common Viper, but of a much thicker form, and entirely of a rusty black colour: it is slow in its motions, and when irritated, spreads its head, which is naturally large, into a surprising width; threatening, at the same time, with a horrid hiss: the fangs are large, and the animal is said to be as dangerous as the Rattlesnake. It is a native of Carolina, chiefly frequenting the higher grounds.

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### EGYPTIAN VIPER.

Coluber Vipera. *C. subferrugineus, fusco maculatus, subtus albidus, cauda brevi mucronata.*

Subferruginous Viper, spotted with brown, beneath whitish, with short mucronated tail.

Coluber Vipera. *Linn. Syst. Nat. p. 275. Hasselq. itin. p. 340.*

Abdominal scuta 118, subcaudal scales 22.

THIS, which is said to be the officinal Viper of the Egyptians, seems to have been first accurately described by Hasselquist, who informs us that it is imported in considerable quantities every year to Venice for the use of the apothecaries in the

composition of the Theriaca, &c. Its size is somewhat smaller than that of the common Viper: the head not so flat on the top, but very protuberant on each side: the snout very obtuse: the body thick towards the middle, and somewhat quadrangular, but thin and cylindric towards the head and tail, which latter is short, slender, conical, and terminated by a slightly incurved horny point or tip: the scales on all the upper parts of the animal are oval and carinated: the ~~colour above~~ is pale-ferruginous with darker spots, and beneath entirely whitish: the usual length of this species, according to Hasselquist, is about two spans and an inch, of which the tail measures only an inch. This is by some supposed to be the Asp of Cleopatra, by the bite of which that high-spirited princess determined to die, rather than submit to be carried to Rome in order to grace the triumph of Augustus. It seems, however, utterly impossible to determine this point. Mr. Bruce, as the reader will find in the description of the *Cerastes*, rather supposes that serpent to have been the species employed. Mr. Schneider, in his work, entitled *Historia Amphibiorum*, considers the Egyptian Viper above described to be the true *Dipsas* of the ancients which was popularly reported to kill by thirst.

### AMMODYTES.

Coluber Ammodytes. *C. glauco-fuscus, vitta dorsali dentata atra, verruca nasali erecta.*

Glaucous-brown Viper, with dentated black dorsal band, and upright nasal wart.

Coluber Ammodytes. *Lin. Syst. Nat. p. 376. Aldr. Serp. 169.*

Abdominal scuta 142, subcaudal squamæ 32.

THIS species is greatly allied to the Viper in general appearance, but is always distinguished by an erect pointed process on the tip of the snout: its usual colour is either blueish-grey or brown, with a continued black dorsal band resembling that of the Viper. It is found in many parts of the eastern regions, and is used medicinally for the same purposes as the common Viper. It is considered as an extremely poisonous species, and, according to Matthiolus, proves fatal in the space of three hours.

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### CHARASIAN VIPER.

Coluber Charasii. *C. rufus, naso supra subacuminato, corpore striis brevibus fuscis transversis subconfluentibus notato.*

Rufous Viper, with the nose acuminate above, and the body marked with short, subconfluent, dusky transverse streaks.

La Vipere. *Charas. Nov. Exper. t. 1. A. A. A.*

THIS species is described by a French author of the name of Charas, who, though well acquainted with the anatomy of the animal, and the

structure and use of the fangs and receptacle of poison, yet contended, in opposition to the celebrated Redi, that when a Viper bit, the symptoms of poison succeeding the bite, were caused by what he termed the "*enraged spirits*" of the creature, and not by the supposed poisonous fluid. This species has the general appearance of the *Berus*, or common viper, but is distinguished by the want of the dorsal band, so ~~conspicuous~~ in that animal, and by the upright, subacuminated tip of the snout: the colour of the upper parts is ferruginous, marked with several short, scattered, and subconfluent letter-like streaks here and there dispersed on the skin: the under parts are of a dusky colour, with a steely lustre, and are speckled with yellow. This species is a native of France, and in its general manners, as well as in size, appears to resemble the common Viper, of which it has sometimes been suspected a variety;

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REDI'S VIPER,

*Coluber* Redi. *C. fusco-ferrugineus, serie dorsali quadruplici transversa striarum brevium subconfluentium fuscaram.*

Ferruginous-brown Viper, with a quadruple transverse dorsal series of short subconfluent brown streaks.

*Coluber* Redi. *Lin. Syst. Nat. Gmel. p. 1091.*

Abdominal scuta 152, subcaudal squamæ 33.

This is greatly allied to the common Viper, but differs in being marked throughout the whole length of the upper parts, with a quadruple series

of short, transverse, alternate streaks, of which the intermediate ones are often confluent: the colour of the under parts is rufous, more especially towards the head and tail. This is the *Vipera* of Redi, and is the species with which the experiments of that philosopher relative to animal poisons were principally made. It is found in many parts of Italy, as well as in Austria, and is said to be more poisonous than the common Viper.

## ASP.

*Coluber Aspis. C. rufescens, maculis dorsalibus subrotundatis fuscis alternis, versus caudam subconfluentibus.*

Rufescent Viper, with roundish, alternate, dusky, dorsal spots, subconfluent towards the tail.

*Coluber Aspis? Lin. Syst. Nat. p. 378.*

*L'Aspic. Cope de Serp. p. 53. pl. 2. f. 1.*

Abdominal scuta 155, subcaudal scales 37.

THE true Asp of the ancients seems to be entirely unknown, owing to the discordant descriptions and want of precision in the works of ancient authors; but the Linnæan *Coluber Aspis* is supposed to be the serpent described under the name of *Aspic* by the Count de Cope de, who informs us that it is a native of France, and particularly of the northern provinces of that country. The individual described by Cope de measured about three feet in length, of which the tail measured three inches and eight lines: the head is rather large, and covered with small carinated scales, the body with larger, of similar structure:

the colour is pale rufous grey, and along the upper parts are three longitudinal ranges of roundish deep-rufous spots, bordered with black, and which unite or become confluent towards the tail, in such a manner as to exhibit the appearance of a zigzag band, resembling in some degree that of the common Viper: the under parts are of a dusky colour, marbled with dull yellow: in the structure of its fangs it resembles the Viper, ~~and is said to~~ be equally poisonous. I must not omit to observe that Mons. Latreille is not willing to allow this serpent to be the real *Coluber Aspis* of Linnæus.

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SWEDISH VIPER.

*Coluber Chersea. C. subferrugineus, vitta dorsali atra flexuosa, capite subtus albido.*

Subferruginous Viper, with black flexuous dorsal band, and head whitish beneath.

*Coluber Chersea. Lin. Syst. Nat. p. 377.*

Abdominal scuta 150, subcaudal scales 34.

THIS is said by Linnæus to be extremely nearly allied to the preceding, of which it might even be supposed a variety, but is of smaller size, not often exceeding the length of a span: it is said to be most frequent in the province of Smoland, where it is greatly dreaded by the inhabitants, who consider its bite as mortal: its colour is a dusky rufous brown, with a flexuous dorsal band of a deeper colour, as in the common Viper: the head is ovate, of a pale colour, and marked with

a heart-shaped dusky spot, the divisions of which are directed backwards. In the Memoirs of the Swedish Academy is an account of a young man, a labourer, bit by this animal on the toe of the left foot: in six hours space the whole leg and thigh were red and swelled; the pulse intermitted, and the patient was oppressed with pains in the head and bowels, accompanied by lassitude, &c. the juice of the ash-leaves being in Sweden a popular specific in similar cases, a glass of the expressed juice, mixed with wine, was exhibited every half hour, and a cataplasm of the bruised leaves applied to the wound: in the evening a glass of warm olive oil was swallowed. By these means the patient was greatly relieved; slept well during the night, and found the swelling much reduced by the next morning; but, neglecting to repeat the same remedies, it again returned, and was again dissipated by the same applications, and in two or three days the patient recovered. Linnæus, however, is said to have been not so fortunate in his attempts to cure, by means of olive oil, a woman wounded by this kind of viper, since the medicine proved inefficacious, and the woman died.



## GREEK VIPER.

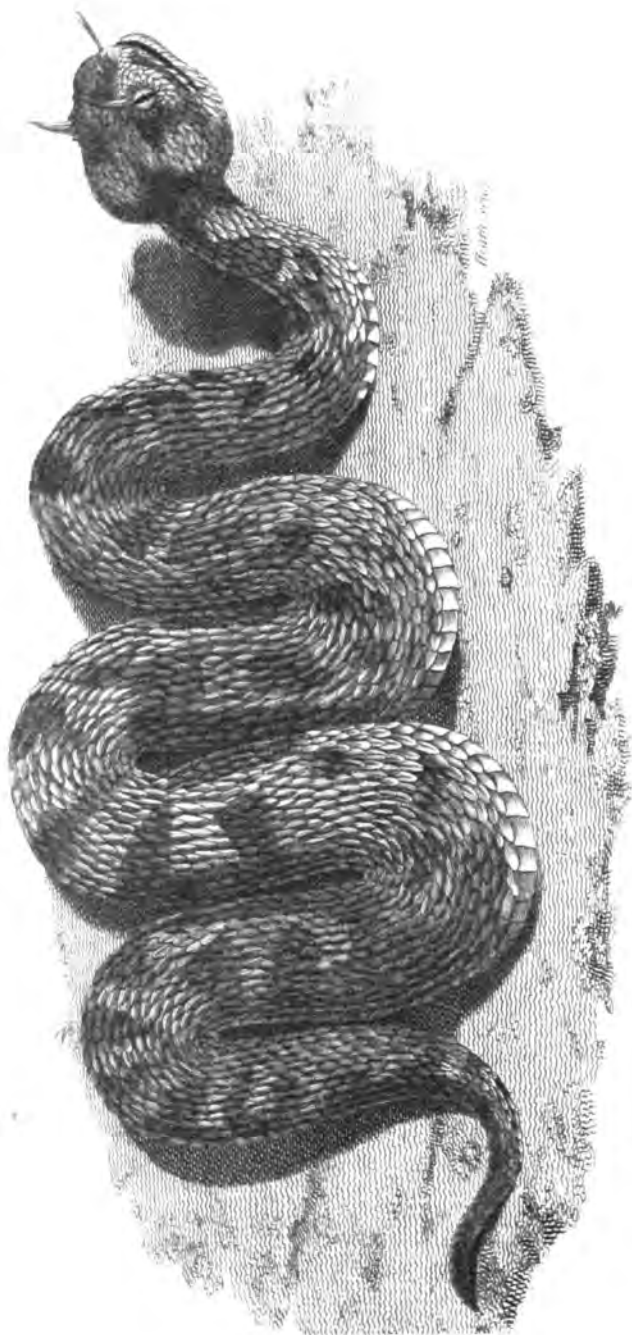
*Coluber Lebetinus. C. griseus, serie quadruplici macularum transversarum; intermediis flavescentibus, lateralibus nigricantibus.*

Grey Viper, with a quadruple series of transverse spots, the middle ones yellowish, the lateral dusky.

*Coluber Lebetinus. Lin. Syst. Nat. p. 278.*

Abdominal scuta 155, subcaudal squamæ 46.

THIS is a Viper of considerable size, measuring, according to Forskal, near a cubit in length, and being of a very thick form towards the middle: the head is large, broad, depressed, and subcor-date: the neck rather slender: the tail about four inches long: the scales on the head small, and those on the other parts larger, ovate-obtuse, flat, and carinated: the back is deflected considerably on each side: colour grey: with four series of alternate transverse spots, those of the middle series yellowish, and those of the lateral blackish: the under parts pale or whitish, pretty thickly freckled with dusky specks. This snake is a native of Greece and the Grecian islands, as Cyprus, &c. where it is called by the name of *Kufi* (Κῦφι), or deaf snake. Its bite is said by Forskal to prove fatal, producing insuperable somnolency. By the more learned, in those regions, it is termed *Aspis*, and Forskal supposes it to have been the *Aspis* of the ancients. It is said to be often found in corn fields during the harvest season, and is much dreaded by the Grecian reapers.



## SCYTHIAN VIPER.

Coluber Scythia. *C. supra nigerrimus, subtus albus.*

Coal-black Viper, white beneath.

Coluber Scythia. *Lin. Syst. Nat. Gmel. p. 1091.*

Abdominal scuta 153, subcaudal squamæ 31.

NATIVE of the woods of Siberia; observed by Dr. Pallas, who informs us that it grows to the length of half a foot or more, and is of the thickness of a finger: colour a very deep black above, but white and glossy beneath: head subcordate; tail about one tenth of the whole length: poisonous, but not dangerously so.

## CERASTES.

Coluber Cerastes. *C. subferrugineus, maculis distantibus subovatis subtransversis fuscis, palpebris cornutis.*

Subferruginous Snake, with distant subovate subtransverse brown spots, and horned eyelids.

Coluber Cerastes. *Lin. Syst. Nat. p. 376.*

Cerastes ex Lybia. *Aldr. Serp. p. 175.*

Cerastes. *Bruce's Travels, appendix.*

Abdominal plates 150, subcaudal scales 25 pair.

THE Cerastes or Horned Viper, which commonly grows to the length of about a foot or fifteen inches, and sometimes to a larger size\*, is distinguished by a pair of horns or curved pro-

\* The specimens described by Cope measured more than two feet, as does also that in the British Museum.

cesses, situated above the eyes, and pointing forwards: these horns have nothing analogous in their structure to the horns of quadrupeds, and are by no means to be considered in the light of either offensive or defensive weapons: they increase, however, the natural antipathy so generally felt against the serpent tribe, and give the animal a more than ordinary appearance of malignity. The Cerastes is a native of many parts of Africa, and is principally found in sandy deserts and dry places. Its usual colour is a pale yellowish or reddish brown, with a few rather large, distant, round, or transversely oblong spots of a deeper colour dispersed along the upper parts of the body, the belly or under part being of a pale lead colour. In Syria and Arabia the Cerastes is particularly frequent, and is also found in many parts of Egypt, &c. It bears a very great affinity to the common Viper, and its bite is perhaps still more to be dreaded, since, exclusive of the general danger of treading accidentally on this reptile, and thus irritating it unawares, it is said to possess a propensity of springing with great suddenness to a considerable distance, and assailing without provocation those who happen to approach it.

The general history and manners of this serpent are amply detailed by Mr. Bruce, who, in the course of his travels, had frequent opportunities of contemplating it in its native regions.

“The Cerastes,” says Mr. Bruce, “inhabits the greatest part of the Eastern Continent, espe-

cially the desert sandy part of it. It abounds in the three Arabias, and in Africa. I never saw so many of them as in the Cyrenaicum, where the Jerboa is frequent in proportion. He is a great lover of heat; for though the sun was burning hot all day, when we made a fire at night, by digging a hole, and burning wood to charcoal in it, for dressing our victuals, it was seldom we had fewer than half a dozen of these vipers, who burnt themselves to death by approaching the embers. The general size of the Cerastes, from the extremity of its snout to the end of the tail, is from thirteen to fourteen inches: its head is triangular, very flat, but higher near where it joins the neck than towards the nose: the length of its head, from the point of the nose to the joining of the neck, is ten twelfths of an inch, and the breadth nine twelfths: between its horns is three twelfths: the opening of its mouth, or rictus oris, is eight twelfths: its horns in length three twelfths: its large canine teeth something more than three twelfths and a half: its neck, at the joining of the head, four twelfths: the body, where thickest, ten twelfths: its tail, at the joining of the body, two twelfths and a half: the tip of the tail one twelfth: the length of the tail one inch and three twelfths: the aperture of the eye two twelfths, but this varies, apparently according to the impression of light. The Cerastes has sixteen small, immoveable teeth, hollow, crooked, inwards, and of a remarkably fine polish, white in colour, inclining to blueish: near one fourth of the bottom is

strongly fixed in the upper jaw, and folds back like a clasp knife, the point inclining inwards, and the greatest part of the tooth is covered with a green, soft membrane, not drawn tight, but as it were wrinkled over it: immediately above this is a slit along the back of the tooth, which ends nearly in the middle of it, where the tooth curves inwardly. From this aperture I apprehend that it sheds its poison, not from the point, where, with the best glasses, I could never perceive an aperture, so that the tooth is not a tube, but hollow only half way; the point being for making the incision, and by its pressure occasioning the venom in the bag at the bottom of the fang, to rise in the tooth, and spill itself through the slit into the wound. By this flat position of the tooth along the jaw, and its being defended by the membrane, it eats in perfect safety; for the tooth cannot press the bag of poison at the root while it lies in this position, nor can it rise in the tube to spill itself, nor can the tooth make any wound, so as to receive it; but the animal is supposed to eat but seldom, or only when it is with young. This viper has only one row of teeth; none but the canine are noxious. The poison is very copious for so small a creature, it is fully as large as a drop of laudanum dropt from a vial by a careful hand. Viewed through a glass, it appears not perfectly transparent or pellucid. I should imagine it hath other reservoirs than the bag under the tooth, for I compelled it to scratch eighteen pigeons upon the thigh as quickly as possible, and they all died nearly

in the same interval of time ; but I confess the danger attending the dissection of the head of this creature made me so cautious, that any observation I should make upon these parts would be less to be depended upon."

"People have doubted whether or not this yellow liquor is the poison, and the reason has been, that animals who had tasted it, did not die as when bitten, but this reason does not hold good in modern physics. We know why the saliva of a mad dog has been given to animals, and has not affected them ; and a German physician was bold enough to distil the pus or putrid matter flowing from the ulcer of a person infected by the plague, and taste it afterwards, without bad consequences ; so that it is clear the poison has no activity till through some sore or wound it is admitted into the circulation. Again, the tooth itself, divested of that poison, has as little effect. The viper deprived of his canine teeth, an operation very easily performed, bites, without any fatal consequence, with the others ; and many instances there have been of mad dogs having bit people cloathed in coarse woollen stuff, which had so far cleaned the teeth of the saliva in passing through it, as not to have left the smallest inflammation after the wound."

"The Cerastes is mentioned by name in Lucan, and without warranting the separate existence of any of the rest, I can see several that are but the Cerastes under another term : the Thebanus Ophites, the Ammodytes, the torrida Dipsas, and



the Prester, all of them are but this viper, described from the form of its parts or colours\*. Cato must have been marching in the night when he met this army of serpents: the Cerastes hides itself all day in holes in the sand, where it lives in contiguous and similar houses to those of the Jerboa; and I have already said, that I never but once found any animal in this viper's belly, but one Jerboa in a gravid female Cerastes."

"I kept two of these last-mentioned creatures in a glass jar, such as is used for keeping sweetmeats in, for two years, without having given them any food: they did not sleep, that I observed, in winter, but cast their skins the last days of April. The Cerastes moves with great rapidity, and in all directions, forward, backward, and sideways. When he inclines to surprise any one, who is too far from him, he creeps with his side towards the person, and his head averted, till judging his distance, he turns round, springs upon him, and fastens upon the part next to him; for it is not true what is said, that the Cerastes does not leap or spring. I saw one of them at Cairo, in the house of Julian and Rosa, crawl up the side of a box, in which there were many, and there lie still as if hiding himself, till one of the people who brought them to us, came near him, and though in a very disadvantageous posture, sticking, as it were, perpendicular to the side of the box, he leaped near the distance of three feet, and

\* Luc. lib. 9.

fastened between the man's fore-finger and thumb, so as to bring the blood. The fellow shewed no sign of either pain or fear, and we kept him with us full four hours, without his applying any sort of remedy, or his seeming inclined so to do. To make myself assured that the animal was in its perfect state, I made the man hold him by the neck, so as to force him to open his mouth, and lacerate the thigh of a pelican, a bird I had tamed, as big as a swan. The bird died in about thirteen minutes, though it was apparently affected in fifty seconds; and we cannot think this was a fair trial, because, a very few minutes before, it had bit the man, and so discharged part of its virus, and it was made to scratch the pelican by force, without any irritation or action of its own."

"I apprehend this to be the Aspic, which Cleopatra employed to procure her death. Alexandria, plentifully supplied by water, must then have had fruit of all kinds in its gardens: the baskets of figs must have come from thence, and the Aspic or Cerastes that was hid in them, from the adjoining desert, where they are plenty to this day; for to the westward in Egypt, where the Nile overflows, there is no sort of serpents whatever that ever I saw, nor, as I have before said, is there any other of the mortal kind that I know, in those parts of Africa adjoining to Egypt, excepting the Cerastes. It should seem very natural for any one, who, from motives of distress, has resolved to put a period to his existence, especially women, and weak persons, unaccustomed to handle arms, to seek

the gentlest method to free themselves from the load of life now become insupportable. This, however, has not always been the case with the ancients. Arria, Poetus's wife, stabbed herself with a dagger, to set her husband an example to die, with this memorable assurance, after giving herself the blow, *Poetus, it is not painful!* Porcia, the wife of Brutus, died by the barbarous, and not obvious way of perishing, by swallowing fire; the violent agitation of spirits prevailing over the momentary difference in the suffering. It is not to be doubted but that a woman, high-spirited like Cleopatra, was also above the momentary differences in feeling; and had the way in which she died not been ordinary and usual, she certainly would not have applied herself to the invention of a new one. We are therefore to look upon her dying by the bite of the Cerastes as only following the manner of death which she had seen adopted by those who intended to die without torment. Galen, speaking of the Aspic in the great city of Alexandria, says, I have seen how speedily they (the Aspicks) occasioned death. Whenever any person is condemned to die whom they wish to end quickly and without torment, they put the viper to his breast, and suffering him there to creep a little, the man is presently killed. Pausanias speaks of particular serpents that were to be found in Arabia, among the balsam-trees, several of which I procured, both alive and dead, when I brought the tree from Bedër Hunein; but they were still the same species of

serpent, only some from sex, and some from want of age, had not the horns, though in every other respect they could not be mistaken. Ibn Sina, called by the Europeans Avicenna, has described this animal very exactly. He says it is frequent in Schem (that is, the country about the south of Damascus), and also in Egypt; and he makes a very good observation on their manners; that they do not go or walk straight, but by contracting themselves; but in the latter part of his description he seems not to have known the serpent he is speaking of, because he says its bite is cured in the same manner as that of the Viper and Cerastes, by which it is implied that the animal he was describing was not a Cerastes, and the Cerastes is not a Viper, both of which assertions are false."

"A long dissertation," adds Mr. Bruce, "would remain on the incantation of serpents. There is no doubt of its reality: the Scriptures are full of it: all that have been in Egypt have seen as many different instances as they chose. Some have doubted that it was a trick, and that the animals so handled, had been first trained, and then disarmed of their power of hurting; and, fond of the discovery, they have rested themselves upon it, without experiment, in the face of all antiquity. But I will not hesitate to aver, that I have seen at Cairo (and this may be seen daily, without trouble or expence), a man who came from above the Catacombs, where the pits of the mummy birds are kept, who has taken a Cerastes with his naked hand, from a number of others lying at the bottom

of the tub, has put it upon his bare head, covered it with the common red cap he wears, then taken it out, put it in his breast, and tied it about his neck like a necklace; after which, it has been applied to a hen, and bit it, which has died in a few minutes; and, to complete the experiment, the man has taken it by the neck, and, beginning at the tail, has ate it, as one would do a carrot or a stock of celery, without any seeming repugnance."

"We know from history, that where any country has been remarkably infested with serpents, there the people have been screened by this secret. The Psylli and Marmarides of old undoubtedly were defended in this manner."

Ad quorum cantus mites jacuere Carastæ\*.

*Sil. Ital. lib. 3.*

"To leave ancient history, I can myself avouch, that all the black people in the kingdom of Senaar, whether Funge or Nuba, are perfectly armed against the bite of either scorpion or viper. They take the Cerastes in their hands at all times, put them in their bosoms, and throw them at one another as children do apples or balls, without having irritated them by this usage so much as to bite. The Arabs have not this secret naturally, but from their infancy they acquire an exemption from the mortal consequences attending the bite of these animals, by chewing a certain root, and

\* Tame at whose spell the charm'd Cerastes lay.

washing themselves (it is not anointing) with an infusion of certain plants in water. One day, when I was sitting with the brother of Shekh Aselan, prime minister of Sennaar, a slave of his brought a Cerastes, which he had just taken out of a hole, and was using with every sort of familiarity. I told him my suspicion that the teeth had been drawn, but he assured me they were not, as did his master Kitton, who took it from him, wound it round his arm, and at my desire ordered the servant to carry it home with me. I took a chicken by the neck, and made it flutter before him; his seeming indifference left him, and he bit it with great signs of anger: the chicken died almost immediately\*: I say his seeming indifference, for I constantly observed, that, however lively the viper was before, yet upon being seized by any of these barbarians, he seemed as if taken with sickness, and feebleness, frequently shut his eyes, and never turned his mouth towards the arm of the person that held him. I asked Kitton how they came to be exempted from this mischief? He said they were born so, and so said the grave and respectable men among them. Many of the lighter and lower sort talked of enchantments by words and by writing, but they all knew how to prepare any person by medicines, which were decoctions of herbs and roots. I have seen many thus armed for a season, do pretty much the same

\* Might not this have happened from the tooth piercing the spinal marrow; and would not the same effect have happened, had the chicken been pierced with a pin?



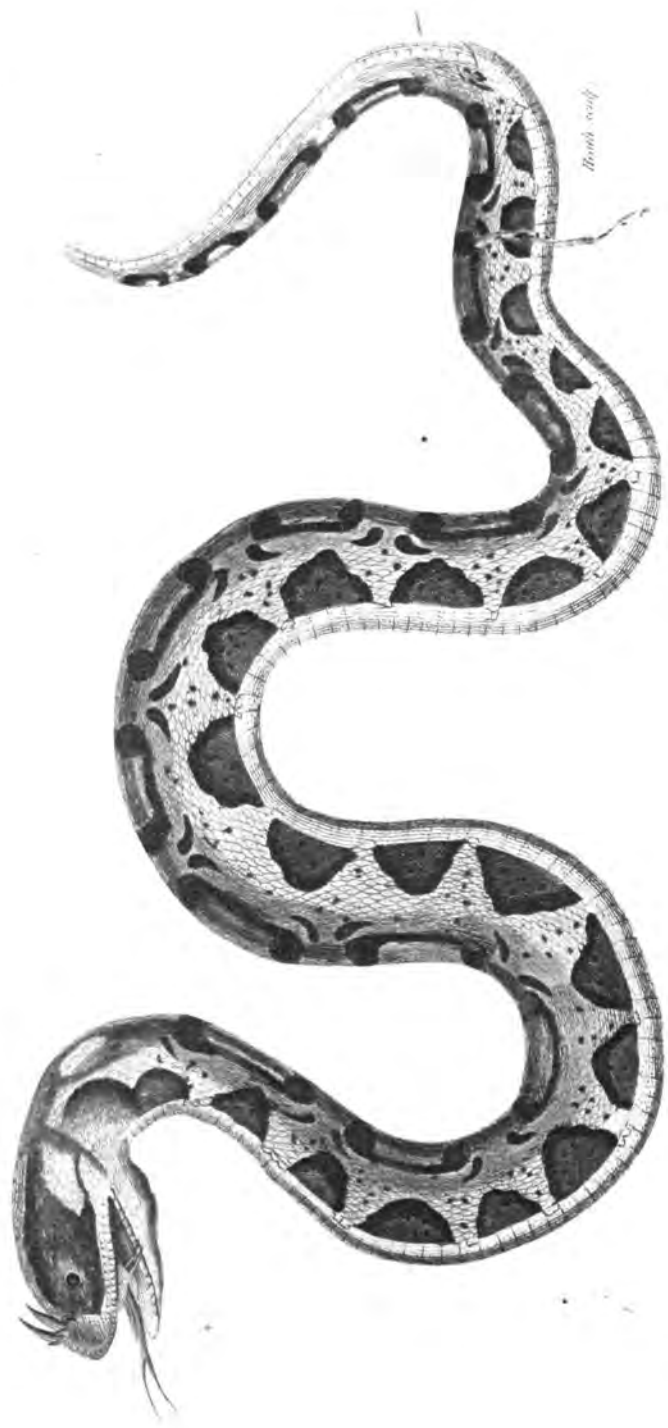
feats as those who possessed the exemption naturally: the drugs were given me, and I several times armed myself, as I thought, resolved to try the experiment; but my heart ~~always~~ failed me when I came to the trial; because among these wretched people it was a pretence they might very probably have sheltered themselves under, that I was a Christian, and that therefore it had no effect upon me. I have still remaining by me a small quantity of this root, but never had an opportunity of trying the experiment."

The Cerastes often makes its appearance among the numerous hieroglyphic figures on the various remains of Egyptian antiquity; and is particularly conspicuous on a pair of large sculptured stones brought from Alexandria, and preserved in the British Museum, and which, probably, made a part of the cornice of some magnificent temple.

This animal, like some other poisonous serpents, is supposed to be viviparous.

The admirable figure of the Cerastes, in the Appendix to Mr. Bruce's Travels, is deserving of the highest commendation, and infinitely surpasses every prior representation of the animal. It is, therefore, on account of its superior merit, selected for the present publication.





*Rattus rattus*

## HORN-NOSE SNAKE.

~~Coluber Nasicornis.~~ *C. subolivaceo-flavescens nigro variatus, fascia laterali flexuosa pallida, naso licorni.*

Subolivaceo-flavescient Snake, with black variegations, pale flexuous lateral band, and two-horned snout.

*Coluber Nasicornis. C. subolivaceo-ferrugineus, nigro irroratus maculis dorsalibus pallidis nigro circumscriptis, fascia laterali undulata pallida.*

Olive-brown Snake, freckled with blackish, with a row of pale dorsal spots surrounded by black, and a flexuous pale fascia on the sides. *Naturalist's Miscellany, pl. 94.*

Abdominal plates 127, subcaudal scales 32 pair.

THIS highly remarkable Snake was first published in the *Naturalist's Miscellany*, and was, prior to the period of its introduction into that work, a perfectly new and undescribed species. I shall therefore repeat, with very slight variations, my former description.

The Snake here represented, adds to the number of those malignant reptiles whose bite, in the hotter regions of the globe, proves the dreadful forerunner of a speedy and painful death. If at the first glance of most of the serpent tribe an involuntary sort of horror and alarm is so often felt by those who are unaccustomed to the examination of these animals, how much greater dread must the unexpected view of the species here exhibited be supposed to inflict? when to the general form of the creature is superadded the peculiar fierceness and forbidding torvity with which Nature has marked its countenance; distinguished

by the very uncommon appearance of two large and sharp-pointed horns, situated, not as in the *Cerastes*, above the eyes, but on the top of the nose or anterior part of the upper jaw. These horns stand nearly upright, but incline slightly backwards and a little outwards on each side, and are of a substance not absolutely horny, but in some degree flexible: their shape is somewhat triangular or three-sided: they are about half an inch in length, and at the fore part of the base of each stands an upright strong scale, of nearly the same shape with the horn itself, and thus giving the appearance of a much smaller pair of horns\*. The mouth is furnished with extremely large and long fangs or tubular teeth, situated as in other poisonous serpents, and capable of inflicting the most severe wounds: two of these fangs appear on each side of the mouth; the hinder pair being smaller than the others. The length of this animal is about thirty-five inches. Its colour is a yellowish olive-brown, very thickly sprinkled all over with minute blackish specks: along the whole length of the back is placed a series of yellowish-brown oblong spots or marks, each of which is imbedded in a patch of black; and on each side of the body, from head to tail, runs an acutely-flexuous or zigzag line or

\* It is remarkable that some of the older writers † speak of a kind of *Cerastes* with four horns, or even more: it is, therefore, not improbable that this species might have been seen by those authors.

† *Salinus, Albertus, &c.*

narrow band of an ochre-colour: this band is bounded beneath by a much deeper or blacker shade, than on the rest of the body: the belly is of a dull ochre-colour or cinereous yellow, freckled with blackish spots and markings; and besides these a number of black spots of different sizes are here and there dispersed over the whole animal. The tail is somewhat thin and short in proportion to the body. The scales of this species are harsh and stiff, and are very strongly carinated. The head is covered with small scales, and is marked on its upper part by a very large longitudinal patch of brown, running out into pointed processes at the sides, and bounded by a space of dull lead-colour or cinereous. The shape of the head is broad and flattened: the cheeks are varied with blackish and yellow marks.

The animal seems to have been taken at a period not far distant from that of casting its skin; since the exterior scales separate easily from the subjacent ones, which then appear of a clearer and lighter colour than before, the yellowish variegations on the sides approaching almost to whiteness, with dusky spots and marks.

This Snake exhibits a richness and magnificence in the pattern of its robe, which cannot be viewed without admiration, though the colours separately considered are far from brilliant; and, like those on the plumage of the Wryneck, produce their effect from the curious manner in which they are disposed and blended.

The Horn-Nose Snake is supposed to be a native of the interior parts of Africa. The specimen was obtained from the master of a Guinea vessel by the Rev. Edward Charles Jenkins, of Charles-Town, in South Carolina, by whom it was presented to the British Museum.

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CROTALINE SNAKE.

Coluber Crotalinus. *C. cinereus, supra maculis magnis nigricantibus alternis, subtus flavescens fusco irroratus.*

Cinereus Snake, marked above with large alternate blackish spots; beneath yellow, freckled with brown.

Coluber Crotalinus. *Lin. Syst. Nat. Gmel. p. 1094.*

Abdominal scuta 154, subcaudal scuta 43.

THIS, says Linnæus, is a large species, with the habit of a Rattle-Snake: colour cinereous, marked above with large, alternate, blackish spots; the under parts yellowish, freckled with brown: head cordate, eyelids protuberant; tail about one seventh of the length of the body, and furnished with scutella as in other Colubri. A specimen of this Snake, in the British Museum, is about the size of the Boa Canina: the head is broad, and obtusely trigonal; the scales are carinated, and the body seems to have been banded with brown, but the specimen being much faded, the disposition of its colours cannot be very exactly determined. The number of abdominal scuta in this specimen is 150, and of subcaudal squamæ 40.

## CLOTHO.

*Coluber Clotho.* *C. griseo-luteus, fasciis numerosis undulatis transversis nigris, subtus cinereus nigro variatus.*

Greyish-orange Snake, with numerous transverse undulated black bands, beneath ash-coloured, with black variegations.

*Vipera Bitin* Ceylonica elegantissima. *Seb. 2. t. 93.*

THIS appears from Seba's description and figure to be a large and richly variegated species, measuring more than six feet in length: and being pretty thick in proportion: the head is large, covered with small scales, and scarce distinguished from the body by any perceptible neck: the colour of the upper parts is a strong orange-brown, freckled with black specks, one at the tip of each scale, and marked with numerous transverse zig-zag bars of black; while about the sides are several scattered black spots of different forms and sizes: the under parts are cinereous, barred here and there by narrow transverse black stripes: the tail of moderate length, thinner than the body, and gradually tapers to the extremity. This snake is a native of Ceylon, and is supposed to be a poisonous species.

## LACHESIS.

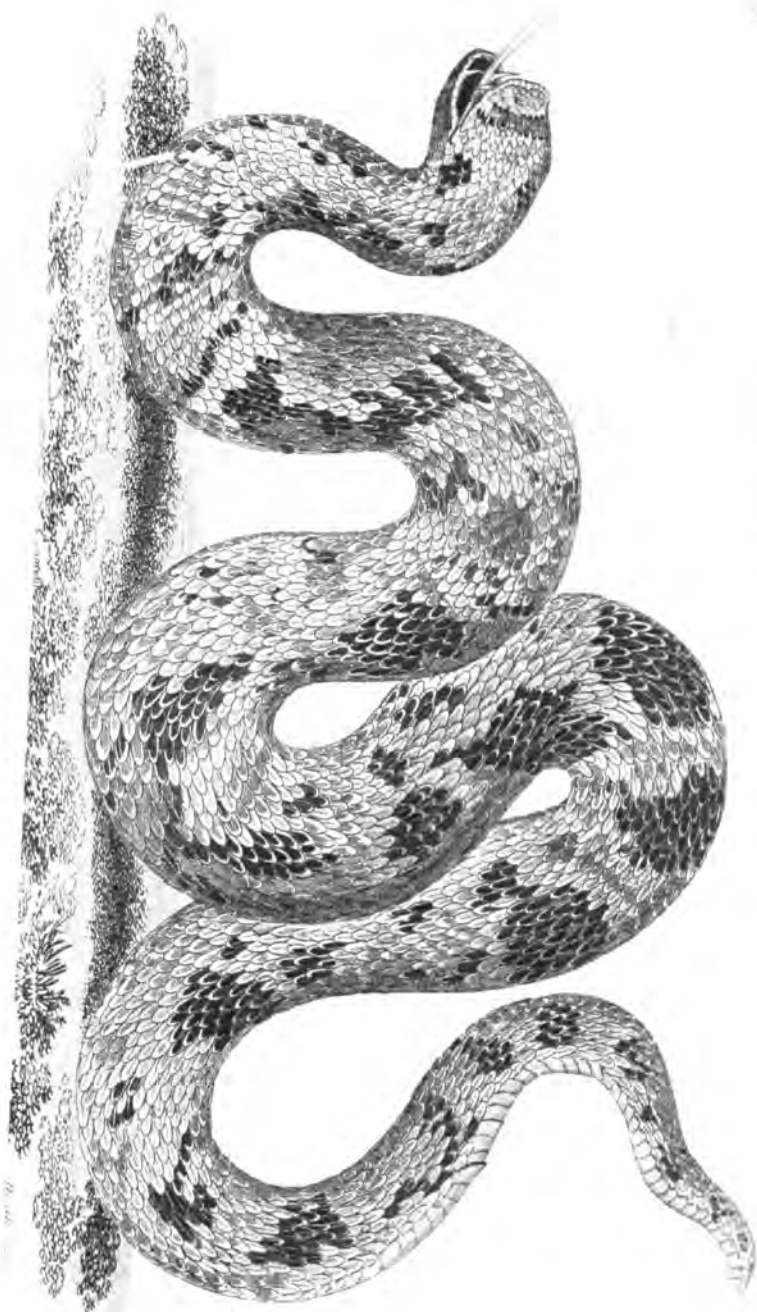
Coluber Lachesis. *C. griseo-flavescens, fusco variegatus, squamis  
laxis carinatis, capite indistincto, cauda brevi.*

Yellowish-grey Snake, variegated with brown, with loose carinated scales, indistinct head, and short tail.

Serpens Ceilonica *Bitin* dicta. *Seb. 2. t. 94. f. 2.*

THIS remarkable snake is figured and slightly described by Seba, who informs us that it is a native of the island of Ceylon, where it is known by the name of *Bitin*. Its colour is a rich and somewhat irregular variegation of deep and light brown, disposed in the form of streaks and patches on a yellowish-grey ground: the scales, which in many parts are tipped with white, are large, strongly carinated, and fixed only at the base, while the remainder is loose or free: in consequence of this disposition of the scales, the animal, while moving, is said to make a kind of rustling sound, by elevating and depressing them, and even sometimes shaking off such as happen to be in any degree loose: the scuta or under scales are broad, of a pale colour, and marked by numerous, small, irregular, dusky, or blackish spots. It is a poisonous species, being armed with large fangs, and, from its general form and proportions, appears to be an animal of very considerable strength: the head is not distinguished in size from the body by any appearance of neck or contraction: the male is deeper coloured than the female, and seems to have a larger body and







LACERTESIN VIV.

a more slender tail. The general length of this snake seems to be about four or five feet, and the tail is short in proportion to the body. It does not appear to have been known to Linnæus, who, relying on his specific characters taken from the number of scuta and squamæ, seems to have neglected almost every species, however remarkable, described or figured by other authors, where those particulars could not be ascertained.

## VAR. ?

*Seb. 2. t. 30.*

THIS is probably a variety of the preceding, from which it differs in being of a somewhat shorter form in proportion, with the tail remarkably short, thick, and suddenly tapering to an obtuse point. Its variegations are very nearly similar to those of the former.

There can be no occasion to warn the scientific reader, that as the two preceding species are described merely from their general appearance, the specific characters annexed must, of course, be received with some degree of latitude.

## ATROPOS.

Coluber Atropos. *C. canus maculis rotundis magnis fuscis albo marginatis in serie quadruplici dispositis.*

Grey Snake, with a quadruple series of large round brown spots with white margins.

Coluber Atropos. *Lin. Syst. Nat. p. 275.*

Abdominal scuta 131, subcaudal squamæ 22.

THIS is a species of a thick and short form, scarcely exceeding fifteen or sixteen inches in length: the head is large and viperine, marked with four or five large dusky spots, and covered with small scales: the remainder of the animal is pale brown, marked all along the upper part by four \* rows of very large, alternate, round, black spots bordered with white: the abdomen is ash-coloured: the tail very short, measuring about a ninth part of the whole length: the scales on all the upper parts are of a slightly sharpened form, and carinated. It is a native of America, and is considered as an extremely poisonous serpent. From its remarkable pattern, and the size of its spots, it is a species very easily distinguished.

\* In a beautiful specimen in the Leverian Museum there seem to be only three rows of spots.