

creature is kept, will, according to Roesel, be perceived two months afterwards*.

To this species of Toad the following singular narrative, recorded by Boerhaave, may be supposed to refer:

“ I lately read a wonderful history relative to the efficacy of odours. Two mountebanks contending for the preference of their Orvietan or antidote, had a promise from the magistrate of a licence or privilege to him whose antidote appeared by experiment to perform the most. The trial was therefore begun by taking poisons themselves. The first day each took the poison from his adversary, and each used his particular Orvietan or antidote; nor did the one or the other suffer any injury. On the next day, when they returned to their former calling, without any manifest hurt, the one told his adversary that he ought not any longer to contend with him, for that he had a kind of poison which resisted the efficacy of any antidote: but the other intrepidly defied him, and denied the fact. A drum was therefore brought, which was continually beat with sticks, and his adversary ordered to draw air from thence through his nose; to which he rashly consented, and immediately perished; for his more crafty ad-

* This is the less surprising, when we consider the effect of several other animal odours. The caterpillar of the *Phalæna Cossus* or Goat Moth, if kept, when full grown, in a chamber, for a short time, will have the same effect, and even a tin box in which it has been confined for some time, will retain the disagreeable odour for several months.

versary had included toads and vipers in the drum, which, being put into a rage by the beating and trembling of the instrument, breathed out a poisonous vapour, which manifestly exerted its virulence upon the seat of life itself; namely, the brain !!!”

VAR. ?

Natter-Jack. *Brit. Zool.* 3. p. 18.

To the above animal seems greatly allied the species known in some parts of England by the name of the Natter-Jack, and which is thus described in the British Zoology :

“ This species frequents dry and sandy places; it is found in *Putney Common*, and also near *Reevesby Abby, Lincolnshire*, where it is called the *Natter-Jack*. It never leaps, neither does it crawl with the slow pace of a toad, but its motion is liker to running. Several are found commonly together, and, like others of the genus, they appear in the evening.

“ The upper part of the body is of a dirty yellow, clouded with brown, and covered with porous pimples, of unequal sizes: on the back is a yellow line. The under side of the body is of a paler hue, marked with black spots, which are rather rough. On the fore feet are four divided toes; on the hind feet five, a little webbed. The length of the body is two inches and a quarter; the breadth one and a quarter: the length of the

fore legs one inch one sixth; of the hind legs two inches."

In the above account no mention is made of any particular odour diffused by the animal on being disturbed; so that it remains doubtful whether it be the same with the mephitic toad before described, or not.

GREEN TOAD.

Rana Viridis. R. pallida, maculis subcircularibus variata, verrucis rubellis aspersa.

Pale Toad, varied with greenish spots, and reddish tubercles.

Rana variabilis. R. colorem varians, dorso et lateribus gibbis verrucis in centro fulvescentibus, dorsi medii excilibus, in prominencia hypochondriorum parte majoribus. Lin. Syst. Nat. Gmel. p. 1051. Pall. Spic. Zool. p. 1. t. 6. f. 3, 4.

Bufo Schreberianus. Laurent. Amph. p. 27.

Bufo viridis. Schneider Hist. Amph. p. 200.

THE Green Toad is a native of Germany and some other parts of Europe, and seems to have been first described by Valisneri, and afterwards by Laurenti, who informs us that it inhabits the cavities of walls about Vienna, and is distinguished by its greenish and confluent spots on the upper parts, disposed on a pale or whitish ground, and scattered over with tubercles, pretty much in the manner of the *Calamita*, or Mephitic Toad. Each of the green spots or patches is also bounded by a blackish margin, and the whole pattern has a somewhat rudely geographical or map-like appearance: on the legs and thighs the spots are

rather transverse, so as to form a kind of bars : the abdomen is of a pale or lurid colour : the tubercles are on some parts reddish, and on others green : the eyes are of a beautiful gold-colour, and seem, when the animal is irritated, to flash with a kind of phosphoric light. The odour of this species is very strong ; resembling that of the common black or garden nightshade, but much more powerful, so as to fill a whole room. The female is of a browner cast than the male.

In winter this species retires under ground, and, like others of the genus, frequents the waters at the breeding season. It appears to vary occasionally in its colours ; the ground-colour being sometimes pale carnation. Its voice is said to resemble in some degree the creaking of a door hinge. Laurenti informs us, that the smaller kinds of grey lizard (*Lacerta agilis*. Var.) on biting this toad, immediately become strongly convulsed, and die in the space of a few minutes ; their tails continuing very strongly convulsed for a considerable time after all motion has ceased in the other parts. Its size is smaller than that of the common toad. Dr. Pallas describes it in his *Spicilegia Zoologica* under the title of *Rana variabilis*, or the Varying Toad ; the general colour being described as whitish, and that of the spots green ; but when placed in a hot sunshine becoming entirely grey ; when sleeping the spots alone appearing grey ; and, lastly, when torpid, the general tinge being a flesh colour.



MARINE TOAD

After Juss's Drawing. Engraved by J. Edwards. Plate 100.

MARINE TOAD.

Rana maxima fusco-flavescens verrucosa, gibbere utrinque humerali magno poris pertuso.

Very large yellowish-brown Toad, with a large porous prominence over each shoulder.

Rana scapulis gibbosis, clunibus nodosis. Lin. Syst. Nat. p. 356.

Rana scapulis singulis scuto punctato, corpore lemniscis convexis rotundis tectis, ano quadrifido. Laurenti Spec. Med. p. 31.

THIS is a very large species; equalling, if not exceeding, the Bull Frog in size, and is of a pale brown colour, lighter beneath, and is marked all over, except on the head, with small, oval, chestnut-coloured tubercles: the head is smooth and veined with a few slight reticular marks, and from the nostrils to the shoulders, and thence down each side the back, run a pair of paler lines, as in many others of this genus. On each shoulder, as it were, or beyond the head, is a large and somewhat oval eminence or projecting part, of a light brown colour, and marked with numerous distinct pores. These parts are, in reality, as Mr. Schneider has observed, no other than the parotid glands, which are more or less protuberant in all Toads, but which in this seem more than commonly conspicuous, and may therefore be allowed to constitute a part of the specific character. The feet are destitute of webs, and the toes, which are four on the fore feet, and five on the hind, have a slightly orbicular termination, and are furnished with short claws, resembling the human nails in miniature:

the toes of the hind feet are very slightly connected at their base by a small approach towards a web. Seba calls this species a Marine American Frog, and observes, that it seems calculated for living both by land and sea; but gives no particular account of its native place. Linnæus appears to have described it merely from Seba's figure, and Mr. Schneider, in his *Historia Amphibiorum*, censures both the Linnæan and Laurentian specific characters, as depending on a circumstance common to all Toads, viz. the tuberos or prominent parotids; but since, as before observed, those parts are remarkably conspicuous in the present animal, there seems to be no good reason why they should not be particularized in the specific character. As to the tubercles at the extremity of the body, they are evidently, as Mr. Schneider has well observed, entirely owing to the natural folding of the skin in that part, when the animal is placed in the attitude represented by Seba; and disappear when the legs are placed in a different direction.

Specimens of this animal, examined by Mr. Schneider, appeared to agree in every respect with Seba's figure, except in not having the tips of the toes visibly orbiculated. Mr. Schneider also speaks of a specimen of double the usual size, which he

* I must farther observe, that I have not pursued Mr. Schneider's arrangement in the disposition of this genus; but have placed some animals among the toads, which he would rank among the frogs, and vice versa.

was in the collection of Dr. Bloch, and which appeared to resemble this species, but was entirely pale, or colourless.

 DOUBTFUL TOAD.

Rana Dubia. *R. fusco-flavescens verrucosa, gibbere utrinque humerali magna porosa, pedibus posticis subhexadactylis subpalmatis.*

Yellowish-brown verrucose Toad, with a large porous prominence over each shoulder, and subhexadactyle subpalmated hind feet.

Rana musica ?? *R. humeris gibbis punctatis.* *Lin. Syst. Nat.* p. 354.

OF this animal a specimen is preserved in the British Museum, under the title of *Rana musica*: its size is that of a common toad, but the shape of the body differs; seeming gradually to decrease from the shoulders to the hind legs, somewhat in the manner of the *Hylæ* or tree frogs. Its colour, so far as can be determined from the specimen, long preserved in spirit of wine, appears to have been a moderately deep brown above, and pale or whitish beneath, slightly marbled or variegated with brown. The whole upper surface is beset with distinct oval pustules or tubercles, somewhat resembling those of the *Rana marina* of Seba; to which, indeed, the animal appears allied by the very large size of the prominent parts on each side the shoulders, or parotids, as Mr. Schneider chuses to call them, which are extremely tumid, and appear perforated by numerous

distinct pores. The under parts of the body are granulated, or beset with tubercles of a much smaller kind: the outsides of the thighs are covered with slightly muricated or pointed warts. The feet are formed like those of the common Toad: the fore feet being unwebbed, and consisting of four toes, with pretty distinct claws or callous tips: the joints of the toes are also tuberculated beneath; and under the foot are two very remarkable calli, or protuberances, as in those of the *R. mephitica*: the hind feet are webbed towards the base, in the same manner as in the common Toad; and may rather be said to have six than five toes; the exterior side of each being furnished with a kind of spurious joint or blunt callous claw: the under part of the hind feet is tuberculated beneath the joints, and scattered over with many small granules.

Whether this be the species intended by Linnaeus, under the name of *Rana musica*, may perhaps be questioned. In the *Systema Naturæ* he refers to no author or figure, but informs us, that the animal is a native of Surinam, and that it has a musical voice. I am, therefore, strongly inclined to believe that his *Rana musica* is in reality no other than the Merian Frog, which Seba describes as having a pleasing or musical voice, and adds, that the inhabitants consider the sound as a presage of fair weather.

MITRED TOAD.



MITRÈD TOAD.

Rana Typhonia. *R. fusca, linea dorsali albida, capite triangulari.*
Brown Toad, with whitish dorsal line, and triangular head.

Rana typhonia. *R. auricularibus lobis ovatis.* *Lin. Syst. Nat.*
p. 356.

Rana margaritifera. *R. ex fusco rubra, granulis dilute rubellis*
conspersa. *Lin. Syst. Nat. Gmel. p. 1050. Laurenti Spec.*
Med. p. 30.

Bufo Typhonius. *Schneid. Amph. p. 207.*

THE first describer of this species seems to have been Seba, who calls it by the name of *Aquagua*, and represents it as a native of Brasil. Its size is that of a common Toad, and its colour on the upper parts is a rufous brown, with a pale or whitish line down the back, and which appears to be not equally conspicuous in different specimens: the under part of the animal is whitish or pale; the thighs are barred with brown; and the skin over the whole body is beset with numerous small granules or protuberances of a blueish or pearly cast; but the principal character of this species is the subtriangular form of the head; the sides of which, beyond each eye, project into an angular protuberance, as shewn in the figure; and from the nose along each side of the head runs an elevated white line over the shoulders to the sides: the fore feet are tetradactylous and unwebbed; the hind feet pentadactylous, and webbed in the usual proportion, as in the common Toad. Mr. Schneider speaks of five bifid tubercles on the middle of the back, which seem to be indeed expressed in

Seba's figure, though not mentioned in the description accompanying it. This species, on account of the singular form of its head, is commonly called the Mitred Toad.

BRASILIAN TOAD.

Rana Brasiliana. *R. rufa, maculis numerosissimis fuscis undique conspersa.*

Rufous Toad, marked on all parts with very numerous brown spots.

Bufo Brasiliensis, de Aguaquaquan dictus, orbiculatus. Seb. 1. p. 116. t. 73. fig. 1, 2.

Rana Brasiliensis. *R. ex cinereo flavescens, maculis rubris undosis, subtus glabra.* Lin. Syst. Nat. Gmel. p. 1049. Laur. Amph. p. 26.

THIS, which was first described by Seba, is considerably larger than the common Toad, which, in its general appearance, it much resembles, but the head is much shorter in proportion. The colour of the whole animal is rufous or yellowish-brown, paler beneath, and uniformly marked on all parts, both above and below, with very numerous, short, transverse, and somewhat wavy red-brown stripes or spots. The fore feet have only four toes, which are slightly rounded and dilated at the tips; and the hind feet, which are pretty strongly webbed, have five, which terminate in sharp points, or weak claws. This animal, according to Seba, is a native of the island of Cuba; but, from the name applied to it, both by Dr. Gmelin, in his edition of the *Systema Naturæ*, as well as by Seba

BRASILIAN TOAD.



Anaxyrus cambridgei (Peters) *Amphibia* *Reptilia* *Amphibia* *Amphibia*



GRANULATED TOAD.

After Mr. G. Trueman. Published by W. Stansby, 1830.

himself, we may conclude that it is chiefly found in South America. Mons. Cepede informs us, that in the Royal Cabinet at Paris there is a specimen of this frog which measures above seven inches from the nose to the extremity of the body.

GRANULATED TOAD.

Rana Ventricosa. *R. granulata pallida, ventre dilatato, lateribus fusco maculatis.*

Pale-brown granulated Toad, with dilated abdomen marked on the sides with blackish spots.

Rana Brasiliensis orbicularis, Pipæ species. *Seb. 1. p. 117. t. 74. f. 1.*

Rana ventricosa. *R. ore semiovato, jugulo prominulo.* *Lin. Syst. Nat. p. 355.*

THIS species is also described and figured by Seba, who tells us that it is a native of Brasil, and is allied to the Pipa, or Surinam Toad. The head is large, as are also the eyes: the gape wide: the body somewhat depressed; the abdomen very broad; the limbs rather short than long; the fore feet tetradactylous; the hind feet pentadactylous and webbed. The colour of the upper parts is a pale yellowish or rufous brown; the under parts paler or whitish, and the sides marked by a longitudinal band of smallish irregular black or dusky spots. The upper surface, both of body and limbs, is also covered with somewhat distinctly placed granules or tubercles of different sizes; those on the neck, shoulders, and thighs, being larger than the rest; while on the last joints

of the legs they are much smaller, and more closely set. Seba's figure represents it as of very considerable size, measuring six inches from the nose to the end of the body.

HORNED TOAD.

Rana Cornuta. *R. cinerea fusco fasciata, palpebris conicis.*

Cinereous Toad, fasciated with brown, with conical eyelids.

Rana cornuta. *R. palpebris conicis.* *Linn. Syst. Nat. p. 356.*

Bufo cornutus seu spinosus Virginianus. *Seb. 1. p. 115. t. 72. f. 1, 2.*

Among the whole tribe of Amphibia it is, perhaps, difficult to find an animal of a more singular appearance than the present, which may be regarded as of a more deformed and hideous aspect than even the Pipa, or Toad of Surinam. This arises not so much from the general shape of the animal, as from the extraordinary structure of the upper eyelids, which are so formed as to resemble a pair of short, sharp-pointed horns; while the width of the mouth is such as to exceed that of any other species, and even to equal half the length of the body itself.

This wonderful animal, says Seba, is of a short and thick form, and remarkable for having two sharp horns on its head, within which are situated the eyes. The skin of the body, both above and below, is of a cinereous yellow, striped with lines of obscure greyish brown. Along the back runs a broad white band, commencing at the head, and



Common Frog

HORNED TOAD.



thence decreasing gradually, so as to appear narrow over the hind parts: it is also beset with small specks like pearls. All the rest of the body is rough with sharp spines, except the head, which is variegated with white, and the abdomen, which is of a deep rufous yellow. The legs are surrounded by a kind of bands or filets, and the toes are marked in a similar manner, and resemble in some degree the human fingers, and are four in number on the fore legs, and five on the hind: the hind feet are also webbed. The head is very large and thick, and when the mouth is opened, exhibits a broad and thick tongue, shaped somewhat like an oyster, and fastened in front to the lower jaw, but loose behind, as in frogs: it is also covered over with papillæ: on each side the head, above the eyes and wide mouth, is a black spot on a white ground. The female agrees in all respects with the male, except that the mouth is still wider, and the front is variegated in a somewhat different manner: between the eyes is a broad stripe, growing narrower on the nose: beneath each eye is a spot resembling an additional or false eye: the hind feet very much resemble hands, having a thumb and four fingers, without being webbed as in the male.

Seba seems to have been misinformed as to the native country of this species, which he imagined to be Virginia; but the animal is now known to be a native of South America only.

It appears that this animal was pretty well described so long ago as the year 1726, in the cata-

logue of Vincent's Museum, at the Hague. It is there called *Bufo Americanus rarissimus*, &c. "The body large and round; the back cinereous, marbled with brown: the brown colour, which appears in the middle, parted by a cinereous list or stripe, which runs from the lower part of the horned eyes, to a great distance, and ends in a point. Above the large, horned eyes, which are seated near each other, and towards the back part of the head, are placed two holes, or seeming spiracles: the head is smooth and broad; but the back, on each side the middle stripe, is beset with rough tubercles as far as the belly: there are four feet, which are marbled with deep brown spots: the mouth is very large, being a hand's breadth in diameter, and equalling that of the body: beneath the mouth and neck the colour of the skin is brown: all the belly, as far as the rump, is whitish: the toes of the feet are divided; those of the fore feet being four in number, and those of the hind five."

Mr. Schneider also has described two specimens of this animal, which were brought from Surinam. The parts which Linnæus somewhat improperly calls horns, are, he observes, a pair of acuminate, callous processes, of a conical shape, seated on the eyelids: the whole back, according to Mr. Schneider, is scattered over with sharp tubercles; and the gape of the mouth reaches almost half the length of the body: the eyes rather small, and less distant than in most other frogs: the feet smooth, and the toes unarmed: the fore feet unwebbed;

the hind feet slightly webbed: each upper eyelid, which rises up into a large and conical callus or horn, is beset with small tubercles: on the sides of the body were, in these specimens, some fulvous spots, and some large striated calli, resembling, in some degree, the spines on the back of a skate: the edge of the upper jaw was beset with very thickly-placed crenatures or denticulations: the tongue thick, rough, fixed in front, but loose on the back-part.

Thus the whole account confirms the fidelity of Seba's description and figures, which, from the extreme singularity, as well as rarity, of the species, seemed, in some degree, to have been considered as dubious.

Of all animals yet known, this may, perhaps, according to our general or popular ideas of proportion and beauty, be considered as the most deformed: a sentiment, however, merely to be admitted so far as it relates to a comparison with other beings, which we have accustomed ourselves to consider as more perfect. On this subject let us attend to the sentiments of a celebrated writer of the seventeenth century.

"I hold there is a general beauty in the works of God, and, therefore, no deformity in any kind or species of creature whatsoever: I cannot tell by what logic we call a Toad, a Bear, or an Elephant, ugly, they being created in those outward shapes and figures which best express the actions of their inward forms. And having past that general visitation of God, who saw that all that he had made

was good, that is conformable to his will, which abhors deformity, and is the rule of order and beauty, there is no deformity but in monstrosity; wherein, notwithstanding, there is a kind of beauty; Nature so ingeniously contriving the irregular parts, as they become sometimes more remarkable than the principal fabrick. To speak yet more narrowly, there never was any thing ugly or mis-shapen but the chaos: wherein notwithstanding, to speak strictly, there was no deformity, because no form; nor was it yet impregnate by the voice of God. Now Nature is not at variance with Art, nor Art with Nature; they being both the servants of his Providence. Art is the perfection of Nature; were the world now as it was on the sixth day, there were yet a Chaos. Nature hath made one World, and Art another. In brief, all beings are artificial, for Nature is the Art of God."—*Rel. Med.* p. 9.

The learned and acute Sir Kenelm Digby, in his observations on the above passage, replies, "That logick which he quarreleth at, for calling a Toad or Serpent ugly, will in the end agree with his: for nobody ever took them to be so in respect to the *Universe* (in which regard he defendeth their regularity and symmetry), but only as they have relation to us."

P. 11A.



Small frog.

Other small's Rana. P. 11A. of the 11th. P. 11A. of the 11th.

PIPA.

Rana Pipa. *R. fusca, digitis anticis apice quadrifidis.*

Brown Toad, with the toes of the fore feet quadrifid at their extremities.

Rana Pipa. *R. digitis anticis muticis quadridentatis, posticis unguiculatis.* Lin. Syst. Nat. p. 354.

Bufo aquaticus pullos super dorsum gerens. Merian Surinam, pl. 59.

Bufo aquaticus Surinamensis. Vincent, pip. 17-26. t. 62.

Rana Surinamensis. Bradl. Nat. t. 22. f. 1.

Bufo s. Pipa Americana. Seb. 1. p. 121. t. 77.

The Pipa, or Surinam Toad.

THIS also is one of those animals which, at first view, every one pronounces deformed and hideous; the general uncouthness of its shape being often aggravated by a phenomenon unexampled in the rest of the animal world, viz. the young in various stages of exclusion, proceeding from cells dispersed over the back of the parent.

The size of the Pipa considerably exceeds that of the common toad: the body is of a flattish form; the head subtriangular; the mouth very wide, with the edges or corners furnished with a kind of short cutaneous, and, as it were, lacerated appendage on each side: in the male, however, the head is rather oval than triangular, and the parts just mentioned less distinct: the fore feet are tetradactylous, the toes long and thin, and each divided at the tip into four distinct portions or processes, each of which, if narrowly inspected with a magnifier, will be found to be

again obscurely subdivided almost in a similar manner: the hind feet are five-toed, and very widely webbed; the web reaching to the very tips of the toes. The male Pipa is larger than the female, measuring sometimes not less than seven inches from the nose to the end of the body: the nose in both sexes is of a somewhat truncated form, like that of a mole, or hog, and the eyes extremely small: from each eye, in the female, run two rows of granules or glandular points to the middle of the back: the whole body is also covered with similar points or glandules, but smaller than the former: in the male a single row of granules proceeds from each eye down the back, instead of a double row, as in the female: these points or granules are also larger than in the female, and gradually decrease in size as they approach the lower part of the back: the skin round the neck, in both sexes, forms a kind of loose or wrinkled collar: the abdomen of the male is of a browner tinge than that of the female, and is sometimes obscurely spotted with yellow; but the general colour, both of the male and female Pipa, is a dark or blackish brown. The Pipa seems to have been first made known to European naturalists about the latter end of the seventeenth century, and to have been first described by Ruysch. It was afterwards described and figured by Madam Merian; but with much greater accuracy by the editor of Seba's Museum, where it is represented in its different states.

It was for a long time supposed that the ova of

PIPA.



this extraordinary animal were produced in the dorsal cells, without having been first excluded in the form of spawn; but later observations have proved that a still more extraordinary process takes place; and that the spawn after exclusion, is received into the open cells of the back, and there concealed till the young have arrived at maturity. This discovery was made by Dr. Fermin, who had an opportunity, during his residence at Surinam, to investigate the natural history of the Pipa in a more accurate manner than had before been practicable. His account is, that the female Pipa deposits her eggs or spawn at the brinks of some stagnant water; and that the male collects or amasses the heap of ova, and deposits them with great care on the back of the female, where, after impregnation, they are pressed into the cellules, which are at that period open for their reception, and afterwards close over them; thus retaining them till the period of their second birth; which happens in somewhat less than three months, when they emerge from the back of the parent in their complete state. During the time of the concealment, however, they undergo the usual change of the rest of this genus, being first hatched from the egg in the form of a tadpole; and gradually acquire their complete shape, some time before their exclusion. This latter circumstance, which does not appear to have been known to Fermin, is confirmed by the united testimonies of Camper, Blumenbach, and Spallanzani, who have all had an opportunity of inspect-

ing specimens of the animal in a state favourable to the examination of this particular. Upon the whole, it appears that there is some analogy in the process of nature with respect to the production of the young, between this animal and the opossum.

According to Fermin, the Pipa is calculated by Nature for producing but one brood of young; and, compared with the rest of the genus, it can by no means be considered as a very prolific animal; the number of young produced by the female which he observed, amounted to seventy-five, which were all excluded within the space of five days.

By a singular error in the Gmelinian edition of the *Systema Naturæ*, the young of the Pipa are said to be at first tailless; afterwards to acquire that part, and again to lose it.

SHORT-HEADED TOAD.

Rana Breviceps. *R. subfusca, subtus pallida, corpore ovato-convexo, vitta longitudinali cinereo-dentata, pedibus fissis.*

Brownish Toad, pale beneath, with ovate convex body, marked by a longitudinal ash-coloured dentated band.

Rana gibbosa. *R. corpore ovato-convexo, vitta longitudinali cinereo-dentata, pedibus fissis.* *Lin. Syst. Nat. p. 355.*

Rana rubeta Africana. *Seb. 2. p. 37. t. 37. f. 3.*

Le Bossu. *Cepede.*

Rana breviceps. *Schneid. Amph. p. 140.*

THE *Rana breviceps*, or Short-headed Toad, is described by Linnæus, in the first volume of the

SHORT HEADED TOAD.
from Seba.

37.



LE BOSSU. *Cope.*

Amoenitates Academicæ, where it is said to be of a subglobose form, extremely convex, of a wrinkled but not tuberculated surface, clouded, and marked by a palish longitudinal dorsal band, which is sinuated on each side: the head very small, obtuse, and immersed in the thorax: the toes of the fore feet unwebbed, without claws, and somewhat tuberos or knotted beneath the joints: the toes of the hind feet six; the thumb broader than the others. In the *Systema Naturæ* he describes it as having an ovate convex body, unwebbed feet, and a longitudinal, cinereous, dentated band or stripe. He does not, however, quote Seba, in whose work it appears to have been first figured. It is one of the smaller species, scarcely exceeding half the size of the common toad. The hind feet are slightly palmated, though this circumstance is not particularized in the Linnæan description above quoted. It is a native of Senegal and other parts of Africa.

INDISTINCT TOAD.

Rana Systoma. *R. corpore subgloboso, capite indistincto, rictu angusto.*

Toad with subglobose body, indistinct head, and small mouth.

Rana Systoma. *Schneid. Amph. p. 144.*

THIS, from Mr. Schneider's account, who seems to have been its first describer, is much allied to the former; having a thick roundish body, with the head so blended in the general outline that

the mouth is scarce apparent: the legs are very short, and the thighs are, as it were, imbedded or inclosed in the wrinkled skin of the sides. The whole animal is smooth or without tubercles: the fore feet unwebbed; the hinder very slightly webbed. The colour of the whole is pale or whitish, spotted or marbled with brown on the upper part: across each of the upper eyelids runs a curved white band or streak uniting towards the nostrils, and upper lip: the eyes are of moderate size. This species was described from a specimen in spirits from the East Indies.

HEADLESS TOAD.

Rana Acephala. *R. corpore subgloboso fusco albo vario, capite indistincto, rictu angustissimo deorsum curvato.*

Brownish Toad, marbled with white, with indistinct head and very small mouth, curving downwards.

Rana acephala. *Schneid. Amph. p. 146.*

THIS is extremely allied to the two former species, and might even be mistaken for the Short-headed Toad, but differs not only in colour, but in the still less apparent distinction of the head, which is so lost in the outline of the body as to be perfectly blended: the mouth is also much smaller than in either of the two preceding animals, and curves downwards at each corner. The colour of this species is brown, variegated with white. The legs are short and weak, as in the two former kinds.

CAROLINA TOAD.



CAROLINA TOAD.

Rana Lentiginosa. R. griseo fusco irrorata, capite subacuminato.

Grey Toad, freckled with brown, with subacuminated head.

Land-Frog. *Catesb. Carol. 2. pl. 69.*

THIS very much resembles the common toad in its general appearance, but has a smaller head and sharper snout. Its motion also is not that of crawling, but leaping. Its colour is a dusky brown, paler beneath, and it is all over mottled with minute blackish or dark brown spots: the irides of the eyes are red. This animal is common in Carolina and Virginia, feeding, like most others of this genus, on insects, and is said to be particularly attracted by any luminous insects, as fire-flies, glow-worms, &c. and will even seize and swallow a small live wood coal of the size of the end of the finger; mistaking it for some luminous insect, and seeming to receive no immediate injury in consequence. These animals are said to be most common in wet weather, but are very frequent on the higher grounds, and appear in the hottest part of the day, as well as in the evening. They vary somewhat in colour, being deeper or paler in different individuals.

CRESCENT TOAD.

Rana Semilunata. *R. nigricans, subtus pallida, macula auriculari utrinque lunata alba.*

Blackish Toad, paler beneath, with a white crescent-shaped spot at each ear.

Bufo semilunatus. *Schneid. Amph. p. 215.*

DESCRIBED by Mr. Schneider, from a specimen in the collection of Dr. Bloch. Size larger than that of the common toad: body blackish: paler beneath: behind the parotids a large, round, white spot: tympanum black, with a semicircular white spot behind it: towards the middle of the back a long narrow spot on each side: hind feet semipalmated: body covered above with tubercles.

 BLACK-LIPPED TOAD.

Rana Melanosticta. *R. cinereo-flavescens, verrucis nigro-punctatis, labio superiore palpebrisque nigro marginatis plantis subhexadactylis semipalmatis.*

Yellowish-brown Toad, with black-speckled warts; the upper lip and eyelids edged with black, and subhexadactylous semipalmated hind feet.

Bufo melanostictus. *Schneid. Amph. p. 216.*

IN the collection of Dr. Bloch: supposed to be a native of China: colour cinereous; body and limbs thickly scattered over with warted tubercles, which are speckled with black, except on the sides and belly, where they are of the colour of

rest of the skin: space between the eyes depressed, and smooth; the borders of the projecting orbits of the eyes are black, and run backwards as far as the drum of the ears, and descending in front, unite before the nostrils: the same border also surrounds the upper jaw: the tips of the toes, and the two calli of both hind and fore feet, are also black. The hind feet are semipalmated. A fine specimen, agreeing with this description, is preserved in the British Museum; its size is nearly equal to that of the common toad, which it much resembles in habit: its colour is a pale yellowish brown.

ARUNCO.

Rana Arunco. *R. corpore verrucoso, pedibus omnibus palmatis.*

Frog with warted body, and all the feet webbed.

Rana Arunco. *Molin. Chil. p. 190.*

LARGER than the common frog; nearly of the same colour; with the body warted, and all the feet palmated. It is a native of Chili, and is described by Molina.

YELLOW TOAD.

Rana Lutea. *R. corpore luteo, pedibus omnibus subpalmatis.*

Molin. Chil. p. 190. Lin. Syst. Nat. Gmel. p. 1050.

Yellow Toad, with all the feet subpalmated.

THIS has the general habit of a common frog, but is much smaller, and the skin is warted: its colour yellow*; all the feet subpalmated. Inhabits, like the former, the waters of Chili.

SOME other undetermined or uncertain species might be added to this genus, from the vague descriptions and rude figures of authors; but as no dependence can be placed on their accuracy, it is perhaps best to omit them altogether.

* The colour, throughout this whole genus, but more particularly among the Toads, differs in intensity, according to the time which has elapsed since the animal cast its cuticle. The manner in which toads perform this process is thus related by Mr. Schneider, from Grignon, who was an eye-witness of it: "The skin splits or cracks in a longitudinal direction both above and below; and the animal pulls off that of the left side with its left foot, and delivering it into the right foot, applies it to its mouth and swallows it: it then performs the same process on the right side with the right foot, and delivering the cuticle into the left foot, swallows it like the former.

PLAYING DRAGON.



After the Chinese Dragon, painted by the Chinese artist.

DRACO. DRAGON.

Generic Character.

<p><i>Corpus</i> tetrapodum, cauda- -tum, alatum: alis propriis.</p>	<p><i>Body</i> four-footed, tailed, and furnished on each side with an expansile, radiat- ed, wing-like skin.</p>
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FLYING DRAGON.

Draco Volans. D. brachius ab ala distinctis. Lin. Syst. Nat.
p. 358.

Dragon, with the fore legs unconnected with the wings.

Lacerta cauda tereti, pedibus pentadactylis, alis femore connexis,
crista gule triplici. Amoen. Acad. 1. p. 540.

Lacerta volans indica. Ruj. Quadr. p. 275.

Lacerta africana volans, s. Draco volans. Seb. 2. t. 86. f. 3.

Lacertus volans, s. Dracunculus. Bont. Jac. 57. t. 57.

Flying Dragon. Nat. Misc. 1. pl. 8.

THE very name of this genus conveys to the mass of mankind the idea of some formidable monster, and recalls to the imagination the wild fictions of romance and poetry; but the animal distinguished by that title in modern natural history is a small and harmless Lizard, agreeing in the general form of its body with the rest of that

tribe ; but furnished with large, expansile, cutaneous processes, covered, like the rest of the animal, with small scales, and strengthened internally by several radii or ribs, extending to the extreme verge of the membrane, and giving the power of contraction and dilatation. As this is a circumstance which separates it from the rest of the Lizard tribe, Linnæus was induced to institute for it a distinct genus under the title above mentioned, and which it seems more proper to retain than to rank the animal, as some have done, under the genus *Lacerta*.

The total length of this highly curious creature is commonly about nine or ten inches, or at most a foot ; the tail being extremely long in proportion to the body, which does not measure more than about four inches in length. The head is of a very singular form, being furnished beneath with a very large triple pouch or process, one part of which descends beneath the throat, while the two remaining parts project on each side ; all are sharp-pointed, and seem analogous in some degree to the gular crests of the Guana and other Lizards, but are still more conspicuous in proportion to the size of the animal. The head is of moderate size ; the mouth rather wide ; the tongue large, and thick at the base ; the teeth small and numerous ; the neck rather small ; the body and limbs somewhat slender, and universally covered with small acuminate and closely-set scales, which incline more to a minutely aculeated appearance on the tail. The colour of the Dragon

on the upper parts is an elegant pale blue, or blueish grey, the back and tail being marked by several transverse dusky undulations or bars, while the wings are very elegantly spotted, more especially towards the broadest part, with differently-shaped patches of black, deep-brown, and white: the border of the wings is also white, and the whole under surface of the animal is of a very pale or whitish brown colour.

This animal is no where so elegantly or faithfully figured as is the work of Seba; the representations in the works of other authors being in every respect inferior, and even unworthy of quotation.

The Dragon is an inhabitant of many parts of Asia and Africa, where, like most of the smaller Lizards, it delights in wandering about trees, and from the peculiar mechanism of its lateral membranes, is enabled to spring from bough to bough, and to support itself in air for some short space, in the manner of a flying squirrel, or even of a bat. It feeds on insects, and is in every respect an animal of a harmless or inoffensive nature.

VAR. 2

Draco Præpos. D. brachius alæ adnatis. Lin. Syst. Nat. p. 258.

Dragon with wings coalescing with the arms.

Draco volans Americanus. Seb. 1. t. 102. f. 2.

THIS is considered by Linnæus in the twelfth edition of the *Systema Naturæ* as a distinct species; on the authority of Seba, who represents it a

native of America; but it seems at present to be unknown to other naturalists; and is, perhaps, no other than a variety of the preceding; differing in the circumstances described in the specific character, and having a more slender neck and body, and a single rather than a triple gular pouch.

It may not be improper here to add, that all the other animals described and figured in the works of some of the older naturalists, under the name of Dragons, are merely fictitious beings, either artificially composed of the skins of different animals, or made by warping some particular species of the Ray or Skate tribe into a dragon-like shape, by expanding and drying the fins in an elevated position, adding the legs of birds, &c. and otherwise disguising the animals. Such also are the monstrous representations (to be found in Gesner and Aldrovandus) of a seven-headed Dragon, with gaping mouths, long body, snake-like necks and tail, and feet resembling those of birds. These deceptions appear to have been formerly practised with some success; and misled not only the vulgar, but even men of science. Of this a curious example is said to have occurred towards the close of the seventeenth century, and is thus commemorated by Dr. Grainger, from a note of Dr. Zachary Grey, in his edition of *Hudibras*, vol. 1. p. 125.

“ Mr. Smith, of Bedford, observes to me, on the word *Dragon*, as follows: Mr. Jacob Bobart, botany professor * of Oxford, did, about forty years

* Not, properly speaking, Professor, but rather Superintendant of the garden.

ago, find a dead rat in the physic garden, which he made to resemble the common picture of dragons, by altering its head and tail, and thrusting in taper sharp sticks, which distended the skin on each side till it mimicked wings. He let it dry as hard as possible. The learned immediately pronounced it a dragon; and one of them sent an accurate description of it to Dr. Magliabechi, librarian to the grand Duke of Tuscany; several fine copies of verses were wrote on so rare a subject; but at last Mr. Bobart owned the cheat; however it was looked upon as a master-piece of art; and, as such, deposited in the Museum, or Anatomy-School, where I saw it some years after."

The most remarkable instance, in later times, is that of a Dragon of the kind above-mentioned, which was in possession of a merchant at Hamburgh, and which was considered by its proprietor as of the value of 10,000 florins; but which the penetrating eye of Linnæus, during his visit to that city, soon discovered to be a mere deception, ingeniously contrived by a dextrous combination of the skins of snakes, teeth of weesels, claws of birds, &c. being, as Linnæus himself expresses it, "*non Naturæ sed artis opus crimium.*" It is said that Linnæus, in consequence of this discovery, was obliged to fly from Hamburgh, in order to avoid the wrath of the enraged proprietor, who determined on a prosecution against him, as having injured the reputation of his property. An exact representation of this curious imposture is given by Seba, who, however, does

not, as commonly supposed, describe it as a really existing species, but merely as so reported. It would be scarcely excusable to swell the number of plates in the present work, by an introduction of this figure, merely to elucidate the anecdote: it is, therefore, entirely omitted.

LACERTA. LIZARD.

Generic Character.

<i>Corpus</i> tetrapodum, elongatum, caudatum, nudum.	<i>Body</i> four-footed, elongated, tailed; without any secondary integument.
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THIS numerous genus may be divided into the following sections or sets, viz.

1. *Crocodiles*, furnished with very strong scales.
2. *Guanus*, and other Lizards, either with serrated or carinated backs and tails.
3. *Cordyles*, with denticulated, and sometimes spiny scales, either on the body or tail, or both.
4. *Lizards proper*, smooth, and the greater number furnished with broad square scales or plates on the abdomen.
5. *Chameleons*, with granulated skin, large head, long missile tongue, and cylindric tail.
6. *Geckos*, with granulated or tuberculated skin, and lobated feet, with the toes lamellated beneath.
7. *Scinks*, with smooth, fish-like scales.

8. *Salamanders, Newts, or Efts*, with soft skins, and of which some are water-lizards.
9. *Snake-Lizards*, with extremely long bodies, very short legs, and minute feet.

The above divisions neither are, nor can be, perfectly precise; since species may occur which may with almost equal propriety be referred to either of the neighbouring sections; but in general they will be found useful in the investigation of the species.

CROCODILES.

COMMON CROCODILE.

Lacerta Crocodilus. L. capite cataphracto, nucha carinata, cauda superne cristis binis lateralibus horida. Lin. Syst. Nat. Gmel. p. 1057. Blumenb. Naturg. 262.

Lizard with mailed head, carinated neck, and tail furnished on the upper part with two lateral crested processes.

Lacerta cauda compressa serrata, pedibus triunguiculatis, palmis pentadactylis, plantis tetradactylis palmatis. Lin. Syst. Nat. p. 359.

Crocodilus. Gesn. Aldr. Bellon. Jonst. &c.

The Common or Nilotic Crocodile.

THE Crocodile, so remarkable for its size and powers of destruction, has in all ages been regarded as one of the most formidable animals of the warmer regions. It is a native of Asia and Africa, but seems to be most common in the latter; inhabiting large rivers, as the Nile, the

COMMON CROCODILE.



Niger, &c. and preying principally on fish, but occasionally seizing on almost every animal which happens to be exposed to its rapacity. The size to which the Crocodile sometimes arrives is prodigious; specimens being frequently seen of twenty feet in length, and instances are commemorated of some which have exceeded the length of thirty feet. The armour with which the upper part of the body is covered may be numbered among the most elaborate pieces of Nature's mechanism. In the full grown animal it is so strong and thick as easily to repel a musket-ball; on the lower parts it is much thinner, and of a more pliable nature: the whole animal appears as if covered with the most regular and curious carved-work: the colour of a full-grown Crocodile is blackish brown above, and yellowish-white beneath; the upper parts of the legs and the sides varied with deep yellow, and in some parts tinged with green. In the younger animals the colour on the upper parts is a mixture of brown and pale yellow, the under parts being nearly white: the eyes are provided with a nictitating membrane, or transparent, moveable pellicle, as in birds: the mouth is of vast width, the rictus or gape having a somewhat flexuous outline, and both jaws being furnished with very numerous sharp-pointed teeth, of which those about the middle part of each jaw considerably exceed the rest in size, and seem analogous to the canine teeth in the viviparous quadrupeds or mammalia: the number of teeth, in each jaw, is

thirty, or more *; and they are so disposed as to alternate with each other when the mouth is closed: on taking out the teeth and examining the alveoli, it has been found that small teeth were forming beneath, in order to supply the loss of the others when shed: the auditory foramina are situated on the top of the head, above the eyes, and are moderately large, oval, covered by a membrane, having a longitudinal slit or opening, and thus in some degree resembling a pair of closed eyes: the legs are short, but strong and muscular: the fore feet have five toes, and are unwebbed: the hind feet have only four toes, which are united towards their base by a strong web: the two interior toes on each of the fore feet, and the interior one of the hind feet, are destitute of claws †: on the other toes are strong, sharp, and curved claws: the tail is very long, of a laterally compressed form, and furnished above with an upright process, formed by the gradual approximation of two elevated crests proceeding from the lower part of the back.

The Crocodile, in a young state, is by no means to be dreaded, its small size and weakness pre-

* The number is observed to vary in different specimens; probably from the different age of the animal. In the skeleton described by Grew, and which measured about fourteen feet in length, there were thirty teeth in each jaw, and those teeth which appeared to be the least worn, were serrated by small denticulations on each side.

† In the skeleton described by Grew there were claws on all the toes.



SKELETON of CROCODILE.

venting it from being able to injure any of the larger animals: it, therefore, contents itself with fish and other small prey; and such as have occasionally been brought to Europe are so far from being formidable or ferocious, that they may generally be handled with impunity, and either from weakness, or the effect of a cold climate, seem much inclined to torpidity; but in the glowing regions of Africa, where it arrives at its full strength and power, it is justly regarded as the most formidable inhabitant of the rivers. It lies in wait near the banks, and snatches dogs and other animals, swallowing them instantly, and then plunging into the flood, and seeking some retired part, where it may lie concealed till hunger again invites it to its prey. In its manner of attack it is exactly imitated by the common *Lacerta palustris*, or Water Newt, which, though not more than about four or five inches long, will with the greatest ease swallow an insect of more than an inch in length; and that at one single effort, and with a motion so quick, that the eye can scarcely follow it. It poises itself in the water, and having gained a convenient distance, springs with the utmost celerity on the insect, and swallows it. If, therefore, a small lizard of four or five inches only in length can thus instantaneously swallow an animal of a fourth part of its own length, we need not wonder that a Crocodile of eighteen, twenty, or twenty-five feet long should suddenly ingorge a dog or other quadruped.

Crocodiles, like the rest of the *Lacertæ*, are oviparous: they deposit their eggs in the sand or mud near or on the banks of the rivers they frequent, and the young, when hatched, immediately proceed to the water; but the major part are said to be commonly devoured by other animals, as Ichneumons, birds, &c. The egg of the common or Nilotic Crocodile is not much larger than that of a goose, and in external appearance bears a most perfect resemblance to that of a bird; being covered with a calcarious shell, under which is a membrane. When the young are first excluded the head bears a much larger proportion to the body than when full grown. The eggs, as well as the flesh of the Crocodile itself, are numbered among the delicacies of some of the African nations, and are said to form one of their favourite repasts.

The gradual evolution and growth of the Crocodile are thus poetically described by Dr. Darwin;

“ So from his shell, on Delta’s showerless isle
Bursts into birth the monster of the Nile;
First, in translucent lymph, with cobweb threads
The brain’s fine floating tissue swells and spreads:
Nerve after nerve the glistening spine descends;
The red heart dances, the aorta bends:
Thro’ each new gland the purple current glides,
New veins meandering drink the reflux tides.
Edge over edge expands each hardening scale,
And sheaths his slimy skin in silver mail.
Ere while, emerging from the brooding sand,
With Tiger paw he prints the brineless strand:
High on the flood with speckled bosom swims,
Helm’d with broad tail, and oar’d with giant limbs:

YOUNG GEORGE DICK looking from the Pig.



Rolls his fierce eye-balls, clasps his iron claws,
And champs with gnashing teeth his massy jaws.
Old Nilus sighs thro' all his cane-crown'd shores,
And swarthy Memphis trembles and adores."

In the large rivers of Africa Crocodiles are said to be sometimes seen swimming together in vast shoals, and resembling the trunks of so many large trees floating on the water. The negroes will sometimes attack and kill a single Crocodile, by stabbing it under the belly, where the skin, at the interstices of the scales, is soft and flexible. It is also, in some countries, the custom to hunt the Crocodile by means of strong dogs, properly trained to the purpose, and armed with spiked collars. It is likewise pretended, that in some parts of Africa Crocodiles are occasionally tamed; and it is said that they form an article of Royal magnificence with the Monarchs of those regions; being kept in large ponds or lakes appropriated to their residence. We may add, that the ancient Romans exhibited these animals in their public spectacles and triumphs. Scaurus, during his ædileship, treated the people with a sight of five Crocodiles, exhibited in a temporary lake, and Augustus introduced one into his triumph over Cleopatra, as well as several others, for the entertainment of the people.

A vulgar error seems to have long prevailed relative to this animal's moving his upper jaw. This error seems to have been first rectified by Grew, in his description of the skeleton of a Crocodile

in the Muscum of the Royal Society. His words are these: "The articulations of the lower jaw with the upper, and of the occiput with the foremost vertebra of the neck, are here made both in the same manner, as in other quadrupeds, notwithstanding the tradition of his moving the upper jaw: the senselessness of this tradition is plain from the structure of the bones, that is the articulation only of the occiput with the neck, and of the nether jaw with the upper, as abovesaid."

"The first author of it was Aristotle, in his fourth book *de partibus animalium*, cap. 11. and thus much is true, not only of this creature, but of all others which have a long head and a wide rictus, that when they open their mouths, they seem to move both jaws; as both the viper and the lizard; and for the same reason Columna might say as much of the Hippopotamus, that he moves the upper jaw, as the Crocodile. So all birds, especially with long bills, shew the contemporary motion of both the mandibles; the musculi splenii pulling back the occiput, and so a little raising the upper, while the musculi digastrici pull the other down. But that this motion was not meant by Aristotle, appears in his first book *De Hist. Anim.* c. 11. & lib. 3. c. 7. where he saith more plainly, that of all other animals only the Crocodile moveth the upper jaw; so that he speaks of it as a motion strange and peculiar; as if the upper mandible did make an articulation with the cranium; contrary to what is here seen; and if we will hear Piso, who

probably speaks Aristotle's meaning, as plainly as he doth his own, he goes further, and saith that the Crocodile doth not only move his upper jaw, but that his nether jaw is immoveable; than which assertion, to one that hath any competent knowledge in anatomy, and seeth the head and lower jaw of this animal articulated in the same way as in other animals, nothing can appear more ridiculous."

Another error which has sometimes been maintained both among ancient and modern naturalists, is, that the Crocodile has no tongue: this part, however, is in reality very large, and even more so in proportion than that of an ox, but from its strong connexion with the sides of the lower jaw, it is as if were fixed or tied down, so as to be incapable of being stretched forwards as in most other animals. The describer, however, of Seba's Museum, denies that it can properly be called the tongue.

It may not be improper to add, that the Crocodile is supposed to be the *Leviathan* of the sacred writings.

VAR. ?

BLACK CROCODILE.

THIS, according to Mons. Adanson, is found in the river Senegal, and differs from the common Crocodile in having a longer snout, and in being almost entirely black. It is said to be extremely rapacious, and has hitherto been observed only in

the river above mentioned, where the common Crocodiles are also found in considerable numbers.

ALLIGATOR.

Lacerta Alligator. *L. capite imbricato plano, nucha nuda, cauda superne binis lineis lateralibus aspera.* *Lin. Syst. Nat. Gmel.* p. 1058. *Blum. Naturg.* p. 263.

Lizard with flat, imbricated head, naked or uncarinated neck, and tail furnished above with two rising lateral lines.

Crocodylus Americanus. *Laur. Amph.* p. 54.

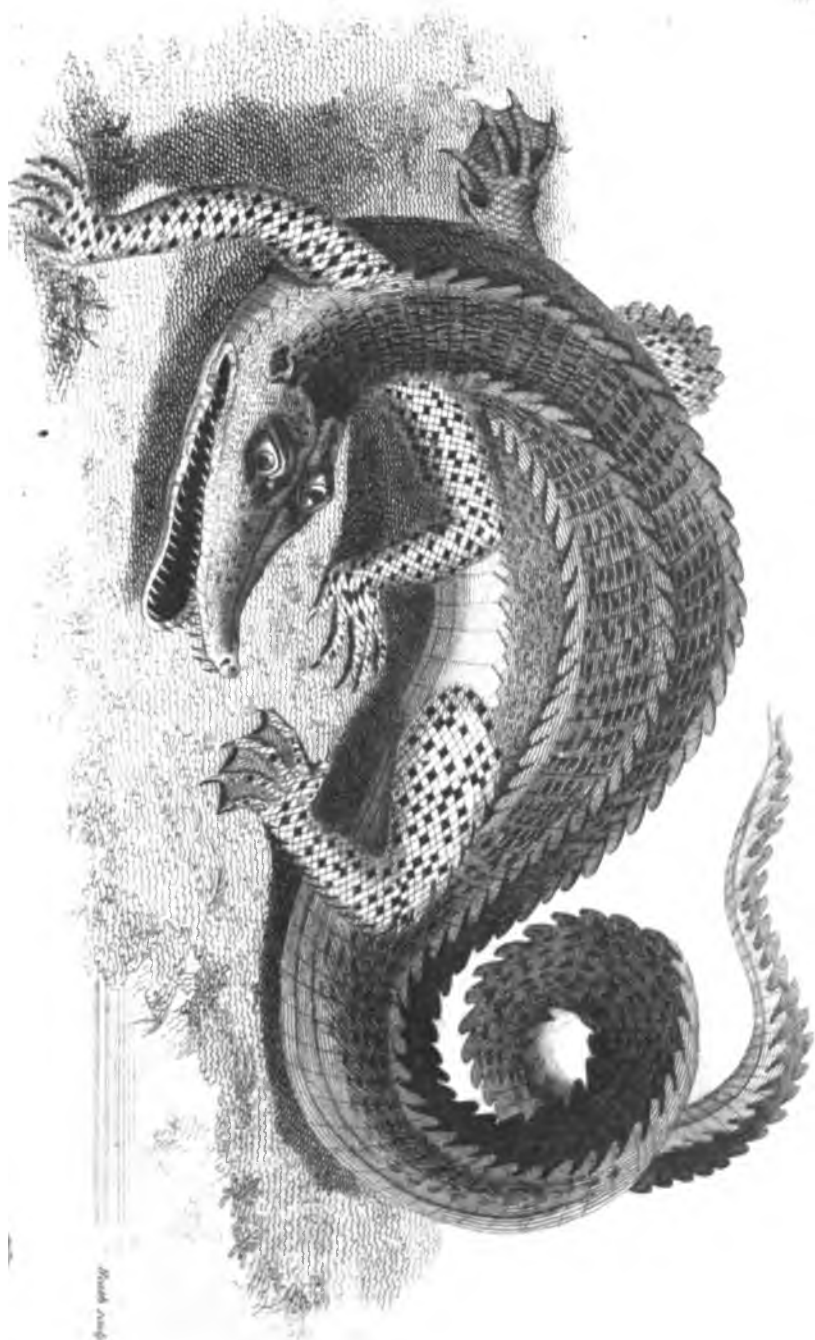
Jacare. *Marcgr. Bras.* 242.

Crocolilus. *Sloan. Jam.* 2, p. 332.

Lacertus maximus. *Catesb.* 2. t. 63.

The Alligator, or American Crocodile.

So very great is the general resemblance between this animal and the Crocodile, that many naturalists have been strongly inclined to consider it as a mere variety, rather than a distinct species. Among others, the Count de Cépède is of this opinion, and declares that on examining several specimens of American Crocodiles, and collating them with those of the Nile, he could not but consider them as absolutely of the same species; and that the slight differences observable between them may be well supposed to be owing merely to the effect of climate. Both animals, he observes, agree in the number of teeth; and the general manners and habits of both are found to be similar in the old and new continent. The more accurate



discrimination, however, of Blumenbach and some others seems in reality to prove that the Alligator or American Crocodile is specifically distinct from the Nilotic, though the difference is not such as immediately to strike a general observer. The leading difference, if it be allowed to constitute a distinction of species, seems to be, that the head of the Alligator is rather smooth on the upper part than marked with those very strong rugosities and hard carinated scales which appear on that of the Crocodile; and that the snout is considerably flatter and wider, as well as more rounded at the extremity. The Alligator arrives at a size not much inferior to that of the Crocodile, specimens having been often seen of eighteen or twenty feet in length.

"Though the largest and greatest numbers of Alligators," says Catesby, "inhabit the torrid zone, the continent abounds with them ten degrees more north, particularly as far as the river *Neus* in *North Carolina*, in the latitude of about 33, beyond which I have never heard of any, which latitude nearly answers to the northernmost parts of Africa, where they are likewise found. They frequent not only salt rivers near the sea, but streams of fresh water in the upper parts of the country, and in lakes of salt and fresh water, on the banks of which they lie lurking among reeds, to surprise cattle and other animals. In Jamaica, and many parts of the continent, they are found about twenty foot in length: they cannot be more terrible in their aspect than they are

formidable and mischievous in their natures, sparing neither man nor beast they can surprise, pulling them down under water, that being dead, they may with greater facility, and without struggle or resistance, devour them. As quadrupeds do not so often come in their way, they almost subsist on fish; but as Providence, for the preservation, or to prevent the extinction of defenceless creatures, hath in many instances restrained the devouring appetites of voracious animals, by some impediment or other, so this destructive monster, by the close connexion of his vertebræ, can neither swim nor run any way than strait forward, and is consequently disabled from turning with that agility requisite to catch his prey by pursuit: therefore they do it by surprise in the water as well as by land; for effecting which, Nature seems in some measure to have recompensed their want of agility, by giving them a power of deceiving and catching their prey by a sagacity peculiar to them, as well as by the outer form and colour of their body, which on land resembles an old dirty log or tree, and in the water frequently lies floating on the surface, and there has the like appearance, by which, and his silent artifice, fish, fowl, turtle, and all other animals are deceived, suddenly caught and devoured."

"Carnivorous animals get their food with more difficulty and less certainty than others, and are often necessitated to fast a long time, which a slow concoction enables them to endure: reptiles particularly, by swallowing what they eat whole,

digest slowly, eat seldom, and live long without food. Wolves are said to gorge themselves with mud, to supply the want of better food. For the like cause many Alligators swallow stones and other substances, to distend and prevent the contraction of their intestines when empty, and not to help digestion, which they seem in no need of. For in the greater number of many I have opened, nothing has appeared but clumps of *lightwood* and pieces of pine tree coal, some of which weighed eight pounds, and were reduced and wore so smooth from their first angular roughness, that they seemed to have remained in them many months. They lay a great number of eggs at one time, in the sandy banks of rivers and lakes, which are hatched by the heat of the sun without further care of the parents. The young, as soon as they are disengaged from their shells, betake themselves to the water, and shift for themselves; but while young they serve as a prey not only to ravenous fish, but to their own species. It is to be admired that so vast an animal should at first be contained in an egg no bigger than that of a turkey."

"In South Carolina they are very numerous, but the northern situation of that country occasions their being of a smaller size than those nearer the line, and they rarely attack men or cattle, yet are great devourers of hogs. In Carolina they lie torpid from about October to March, in caverns and hollows in the banks of rivers, and at their coming out in the spring, make an hideous bel-

lowing noise. The hind part of their belly and tail are eat by the Indians. The flesh is delicately white, but has so perfumed a taste and smell that I never could relish it with pleasure."

According to the observations of Mons. de la Borde, as related by the Count de Cepede, it appears that the Alligators in South America deposit their eggs, like the turtles, at two or three different periods, at the distance of some days from each other; laying from twenty to about four-and-twenty eggs each time. Mons. de la Borde adds, that those of Cayenne and Surinam are observed to raise a little hillock towards the banks of the river they frequent, and hollowing it out in the middle, to amass together a heap of leaves and other vegetable refuse in which they deposit their eggs, and covering them with their leaves, a fermentation ensues, by the heat of which, joined to that of the atmosphere, the eggs are hatched. The time at which the Alligators about Cayenne begin to lay their eggs, is the same with that in which the turtles also deposit theirs, viz. the month of April. Both the Alligator and the Crocodile are supposed to be very long-lived animals, and their growth is extremely slow.

GANGETIC CROCODILE.

Lacerta Gangetica. *L. maxillis elongatis teretibus subcylindricis. cauda superne cristis binis in unam confluentibus horrida.* Lin. *Syst. Nat. Gmel. p. 1057. Gronov. Gazoph. 2. p. 11.*

Lizard with elongated subcylindric jaws, and tail furnished above with two crests coalescing into one towards the extremity.

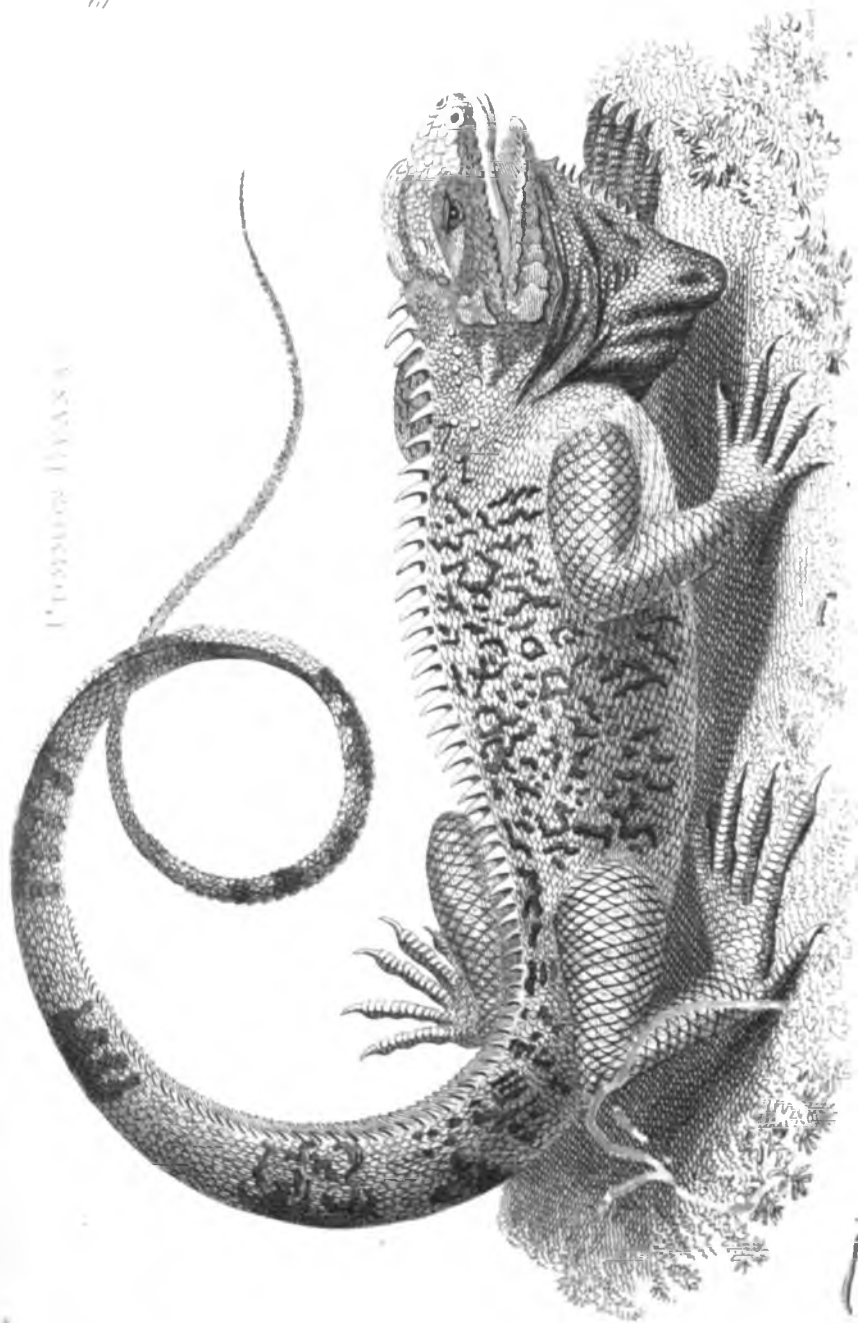
JUN. ? *Crocodylus ventre marsupio donatus, fuscibus merganseris rostrum amulantibus.* Edw. *Act. Soc. t. 49. p. 369. t. 19.*

Gangetic, or Indian Crocodile.

THE Gangetic Crocodile is so strikingly distinguished both from the Nilotic and the Alligator by the peculiar form of the mouth, that it is hardly possible, even on a cursory view, to confound it with either of the former; the jaws being remarkably long, narrow, and perfectly strait, and the upper mandible terminated above by an elevated tubercle. In the general form and colour of the body and limbs it resembles the common Crocodile, but the number of transverse zones or bands formed by the rows of scales, on the back, is greater than in that species. In a very young state the length and narrowness of the snout are still more conspicuous than in the full-grown animal. The teeth are nearly double the number of those of the common Crocodile, and are of equal size throughout the whole length of the jaws. This species is a native of India, and is principally seen in the Ganges, where it arrives at a size at least equal to the Nilotic Crocodile, and is of similar manners. It seems to have been first no-

ticed as a distinct species by Edwards, who, in the Philosophical Transactions for the year 1759, gave an accurate description, accompanied by a good figure, of a young specimen preserved in spirits, and which was received by Dr. Mead from Bengal. This specimen had a remarkable aperture on the skin of the abdomen, which was at that time considered as forming a kind of specific character, but which was probably nothing more than the passage by which the umbilical vessels of the animal were attached during its confinement in the egg. It was however supposed by Edwards to have been the opening of a ventral pouch destined for the reception of the young, as in the Opossum. The general structure of the feet is similar to that of the common Crocodile, except that the third and fourth toes only, and this on the fore as well as hind feet, are connected together by a web. "The eyes," says Edwards, "are very prominent, and seem to be so constructed that they may be carried above the water, while the rest of the animal is wholly under water, in order to watch its prey on the surface, or on the banks and shores of rivers."

In the British Museum is a specimen of this animal measuring about eighteen feet. In the Leverian Museum is an elegant and well-preserved specimen of much smaller size, viz. about three feet in length.



Guanas with serrated dorsal crest, &c.

COMMON GUANA.

Lacerta Iguana. *L. cauda tereti longa, dorso serrato, crista gulae denticulata.*

Lizard with long round tail, serrated back, and denticulated gular crest.

Lacerta Iguana. *L. cauda tereti longa, sutura dorsali dentata, crista gulae denticulata.* Lin. Syst. Nat. p. 366.

Lacerta Leguan. Bunt. Jav. 56.

Lacertus Senembi & Iguana. Illuj. Quadr. 265.

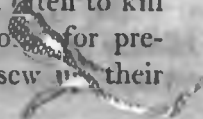
Leguana. Seb. Mus. 1. t. 95, 96, 97, &c.

The Great American Guana.

THOUGH the Lizard tribe affords numerous examples of strange and peculiar form, yet few species are perhaps more eminent in this respect than the Guana, which grows to a very considerable size, and is often seen of the length of three, four, and even five feet. It is a native of many parts of America and the West-Indian islands, and is also said to occur in some parts of the East Indies. Its general colour is green, but with much variation in the tinge of different individuals: it is generally shaded with brown in some parts of the body, and sometimes this is even the predominating colour. The back of the Guana is very strongly serrated; and this, together with the gular pouch, which it has the power of extending or inflating occasionally to a great degree, gives a formidable appearance to an animal otherwise harmless. It inhabits rocky and woody places, and feeds on insects and vegetables. It is itself

reckoned an excellent food, being extremely nourishing and delicate ; but is observed to disagree with some constitutions. The common method of catching it is by casting a noose over its head, and thus drawing it from its situation ; for it seldom makes an effort to escape, but stands looking intently at its discoverer, inflating its throat at the same time in an extraordinary manner. The Guana has been described and figured by several authors, but the most expressive representations are those given by Seba.

“ Guanas,” says Catesby, “ are of various sizes, from two to five feet in length ; their mouths are furnished with exceeding small teeth, but their jaws armed with a long beak, with which they bite with great strength : they inhabit warm countries only, and are rarely to be met with any where north or south of the tropics. Many of the Bahama islands abound with them, where they nestle in hollow rocks and trees : their eggs have not a hard shell, like those of Alligators, but a skin only, like those of a turtle ; and are esteemed a good food. They lay a great number of eggs at a time, in the earth, which are there hatched by the sun’s heat. These Guanas are a great part of the subsistence of the inhabitants of the Bahama islands, for which purpose they visit many of the remote *Kayes* and islands in their sloops to catch them, which they do by dogs trained up for that purpose, which are so dextrous as not to kill them, which if they do, they serve only for present spending ; if otherwise, they sew up their



mouths, to prevent their biting, and put them into the hold of their sloop till they have caught a sufficient number, which they either carry alive for sale to Carolina, or salt and barrel up for the use of their families at home. These Guanas feed wholly on vegetables and fruit, particularly on a kind of fungus growing at the roots of trees, and on the fruits of the different kinds of *Annonas*. Their flesh is easy of digestion, delicate, and well-tasted: they are sometimes roasted, but the more common way is to boil them, taking out the leaves of fat, which are melted and clarified, and put into a calabash or dish, into which they dip the flesh of the Guana as they eat it. It is remarkable that this fat, which adheres to the inside of the abdomen, imbibes the colour of the fruit the animal eats last, which I have frequently seen tinged of a pale red, yellow, or sometimes of a purple colour, which last was from eating the *Prunus maritima*, which fruit, at the same time, I took out of them. Though they are not amphibious, they are said to keep under water above an hour. When they swim, they use not their feet, but clap them close to their body, and guide themselves with their tails: they swallow all they eat whole. They cannot run fast, their holes being a greater security to them than their heels. They are so impatient of cold, that they rarely appear out of their holes but when the sun shines."

"The Guana," says Browne, in his Natural History of Jamaica, "like most of the tribe, lives a very considerable time without food, and changes

its colour with the weather, or the native moisture of its place of residence. I have kept a grown Guana about the house for more than two months: it was very fierce and ill-natured at the beginning, but after some days it grew more tame, and would, at length, pass the greatest part of the day upon the bed or couch, but it went out always at night. I have never observed it to eat any thing, except what imperceptible particles it had lapped up in the air; for it frequently threw out its forked tongue, like the Cameleon, as it walked along. The flesh of this creature is liked by many people, and frequently served up in fricasees at their tables, in which state they are often preferred to the best fowls. The Guana may be easily tamed while young, and is both an innocent and beautiful creature in that state."

The female of this species is said to be smaller than the male, and of brighter colours.

VAR. ?

Horned Guana. Le Lezard cornu. *Cepede ov. 2. p. 493.*

THIS, according to Cepede, its first describer, is so much allied to the common Guana, that it might almost be supposed a variety of that species, which it resembles in size and general proportions, serrated back, form of scales &c. but is destitute of the gular pouch or crest, while in front of the head, between the eyes and nostrils, are seated four rather large scaly tubercles, be-



les, be

hind which rises an osseous conical horn or process, covered by a single scale. This Lizard is a native of the island of St. Domingo, where it is said to be very common. Mons. Cope informs us that he had seen two specimens, one of which wanted the large tubercles on each side the head.

 AMBOINA GUANA.

Lacerta Amboinensis. L. cauda tereti longa, pinna caudali radiata, sutura dorsali dentata. Schlosser de lucert. Amboinens. 1768.

Long-tailed variegated Lizard, with radiated tail-fin, and dentated dorsal suture. *Nat. Miscell. pl. 403.*

The variegated Amboina Lizard.

THIS highly remarkable species appears to have been first described by Valentyn, in his account of the East Indies, and particularly of the island of Amboina, where it is principally found; but a much more accurate description, accompanied by an exquisite figure, was published in the year 1768 by Dr. Albert Schlosser.

This Lizard appears in some degree to form a connecting link between the Guana and the Basilisk. It grows to the length of three feet, or more, and is at once remarkable for the singularity of its appearance and the beauty of its colours. The head is rather large than small, somewhat triangulated above, and covered with small round scales: the upper jaw obtuse and

somewhat inclining to a square termination; the lower is rounded: the scales surrounding the lips are larger than on other parts of the head: the eyes are moderately large; the foramina of the ears conspicuous; the mouth wide; the teeth sharp and numerous; the tongue large, fleshy, and slightly emarginated at the tip: the skin about the neck, throat, and breast, is loose or wrinkled; the body is covered with very small oblong or somewhat square scales, interspersed with much larger rounded or oval ones, scattered here and there over the sides and about the shoulders and thighs: the tail is very long, of a rounded form, and furnished above with a very broad, rising crest or upright process, scolloped, or sinuated on the edge by slight subdivisions, and internally strengthened by several bony radii resembling those in the fins of fishes: the scales on this part of the tail are larger than on the other parts: from the back of the head to the extremity of the tail runs a continued series of denticulated serratures, gradually diminishing in size as they approach the tip of the tail: the legs are moderately long, stout, and scaled in a similar manner with the body: the feet are large and strong, and are each furnished with five toes, edged on their sides with a denticulated or pectinated skin and terminated by strong, curved claws.

The head and neck of this animal are green, variegated by transverse whitish uniplanations: the back and tail brown, with a slight blue tinge or

purplish cast; the sides and abdomen pale-brown or greyish, spotted by the round white scales before mentioned.

This Lizard, according to Valentyn, resides in the neighbourhood of rivers and other fresh waters. It is frequently observed on the banks of rising grounds, as well as on the lower kind of shrubs which grow near the water, but does not ascend the taller trees. When disturbed by the approach of men, dogs, &c. it instantly plunges into the water, and hides itself beneath the rocks or stones under the banks, from whence, however, it may be easily taken; and, when caught, does not attempt to bite, or defend itself, but seems, as it were, stupefied. It may also be caught by a noose or snare. It lays its eggs in the sand; especially near the small islets of the rivers it frequents: these eggs, while in the belly of the animal, are of a yellow colour, and are disposed into two long groupes or clusters, but when laid are white, and of an oblong shape.

The male and female differ considerably in size and distribution of colours; the female being of a more obscure tinge than the male, and having but little appearance of the crest or process on the tail. This animal is more esteemed as a food than even the common Guana, and its flesh is said to be very white, sweet, and of a penetrating odor. Valentyn, who had attended to the anatomy of the animal, informs us, that it has a small triangular heart; an oblong liver, with a round gall-bladder; small reddish lungs, slightly tinged with

lead-colour; a narrow, whitish stomach, coated, or, as it were, enveloped in fat, and large intestines, in which were discovered the berries and seeds of certain aquatic shrubs, together with some small semitransparent pebbles, and a kind of worm not unlike millepedes.

Of this curious Lizard a very fine specimen occurs in the Museum of the late Mr. John Hunter.

BASILISK.

Lacerta Basiliscus. *Ex cauda tereti longa, pinna dorsali radiata, occipite cristato.* *Lia. Syn. Nat. p. 366.*

Long-tailed Lizard, with radiated dorsal and caudal fin, and pointed occipital crest.

Draco arboreus volans Americanus amphibius, sive Basiliscus. *Seb. Mus. 1. p. 366. t. 100. f. 1.*

The Basilisk. *Nat. Hist. pl. 142.*

THE Basilisk of the ancients, supposed to be the most malignant of all poisonous animals, and of which the very aspect was said to be fatal, is a fabulous existence, to be found only in the representations of painters and poets. Without citing other descriptions, it may be sufficient to quote that of Lucan, who, with true poetic licence, represents the Basilisk exerting his terrific glance in the burning deserts of Africa, and obliging the rest of the poisonous tribe to preserve in humble distance.

"Sibilaque caudens cunctas terrentia pestes
Ante venena torrens, late sibi submovet omnes
Vulgus, et in throna regnat Basiliscus arcus."

BASILISK.



But fiercely hissing through the poison'd air
The Basilisk exerts his deathful glare :
At distance bids each vulgar pest remain,
And reigns sole monarch of his sultry plain.

But the animal known in modern natural history by this name is a species of Lizard, of a very singular shape, and which is particularly distinguished by a long and broad wing-like process or expansion continued along the whole length of the back, and to a very considerable distance on the upper part of the tail, and furnished at certain distances with internal radii analogous to those in the fins of fishes, and still more so to those in the wings of the *Draco volans*, or Flying Lizard. This process is of different elevation in different parts, so as to appear strongly sinuated and indented, and is capable of being either dilated or contracted at the pleasure of the animal. The occiput or hind part of the head is elevated into a very conspicuous pointed hood or hollow crest.

Notwithstanding its formidable appearance, the Basilisk is a perfectly harmless animal, and, like many other of the Lizard tribe, resides principally among trees, where it feeds on insects, &c. It has long ago been admirably figured in the work of Seba, and as it is an extremely rare species, has sometimes been considered (from the strangeness of its form) as a fictitious representation. There is, however, in the British Museum, a very fine specimen, well preserved in spirits, and which confirms the excellency of Seba's figure; from which, in all probability, Linnæus himself

(who never saw the animal) took his specific description. The colour of the Basilisk is a pale cinereous brown, with some darker variegations towards the upper part of the body. Its length is about a foot and half. The young or small specimens have but a slight appearance either of the dorsal or caudal process, or of the pointed occipital crest. The Basilisk is principally found in South America, and sometimes considerably exceeds the length before mentioned, measuring three feet, or even more, from the nose to the extremity of the tail. It is said to be an animal of great agility, and is capable of swimming occasionally with perfect ease, as well as of springing from tree to tree by the help of its dorsal crest, which it expands in order to support its flight.

GALEOTE LIZARD.

Lacerta Calotes. L. cauda tereti longa, dorso antice capiteque postice dentato. Lin. Syst. Nat. p. 367.

Lizard with long round tail; the back dentated on the fore part, and the head on the hind part.

Lacertus Ceylonicus amphibius, seu Leguana Soa Ajer dicta. Seb. 1. p. 149. t. 95. f. 3, 4.

Lacerta Ceylonica, &c. Ascalabotes Grecis dicta. Seb. 1. p. 146. t. 95. f. 2.

THIS species is considerably allied to the common Guana in habit or general appearance; but is of much smaller size, rarely exceeding the length of a foot and half from the tip of the nose to the extremity of the tail. It is also destitute

THE ALLIGATOR.



AMERICAN LIZARD.

of the very large gular pouch, so conspicuous in that animal; instead of which it has merely a slight inflation or enlargement on that part. In colour it occasionally varies, like most of this tribe; but is commonly of an elegant bright blue, variegated by several broad, and somewhat irregular white or whitish transverse bands on each side of the body and tail. From the hind part of the head, to the lower part of the back, runs a strongly serrated crest, the divisions of which are long and sharp-pointed: the region of the head, on each side, behind the eyes and ears, and more particularly round the latter, is furnished with several serratures of a similar appearance to those on the back; forming one of the principal characteristics of this species. The scales are larger in proportion than those of the Guana, sharp-pointed, and marked by a pretty strong carina: the limbs are rather slender than stout, and the toes more remarkably so: the tail exceeds the body very considerably in length, and terminates acutely.

This species has been well represented in the work of Seba, who has figured several varieties, differing in size and colour. It is a native of the warmer regions both of Asia and Africa, and is found in many of the Indian islands, and particularly in Ceylon, in which it is common. According to the Count de Cepede it is also found in Spain, &c. and is said by that author to wander about the tops of houses in quest of spiders; and he observes, that it is even reported to prey on

rats, and to fight with small serpents in the manner of the common Green Lizard and some others.

AMERICAN GALEOTE.

Lacerta Agama. L. cauda tereti longa, collo supra capiteque postice aculeato, occipitis squamis reversis. Lin. Syst. Nat. p. 367.

Lizard with long round tail; the neck above and the head behind aculeated; the scales of the hind-head reversed.

Salamandra Americana, &c. Seb. 1. p. 169. t. 107.

THIS is in some respects allied to the Calotes, but differs in wanting the very conspicuous dorsal serratures, instead of which it has only a small denticulated carina on that part: the head is larger in proportion, and is covered on the back part with elongated or sharp-pointed scales, some of which are more or less reversed at their extremities: the body is coated with small scales, with several larger ones of a rounded form scattered here and there on the sides: the tail is long, and verticillated with stages of sharp-pointed scales: the whole animal is of a less slender and elegant aspect than the preceding, and is commonly of a brown or lead-coloured cast, clouded here and there with deeper and lighter variegations. It is a native of South America and some of the West-Indian islands, and sometimes grows to a very considerable size. The male is said to differ from the female in having the dorsal crest composed of longer spines, extending almost to the lower part



BROAD-TAILED LIZARD.



MOTTLED LIZARD.

of the back, whereas in the female they scarce reach farther than the shoulders.

VAR ?

Lacerta Muricata. *L. cauda tereti lissa, corpore griseo, squamis carinatis mucronatis.*

Muricated Lizard. L. with long rounded tail, body greyish, scales carinated and sharp-pointed. *White's Voy.* p. 242. pl. 31. f. 2.

- THIS variety, or the Brown Australasian Lizard, can hardly be considered as specifically distinct, though I have myself described it as such in Mr. White's Journal of a Voyage to New South Wales. It measures more than a foot in length^{*}; its general colour being a brownish grey, the whole upper part marked with transverse dusky bars, most conspicuous on the legs and tail, which latter is very long: the scales on every part of the animal are of a sharp form, and furnished with a prominent line on the upper surface: towards the back part of the head they almost run into a kind of weak spines: the feet are furnished with moderately strong and sharp claws. The chief difference between this and the first described kind, exclusive of colour, seems to be the defect
- of the reversed scales on the back part of the head.

^{*} Specimens have sometimes been seen of much larger size.

BICARINATED LIZARD.

Lacerta Bicarinata. L. cauda compressa, supra bicarinata mediocri, dorso quadrifariam carinato-striato. Linn. Nat. p. 361.

Lizard with four rows of strong carinated scales on the back, and tail of moderate length.

La Dragonne. *Cepede ovip. 1. p. 243. pl. 16.*

THIS species, which in the work of the Count de Cepede* seems in some degree confounded with the *Dracæna*, is in general of much smaller size, the specimen figured in the work above mentioned measuring but two feet five inches from the tip of the snout to the end of the tail. In its habit it bears some resemblance to a Crocodile in miniature, having hard, tuberculated, and carinated scales on the upper parts of the body, and two rows of scales more prominent than the rest, running from the upper part of the back to the tail, at which part they become confluent, and are continued in the form of a serrated crest, to the tip: the head is small; the mouth wide; the snout sharpish; the teeth pretty numerous; those in front of the mouth small, those situated backwards larger, and more obtuse; the tongue forked. The colour of this animal, according to Cepede, is a reddish brown more or less tinged with •

* *Lacertam* is (Cepede) *dracænam* Linnæi nobis promittit et pingit in tab. 16. quæ plane est *bicarinata* Linnæi, cujus pictura accurata hucusque curvimus: quapropter imprudentiæ Græci gratias agendas potius quam levitatem ejus taxanda esse censeo. —Schneid. *Amph. Phys. Sp. Alt. p. 40.*

greenish in some parts. It is a native of South America, where, like the Guana, and some other Lizards, it is occasionally used as a food: the eggs also are said to be much esteemed for the same purpose. It frequents woody and marshy regions. Mons. de la Borde, a correspondent of the Count de Cépède, kept one alive for some time: it often continued in the water for hours together, hiding itself when disturbed or affrighted, but delighted in coming out occasionally, and basking in the sun.

VAR. ?

In Brasil is said to be found a large lizard, much resembling the Crocodile, which readily climbs trees, and seems, according to the Count de Cépède, to be no other than a variety of the preceding; from which it differs in being of a darker colour, and having shorter claws. It is called by the title of *Ignarucu*.

The *L. bicarinata* is described by Linnæus, in the *Systema Naturæ*, as a small species. We must, therefore, either suppose Linnæus to have described a very young or small specimen, or the species above described to be in reality different from the *bicarinata*, though marked by similar characters: or it is even possible that it may be a sexual difference of the *Dracæna*, with which the Count de Cépède appears to confound it by quoting the figure of Seba as representing the same animal.

MONITORY LIZARD.

Lacerta Monitor. *L. cauda ancipiti, corpore multo nigro, maculis albis ocellatis.*

Black Lizard; with very long compressed carinated tail, and body marked by transverse rows of white ocellated spots.

Lacerta Monitor. *Lin. Syst. Nat. p. 360.*

Lacerta Amboinensis elegantissima. *Seb. 1. p. 147. t. 93. f. 1, 2, 3.*

Lacerta major *Tilcuetzpalli* in Nova Hispania dicta. *Seb. 1. p. 152. t. 97. f. 2. L. Tupinambis. 2. t. 86. L. Tejuguacu. 2. t. 105. L. Mexicana. 2. t. 30. L. Ceilonica. 2. t. 49.*

Le Tupinambis. *Cepede orip. p. 251. pl. 17.*

THE Monitor, or Monitory Lizard, is one of the most beautiful of the whole tribe, and is also one of the largest; sometimes measuring not less than four or five feet from the nose to the tip of the tail. Its shape is slender and elegant, the head being small, the snout gradually tapering, the limbs moderately slender, the tail laterally compressed, and insensibly decreasing towards the tip, which is very slender and sharp. Though the colours of this Lizard are simple, yet such is their disposition, that it is impossible to survey their general effect without admiration. In this respect, however, the animal varies, perhaps, more than most others of its tribe. It is commonly black, with the abdomen white, the latter colour extending to some distance up the sides, in the form of several pointed bands, besides which the whole body is generally ornamented by several transverse bands consisting of white annular spots, while the head

MONSTROUS LIZARD



is marked with various streaks of the same colour, the limbs with very numerous round spots, and the tail with broad, distant transverse bands. In others the spots forming the lateral bands are simple instead of annular; and in others the annuli or white rings are themselves composed of small white spots, which are likewise often scattered here and there over the black ground-colour. The ground-colour in some, instead of being black, is of a deep ferruginous brown. All, however, agree so far in the general disposition of the variegations, that it is not easy to mistake the species for any other.

This elegant animal is a native of South America, where it frequents woody and watery places, and, if credit may be given to the reports of some authors, is of a disposition as gentle as its appearance is beautiful. It has even gained the title of Monitor, Salvaguarda*, &c. from its pretended attachment to the human race, and it has been said that it warns mankind of the approach of the Alligator by a loud and shrill whistle.

VAR. ?

Lacerta Varia. Variegated Lizard. *White's Journ. of Voy. to New South Wales*, p. 253. pl. 38. *Nat. Misc.* pl. 88.

So nearly does this animal approach to the former, that it may be doubted whether it should not

* These names are also applied by some authors to different species, as the *Teguixin*. &c.


be considered as a variety rather than a truly distinct species. It differs, however, in colour, and in some degree in the disposition of its variegations, which are generally pale yellow instead of white, and in some specimens even of a bright gold-colour. The markings on the body also, instead of the general ocellated pattern of the preceding, consist rather of rounded or slightly subangular spots and variegations: the limbs, as in the preceding, are marked either with numerous bands or spots, and the tail is banded: the claws are very large and strong. This Lizard is a native of New Holland.

SPINE-TAILED LIZARD.

Lacerta Acanthura. L. gularis subtus plicata, corpore squamis minutis tecto, cauda longa squamis carinatis spinoso-trifidis verticillata.

Lizard with the throat plaited beneath; the body covered with minute scales; the tail long, and verticillated with carinated triple-spined scales.

A SPECIMEN of this animal is preserved in the British Museum, where it is distinguished by the title above mentioned. Its length is about a foot and half, but it probably grows to a considerably larger size. The head, which resembles that of the *Amerv* and *Teguizim* in shape, is covered with somewhat small subhexagonal scales, and is very distinctly marked off, as it were, from the body: beneath the throat is a very conspicuous transverse

plait, as in the *Ameiva*: the whole skin also about the neck, throat, and beginning of the sides, is, in this specimen at least, remarkably lax, and it is probable that in the living animal the skin beneath the throat may have a kind of pouched appearance, though entirely without any middle carina on that part: the other parts of the body, both above and below, are covered with very small scales; of which, however, those of the under parts are rather larger than those of the upper. From the beginning of the neck to the origin of the tail runs a series of short denticulations, forming a serrated crest of very slight elevation: the tail is very long, and strongly marked into numerous verticilli or rings, composed of very long and very strongly carinated scales; each terminating in a lengthened point  and thus causing a spiny appearance throughout the whole length of that part: the feet are all pentadactylous, and the toes rather long; especially those of the hind feet: the claws strong and sharp. The colour of this species on the upper parts is glaucous, variegated with a few small and somewhat indistinct clouds and marblings of a whitish cast: the tail and under parts are of a pale or yellowish white colour.

This species seems much allied to the *Quetzpaleo* of Seba, 1. p. 152. t. 97. f. 4. which is generally supposed to represent the *Azurea* of Linnæus.

SHARP-TAILED LIZARD.

Lacerta Lophura. *L. corpore squamis inæqualibus* ~~cauda~~, *et* *serrata, cauda longa compresso-carinata.*

Lizard with the body covered by dissimilar scales; the back serrated; the tail long, and compresso-carinated.

A VERY large species: at first view much resembling the *Teguixin* in size, colour, &c. but is coated with scales of dissimilar size on different parts; large, rounded, and oval ones being scattered here and there among the smaller: tail long, carinated above, compressed, and sharp-pointed: both back and tail serrated throughout their whole length. In the British Museum, and in that of Dr. William Hunter.

 DRACÆNA LIZARD.

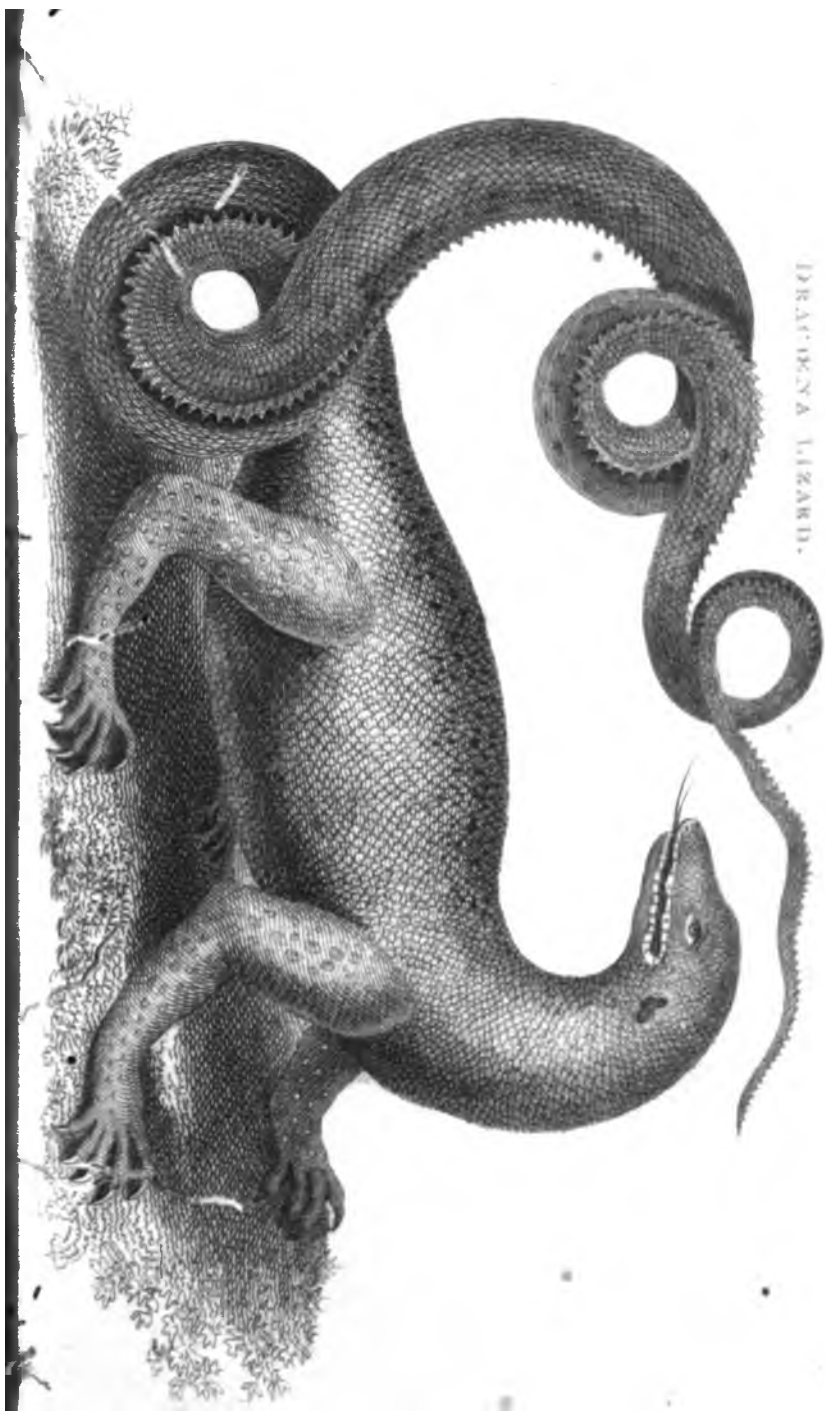
Lacerta Dracæna. *L. cauda supra denticulata longa, corpore lœvi, digitis subæqualibus.* *Lin. Syst. Nat. p. 360.*

Large long-tailed Lizard, with smooth body and tail denticulated along the upper part.

Lacerta Americæna maxima *Cordylus & Caudicerbera dicta.* *Sch. 1. p. 158. t. 101.*

THE *Dracæna* may be considered as one of the largest of the Lizard tribe; much exceeding the *Guana* in the general size of the body, as well as in the proportion of its limbs and tail. It is native of several parts of South America, as well as of some of the Indian islands, and is said to be

DRACONIA LIZARD.



more esteemed in some countries as an article of food than the Guana. The head is small, and of an elegant form, the snout tapering in such a manner as to bear a resemblance to that of an Italian greyhound: the teeth are small and numerous, and the tongue forked: the openings of the ears large, and surrounded by a well-defined scaly border: the proportions of the neck and limbs are elegant though strong, and the body is moderately thick: the tail is of a great length, though in a fine specimen, preserved in the Leverian Museum, it is not quite so long in proportion, as represented by Seba, whose excellent figure is copied in the present work. The colour is brown, with a slight cast of chesnut, palest on the abdomen and insides of the limbs; the outsides of which are marked by numerous, small, pale, or yellowish spots. The whole animal is smooth, or destitute of prominences on the skin, which is covered with small, ovate, and, in some parts, slightly subquadrate scales, largest on the outsides of the limbs, the back, and the abdomen: along the upper edge of the tail runs a continued series of short, triangular denticulations, as shewn in the engraving: the feet are moderately strong, and the toes are armed with sharp, crooked claws. This animal has been described by some of the older writers on natural history, under the name of *Cordylus*, or *Cordyl*; a name which has also been applied to different species.

VAR. ?

IN the Leverian Museum is a specimen, which differs in being of a very pale brown colour, variegated on the body and tail by several deep brown transverse bands, among which, as well as on the abdomen and limbs, are interspersed many smaller variegations and spots of similar colour: the tail much shorter than in the preceding, though of similar thickness or relative proportion to the body.

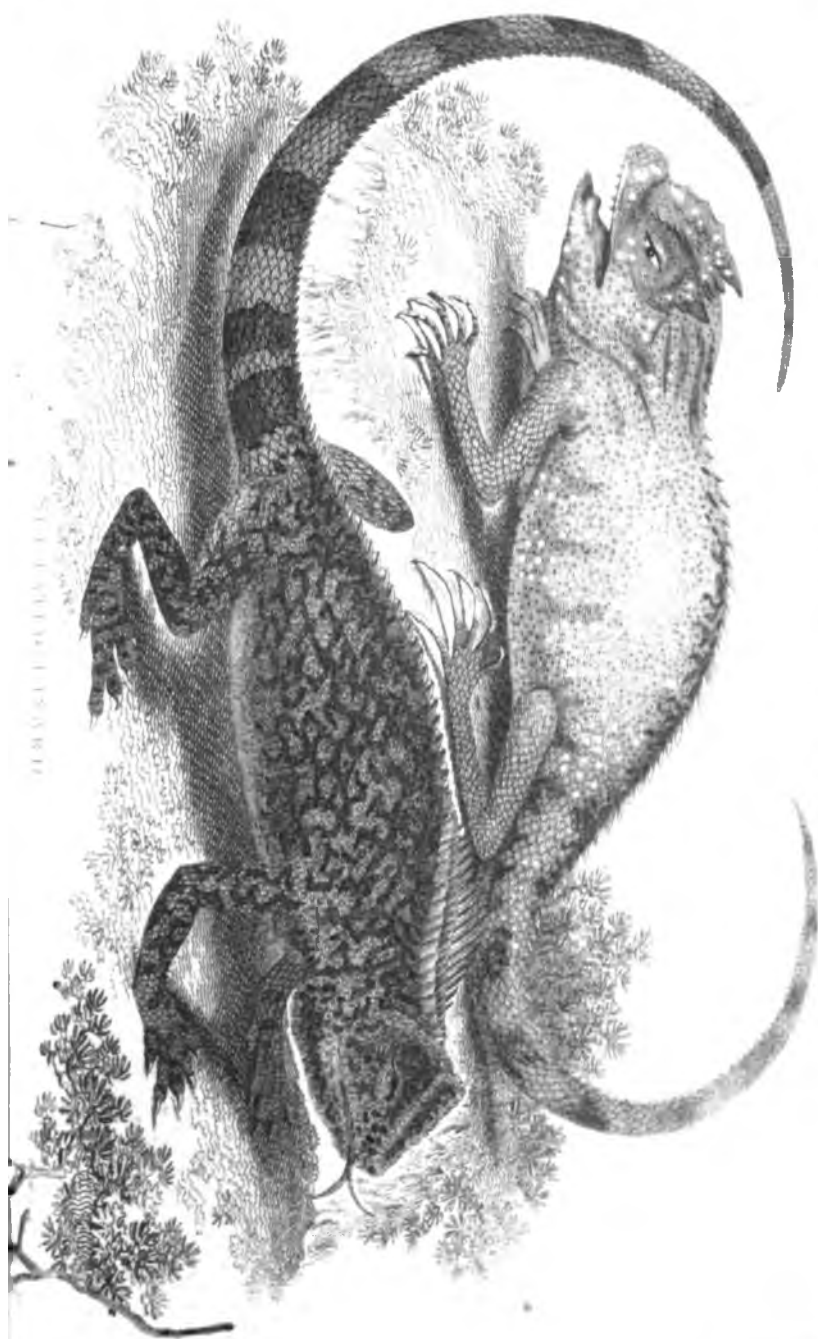
 SUPERCILIOUS LIZARD.

Lacerta Superciliosa. L. cauda carinata, dorsa supercilisque squamis ciliatis. Lin. Syst. Nat. p. 360.

Lizard with carinated tail: the back and eyebrows ciliated with upright lanceolated scales.

Lacerta Ceilonica cristata & pectinata. Sch. 1. p. 147. t. 94. f. 1.

THIS Lizard, in its general appearance, is somewhat allied to the Guana, and more especially to the horned Guana of Cope; having, like that animal, the appearance of a pair of sharp-pointed, horn-like processes above and beyond each eye, between which are also situated a certain number of aculeated scales; while from the back of the head to the tip of the tail runs a series of short or slightly elevated serratures: the scales about the edges of the mouth and on the tip of the nose are,



as usual in most Lizards, larger than on the rest of the animal: the tongue is large and rounded: the body is covered with small subacuminated scales, those on the tail being somewhat larger: the limbs are rather slender, and the tail of moderate length. Seba figures two specimens of this Lizard, one of which has several rounded scales, of different sizes, interspersed here and there on the sides of the body, and which are not visible on the other.

This is an Asiatic species, and is also found in the Indian islands. The colour of one of Seba's specimens, both of which, he informs us, came from Amboina, was pale yellow, tinged with blueish variegations: the other with brown and whitish ones. The size is that of a small Guana, measuring from twelve to about sixteen inches from the nose to the tip of the tail.

SCUTATED LIZARD.

Lacerta Scutata. L. cauda compressa mediocri, sutura dorsali dentata, occipite bimucronato. Lin. Syst. Nat. p. 360.

Lizard with compressed tail of middling length, dentated dorsal suture, and two pointed processes at the back of the head.

Salamandra prodigiosa Amboinensis scutata. Seb. 1. p. 173. t. 109. f. 3, 4.

THE *L. scutata* is allied in shape, size, and general appearance, to the former, but has a somewhat larger head in proportion. It is principally distinguished by a row of scales more elevated

than the rest, which pass over each eye; a sort of ridge or prominent edge being continued from those parts as in the Chameleon, towards the back of the head, where they unite, and are continued in form of a short denticulated crest, down the middle of the back to the beginning of the tail, which is much longer than the body. The body is covered with moderately small acuminate scales; the limbs and tail with somewhat larger ones. The colour of this Lizard is brown; more or less deep in different individuals, and clouded or mottled with a few variegations of a still deeper cast. It is a native of the island of Ceylon.

SMOOTH-CRESTED LIZARD.

Lacerta Principalis. *L. cauda subcarinata, crista gulæ integerrima, dorso lævi.* *Lin. Syst. Nat. p. 360.*

Lizard with subcarinated tail, plain-edged gular crest, and smooth back.

Lacerta Ceilonica maculis albis & nigris notata. *Seb. 2. p. 32. f. 3.*

Le Large-Doigt. *Cepede oxip. p. 263.*

THE *L. Principalis* is rather a small species, scarce exceeding the length of eight or nine inches from the nose to the extremity of the tail. Its general form is rather slender; the head small; the snout taper; the back smooth, or destitute of serratures, a sharpened carina only running along the upper part of the tail: the throat is furnished with a gular crest which is of a smooth or rounded

outline: the scales on the whole animal are very small: the tail long, and the toes, as in some other lizards, somewhat dilated on each side towards their extremities. The colour of the animal is blue. It is a native of South America.

VAR. ?

Lacerta bimaculata. L. cauda carinata denticulata, corpore duplo longiore, digitis palmarum plantarumque lobatis. Sparm. Nov. Act. Stoch. 3. t. 4. Lin. Syst. Nat. Gmel. p. 1059.

THIS is, according to Mr. Schneider, no other than a variety of the *Principalis*, of a blue colour, spotted here and there with black, and having two larger spots of that colour over the shoulders. It is a native of St. Eustatia, and is also met with in Pennsylvania. It is said to have a hissing or whistling voice.

VAR. ?

Le Roquet. Cope de ovip. p. 397. pl. 27.

THIS appears much allied to the *Principalis*, which it resembles in size and habit, as well as in having the last joints of the toes somewhat enlarged or lobed on each side, but is destitute of the gular crest. In its manners it is said to resemble the European green lizard, frequenting gardens, among trees, &c. moving nimbly about, and commonly holding its tail in an elevated position, curving over its back. It feeds on the

smaller insects, of which it destroys great multitudes. When tired with exercise, or oppressed with heat, it is said to hold open its mouth, and pant, with exerted tongue, in the manner of a dog. Its colour is a pale yellowish brown, with deeper and lighter variegations.

STRUMOUS LIZARD.

Lacerta Strumosa. *L. cauda tereti longa, pectore gibbo protenso.*
Lin. Syst. Nat. p. 368.

Lizard with long round tail, and gibbose projecting breast.

Salamandra Mexicana strumosa. *Seb. 2. t. 20. f. 4.*

THIS is a small species, about the size of the *Principalis*, and is entirely smooth or destitute of any dorsal carina or serratures, but is furnished with a large, flattish gular pouch or crest of a pale red colour, while the rest of the animal is of a pale blueish grey, with a few slight variegations of a more dusky tinge: the tail is much longer than the body, and is of similar colour, with a few obscure transverse bands: the limbs are moderately slender, and the whole habit is in some degree similar to that of the *Principalis*. It is a native, according to Seba, of South America.

MARBLED LIZARD.

Lacerta Marmorata. *L. cauda tereti longa, gula subcristata antice dentata, dorso levi.* *Lin. Syst. Nat. p. 368.*

Lizard with long round tail, subcristated throat, and smooth back.

Lacerta Chalcitica marmorata ex Gallæcia. *Sch. 2. p. 79. t. 76. f. 4. 2*

Le Marbré. Copece ovip. p. 394. pl. 26.

THE Marbled Lizard is a moderately small species, measuring about a foot in total length, or something more: its habit is slender and elegant: the head rather small; the snout taper; the limbs slender, and the tail very long in proportion. The whole body is covered with small ovate scales, the back having a slight or scarce perceptible carina of rather sharper scales than on the other parts, and which become rather more apparent as they approach the upper part of the tail: beneath the throat is a slightly protuberant crested and somewhat dentated skin: the feet are formed nearly as in the *Principalis*, having slender toes, with the ultimate joints a very little dilated. The colour of this species is pale blue, variegated with undulating transverse fasciæ of a whitish cast: the belly is of a pale rose-colour. It is a native of America and the West-Indian islands, and, according to Linnæus, of India. The gular protuberance in the female is not perceptibly denticulated: the tail in both is marked by three or

four slightly rising or carinated longitudinal lines. This species is well figured in the work of the Count de Ceppe.

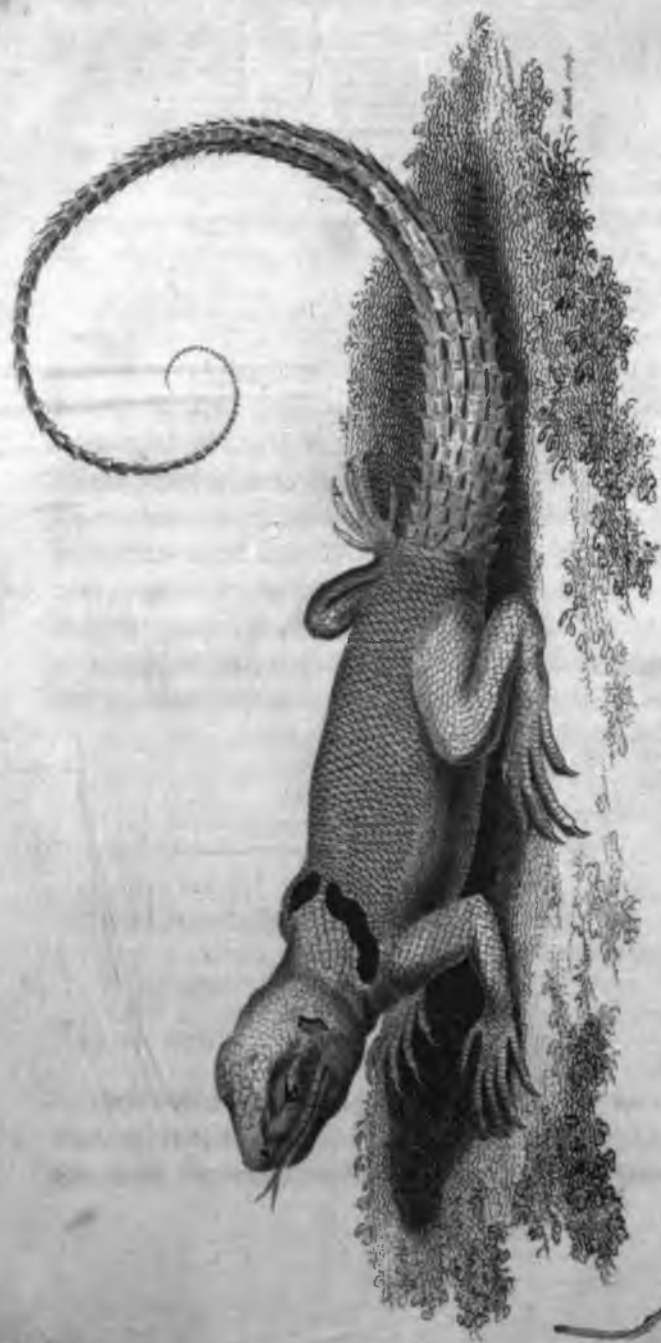
UMBRE LIZARD.

Lacerta Umbra. *L. cauda tereti longa, nucha subcristata, occipite calloso, dorso striato.* *Lin. Syst. Nat. p. 367.*

Lizard with long, round tail, neck subcristated above, hind-head callous, and back striated.

Iguana sepiformis. *Laur. Amph. p. 47.*

A MIDDLE-SIZED, or rather small species: native of North America: first described by Linnæus in the Museum Adolphi Friderici. Body covered with scales carinated and pointed at the tips, and down the back runs a carina formed by similar scales, somewhat more strongly marked: head of an obtuse and somewhat rounded form, and marked on the hind part by a large, callous, bare spot: beneath the throat a strong plait or furrow; body clouded with deeper and lighter shades, and the tail of considerable length. This seems a species very little known.



AZUKE LIZARD.

Anolis azuke Lizards. Published by G. B. Edwards, New York.

Cordyles, with either denticulated or spiny scales on the body or tail, or both.

PELLUMA LIZARD.

Lacerta Pelluma. L. cauda verticillata longiuscula, squamis rhomboideis. Lin. Syst. Nat. Gmel. p. 1060. Molin. Chil. p. 190.

Lizard with longish verticillated tail, and rhomboid scales.

THIS is one of the middle-sized Lizards; the total length being nearly two feet, and the length of the body and tail nearly equal. It is a native of Chili, where it is said to inhabit hollows under ground. It is covered on the upper parts with very minute scales, and is beautifully variegated with green, yellow, blue, and black: the under parts are of a glossy yellowish green: the tail long and verticillated by rows of rhomboid scales. The skin of this Lizard is said to be used by the Chilians for the purpose of a purse.

AZURE LIZARD.

Lacerta Azurea. L. cauda verticillata brevi, squamis mucronatis. Lin. Syst. Nat. p. 362.

Lizard with short tail, verticillated with mucronated scales.

Lacerta Africana elegantissima. Seb. 2. p. 62. t. 62. f. 6.

Lacerta Brasiliensis Quetzpaleo, &c. Seb. 1. p. 152. t. 97. f. 4. ♀

THE colour of this species, in its natural or recent state, seems to be an elegant pale blue, fasciated on the body and tail with several transverse

and somewhat alternate bands either of black or very deep blue; but this is most conspicuous in the smaller specimens or varieties. It also appears to be sometimes met with of a plain colour, or with only a pair of fasciæ on the upper parts of the body, as in the specimen figured on the annexed plate. The head is rather obtuse; the body moderately thick, and covered as well as the limbs, with very small smooth scales: the tail, on the contrary, which is of moderate length, is very distinctly and strongly verticillated by rows of large carinated scales, the extremities of which project considerably, so as to form so many spiny points. In the smaller fasciated varieties the tail is shorter in proportion than in larger plain ones. A beautiful specimen of this kind, of the length of a very few inches, occurs in the Leverian Museum.

The large variety is a native of South America: the smaller of many parts of Africa.

CORDYLE LIZARD.

Lacerta Cordylus. L. cauda verticillata brevi, squamis denticulatis, corpore levigato. Lin. Syst. Nat. p. 361.

Lizard with smooth body, and short tail verticillated with denticulated scales.

Lacertus Africanus cauda spinosa. Seb. 1. p. 136. t. 84. f. 3, 4.

Lacerta nigra Africana. Seb. 2. p. 62. t. 62. f. 5.

THE Cordyle Lizard is so nearly allied to the Azurea, that on a cursory view it might easily be mistaken for the same species. It differs, how-



David A. Brinkman, President of the American Society of Human Resources

ever, in having the body covered by much larger scales, which are also of an oblong-square form; and the tail, which does not much exceed the body in length, is verticillated by rows of very large scales of similar form, strongly carinated, and denticulated at their extremities. The colour of the animal is sometimes blueish, and sometimes of a dusky or livid brown: its total length is about ten inches.

 ROUGH LIZARD.

Lacerta Stellio. *L. cauda-verticillata mediocri, squamis denticulatis, capite corporeque muricato.* Lin. Syst. Nat. p. 361.

Lizard with verticillated tail of middling length, with denticulated scales; the body and head muricated.

Lacerta aculeata promontorii bonæ spei. Seb. 2. p. 10. t. 9. f. 6.

THIS species is remarkable for the unusually rough or hispid appearance of its whole upper surface; both body, limbs, and tail, being covered with pointed scales, projecting here and there to a considerable distance beyond the surface, so that it appears muricated with spines: the tail is rather short than long, and is verticillated with rows of pointed scales. The general colour of the animal is a pale blueish brown, with a few deeper and lighter transverse variegations: its general length is about eight inches. It is a native of many parts of Africa.

It may be here observed, that the Lizard which we may suppose to have been emphatically termed

Stellio, by the ancients, from its being marked with spots resembling stars, seems at present unknown. It is, however, observable, that in one of Seba's plates a species occurs which is actually marked with well-defined or regular star-shaped spots.

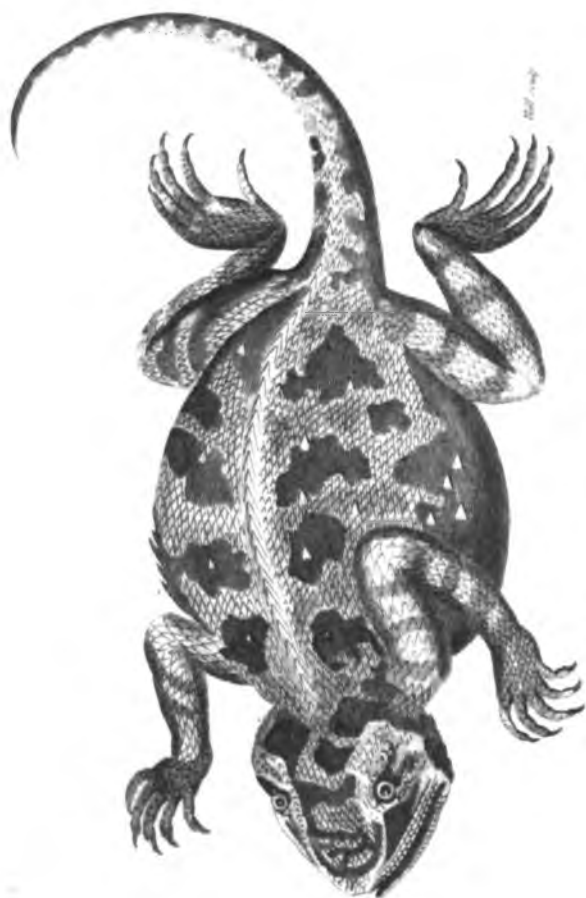
Mr. Schneider considers the Lizards called Geckos as the true Stelliones.

ANGULATED LIZARD.

Lacerta Angulata. *L. cauda hexagona longa, squamis carinatis mucronatis.* *Lin. Syst. Nat. p. 364.*

Lizard with long hexagonal tail, with carinated and mucronated scales.

A SMALL species, first described by Rolander. Head naked, marked by several unequal, elevated wrinkles, and truncated, as it were, behind, where it joins with the body: beneath the throat two large rounded scales: body covered with carinated scales, except on the belly, where they are smooth: tail longer than the body, and strongly marked or angulated by six longitudinal carinæ: colour brown: native of America.



ORBICULAR LIZARD.

Geckonidae - distributed by the whole of the world.

ORBICULAR LIZARD.

Lacerta Orbicularis. *L. supra muricata cauda tereti mediocri, abdomine subrotundo.*

Lizard with muricated scales, short round tail, and broad rounded body.

Lacerta orbiculare. *L. cauda tereti mediocri, vertice trinuricato, abdomine subrotundo.* *Lin. Syst. Nat. p. 365.*

Lacertus orbicularis spinosus, &c. Seb. 1. p. 134. t. 73. f. 1, 2.

THIS remarkable species may be said to connect, in some degree, the Toad and Lizard tribes, having the large, ventricose body of the one, with the limbs and tail of the other. Its general size is as represented on the annexed plate, and its colour a dusky brown, variegated with deeper and lighter shades: along the back runs a carina of sharp-pointed scales, and the whole upper surface is covered with somewhat spiny or muricated ones of different sizes; the under parts are coated by flat, pointed, smooth scales, rather larger than those on the upper parts.

This animal is a native of South America, and is one of the rarer species, being not often seen in collections.

Lizards proper, smooth, and the greater number furnished with broad square plates or scales on the abdomen.

GREEN LIZARD.

Lacerta Agilis. L. cauda verticillata longiuscula, squamis acutis, collari subtus squamis constructo. Lin. Syst. Nat. p. 363.

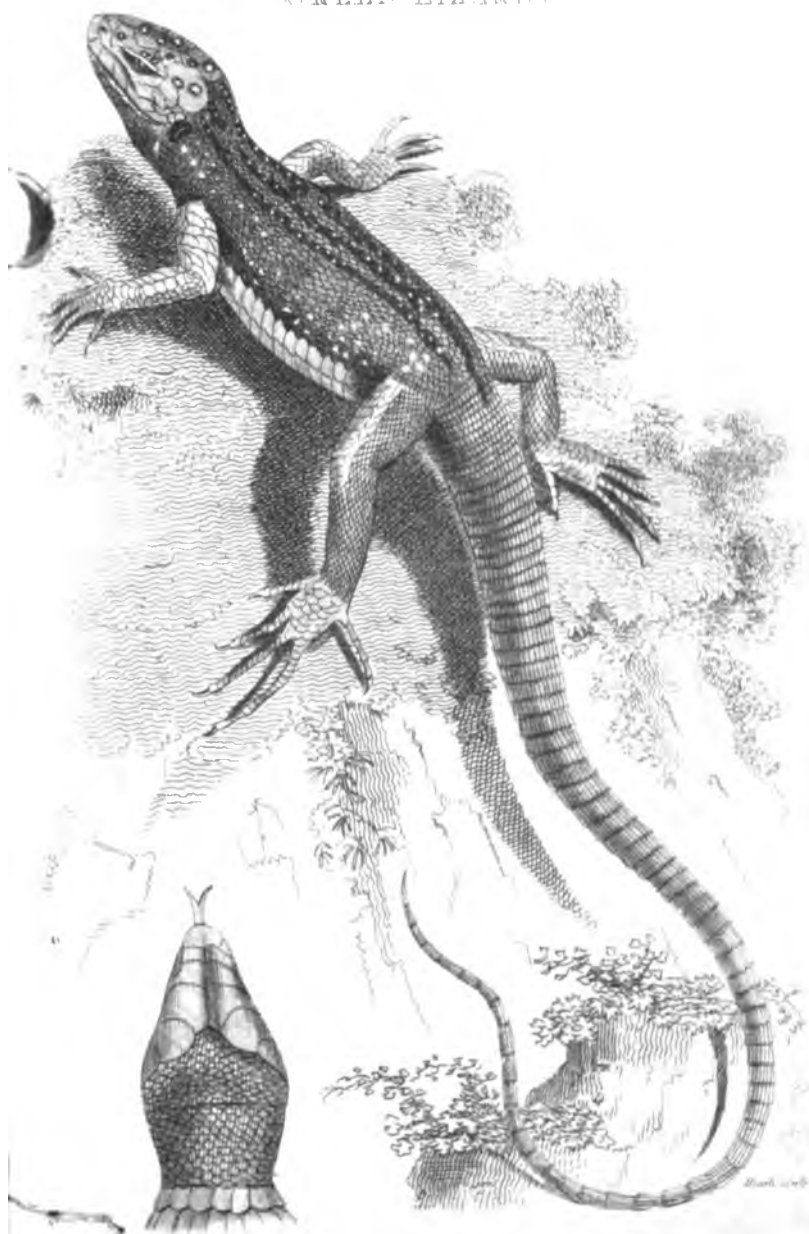
Green Lizard, with minute dusky variegations, a collar of large scales beneath the neck, and long verticillated tail.

Lacertus viridis. Aldr. Quadr. Ovip. 634. Raj. Quadr. 264.

Lacertus vulgaris ventre nigro maculato. Raj. Quadr. 264.

THIS elegant species, which is found in all the warmer parts of Europe, and which seems pretty generally diffused over the ancient continent, sometimes arrives at a very considerable size, measuring more than two feet to the extremity of the tail: its more general length, however, is from ten to fifteen inches. In its colours it is the most beautiful of all the European *Lacerta*, exhibiting a rich and varied mixture of darker and lighter green, interspersed with specks and marks of yellow, brown, blackish, and even sometimes red. The head is commonly of a more uniform green than the rest: the under part of the animal, both on the body and limbs, is of a pale blue-green cast: the head is covered with large angular scales; the rest of the upper parts with very small ovate ones: the tail, which is commonly much longer than the body, is marked into very numerous verticilli, or rings of oblong-square scales, slightly bifid at their extremities: beneath the

GREEN LIZARD.



throat is a kind of collar, formed by a row of scales of much larger size than the rest: the abdomen is covered, down its whole length, with six rows of broad transverse scales or plates, and the under surface of the limbs is also covered with similar scales: along the insides of the thighs* runs a row of papillæ or tubercles, commonly about thirteen in number, which are also found in many other lizards belonging to different sections of the genus, and which probably assist the animal in climbing, or clinging to the stems and branches of vegetables, &c.: the tongue is moderately long, broad at the base, bifid towards the tip, and covered on its broad part with numerous rows of minute sharp papillæ pointing backwards, and thus the better enabling the animal to retain and swallow its prey, which consists chiefly of insects, small worms, &c. The Green Lizard is found in various situations, in gardens, about warm walls, buildings, &c. and is an extremely active animal, pursuing with great celerity its insect prey, and escaping with great readiness from pursuit when disturbed. If taken, however, it is soon observed to become familiar, and may even be tamed to a certain degree; for which reason it is considered as a favourite animal in many of the warmer parts of Europe. It appears to run into numerous varieties both as to size and colour, but in all these states the particular characteristics of the species are easily ascertained.

* This is always to be understood as relating to the hind thighs only.

VAR.?

Smaller, or grey Lizard.

Scaly Lizard. *Brit. Zool.* 3. p. 20. pl. 2. f. 2

Little Brown Lizard. *Edw.* pl. 225.

THIS is found in many parts of Europe, where the larger or green kind is not to be discovered. It is generally of the length of about six or eight inches, and is of a pale greyish or greenish brown colour, with a pair of dusky or deep brown dorsal or lateral stripes, speckled with small whitish spots, and accompanied by a few yellowish variegations: the under parts are of a very pale blueish or whitish green, and sometimes yellowish. This variety is found in our own country, and is occasionally seen basking, during the hotter part of the summer, about the roots of trees, old walls, &c. &c. in pursuit of insects, and generally escaping with great readiness, if pursued. This, as well as the former kind, has sometimes been used as a medicine, and has been supposed to possess peculiar virtues in leprous and some other cases.

VARIEGATED LIZARD.



VARIEGATED LIZARD.

Lacerta Teguxin. *L. variegata, cauda tereti longa, lateribus subrugosis, collo subtus plica triplici.*

Variegated Lizard, with long round tail, somewhat wrinkled sides, and a triple plait under the throat.

Lacerta Teguxin. *L. cauda tereti longa, sutura laterali plicata.*

Lin. Syst. Nat. p. 368.

Lacerta Teguxin seu Tejuguacu. *Seb. 1. p. 90. f. 1, 2, 3.*

Lacerta Tejuguacu. *Seb. 1. t. 99. f. 1, 2.*

Sauveguard. *Mer. Surin. t. 70.*

THIS, which is by far the largest in this division of the genus, sometimes exceeds the Guana in size. It has been extremely well represented in some of the plates of Seba, as well as by the celebrated Madam Merian, who has given a figure of it at the end of her splendid work on the insects of Surinam.

The head is covered, as in the Green Lizard, with large scales or plates; the body with small and somewhat square scales, which are so disposed as to mark the sides into numerous tapering annuli or striæ; passing from the back perpendicularly downwards, and from the sides perpendicularly upwards, the narrow end of each row alternating with the broader end of the opposite one; and in the younger specimens a kind of plaited appearance, or continued lateral wrinkle appears to pass along each side of the animal: the tail, which is very long, is surrounded by extremely numerous rings of small square scales, and tapers to a slender point. The colour, in the

larger specimens, is highly beautiful, consisting of an elegant, and, in general, somewhat minute variegation of brown, blackish, and purple spots, on a pale blueish-white, and, in some parts, yellowish ground. The whole form of the animal is rather thick or plump, in comparison with many other lizards: the tongue is broad, flat, long, forked at the tip, and curiously striated on each side: the head shaped like that of the Ameiva, to which this species is nearly allied. It is a native of South America.

RED-HEADED LIZARD.

Lacerta Erythrocephala. L. atrovirens fasciis transversis nigris, abdomine longitudinaliter albo nigro & caeruleo fasciato, pectore nigro, vertice rubro.

Blackish-green Lizard, with transverse black undulations, abdomen longitudinally banded with black, white, and blue, the breast black, and the top of the head red.

La Tete-Rouge. *Cepede ovip. 2. p. 493.*

A MIDDLE-SIZED species; native of the island of St. Christopher; described by the Count de Cepede. Colour deep or dark green above, mixed with brown: back marked by several transverse black undulations: top of the head, and part of the sides of the neck, red: throat white; breast black: belly variegated with longitudinal black, blue, and whitish bands, and covered with square scales or plates: head covered with larger scales than the other parts: beneath the thighs a row of tubercles.

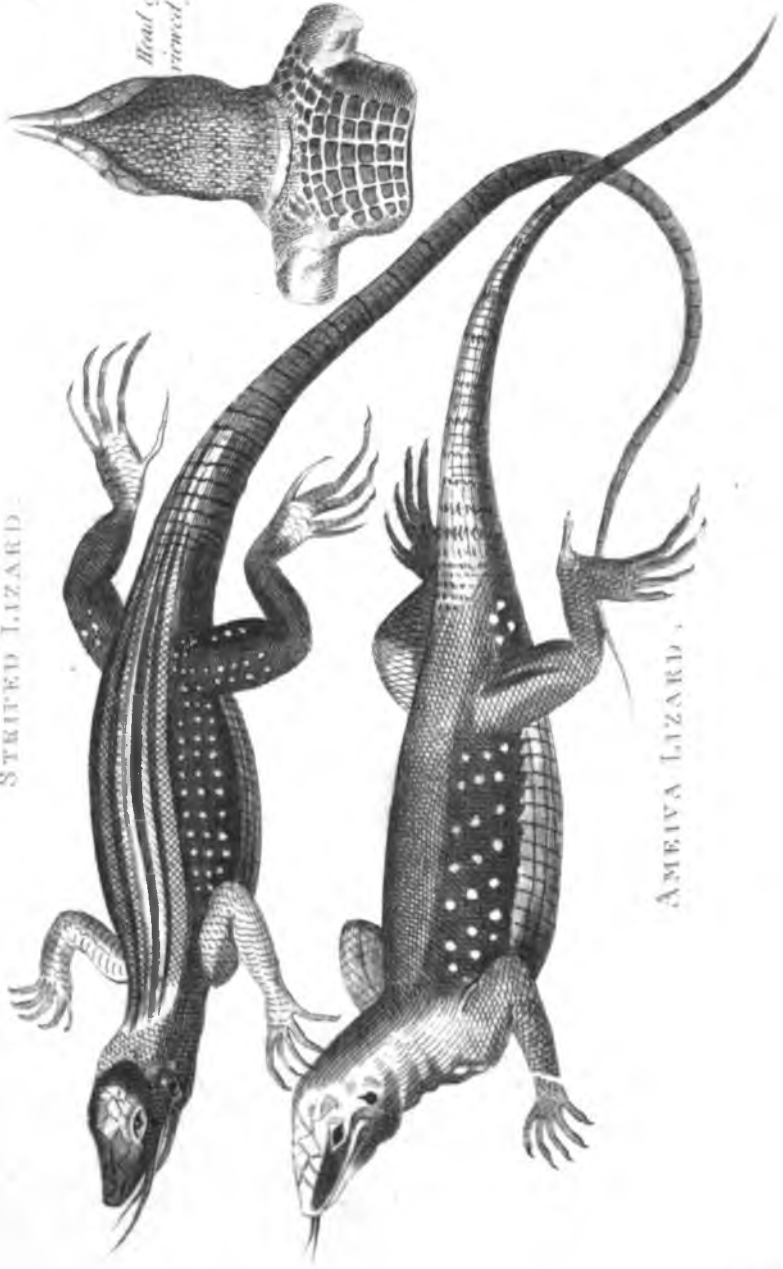
Spilargis lineata (L.)



Engraved by J. H. Johnson from a drawing by J. B. S. P. 1851

Head of Ameiva
viewed from below

STRIPED LIZARD.



AMEIVA LIZARD.

AMEIVA LIZARD.

Lacerta carulæ, albo nigroque variata, cauda longa verticillata, scutis abdominis triginta.

Blue Lizard with black and white variegations, long verticillated tail, and thirty abdominal scuta.

Lacerta Ameiva. L. cauda verticillata longa, scutis abdominis triginti, collari subtus ruga duplici. Lin. Syst. Nat. p. 362.

Great spotted Lizard. *Edw. pl. 203.*

Ameiva. Seb. 1. t. 88. f. 1, 2.

THE Ameiva is much allied to the Green Lizard in its general appearance, but is not furnished with the remarkable scaly collar by which that species is distinguished; having only a double transverse crease or plait on the same part: the head is also somewhat longer, and the snout more taper in proportion: the scales with which the upper parts of the animal are covered are extremely small, so as to be not very distinctly visible: those of the abdomen consist of square plates, as in the green lizard; and beneath each thigh is a range of tubercles. In colour the Ameiva varies considerably, but is commonly blue or blueish-green above, with somewhat irregular variegations of black and white, which are sometimes disposed in streaks, and sometimes in spots, or patches; and commonly in such a manner as to leave several whitish or pale-blue round spots scattered on different parts of the body and limbs: the under parts are dusky, with more or less of a blueish cast, and often marked here and there with small whitish spots.

The *Ameiva* is principally found in South America, but it is also said to occur in some parts of Asia and Africa.

STRIPED LIZARD.

Lacerta Lemniscata. *L. cauda tereti longa, dorso lineis octo albulis.* *Lin. Syst. Nat. p. 369.*

Dusky-blue Lizard, with eight white lines down the back, long round tail, and limbs spotted with white.

Lacerta Brasiliensis Taraguira. *Seb. 2. t. 91. f. 3.*

Lacerta Brasiliensis Tecunhana. *Seb. 2. t. 91. f. 4.*

So closely allied is this to the *Ameiva*, that, without a careful inspection, it might be mistaken for the same species: its general size, however, is rather smaller: its colour is a dusky blue, marked above by eight longitudinal white lines or stripes, running from the head to the beginning of the tail: the sides, beneath the stripes, and the outsides of the thighs, are marked with small white spots: beneath the thighs is a range of tubercles, but there is no appearance of a crease or transverse fold under the throat: the white stripes on the back vary in breadth, and even sometimes in number, in different individuals. It is a native of Africa, and is principally found in Guinea; but is also said to be met with in some parts of India, and even in South America.

FOUR-STRIPED LIZARD.

Lacerta Quadrilineata. *L. cauda tereti longa, pedibus subungiculatis, palmis tetradactylis, corpore lineis quatuor flavis.* Lin. *Syst. Nat. Gmel. p. 1076.*

Blackish-blue Lizard, with tetradactyle fore-feet, long rounded tail, and four white or yellowish lines down the back.

CLOSELY allied to the *Lemniscata*, but a much smaller species: colour blackish blue, with four white or yellowish bands down the back: fore feet tetradactyle; hind feet pentadactyle: claws very small: tail long and taper. Described by Linnæus in the Museum Adolphi Friderici. Supposed to be a native of North America.

RIBBON LIZARD.

Lacerta Tæniolata. *L. cauda tereti longa, corpore supra tæniolis albis nigrisque, subtus albo.*

Lizard with long round tail, and body marked above with black and white stripes; beneath white.

Ribbon Lizard. *White's Journ. of Voy. to N. S. Wales, p. 245. pl. 32.*

A SMALL species, much allied to *Fasciata* and others of this division: covered entirely with smooth, rounded, imbricated scales on all parts: colour ~~chestnut brown~~ above; pale or whitish beneath: on the back from the head to the middle of the tail six narrow white linear stripes, the intermediate spaces of the central and lowermost stripes

being black : tail long and slender : limbs striped longitudinally with black : feet slender ; five-toed : native of New Holland.

SIX-LINED LIZARD.

Lacerta Sexlineata. *L. cauda verticillata longa, dorso lineis sex albis.* *Lin. Syst. Nat. p. 364.*

Grey-brown Lizard, with long verticillated tail, and six white lines down the back.

The Lion-Lizard. *Catesb. Car. 2, t. 68.*

A SMALL species, allied to the Ameiva : colour grey, with six longitudinal lines or whitish stripes down the upper parts : beneath the throat a double crease, and beneath the thighs a row of tubercles : legs long ; feet slender : tail commonly carried in an elevated manner, curving over the back, for which reason it is called the Lion-Lizard : runs very swiftly, and chiefly frequents the rocks about the sea coasts of Cuba and Hispaniola, where it is preyed on by Gulls, &c.

FASCIATED LIZARD.

Lacerta Fasciata. L. cauda tereti longiuscula, caerulea, dorso lineis quinque flavescentibus. -Lin. Syst. Nat. p. 369.

Brown Lizard, with longish blue tail, and five yellowish lines down the back.

The Blue-tail Lizard. *Catesb. 2. t. 67.*

A SMALL species, seldom exceeding eight inches in length: head short; tail blue; rest of the body brown, with five equidistant yellow lines running from the nose to the tail: native of Carolina and Virginia, where it frequents hollow trees, &c. and is often seen on the ground.

FIVE-LINED LIZARD.

Lacerta Quinquelineata. L. cauda tereti mediocri, dorso lineis quinque albidis.

Dusky Lizard, with tail of middling length, and five whitish lines down the back.

A SMALL species: colour deep brown or blackish, with five whitish dorsal stripes, continued half way down the tail: on the head six stripes: tail twice the length of the body: abdomen imbricated with striæ: native of Carolina: described by Dr. Garden.



PUNCTATED LIZARD.

Lacerta Interpunctata. *L. cauda tereti longa, dorso lineis duabus flavis, punctis nigris interspersis.* *Lin. Syst. Nat. Gmel.* p. 1075. *Mus. Ad. Frid.* p. 46.

Lizard with long round tail, and two yellow dorsal lines, with black specks interspersed.

Lacerta Africana. *Seb. 2. t. 12. f. 6.*

A SMALL species: native of Asia: head covered with large scales: body smooth and glossy, with two obscure yellowish lines distinguishing the back from the sides: down the dorsal area run six rows of black specks or points, and down each side a similar number: feet and tail also spotted in a similar manner.

 RED-THROAT LIZARD.

Lacerta Bullaris. *L. viridis, cauda tereti longa, vesica gulari rubra.*

Green Lizard, with long round tail and red gular vesicle.

Lacerta Bullaris. *L. cauda tereti longa, vesica gulari.* *Lin. Syst. Nat. p. 368.*

Green Lizard of Jamaica. *Catesb. Car. 2. t. 66.*

THIS, according to Catesby, is usually six inches long, and of a shining grass-green colour. It is common in Jamaica, frequenting hedges and trees, but is not seen in houses: when approached it swells its throat into a globular form, the protruded skin on that part appearing of a bright red colour, which disappears in its withdrawn or

contracted state: this action is supposed to be a kind of menace, in order to deter its enemy; but it is incapable of doing any mischief by its bite or otherwise.

VAR. ?

Green Carolina Lizard. *Catesb.* 2. *pl.* 65.

THIS, which appears to resemble the former in every particular, except in the extensile gular skin, is said by Catesby to be very common in Carolina, frequenting houses, and becoming in a degree familiar, so as to sport about the tables and windows, catching flies with great dexterity, appearing chiefly in summer, and on the approach of cold weather retreating to its winter quarters, lying torpid in the hollows of trees, &c. It is sometimes tempted to leave its retreat prematurely, and, on a change of weather, becomes so enfeebled by the cold as to perish before it regain its habitation. Its colour is observed to change very considerably, appearing of a bright green in dry hot weather, and changing to brown in cold weather: the structure of the feet in these lizards is similar to that of the *L. Principalis*, the toes being slender and somewhat dilated towards the tips. The red expansile gular pouch is perhaps peculiar to the male.

RED-TAIL LIZARD.

Lacerta Cruenta. *L. cauda verticillata supra cinerea subtus coccinea apice albicante, colli subtus plica transversa.* *Lin. Syst. Nat. Gmel. p. 1072. Pall. it. 1. p. 456.*

Brown Lizard, with seven cervical and four dorsal white stripes, a crease under the throat, and verticillated tail red beneath.

AN extremely small species, allied to the *L. velox*, but with a sharper snout: body brown above, with seven white stripes on the neck, four of which are continued as far as the tail: limbs spotted with round white spots; body white beneath, tail red beneath, and white at the tip: a row of tubercles on the thighs: native of the south of Siberia, inhabiting the country about the salt lakes.

LOBE-CHEEKED LIZARD.

Lacerta Lobata. *L. collo utrinque lobo semiorbiculato denticulato.* Brownish Lizard, with a semiorbicular denticulated lobe on each side the neck.

Lacerta aurita. *L. cauda tereti mediocri utrinque ad latus callosis punctis aspera, plica gulæ transversa subgemella, oris angulis utrinque in cristam semiorbiculatam mollem scabram dentatam dilatatis.* *Lin. Syst. Nat. Gmel. p. 1073. Pall. it. 3. p. 702. t. V. f. 1.*

THIS is a middle-sized species, of a somewhat thick or ventricose habit; with the body rather depressed, and the head rounded or blunt in front: from the corners of the mouth on each side is

horizontally extended a flat, semiorbicular skin or wattle, of a red colour, with serrated edges, and reaching as far as the shoulders: the remainder of the animal is clouded with yellowish and cinereous: tail rather short than long, and roughened above, as is the whole body, with small, pointed granules: toes five, of which the three intermediate ones are serrated on the edges. This species appears to be in some degree allied to the Geckos; it is a native of the southern desert of Siberia, frequenting sandy hills, and was first described by Dr. Pallas.

SUN-GAZING LIZARD.

Lacerta Helioscopa. *L. cauda imbricata basi crassa apice acuta, collo subtus plica transversa, capite callis aspero.* *Lin. Syst. Nat. Gmel. p. 1074. Pall. it. 1. p. 457.*

Brownish Lizard, with imbricated tail, thick at the base and sharp at the tip, a transverse crease beneath the throat, and the head rough with calli.

THIS also appears to be in some degree allied to the Geckos, being of a short, thickish form and muricated on the upper parts with small tubercles: the head is blunt or rounded in front; and the neck marked by a kind of stricture: tail moderately short, and terminating acutely: colour of the ~~upper parts~~ grey, with brown and blueish spots and linear streaks: neck often marked above by a red spot: under parts pale or whitish, and covered with smooth, pointed scales: tip of tail

red beneath. This species is said by Dr. Pallas to be very common in the southern deserts of Siberia, where it delights to sit in hot sunny situations, with its head turned up towards the sun. It is a small species, measuring not more than a finger's length, and is extremely nimble in its motions.

TURKISH LIZARD.

Lacerta Turcica. L. cauda subverticillata mediocri, corpore griseo subverrucoso. Lin. Syst. Nat. Gmel. p. 1068.

Brown roughish Lizard, with subverticillated tail of middling length.

Small spotted grey Lizard. *Edw. pl. 204. f. 2.*

A SMALL species, first described by Edwards: native of the eastern regions: head rather large: body thickish: tail rather short, thickish at the base, and pointed at the tip: whole animal roughened on the upper surface with small granules or tubercles: colour dull brown, somewhat paler on the under parts: appears to be somewhat allied to the Geckos in general habit.

BROAD-TAILED LIZARD.

Lacerta Platura. L. griseo-fusca scabra, subtus pallida, cauda depresso-plana lanceolata, margine subaculeata.

Grey-brown rough Lizard, paler beneath, with depressed lanceolate tail almost spiny on the margin.

Lacerta Platura. Broad-tailed Lizard. White's Journ. of Voy. to New South Wales, p. 245. pl. 32. Nat. Misc. vol. 2. pl. 65.

THIS remarkable species is a native of New Holland, and is strikingly distinguished by the peculiar form of its tail, which is flat or depressed, and gradually widens from the base to a greater diameter than the body of the animal, and again gradually tapers to a sharp attenuated extremity: it is muricated, as is every other part of the upper surface of the animal, by small tubercles, which on the edges of the tail are lengthened into sharpened points: the head is large, somewhat flattened, broad at the back part, and tapers at the snout: the neck is nearly of the diameter of the body, which somewhat exceeds the tail in length: the limbs are of moderate length and rather slender than strong: the feet all pentadactyle, with slender toes, armed by curved claws. The colour of the whole animal on the upper parts, is a dusky brownish grey; beneath paler and smooth. The general length of this species seems to be from four to six inches or rather more. In habit, except in the feet, it is allied to the Gecko tribe.

PLICA LIZARD.

Lacerta Plica. L. cauda tereti longa, occipite calloso, palpetris supra excoriatis, collo lateribus verrucoso, subtus plicato. Lin. Syst. Nat. Gmel. p. 1074.

Lizard with round long tail, hind-head callous, eyebrows excoriated above, neck warted at the sides, and plaited beneath.

A SMALL species, native of India and South America: length of a finger; covered on all parts with conical scales: on each side the neck two muricated tubercles: beneath the throat a double crease: down the back a row of larger scales than the rest, and somewhat crenated: tail about twice the length of the body, covered with minute scales, and scarce distinctly verticillated: toes long, roughened beneath by sharper scales: claws compressed.

JAPANESE LIZARD.

Lacerta Japonica. L. cauda tereti longa, pedibus unguiculatis, palmis tetradactylis, dorso vittato. Lin. Syst. Nat. Gmel. p. 1076 Houttuyn. Act. Uliss. 9. p. 329.

Lizard with long round tail, unguiculated feet, tetradactyle fore-feet, and single-striped back.

A SMALLISH species: native of Japan: colour livid brown above, with a broad ~~acutated~~ ^{acutated} yellow stripe from the hind head to the beginning of the tail: eyes small; eyelids large and rough: tail somewhat compressed at the tip: claws black.

NILOTIC LIZARD.

Lacerta Nilotica. *L. cauda longa extimo triquetra, corpore glabra, dorso squamarum lineis quatuor.* *Lin. Syst. Nat. Gmel.* 1075. *Hasselqu. it. p. 311.*

Lizard with long triquetrous tail, smooth body, and four lines of scales down the back.

SMALL; native of Egypt: observed by Hasselquist.

TILIGUERTA LIZARD.

Lacerta Tiliguerta. *L. cauda verticillato corpore duplo longiore, scutis abdominis octoginta.* *Lin. Syst. Nat. Gmel. p. 1070.* *Cetti. Anfib. di Sard. p. 15.*

Lizard with verticillated tail of twice the length of the body, and eighty abdominal scuta.

THIS, which is a small species, measuring between seven and eight inches in length, is allied to the green lizard, and is a native of the island of Sardinia, where it is said to be found in fields, about walls, &c.: the male is green, spotted with black; the female brown.



DESERT LIZARD.

Lacerta Deserti. *L. cauda terti longiuscula, pedibus pentadactylis, corpore supra nigro, lineis sex albis longitudinalibus.* Lin. *Syst. Nat. Gmel. p. 1076.*

Lizard with longish round tail, pentadactyle feet, and body black above, with six longitudinal white lines.

A VERY small species: body white beneath: the stripes of the back consist of oblong spots, and between the exterior stripe and the next are five white specks: native of the *Ural* desert.

 ARGUTE LIZARD.

Lacerta Arguta. *L. cauda verticillata brevi, basi crassiuscula, apice filiformi, collari squamis obsoletis plicaque sub collo duplici insigni.* Lin. *Syst. Nat. Gmel. p. 1072. Pall. it. 1. p. 456.*

Lizard with short verticillated tail, thickish at the base and filiform at the tip, with a collar of obscurely-marked scales, and a remarkable double crease under the neck.

NATIVE of the South of Siberia: described by Dr. Pallas: allied to the green lizard, but of a shorter or more ventricose form, with a sharper snout, and less numerous as well as less distinct subfemoral tubercles: colour glaucous above, with several subconfluent transverse black bands, most distinct at the base of the tail, where they are marked by ocellated spots of the ground colour of the back: under parts white.

ALGERINE LIZARD.

Lacerta Algira. *L. cauda verticillata longiuscula, corpore lineis utrinque duabus flavis.* *Lin. Syst. Nat. Gmel. p. 1073.*

Lizard with longish verticillated tail, and two yellow lines on each side the body.

A SMALL species, of about a finger's length: above brown, beneath yellowish: back covered with carinated scales, and bounded on each side by a yellow line, separating the abdomen from the upper parts. Native of Algiers.

 SWIFT LIZARD.

Lacerta Velox. *L. cauda verticillata longiuscula, collari subtus squamis constructo, corpore supra cinereo, strigis quinque longitudinalibus dilutioribus punctisque fuscis vario, ad latera nigro maculato & cærulescente punctato.* *Lin. Syst. Nat. Gmel. p. 1072. Pall. it. 1. p. 457.*

Lizard with longish verticillated tail, a scaly collar beneath the neck; cinereous body, with five longitudinal paler bands, variegated with black specks; the sides spotted with black, and speckled with blue.

MUCH allied to the *L. agilis*, but much smaller, and more slender: hind feet marked with orbicular spots: native of Siberia, wandering about in sunny situations among stones, &c. when disturbed, moves on with extreme celerity.

URAL LIZARD.

Lacerta Uralensis. L. cauda tereti longiuscula, collo subtus plicato, pedibus omnibus pentadactylis, dorso ex cinereo livido, rugoso & subverrucoso. Lin. Syst. Nat. Gmel. p. 1073. Iapchin. it. 1. p. 317. t. 22. f. 1.

Lizard with longish round tail, neck plaited beneath, all the feet pentadactyle, and back livid, rugose, and subverrucose.

NATIVE of the desert of *Ural*: length about four inches: head roundish: colour of the upper parts livid brown, and covered with a wrinkled and slightly tuberculated skin: under parts whitish: moves with great swiftness.

SEPS LIZARD.

Lacerta Seps. L. cauda verticillata longiore, sutura laterali reflexa, squamis quadratis. Lin. Syst. Nat. p. 363.

Blueish-brown Lizard, with longish verticillated tail, reflexed lateral suture, and square scales.

THE Seps is rather a small species, and is easily distinguished by the thin and lengthened form of its body, long, slender tail, small, short limbs, slender toes, and particularly by the square scales with which it is entirely covered both above and below, and which are so disposed as to mark the animal into a great number of longitudinal and transverse divisions: the abdomen is divided as it were from the sides, by a very strongly-marked suture, continued from the head to the base of the



COMMON CHAMELEON.

tail; the sides rising up a little beyond the furrow: beneath the thighs is a row of papillæ: all the feet are furnished with five slender toes, and the tail is marked into about fifty verticilli or divisions. This lizard is a native of the southern parts of Europe, and though remotely different as a species, seems by some authors to have been confounded with the *Lacerta Chalcides*, the name *Seps* having been applied occasionally to both animals. In the British and Leverian Museums are specimens agreeing in every particular with the Linnean description of the species. Its colour is a livid brown above, paler or more inclining to whiteness beneath.

Chamæleon, with granulated skin, missile tongue, &c.

COMMON CHAMÆLEON.

Lacerta Chamæleon. L. cinerea, pileo plano, cauda tereti incurva, digitis duobus tribusque coadunatis.

Grey Chameleon, with flat crown, cylindrical incurved tail, and toes conjoined by two and three.

L. Chamæleon. L. cauda tereti breviter incurva, digitis duobus tribusque coadunatis. Lin. Syst. Nat. p. 364.

L. cinerea, pileo plano. Lin. Syst. Nat. Gmel. p. 1669.

Chamæleon. Aldr. Quad. Ovip. p. 670. Junst. Quadr. t. 79.

The Chameleon. Museum Leverianum, 1. p. 191.

L. Chamæleon. Chameleo. Millar. Cam. Plan. p. 22. t. 11.

Few animals have been more celebrated by natural historians than the Chameleon, which has

been sometimes said to possess the power of changing its colour at pleasure, and of assimilating it to that of any particular object or situation. This, however, must be received with very great limitations; the change of colour which the animal exhibits varying in degree, according to circumstances of health, temperature of the weather, and many other causes, and consisting chiefly in a sort of alteration of shades from the natural greenish or blueish grey of the skin into pale yellowish, with irregular spots or patches of dull red; but not justifying the application of the Ovidian distich.

“Non mihi tot cultus numero comprehendere fas est:
Adjicit ornatus proxima quæque dies.”

No numbers can the varying robe express,
While each new day presents a different dress.

It is also to be observed, that the natural or usual colour of Chameleons varies very considerably; some being much darker than others, and it has even been seen approaching to a blackish tinge. An occasional change of colour is likewise observable, though in a less striking degree, in some other Lizards.

The general length of the Chameleon, from the tip of the nose to the beginning of the tail, is about ten inches, and the tail is of nearly similar length, but the animal ~~is~~ found of various sizes, and sometimes exceeds the length above men-tioned. It is a creature of a harmless nature, and supports itself by feeding on insects; for which

purpose the structure of the tongue is finely adapted, consisting of a long, missile body, furnished with a dilated and somewhat tubular tip, by means of which the animal seizes insects with great ease, darting out its tongue in the manner of a Woodpecker, and retracting it instantaneously with the prey secured in its tip. It can also support a long abstinence, and hence arose the popular idea of the Chameleon being nourished by air alone. It is found in many parts of the world, and particularly in India and Africa. It is also sometimes seen in the warmer parts of Spain and Portugal.

The Chameleon, by the power which it possesses in common with most other Amphibia, of inflating its lungs and retaining the air for a great length of time, appears occasionally of a plump or fleshy aspect, while at other times, on evacuating the air from its lungs and keeping them in a collapsed state, it appears in the utmost degree of extenuation as if consisting of little more than a mere skin, the ribs being completely visible on each side the body. The skin on every part of the animal is of a granulated structure, the granules differing in size on different parts, from that of a small pin's head to the diameter of the tenth of an inch, or even more, especially on the edges of the projecting parts of the head and jaws. Down the back runs a series of obscure denticulations or slight projections, forming a carina on that part. The feet consist each of five toes, three and two of which on each foot are connate, or

united as far as the claws by a common skin: on the fore feet the two outward and three inward toes are united; and in the hind feet the two inward and three outward. The motions of the Chameleon are extremely slow, and in sitting on a branch, or in passing from one to another, it fastens itself by coiling its tail round that from which it means to pass, till it has perfectly secured the other with its feet.

The general or usual changes of colour in the Chameleon, so far as I have been able to ascertain from my own observation of such as have been brought into this country in a living state, are from a blueish ash-colour (its natural tinge) to a green and sometimes yellowish colour, spotted unequally with red. If the animal be exposed to a full sunshine, the unilluminated side generally appears, within the space of some minutes, of a pale yellow, with large roundish patches or spots of red-brown. On reversing the situation of the animal the same change takes place in an opposite direction; the side which was before in the shade now becoming either brown or ash-colour, while the other side becomes yellow and red; but these changes are subject to much variety both as to intensity of colours and disposition of spots.

The following is the description given by the anatomists of the French Academy:

“ The colour of all the eminences of our Chameleon when it was at rest, in the shade, and had continued a long time undisturbed, was a blueish grey, except under the feet, where it was white

inclining to yellow, and the intervals of the granules of the skin were of a pale and yellowish red. This grey, which coloured all the parts exposed to the light, changed when in the sun; and all the places of its body which were illuminated, instead of their blueish colour, became of a brownish grey, inclining to a *minime*. The rest of the skin, which was not illuminated by the sun, changed its grey into several brisk and shining colours, forming spots about half a finger's breadth, reaching from the crest of the spine to the middle of the back: others appeared on the ribs, fore legs, and tail. All these spots were of an Isabella colour, through the mixture of a pale yellow with which the granules were tinged, and of a bright red, which is the colour of the bottom of the skin which is visible between the granules: the rest of the skin not enlightened by the sun, and which was of a paler grey than ordinary, resembled a cloth made of mixed wool; some of the granules being greenish, others of a minime-grey, and others of the usual blueish grey, the ground remaining as before. When the sun did not shine, the first grey appeared again by little and little, and spread itself all over the body, except under the feet, which continued of the same colour, but a little browner; and when, being in this state, some of the company handled it, there immediately appeared on its shoulders and fore legs several very blackish spots about the size of a finger nail, and which did not take place when it was handled by those who usually took care of it. Sometimes it was

marked with brown spots, which inclined towards green. We afterwards wrapped it up in a linen cloth, where having been two or three minutes, we took it out whitish ; but not so white as that of which Aldrovandus speaks, which was not to be distinguished from the linen on which it was laid. Ours, which had only changed its ordinary grey into a very pale one, after having kept this colour some time, lost it insensibly. This experiment made us question the truth of the Chameleon's taking all colours but white ; as Theophrastus and Plutarch report ; for ours seemed to have such a disposition to retain this colour, that it grew pale every night ; and when dead, it had more white than any other colour : nor did we find that it changed colour all over the body, as Aristotle reports ; for when it takes other colours than grey, and disguises itself, to appear in masquerade, as *Ælian* pleasantly says, it covers only certain parts of the body with them. Lastly, to conclude the experiments relative to the colours which the Chameleon can take, it was laid on substances of various colours, and wrapped up therein ; but it took not them as it had done the white ; and it took that only the first time the experiment was made, though it was repeated several times on different days."

"In making these experiments we observed that there were a great many places of its skin which grew brown, but very little at a time : to be certain of which we marked with small specks of ink those granules which to us appeared whitest in its

pale state; and we always found that when it grew brownest, and its skin spotted, those grains which we had marked, were always less brown than the rest."

The anatomy of the Chameleon has been well detailed by the above-mentioned Academicians. The principal abridged particulars are as follow:

The *Mouth* is wide and the bones of the jaws denticulated, so as to represent small teeth.

The *Tongue* is of a very extraordinary form; being composed of a white solid flesh, about ten lines long, and three broad, round, a little flattish towards the end, hollow, and open, somewhat like the end of an elephant's proboscis. This tongue is fastened to the *os hyoides* by means of a sort of trunk, shaped like an intestine, six inches long, and a line broad, having a membrane without, and a nervous substance within, which is solid and compact, though soft, and not easily divisible into fibres: this trunk serves to cast out the tongue, which is fastened to it, by extending it, and to draw it back by contracting it, which motion it is enabled to perform by a kind of cartilaginous *stylus* to which its investing membrane is attached, and over which it is plaited like a silk stocking on the leg: this *stylus* is an inch long, and takes its origin from the middle of the base of the *os hyoides*, as in the tongue of several birds: a number of blood-vessels are distributed on the tongue.

The form, structure, and motion of the *Eyes* is very peculiar: they are very large, viz. above five lines in diameter; appearing spherical, projecting

in the living animal full half of their diameter: they are covered with one single eyelid or skin, pierced in the middle with a small hole of not more than a line in diameter, through which the pupil appears, surrounded by a gold-coloured iris: the eyelid, or investing skin, is granulated like the rest of the animal: the fore part of the eye is fastened to the lid, so that the lid follows all the motions of the eye: sometimes one of the eyes will move while the other is at rest, or turn forwards while the other is directed backwards, or upwards, while the other is turned downwards: by extending the skin of the orifice crossways the Chameleon can close its eyes, the hole then becoming a longitudinal rima or slit: the optic nerves are eight lines in length: the cornea is small; the sclerotica hard and thick; but the hinder part very thin: the choroides black under the iris, and blueish at the bottom: the retina very thick, and reddish: the humors all aqueous, the chrystalline itself scarce distinct from the rest.

The *Brain* is extremely small, scarce more than a line in diameter, and not twice the thickness of the spinal marrow, which is very white, the brain itself being grey.

The *Heart* is very small, not exceeding three lines in length; its point appearing truncated or as if cut off: the auricles very large, especially the left, and somewhat redder than the heart.

The *Lungs* very large when inflated; and divided into several processes or saccular subdivisions; but when collapsed they appear small.

The *Stomach* long and narrow; the intestines large.

The *Liver* of a pretty firm substance, and of a dark red colour.

In the stomach (as may be supposed) were the remains of insects.

This Chameleon, during the time it lived, occasionally evacuated from its intestines certain small stony concretions of about the size of a pea, of an apparently calcareous substance, and readily dissolving in vinegar: one of them was found to contain in its middle the head of a fly; so that they must necessarily have been formed in the stomach or intestines of the animal*.

The spine of the Chameleon, comprehending the tail, consists of seventy-four vertebræ, and the ribs are eighteen on each side.

The popular error of the Chameleon living on air alone, must have originated from the long abstinence which the animal can occasionally support; instances having occurred of its passing several months without any apparent nourishment.

Sir Thomas Browne, in a long and learned chapter on this subject in his *Vulgar Errors*, expresses himself in the following terms:

“All which considered, severer heads will be apt enough to conceive the vulgar opinion of this animal, to be not much unlike that of the *Astomi*,

* A kind of Bezoar is occasionally found in the stomach of the common Guana; instances of which may be found in the work of Seba.

or Men without mouths, in *Pliny*; suitable unto the relation of the Mares in Spain, and their sub-ventaneous conceptions from the western wind; and in some way more unreasonable than the figment of *Rabican*, the famous horse in *Ariosto*, which being conceived by flame and wind, never tasted grass, or fed on any grosser provender than air; for this way of nutrition was answerable unto the principles of his generation; which being not airy but gross and seminal in the *Chamæleon*, unto its conservation there is required a solid pasture, and a food congenerous unto the principles of its nature."

Besides the Common Chameleon, different races appear to exist, which are principally distinguished by their colour, and the more or less elevated state of the angular or crested part of the head. These, which Linnæus was content to consider as varieties, are now raised to the dignity of species, and are thus distinguished in the Gmelinian edition of the *Systema Naturæ*.

AFRICAN CHAMELEON.

Lacerta Africana. L. nigra pileo carinato. Lin. Syst. Nat. Gmel. p. 1069.

Blackish Chameleon, with carinated crown.

Chamæleo ex Africa colore nigricante, at pectine albo supra dorsum decoratus. Seb. Mus. 1. p. 134. t. 83. f. 4.

THIS, says Seba, came from the coasts of Barbary, and is one of the largest yet known: along

the back, to the end of the tail, runs a pure white stripe, bounded by a broad blackish band : the rest of the animal is variegated with pale cinereous undulations. In the specific character, as given by Dr. Gmelin, the word *nigricans* should be substituted for *nigra*, since the stripes alone on the top of the back are of a black colour, as is evident from the description and figure of Seba.

LITTLE CHAMELEON.

Lacerta Pumila. *L. corpore lateribus cærulescente, lineis binis flavescens.* *Lin. Syst. Nat. Gmel. p. 1069.*

Chameleon with the body blueish on each side, marked with two yellowish lines.

Chamæleo promontorii Bonæ Spei, cæruleo alboque colore marmoris instar variegatus. *Seb. Mus. 1. p. 135. t. 83. f. 5.*

THIS, according to Seba's description and figure, has the head somewhat flatter than the former, though still elevated towards the middle part: it is also edged on each side by a denticulated margin. The body is of a blueish colour, marbled or variegated with white. It may well be doubted, however, whether either this or the former can properly be considered as in any other light than varieties of the common or first described species.

Geckos, with granulated or tuberculated skin, lobated feet, and toes lamellated beneath.

COMMON GECKO.

Lacerta Gecko. *L. livida fusco variegata, corpore verrucoso, pedum lamellis indivisis.*

Livid Gecko, with brown variegations, body warted above, and the lamellæ of the feet undivided.

Lacerta Gecko. *L. cauda tereti mediocri, digitis muticis subtus lamellatis, corpore verrucoso, auribus concavis.* Lin. Syst. Nat. p. 365.

Salamandra vera seu Gekko Ceilonicus. Seb. 1. p. 170. t. 108.

THE Gecko, said to be so named from the sound of its voice, which resembles the above word uttered in a shrill tone, is a native of many parts of Asia and Africa, as well as of some of the warmer regions of Europe. It is one of the middle-sized Lizards, measuring, in general, about a foot in length, or rather more. It is of a thicker and stouter form than most other Lizards, having a large and somewhat triangular flattish head, covered with small scales, a wide mouth, large eyes, minute teeth, and a broad flat tongue. The limbs are of moderate length, and the feet are of a broader form than in the rest of the genus Lacerta, each toe being dilated on the margins, and divided beneath into a great number of parallel transverse lamellæ, without any longitudinal mark or furrow: all the toes, except the thumbs, are furnished with small claws: the tail, which is generally longer than the body, is marked, more or less

COMPTON (MICH.)



From the collection of the U.S. National Museum, Washington, D.C.

distinctly, according to the age of the animal, into divisions or verticillated rings: the whole animal is covered on the upper parts with numerous, distant, round warts or prominences, approaching more or less to an acute form in different individuals, and sometimes obtuse: beneath each thigh is a row of perforated papillæ, as in the Green Lizard and many others: the under parts of the body are covered with scales of somewhat dissimilar appearance, but all approaching to a round figure.

The Gecko inhabits obscure recesses, caverns, old walls, trees, &c. &c. and wanders about chiefly on the approach of rain. It is considered as of a poisonous nature, a highly acrimonious kind of fluid exsuding from the lamellæ of the feet, which remaining on the surface of fruit or any other edible substance is often productive of troublesome symptoms to those who happen to swallow it. From the peculiar structure of its feet, the Gecko can readily adhere to the smoothest surfaces. The general colour of the animal is pale brown, with a few irregular dusky or blueish variegations, but in those which inhabit the warmer regions of the globe this colour seems to be exalted into a much more brilliant appearance.

Var. ?

TOKAI.

THIS kind is described by the Jesuit Missionaries from Lewis the fourteenth to Siam. Its

length is about a foot: the body is covered above by a granulated skin, varied with red and blue undulations: the back is roughened by a great many longitudinal rows of pale blue conical protuberances: the belly is cinereous, scattered over with red spots: the head large and triangular: the eyes very large: tongue flat: feet divided into lamellæ beneath; by the help of which the animal adheres to the smoothest surfaces, as if agglutinated to them. It occasionally enters the houses of the Siamese; is considered by them as a poisonous animal, and is called by the title of *Tokai*.

Bontius, in his history of Java, appears to describe a similar kind, under the name of the Indian Salamander. It is called *Gecco* by the Javanese, on account of its shrill cry. Its length is about a foot, and its colour sea-green, spotted with red: the head large and toad-like; the eyes large and extremely protuberant: the body broad, and the tail long. The Javanese are said to hold up the animal by the tail, in order to make it discharge its foam or sanies from its mouth, which they collect in order to poison their arrows with.

GECKOTTE.

Lacerta Dubia. *L. livida supra oculato-rerucosa, papillis femoralibus nullis.*

Livid Gecko, with pointed warts on its upper surface, and no femoral papillæ.

Le Geckotte. *Cepede ovis. p. 420.*

THIS is described by the Count de Cepede, who informs us that it is so nearly allied to the Gecko, that, without an attentive survey, it might be easily confounded with it: it is distinguished, however, by its somewhat thicker or shorter form, both in body, limbs, and tail, as well as by the defect of subfemoral papillæ: the upper parts are tuberculated, as in the former species, the tubercles appearing most pointed about the neck, sides, and tail, which latter, in the young animal, is divided into strongly-marked aculeated verticilli, owing to the scales with which it is at that time covered; but, as the animal advances in age, the verticilli become gradually less conspicuous, and are at length entirely obliterated, so that the part appears smooth, as well as much shorter than in its younger state.

This species is found in the south of France, where it is called *Tarente*: it inhabits ruins, walls, houses, &c. delighting much in sunshine, and being never found in damp shady situations. In winter it lies concealed in the hollows of walls, beneath tiles, &c. where it remains in an inert, but not a torpid state. It is regarded as innocent,

and has no particular voice or cry. The Count de Cepede appears to suppose it the *L. Mauritanica* of Linnaeus, but Mr. Schneider assures us, that this is a mistake.

PERFOLIATED GECKO.

Lacerta Perfoliata. *L. subfusca supra leviuscula, lamellis pedum sulco divisis, cauda (sæpius) subtrunata.*

Brownish Gecko, nearly smooth above, with the lamellæ of the feet divided by a furrow, and tail (frequently) turbinated. *Stellio perfoliatus.* - *Schneid. Amph. Phys. Spec. Alt. p. 26.*

THIS species also is so extremely nearly allied to the common Gecko, that it might pass for the same animal, except that it is of a somewhat thicker form, with shorter limbs, and is less distinctly marked by tubercles on the back, which is rather covered by small conical scales or granules: it is also destitute of subfemoral papillæ: the lamellæ of the feet are divided by a midrib, or longitudinal furrow, and the claws are sheathed or retractile: the tail is of similar form to that of the common Gecko, but appears to be liable to a singular variation, in which it is remarkably swelled immediately beyond its origin, and gradually tapers again to the extremity, so as to resemble the form of a young turnep root; being shorter than the body itself: this variation, if such it be, has been considered by some authors as a distinctive character, and the animal has been accordingly named *Lacerta rapicauda*, under which

title it stands in the Gmelinian edition of the *Systema Naturæ*. A specimen of similar character is preserved in the British Museum, as well as in the Leverian, and from the general tenor of the descriptions given by authors, it appears to be more frequently seen in this state than in what Mr. Schneider considers as its truly natural one. Mr. S. names it the Perfoliated Gecko, from the appearance of the under surface of the feet, the lamellæ of which, being traversed by a longitudinal midrib, represent in some degree the structure of the leaves in a perfoliate plant. The colour of this species is cinereous, clouded or marbled with brown variegations. Upon the whole, I cannot help suspecting, that this is, in reality, the same animal with the preceding, or Geckotte.

MAURITANIC GECKO.

Lacerta Mauritanica. *L. tota supra mucronato-terrucosa, cauda planiuscula subtus scutis tecta, pedum lamellis divisis lunulatis.*

Brown Gecko, entirely covered above with sharp warts, with the tail nearly flat and furnished with scuta beneath, and with the lamellæ of the feet lunulated and divided.

Stellio Mauritanicus. *Schneid. Phys. Amph. Sp. Alt. p. 24.*

Salamandra Ceilonica. *Seb. 1. p. 170. t. 108. f. 4, 5, 6, 7.?*

Lacerta Mauritanica. *L. cauda subverticillata brevi muricata apice levi, corpore supra muricatâ, digitis subtus lamellatis muricatis.* *Lin. Syst. Nat. p. 361.*

THE Mauritanic Gecko is of similar aspect to the first or common species, but is covered with

spiny or sharp-pointed warts on its upper surface: the tail also is distinctly verticillated by rows of spiny processes: the toes are lamellated beneath, but not divided by a middle sulcus, and are furnished with small claws: beneath the thighs is a short row of papillæ: the tail is flattish beneath, and covered with broad transverse scales, and the principal or most strongly-marked joints or verticilli are the six superior ones. Mr. Schneider, who seems to be never weary of censuring the Count de Cepede, complains that that gentleman has erred in comparing this with a very different species, and that he never could have seen the animal.

CHINESE GECKO.

Lacerta Sinensis. *L. cauda ancipite, digitis omnibus unguiculatis, facie foraminibus pluribus pertusa.* Schneid. *Amph. Phys. Sp. Alt.* p. 28.

Gecko with flat tail, all the toes unguiculated, and the face perforated by several pores.

THIS was first described by Osbeck, who observed it in China, where it is frequently seen in houses, running about the walls, and climbing with extreme readiness on the smoothest surfaces, preying chiefly on the smaller kind of Blattæ. The head is broad and flat; the teeth small; the tongue flat and emarginated at the tip: the body flat, broad, and compressed at the sides: the back beset with black and whitish tubercles: the tail

rather longer than the body, and flat or ancipital*: the toes lamellated beneath, and all furnished with claws: the colour of the upper parts is cinereous; the abdomen white; and the tail variegated by ten or eleven blackish clouds or bars: about the sides of the nose and eyes are several scattered pores. This species is considered as perfectly innocuous. It appears to be omitted in the Gmelinian edition of the *Systema Naturæ*.

 WHITE-STRIPED GECKO.

Lacerta Vittata. *L. fusco-flavescens, fascia dorsali alba super caput furcata.*

Yellowish-brown Gecko, with a white dorsal band forked over the head.

L. vittata. *L. cauda tereti longa, dorsi vitta alba dichotoma.*
Linn. Syst. Nat. Gmel. p. 1067. Houttuyn. Act. Uliss. 9.
p. 325. t. 2.

Stellio bifurcifer. *Schneid Amph. Phys. Spec. Alt. p. 21.*

THE White-striped Gecko is one of the smaller species, measuring about seven or eight inches in length, and is of a somewhat more slender form than the rest: the head is large in proportion to the body; the limbs of moderate length; and the tail, which is slightly verticillated towards the base, is rather slender, and scarcely equal to the body in length: the toes are lamellated beneath, marked by a sulcus or middle division, and ter

* It is not clear, from Osbeck's description, whether the tail be vertically or laterally compressed.

minated by curved claws. This species is readily distinguished from all others yet discovered by its colour, being of a yellowish brown, marked on the back, from head to tail, by a very distinct white band, which on the head divides into a forked appearance, and at the commencement of the tail into two short rounded tips: the slender part of the tail, commencing beyond the three first rings, is of the same pale or white colour, marked longitudinally with several short, brown, scattered streaks. The whole upper surface of the animal is beset with extremely small tubercles, so minute as not to be perceived without a close inspection. It is said to be a native of India.

FIMBRIATED GECKO.

Lacerta Fimbriata. *L. corpore utrinque margine membranaceo fimbriato, cauda plana, pedum lamellis subdivisis.*

Gecko with membranaceous fimbriated border on each side of the body, flat tail, and lamellæ of the feet divided by a furrow.

Stellio fimbriatus. *Schævid. Amph. Phys. Sp. Alt. p. 32.*

La Tete-Plate. *Cepede Orip. p. 425. pl. 30.*

THIS remarkable species seems to have been first described by the Count de Cèpede, who informs us that it appears in some degree to connect the Chameleon, the Gecko, and the Water Newts; the head, skin, and general form of the body resembling those of the Chameleon, the tail that of the Water Newts, being of a compressed form, though in a different manner (not vertically but

horizontally flattened), while the feet resemble those of the Gecko. The largest specimen examined by the Count de Cepede measured about eight inches and six lines in length, of which the tail measured two inches and four lines. The head is very large, and much flattened: the eyes large; the opening of the mouth wide; the teeth very small and numerous, and the tongue broad, divided, and resembling that of the Gecko: the lower jaw is so thin or flat, that one would at first imagine the lower part of the head to be wanting: the outline of the whole head, viewed from above, is almost triangular, as in the Chameleon; but the triangle is of a much longer form, and without any rising casque or crest as in that animal: the body is about twice the length of the head, and is bordered by a membrane or prolongation of the skin, which, commencing on each side the head, is continued along those of the body, forming a kind of fringed or fimbriated process, which also passes down each leg, separating the upper surface from the lower: the tail, which, as before observed, is much shorter than the body, is so formed as to resemble, in some degree, the shape of an oar; being expanded into a wide membranaceous part on each side, the true tail, or middle part, being taper and small: the legs are rather short: the feet divided into five toes, connected at their origin by the skin of the legs, but much divided and expanded at their tips, and are all furnished beneath with a number of transverse lamellæ, as in the rest of the Gecko tribe: the skin on all parts resembles

that of the Chameleon, being covered with small protuberances, so as to give it a somewhat chagrin-like appearance. The colour of this animal is not constant or permanent, as in most lizards, but variable, as in the Chameleon, presenting successively different shades of red, yellow, green, and blue. This variation of colour is, however, confined to the upper surface of the animal; the lower always continuing of a bright yellow. These changes, we are informed, have been observed in the living animal by Mons. Bruyeres in its native country, viz. Madagascar, where it is not very uncommon, and where, though a harmless animal, it is held in great abhorrence by the natives, who consider it as of a poisonous nature, and fly from it with precipitation; pretending that it darts on their breast, and adheres with such force by its fringed membrane that it cannot be separated from the skin without the assistance of a razor. The principal cause of this popular dread of the animal, is its habit of running open-mouthed towards the spectator, instead of attempting to escape when discovered. Its chief residence is on the branches of trees, where it lives on insects, holding itself secure by coiling its tail, short as it is, half round the twig on which it sits. It chiefly appears in rainy weather, when it moves with considerable agility, often springing from bough to bough. On the ground it walks but slowly, the fore legs being shorter than the hinder.

FOUR-TOED GECKO.

Lacerta tetradactyla. L. lutea viridi variegata, pedibus tetradactylis, cauda plana.

Yellow Gecko, varied with green, with tetradactyle feet, and flat tail.

Stellio tetradactylus. Schneid. Amph. Phys. Sp. Alt. p. 33.

Le Sarroube. *Cepede ovip. p. 493.*

THIS was first described by the Count de Cepede, from an account communicated by Mons. Bruyeres. It is very nearly allied to the Fimbriated Gecko, but differs in wanting the fimbriated margin, and in the number of toes on the fore feet, which are only four. Its length is about twelve inches : the head flat and oblong : the eyes large, with the pupils vertical : the neck long, and covered above with a double row of yellow scales ; the back with a granulated yellow skin, marked with green spots or variegations : the abdomen is covered with yellow scales : in the form of the feet and tail it agrees with the preceding, except, as before observed, in having only four toes on the fore feet, for which reason the Count de Cepede has stationed it among the Salamanders. It is a native of Madagascar, where it is held in equal detestation with the former species. Its native name is *Sarrube*. It inhabits woods, and appears chiefly during the rainy season, and by night.

SCOLLUP-TAILED GECKO.

Lacerta Caudiverbera. L. cauda depresso-plana pinnatifida, pedibus palmatis. Lin. Syst. Nat. p. 359.

Gecko with flat pinnatifid tail and palmated feet.

Salamandra aquatica ex Arabia. Seb. 2. p. 109. t. 103. f. 25

THIS curious species is described by Seba, who represents it as a native of Arabia. Its total length is about sixteen inches, of which the tail measures something more than half. The head is large and flattish, the mouth wide, the tongue broad, the teeth small and numerous, the neck short, the throat protuberant, the body thick, and the limbs rather short than long: the fore feet are apparently formed like those of the rest of the Gecko tribe: the hind feet are of a similar form, but strongly palmated: the tail tapers gradually to the tip, but is edged throughout its whole length with a broad and deeply-scolloped fin or membrane, which gradually widens as it approaches the tip, where it is considerably broader than on the sides. The whole animal is covered, except on the head, with a smooth* skin of a yellow colour; the back being marked by numerous, distant, red tubercles or granules, each surrounded by a circle of small white scales: the thighs and middle part of the tail are also spotted with similar red tubercles, but not surrounded by white scales like those on the

* By this Seba may perhaps mean a finely-scaled skin rather than a naked one.



Pseudorhynchus (F&W.)

Scoliopterus (F&W.)

Foot of *Pseudorhynchus*

back : the webs of the hind feet and the scolloped or finny part of the tail are of a bright red : all the toes are furnished with claws. It is an extremely rare animal, and its full history does not appear to be clearly understood.

VAR. ?

Caudiverbera Peruviana. *Laur. Amph. p. 34. Feuillee Per. 2. p. 319.*

FEUILLEE, in his account of Peru, describes a species in many respects allied to the above, but of a blueish black colour.

Mr. Schneider, who ranks the *L. Caudiverbera* among the rest of the Geckos, observes, that there is some confusion in the Count de Cépède's work relative to this species and the American Crocodile of Seba. "Gallus De la Cépède omnem animalis notitiam, appositis licet locis civis sui Feuillee et Laurenti, plane pervertit. Scilicet is nescio quo glaucomate oculis subito oborto in Systemate Linnæi Sebani Thesauri tomum 1. ejusque tabulam 103. fig. 2. laudatum legere sibi visus est cum Linnæus laudasset eandem tabulam ex tomo altero. Picturam igitur Sebanam, quam tamen ipse suo errore retulerat ad lacertam caudiverberam, improbavit, et recte quidem, eique alteram ejusdem tomi in tab. 106. fig. 1. substituit, quæ Crocodilum Americanum plane expressit, atque ad ejus notitiam recte fuit relata a Laurentio. Cui errori sane gravissimo similes plures reperi in libro

Galli, quos tempore opportuniore alibi coarguam."

—*Schneid. Amph.*

SCHNEIDERIAN GECKO.

Lacerta Schneideriana. *L. cinerea, cauda supra convexa infra plana, fascia utrinque capitis nigra, pedum lamellis lunulatis divis.*

Grey Gecko, with tail convex above and flat below, a black band on each side the head, and the lamellæ of the feet lunulated and divided.

Stellio platyurus. *Schneid. Amph. Sp. Alt. p. 30.*

SLIGHTLY described by Mr. Schneider, who considers it as a species before unnoticed: size not mentioned: colour cinereous, with a brown band on each side the head, running across the eyes over the shoulders: along each side of the body a kind of suture or wrinkling of the skin: tail broad, convex above, flat below, and edged with a row of longer and sharper scales than on the other parts.

SPARMANN'S GECKO.

Lacerta Sparmanniana. *L. corpore supra papilloso, cauda lanceolata mediocri, palmis tetradactylis.*

Gecko with the body papillated above, lanceolate tail of moderate length, and tetradactyle fore feet.

Lacerta Geitje. *Lin. Syst. Nat. Gmel. p. 1068.*

Sparmann Act. Goeteb. 1. p. 75. t. 5. f. 1.

THIS small species, which does not exceed three inches in total length, is found at the Cape of Good Hope, where it is considered as a poisonous animal, the saliva, secreted moisture from its pores, &c. being said to produce tumours and even gangrenes, which are sometimes cured by the application of citron juice, but if too much neglected, are productive of very dangerous symptoms. It seems to have been first described by Sparmann. Its colour on the upper parts is a variegation of darker and lighter shades, and on the under parts whitish.

SPITTING GECKO.

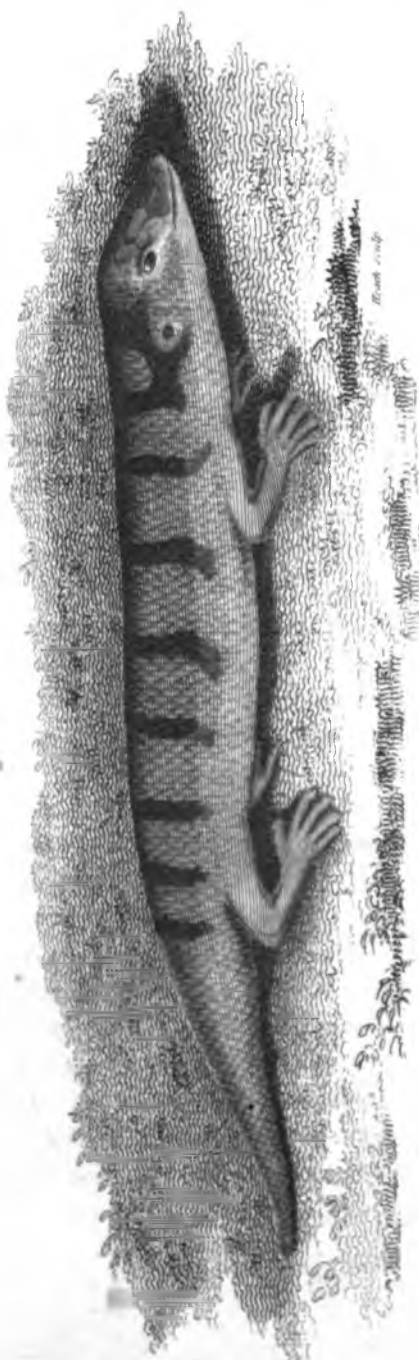
Lacerta Sputator. *L. cinerea, supra fasciis transversis fuscis, cauda tereti subtus scutata.*

Grey Gecko, marked above with brown transverse bands, with round tail scutated beneath.

Lacerta Sputator. *Sparm. Nov. Act. Stockh. 5. n. 9. 1. 4. f. 1—3.*

THIS also is a small species, scarce exceeding four inches in total length, and being often found

much smaller: the tail is but little longer than the body: the colour of the upper parts pale cinereous, with several bands or transverse patches of brown, which gradually vanish towards the tip of the tail: the limbs are banded in the same manner: the under parts are pale cinereous or whitish: the tongue oblong, flattish, rounded, and slightly divided at the tip: the feet are divided into five toes, without claws, and terminated by a kind of dilated tips: the scales on the whole animal are smooth or glossy; the tail round and taper, and furnished beneath with a row of small scuta. This species is a native of the island of Eustatia, and occasionally strays into houses, and about wood-work, walls, &c. When disturbed by a near approach, it is said to ejaculate from its mouth a black acrimonious fluid into the face of the spectator; thus causing a slight inflammation of the skin, which is commonly dispersed by rubbing the part with camphorated spirit of wine. The exact structure of the lower surface of the feet in this species is not distinctly described, but there is reason to suppose that it belongs to the Gecko tribe.



OFFICIAL SCINE

From the collection of the British Museum, London.

7 *Scinks, with round fish-like scales.*

OFFICIAL SCINK.

Lacerta Scincus. L. fusco-flavescens, supra fasciis transversis fuscis, cauda brevi apice compressa, maxilla superiore longiore.

Yellowish-brown Lizard, with transverse brown bands on the upper part, short tail with compressed tip, and upper jaw longer than the lower.

Lacerta Scincus. L. cauda tereti mediocri apice compressa, digitis muticis marginalis. Lin. Syst. Nat. p. 365.

Scincus. Raj. Quadr. 271.

Scincus major. Best. Fascic. Rarior. t. 2, f. 1.

The Common or Official Scink.

THE Scink is one of the middle-sized or smaller lizards, and is a native of many of the eastern parts of the world. It abounds in Lybia, Syria, Egypt, and Arabia, frequenting moderately dry and sandy soils, and growing to the length of six or seven inches, or even sometimes more. The head of the Scink is rather small than large, the body thick and round, and the tail in general considerably shorter than the body. The whole animal is of a pale yellowish brown colour, with a few broad, dusky, transverse undulations or zones, and is uniformly covered with moderately large or fish-like scales, lying extremely close and smooth, so that the surface has a glossy or oily appearance. It is an animal of harmless manners, and, like most other lizards, supports itself on the various insects which wander about the regions it inhabits.

This animal was once in high estimation as an article in the *Materia Medica*, and the flesh, particularly of the belly, was supposed to be diuretic, alexipharmic, restorative, and useful in leprous and many other cases; but whatever virtues it may possess when used fresh, it is not considered as of any importance when in its dried or imported state, and while it continued to be used in practice served only to increase the number of ingredients in that curious remnant of what Dr. Lewis happily terms the wild exuberance of medical superstition in former ages, the celebrated *Confectio Democraticis*, or Mithridate.

The Scink is described and figured by Mr. Bruce under the name of *El Adda*, and is said to be extremely common in the province of *Athara*, in Abyssinia.

“ It burrows,” says this author, “ in the sand, and performs this operation so quickly, that it is out of sight in an instant, and appears rather to have found a hole than to have made one, yet it comes out often in the heat of the day, and basks itself in the sun; and if not very much frightened, will take refuge behind stones, or in the withered, ragged roots of the absinthium, dried in the sun to nearly its own colour. Its length is rather more than six inches: though its legs are long, it does not make use of them to stand upright, but creeps with its belly almost close to the ground. It runs, however, with very great celerity. It is very long from its shoulder to its nose, being nearly two inches: its body is round, having scarce any

flatness in its belly : its tail too is perfectly round, having no flatness in its lower part : it is exceedingly sharp-pointed, and very easily broke, yet I have seen several where the part broke off has been renewed, so as scarcely to be discernible : it is the same length between the point of the tail and the joint of the hinder leg, as was between the nose and the shoulder of the fore leg : its forehead, from the occiput, is flat, its shape conical, not pointed but rounded at the end, in the shape of some shovels or spades : the head is darker than the body ; the occiput darker still : its face is covered with fine black lines, which cross one another at right angles like a net : its eyes are small, defended with a number of strong black hairs or eye-lashes : its upper jaw is longer, and projects considerably over the under : both its jaws have a number of short, fine, but very feeble teeth, and, when holding it in my hand, though it struggled violently to get loose, it never attempted to make use of its teeth ; indeed it seems to turn its neck with great difficulty : its ears are large, open, and nearly round : its body is a light yellow, bordering on straw colour, crossed with eight bands of black, almost equally distant, except the two next the tail : all these decrease both in breadth and length from the middle towards each extremity of the animal : the scales are largest along the back ; they are very close, though the divisions are sufficiently apparent : their surface is very polished, and seems as if varnished over : its legs, from the shoulder to the middle toe, are nearly an

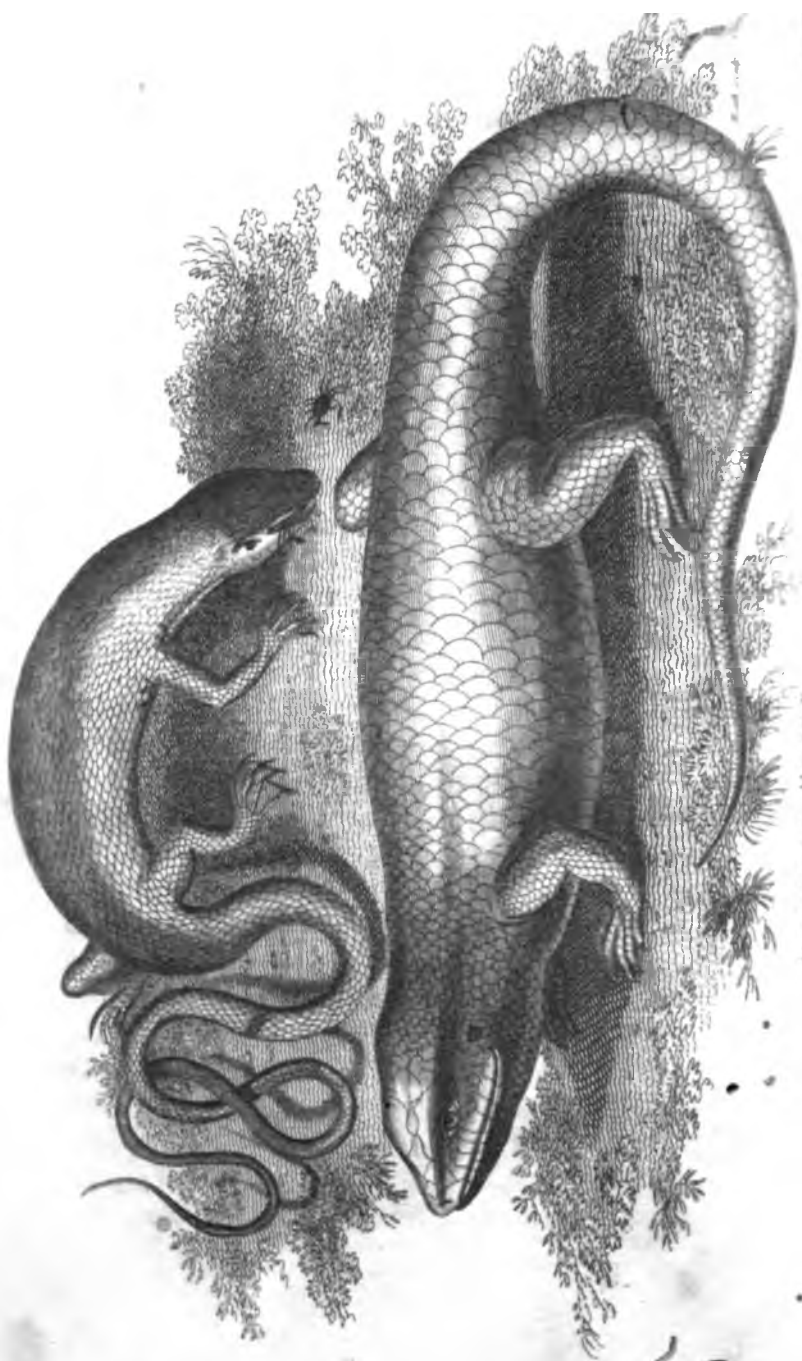
inch and three quarters long; its feet are composed of five toes, the extremity of each ~~i~~ armed with a brown claw of no great strength, whose end is tipped with black."

Mr. Bruce adds, that the El Adda is one of the few lizards which the Arabs in all times have believed to be free from poisonous qualities, and yet to have all the medical virtues they have so abundantly lavished upon the more noxious species: their character, however, as a medicine, seems to be greatly on the decline in their native regions, and though the books prescribing them are in every body's hands, yet the medicine is not now made use of in the places where the books were written, which affords a pretty strong proof that it was never very efficacious.

Mr. Bruce observes, that lizards in general are peculiarly numerous in the eastern regions. The desert parts of Syria, bordering on Arabia Deserta, abound with them beyond a possibility of counting them.

"I am positive," says Mr. Bruce, "that I can say, without exaggeration, that the number I saw one day, in the great court of the temple of the Sun at Balbec, amounted to many thousands: the ground, the walls, and stones of the ruined buildings, were covered with them, and the various colours of which they consisted made a very extraordinary appearance, glittering under the sun, in which they lay sleeping and basking."

LONG TAILED SKINK



GREATER NODDY

GREATER SCINK.

Lacerta Rufescens. *L. rufo flavescens, pedibus brevibus, cauda mediocri.*

Yellowish-rufous Lizard, with short feet, and tail of moderate length.

Lacertus Cyprius scincoides. *Aldr. ovip. p. 660.*

L. aurata? *L. cauda tereti longiuscula, squamis rotundatis glabris, lateribus subfuscis.* *Lin. Syst. Nat. p. 568.*

Lacerta maritima maxima, seu Crocodilus ex Arabiæ. *Seb. 2. p. 112. t. 105. f. 3.*

THIS species much resembles the common or officinal Scink, but is considerably larger, measuring fifteen inches or more in length, from the nose to the end of the tail, which latter is longer in proportion than that of the Scink. The colour of the whole animal is a pale rufous brown, with a still paler stripe down the back, and along each side: the head is covered in front with large angular scales; the body, limbs, and tail, with rounded ones, which are more distinctly expressed, or not quite so glossy and closely pressed to the skin as in the true Scink: the legs are short and thick, the feet pentadactyle and furnished with small claws. It is, according to Seba, a native of Arabia and Egypt, living both in land and water, and often frequenting the shores of the Nile, &c. It seems also to be found in some of the European islands, and in particular in that of Cyprus, since the *Lacertus Cyprius Scincoides* of Aldrovandus appears to be the same animal: this latter is represented as of a deeper colour on the sides than on

the back, with a pale lateral line, and is commonly quoted as the *Lacerta aurata* of Linnaeus, which that author describes as being of a beautiful gilded hue, while living, which is lost in the dead specimen. It is probably most remarkable in the young or half-grown animals, specimens sometimes occurring, of a small size, in which the gilded tinge of the scales, and brown lateral stripe, are very conspicuous.

LONG-TAILED SCINK.

Lacerta longicauda. *L. olivacea-flavescens*, *cauda longissima*.

Olivaceous-yellow Lizard, with extremely long tail.

Scincus marinus Americanus longa cauda. *Seb. 2. p. 11. t. 10. f. 4.*

THIS is considered by Dr. Gmelin as a variety of the common Scink ; yet it differs so much from that animal, by its great length of tail, that it is in all probability a very distinct species. It is, according to Seba, a native of America, and is said to frequent the sea coasts, and to feed on small crabs and spiders. Its colour is a greenish yellow, deeper or lighter in different individuals.

MABOUYA SCINK.

Lacerta Mabouya. L. subaurato-flavescens, lateribus subfuscis, pedibus brevibus, maxillis æqualibus, cauda mediocri.

Gilded-yellowish Lizard, with brownish sides, short legs, jaws of equal and tail of middling length.

Le Mabouya. *Cepede ovip. p. 378. pl. 34.*

THE Mabouya, according to the Count de Cepede, who has described and figured it in his History of Oviparous Quadrupeds, is extremely allied to the Scink, from which, indeed, on a cursory view, it scarce differs, except in having somewhat shorter legs in proportion, and jaws of equal length; whereas in the Scink the upper jaw is longer than the lower. The length of the individual described by the Count de Cepede was eight inches: the ground colour is a kind of gilded yellow*, but the scales on the back are sometimes much darker with a white speck or line on each: along the sides of the body runs a dusky or deep brown band, beneath which the colour is much paler, forming almost a white band: the colour of this animal, however, like that of the preceding species, appears to vary in different specimens. It is a native of America, as well as of Jamaica and other West-Indian islands. It is also found, according to Cepede,

* This species seems much allied to the *L. aurata* of Linnæus, the synonyms to which in the *Systema Naturæ* seem to be applied with no very great precision.

in some parts of the old continent, and in particular in the island of Sardinia, where it is known by the name of *Tiligugu*.

GALLIWASP.

Lacerta Occidua. L. subfusca, fasciis subundulatis transversis fuscis, pedibus brevibus, cauda mediocri.

Brownish Lizard, with subundulated transverse bands, short legs, and tail of middling length.

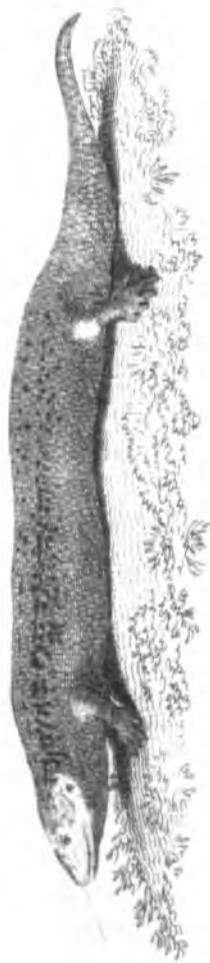
Galliwasp. *Sloan. Jam. 2. pl. 273. f. 9.*

Brown, Jam. p. 463.

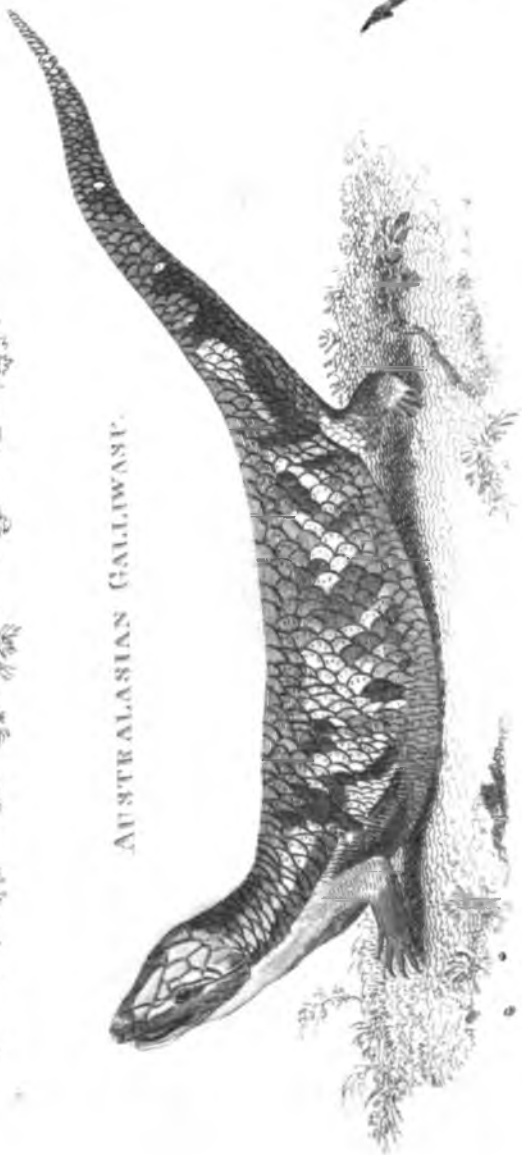
THE Galliwasp differs from the *L. rufescens*, or Greater Scink, in being of a still larger size, and of a thicker form, as well as in having a somewhat shorter tail in proportion; but so great is the general similarity, that it might almost be considered as a variety rather than as truly distinct.

The general length of the Galliwasp is nearly two feet, from the nose to the tip of the tail, which, like the body, is thick and strong, tapering pretty suddenly towards the tip: the limbs are short, and the whole appearance of the animal remarkably stout and plump: the teeth are small in front, but as they approach the back part of the jaws they gradually increase in size, and much resemble the molares in the Mammalia. The Galliwasp is a native of the American islands, and seems to be particularly common in Jamaica, where it is said to frequent woody and marshy

MAROUYA SCINK



AUSTRALASIAN GALLIWASP



districts. It is commonly of a palish brown colour, clouded with somewhat irregular bands of a deeper cast; but it is said occasionally to change its colour into a lively golden yellow. A similar change of colour seems also to take place in the Greater African Scink before described, since it is by some authors named *aurata*, though the real *L. aurata* of Linnæus, from the very brief specific character in the *Systema Naturæ*, seems not very easily determinable. The Galliwasp, according to Browne, in his *Natural History of Jamaica*, is reckoned the most venomous reptile in that island, and it is said that no creature can recover from its bite; but this he very properly considers as merely a popular error. It grows, according to that author, to two feet or more in length.

VAR. ?

Australasian Galliwasp.

Lucerta Scincoides. Scincoid Lizard. *Nat. Misc. pl. 170.*

Scincoid, or Scink-formed Lizard. *White's Journal of a Voyage to New South Wales, p. 242. pl. 30.*

THIS I consider as a variety of the preceding, with which it agrees in size and general appearance, but has larger scales, a longer tail in proportion, and is of a somewhat darker colour; the sides and tail being variegated with deep brown and somewhat irregular transverse bands, and on each side the neck is commonly a longitudinal brown spot or patch. It is a native of New Holland, and is very accurately figured

in Mr. White's Journal above referred to: The tongue in this, as well as in the other Scinks, is short, flat, rounded, and entire; not forked as in most Lizards.

SPOTTED SCINK.

Lacerta Guttata. *L. cauda tereti longa maculis quatuor transversis & apice nigris, corpore supra cano albido guttato, subtus albido.* *Lin. Syst. Nat. Gmel. p. 1078. Lepechin. it. 1. p. 317. t. 22. f. 2, 3.*

Grey Lizard, spotted with white, with long tail marked by four transverse black bands and with black tip.

A VERY small species, not much exceeding three inches in length: sufficiently described in the specific character: native of the *Ural* desert, where it was observed by *Lepechin*.

OCELLATED SCINK.

Lacerta Ocellata. *L. cauda tereti brevi corpore subtus albo, supra ex griseo virescente, ocellis subrotundis radio fuscis, disco rectangulo albis.* *Lin. Syst. Nat. Gmel. p. 1077. Forsk. F. Arab. p. 13.*

Greenish-grey Lizard, white beneath, marked above with roundish ocellated brown spots with white rectangular disks.

LENGTH about a span: body depressed: feet short, pentadactyle: no femoral warts: the other particulars sufficiently described by the specific

SALAMANDER.



GREAT WATER NEWT.



Hellbender

character: native of Egypt, about the neighbourhood of houses, &c. observed by Forskal.

Salamanders, Newts, or Efts.

SALAMANDER.

Lacerta Salamandra. *L. nigra luteo maculata, cauda tereti mediocri.*

Black Lizard, spotted with gold-colour, with tail of middling length.

Lacerta Salamandra. *L. cauda tereti brevi, pedibus muticis, palmis tetradactylis, corpore poroso nudo.* Lin. Syst. Nat. p. 371.

Salamandra terrestris. Aldr. Quad. 641. Raj. Quadr. 273. Geen. Quadr. 80.

THE Salamander, so long the subject of popular error, and of which so many idle tales have been recited by the more ancient naturalists, is an inhabitant of many parts of Germany, Italy, France, &c. but does not appear to have been discovered in England. It delights in moist and shady places, woods, &c. and is chiefly seen during a rainy season. In the winter it lies concealed in the hollows about the roots of old trees; in subterraneous recesses, or in the cavities of old walls, &c. The Salamander is easily distinguished by its colours; being of a deep shining black, variegated with large, oblong, and rather irregular patches of bright orange-yellow, which, on each side the back, are commonly so disposed as to form a pair of interrupted longi-

tudinal stripes: the sides are marked by many large, transverse wrinkles, the intermediate spaces rising into strongly marked convexities; and the sides of the tail often exhibit a similar appearance. On each side the back of the head are situated a pair of large tubercles, which are in reality the parotid glands, and are thus protuberant not only in some others of the Lizard tribe, but in a remarkable manner in the genus *Rana*: these parts, as well as the back and sides of the body, are beset in the Salamander with several large open pores or foramina, through which exsudes a peculiar fluid, serving to lubricate the skin, and which, on any irritation, is secreted in a more sudden and copious manner under the form of a whitish gluten, of a slightly acrimonious nature; and from the readiness with which the animal, when disturbed, appears to evacuate it, and that even occasionally to some distance, has arisen the long-continued popular error of the Salamander's being enabled to live uninjured in the fire, which it has been supposed capable of extinguishing by its natural coldness, and moisture: the real fact is, that, like any of the cold and glutinous animals, as snails, &c. it, of course, is not quite so instantaneously destroyed by the force of fire as an animal of a drier nature would be. The general length of the Salamander is about seven or eight inches, though it sometimes arrives at a much larger size: in the number and form of its spots it varies considerably, and is occasionally seen entirely

black: the tail is somewhat shorter* than the body, and of a round or cylindric form, gradually tapering to the extremity, which is rather obtuse than sharp. Like other Lizards of this tribe, the Salamander lives principally on insects, small snails, &c. its tongue, however, is not so formed as to catch these in a sudden manner, being short, broad, and in some degree confined, so as not to be darted out with celerity. It is capable of living in water as well as on land, and is sometimes found in stagnant pools, &c. Its general pace is slow, and its manners torpid.

A strange error appears to have prevailed relative to the supposed poisonous nature of this animal, and the malignity of its venom has even been considered as scarcely admitting a remedy. On this subject the writings of Gesner and Aldrovandus afford ample information; but it is useless, as well as unpleasing, in these days of general illumination, to detail the absurd and erroneous doctrines of past ages. It may be sufficient to observe, that the Salamander is perfectly innoxious, and incapable of inflicting either wound or poison on any of the larger animals, though it appears, from the experiments of Laurenti, that the common small grey lizard (*L. agil. var.*) is poisoned by biting a Salamander, and thus swallowing the secreted fluid of the skin; becoming

* It is remarkable, that in the beautiful representation of this animal in the frontispiece to Roessel's *Historia Ranarum*, the tail is longer than the body; but this must be considered as a rare occurrence.

almost immediately convulsed, and dying in a very short time afterwards.

The Salamander is a viviparous species; producing its young perfectly formed, having been first hatched from internal eggs, as in the Viper, and some other Amphibia. It is said to retire to the water in order to deposit its young, which, at their first exclusion, are furnished with ramified* branchial fins or processes on each side the neck, and which being merely temporary organs, are afterwards obliterated, as in the young of frogs and water-newts. The number of young produced at one birth by the Salamander is said sometimes to amount to thirty or forty.

* On this subject some confusion and disagreement will be found to take place in the works of different naturalists; Mr. Latreille seems to doubt very much whether the Salamander really produces her young in the water, as well as whether they are at first furnished with ramified branchial fins.

COMMON NEWT.

Lacerta Vulgaris. *L. fusco-flavescens, linea dorsali duplici fusca, abdomine croceo fusco-maculato.*

Yellowish-brown Newt, with a double brown dorsal line, and orange-coloured abdomen, spotted with brown.

Lacerta vulgaris. *L. cauda tereti mediocri, pedibus unguiculatis, palmis tetradactylis, dorso linea duplici fusca.* *Lin. Syst. Nat.* p. 370. *Faun. Suec.* 283.

Brown Lizard. *Pennant Brit. Zool.* 3. p. 23. pl. 2.

Common Newt. *Nat. Misc.* vol. 9. pl. 118.

THIS, which is the smallest of the British Lizards, is altogether a terrestrial species. It is commonly seen in gardens, and not unfrequently in the neighbourhood of dunghills, &c. It also occasionally makes its way into cellars in the manner of the slug, the toad, &c. Linnæus, in the twelfth edition of the *Systema Naturæ*, seems to suppose it an inhabitant of the water during its young or larva state. I can, however, safely affirm, that I have more than once met with specimens in perfectly dry situations, and at a distance from any waters, so extremely minute as scarce to equal half an inch in length, and which yet appeared to differ in no respect, except in magnitude, from the full grown animal. I am, therefore, inclined to suppose it a viviparous species. Its general length is about three inches and a half, and its colour yellowish brown above, with a double, narrow, dorsal line or streak of a deeper tinge; the under parts bright orange, spotted with brown.

GREAT WATER-NEWT.

Lacerta Palustris. *L. nigricans, lateribus albido-punctatis, abdomine croceo maculis maculibus nigris.*

Blackish Newt, with the sides speckled with white; the abdomen orange, with irregular black spots.

Lacerta palustris. *L. cauda lanceolata mediocri, pedibus muticis, palmis tetradactylis.* *Lin. Syst. Nat. p. 370.*

The warted Newt. *Nat. Misc. 8. pl. 279.*

THE larger or warted Water-Newt is considerably allied to the Salamander in its general appearance, though of inferior size, and marked by a different distribution of colours. It also differs from that species in the highly conspicuous dorsal crest, or elevated and irregularly sinuated process with which the male is furnished. This species, when full grown, measures from about five and a half to six inches in length, and sometimes rather more. Its colour on the upper parts is an extremely dark or blackish brown, the sides being marked with numerous, small, scattered, whitish specks or granulations: the under parts are of a bright orange-colour, variegated with numerous, large, irregular spots or patches of deep black: the tail is of a flattened form, with thin or sharp edges, and with an acute termination: on each side the tail, in the male, is a silvery-white, broad band or stripe, accompanied by a blueish tinge: this lateral tail-stripe, as well as the dorsal crest or process, is generally far less conspicuous, and

even sometimes entirely wanting, in the female: the eyes are of a bright gold-colour; the head rather small than large; the limbs short; the fore feet divided into four, and the hind into five toes, all of which are destitute of claws. This animal is by no means an infrequent inhabitant of the clearer and colder kinds of stagnant waters, and is also occasionally met with in damp and shady situations, under trees, hedges, &c. &c. It is, in this country at least, a much rarer species than the small or common water-newt, with which it appears to have been confounded by some authors, and among others by the Count de Ceppe, in his History of Oviparous Quadrupeds. The male is most accurately represented in the present publication, on the same plate with the Salamander, with which, as before observed, it seems to have a considerable degree of affinity. It lives principally on insects. Though an innoxious species, and perfectly incapable of injuring any of the larger animals, yet it appears, from the experiments of Laurenti, that the natural exsudation or secreted moisture of its skin is fatal, like that of the Salamander, to the small varieties of the *Lacerta agilis*, several of which, on biting this animal, soon became paralytic on the fore legs, were seized with a general weakness, and died without any convulsive motions.

COMMON WATER-NEWT.

Lacerta Aquatica. L. olivaceo-fusca nigro maculata, vultus crocea, cauda ancipiti lateribus sinuata.

Olive-brown Water-Newt, spotted with black, with orange-coloured abdomen, and sharp-edged sinuated tail.

Lacerta Aquatica. L. cauda teretiuscula mediocri, pedibus muticis, palmis tetradactylis. Linn. Syst. Nat. p. 370.

The Smaller or Common Water-Newt. *Nat. Misc. 11. pl. 412.*

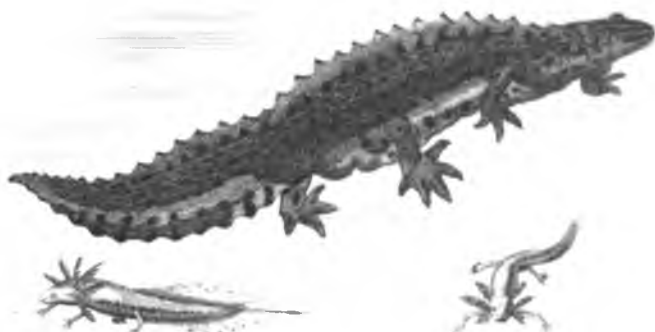
THIS, which in England occurs in almost every soft stagnant water, is a much smaller species than the preceding; and though the different specimens occasionally vary very considerably as to the cast of colour, yet the animal may at all times be very readily distinguished from the former. Its general length is about three inches and a half, and it very rarely exceeds that of four inches at most. The male is distinguishable at first sight from the female by its very conspicuous dorsal crest or process, which is broader in proportion, more strongly elevated, and more regularly sinuated than that of the preceding species: the sinuations are continued to the very tip of the tail on the upper part, and take place likewise in a similar proportion on the under part as far as the junction of the tail with the abdomen; whereas in the former species the upper part alone of the tail can properly be said to be crested: this wide process, or sinuated part, is remarkably transparent, and when viewed with a lens of even moderately magnifying power, exhibits very distinctly the ramifications of the blood-vessels dispersed through it:

COMMON NEWT.

63



LAC: PUNCTATA, Latreille.



LARVÆ of common Water Newt.



LAC: PUNCTATA FEM. Latreille.



COMMON WATER NEWT.

but if examined by the microscope, is, perhaps, of all other objects that can be selected for that purpose, the most eligible for exhibiting a general view of the circulation ; shewing, in the most distinct and beautiful manner, the rapid current of the blood, the particles of which, in this animal, as well as in the rest of the Amphibia, are of an oval form ; not round, as in the Mammalia. In the greater Water-Newt, on the contrary, this part, being nearly opaque, can by no means advantageously exhibit the same phenomenon. The female is almost destitute of the dorsal crest, but the tail is furnished with an approach to it, though far less conspicuous than in the male. The general colour of the male is olive-brown, beautifully and distinctly marked with numerous, round, black spots, dispersed over every part of the animal, but largest and most conspicuous on the sides and tail : the abdomen is orange-coloured, the black spots often appearing rather less intense on that part than on the back. The female differs very considerably in colour, being generally of a pale yellowish brown, much less distinctly spotted, and from the want of the dorsal crest, might be almost mistaken for a different species by a person inconsiderant in the history of the animal. On the top of the head, in both sexes, are three or four longitudinal dusky streaks : the eyes are small and gold-coloured : the fore feet tetradactylous ; the hind pentadactylous ; all destitute of claws, and in some specimens more or less approaching to a kind of palmated appearance towards the base, as

in the sixth figure of the sixth plate of Mons. Latreille's work on the Salamanders of France; which figure appears to me to represent no other than a very fine specimen of the male of the present species, though considered as different by Mons. Latreille, and distinguished by the title of *punctata*. It is certain that the water-newt varies considerably in the cast of its colour at different times of the year, and in different states of the weather, even in the course of the same day; and if taken out of soft water, and suddenly plunged into that of a colder temperature, will almost immediately become of a considerably darker tinge than before. The breadth of the tail, and that of the toes, seems also to be occasionally liable, in this animal, to considerable variation: I cannot, therefore, prevail upon myself to consider all the water-newts described by Mons. Latreille in the above publication as specifically distinct; and it is remarkable that that which Mons. L. expressly describes and figures under the title of *palmata*, is in reality far less palmated than his *punctata*, before mentioned, as will be evident on inspecting the 6th plate of that author's own work. *

The Water Newt breeds in the early part of the spring, depositing small oblong * strings or clus-

* According to Spallanzani, the ova are of a kidney-shaped form, and seem, in reality, to be so many ready-formed larvæ, since, long before they leave the gluten in which they are imbedded, their motions are very brisk and frequent: they liberate themselves from the surrounding gluten in about ten days; the branchial fins are visible on their first exclusion, and the rudi-

ters of spawn, from which are soon hatched the larvæ or young, which, for a considerable period, are furnished with a triple pair of ramified branchial fins or processes on each side the neck; thus giving the animal, in some degree, the appearance of a small fish. These parts, after having served their temporary purpose, of assisting the respiration of the animal, during its growing state, are gradually obliterated.

Water-Newts frequently cast their skins, which may be occasionally observed floating in the waters they inhabit, and are sometimes so perfect as to exhibit the whole form of the complete animal.

The Water-Newts are remarkable for a high degree of reproductive power, and have been known to exhibit the restoration of their legs, tails, and even, according to Dr. Blumenbach, of the eyes themselves, after having been deprived of them by cutting. That the eyes of the com-

ments of the fore legs soon begin to appear, and in something more than a fortnight those of the hind legs become visible; the branchial fins become obliterated about the beginning of September, at which time the animal appears in its perfect form. It may be added, that as these animals may be said in some degree to verify the celebrated and seemingly paradoxical case recorded by Averroes, and so wittily commented upon by Sir Thomas Brown *, it should seem that hybrid productions may be more frequent between these than other amphibia; and this may account for the numerous varieties occasionally observed and described by authors.

* *Pseud. d. Epidemic*, book vii. chap. 16.

mon green Lizard (*Lac. agilis*) have been restored to their former fullness and strength after being punctured with a needle so as to let out the aqueous humour, is an observation recorded by Pliny*, and referred to by Mr. Schneider in the first fasciculus of his work entitled *Historia Amphibiorum*.

It has been already observed, in the general description of the Amphibia, at the beginning of this volume, that they are tenacious of life, and that water-newts have been found completely imbedded in masses of ice, in which they must have remained some weeks, or even, perhaps, months, and yet on the dissolution of the ice, have been restored to their former vigour. It is remarkable that they are very readily killed by being plunged into salt water, or rubbed on the back for a short time with common salt.

I must not omit to add, that the *L. palustris* and *aquatica*† have by some writers been consi-

* Speaking of various remedies for blindness, Pliny says, “*Lacertæ quoque pluribus modis ad oculorum remedia assumunt. — Alii terram substernunt Lacertæ viridi excoecatæ, et una in vitreo vase annulos includunt e ferro solido vel auro: cum receperisse visum lacertam apparuerit per vitrum, emissa ea, annuli contra lippitudinem utuntur.*” — *Plin. Hist. Nat. lib. 29. sect. 28.*

† Linnaeus seems not to have understood clearly the nature of this animal; since, after its specific character, in the 12th edit. of the *Systema Naturæ*, he proposes a question; whether it may not be the Larva of the *Lacerta vulgaris*? and in a former edition of the same work he appears to think it the Larva of the *L. agilis*; upon which query Laurenti makes the following observation: “*Linnaeus interrogat: an forte larva lacertæ agilis? Incepta*

dered as constituting merely one of the same species; but this can surely be accounted for on no other supposition than the want of an opportunity of contemplating the animals in their living state. Among those who have thus conjoined, or rather confounded them, must be numbered the Count de Ceppe, whose negligence in this respect affords a curious contrast to the opposite extreme of Mr. Latreille and Mr. Schneider.

LEVERIAN WATER-NEWT.

IN the Leverian Museum is a specimen of an extremely large water-newt, supposed to be a non-descript species. Its total length is seventeen inches and a half, of which the tail measures six inches and a half, from the setting on of the thighs, but if measured from the commencement of the upper membranaceous edge, only four inches and three quarters. The head is flattened and shaped somewhat like that of a burbot; the mouth moderately wide; the upper jaw furnished in front with two concentric rows of very numerous, small, setaceous teeth; the rows being set about the eighth of an inch apart: in the under jaw is a single row only: the eyes are small, round, and situated on each side the front of the head,

quæstio! Cl. Du Fay in Act. Gall. ostendit generare oviparam; ostendit præterea, & pinxit metamorphoses, &c. Legat Linnæus, et cessabit tandem interrogare."

and consequently very remote from each other, and not near so far backward as the corners of the mouth: the body is longish, moderately plump or thick, and is pale brown, marked, in a confluent manner, with darker variegations: from the fore to the hind legs runs an obscurely-elevated lateral line: the legs are about an inch in length, and both fore and hind legs are furnished along the whole length of their back part with a dilated skin or crest, which, just above each foot, is sinuated by two pretty deep scollops or insections: the tail resembles that of the common water-newt, but is neither so long nor so deeply finned or crested in proportion, and its termination is rather obtuse than acute: the feet are very small: the fore feet furnished with four, and the hind with five toes, all destitute of claws, or at least the appearance of those parts is but very obscure. No particular history is annexed to the specimen, nor is its native place known.

SPOTTED WATER-NEWT.

Lacerta Maculata. *L. nigricans, dorso longitudinaliter duplici serie albo maculato.*

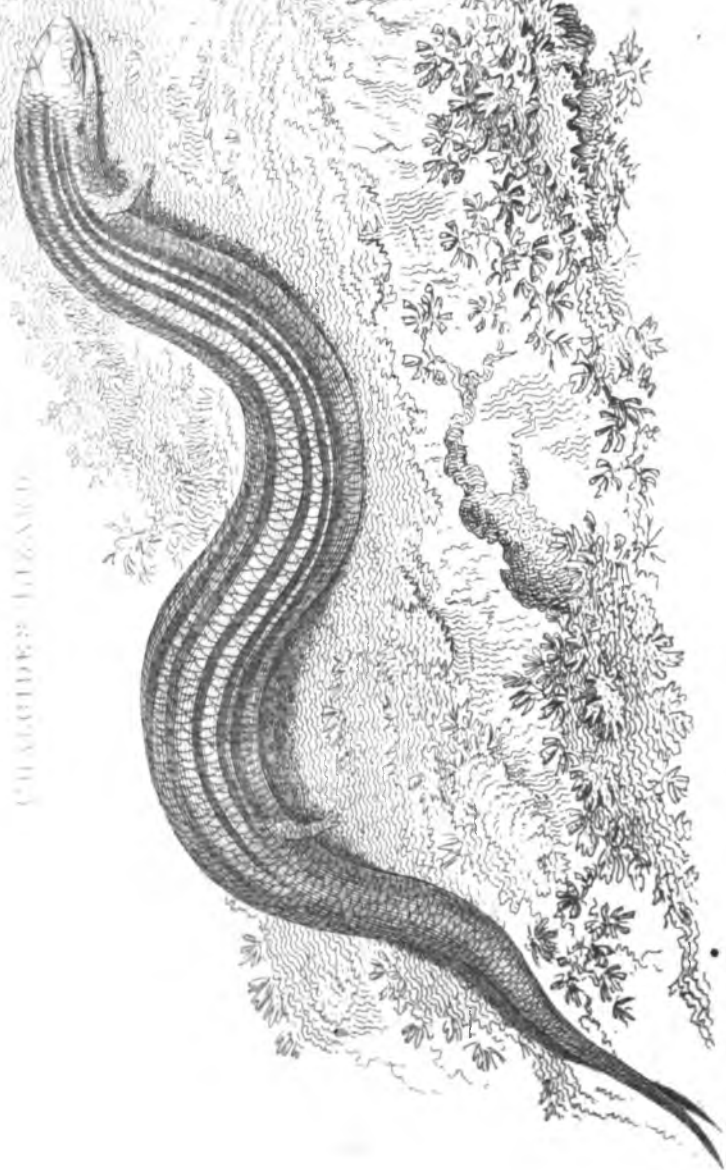
Blackish Water-Newt, with a double row of white spots down the back.

Lacerta punctata. *Lin. Syst. Nat. Gmel. p. 1076.*

Spotted Eft. *Catesb. Car. Append. t. 10.*

THIS species, according to Catesby, is an inhabitant of ponds, ditches, and other stagnant waters

CHALCIDEUS LEZARD



in Carolina. It is about five inches in length, with a rather large head; the fore feet have four and the hind five toes: its colour is deep brown, with a double row of white spots, from the top of the head to the tail, where it becomes a single row to the end. Catesby adds, that it is equally inoffensive with the common water-newts of Europe.

Snake-Lizards, with extremely long bodies, and short legs.

CHALCIDES LIZARD.

Lacerta Chalcides. *L. ferruginea, pedibus tridactylis brevissimis, corpore longissimo lineis sex dorsalibus fuscis.*

Ferruginous Lizard, with very short tridactyle feet, and very long body with six brown dorsal lines.

Lacerta Chalcides. *L. cauda tereti longa, pedibus pentadactylis brevissimis. Lin. Syst. Nat. p. 369.*

Cæcilia major. *Imperat. Nat. 97.*

Lacerta Chalcidica. *Aldrov. Quadr. 638.*

THE Chalcides is a native of many of the warmer parts of Europe, as well as of Africa, and is found of different sizes, from the length of a few inches to that of a foot, or even more. Its general length, however, seems to be eight or nine inches. The head is covered in front with large scales, and is terminated by a slightly tapering, but not pointed snout: the eyes are small, and the openings of the ears very distinct: there is, properly speaking, no neck, the diameter continuing nearly equal from the head to the begin-

ning of the tail, which is often longer than the body, and gradually tapers to a small point: the legs are very short, and the feet still more so in proportion, consisting each of three toes, terminated by minute claws: the scales, on every part of the body, legs, and tail, are of a shape nearly resembling those of the Scinks, lying smoothly over each other in the manner of those of a fish: the colour of this animal is pale ferruginous or chestnut brown, lighter or of a yellow brown beneath: along the back are six deep brown lines or narrow bands, viz. two somewhat distant ones down the middle, and two approximated ones down each side: in the living animal the colour is generally said to have a kind of metallic or brassy cast, which seems to have given rise to the old name *Chalcides* and *Chalcidica*. This singular Lizard is described by Linnæus as having the feet furnished with five toes, but whatever may have been the case with the individual specimen which he examined, it seems pretty certain that the general number is three. In the British Museum is an elegant specimen, from which the annexed figure is engraved. The *Chalcides* is an animal of a harmless nature, frequenting moist shady places, moving rather slowly, and feeding on insects, small worms, &c. It is a viviparous species, and is said to produce a great many young. The Serpents to which it bears the nearest alliance, in point of form, are those of the genus *Anguis*, and particularly the *A. fragilis*, or common *Slow-Worm*.

ANNULATED CHALCIDES.

Chalcide. *Cepede ovip.* p. 443.

THIS, which is described by the Count de Cepede, under the name of *Chalcide*, appears extremely nearly allied to the former, but instead of having imbricated fish like scales, as in that animal, it is marked into a continued series of annuli throughout its whole length, the scales being square instead of rounded. The specimen described was of a dark colour, with a brassy cast: the body measured two inches six lines in length, being somewhat shorter than the tail: the feet still shorter than in the former species, measuring scarcely more than a line in length, and being all tridactyle: the number of annuli on the body was forty-eight. The native country of this kind seems unknown.

SERPENT LIZARD.

Lacerta Serpens. L. capite corpore caudaque continuis cylindricis, pedibus minimis remotissimis, pentadactylis unguiculatis. Lin.

Syst. Nat. Gmel. p. 1078. Bloch. Besch. der Berl. Naturf. 2. p. 28. t. 2.

Lizard with head, body, and tail of a continued cylindric form, and very small, remote, pentadactyle feet.

Anguis quadrupes. *A. pedibus quatuor. Lin. Syst. Nat. p. 390.*

THIS, which is a native of Java, measures about five inches and a half in length, and is entirely

covered with imbricated scales : its colour is either cinereous or pale ferruginous above, marked with from fifteen to twenty dusky lines, and beneath cinereous with a silvery gloss.

ANGUINE LIZARD.

Lacerta Anguina. L. cauda verticillata extremo rigidula, corpore striato, pedibus adactylis subulatis. Lin. Syst. Nat. p. 371.

Lizard with long body, extremely long tail, and subulated adactyle feet.

Vermis serpentiformis ex Africa. *Seb. 2. p. 70. t. 68. f. 7, 8.*

DESCRIBED by Linnæus, apparently from Seba's figure, which is about fifteen inches in length, the body measuring only four. The head is rather small, the nose taper, the legs very short, placed very near the head and vent, and apparently terminating in one undivided toe or process: the whole animal appears covered with ovate scales, and is brown above, ash-coloured on the sides, and yellowish beneath ; the upper surface marked throughout its whole length by several dark lines or stripes. Native, according to Seba, of the Cape of Good Hope, where it is found in great plenty in the water and about the rocks in Table Bay.

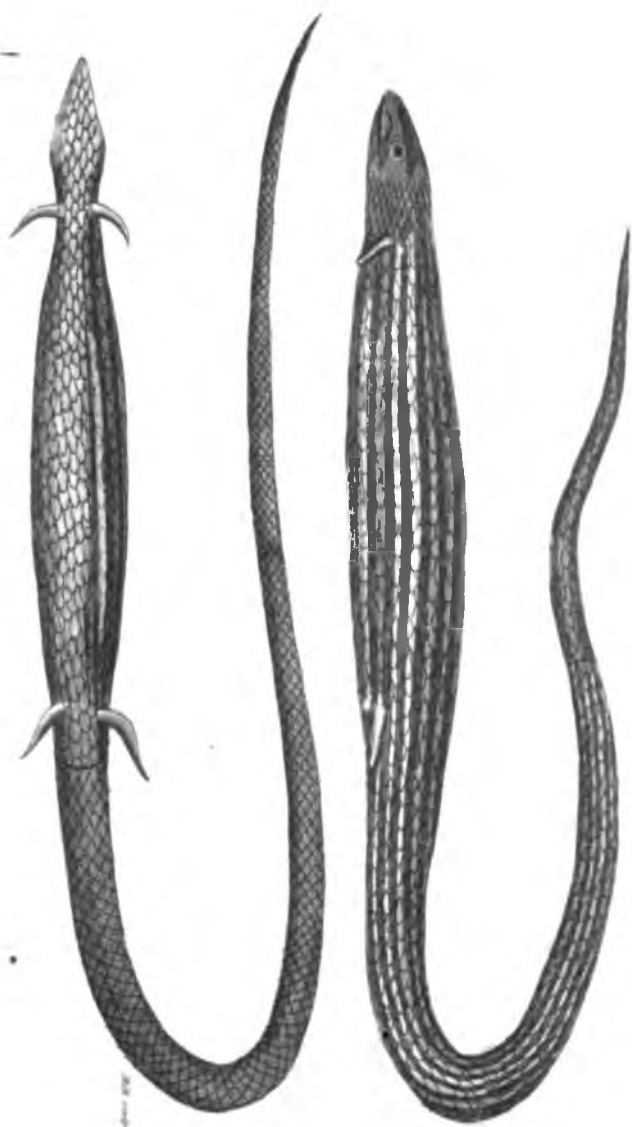
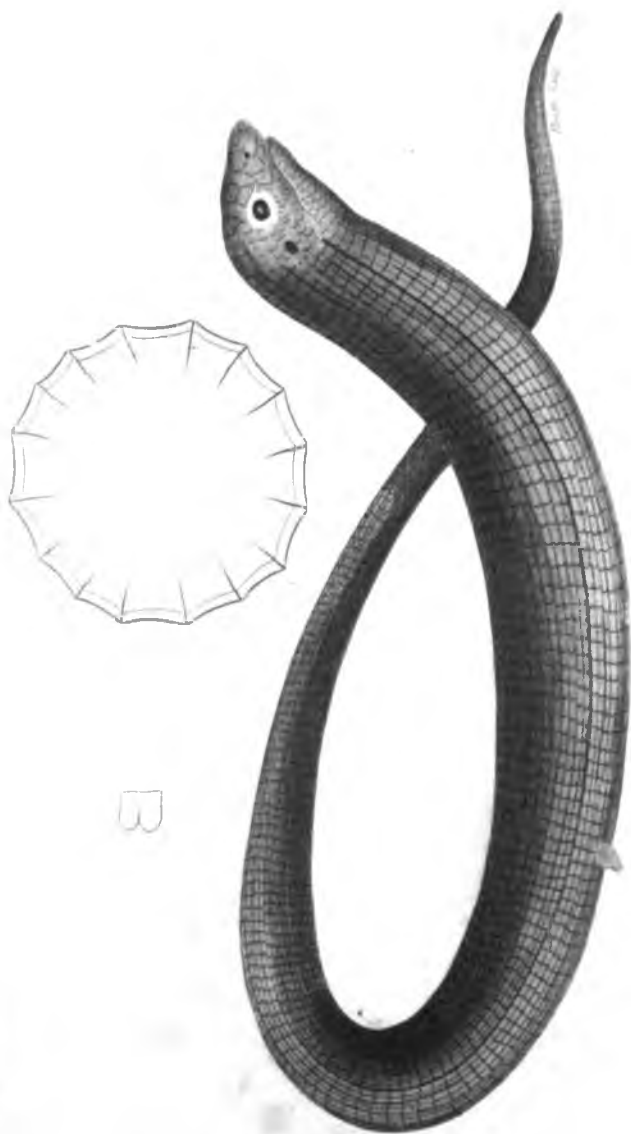


Fig. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100.



APUDAL LIZARD.

APODAL LIZARD.

Lacerta Apus. L. anguiformis ferruginea, pedibus anterioribus nullis, posterioribus brevissimis monodactylis.

Ferruginous snake-formed Lizard, without fore feet, and with very short monodactylous hind feet.

Lacerta apus. L. capite & corpore continuis una cum cauda longa teretibus imbricatis pallidis, pedibus anterioribus nullis, posteriorum subdidactylorum vestigio. Pall. Nov. Comm. Petrop. 19. p. 435. t. 9. Lin. Syst. Nat. Gmel. p. 1079.

A STILL nearer approach is made to the snake tribe by this large and singular Lizard, than even by the Chalcides. It is a native of Greece, the Southern parts of Siberia, and doubtless of many other parts of Europe and Asia, though it seems to have been but recently known to naturalists, Dr. Pallas, who discovered it in the south of Siberia, having been its first describer. It is found of the length of near three feet, and so perfectly resembles the general form of a large snake, that it is not without a near inspection that it is ascertained to belong to the race of Lizards; being furnished merely with a pair of very short and somewhat acuminate processes by way of feet, situated at a vast distance from the fore parts of the body, nearly on each side the vent: the processes have no divisions or toes, but seem to form one simple projection, with a slight indenture only: the head is rather large, and covered with large scales: the snout rather taper; the upper jaw somewhat projecting over the lower: the mouth moderately wide: the ears very conspicuous: there is no ap-

pearance of neck ; the body tapering in the most gradual manner from the head to the end of the tail, which is longer than the body, and terminates in a point. The whole animal is covered with longitudinal rows of moderately large scales with emarginated tips, and so disposed as to form so many prominent or carinated lines along the surface, in consequence of which a transverse section of the body, in any part, presents a multangular outline. Along each side of the body, from the head to near half the length of the tail, runs a deep continued furrow or channel. The colour of this Lizard is a pale chesnut or ferruginous above, and pale yellow-brown beneath. It is singular that an animal of so large a size should so long have remained unknown to systematic naturalists. Two very fine specimens were brought from Greece by the late Dr. John Sibthorp, Professor of Botany in the University of Oxford, and from one of these was drawn the accurate figure engraved on the annexed plate. The animal frequents moist and shady places, and appears to be of a harmless character.

BIPED LIZARD.

Lacerta Bipes. *L. corpore subaequali tertii imbricato pallido, squamarum singularum puncto fusco, pedibus anterioribus nullis, posteribus didactylis muticis.* *Lin. Syst. Nat. Gmel. p. 1079.*

Long-bodied cylindric pale-yellow Lizard, speckled with brown, without fore-feet, and with very small didactylous hind-feet.

Anguis bipes. *A. squamis abdominalibus 100, caudalibus 60.*
Lin. Mus. Ad. Find. p. 21. t. 28. f. 3.

Serpens, &c. Seb. 1. t. 58. f. 9. & t. 86 f. 3.

A SMALL species, said to be found in South America and in India. Length about six inches: diameter scarcely that of a goose quill: colour pale yellow, minutely speckled with brown: head small; body cylindric, tail very short and taper but not sharp-pointed: on each side the vent is a small subulated foot, which being closely examined is found to be divided into two small and unequal toes, without claws. This Lizard is described by Linnæus in the *Museum Adolphi Frederici* as a species of snake, under the title of *Anguis bipes*. It is also figured in the same work, but more elegantly in that of Seba.

LUMBRICIFORM LIZARD.

Lacerta Lumbricoides. *L. bipes cylindrica, squamis quadratis annulata, sulco laterali, pedibus posterioribus nullis.*

Two-footed cylindric Lizard, annulated with square scales, with a lateral furrow and no hind feet.

Le Cannellé. Cope de ovip. p. 613. pl. 41.

Lacerta Lumbricoides. Lumbriciform Lizard. *Nat. Misc. vol. 6. pl. 212.*

NATIVE of Mexico. First described by the Count de Cope in his *History of Oviparous*

Quadrupeds. Length eight inches : diameter near half an inch : length of head three lines ; of the tail one inch : both head and tail, as in the genus *Amphisbana*, scarce distinguished by any difference of diameter from the body, which is of uniform breadth throughout, and is covered entirely by annuli of square scales, as in the *Amphisbana fuliginosa* : along the whole body, from head to tail, on each side, runs a continued sulcus or channel, separating the upper or lower surfaces : legs only two ; extremely short, placed near the head, and divided into five minute toes with correspondent claws : not the least appearance of hind legs : vent surrounded on its upper part by a row of small perforated papillæ, as in the thighs of the green lizard, &c. Colour of the living animal suspected to be green, paler beneath.

The specimen preserved in the British Museum is about half the size of that described by the Count de Ceppe, and is of a pale ferruginous colour above, and yellowish white beneath.

END OF PART I.

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