

# TRANSLATION AND ANNOTATION OF THE AMPHIBIAN AND REPTILE SECTION OF SYSTEMA NATURAE X

by

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## INTRODUCTION

The tenth edition of *Systema Naturae* is one of the most significant and fundamental works in the science of biology -- it marked the beginning of orderliness to the chaotic and inconsistent methods of naming animals. Karl Linné, a Swedish naturalist, who latinized his name to Carolus Linnaeus, is the author of the *Systema Naturae*. He was enobled in 1761 as Carl von Linné, thus his name may appear as Linnaeus, Linné, or von Linné. In the *Systema* he used the system of binomial nomenclature, i.e., application of at least two names, the generic name and the specific epithet, for the scientific name of an animal. Binomial nomenclature was not actually a creation of Linnaeus's. The concept of genus and specific epithet had been used for hundreds of years before his time, but the use of such names in a uniform manner and under the same cover for all groups of animals emphasized the advantages of such a system, and biologists soon embraced the idea and the binomial system was considered to be the ideal form for nomenclature. Linnaeus had actually had the same effect on botanists via publication of his book *Species Plantarum* in 1753. The fundamental concept of nomenclature is based on priority for the oldest name; names applied by Linnaeus are often the inventions of earlier taxonomists, but the acceptance of Linnaeus' 10th as the starting point forces us to give credit for many of the earlier names to him. By currently accepted rules, no names proposed prior to 1758 are granted priority.

Linnaeus did not propose any rules for animal nomenclature but did provide some rules for botanists in his *Critica Botanica* of 1737. Zoological taxonomists did not have any guiding principles for applications of priority until 1842 when the British Association for the Advancement of Science adopted a set of rulings known as the "Stricklandian Code". In 1889 the First International Zoological Congress discussed a set of rules proposed by Professor Raphael Blanchard and adopted them at the second Congress in 1892. But a need was seen for considering all rules and by 1905 the Sixth Congress adopted the *Règles internationales de la Nomenclature zoologique*. The Règles were later replaced by the *International Code of Zoological Nomenclature*, which is the set of rules determined by the International Congress of Zoology and which is published by the International Commission on Zoological Nomenclature. In its articles the Code clearly states that Linnaeus' 10th edition is the starting point for zoological nomenclature and is arbitrarily assigned a publication date of January 1, 1758 and that any other work published in 1758 is to be treated as having been published after that edition. Many of the names used by Linnaeus still apply, albeit in many cases in different genera.

As we look at the expanded title of the *Systema Naturae*, we see that it refers to Classes, Orders, Genera, and Species. The concept of family, a hierarchy higher than genus but lower than Order, came after Linnaeus's work. Not surprisingly, then, later investigations have led to some Linnaean names being converted to different hierarchical levels. The taxonomists of Linnaeus's time were concerned with only a few thousand species, but today we are concerned with possibly two million or more species. We have endeavored to simply translate Linnaeus' 10th; any further interpretations fall beyond this province and belong to the specialist systematists.

At present time many class and order names given by Linnaeus have no recognition because the International Code of Zoological Nomenclature, now in its third edition, does not use its regulations for any hierarchical category above superfamily.

This is not the first translation of the *Systema Naturae*. The 13th edition, published posthumously in 1789 by Johannes Friedrich Gmelin, was translated into English from 1802-1806 by William Turton. The 13th dealt with far more species than were known by Linnaeus and included plants. It consists of seven volumes. But any user of the translation of the 13th edition should be warned that names contained in it are not necessarily endowed with priority and more important, the translation is not specifically the words of Linnaeus or Gmelin. Much additional text has been included and the documentation is simply a gross listing of sources, not specific literature, and no detailed credits are given within the text.

In our translation of Linnaeus we have faced a singular challenge which is comparable to that which plagues the students of English literature, e.g., determination of the meanings of statements that appear in Shakespearean plays. But we must remember that science tries to be exact, thus we choose not to try to second guess what Linnaeus meant. If some suggested clue is there, we explore it in endnotes, but otherwise we have tried to project exact wording. A comment by a major scholar of Linnaeus's work, the late John L. Heller, reads "...I think it must be admitted that sometimes Linnaeus's Latin syntax was a bit shaky and that occasionally he did come up with the wrong word." (1980 *Bibliotheca Zoologica Linneana*. pp. 240-264 In G. Broberg [ed.] *Linnaeus: Progress and Prospects in Linnaean Research*. Almqvist & Wiskell International, Stockholm, and Hunt Institute for Botanical Documentation, Pittsburgh). Indeed we also discerned flaws in the syntax and our translations may seem to reach a different context than what he perhaps meant to say. Obviously the thought processes of early scholars were of a different ilk than those of today's sophisticated students, and we have difficulty in trying to reach into the depths of the earlier workers' brain cells to understand their interpretations. As trained scholars in our fields, classical languages and zoology respectively, we were often brainwashed by the information contained in our texts and in our mentors' lectures. But as we have discovered, from the mouths of babes, our students, we often hear novel ideas, the spawn of innocence! Thus to avoid injection of bias we have tried to be as literal as possible unless we can show cause to be otherwise. Where we find or suspect a typographical error we so indicate in our annotations.

A final word should be said concerning consistency. Linnaeus employed a wide variety of words for closely connected ideas. To recreate the intention of the original and to facilitate its study, care has been taken to provide different English words for corresponding different Latin words. Thus, a dot (*punctum*) is not a spot (*macula*) and dark-black (*ater*) is to be differentiated from black (*niger*). A frequent term which could have several meanings is *striatus*. Although we think of "striated" as meaning grooved (but one interpretation in herpetology has been "streaked"), Linnaeus's application of *striatus* seems to have been used to indicate stripes or keels. In actual Latin "stria" can mean groove or ridge. Thus where he has used such a term we have examined descriptions of the animal and determined what actual connotation he must have meant.

Specialist systematists have not been able to unravel all of Linnaeus's 10th, thus many species that he named remain obscure and unrecognized. Some have been determined to be other than what was first accepted and appeals have been made to the International Commission on Zoological Nomenclature to use its jurisdiction to overrule the laws of priority contained in the Code so that name stability can be retained for often used though erroneously applied names.



In the use of terminology we have used both a mixture of technical and vernacular terms. This is not inconsistent with modern descriptive zoology. Terms such as verrucose and warty are synonymous and either word may appear in a description. Sometimes our Latin dictionaries do not reveal all of the meanings or connotations that might apply to a word, especially as used in specialty taxonomy. This is where our collaboration has been an essential tool, Kitchell to translate the Latin, Dundee to determine how words or phrases might actually be stated by a zoologist. Each of us has thus contributed to the endnotes in discussing the innuendos of the text.

Certain terms used by Linnaeus may not be everyday terms to specialists (e.g., muricate, which refers to a spinose appearance seen in sea shells of the genus *Murex*, is used frequently in application to reptiles, but it is not a term that modern day herpetologists, or for that matter even sea shell specialists, employ). If the user of our translations encounters a problem of this nature, we recommend seeking definition in an unabridged dictionary. Many geographic names that were in use in Linnaeus' s time are now supplanted by newer names. In our appended list of current names for Linnaean species the approximate geographic ranges are given, thus preempting Linnaeus's often inaccurately stated distributions. Finally, we include a complete list of all the literature cited by Linnaeus.

Readers of this translation should be aware that Latin punctuation does not correspond to modern English punctuation, thus an exact translation phrase by phrase is not presented. In many cases we have modified Linnaeus's statements by using the telegraphic style of description so often used in taxonomic writings, but the meanings should be the same. But we have at least noted the original pagination and have tried to stay with the original paragraphing, thus comparison of Latin and English text is facilitated.

Footnotes appear at the bottom of the page as originally placed in *Systema Naturae*. Our own commentaries, represented by superscript numbers, appear at the end of the translated text.

The following is actual text translation. The term *Indiis*, which refers to the West Indies, appears to be a persistent error in Linnaeus's geography. The species alleged to live there usually are South American. We were also struck by the frequency of color references to white or whitish and are guessing that the preservation process of that day was of poor quality, thus resulting in considerable fading. Beginning on page 214 of the original text, readers will discover the male sign ♂ below the number (which is total of ventral + subcaudal scutes) for many snake species. This is not, however, intended to indicate sex, instead Linnaeus stated on p. 221 of the original text that it indicates that the species is venomous (see also our footnote 46). Re the ventral + subcaudal count, see also our footnote 45). The † is nowhere defined in *Systema Naturae*, but in the Ray Society's 1957 facsimile of Linnaeus's 1753 *Species Plantarum*, in which the binomial system is introduced for plants, W.T. Stearn states in the introduction that the sign meant an imperfectly known species or some doubt or obscurity. Stearn also states that Linnaeus's 1754 *Genera Plantarum* used the sign for a genus that he had seen only as herbarium material. We can only surmise that in *Systema Naturae* he perhaps meant it to mean that he was unsure. For a comment on terms relating to epidermal scutes, see footnote 8.

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CLASS III  
Amphibians

These most terrible and vile animals are distinguished by their unilocular and single chambered heart, arbitrary lungs, and a divided penis.

Most amphibians are rough, with a cold body, a ghastly color, cartilaginous skeleton, foul skin, fierce face, a meditative gaze, a foul odor, a harsh call, a squalid habitat, and terrible venom. Their Author has not, therefore, done much boasting on their account.<sup>1</sup>

A polymorphous nature has bestowed a double life on most of these amphibians: granting that some undergo metamorphosis and others cast off their old age. Some are born from eggs, whereas others bear naked young. Some live variously in dry or wet, whereas others hibernate half the year. Some overcome their prey with effort and cunning, whereas others lure the same prey to their jaws as if by magic.

REPTILES. Footed and have flat-nude ears without ear lobes. They pursue various lives depending on their structure. The turtles are protected by their shell. The dracos<sup>2</sup> fly on wings, whereas lizards flee on feet, and frogs are hidden by location. Nor do they all lack venom, for example the toad, salamander, and gecko.<sup>3</sup>

SERPENTES. Footless and, lacking ears, are deaf. Lungs separate them from the fish, as do eggs in a chain and a divided penis. In short, the resemblance of the serpents with the lizards and that of the lizards with the frogs is so great as to admit no boundaries. Nature the savior has armed these creatures, cast onto the bare ground, ignorant of the use of limbs, and exposed to every harm, with weaponry bristling with dreadful venom, each unto its own kind.

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These weapons are very like teeth, but they are located on the outside edge of the upper jaw and can be extended and retracted at will. They are equipped with a sack of poison which they inject into the blood through a wound-- the cause of dire results though in other respects it is inert.

And thus these Catonians<sup>4</sup> have a poisonous bite and threaten death with the tooth; the cups<sup>5</sup> lack death surely according to Redi<sup>6</sup>. He who was in charge armed (i)<sup>46</sup> only a tenth of the species, but lest those who were deprived of the weapons the others possessed should be miserable and rage too much, he wished them to be similar in shape so that all of them, of dubious identification, would be feared by all. But man's Benefactor gave to the people of India the mongoose along with the *Ophiorhiza*<sup>7</sup>, to the Americans the pig along with *Senega*<sup>7</sup> and to the Europeans the stork along with the olive.

Should one wish a diagnosis for these, let him take it from the presence or absence of feet and from abdominal and caudal scutes<sup>8</sup>. But lest the number, taken from one and added to another, should confuse, it is useful to have each one numbered (*Act. Stockh.* 1752, p. 296). The length should be given to and from the anus and in some cases it should be by color. Be careful, however, lest the tail, once cut off, has been regenerated.

NANTES, the aquatic finned ones.(Chondropterygios, or the so-called cartilaginous fishes). A class of amphibians that have arbitrary lungs\*, although it is true that they are not to be seen. They do not breathe with free, but with joined gills. The males lie upon the females with a divided penis! The eggs are in a chain with young, the skin is foul, the bones and the rest are cartilaginous. Nor are they entirely unschooled in venom, as witness the sting ray and the electric ray.

AMPHIBIOLOGI are the smallest of them all, but none are true. Seba has collected and delineated a tremendous number of them unknown to himself, but he multiplied them and described them but minimally. Catesby sketched a few serpents more beautifully than he made notes about them.

\* The lungs are pectinate, finned like those of fish but are joined to an arcate, cylindrical, bulbous passage way, lacking a bony rod, unlike that of a fish, except in external appearance.

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## CHARACTERISTICS OF THE GENERA

### I. REPTILES. Footed, air breathing

- 103. *Testudo* : body protected in a shell
- 104. *Draco* : winged flying body
- 105. *Lacerta* : a body (shelled or winged) that is naked and tailed
- 106. *Rana* : a body similarly naked and without a tail<sup>9</sup>

### II. SERPENTES. Legless, air breathing

- 107. *Crotalus* : abdominal and caudal scutes, with a rattle
- 108. *Boa* : abdominal and caudal scutes, without a rattle
- 109. *Coluber* : abdominal scutes, caudal scales
- 110. *Anguis* : abdominal and caudal scales
- 111. *Amphisbaena* : abdominal and caudal rings
- 112. *Coecilia* [sic]: naked, lateral wrinkles

### III. NANTES. Finned, breathing air through their sides

- 113. *Petromyzon* : 7 spiracles
- 114. *Raja* : 5 spiracles below ; body depressed.
- 115. *Squalus* : 5 lateral spiracles; smooth, rounded body
- 116. *Chimaera* : 1 spiracle; 2 front incisor teeth
- 117. *Lophius* : 1 spiracle; pectoral fins inserted in the forelimb
- 118. *Acipenser* : 1 spiracle; retractable mouth

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## I. REPTILES

Air breathing, four feet

### 103. *TESTUDO*. Four-footed body; tailed; covered with a shell

- Mydas*. 1: Turtle with flipper-like feet, two claws on the front feet, single claws on the hind feet, oval shell.  
*Amoen. acad.* 1. p. 138. Turtle with pointed claws, two on the front foot, one on the rear foot  
*Mus. Ad. Fr.* 1. p. 50. Dark-black turtle.  
*Osborne. iter.* 293.  
*Gesner. quadr.* 78. Marine turtle.  
*Aldrovandus. quadr.* 712. t. 714.  
*Grew. mus.* 38. t.3. f. 4<sup>10</sup>  
*Olear. mus.* 27. t. 17. f. 1.  
*Bradford. natur.* t. 4. f. 4  
 β. *Seba. mus.* l. t. 80. f. 9. American marine turtle called the *Mydas*.  
*Amoen. acad.* 1. p. 137. The same turtle  
*Marcgrave. bras.* 241. The *jurucuja* to the people of Brazil  
*Raj. quadr.* 256.  
 γ *Amoen. acad.* 1. p. 287. n. 7. A turtle with sharp claws, with single ones on the front and hind feet.  
*Mus. Ad. Fr.* 1. p. 50. The same turtle  
*Seba. mus.* 1. t. 79. f. 4. 5. 6.



It lives near the sea islands: Ascension Isle, etc. It buries its membranous eggs by night in calcareous sand.

Its flesh is greenish and edible. It sleeps on its back on the sea. It attacks as many men as pursue it. It does not get up when on its back on land. Its shell was once used for shields and arches.<sup>11</sup>

- Caretta*. 2: Turtle with flipper-like feet. Two claws on its fore and hind feet; shell ovate and sharply serrated.  
*Gron. mus.* 2. p. 85. n. 69. Turtle with swimming feet, two sharp claws.  
*Brown. jam.* 465. Turtle with two sharp claws on each side, five gibbous scales on its back.

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- Catesb. car.* p. 39, t. 39. Testudo *Caretta* Rochef. <sup>12</sup>  
*Raj. quadr.* 258. Testudo *Caretta*.  
 Lives near American islands.
- orbicularis* 3: Turtle with palmate feet, circular and flattish shell.  
*Raj. quadr.* 254. Freshwater turtle?  
 Lives in southern Europe.  
 Small, very solid, rounded shell neither anteriorly nor posteriorly emarginate. The sternum is split posteriorly. The toes of the feet are connected by a membrane into a round sole.
- scabra* 4. Turtle with a flattish shell with all its small scutes in the middorsum.  
 Lives in the Indies.  
 The body and sides of the shell, below, are variably white and black. The sternum is truncated posteriorly.
- lutaria* 5. Turtle with subpalmate feet; tail shorter than half its body; subconvex shell, carinate to the rear; with three scutes.  
*Amoen. acad.* 1. p. 139, n. 23. Turtle with sharp claws, four each on the fore and hind feet.\*  
 Lives in Italy, Orient.  
 Forefeet more or less palmate, hind feet less so. Sternum posteriorly truncate.
- graeca* 6. Turtle with subdigitate feet, a gibbous shell with a very blunt lateral margin, flattish scutes.  
 The lesser, tessellated African turtle. *Edw. av.* 204. t. 204.  
 Lives in Africa.  
 Tailed body, five claws on its forefeet but four on the rear.
- carolina* 7. Turtle with digitate feet, a gibbous shell, no tail.  
 Tessellated lesser Carolinian turtle. *Edw. av.* 205. t. 205.  
 Lives in Carolina.  
 Five-toed forefeet, four-toed hind feet.
- carinata* 8. Turtle with digitate feet, humped shell, four dorsal small scutes, front<sup>13</sup> scutes carinate. Solid, one-piece sternum.  
 Lives in warm regions.

\* This asterisk probably is a typographic error--no meaning can be ascertained.

Turtles often live 14 days with their heads cut off. In the colder regions the terrestrial types hibernate during winter. No animal is slower than a turtle. During copulation they often cling together for a month.

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geo-  
metrica

9. Turtle with hind feet palmate, small scutes of the shell elevated.  
*Mus. Ad. Fr.* 1. p. 50. Turtle with sharp claws, five on the front foot, 4 on the hind foot.

*Worm. mus.* 317. Turtle painted, or marked with stellate forms.

*Amoen. acad.* 1. p. 139 n. 24

*Grew. mus.* 36. t. 3. f. 1, 2. Greater turtle with tessellated shell

*Seb. mus.* 1. t. 80. f. 8. Lesser Amboinian turtle

*Pis. bras.* t. 105. Turtle with geometric shapes of blackish and yellowish color.

*Raj. quadr.* 259. Lesser tessellated turtle.

Lives in Asia.

Black shell with small, yellow scutes emitting yellow anastomosing rays.

pusilla

10. Turtle with hemispherical shell, convex trapezoidal small scutes, with punctate centers striated at the margins.

*Grew. mus.* 38. t. 3. f. 3. Virginia turtle.

*Worm. mus.* 313. Land turtle, small, from east India.

*Raj. quadr.* 259. The same turtle.

Lives in India.

ser-  
pentina

11. Turtle with digitate feet, subconvex shell, blunt and five-pointed posteriorly.  
Lives in warm regions.

104. *DRACO*. Four-footed body, tailed, winged.

volans.

1. *Draco. Syst. nat.* 36. *Gron. mus.* 2. p. 73. n. 46.

*Mus. Ad. Fr.* 1. p. 40. *Draco*.

*Amoen. acad.* 1. p. 126. Lizard with a smooth tail, five-toed feet, wings connected to the thigh, triple crest on the throat.

*Bont. jav.* 57. t. 57. The flying lizard or little dragon.

*Seb. mus.* 2. t. 86. f. 3. The African flying lizard.

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In turtles the front feet have five toes, the rear four, with the same number of claws. The marine types are exceptions, having flipper-like feet. The scutes of the shell are quite often of the same number and as a result diagnosis of species is very difficult.

All the other dracones [dragons] listed by authors are fictitious, like the *HYDRA*, *Seb. mus.* 1. t. 102. f. 1 which I saw at Hamburg, but which was an outstanding work, not of nature, but of art.

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*Brad. natur.* t. 9. f. 5. Flying lizard.

Lives in India and Africa.

105. *LACERTA*. Four-footed body, tailed, naked.

\*Those with a compressed tail

Croco-  
dilus

Lizard with a compressed tail, three-clawed feet, front feet five-toed, hind feet four-toed and palmate.

*Amoen. acad.* 1. p. 121. The same lizard.

*Mus. Ad. Fr.* 1. p. 40. The same lizard.

*Gron. mus.* 2. p. 74. n. 47. *Crocodylus*.

*Bellon. aquat.* 41. *Crocodylus*.

*Gesn. quadr.* 9. *Crocodylus*.

*Aldr. aquat.* 677. *Crocodylus*.

*Jonst. quadr. t. 79. f. 3. Crocodilus.*

*Raj. quad. 261. Lacertus maximus.<sup>14</sup>*

*Bont. jav. t. 55. Crocodylus Cayman.*

*Marcgr. bras. 242. Jacare.*

*Olear. mus. 8. t. 7. f. 3. Crocodylus.*

*Bell. mus. 47. t. 13. Crocodilus niloticus.*

*Sloan. jam. 2. p. 332. Crocodilus.*

*Seb. mus. 1. t. 103. 104. Crocodilus.*

*Merian. sur. 49. f. 69. Crocodil.*

*Vallisn. nat. 1. t. 43.*

*Catesb. car. 2. t. 63. Lacertus maximus.<sup>14</sup>*

Lives in the waters of Africa, Asia, and America.

Anatomy of the crocodile. *Hasselq. iter. 292.*

It lays one hundred eggs. These are dug up by the ichneumon, a small bird. <sup>15</sup>

When the young are hatched, the mother calls them forth onto her back and leads them to water. The male and female swallow down those who fall in the water. It eats under water. Joined together in a group, they disturb the aquatic animals. *Leviathan Jobi. 40:20; 41:24.<sup>16</sup>*

It is fierce to those fleeing it. Those who know how, leap onto its back and control it.<sup>17</sup>

*Caudiverbera* 2. Lizard with a depressed-flat, pinnate tail, palmate feet.  
*Fevill. peruv. 2. p. 319. t. 319.*  
*Seb. mus. 2. t. 62. f. 9.*  
It lives in Peru.

*superciosa* 3. Lizard with a carinate tail, back and eyebrows ciliate.  
*Mus. Ad. Fr. 1. p. 40. The same lizard.*

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*Seb. mus. 1. t. 109. f. 4.*

Lives in the Indies.

*scutata* 4. Lizard with an average sized, subcompressed tail, toothed dorsal suture, bimucronate occiput.  
*Seb. mus. 1. p. 173. t. 109. f. 3. Huge, scuted, amboinian<sup>18</sup> salamander.*  
Lives in Asia.

*Monitor* 5. Lizard with a carinate tail and a shortened body.  
*Mus. Ad. Fr. 1. p. 41. Lizard with an entirely two-edged tail. five-toed feet, all toes clawed.*  
*Seb. mus. 2. t. 86. f. 2*  
*t. 105. f. 1.*  
*1. t. 94. f. 1. 2.*  
Lives in the Indies.  
The body is verticillated with white ocellate spots. Abdomen white, with interrupted linear bands.

*principalis* 6. Lizard with a subcarinate tail; solid throat crest, smooth back.  
*Mus. Ad. Fr. 1. p. 43.*



*Amoen. acad.* 1. p. 286. t. 14. f. 2.  
Lives in the Indies.

**bicarinata**

7. Lizard with a compressed tail, moderately bicarinate; back carinate-keeled<sup>19</sup> four times.

Lives in the Indies.

Small, gray. The back has two raised ridges and each side of the back is carinate-striated with scales. The sides have convex tuberculate scales. The abdomen is covered with 24 transverse rows of scales, six in each. The tail is about 1 1/2 times as long as the body, is compressed, striated below, smooth on the sides, with a double angular ridge above. No crest.

**palustris**

8. Lizard with an insignificant tail, moderate size, with split, stubby feet. Four-toed front feet. *Fn. svec.* 256.

*Gron. mus.* 2. p. 77. n. 51. Warty, unscaled salamander.

*Raj. quad.* 273. Aquatic salamander.

*Seb. mus.* 1. t. 89. f. 4, 5. American lizard.

Lives in the fresh, stagnant waters of Europe. Perhaps a distinct species from *L. agilis* or the larva of another<sup>20</sup>.

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\*\* *Those with a verticillate tail*

**Cordylus**

9. Lizard with a short, verticillated tail, dentate scales, smooth body.

*Amoen. acad.* 1. p. 132. 292.

*Gron. mus.* 2. p. 79. n. 55. *Cordylus*.

*Seb. mus.* 1. t. 84. f. 3. 4. & 2. t. 62. f. 5.

Lives in Africa and Asia.

Body verticillated with truncate scales.

**Stellio**

10. Lizard with an average sized verticillate tail. Dentate scales, head and body spiny.

*Hasselt. iter.* 301. Spotted lizard.

*Tournes. itin.* 1. p. 119. t. 120. The lizard called *Coslordilos*.

*Seb. mus.* 2. t. 8. f. 7.

Lives in the Orient: Delos<sup>21</sup>, Egypt, Africa.

**mauritania**

11. Subverticillate tail, short, terete, with a spiny apex. Body spiny above, feet scaly below. It lives in Mauritania. E. Brander.

The body resembles *L. gecko* in bearing and shape, but is sickly yellow and, at the sides of the head, above the neck, back, and legs, is warty and spiked. The tail is shorter than the body, spiny in six places from its base to the middle. From there to the tip it is smooth. The toes of the feet, as in the gecko, lamellosely squamate below, with very small claws. Beneath, the entire body is smooth with very small scales.

**azurea**

12. Lizard with a short, verticillate tail, pointed scales.

*Mus. Ad. Fr.* 1. p. 42. The same lizard.

*Seb. mus.* 2. t. 62. f. 6.

Lives in Africa.

*turcica*

13. Lizard with a subverticillate, average tail, a gray, subverucose body.  
*Edw. av.* 204. *t.* 204. Lesser lizard, ash-gray, spotted, Asiatic.

Lives in the Orient.

The tail is scarcely longer than the body, poorly verticillate. The body is small, gray, spattered with dark spots, uneven<sup>22</sup> and with scattered, ill-formed warts.

*Ameiva.*

14. Lizard with a long, verticillate tail, thirty abdominal scutes, a collar with a double wrinkle below.

*Amoen. acad.* 1. *p.* 127, 293. Lizard with a terete tail, twice the length of the body, five-toed feet, no crest, 30 abdominal scutes.

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*Mus. Ad. Fr.* 1. *p.* 45. The same lizard.

*Gron. mus.* 2. *p.* 80. *t.* 56. Lizard with a terete tail three times the length of the body, very smooth scales, oblong squarish<sup>23</sup> abdominal scales.

*Clus. exot.* 115. *Lacerta indicus*

*Edw. av.* 202. *t.* 202, 203. Greater green lizard.

*Worm. mus.* 313. *f.* 313.

*Raj. quadr.* 270. Indian lizard.

*Seb. mus.* 1. *t.* 85. *f.* 2, 3.

*t.* 88. *f.* 1, 2.

*Sloan. jam.* 2. *p.* 333. *t.* 273. *f.* 3. The greater, ash-gray, spotted lizard.

β *Amoen. acad.* 1. *p.* 130. Lizard with a terete tail 1 1/2 times the length of the body. Five-toed feet, back striated with longitudinal lines.

Lives in America.

*agilis*

15. Lizard with a longish, verticillate tail with sharp scales, a collar below composed of scales.

*Faun. svec.* 1352. Lizard with a terete verticillate tail the length of the body, five-toed clawed feet.

*Syst. nat.* 36. *n.* 6. Lizard with a terete, long, verticillate tail with sharp scales, five-toed clawed feet.

*Mus. Ad. Fr.* 1. *p.* 43. The same lizard.

*Gron. mus.* 2. *p.* 80. *n.* 57. Lizard with a tail a bit longer than the body, very smooth scales.

*Raj. quadr.* 264. Common lizard, black spotted belly

*Seb. mus.* 2. *t.* 79. *f.* 4. Lesser spotted indigenous lizard.

β *Raj. quadr.* 264. Green lizard

*Aldr. quadr.* 634. Green lizard

*Seb. mus.* 2. *t.* 4. *f.* 4, 5. Green lizard.

Lives in Europe and India

In southern Europe it differs by its green color. The Indian one is more beautifully colored. The thigh is marked below with a line of hard dots, as is the case for *L. ameiva*.

*algira*

16. Lizard with a verticillate, rather long tail, body with two yellow lines on both sides.

Lives in Mauntania. *E. Brander.*

The body is barely longer than a finger, dusky above, yellowish below. Dorsal

scales are carinate and more pointed. A yellow line delineates the back on both sides and another distinguishes the abdomen on both sides from the sides.

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*Seps*

17. Lizard with a long, verticillate tail, a lateral, curved back suture, squared scales.

*Amoen. acad.* 1. p. 293. Lizard with a verticillate tail, subpentadactyl feet<sup>24</sup>, squared scales.

It lives in southern areas.

Short feet, distant, suited for running. Flat abdomen.

*angulata*

18. Lizard with a long, hexagonal tail; carinate, pointed scales.

It lives in America. *Rolander.*

Small, with a dark back. All its scales, with the exception of the abdominal ones, are pointed, very carinate. Naked head, with various raised wrinkles. To the rear, where the neck scales begin, it is truncated and attached as it were. Beneath its throat are two large, rounded scales. The tail is 1 1/2 times longer than the body, hexagonal, very angular.

\* \* \* *Tail terete and imbricate, longer than the body.*

*chamaeleon*

19. Lizard with a short, terete, incurved tail, with two and three toes joined together.

*Amoen. acad.* 1. p. 290, 501. The same lizard.

*Mus. Ad. Fr.* 1. p. 45. The same lizard.

*Gron. mus.* 2. p. 76. n. 50. Chamaeleon.

*Olear. mus.* 9. t. 8. f. 3. Chamaeleon.

*Bellon. itin.* 1. 2. c. 60. Chamaeleon.

*Besl. mus. t.* 12. Chamaeleon.

*Valent. mus.* 1. 3. c. 31. Chamaeleon.

*Kircher. mus.* 275. t. 293. f. 44. Chamaeleon.

*Jonst. quadr. t.* 79. Chamaeleon.

*Seb. mus.* 1. t. 82. f. 3. 4. 5. & t. 83. f. 5.

*Aldr. quadr.* 670. Chamaeleon.

It lives in Africa and Asia.

Chamaeleon anatomy. *Hasselq. iter.* 297.

It differs at the top by being flat and carinate. It slowly swells and shrinks its body.

The eyes are covered, very brilliant, with a naked, golden pupil. Its gait is slow, with opposed, anomalous feet and with tail raised above. The tongue is lumbriciform, very long, and catches flies. It changes colors in warm places and is awake by night.

*Salaman-  
dra*

20. Lizard with a terete, short tail, stubby toes, and a naked, porous body

*Amoen. acad.* 1. p. 131. Lizard with a smooth, short tail, unarmed feet. Front feet are four-toed, hind feet five-toed.

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*Mus. Ad. Fr.* 1. p. 45. The same lizard.



*Matth. diosc.* 274. f. 274. Salamander.

*Gesn. quadr.* 80. Salamander.

*Aldr. quadr.* 641. Land salamander.

*Jonst. quadr. t.* 77. f. 10.

*Olear. mus. t.* 8. f. 4.

*Seb. mus. 2. t.* 12. f. 5.

*Raj. quadr.* 173. Land salamander

Lives in Europe.

The body is naked, without scales, perforated with pores. It was said in antiquity that it lived in fire, but Bartholinus has experimented on this. It exudes an oil from its pores that is used as a depilatory.

*Gecko*

21. Lizard with a terete, average tail; imbricate toes; body warty.

*Amoen. acad.* 1. p. 133. 292. Lizard with a smooth, average tail, five-toed feet.

Toes crested and imbricate; body warty.

*Mus. Ad. Fr.* 1. p. 46. The same.

*Hasselqv. iter.* 306. Gecko lizard with a smooth, average tail, crested feet, with lamellae longitudinally.

*Gron. mus. 2. p.* 78. n. 53. Salamander.

*Seb. mus. 1. t.* 168. f. 2-8.

*Bont. jav.* 57. Indian salamander.

Lives in the Indies, often even in homes.

It exudes poison onto its food from its feet (or through its urine?).<sup>25</sup>

*Hasselqv.* Tame; uses a house as a place of refuge.

*Stincus*<sup>26</sup>

22. Lizard with a terete, average tail, compressed at its tip; with marginate, stubby toes.

*Gron. mus. 2. p.* 76. n. 49. Scincus.

*Seb. mus. 2. p.* 112. t. 105. f. 3.

*Besl. mus. 1. 12. f.* 1.

*Olear. mus. 9. t.* 8. f. 1.

*Raj. quadr.* 271. Scincus.

*Amoen. acad.* 1. p. 294.

*Hasselqv. act. ups.* 1750. p. 30.

- - - *itin.* 309. n. 58.

Lives in mountainous areas of Libya, Egypt, and Arabia Petraea.<sup>27</sup>

The body is sold as an aphrodisiac.<sup>28</sup>

*hispidia*

23. Lizard with a terete average tail, triple-spined at tip.

*Mus. Ad. Fr.* 1. p. 44. The same lizard.

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*Seb. mus. 1. t.* 109. f. 6.

t. 83. f. 1. 2.

It lives in South America

*orbicularis*

24. Lizard with a terete, short tail, trunk subglobular and spiny above.

*Seb. mus. 1. p.* 134. t. 83. f. 1. 2. Orbicular spiny lizard

*Hernand. mex.* 327, 328. Orbicular lizard

*Raj. quadr.* 263. Orbicular lizard

Lives in Mexico.

*vulgaris* 25. Lizard with a terete, average tail; four-toed front feet; feet stubby.  
*Faun. svec.* 254. Lizard with unarmed feet, four-toed hands<sup>29</sup> five-toed rear feet; livid body; dark double dorsal line.  
*Raj. quadr.* 264. Common lizard.  
 Lives in Europe. Its larva is beneath the water.

*aquatica* 26. Lizard with a moderately terete, average tail; stubby, split feet; front feet four-toed.  
*Gron. mus.* 2. p. 78. n. 52. Scaleless salamander, moderately terete tail.  
*Gesn. ovip.* 31. Aquatic lizard  
*Seb. mus.* 2. p. 15. t. 12. f. 7. Ceylon salamander.  
 It lives in fresh and stagnant bodies of water in Europe. Whether this is a distinct species of a larva of the previous one I am not yet fully clear.

\*\*\*\* *Those whose tail is terete, imbricate, longer than the body.*

*Basili-* 27. Lizard with a terete, long tail; radial dorsal fin; crested occiput.  
*scus* *Seb. mus.* 1. t. 100. f. 1.  
 Lives in South America.

*Igvana*<sup>30</sup> 28. Lizard with a terete, long tail; a dorsal, dentate suture; a denticular gular crest.  
*Amoen. acad.* 1. p. 123. 287. Lizard with a terete tail; five-toed feet; longitudinal dorsal crest; a hanging, anteriorly dentate appendage on the throat.  
*Mus. Ad. Fr.* 1. p. 43. The same.  
*Gron. mus.* 2. p. 82. n. 60. Igvana.  
*Maregr. bras.* 236. f. 236.

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*Jonst. quadr.* t. 77. f. 5.  
*Jacob. mus.* t. 4.  
*Olear mus.* t. 6. f. 1. Yvana.<sup>31</sup>  
*Bont. jav.* 56. t. 56. Leguan lizard  
*Maregr. bras.* 236. Senembi or Igvana  
*Nieremb. nat.* 271. t. 271.  
*Ovied. amer.* l. 13. c. 3.  
*Rhed. exper.* 100. t. 101. Igvane.  
*Worm. mus.* 313.  
*Sloan. jam.* 2. p. 333.  
*Raj. quadr.* 265. Senembi lizard and Igvana.  
*Seb. mus.* 1. t. 95. f. 1. 2.  
                   96. f.  
                   97. f. 3.  
                   98. f. 1.  
*Clus. exot.* 116. Yvana.  
*Catesb. car.* 2. p. 64. t. 64?  
 Lives in the Indies.  
 It is captured by means of a noose. Its flesh is tastiest of all, but is harmful to those with syphilis.





- strumosa* 35. Lizard with a terete, long tail, a gibbous, forward -thrust chest.  
*Seb. mus. 2. t. 20. f. 4.* Mexican strumose salamander.  
 Lives in South America.  
 The chest, or sternum, projects forward into a blunt dagger shape.
- Teguixin* 36. Lizard with a terete, long tail; a lateral folded suture.  
*Amoen. acad. 1. p. 128.* Lizard with a terete, long tail; five-toed feet; no crest;  
 plicate abdomen.  
*Mus. Ad. Fr. 1. p. 45.*  
*Seb. mus. 1. t. 96. f. 1.*  
 Lives in the Indies.  
 The neck has a triple fold below.
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- aurata* 37. Lizard with a terete, long tail; glabrous rounded scales; darkish sides.  
*Amoen. acad. 1. p. 294.* Lizard with a smooth tail; five-toed feet; rounded,  
 very smooth, grayish scales; darkish sides.  
*Mus. Ad. Fr. 1. p. 46.* Barbarian lizard.  
*Gron. mus. 2. p. 75. n. 48.* Scincus?  
*Seb. mus. 1. t. 89. f. 3.*  
*Aldr. quadr. 660.* Cypriot scincoid lizard.  
 It lives in the English Isle of Jersey and on Cyprus.  
 In life, it shines most beautifully with a gold color.  
 The body is smooth, almost fat. The ears are concave.
- punctata* 38. Lizard with a terete, long tail; with two yellow lines on the back, with  
 interspersed black dots.  
*Mus. Ad. Fr. p. 46.* The same lizard.  
*Seb. mus. 2. t. 9. f. 9.*  
 Lives in Asia.  
 Two yellowish lines enclose the back and distinguish it from the sides.
- lemniscata* 39. Lizard with a terete, long tail; with eight striped<sup>35</sup> lines on the back  
*Mus. Ad. Fr. 1. p. 47.* The same lizard.  
*Seb. mus. 1 t. 92. f. 4.*  
 Lives in Guinea.<sup>36</sup>  
 Very similar to *Lacerta agilis*.
- fasciata* 40. Lizard with a terete, longish tail; back brown, with five yellowish lines.  
*Catesb. car. 2. t. 67.* Blue-tailed lizard.  
 Lives in Carolina.
- lineata* 41. Lizard with a terete, long tail. four-toed front feet; body with four yellow lines.  
*Mus. Ad. Fr. 1. p. 46.* Lizard with a terete, long tail; feet split and minimally clawed.  
 Front feet are four-toed, hind feet five-toed.  
*Seb. mus. 2. t. 41. f. 6.* Lesser lemniscate Ceylonese lizard.  
 Lives in Ceylon.
- Chalcides* 42. Lizard with a terete, long tail; three-toed feet.  
*Syst. nat. 36. n. 7.* The same lizard.

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*Column. Ecphr.* 1. p. 35.t. XXXVI. Seps, chalcid lizard or chalcides<sup>37</sup>.  
*Aldr. quadr.* 638. Chalcidic lizard.  
 Lives in southern Europe and Africa.  
 Midway between the lizards and the snakes, but equipped with ears.

*angvina*<sup>38</sup> 43. Lizard with a tail somewhat stiff at its end; striped body<sup>39</sup>; pinniform feet.  
*Seb. mus.* 2. t. 68. f. 6. 7. A serpentine worm out of Africa.  
 Lives on the Cape of Good Hope. It has not been seen by me.

106. *RANA.* Body tetrapod, naked, tailless.

*Pipa* 1. Frog with stubby, four-toothed front feet, clawed rear feet.  
*Mus. Ad. Fr.* 1. p. 49. The same frog.  
*Gron. mus.* 2. p. 84. n. 64.  
*Seb. mus.* 1. p. 121. t. 77. f. 1-4. Toad or American pipa.<sup>40</sup>  
*Vincent. pip.* 1726. t. 62. Surinam aquatic toad.  
*Bradl. nat.* 1. 22. f. 1. Surinam frog.  
*Vallisn. nat.* 1. t. 41. f. 6.  
 Lives in Surinam.  
 It hatches its young by laying them on its back.

*Bufo* 2. Frog with a dark and pale, warty, swollen body.  
*Fn. svec.* 253. Frog with split, four-toed front feet; rear feet palmate, six-toed<sup>41</sup>;  
 fairly short thumb.  
*It. oel.* 142.  
*Gesn. pisc.* 807. Rubeta or phrynum.<sup>42</sup>  
*Jonst. quadr.*  
*Bradl. nat.* t. 21. f. 2.  
*Raj. quadr.* 252. Toad or rubeta.  
 It lives in shady, wooded, stony areas of Europe, especially in Ukrainia.  
 It is eaten by the buteo falcon. *Gesn. pisc.* 807.  
 The warts exude a milky substance and are poisonous if drunk, touched, or inhaled. It delights in *Cotula*, *Actaea*, *Stachys foetida*.<sup>43</sup> It is viviparous, with, so they say, the male acting as midwife. It lures insects into its mouth through bewitchment. It is nocturnal and a digger.

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The front feet in most species of *Ranae* are split and four-toed. The rear feet are five-toed and palmate, less frequently indistinctly six-toed<sup>41</sup>.

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*Rubeta* 3. Frog with a warty body; obtuse anus; dotted with black below.  
*Syst. Nat.* 37. n. 5. Frog with split, four-toed front feet; subpalmate rear feet;  
 anus dotted below.  
*It. Wgot.* 261.  
 Lives in Europe.

*gibbosa* 4. Frog with an ovate-convex body; a longitudinal ash-gray dentate stripe;  
 split feet.  
*Amoen. acad.* 1. p. 286. Frog with four-toed split front feet; six-toed<sup>41</sup> split rear

feet; thumb a bit wide and very short.

*Mus. Ad. Fr. 1. p. 48.* The same frog.

Lives in remote areas.

*variegata*

5. Frog with a warty body; a white abdomen spotted with black; a gular fold.

Lives in remote areas.

It is similar to toads but is small, black, and is everywhere rough above with dots. Below, it is variegated with white and black. The feet are stubby, the front feet split and four-toed, the rear feet five-toed and palmate. A transverse wrinkle under the neck.

*ventricosa*

6. Frog with a semi-ovate mouth, fairly projecting throat.

*Mus. Ad. Fr. 1. p. 48.* The same frog.

Lives in the Indies.

*marina*

7. Frog with gibbose shoulder blades; bumpy rear end.

*Seb. mus. 1. t. 76. f. 1.* Largest marine frog.

Lives in America.

Front feet split, four-toed. Rear feet somewhat split and five-toed.

*typhonia*

8. Frog with ovate ear lobes.

Lives in America, calling by night with the foul sound of the crow as it grows light.

*Rolander.*

The back has four longitudinal wrinkles, raised dots, and black spots. The feet are stubby, front feet four-toed and split, rear feet five-toed and palmate. The toes are narrow, the second being the longest, but lacking rounded claws.

*ocellata*

9. Frog with ocellate ears and stubby feet.

*Brown. jam. 466. t. 41. f. 4.* The largest, compressed, mottled frog.

Are the penises of frogs the warts on the thumb of the front foot? <sup>44</sup> For in the turtles the penis is at the loins by the thighs, in serpents it is at the anus. Frogs' eggs are naked.

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Lives in America.

At the ears there is an ocellate spot on each side. Front feet four-toed and split; rear feet five-toed, subpalmate.

*cornuta*

10. Frog with conical eyelids.

*Mus. Ad. Fr. 1. p. 48.* The same frog.

*Seb. mus. 1. t. 72. f. 1, 2.* Horned toad or spiny Virginia [toad].

Lives in Virginia and is hideous in appearance.

*marginata*

11. Frog with marginate sides, a smooth body, and split rear feet.

*Mus. Ad. Fr. p. 47.* Frog with marginate sides.

Lives in the Indies.

*paradoxa*

12. Frog with femur obliquely striated posteriorly. *Mus. Ad. Fr. 2.p...*

*Syst. nat. 36. n. 2.* Lizard with a double tail; front feet four-toed and split; rear feet



five-toed and palmate. Abdomen swollen.  
*Mus. Ad. Fr.* 1. p. 49. Fish frog.  
*Seb. mus.* 1. t. 78. f. all.  
*Merian. surin.* 71. t. 71.  
 Lives in Surinam.

*tempora-  
ria*

13. Frog with a flatish, sub-angular back.  
*Faun. svec.* 250. Frog, front feet four-toed and split, rear feet five-toed and palmate. The thumb is rather long.  
*It. oel.* 154. Occasional frog.  
*Gesn. ovip.* 46. Harmless aquatic frog.  
*Aldr. ovip.* 89. Frog.  
*Jonst. quadr. t.* 75 f. 5, 6, 7, 8.  
*Raj. quadr.* 247. Aquatic frog.  
*Bradl. natur. t.* 21. f. 1.  
 It lives in Europe.  
 It is aquatic in the spring but terrestrial in the summer. It lives on gnats and is eaten by ducks and herons. Even when its heart has been removed, it leaps.

*esculen-  
ta*

14. Frog with an angular body; back transversely gibbous; abdomen marginate.  
*Roes. ran.* 51. t. 13. Green aquatic frog.  
 It lives in springs in Europe.  
 Green, with three yellow lines, the middle one running from the mouth to the anus. The back is divided transversely with a hump. Rear feet palmate. The male has rounded, inflated ears. Very often it predicts rain with its evening song.

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*Hyla*

15. Frog with a transversely gibbous angular back; abdomen crossed with a curved band on the groin.  
*Gesn. pisc.* 809. Gibbous frog. 4,5,  
 Lives in Europe.  
 From a distance its croaking imitates the sound of bells.

*arborea*

16. Frog with a smooth body. Beneath it is tuberculate with contiguous dots. Feet split, with roundish wide claws.  
*Amoen. acad.* 1. p. 135. Frog with split feet, roundish claws, and smooth, posteriorly angulate body.  
*Mus. Ad. Fr.* 1. p. 47. The same frog.  
*Gron. mus.* 2. p. 84. n. 63. Frog.  
*Seb. mus.* 1. t. 73. f. 3. Slender Brazilian frog.  
*Seb. mus.* 2. t. 78. f. 5. Red American frog.  
*Gesn. pisc.* 808. Green, small frog.  
 β *Amoen. acad.* 1. p. 285. Frog with split feet; front feet four-toed, rear feet five-toed. Knees are tuberoses below.  
 Lives beneath the leaves of trees in Europe and America, calling flies into its jaws.

*boans*

17. Frog with a smooth body; contiguous dots below. Feet palmate, rear feet five-toed, front feet four-toed with roundish, wide claws.

*Amoen. acad.* 1. p. 285. Frog with four-toed front feet, rear feet five-toed and palmate. Tips of the claws roundish.

*Mus. Ad. Fr.* 1. p. 47. The same frog.

*Seb. mus.* 1. t. 71. f. 3, 4. Surinam frog.

Lives in America.

It is very similar to the tree frog but all the feet are palmate and the body is large and white, even possessing milky white spots. And these things are enough to distinguish it as a species.

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Oviparous aquatic frogs undergo metamorphosis.

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## II. SERPENTES<sup>45</sup>

Mouth breathing. No feet or fins.<sup>46</sup>

107. *CROTALUS*. Abdominal scutes. Subabdominal scutes and scales. Rattle at the end of its tail.

Scutes and small scutes.

192. *horridus*. 167-23: 2. *Mus. Ad. Fr.* 1. p. 39

♂

*Bradl. natur.* t. 9. f. 1

*Seb. mus.* 2. t. 95 f. 1.

Lives in America

Very venomous; its antidote is *Senega*; it is eaten by pigs; it calls down birds and squirrels from the trees into its jaws.

195. *Dryinus* 165-30. *Amoen. acad.* 1. p. 297.

♂

Lives in America.

A few off-white, yellowish spots.

196. *Durissus*. 172-21: 3. *Amoen. acad.* 1. p. 500.

♂

*Kalm. act. Stockh.* 1752. p. 310 & 1753: p. 52, 185.

*Gron. mus.* 2. p. 70. n. 45. *Crotalophorus* 174-22:3.

Lives in America.

Varied with white and yellow, black rhomboidal spots with white ones in a disc pattern.<sup>47</sup>

108. *BOA*. Abdominal scutes. Subcaudal scutes (lacking a rattle).

276. *scytale*. 250-26. *Gron. mus.* 2. p. 55. n. 10.

*Scheuch. sacr.* t. 737. f. 1.

Lives in America.

Color undulate in white and black. The scales of the head are larger.

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280. *canina*. 203-77. *Mus. Ad. Fr.* 1. p. 39. t. 3.

*Seb. mus.* 2. t. 96. f. 2.

t. 81. f. 1.

Lives in the trees of America.

Green with intermittent white stripes.

Worshipped by the Americans. Rolander.

299. *Hipnale*. 179-120. *Seb. mus. 2. t. 34. f. 2.*  
Lives in Asia.  
Varied with a gray-yellowish color.
300. *Constrictor*. 240-60. *Amoen. acad. 1. p. 497. t. 17. f. 3.*  
*Mus. Ad. Fr. 1. p. 38.*  
*Gron. mus. 2. p. 69. n. 43. Cenchrus 248-60*  
*Seb. mus. 2. t. 98. f. 1*  
t. 99. f. 1,2.  
t. 100. f. 1.  
t. 101. f. 1.  
t. 104. f. 1.  
1. t. 53. f. 1.  
t. 36. f. 5.  
t. 62. f. 2, 1.  
Lives in the Indies.
319. *murina*. 254-65. *Gron. mus. 2. p. 70. n. 44. Coluber 254-69.*  
*Seb. mus. 2. t. 29. f. 1.*  
Lives in America.  
Reddish with rounded spots above.
322. *cenchrus*. 265-57.  
Lives in Surinam.  
Yellowish, with white spots, gray in the iris.
345. *Orophias*. 281-64. *Mus. De Geer.*  
Lives...  
Face of the constrictor, but dark.
375. *Enydris*. 270-105. *Mus. De Geer.*  
Lives in America.  
Variegated with a gray color. The lower teeth are long.
418. *Hortulana*. 290-128. *Mus. Ad. Fr. 1. p. 37.*  
*Seb. mus. 2. t. 84. f. 1.*  
t. 74. f. 1

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Lives in America.

Pale, with livid, wedge-shaped spots. Head <sup>48</sup>with golden-yellow splotches resembling a garden.<sup>49</sup>

109. *COLUBER*.

Abdominal scutes.  
Subcaudal scales.

140. *Vipera*.

118-22. *Hasselqv. Act. Ups. 1750. p. 24.* <sup>50</sup>

♂

[*Hasselqv.*] *itin. 314. n. 60.*



Lives in Egypt.

Very short, gibbous head, minute scales.

The sort of this viper for sale is Egyptian, not *Berus*.<sup>51</sup>

153. *Atropos*<sup>52</sup> 131-22. *Mus. Ad. Fr.* 1 p. 22. t. 13. f. 1  
 ♂ Lives in America.  
 Hoary, dark eyes with a white iris.
160. *Leberis*. 110-50.  
 ♂ Lives in Canada. *Kalm*.  
 Bands [with] black lines.<sup>53</sup>
161. *Lutrix*. 134-27.  
 Lives in the Indies.  
 Back and abdomen yellow; sides tending to blue.
162. *Calamarius*. 140-22. *Mus. Ad. Fr.* 1. p. 23. t. 6 f. 3.  
 Lives in America.  
 Livid with dark bands and linear punctations; below, dark-tessellated.
170. *Constrictor* 130-40.  
 Lives in Canada. *Kalm*.  
 The lowest apex of its jaw is three-cornered.  
 It approaches men, twisting itself around their feet, but it is harmless.
174. *Ammodytes*. 142-32. *Amoen. acad.* 1. p. 506. n. 25.  
 ♂ *Bellon. itin.* 203. *Druinus*.  
*Aldr. serp.* 169. *Ammodytes*.

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The horned viper, *Hasselqv. Act. Ups.*, 1750, p. 27. is a coluber fabricated by the craft of the Arabs, who pierced its head with the claws of a small bird and then inserted them there.

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Lives in the Orient.

Nose terminated in a raised wart.

175. *Cerastes*. 150-25. *Hasselqv. Act. Ups.*, 1750. p. 27. [see footnote on p. 216]<sup>50</sup>  
*[Hasselqv.] iter.* 315. n. 61. Horned Coluber.  
*Bellon. itin.* 203.  
 Lives in the Orient.  
 All the scales of its head are small and rounded.  
 A soft tooth emerges from its upper eyelid.
177. *plicatilis*. 131-46. *Amoen. acad.* 1. p. 301. n. 26.  
*Mus. Ad. Fr.* 1. p. 23.  
*Seb. mus.* 1. t. 57. f. 5.  
 Lives in Ternate.<sup>54</sup>  
 Livid, with dark sides; beneath, a triple row of dark dots.

178. *Domicella*. 118-60. *Amoen. acad.* 1. p. 117. n. 5.  
*Seb. mus.* 1.  
 White with darkish bands coming together below.
179. *Alidras*. 121-58. *Mus. De Geer*.  
 Lives in the Indies.  
 Totally white.
180. *buccatus*. 107-72. *Mus. Ad. Fr.* p. 29. t. 19. f. 3  
 Lives in the Indies.  
 Dark with white bands. White head: two dark spots on top of its head and a triangle over its nostrils.
181. *angulatus*. 120-60. *Mus. Ad. Fr.* 1. p. 23. t. 15. f. 1.  
*Amoen. acad.* 1. p. 119. n. 7.  
*Seb. mus.* 2. t. 12. f. 3.  
 Lives in Asia.  
 Gray-brown with dark bands.
183. *Berus*. 146-39. *Faun. svec.* 260.  
 ♂  
*Amoen. acad.* 1. p. 113. n. 1  
*Aldr. serp.* 115, 116.  
 Lives in Europe.
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184. *Chersea*. 150-34. *Faun. svec.* 261.  
 ♂  
*L. Act. Stockh.* 1749. p. 246. t. 6.  
*Aldr. serp.* 197. Rusty colored asp.  
 Lives in the lowlands of Sweden; very venomous and its bite is frequently fatal in Sweden. Is it sufficiently different from the asp, even though it is smaller in our lands?
189. *caeruleus*. 165-24. *Amoen. acad.* 1. p. 303. n. 31.  
*Seb. mus.* 2. t. 13. f. 3.  
 Lives in America.  
 Bluish-white scales on either side; below, white.
190. *albus*. 170-20. *Mus. Ad. Fr.* 1. p. 24. t. 14. f. 2.  
 Lives in the Indies.  
 White, without spots.
192. *aspis*. 146-46. French "aspice"  
 ♂  
 Lives in France.  
 Reddish, with dark alternate spots flowing together into a band.  
 Like *Chersea*, but larger.
193. *Typhlus*. 140-53. *Mus. De Geer*.  
 Lives in the Indies.  
 Bluish.

201. *Lebeti-* 155-46. *Hasselqvist.*  
 ♂ *nus* Lives in the Orient.  
 Somewhat cloudy; dark dots below.
202. *melano-* 140-62. *Mus. Ad. Fr. 1. p. 24. t. 15. f. 2.*  
*cephalus.* Lives in America.  
 Dark, very smooth, black head.
204. *Cobella.* 150-54. *Amoen. acad. 1. p. 117. n. 14.*  
*p. 302. n. 28.*  
*p. 496. n. 14.*  
*Gron. mus. 2. p. 65. n. 32.*  
*Seb. mus. 2. t. 2. f. 6.*  
 Lives in America, very common.

The subcaudal scutes of the colubers are counted longitudinally, or as pairs even though they are alternate, although two may present the appearance of a scute beneath the abdomen.<sup>55</sup>

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Ash gray, with scattered oblique white lines; oblique, lead-colored spots behind each eye.

207. *Reginae.* 137-70. *Mus. Ad. Fr. p. 24. t. 13. f. 3.*  
 Lives in America.  
 Dark abdomen variegated with white and black.
212. *severus.* 170-42. *Mus. Ad. Fr. 1., p. 25. t. 8. f. 1.*  
 ♂ *Seb. mus. 2. t. 54. f. 4.*  
 Lives in Asia.  
 Ash-gray with white bands. Ash-gray band between the eyes and behind the nostrils.
216. *Aurora.* 179-37. *Mus. Ad. Fr. p. 25. t. 19. f. 1.*  
*Seb. mus. 2. t. 78. f. 3.*  
 Lives in America.  
 Livid, yellow back.
217. *Sipedon.* 144-73. *Kalm.*  
 Lives in North America.  
 Dark.
218. *maurus.* 152-66.  
 Lives in Algeria. *E. Brander.*  
 Body dark above with two dorsal lines. Dark-black below. From the dorsal lines to the abdomen, on each side, many black bands.
219. *stolatus.* 143-76. *Mus. Ad. Fr. 1. p. 26. t. 22. f. 1.*  
 ♂ *Seb. mus. 2, t. 9. f. 1.*  
 Lives in America.  
 Gray, with two white stripes.



Scutes on both sides with a black dot.

220. *vittatus*. 142-78. *Amoen. acad.* 1. p. 30. n. 27.  
*Mus. Ad. Fr.* p. 26. t. 18. f. 2.  
*Gron. mus.* 2. p. 65. n. 31. Coluber 155-62.  
*Seb. mus.* 2. t. 45. f. 5.  
 t. 60. f. 2, 3.  
 Lives in America.  
 Scutes with a dark margin.  
 White stripe, dentate, beneath the tail.

Serpents of our country hibernate and in the early spring shed their skin, that is to say, their "old age."

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221. *miliaris* 162-59. *Mus. Ad. Fr.* p. 27.  
 Lives in the Indies.  
 Dark; white spot on the scales. White below.
227. *rhombaeus* 157-70. *Mus. Ad. Fr.* p. 27. t. 24. f. 2.  
 Lives in the Indies.  
 Bluish with black spots, blue rhomboids in the middle.
229. *cyaneus*. 119-110. *Amoen. acad.* 1. p. 493. n. 10.  
*Seb. mus.* 2. t. 43. f. 2.  
 Lives in America  
 Intensely blue, with the appearance of *Ah [a]etulla*. Green below.
230. *Natrix*. 170-60. *Faun. svec.* 259.  
*It. gotl.* 146.  
*Amoen. acad.* 1. p. 116. n. 3.  
*Gron. mus.* 2. p. 63. n. 27.  
 Lives in Europe; bears young in dung heaps.  
 Black with a white spot on each side toward the neck.
233. *Aesculapii*. 190-43. *Amoen. Acad.* 1. p. 497. n. 15.  
*Mus. Ad. Fr.* 1. p. 29. t. 11. f. 2.  
*Gron. mus.* 2. p. 59. n. 18.  
*Seb. mus.* 2. t. 18. f. 4.  
 Lives in the Indies.  
 White and black bands divided by a line or a white ring.
234. *agilis*. 184-50. *Amoen. acad.* 1. p. 304. n. 33.  
*Mus. Ad. Fr.* 1. p. 27. t. 21. f. 2.  
 Lives in the Indies.  
 Dark and white bands.
235. *lacteus*. 203-32. *Mus. Ad. Fr.* 1. p. 28. t. 18. f. 1.  
 ♂ Lives in the Indies.

White with double dark-black spots. Top of the head dark-black with a white, longitudinal line.

244. *aulicus*. 184-60. *Mus. Ad. Fr.* 1. p. 29. t. 12. f. 2.  
*Seb. mus.* 1. t. 91. f. 5.  
 Lives in America.

Serpents often swallow down prey twice as thick as their neck, on account of their expandable, unarticulated jaws.

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Gray, with biturcated white bands on the side. Top of head white.

246. *monilis*. 164-82. *Mus. De Geer*.  
 Lives in America.  
 Annulate body, a necklace [monile] of 3 white dots on the neck.
252. *pallidus*. 156-96. *Amoen. Acad.* 1. p. 494. n. 11.  
*Mus. Ad. Fr.* 1. p. 31. t. 7. f. 2.  
 Lives in the Indies.  
 Pale, with scattered gray spots and dark dots. Double, interrupted, blackish lateral small<sup>56</sup> lines.
252. *lineatus*. 169-84. *Mus. Ad. Fr.* 1. p. 30. t. 12. f. 1.  
 t. 20. f. 1.  
*Seb. mus.* 2. t. 12. f. 3.  
 Lives in Asia.  
 Bluish, with 4 dark linear stripes.
253. *Naja*. 193-60. *Mus. Ad. Fr.* p. 30. t. 21. f. 1.  
 ♂  
*Seb. mus.* 2. t. 90. f. 1, 2.  
 t. 85. f. 1.  
 t. 89. f. 1, 2, 3, 4.  
 t. 97. f. 1, 2, 3, 4.  
 t. 94. f. 1.  
 1. t. 44. f. 1.  
*Kaemph. amoen.* 565. t. 567.  
*Amoen. acad.* 1. p. 305.  
 Lives in eastern India.  
 Sides of the neck widen into a membrane with white spectacle-shaped spots above.  
 Most venomous of all. Antidote is *Ophiorhiza*; killed by the mongoose.
254. *padera*. 198-56. *Mus. Ad. Fr.* 2. p...  
 Lives in the Indies.  
 Many pairs of black spots down its back in a connected small line. The same number, unconnected, on its sides.
258. *canus*. 188-70. *Mus. Ad. Fr.* 1. p. 31. t. 11. f. 1.  
 Lives in the Indies.

Note those armed with a retractable, venomous weapon, marked by the symbol ♂.

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Hoary, with darkish bands, two snowy dots on the sides.

260. *sibilans*. 160-100. *Amoen. acad.* 1. p. 302. n. 30.  
*Seb. mus.* 2. t. 52. f. 4.  
 t. 56. f. 4.  
 t. 107. f. 4.  
 Lives in Asia.  
 Bluish, with black stripes, white below.
261. *laticauda-* 220-42. *Mus. Ad. Fr.* 1. p. 31. t. 16. f. 1.  
*tus*. Lives in the Indies.  
 Ash-gray with dark bands.  
 Blunt tail, doubly compressed.
262. *Sirtalis*.<sup>57</sup> 150-114. *Kalm*.  
 Lives in Canada.  
 Three green-bluish stripes on a dark, slender, ribbonlike body.
263. *atrox*. 196-69. *Amoen. acad.* 1. p. 305. n. 35.  
 ♂ *Mus. Ad. Fr.* 1. p. 33. t. 22. f. 2.  
*Seb. mus.* 1. t. 43. f. 5.  
 Lives in Asia.  
 Hoary, with carinate scales.  
 Head depressed, with compressed, angular small scales.
264. *Sibon*. 180-85. *Amoen. acad.* 1. p. 304. n. 32.  
*Seb. mus.* 1. t. 14. f. 4.  
 Lives in Africa.  
 Rusty-dark, sprinkled with white; below white with dark spots.
265. *nebulat-* 185-81. *Mus. Ad. Fr.* p. 32. t. 24. f. 1.  
*tus* *Catesb. car.* 2. p. 42. t. 42?  
 Lives in America.  
 Clouded with dark and ash-gray; below, varied with white and dark; it  
 climbs legs and constricts.
266. *fuscus*. 149-117. *Mus. Ad. Fr.* 1. p. 32. t. 17. f. 1.  
*Seb. mus.* 2. t. 54. f. 2.  
 t. 71. f. 1.  
 t. 72. f. 1.  
 t. 87. f. 1.  
 t. 5891. f. 1.

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Lives in Asia.

Ashy-dark, resembling the Ahaetulla. Behind the eyes an oblong, dark



spot.

267. *Saturninus*. 147-120. *Mus. Ad. Fr.* 1. p. 32. t. 9. f. 1.  
Lives in the Indies.  
Livid, ashy-cloudy. Large eyes.
270. *candidus* 220-50. *Mus. Ad. Fr.* 1. p. 33. t. 7. f. 1.  
Lives in the Indies.  
Whitish with dark bands.
271. *niveus*. 209-62. *Mus. De Geer*.  
♂ *Seb. mus.* 2. t. 15. f. 1.  
Lives in Africa.  
White, without spots.
272. *scaber*. 228-44. *Mus. Ad. Fr.* p. 36. t. 10. f. 1.  
Lives in the Indies.  
Clouded with dark and black, carinate scales. Top of head with a black spot, bifid to the rear.<sup>59</sup>
273. *carinatus* 157-115. *Mus. Ad. Fr.* p. 31.  
Lives in the Indies.  
Lead-colored with scales pale at the margin. White below. Carinate back.
275. *corallinus* 193-82. *Mus. Ad. Fr.* 1. p. 33.  
♂ *Seb. mus.* 2. t. 17. f. 1.  
Lives in Asia.  
Glaucous with three dark bands; scales distant<sup>60</sup> pale below with hoary dots.
276. *ovivorus*. 203-73. *Kalm*.  
*Pis. bras.* 279. Guinpuaguara.  
Lives in America.
279. *exoletus* 147-132. *Mus. Ad. Fr.* 1. p. 34. t. 10. f. 2.  
Lives in the Indies.  
Bluish-ashy, resembles the *Ahaetullae*.
281. *Situla*. 236-45.  
Lives in Egypt. *Hasselqv.*  
Gray with two black stripes.

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The color in serpents varies widely, thus one should never trust in their coloration.

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282. *triscalis* 195-86.  
Lives in the Indies.  
Glacous body. Three dark longitudinal dorsal lines joined at the backbone, the middle of which ends above the anus; on each side, a dark line running with the previous two to the tip of the tail; tail 1/5.<sup>61</sup>

285. *lemniscatus*. 250-37. *Amoen. acad.* 1. p. 118. n. 6.  
p. 413. n. 9.  
*Mus. Ad. Fr.* 1. p. 34. t. 14. f. 1.  
*Seb. mus.* 1. t. 10. f. last.  
2. t. 76. f. 3.  
Lives in Asia.  
White and black bands, often interrupted by two white rings. Body very glabrous.
286. *annulatus* 190-96. *Amoen. acad.* 1. p. 120. n. 9.  
p. 305. n. 34.  
*Mus. Ad. Fr.* p. 34. t. 8. f. 2.  
*Seb. mus.* 2. t. 38. f. 2.  
Lives in America.  
White with alternate dark round spots, everywhere flowing together.
287. *Dipsas*. 152-135. *Amoen. acad.* 1. p. 302. n. 29.  
♂  
*Gron. mus.* 2. p. 64. n. 30.  
*Seb. mus.* 2. t. 24. f. 3.  
Lives in America.  
Bluish with scales whitish at the margin. Tail with a bluish suture below.
290. *Pelias*. 187-103. *Mus. De Geer*.  
Lives in the Indies.  
Dark behind the eyes and top of the head, the rest doubled with black.  
Abdomen green with a yellow line on each side.
293. *Tyria*. 210-83.  
Lives in Egypt. *Hasselqvist*.  
Whitish with a triple longitudinal row of rhomboidal, dark spots.
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297. *jugularis*. 195-102.  
Lives in Egypt. *Hasselqv.*  
Black with a blood-red throat.
299. *Petola*. 209-90. *Amoen. acad.* 1. p. 306. n. 36.  
p. 119. n. 8.  
p. 495. n. 13.  
*Gron. mus.* 2. p. 57. n. 13.  
*Seb. mus.* 1. t. 54. f. 4.  
Lives in Africa.  
Lead-colored with testaceous bands.
307. *Molurus*. 248-59. *Mus. De Geer*.  
Lives in India.  
Very similar to the boa, but the scutes and scales of the head are larger as in colubers.
313. *Ahaetulla*. 163-150. *Amoen. acad.* p. 115. n. 2.

*p. 495. n. 12.*

*Mus. Ad. Fr. 1. p. 35. t. 22. f. 3.*

*Gron. mus. 2. p. 61. n. 24.*

*Seb. mus. 2. t. 82. f. 1.*

*2. t. 12. f. 3.*

*Bradl. natur. t. 9. f. 2.*

Lives in Asia, America.

Green-gold with black scales at its peak; black bands across its eyes.

314. *petolarius.* 212-102. *Mus. Ad. Fr. 1. p. 35. t. 9. f. 2.*

Lives in the Indies.

Dark with white bands; pale below.

316. *Haje.* 207-109. *Hasselqv. iter. 317. n. 62.* A Coluber with 206 abdominal scutes, 60 caudal scales.

Lives in lower Egypt.

Very large, dark-black with oblique bands and half-white scales.

323. *filiformis.* 165-158. *Mus. Ad. Fr. p. 36. t. 17. f. 2.*

Lives in the Indies.

Black, very narrow, white below. Head thicker than the body.

325. *pullatus.* 217-108. *Amoen. acad. 1. p. 300. n. 25.*

*Mus. Ad. Fr. 1. p. 35. t. 20. f. 3.*

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*Gron. mus. 2. p. 56. n. 12.* Coluber 215-104.

*Seb. mus. 2. t. 20. f. 1.*

Lives in Asia.

Dark black bands with white dots. Snowy white temples with dark black spots.

326. *hippo-crepis.* 232-94. *Mus. Ad. Fr. 1. p. 36. t. 16. f. 2.*

Lives in America.

Livid with dark spots. Dark bands between the eyes and a curved band on the occiput.

328. *minervae* 238-90. *Mus. Ad. Fr. 1. p. 36.*

Lives in the Indies.

Glaucous with a dark dorsal stripe. Three dark stripes on the head.

337. *cinereus* 200-137. *Mus. Ad. Fr. 1. p. 37.*

Lives in the Indies.

Ash-gray with a white, angled abdomen. Scales of the tail rust colored at the margin.

339. *vindissimus.* 217-122. *Mus. Ad. Fr. 2, p...*

Lives in Surinam.

Very green with abdominal scutes medially widened.



340. *mucosus* 200-140. *Mus. Ad. Fr.* 1. p. 37. t. 23. f. 1.  
Lives in the Indies.  
Bluish head.
344. *cenchoa*. 220-124. *Amoen. acad.* 1. p. 306. n. 37.  
*Seb. mus.* 2. t. 16. f. 2,3.  
Lives in America.  
Dark with pale spots and snowy-white bands. Head subglobular.
359. *mycterizans* 192-167. *Mus. Ad. Fr.* 1. p. 28. t. 5. f. 1.  
♂ t. 19. f. 2.  
*Gron. mus.* 2. p. 59. n. 19.  
*Seb. mus.* 2. t. 23. f. 2.  
*Catesb. carol.* 2. p. 47. t. 47.  
Lives in America.  
Snout extended, tetragonal; sides with a pale linear stripe.

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385. *caerule-scens* 215-170. *Mus. Ad. Fr.* 1. p. 37. t. 20. f. 2.  
Lives in the Indies.  
Bluish  
*Arges.* *Seb. mus.* 2. t. 103. f. 1.  
Lives in Africa.  
Occiput bilobed-gibbous. Body with transverse ocelli distributed in rings<sup>62</sup>. Not seen by me, nor have the scutes been noted.
110. *ANGUIS.* Abdominal scales and subcaudal scales.
160. *bipes.* 100-60. *Mus. Ad. Fr.* 1. p. 21. t. 28. f. 3.  
*Seb. mus.* 1. t. 53. f. 8.  
t. 86. f. 3.  
Lives in the Indies.  
Two very short feet, two-fingered, toward the anus. Pale with a dark dot on each scale.
197. *Meleagris.* 165-32.  
*Seb. mus.* 2. t. 21. f. 4.  
Lives in the Indies.  
Similar to *A. bipes*, glaucous with black dots in a multiple, longitudinal row.

Colubers not seen by me, described by Cl. Gronovius in *Gron. Mus.*

- 165 abdominal. 141 caudal 24. *Gron.* 41. *Seb.* 2 t. 98. f. 1.
- 175 -- 136 -- 39. *Gron.* 38. variegated with rusty-blue and white.
- 177 -- 135 -- 42. *Gron.* 39. white with black and white spots.
- 201 -- 159 -- 42. *Gron.* 29. *Seb.* 1. t. 33. f. 6. white-rufous.
- 202 -- 142 -- 60. *Gron.* 36. *Seb.* 2. t. 35. f. 4. bluish.
- 203 -- 153 -- 50. *Gron.* 34. white, with black lines and spots.
- 212 -- 149 -- 63. *Gron.* 33. white, girdled with black lines.
- 213 -- 138 -- 74. *Gron.* 37. *Seb.* 2. t. 20. f. 2. blue with black spots.

220	-	160	--	60.	<i>Gron.</i> 28. girdled with white and black lines.
230	-	165	--	74.	<i>Gron.</i> 25. <i>Seb.</i> 2. t. 21. f. 3. white with obscure lines.
234	-	174	--	60.	<i>Gron.</i> 22. <i>Seb.</i> 2. t. 33. f. 1. ashy -blue.
240	-	163	--	77.	<i>Gron.</i> 26. <i>Seb.</i> 2. t. 1. f. 9. & t. 9. f. 2. with a black stripe.
260	-	180	--	80.	<i>Gron.</i> 20. variegated with white and brown.
266	-	191	--	75.	<i>Gron.</i> 15. brown with white dots.
298	-	202	--	96.	<i>Gron.</i> 14. with brown spots.
311	-	189	--	122.	<i>Gron.</i> 17. purplish with dark -black spots.
314	-	172	--	142.	<i>Gron.</i> 23. blue with a dark-black lateral line.
315	-	190	--	125.	<i>Gron.</i> 28. girdled with white and black lines.
342	-	272	--	70.	<i>Gron.</i> 11. <i>Seb.</i> 2. t. 199. f. 2. clouded.

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198. *colubri-  
ra* 180-18. *Hasselqv. iter.* 320. n. 65.  
Lives in Egypt.  
Beautifully variegated with pale and dark.
209. *Jaculus.* 186-23. *Hasselqv. iter.* 319. n. 64.  
Lives in Egypt.  
Abdominal scales a bit wider.
212. *maculata* 200-12. *Mus. Ad. Fr.* 1. p. 21. t. 21. f. 3.  
*Gron. mus.* 2. p. 53. n. 5.  
*Seb. mus.* 2. t. 100. f. 2.  
1. t. 53. f. 7.  
Lives in America.  
Yellow above, with a dorsal stripe and dark linear bands.
214. *reticulata* 177-37. *Gron. mus.* 2. p. 54. n. 7.  
*Scheuch. sacr. t.* 747. f. 4.  
Lives in America. †  
Color of the scales is dark with a white disc.
215. *Cerastes* 200-15. *Hasselqv. Act. Ups.* 1750. p. 28<sup>50</sup>  
[*Hasselqv.*] *it[er].* 320. n. 66.  
Lives in Egypt. †
237. *lumbrica-  
lis.* 230-7. *Gron. mus.* 2. p. 52. n. 3.  
*Brown. jam.* 460. t. 44. f. 1.  
*Seb. mus.* 1. p. 137. t. 86. f. 2.  
Lives in America. †  
Color from yellow from whitish.
250. *laticauda* 200-50. *Mus. Ad. Fr.* 2. p. ..  
Lives in Surinam.  
Compressed tail, pointed, pale with dark bands.
253. *Scytale* 240-13. *Amoen. acad.* 1. p. 296.  
*Mus. Ad. Fr.* 1. p. 21. t. 6. f. 2.  
*Gron. mus.* 2. n. 14. *Anguis* 227-14.

*Seb. mus. 2. t. 2. f. 1,2,3,4.*

*t. 7. f. 4.*

*t. 20. f. 3.*

Lives in the Indies.

Whitish, with the margins of the scales everywhere rust colored. Dark bands.

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262. *Eryx.*

*Gron. mus. 2. p. 35. n. 9. (126-136.)*

Lives in America (I have not seen it).

Ash-gray with three black lines; bluish below.

270. *fragilis.*

135-135. *Faun. svec. 258.*

*Aldr. serp. 245. Caecilia vulgaris.*

Lives in Europe.

Its extreme fragility is cleverly explicated by Lemery <sup>63</sup> in his dictionary.

111. *AMPHISBAENA.* Rings on the body and tail.

230. *fulgino-  
sa*

200-30. *Amoen. acad. 1. p. 295.*

*Mus. Ad. Fr. 1. p. 20.*

*Gron. mus. 2. p. 1. Amphisbaena 209-25.*

*Raj. quadr. 288.*

*Seb. mus. 2. t. 1. f. 7.*

*t. 18. f. 2.*

*t. 22. f. 3.*

*t. 73. f. 4.*

*t. 100. f. 3.*

*1. t. 88. f. 3.*

Lives in America.

Variegated with white and black.

239. *alba.*

223-16. *Mus. Ad. Fr. 1. p. 26. t. 4. f. 2.*

*Seb. mus. 2. t. 24. f. 1.*

*t. 6. f. 4.*

Lives in America.

Totally white.

112. *CAECILIA.* Wrinkles on the trunk and tail.

Upper lip with two tentacles.

135. *tentacula-  
ta*

135-0. *Amoen. acad. 1. p. 489. t. 17. f. 2.*

*Mus. Ad. Fr. 1. p. 19. t. 5. f. 2.*

*Gron. mus. 2. n. 1. p. 52.*

Lives in America.

350. *glutinosa.*

340-10. *Mus. Ad. Fr. 1. p. 19. t. 4. f. 1.*

Lives in the Indies.

Dark, with a whitish lateral line.



## END NOTES

1. The nature of the Latin is such that Linnaeus may refer either to himself as the author or to God as the "Author", i.e., creator of these animals. The capitalization of "Author" is Linnaeus's.
2. *Draco*, a genus of SE Asian lizards.
3. *Bufo*, *Salamandra*, *Gecko* are species by Linnaeus' s reckoning, but the forms in general are as we interpret them.
4. Catonians--the lower world. An obscure term, perhaps related to the Greek "kata", "down", and hence these lowly creatures
5. Apparently a referral to cusps or solid teeth.
6. Redi, an Italian scientist, performed experiments on the nature of poisonous creatures. A recent translation and annotation is *Francesco Redi on Vipers*, by Peter K. Knoefel. 1988. E.J. Brill, Leiden. xvii+86 pp., 2 figs.
7. Linnaeus tells us first that only 10% of all snakes are made venomous. In so doing the creator not only protected humans from excessive poisoning, but also protected the serpents' feelings and existence. Here he adds the fact that humans have been given various natural protections against the poisonous serpents, listing an animal enemy and a plant antidote for three main locales.  
  
The enmity of the mongoose to the cobra and the pig to the rattlesnake (cf. *Crotalus horridus* below) are well known. The mongoose, which Linnaeus described as *Viverra ichneumon* on p. 43 of the 10th ed. of the *Systema Naturae*, is today known as *Herpestes ichneumon*, a species ranging from the Iberian Peninsula through North Africa to Asia Minor. India is home to several species of *Herpestes*, but not *H. ichneumon*. Ophiorhiza means, literally, "snake root," and Linnaeus lists it below as an antidote for the bite of the *Naja* (cobra) (the mongoose is also again mentioned here). Gerth van Wijk, H.L. (1922. *A Dictionary of Plant Names* . 2 v. M. Nijhoff, The Hague. 1:918) gives its popular names as "mongoose plant" and "Indian snake-root." R. N. Chopra et al. (1956. *Glossary of Indian Medicinal Plants* . Council of Sci. and Indust. Res., New Delhi. p. 181) as an antidote to snake bite. *Polygala senega* is an American milkwort and C.F. Millspaugh (1974. *American Medicinal Plants*. Dover Publ., New York . p. 174-176) lists it as a popular antidote to rattlesnake bite and Linnaeus lists it below as such (*Crotalus horridus*). The well known antipathy of storks and serpents was frequently commented upon in antiquity. See D. W. Thompson (1966. *A Glossary of Greek Birds*. Olms, Hildesheim, Germany. p. 223) for possible sources for Linnaeus's comment.
8. Linnaeus uses three different terms for sorts of scales and plates. In order best to reproduce the effect of the original, the following renditions are used consistently throughout without regard to their actual correspondence with the animal's appearance: squama= scale, scutum= scute, scutellum = a small scute. All, of course, are synonyms for the epidermal scales.
- 9 Reading the non-Latin "e caudatum" as a single word.
10. Figure 4 in in plate 3 of Grew looks more like *Eretmochelys* if judged by pattern and apparent overlapping scutes.

11. Cf. Pliny, *Naturalis Historiae* 9.12.35. In an 1832 issue of a Key West, Florida newspaper mention was made of a dealer seeking to buy 500 lbs. of loggerhead turtle shell, which for lack of any other known use for the shell, we speculate was to be used for arches.
12. This reference cited by Catesby is Rochefort, César de (Charles de) 1658. *Histoire naturelle et morale des Iles Antilles de l'Amérique*. Rotterdam. Arnould Leers. In the copy we saw, the accent in *l'Amérique* is over the "q", an obvious error.
13. Reading "anterioribus" for the obvious typographical error "a terioribus".
14. Linnaeus frequently changes from "lacertus" to "lacerta" when speaking of the lizard. The terms here are treated as interchangeable.
15. A confusion of Pliny, *Historiae Naturalis*. 8.36.88f, which first speaks of the ichneumon/mon-goose and then of the crocodile.
16. This is reference to the book of Job in the Bible. Leviathan is a term which today is usually thought of as referring to a whale, but also something monstrous, actually a sea monster in biblical and other older writings. The verses in Job, although perhaps often referable to whales, also comment about teeth, scales, etc., things that would be applicable to a crocodilian. Most likely that would be the Nile crocodile, a known man eater well-known to early European travelers in Africa. Today we recognize *Lacerta crocodilus* as *Caiman crocodilus* of Middle and South America.
17. This tale stems from Pliny, *Historiae Naturalis* 8.38.93, who ascribes this behavior to a diminutive race of men called the Tentyritae.
18. Linnaeus' s term "amboinensis" might be interpreted as referral to the Amboin Islands in Indonesia. In the present case, however, the reference is to the amboin tree of India and adjacent areas, hence in these trees (this lizard is now known as the agamid *Lyriocephalus scutatus*, endemic to Sri Lanka).
19. This ambiguous statement about scales perhaps is due to the peculiar scale arrangement on this lizard. The body has large tubercular scales and small scales on the back, with the tubercular ones tending to form six rows.
20. Today we know this to be the salamander, *Triturus vulgaris*.
21. Delos is a Greek island. Of herpetological interest is that Apollo was born there and a famous statue of him depicts him killing a lizard. Kitchell has visited the island and says that it literally swarms with lizards.
22. Emending the printed, non-word, "inaebuale" to read "inaequale".
23. Reading "quadratis" for the non-Latin "quadiatis."
24. Subpentadactyl means fewer than five toes, but meaning is not clear. He could be saying that some feet have fewer than five toes, or perhaps that some toes are decidedly shorter than others.

25. The parenthetical expression is Linnaeus's.
26. Typographical error. The name should be *scincus*, which was what Gronovius used in 1754. Linnaeus repeated this error in the 12th ed. of the *Systema.*, but Gmelin's version in the 13th ed. shows *scincus*.
27. Not "Rocky Arabia" as in the translation of the 13th ed. of Syst. Nat. by Wm. Turton, but rather the area of Arabia surrounding Petra. The term is an ancient one.
28. The fact is from Pliny, *Historiae Naturalis*. 8.38.91f who specified it as a male aphrodisiac.
29. Linnaeus abandons his more usual "palma" for forefeet here in favor of "manus", "hand."
30. "U" and "V" are often used interchangeably in Latin. In this case Linnaeus clearly wanted to use "V". See further discussion under *Lacerta igvana* in the list of current names appended.
31. This and following names reflect variations on "Igvana."
32. "Striatum" could mean keeled or striped, but the abdominal scales of this species are not actually keeled, nor is the pattern striped. Perhaps some wrinkling due to preservation gave the appearance of striations, hence this choice of interpretation.
33. Here we interpret that "striatus" means keeled, but we must wonder if Linnaeus perhaps meant "striped" in reference to the crossbands of the dorsum.
34. Grammatically, either the eyebrows or the scar (a raised superciliary area) can be what is divided. But the term "transversely" in the description appears to be inaccurate and certainly a single furrow could not divide something into three parts. Dr. George Zug has examined *Plica plica* and *Plica umbra* for us and states, "The upper eyelid and brow ridge are large and in preservation folded, likely because of size. Brow consists of 2-3 rows of large superciliary scales forming a distinct ledge. The eyelid is covered with numerous small scales and usually bears longitudinal folds (probably due to tissue contraction and sinking of eyeball during preservation hardening). The first furrow (longitudinal [anter-posterior axis] inpocketing) lies immediately beneath the brow ridge internal/ventral juncture with the eyelid; the second furrow extends along the middle of the eyelid. The two furrows form thus three folds".
35. Here "striatus" clearly means striped because that is the color pattern of this lizard.
36. He probably meant Guiana. The species herein described is *Cnemidophorus lemniscatus*, a South American lizard.
37. In ancient Greek writings Seps was a venomous serpent, but also the term came to be applied to the serpentiform lizards that we know as *Chalcides*. The term chalcidian could be interpreted as the term applied to chalcid wasps, but in this case Linnaeus probably refers to Chalcis, a city on the Greek island of Euboea.
38. The use of "v" instead of "u" in this name raises a question of Linnaeus's intent. Compare to *Igvana* as discussed in endnotes 28, 29. In this case we interpret that the "v" is intended as a "u" because "angvina" has no meaning, whereas "anguina" is derived from the Latin "anguis" for snake, and most certainly this species is snakelike in appearance.



39. "Striato" here can mean both striped and keeled, for both appearances apply to this species.
40. Pipa is a Dutch term for a Carib indian group that lives in the Guianas.
41. Linnaeus apparently mistakes the metatarsal spade for a digit.
42. Rubeta is a Latin term for a kind of toad, and phryne is a Greek word for toad.
43. Various plants.
44. In many male anurans the base of the thumb of males is much larger than in females, and is used in gripping the female during amplexus. Anurans have no intromittent structure resembling a penis (except for a very few that have a taillike appendage), thus Linnaeus may have thought the sperms were conveyed via the thumbs which are the only parts of the male anatomy directly contacting the female.
45. The numbering format that Linnaeus used for the snakes differs from that of the turtles, lizards, frogs, and toads. The number given before the species name represents the total of the ventral and subcaudal scutes added together, and the next set of numbers represents the ventral and subcaudal counts separately. But the reader may notice that sometimes the v + sc count does not equal the total first given: that is because when total counts are the same (e.g., on p. 217 for *buccatus* and *angulatus*, Linnaeus added one to the second species listed. Linnaeus's counts often were erroneous, thus readers are advised to seek more information from other sources, a very important one of which is Andersson (1899. Bihang till K. Svenska Vet.-Akad. Handlingar. Band 24 Afd. IV. No. 6: 1-35).
46. A footnote on page 221 calls attention to the male symbol, which in this case is used to denote presence "of a retractable, venomous weapon." In light of modern knowledge Linnaeus erred in ascribing venomous properties to some snakes, but also failed to note that some, e.g., *Couber haje*=*Naja haje*, are venomous. But, of course, the herpetological world is discovering that some snake species that have been presumed to be harmless are in fact capable of delivering a poisonous bite.
47. The Latin could be better; even in the translation of the 13th edition the rendition could be improved. What Linnaeus is trying to say is that the dark rhomboidal spots are fringed with small white scales
48. Emending the senseless "put" to "caput."
49. The text is sound; the sense is apparently that the splotches resemble an enclosed garden. The translation of the 13th edition reads, "resembling a flower-pot", but the translation is dubious and the sense obscure.
50. The actual date of publication is 1751.
51. A referral to the snakes that are sold being the Egyptian species, not the European species *Coluber berus*.
52. Greek mythology lists three fates: Clotho wove the thread of life into a tapestry that represented all of existence; Lachesis measured each individual thread, and Atropos was the fate



who cut the life thread. Clotho and Lachesis, the remaining fates, appear as serpents in the 13th edition.

53. This species has never been effectively determined to date. Klauber (1948. *Copeia* 1948: 11-12) gave a liberal translation of "bands consisting of black lines" and discussed both pattern and scutellation as a basis for his suggestion that the animal might be *Storeria* sp.

54. An island in the Moluccas of the East Indies.

55. Subcaudal scutes usually occur in slightly staggered pairs and are counted as pairs, but occasionally the subcaudals may not be divided and are thus similar to the ventral scutes.

56. Linnaeus uses the diminutive form of line. Did he mean short or did he mean narrow?

57. This species has considerable interest for North American herpetologists because it represents one of the most studied and common of North American species. Klauber (1948. *Copeia* 1948, p. 8-10) discussed the error that had been made in applying the name to the common garter snake, whereas it really described the Eastern Ribbon Snake that we know as *Thamnophis sauritus*. The problem has been rectified by official suppression via the ICZN.

58. Correcting the "s" to "r".

59. The grammar is such that either the spot or the top of the head may be bifid, but of course we know from actual specimens the spot is what is divided.

60. Probably meaning that the scales were well-separated from each other. This phenomenon could perhaps be attributed to the animal containing an undigested food item in the digestive tract.

61. Tail 1/5 probably means tail is 1/5 the total length.

62. Argus (the name of the 13th edition) is a figure of Greek mythology notable for his one hundred eyes.

63. Lémery, Nicolas 1716. *Dictionnaire, ou Traité universel des Drogues simples. Pharmacopée universelle*. Several editions subsequently published.

Carolus Linnæus Smolandus.

Carl Linnaeus

Carl - Linné Carl Linné

Carl Linné

The Aging of a Signature,  
from 1728 to 1765 (third line) and later.