

40
666
EPT

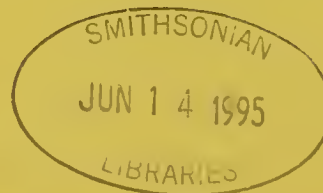
**A TRILOGY ON THE HERPETOLOGY
OF
LINNAEUS'S SYSTEMA NATURAE X**



Kenneth Kitchell, Jr.
Department of Foreign Languages
Louisiana State University, Baton Rouge

and

Harold A. Dundee
Department of Ecology, Evolution, and Organismal Biology
Tulane University



**SMITHSONIAN
HERPETOLOGICAL INFORMATION
SERVICE
NO. 100**

1994

**SMITHSONIAN
HERPETOLOGICAL
INFORMATION
SERVICE**

The SHIS series publishes and distributes translations, bibliographies, indices, and similar items judged useful to individuals interested in the biology of amphibians and reptiles, but unlikely to be published in the normal technical journals. Single copies are distributed free to interested individuals. Libraries, herpetological associations, and research laboratories are invited to exchange their publications with the Division of Amphibians and Reptiles.

We wish to encourage individuals to share their bibliographies, translations, etc. with other herpetologists through the SHIS series. If you have such items please contact George Zug for instructions on preparation and submission. Contributors receive 50 free copies.

Please address all requests for copies and inquiries to George Zug, Division of Amphibians and Reptiles, National Museum of Natural History, Smithsonian Institution, Washington DC 20560 USA. Please include a self-addressed mailing label with requests.

The Linnaeus crest on the cover bears evidence of Linnaeus's botanical interest. The shoulders and sides bear strands of "ivy"; the top is capped by a pair of spiny leaves bracketing a single stem with two flowers. The shield contains three crowns, each with a different "morphology". Additional details on Linnaeus and the family crest are in Uggla's 1957 book *Linnaeus* (Swedish Institute, Stockholm). K. Adler generously provided SHIS with reference to the preceding book and other items relating to Linnaeus (signatures, p. 40; Methodus, p. 54). G.R.Z.

**A TRILOGY ON THE HERPETOLOGY
OF LINNAEUS'S
SYSTEMA NATURAE X**

by Kenneth Kitchell, Jr. & Harold A. Dundee

TABLE OF CONTENTS

	Page
Foreward.....	2
Translation and Annotation of the Amphibian and Reptile Section of Systema Naturae X (Kenneth Kitchell, Jr.).....	3
Current Names for Linnaeus's Herpetological Species in Systema Naturae X (Harold A. Dundee).....	41
The Literature Cited by Linnaeus in the Amphibian and Reptile Section of Systema Naturae X (Harold A. Dundee).....	54

FOREWORD

Several years ago one of us, (HAD) was preparing a manuscript on higher category systematics and discovered to his amazement that no translation of the 10th edition of the *Systema Naturae* had been done. Although he had studied two romance languages and could struggle through some translation of Linnaeus's Latin, Dundee realized that his interpretations could be in error, hence he sought some help in translations of parts of the the *Systema* that were essential to his work. Faced with the absence of members of the Classics Department at his institution during the summer he sought aid from a zoologist priest at another institution. Although the priest could read some Latin, he was not that skilled at the use of the language. In talking to an older priest friend, Dundee was informed that if you needed to get some Latin translation from a priest you would have to go to a person probably 55-60 years or older because the Catholic church had ceased to do masses in Latin and the younger priesthood no longer had to be proficient in Latin. Prior to 1850 zoologists usually were competent readers and users of Latin, but because Latin was no longer the language of any major country the language skills needed for reading technical papers shifted to active and productive languages. Today few zoologists can say that they took courses in Latin or Greek, the main languages of so much early science. The need therefore for a translation of a major classic in zoology became evident. Accordingly Dundee turned to Kenneth Kitchell, a scholar of Latin, to do the translation, with Dundee cooperating to finesse the translation in terms that would be used by zoologists. As the work progressed the need for a listing of current names for Linnaean species and for identification of the literature that he cited became obvious, and this area, being solely in the field of herpetology, has become a contribution by Dundee.

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

by

Kenneth Kitchell and Harold A. Dundee

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.

Original page 194

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.¹

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 dracos² 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.³

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.

Page 195

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 Catonians⁴ have a poisonous bite and threaten death with the tooth; the cups⁵ lack death surely according to Redi⁶. He who was in charge armed (i)⁴⁶ 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*⁷, to the Americans the pig along with *Senega*⁷ 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 scutes⁸. 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.

page 196

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 tail⁹

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

page 197

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. 4¹⁰
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.¹¹

- 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.

page 198

- Catesb. car.* p. 39, t. 39. Testudo *Caretta* Rochef. ¹²
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, front¹³ 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.

page 199

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.

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.

page 200

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. *Crocodilus*.

Bellon. aquat. 41. *Crocodilus*.

Gesn. quadr. 9. *Crocodilus*.

Aldr. aquat. 677. *Crocodilus*.

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

Raj. quad. 261. Lacertus maximus.¹⁴

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.¹⁴

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. ¹⁵

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; 41:24.¹⁶*

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

*Caudiver-
bera* 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.

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

page 201

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, amboinian¹⁸ 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.

*principa-
lis* 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-keeled¹⁹ 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 another²⁰.

page 202

** *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: Delos²¹, Egypt, Africa.

mauritanica

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, uneven²² 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.

page 203

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 squarish²³ 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.

page 204

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 feet²⁴, 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.

page 205

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?).²⁵

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

Stincus²⁶

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.²⁷

The body is sold as an aphrodisiac.²⁸

hispidia

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

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

page 206

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 hands²⁹ 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*³⁰ 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.

page 207

Jonst. quadr. t. 77. f. 5.
Jacob. mus. t. 4.
Olear mus. t. 6. f. 1. Yvana.³¹
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.
-
- page 209**
- 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 striped³⁵ lines on the back
Mus. Ad. Fr. 1. p. 47. The same lizard.
Seb. mus. 1 t. 92. f. 4.
 Lives in Guinea.³⁶
 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.

page 210

Column. Ecphr. 1. p. 35.t. XXXVI. Seps, chalcid lizard or chalcides³⁷.
Aldr. quadr. 638. Chalcidic lizard.
 Lives in southern Europe and Africa.
 Midway between the lizards and the snakes, but equipped with ears.

*angvina*³⁸ 43. Lizard with a tail somewhat stiff at its end; striped body³⁹; 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.⁴⁰
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-toed⁴¹;
 fairly short thumb.
It. oel. 142.
Gesn. pisc. 807. Rubeta or phrynum.⁴²
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*.⁴³ 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.

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-toed⁴¹.

page 211

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-toed⁴¹ 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? ⁴⁴ For in the turtles the penis is at the loins by the thighs, in serpents it is at the anus. Frogs' eggs are naked.

page 212

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.

page 213

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.

Oviparous aquatic frogs undergo metamorphosis.

page 214

II. SERPENTES⁴⁵

Mouth breathing. No feet or fins.⁴⁶

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.⁴⁷

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.

page 215

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

page 216

Lives in America.

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

109. *COLUBER*.

Abdominal scutes.
Subcaudal scales.

140. *Vipera*.

118-22. *Hasselqv. Act. Ups. 1750. p. 24.* ⁵⁰

♂

[*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*.⁵¹

153. *Atropos*⁵² 131-22. *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.⁵³
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*.

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.

page 217

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]⁵⁰
[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.⁵⁴
 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.
- page 218.
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-*
♂ *nus* 155-46. *Hasselqvist.*
Lives in the Orient.
Somewhat cloudy; dark dots below.
202. *melano-*
cephalus. 140-62. *Mus. Ad. Fr. 1. p. 24. t. 15. f. 2.*
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.⁵⁵

page 219

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."

page 220

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.

page 221

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 small⁵⁶ 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 ♂.

page 222

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*.⁵⁷ 150-114. *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.

page 223

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.⁵⁹
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 distant⁶⁰ 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.

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

page 224

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 1/5.⁶¹

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.
-
- page 225
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.

page 226

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

crepis.

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. *vindissi-* 217-122. *Mus. Ad. Fr. 2, p...*

mus.

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.

page 227

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 rings⁶². 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.

page 228

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. 28⁵⁰
[*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.

page 229

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 ⁶³ 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 Euboa.
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 Linnæus

Carl - Linné Carl Linné

Carl Linné

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

CURRENT NAMES FOR LINNAEUS'S HERPETOLOGICAL SPECIES IN SYSTEMA NATURAE X

by

Harold A. Dundee

The following list gives Linnaeus's original assignment and the name and source for its first use as utilized currently in systematic herpetology. Identification of Linnaeus's species has not been easy for herpetologists because his descriptions often were sparse, inaccurate, or specimens have not been located or had tags jumbled. Major sources of information on the type specimens are those of L.G. Andersson, 1899. *Catalogue of Linnaean Type-specimens of Snakes in the Royal Museum in Stockholm*. Bihang till Kungliga Svenska Vetenskapakademien Handlingar. 24, pt. 4 (6)1-35 ; Lönnberg, E. 1896. *Linnean type specimens of birds, reptiles, batrachians and fishes in the zoological museum of the R. University in Upsala*. Bih. till Svensk. Vet. Akad. Handl. 22(4)1:1-45. The Royal Museum is where most of Linnaeus' types were stored. Andersson noted flaws in Linnaeus's descriptions, problems in labeling of specimens, etc. The following listing is given sequentially by page as the names appear in the 10th edition of *Systema Naturae*. Also, because Linnaean localities often were wrong, the area(s) of major distribution is/are given [the ranges listed are for the whole species, but note that the specimen[s] used by Linnaeus may represent but one of the subspecies and thus might have a more restricted distribution]. The geographic designation "Indiis" seems to apply almost exclusively to South America, not to the West Indies as one might interpret. I have disputed several names in use and cite the Code and ICZN in reference to interpretation. These refer to International Commission of Zoological Nomenclature. 1985. *International Code of Zoological Nomenclature*, 3rd ed. International Trust for Zoological Nomenclature, London.

Sources for names and distributions include: *Catalogue of American Amphibians and Reptiles* (a continually issued publication by the Society for the Study of Amphibians and Reptiles); Peters and Orejas-Miranda 1970 *The Neotropical Squamata I. Snakes* (plus addenda by P.E. Vanzolini) ; Peters and Donoso-Barros 1970 *The Neotropical Squamata. II. Lizards and Amphisbaenians* (plus addenda by P.E. Vanzolini); Welch 1982 *Herpetology of Africa*; Welch 1983 *Herpetology of Europe and Southwest Asia* Welch 1988 *Snakes of the Orient*; Frost 1985 *Amphibian Species of the World*; Mertens and Wermuth 1960 *Die Amphibien und Reptilien Europas*; Villa, Wilson, and Johnson 1988 *Middle American Herpetology*; and various recent publications in journals.

197

Testudo mydas. *Chelonia mydas* Schweigger 1812. Königsberg. Arch. Naturgesch. Math.: 291. Most warmer oceanic regions.

Testudo caretta. *Caretta caretta* Stejneger 1902. Ann. Rpt. U.S.N.M. for 1902:715. Most warmer oceanic regions.

198

Testudo orbicularis. *Emys orbicularis* Blanford 1876. Zool. 2:308. (See under *T. lutaria*.)

Testudo scabra. *Melanochelys trijuga* Gray 1869. Proc. Zool. Soc. London:187. India and Ceylon to Burma. Lönnberg (1896. Bih. Sven. Vet.-Akad. Handl. 22[4]:34) said that "the specimen is quite young, dried and in a very bad condition" and cannot be identified with certainty Boulenger (1899. Cat. Chel. Brit. Mus.:118) said it may be *Nicoria trijuga*.

Testudo lutarla. *Emys orbicularis* Blanford 1876. Zool. & Geol. in Acct. Jour. Persian Boundary Comm. 2:308. Europe, N. Africa, western Asia.

Testudo graeca. *Testudo graeca* Linnaeus. Northern Africa to southwestern Europe and western Asia.

Testudo carolina. *Terrapene c. carolina* Bell 1825. Zool. J. 2:309. Eastern U.S.A. and México.

Testudo carinata. *Terrapene carolina.* See under *T. carolina* above.

199

Testudo geometrica *Psammobates geometricus* Fitzinger 1843. Syst. rept.:29. South Africa.

Testudo pusilla. *Testudo g. graeca* Mertens 1946. Senckenbergiana 27:112. Southern Europe, northern Africa.

Testudo serpentina. *Chelydra s. serpentina* Schweigger 1812. Königsberg. Arch. Naturgesch. Math. 1:292. Eastern North America to northwestern South America.

Draco volans *Draco volans.* Linnaeus. Malay Peninsula to the Philippine Ids.

200

Lacerta crocodilus *Caiman crocodilus.* Andersson 1900. Bih. Kung. Svenska Vet.-Akad. Handl. 26(1):5. Southern México to northern Argentina.

Lacerta caudiverbera. ? Boulenger 1887. Cat. Liz. British Mus. 1:236 thought this to be a mythical species of gecko.

Lacerta superciliosa. *Uranoscodon superciliosa* Kaup 1825. Isis von Oken 16:590. Northeastern South America.

201

Lacerta scutata. *Lyriocephalus scutatus* Kelaart 1852. Prod. Faun. Zeyl.:166. Sri Lanka.

Lacerta monitor. An invalid and rejected name. 1959. Opinion 540. Opin. and dec. rend. by ICZN. 20:79.

Lacerta principalls. ? *Anolis carolinensis.* Boulenger 1885. Cat. Liz. British Mus. 2:43. U.S.A. The application of *Anolis carolinensis* is credited to Baird 1859. Rept. boundary. U.S. Mex. bound. surv. under Comm. Lt. Col. W.H. Emory :12, but the name was originally proposed as *Anolius carolinensis* Voigt 1832. Cuvier's Thierreich 2:71. Lönnberg (1896. Linnean type-specimens of birds, reptiles, batrachians and fishes in the Zoological Museum of the R. University of Upsala. K. Svenska Vet.-Akad. Handl. 22[4]:1:1-45) said that the specimen was in bad condition and although it resembles members of the *Anolis carolinensis* group, it is not *A. carolinensis*. Also, he believed that the name *L. principalls* was probably based on a composite of several species of *Anolis*. Savage and Guyer (1991. J. Herpetol. 25:365) believe that the status of the name would require reexamination of the type and that it is a potential threat to a currently recognized species as a senior synonym.

Lacerta bicarinatus. *Neusticurus bicarinatus.* Duméril and Bibron 1839. Erp. Gén. 5:64. Northern South America.

Lacerta palustris. *Triturus vulgaris* Dunn 1918. Bull. M.C.Z. 62:452. Europe and western Asia.

202

Lacerta cordylus. *Cordylus cordylus* Fitzsimons 1943. Liz. So. Africa:455. Kenya, Zimbabwe, and Angola to Namibia and Republic of South Africa.

Lacerta stellio. *Agama stellio.* Boulenger 1885. Cat. Liz. British Mus. 1:368. Africa, Orient.

Lacerta mauritanica. *Tarentola mauritanica.* Gray 1845. Cat. Spec. Liz. British Mus.: 164. Canary Islands, western Mediterranean to Greece and northern Africa.

Lacerta azurea. *Uracentron azureum.* Kaup 1826. Isis von Oken 19:88. Guianas and northern Brasil.

Lacerta turcica. *Hemidactylus turcicus.* Boettger 1876. Ber. Offenbach Ver. Naturk. 15/16:57. Mediterranean to Red Sea areas, eastward to northwestern India, south to Kenya. Widespread as introduction to southeastern U.S.A., México, and Cuba.

Lacerta amelva. *Ameiva ameiva.* Cockerell 1893 J. Inst. Jamaica 1:310. Panamá, tropical South America, Trinidad, and Tobago.

203

Lacerta agilis. *Lacerta agilis.* Linnaeus. Europe to central Asia.

Lacerta algira. *Psammotriton algirus.* Boulenger 1887. Cat. Liz. British Mus. 3:50. SW Europe and northwestern Africa.

204

Lacerta seps. *Tetradactylus seps.* Boulenger 1887. Cat. Liz. British Mus. 3:124. South Africa.

Lacerta angulata. *Alopoglossus angulata.* Hoogmoed 1973. Biogeographica 4: 216. Guianas and amazonian regions of South America.

Lacerta chamaeleon. *Chamaeleo chamaeleon.* Stejneger 1936. Copeia 1936:136. Portugal to North Africa, east to western Asia.

Lacerta salamandra. *Salmandra salamandra.* Lönnberg 1896. Bih. Kung. Svensk. Vet.-Akad. Handl. 22(4):10. Europe, northwestern Africa, and western Asia.

205

Lacerta gecko. *Gecko gecko.* Smith 1935. Fauna British India. Rept. & Amph. II: Sauria: 111. Northeastern India to southern China, southward to Malay Peninsula and East Indies.

Lacerta stincus. *Scincus scincus.* Loveridge 1936. Field Mus. Nat. Hist. Zool. Ser. 22(1):72. N. Africa.

Lacerta hispidula. *Agama hispidula.* Gray 1845. Cat. Spec. Liz. in Coll. British Mus. :257. Tanzania to Zimbabwe and Namibia southward.

206

Lacerta orbicularis. *Phrynosoma orbiculare.* Wiegmann 1828. Isis von Oken :367. México

Lacerta vulgaris. *Triturus vulgaris.* Dunn 1918. Bull. M.C.Z. 62:452. Europe and western Asia.

Lacerta aquatica. *Triturus vulgaris.* Dunn 1918. Bull. M.C.Z. 62:452. Europe and western Asia.

Lacerta basiliscus. *Basiliscus basiliscus.* Wagler 1830. Nat. Syst. Amph.:148. Northwest South America to southern Central America.

Lacerta igvana. *Iguana iguana.* Van Denburgh 1898. Proc. Acad. Nat. Sci. Phila. 1898(1897) 49:461. México to southern Brasil and Paraguay. Frost and Collins (1988. Herpetol. Rev. 19:74) noted that Linnaeus used *Lacerta igvana* and that his usage elsewhere on the page of *vulgaris*, *aquatica*, and pre-Linnaean names such as Yvana, Igvana, Leguan indicated that use of a "v" rather than a "u" in *igvana* was not as romanized "u". They therefore interpreted that the correct specific epithet is *igvana*. Lönnberg (1896. Bih. Kung. Svensk. Vet.-Akad. Handl. 22[4]:9) also had suggested that "we have no right to abolish the old Linnean name." However, in light of the lack of usage of *igvana* they indicated that they would petition the International Commission on Zoological Nomenclature for conservation of the spelling *iguana*. I have not seen evidence of that petition in print as yet.

207

Lacerta calotes. *Calotes calotes.* Lönnberg 1896. Bih. Kung. Svensk. Vet.-Akad. Handl. 22(4):15. India, Sri Lanka.

Lacerta agama. *Agama agama*. Andersson 1900. Bih. Kung. Svensk Vet.-Akad. Handl. 22(4):15. Africa.

Lacerta umbra. *Plica umbra*. O'Shaughnessy 1881. Proc. Zool. Soc. Lond. 1881:245. Northern South America.

208

Lacerta plica. *Plica plica*. Gray 1831. Synop. Species Class Rept. In Griffith. Cuvier's animal kingdom 9:41. Northern South America.

Lacerta marmorata. *Polychrus marmorata*. Merrem 1820. Tent. Syst. Amphib. :48. Amazon Basin; Venezuela.

Lacerta bullaris. Savage and Guyer (1991. J. Herpetol. 25:365) indicated that Stimson and Underwood(1983. Bull. Zool. Nomencl. 40:17-19) said that the name was based on the colored figure (pl. 66) and description of *Lacerta viridis jamaicensis* in Catesby 's (1743. The Natural History of Carolina, Florida, and the Bahama Islands. v. 2.) pre-Linnean work and thus considered this name to be a senior synonym of *Anolis garmani* Stejneger 1899(Amer. Natur. 33:601). Savage and Guyer noted that no one had adopted that proposal and because *A. bullaris* had not been used as a valid name for any species in this century the Jamaican species should be properly called *Norops garmani* (Stejneger) (= *Anolis garmani*).

Lacerta strumosa. *Anolis lineatus* Daudin 1802. Hist. Nat. Rept. 4:66., pl. 58, fig. 1. Curaçao. Savage and Guyer (1991. J. Herpetol. 25:365) reviewed the nomenclatural history and indicated that Linnaeus's name, *L. strumosa*, had priority but that because it had not been used for 175 years and because of current Code rules the name would be suppressed

Lacerta tegulxin. *Tupinambis teguixin*. Boulenger 1885. Cat. Liz. British Mus. 2:335. Guianas to Uruguay and northern Argentina.

209

Lacerta punctata. *Lygosoma punctatum*. Boulenger 1887. Cat. Liz. British Mus. 3:310. Asia.

Lacerta iemniscata. *Cnemidophorus iemniscatus*. Duméril and Bibron 1839. Erp. Gén. 5:123. Central America to northern South America.

Lacerta fasciata. *Eumeces fasciatus*. Cope 1875. Bull. U.S.N.M. (1):45. Eastern U.S.A.

Lacerta lineata. *Gymnophthalmus lineatus*. Andersson 1900. Bih. Kung. Svensk. Vet.-Akad. Handl. 26(1):16. Dutch Leeward Islands and Surinam.

Lacerta chalcides. *Chalcides chalcides*. Mertens and L. Müller 1940. Abh. senckenburg. Naturf. Ges. 451:58. Western Mediterranean region except for northwestern Africa.

210

Lacerta angvina. [*Chamaesaura*] *anguina*. Schneider 1801. Hist. Amph. 2:210. South Africa. Schneider actually used the trivial name *anguinea* and subsequent authors used *anguina*., sometimes crediting Schneider with that usage. The 12th ed. of *Systema Naturae* also used *L. angvina*, but the 13th Gmelin edition used *L. anguina*. In this situation I believe that the "v" represents a "u" because angvina has no meaning whereas *anguina* is derived from *anguis* (from the Latin meaning a snake and indeed this species is snakelike in appearance).C.D.Sherborn (1899. An index to the generic and trivial names of animals described by Linnaeus in the 10th and 12th editions of his *Systema Naturae*. Manchester Museum Handbooks, pub. 25. Dulau & Co., London and J.E. Cornish, Manchester) listed under *Lacerta, angvina*, but under trivial names showed *anguineus*. Compare this name usage to the comments on *Lacerta igvana* (p. 206). The Principle of Priority in the Code would require use of *Chamaesaura angvina*, but because *anguina* has not been used for over 50 years it should be suppressed under articles 23b and 79c of the Code.

Rana pipa. *Pipa pipa*. Barbour 1923. Proc. New Eng. Zool. Club 9:3. Far northern South America.

Rana bufo. [*Bufo bufo*.] Cuvier 1817. Règ. Anim. Ed. 1. 2:94. Northwest Africa, Europe to Lake Baikal, the Caucasus, and Iran.

211

Rana rubeta. *Bufo bufo*. see *Rana bufo* above.

Rana gibbosa. *Breviceps gibbosus*. Merrem 1820. Tent. Syst. Amphib. :178. South Africa.

Rana variegata. *Bombina variegata*. Mertens and L. Müller 1928. Abh. senckenberg. Naturf. Ges. 41:16. Central and southern Europe to central Asia

Rana ventricosa. *Bufo bufo*. See *Rana bufo* on p. 210.

Rana marina. *Bufo marinus*. Schneider 1799. Hist. Amph. 1:219. Southern Texas to northern South America. Widely introduced in Australia, some Pacific islands, Florida, Caribbean islands, etc.

Rana typhonla. *Bufo typhonius*. Schneider 1799. Hist. Amph. 1:207. South America.

Rana ocellata. *Leptodactylus ocellatus*. Girard 1853. Proc. Acad. Nat. Sci. Phila.:420. South America east of the Andes.

212

Rana cornuta. *Ceratophrys cornuta*. Schlegel 1837. Abteil. neuer oder unvollst. bek.-Amphib. pl. 10. Northern South America east of the Andes.

Rana marginata. ? Lönnberg (Bih. Kung. Svensk. Vet.-Akad. Handl. 22[4]1:35) said, "can impossibly be identified. (sic)."

Rana paradoxa. *Pseudis paradoxus*. Wagler 1830. Nat. Syst. Amph.:203. Northern South America east of the Andes to northern Argentina.

Rana temporaria. *Rana temporaria* (part) Linnaeus, *Rana arvalis*. Nilsson 1842. Skandin. Faun., 3 Amph.:92. Most of Europe.

Rana esculenta. *Rana esculenta* Linnaeus. England and Sweden to Italy, Sicily, and the Ukraine.

213

Rana hyla. *Hyla arborea*. Cuvier 1817. Règ. Anim. Ed. 1. 2:94. Northwestern Africa, central Europe to the Caucasus and Turkey.

Rana arborea. See *Rana hyla* above.

Rana boans. *Hyla boans*. Daudin 1803. Hist. Nat. Rept. 8:64. Panamá and northern South America.

214

Crotalus horridus. *Crotalus horridus* Linnaeus. Eastern U.S. in forested regions.

Crotalus dryinas. *Crotalus durissus*. Hoge 1966 (1965). Mem. Inst. Butantan 32:142. Northeastern México to northern Argentina, but in South America, east of Andes in savanna regions and apparently absent from the Amazon basin.

Crotalus durissus. *Crotalus durissus* Linnaeus. See *C. dryinas* above.

Boa scytale. *Anilius scytale*. Oken 1816. Leh. Naturgesch. 3:283. Guianas, northern Brasil, and Amazon drainage of Colombia, Ecuador, and Peru.

215

Boa canina. *Corallus caninus*. Boulenger 1893. Cat. Sn. in British Mus. 1:102. Amazon Basin and the Guianas of South America.

Boa hypnale. *Corallus caninus*.. see above.

Boa constrictor. *Boa constrictor* Linnaeus. México to Argentina, and Dominica and St. Lucia in the Antilles.

***Boa murina*.** *Eunectes murinus*. Gray 1831. Syn. Species of Class Rept. 9:96. In: E. Griffith, The Animal Kingdom....by Baron Cuvier.

***Boa cenchria*.** *Epicrates cenchria*. Wagler 1830. Nat. Syst. Amph. :38. Costa Rica to Argentina, and Trinidad and Tobago.

***Boa orophias*.** *Boa constrictor orophias* Linnaeus. Peters and Orejas-Miranda 1970. Bull. U.S.N.M. (297):37. St. Lucia in the Antilles.

***Boa enydris*.** *Corallus enydris*. Forcart 1951. Herpetologica 7:197. Nicaragua to Peru; Windward Islands.

***Boa hortulana*.** *Corallus enhydris*. See *B. enhydris* above.

216

***Coluber vipera*.** *Cerastes vipera*. Boulenger 1891. Trans. Zool. Soc. London 13:155. Sahara Desert.

***Coluber atropos*.** *Bitis atropos*. Günther 1858. Cat. Colubrine Sn. in Coll. British Mus.:268. Zimbabwe to South Africa.

***Coluber leberis*.** ?? *Storeria* sp. See Klauber 1948. Copeia 1948:11-12.

***Coluber lutrix*.** *Duberria lutrix*. Loveridge 1929. Bull. U.S.N.M. (151):28. Ethiopia and Zaire to Republic of South Africa.

***Coluber calamarius*.** *Oligodon calamarius*. Andersson 1899. Bih. Kung. Svensk. Vet.-Akad. Handl. 24(6):8-9. Sri Lanka.

***Coluber constrictor*.** *Coluber constrictor*. Linnaeus. U.S.A. and northern México.

***Coluber ammodytes*.** *Vipera ammodytes*. Sonnini and Latreille 1801. Hist. Nat. Rept. 3:306. Southwestern Europe and western Asia.

217

***Coluber cerastes*.** *Cerastes cerastes*. Andersson 1899. Bih. Kung. Svensk. Vet.-Akad. Handl. 24(6):29. Sahara Desert to Arabian Peninsula and the Middle East.

***Coluber plicatilis*.** *Pseudoeryx plicatilis*. Fitzinger 1826. Neue Class. Rept.:55. Colombia and the Guianas to northern Argentina.

***Coluber domlcella*.** *Liophis poecilogyrus*. Dixon 1980. Cont. Biol. and Geol. Milwaukee Pub. Mus. (31):7. Amazonian Ecuador and Brasil to Argentina.

Coluber alldras ?? Andersson 1899. Bih. Kung. Svensk. Vet.-Akad. Handl. 24(6):34 could not identify the Linnaean type, but said that the specimen matches a completely discolored *Helicops angulatus*, from which it differed by having 21 scale rows rather than 19. Andersson concluded that *C. alldras* is a synonym of *Coluber angulatus* Linnaeus.

***Coluber buccatus*.** *Homalopsis buccata*. Merrem 1790. Betr. z. Naturgesch. fasc. 2:36. India to Indochina and Indonesia.

***Coluber angulatus*.** *Helicops angulatus*. Wagler 1830. Nat. Syst. Amph. :171. Northern South America and Trinidad.

***Coluber berus*.** *Vipera berus*. Daudin 1803. Hist. Nat. Rept. 6:89. Europe to north and middle Asia.

218

***Coluber cherssea*.** *Vipera berus*. Daudin 1803. Hist. Nat. Rept. 6:89. See *Coluber berus* page 217.

***Coluber coeruleus*.** ??????

***Coluber albus*.** *Brachyorrhus [albus]*. Agassiz 1848. Nomencl. Zool. Universalis. Soloduri, Jent and Gassman. The original spelling of the generic name was given by Kuhl (1826 in Schlegel, Bull. Sci. Nat. Géol. (Paris): 236 as *Brachyorrhos* but was emended by Agassiz 1847. Nomencl. Zool. Index Univ.:51 and 1848 2nd ed.:147. Indonesia.

- Coluber aspis*.** *Vipera aspis*. Merrem 1820. Tent. Syst. Amph. :151. Southern Europe.
- Coluber typhlus*.** *Liophis typhlus*. Dixon 1980. Cont. Biol. Geol. Milwaukee Pub. Mus. (31):16. Northern South America east of Andes to northern Argentina
- Coluber lebetinus*.** *Vipera lebetina*. Daudin 1803. Hist. Nat. Rept. 6:137. Northwestern Africa, Greek islands, western and middle Asia.
- Coluber melanocephalus*.** [*Tantilla*] *melanocephala*. Cope 1861. Proc. Acad. Nat. Sci. Phila. 13:74. Honduras to northern Argentina.
- Coluber cobella*.** *Liophis cobella*. Jan 1866. Icon. Gén. Ophid. livr. 16:pl. 5. Northern South America east of the Andes.

219

- Coluber reginae*.** *Leimadophis reginae*. Amaral 1935. Mem. Inst. Butantan 9:238. Northern South America east of the Andes.
- Coluber severus*.** *Xenodon severus*. Fitzinger 1826. Neue Class. Rept. :57. Amazonian South America.
- Coluber aurora*.** *Lamprophis aurora*. Smith 1849. Illus. Zool. So. Africa Rpt. App.:19. South Africa.
- Coluber sipedon*.** *Nerodia sipedon*. Baird and Girard 1853. Cat. N.A. Rept. I. Serp.:38. Eastern U.S.A. and extreme southern Canada.
- Coluber maurus*.** *Natrix maura*. Lindholm 1929. Zool. Anz. 81:81. Southwestern Europe and northwestern Africa.
- Coluber stolatus*.** *Amphiesma stolata*. Duméril, Bibron, and Duméril 1854. Erp. Gén. 7:727. Pakistan to southeastern China and Indochina.
- Coluber vittatus*.** *Xenochrophis vittata*. Malnate and Minton 1965. Proc. Acad. Nat. Sci. Phila. 117:22. Indonesia.

220

- Coluber miliaris*.** *Liophis miliaris*. Müller 1927. Abh. senckenberg. Naturf. Ges. 40:259-304. Brasil from Amazonas state to Argentina.
- Coluber rhombeatus*.** *Psammophylax rhombeatus*. Günther 1858. Cat. Colubrine Sn. in Coll. British Mus.:31. Southern Africa.
- Coluber cyaneus*.** ??
- Coluber natrix*.** *Natrix natrix*. Stejneger 1907. Bull. U.S.N.M. (58):263. Europe to Turkey and Iran and western China; northwestern Africa.
- Coluber aesculapii*.** *Erythrolamprus aesculapii*. Duméril, Bibron, and Duméril. 1854. Erp. Gén. 7:845.
- Coluber agllis*.** *Erythrolamprus aesculapii*. See *Coluber aesculapii* above.
- Coluber lacteus*.** [*Homoroselaps lacteus*]. Smith and Smith 1983. Bull. Zool. Nomencl. 33:73. South Africa.
- Coluber aulicus*.** *Lycodon aulicus*. Boie 1827. Isis von Oken 20:551. Pakistan to Nepal, India, and Sri Lanka

221

- Coluber monilis*.** ?? Andersson 1899. Bih. Kung. Svensk. Vet.-Akad. Handl. 24(6):34 indicated that of four snakes at the Royal Museum in Stockholm called *C. monilis*, one agrees completely with Linnaeus' s description and it probably was Linnaeus's type. He said the animal is a *Homalopsis buccata*.
- Coluber pallidus*.** *Thamnodynastes pallidus*. Andersson 1899. Bih. Kung. Svensk. Vet.-Akad. Handl. 24(6):17. Northern South America.

***Coluber lineatus*.** *Liophis lineatus*. Dixon 1980. Cont. Biol. Geol. Milwaukee Pub. Mus. (31):29. Panamá.

***Coluber naja*.** *Naja naja*. Sworder 1922. Singapore Nat. (2):71. Iran and southern Russia to southern China, the Philippines, and Indonesia.

***Coluber padera* ??** Andersson 1899 Bih. Kung. Svensk. Vet.-Akad. Handl. 24(6):29 stated that the type could not be identified, but that another specimen from the Museum Drottingholmense and now at the Royal Museum in Stockholm was labeled *Coluber padera* and is identical with Linnaeus's *Coluber canus* (= *Pseudaspis canus*).

***Coluber canus*.** *Pseudaspis cana*. Cope 1864. Proc. Acad. Nat. Sci. Phila. 16:168. Kenya and Angola southward in Africa.

222

***Coluber sibilans*.** *Psammophis sibilans*. Boie 1827. Isis von Oken 20:547. Africa.

***Coluber laticaudatus*.** *Laticauda laticauda*. Stejneger 1907. Bull. U.S.N.M. (58):402. Warm seas from Bay of Bengal and Sri Lanka to Australia, Melanesia and Polynesia to Japan.

***Coluber sirtalis*.** *Thamnophis sirtalis*. Garman 1892. Bull. Essex Inst. 24:104. Klauber (1948 Copeia 1948:9) pointed out that the description really was for *T. sauritus*. That application has been officially suppressed. Much of North America and northern México.

***Coluber atrox*.** *Bothrops atrox*. Lichtenstein 1856. Nomencl. Rept. et Amph. Mus. Zool. Ber. :35. Northern Bolivia and northern Brasil to Colombia and Venezuela east of the Andes.

***Coluber sibon*.** *Sibon nebulata*. Fitzinger 1826. Neue Class. Rept. :31. Southern México into northern South America.

***Coluber nebulatus*.** *Sibon nebulata*. See *Coluber sibon* above.

***Coluber fuscus*.** *Chironius fuscus*. Amaral 1929. Mem. Inst. Butanatan 4:161. Panamá to Peru, the Guianas and central Brasil.

223

***Coluber saturninus*.** *Chironius fuscus*. See *Coluber fuscus* above.

***Coluber candidus*.** *Bungarus candidus*. Cantor 1847. Cat. Rept. Malay Pen.:113. Thailand to Java.

***Coluber niveus*.** *Naja haje*. Merrem 1820. Tent. Syst. Amph. :148. Much of Africa.

***Coluber scaber*.** *Dasypeltis scabra*. Günther 1858. Cat. Colubrine Sn. Coll. British Mus.:142. Egypt to Gambia and the Cape of South Africa. Many authors over the years have used *D. scabra*, but equally many have used *D. scaber*. In 1952 Gans and Loveridge submitted an application to ICZN to validate the use of *Dasypeltis* and also requested placement of the trivial name *scaber* on the Official List of Specific Trivial Names in Zoology (Bull. Zool. Nomencl. 6:347-348). In 1956 that application was approved by the ICZN--Opinion 387 (Bull. Zool. Nomencl. 12:241). Unfortunately Gans, in his doctoral dissertation on *Dasypeltis* (Ann. Mus. Royal du Congo Belge, ser. 8 Scien. Zool. 74:1-237.), used the name *Dasypeltis scabra*. His synonymy listed 58 uses of *scaber* and 60 of *scabra*. Apparently since that time everyone has used *scabra*. Gans (personal comm.) does not recall why he did not follow the opinion rendered in his favor. The name should be *Dasypeltis scaber*. I base this interpretation on Article 31(b)(i) of the Code which says that where the author of a species-group name did not indicate where he regarded it as a noun or as an adjective and where it may be regarded as either and evidence of usage is not decisive, it is to be treated as a noun in apposition to the name of its genus; its spelling is not changed if it is combined with a generic name of a different gender. What rulings will be made in the forthcoming 4th ed. of the Code regarding agreement in gender of genus and species was not clearly established at the 1990 ICZN meeting.

Coluber carlnatus. *Chironius carinatus.* Fitzinger 1826. Neue Class. Rept.:31 Central America and tropical South America; Guadalupe, St. Vincent Isl., Trinidad.

Coluber corallinus. *Liophis triscalis.* Boulenger 1894. Cat. Sn. British Mus. 2:129. Caribbean South America and Curaçao.

Coluber ovivorus. ??*Elaphe vulpina.* See Klauber 1948. Copeia 1948:12. North central North America. ***Coluber exolitus.*** *Chironius exoletus.* Hoge, Romano, and Cordeiro 1976/77. Mem. Inst. Butantan 40/41:41. Western Amazon Basin in Peru and Brasil.

Coluber sltula. *Elaphe situla.* Mertens 1923. Senckenbergiana 5:208. Southern Italy and major Mediterranean islands into southwestern Asia.

224

Coluber triscalls. *Liophis triscalis.* See *Coluber corallinus* on p. 223.

Coluber lemniscatus. *Micrurus lemniscatus.* Beebe 1919. Zoologica (NY) 2:216. Trinidad, Venezuela to the Guianas and the Amazon Basin.

Coluber annulatus. *Leptodeira annulata.* Fitzinger 1843. Syst. Rept. :27. México to Argentina.

Coluber dipsas. ??

Coluber pellas. *Chrysopelea pelias.* Andersson 1899. Bih. Kung. Svensk. Vet.-Akad. Handl. 24(6):35. Malaysia to Borneo and Java.

Coluber tyrla ?? Andersson 1899. Bih. Kung. Svensk. Vet.-Akad. Handl. 24(6):30 stated that the type apparently no longer exists. Boulenger 1893. Cat. Sn. British Mus. 1:407 put ? *C. tyria* as a synonym of *Zamenis nummifer*, but such could only have been a guess from the limited description given by Linnaeus.

225

Coluber jugularis. *Coluber jugularis.* Linnaeus. Southeastern Europe and western Asia.

Coluber petola. [*Oxyrhopus*] *petola.* Lönnberg Bih. Kung. Svensk. Vet.-Akad. Handl. 22(4):7. México to Ecuador, eastward in northern South America.

Coluber molurus. *Python molurus.* Gray 1842. Zool. Misc.:4. Pakistan to Java.

Coluber ahaetulla. *Leptophis ahaetulla.* Bell 1825. Zool. J. 2:328. Clarified by Stejneger 1933. Copeia 1933:202. Southern México to Ecuador and central Argentina east of the Andes.

Coluber petolaris. [*Oxyrhopus*] *petola.* See *Coluber petola* above.

Coluber haje. *Naja haje.* See *Coluber niveus* on p. 223.

Coluber filiformis. Unidentifiable. See Oliver 1948. Bull. A. M. N. H. 92:169.

Coluber pullatus. *Spilotes pullatus.* Wagler 1830. Nat. Syst. Amph.:179. Southern México to Argentina.

226

Coluber hppocrepls. *Coluber hippocrepsis.* Linnaeus. Southwestern Europe to north-western Africa.

Coluber minervae. *Liophis lineatus.* Dixon 1980. Cont. Biol. Geol. Milwaukee Publ. Mus. (31):10. Panamá; South America west of Andes to northern Argentina.

Coluber cinereus. *Liophis cobella* ?? Dixon 1980. Cont. Biol. Geol. Milwaukee Pub. Mus. (31):6. See *Coluber cobella* on p. 218.

Coluber vlrldissimus., *Philodryas viridissimus.* Boulenger 1896. Cat. Sn. British Mus. 3:129. Southern Venezuela and the Guianas to Argentina.

Coluber mucosus. *Ptyas mucosus.* Cope 1860. Proc. Acad. Nat. Sci. Phila. 12:563. Pakistan to Taiwan and Java.

Coluber cenchoa. *Imantodes cenchoa.* Duméril 1853. Mém. Acad. Sci. Paris 23:507. Southern México to Bolivia and Paraguay.

Coluber mycterizans. *Ahaetulla mycterizans*. Stejneger 1933. Copeia 1933:203 said that although assigned to that name earlier, confusion of the identity of five specimens invalidates early usage. Thailand to Java.

227

Coluber caerulescens. ?? Andersson 1899. Bih. Kung. Svensk. Vet.-Akad. Handl. 24(6):26 stated that only one of the original five specimens labeled *C. caerulescens* remains and it "is a *Herpetodryas fuscus*", whose scalation differed greatly from Linnaeus' s description.

Coluber arges ?? In *Syst. Nat.* XII, Linnaeus changes to *argus*. The description, based on a figure from Seba's Thesaurus, says, among other things, no scales noted. Boulenger 1893 Cat. Sn. British Mus. 1:82 regarded *C. argus* as a mythical creature.

Anguis blpes. *Scelotes bipes*. Gray 1845. Cat. Spec. Liz. British Mus. :123. South Africa.

Anguis meleagrils. *Acontias meleagrils*. Merrem 1820. Tent. Syst. Amph.:89. South Africa.

228

Anguis colubrina. *Eryx colubrinus*. Flower 1933. Proc. Zool. Soc. London 1933:804. Egypt to Kenya and Niger.

Anguis jaculus. *Eryx jaculus*. Daudin 1803. Hist. Nat. Rept. 7:251. Southwestern Europe, western Asia, and northern Africa.

Anguis maculata. *Cylindrophis maculatus*. Boulenger 1893. Cat. Sn. British Mus. 1:136. Sri Lanka.

Anguis reticulata. *Typhlops reticulatus*. Duméril and Bibron. Erp. Gén. 6:282. Tropical South America east of the Andes.

Anguis cerastes. *Eryx jaculus*. see *Anguis jaculus* above.

Anguis lumbricalls. *Typhlops lumbricalis*. Oppel 1811. Ordn., Fam. Gatt. Rept. :55. Cuba, Hispaniola, Bahamas, and introduced into Florida and Guyana.

Anguis laticauda. ?? Andersson 1899. Bih. Kung. Svensk. Vet.-Akad. Handl. 24(6):32 indicated that the type was no longer to be found.

Anguis scytale. *Anilius scytale*. Oken 1816. Lehr. Naturgesch. :283. Venezuela to Peru, the Guianas, and northern Brasil.

229

Anguis eryx. ? *Anguis fragilis* (part) according to Boulenger 1885. Cat. Liz. British Mus. 2:86. See *A. fragilis* below.

Anguis fragilis. *Anguis fragilis*. Linnaeus. Europe to the Caucasus and Iran; northwestern Africa.

Amphisbaena fulginosa. Linnaeus. Panamá and northern South America.

Amphisbaena alba. Linnaeus. Panamá; Trinidad; northern South America east of Andes, south to northern Paraguay.

Caecilla tentaculata. *Caecilia tentaculata* (part). Linnaeus. Panamá ; northern South America east of Andes to central Brasil.

Caecilla tentaculata. *Caecilia gracilis* (part). Shaw 1802. Gen. Zool. or Syst. Nat. Hist. 3, pt. 2:597-598. Guianas and Peru; probably also the Amazon Basin.

Caecilla glutinosa. *Ichthyophis glutinosus*. Cantor 1847. J. Asiatic Soc. Bengal, Calcutta. 16:1059. Sri Lanka.

INDEX TO SCIENTIFIC NAMES (GENERA AND SPECIES) USED IN SYSTEMA
NATURAE ED. X AND IN CURRENT USE.

Page listings refer to page of *Systema Naturae*.

aesculapii, Coluber.....	220	orophias.....	215
agama, Lacerta.....	207	scytale.....	214
agilis, Coluber.....	220	boans, Rana.....	213
agilis, Lacerta.....	203	buccatus, Coluber.....	217
ahaetulla, Coluber.....	225	bufo, Rana.....	210
alba, Amphisbaena.....	229	bullaris, Lacerta.....	208
albus, Coluber.....	218	Caecilia.....	229
algira, Lacerta.....	203	glutinosa.....	229
alidras, Coluber.....	217	tentaculata.....	229
ameiva, Lacerta.....	202	caerulescens, Coluber.....	227
ammodytes, Coluber.....	216	caeruleus, Coluber.....	218
Amphisbaena.....	229	calamarius, Coluber.....	216
alba.....	229	calotes, Lacerta.....	207
fuliginosa.....	229	candidus, Coluber.....	223
Anguis.....	227	canina, Boa.....	215
bipes.....	227	canus, Coluber.....	221
cerastes.....	228	caretta, Testudo.....	197
colubrina.....	228	carinata, Testudo.....	198
eryx.....	229	carinatus, Coluber.....	223
fragilis.....	229	carolina, Testudo.....	198
jaculus.....	228	caudiverbera, Lacerta.....	200
laticauda.....	228	cenchoa, Coluber.....	226
lumbricalis.....	228	cenchria, Boa.....	215
maculata.....	228	cerastes, Anguis.....	228
meleagris.....	227	cerastes, Coluber.....	217
reticulata.....	228	chalcides, Lacerta.....	209
scytale.....	228	chamaeleon, Lacerta.....	204
angulata, Lacerta.....	204	chelsea, Coluber.....	213
angulatus, Coluber.....	217	cinereus, Coluber.....	226
angvina, Lacerta.....	204	cobella, Coluber.....	218
annulatus, Coluber.....	224	Coluber.....	216
aquatica, Lacerta.....	206	aesculapii.....	220
arborea, Rana.....	213	agilis.....	220
arges, Coluber.....	226	ahaetulla.....	225
aspis, Coluber.....	218	albus.....	218
atropos, Coluber.....	216	alidras.....	217
atrox, Coluber.....	222	ammodytes.....	216
aulicus, Coluber.....	220	angulatus.....	217
aurata, Lacerta.....	209	annulatus.....	224
aurora, Coluber.....	219	arges.....	227
azurea, Lacerta.....	202	aspis.....	218
basiliscus, Lacerta.....	206	atropos.....	216
berus, Coluber.....	217	atrox.....	222
bicarinata, Lacerta.....	201	aulicus.....	220
bipes, Anguis.....	227	aurora.....	219
Boa.....	214	berus.....	217
canina.....	215	buccatus.....	217
cenchria.....	215	caerulescens.....	227
constrictor.....	215	caeruleus.....	218
enydris.....	215	calamarius.....	216

hipnale.....	215	candidus.....	223
hortulana.....	215	canus.....	221
murina.....	215	carinatus.....	223
Coluber		vipera.....	216
cenchoa.....	226	viridissimus.....	226
cerastes.....	217	vittatus.....	219
chersea.....	218	colubrina, Anguis.....	228
cinereus.....	226	constrictor, Boa.....	215
cobella.....	218	constrictor, Coluber.....	216
constrictor.....	216	corallinus, Coluber.....	223
corallinus.....	223	cordylus, Lacerta.....	202
cyaneus.....	220	cornuta, Rana.....	212
dipsas.....	224	crocodylus, Lacerta.....	200
domicella.....	217	Crotalus.....	214
exoletus.....	223	dryinas.....	214
filiformis.....	225	durissus.....	214
fuscus.....	222	horridus.....	214
haje.....	225	cyaneus, Coluber.....	220
hippocrepis.....	226	dipsas, Coluber.....	224
jugularis.....	225	domicella, Coluber.....	217
lacteus.....	220	Draco.....	199
laticaudatus.....	222	volans.....	199
leberus.....	216	dryinas, Crotalus.....	214
lebetinus.....	218	durissus, Crotalus.....	214
lemniscatus.....	224	enydris, Boa.....	215
lineatus.....	221	eryx, Anguis.....	229
lutrix.....	216	esculenta, Rana.....	212
maurus.....	219	exoletus, Coluber.....	223
melanocephalus.....	218	fasciata, Lacerta.....	209
miliaris.....	220	filiformis, Coluber.....	223
minervae.....	226	fragilis, Anguis.....	229
molurus.....	225	fuliginosa, Amphisbaena.....	229
monilis.....	221	fuscus, Coluber.....	222
mucosus.....	226	gecko, Lacerta.....	205
mycterizans.....	226	geometrica, Testudo.....	199
naja.....	221	gibbosa, Rana.....	211
natrux.....	220	glutinosa, Caecilia.....	229
nebulatus.....	222	graeca, Testudo.....	198
niveus.....	223	haje, Coluber.....	225
ovivorus.....	223	hipnale, Boa.....	215
padera.....	221	hippocrepis, Coluber.....	226
pallidus.....	221	hispida, Lacerta.....	205
pelias.....	224	horridus, Crotalus.....	214
petola.....	225	hortulana, Boa.....	215
petolaris.....	225	hyla, Rana.....	213
plicatilis.....	217	igvana, Lacerta.....	206
pullatus.....	225	jaculus, Anguis.....	228
reginae.....	219	jugularis, Coluber.....	225
rhombeatus.....	221	Lacerta.....	200
saturninus.....	223	agama.....	207
scaber.....	223	agilis.....	203
severus.....	219	algira.....	203
sibilans.....	222	ameiva.....	202
sibon.....	222	angulata.....	204
sipedon.....	219	angvina.....	210
sirtalis.....	222	aquatica.....	206

situla.....	223	aurata.....	209
stolatus.....	219	azurea.....	202
triscalis.....	224	basiliscus.....	206
typhlus.....	218	bicarinata.....	201
tyria.....	224	bullaris.....	208
calotes.....	207	mycterizans, Coluber.....	226
caudiverbera.....	200	mydas, Testudo.....	197
chalcides.....	209	naja, Coluber.....	221
chamaeleon.....	204	natrix, Coluber.....	220
cordylus.....	202	nebulatus, Coluber.....	223
crocodilus.....	200	niveus, Coluber.....	223
fasciata.....	209	ocellata, Rana.....	211
gecko.....	205	orbicularis, Lacerta.....	206
hispida.....	205	orbicularis, Testudo.....	198
igvana.....	206	orophias, Boa.....	215
lemniscata.....	209	ovivorus, Coluber.....	223
lineata.....	209	padera, Coluber.....	221
marmorata.....	208	pallidus, Coluber.....	221
mauritanica.....	202	palustris, Lacerta.....	201
monitor.....	201	paradoxa, Rana.....	212
orbicularis.....	206	pelias, Coluber.....	224
palustris.....	201	petola, Coluber.....	225
plica.....	208	petolarius, Coluber.....	225
principalis.....	201	pipa, Rana.....	210
punctata.....	209	plica, Lacerta.....	208
salamandra.....	204	plicatilis, Coluber.....	217
scutata.....	201	principalis, Lacerta.....	201
seps.....	204	pullatus, Coluber.....	225
stellio.....	202	punctata, Lacerta.....	209
stincus.....	205	pusilla, Testudo.....	199
strumosa.....	208	Rana.....	210
superciliosa.....	200	arborea.....	213
teguixin.....	208	boans.....	213
turcica.....	202	bufo.....	210
umbra.....	207	cornuta.....	212
vulgaris.....	206	esculenta.....	212
lacteus, Coluber.....	220	gibbosa.....	211
laticauda, Anguis.....	208	hyla.....	213
laticaudatus, Coluber.....	222	marginata.....	212
leberis, Coluber.....	216	marina.....	211
lebitinus, Coluber.....	218	ocellata.....	211
lemniscata, Lacerta.....	209	paradoxa.....	210
lemniscatus, Coluber.....	224	pipa.....	210
lineata, Lacerta.....	209	rubeta.....	211
lineatus, Coluber.....	221	temporaria.....	212
lumbricalis, Anguis.....	228	typhonia.....	211
lutaria, Testudo.....	198	variegata.....	211
lutrix, Coluber.....	216	ventricosa.....	211
maculata, Anguis.....	228	reginae, Coluber.....	219
marginata, Rana.....	212	reticulata, Anguis.....	228
marina, Rana.....	211	rhombeatus, Coluber.....	220
marmorata, Lacerta.....	208	rubeta, Rana.....	211
mauritanica, Lacerta.....	202	salamandra, Lacerta.....	204
maurus, Coluber.....	219	saturninus, Coluber.....	223
melanocephalus, Coluber.....	218	scaber, Coluber.....	223
meleagris, Anguis.....	227	scabra, Testudo.....	198

miliaris, Coluber.....	220	scutata, Lacerta.....	201
minervae, Coluber.....	226	scytale, Anguis.....	228
molurus, Coluber.....	225	seps, Lacerta.....	204
monilis, Coluber.....	221	serpentina, Testudo.....	199
monitor, Lacerta.....	221	severus, Coluber.....	219
mucosus, Coluber.....	226	sibilans, Coluber.....	222
murina, Boa.....	215	sibon, Coluber.....	222
sipedon, Coluber.....	219	mydas.....	197
sirtalis, Coluber.....	222	orbicularis.....	198
situla, Coluber.....	223	pusilla.....	199
stellio, Lacerta.....	202	scabra.....	199
stincus, Lacerta.....	205	serpentina.....	199
stolatus, Coluber.....	219	triscalis, Coluber.....	224
strumosa, Lacerta.....	208	turcica, Lacerta.....	202
superciliosa, Lacerta.....	200	typhlus, Coluber.....	218
teguixin, Lacerta.....	208	typhonia, Rana.....	211
temporaria, Rana.....	212	tyria, Coluber.....	224
tentaculata, Caecilia.....	229	umbra, Lacerta.....	227
Testudo.....	197	variegata, Rana.....	211
caretta.....	197	ventricosa, Rana.....	211
carinata.....	197	vipera, Coluber.....	216
carolina.....	198	viridissimus, Coluber.....	226
geometrica.....	199	vittatus, Coluber.....	219
graca.....	198	volans, Draco.....	199
lutaria.....	198	vulgaris, Lacerta.....	206



THE LITERATURE CITED BY LINNAEUS IN THE AMPHIBIAN AND REPTILE SECTION OF SYSTEMA NATURAE X

by

Harold A. Dundee

Although Linnaeus is credited with the scientific names given in the 10th edition of the *Systema Naturae*, he was not the originator of many of those names. He used many names given by earlier writers. In the species accounts, his format is comparable to our current day "synonymy", usually giving the name used but also including in many cases some pertinent description given by the source cited. For modern systematic treatments, we can ignore those names given by pre-Linnaean authors, but the information may be useful for historical biological studies or to systematists who wish to examine a more detailed description of a Linnaean type-specimen than that given by Linnaeus in the 10th ed. of *Systema Naturae*. I have attempted to document each citation that Linnaeus used.

Identification of the literature cited by Linnaeus has not been an easy task. Although I was able to identify specifically many of the sources to which Linnaeus referred, often by virtue that only one author & title answered to that abbreviation, I frequently could only identify the publication but not the specific edition that Linnaeus may have seen. Many reprintings of older publications were made and the paginations are not necessarily the same as the original. To actually see the various possible editions I would have had to visit many libraries in diverse places, a task that could not be justified in terms of time or cost. But I have seen personally a copy of every item cited by Linnaeus. Major sources for determining titles and editions for the citations that I have identified include: 1985 *The British Library General Catalogue of Printed Books to 1975*, K.G. Saur, London; 1931 *Catalogue Général des Livres Imprimés de la Bibliothèque Nationale* [France]. Imprimerie Nationale, Paris; 1979 *National Union Catalog. Pre-1956 Imprints*, Mansell Publishing, London and The American Library Association; continuances of the NU Catalog by Library of Congress. Generally speaking, I assume that Linnaeus used the editions in his own library whenever possible; that library is now housed at the Linnean Society in London. The material has all been placed on microfilm at the University of California, Berkeley library from a microfilm at the Library of Congress. A # precedes sources that were part of Linnaeus's library, but Linnaeus's edition may not be the same as the one I actually saw. All remaining items are listed in good faith. When in doubt, I list the earliest published version. I have been adamant in condemning authors who cite things that they have not seen but merely saw cited in some other article, thus often perpetuating errors. The citations as given are presented as I saw them on the title pages, thus use of "v" for "u", etc. is presented so that a reader may feel confident that he has the correct reference. Author names given in various catalogs may be anglicized, even though they appear on title pages in Latin or some other native language form. In several cases I have noted errors by Linnaeus when I could examine an original of the source. Occasionally I refer to Heller 1958; this is Heller, J.L. *Index auctorum et librorum a Linnaeo (Species Plantarum, 1753) citatorum*, pp. 3-60 of an appendix to *Species Plantarum*, a facsimile of the first edition published in 1959 by the Ray Society. Citations therein that were abbreviated the same as in *Systema Naturae X* were investigated as much as possible. At the time of his death, Heller had been working for years on

"guide to Linnaean zoological literature." A year or so before his death, Heller had asked Alwyne Wheeler, formerly of the British Museum (Natural History), to assist him in finding a publisher for that monograph. Wheeler arranged for this to be done as a joint British Museum and Oxford University Press publication, with Wheeler serving as an editor and also contributing some introductory essays and the Linnaean background. For various reasons the project has been delayed, but Mr. Wheeler graciously supplied me with verifications of several items that I had been unable to see, but I subsequently got to see them for myself. Dr. Kraig Adler also supplied some verifications. From the several pages of Heller manuscript that I have seen, I am well aware that Heller's work is infinitely more extensive than what I am supplying and likely will provide a more accurate idea of which particular editions of publications Linnaeus actually used, but Heller has not supplied publisher names as a final touch to his determinations. I recommend that readers of this report turn to Heller's guide for the "final word" when it ultimately appears. In a symposium report, Heller (1980 *Bibliotheca Zoologica Linneana*. pp. 240-264 *In* G. Broberg [ed.] *Linnaeus: Progress and Prospects in Linnaean Research*. Almquist & Wiskell International, Stockholm and Hunt Institute for Botanical Documentation, Pittsburgh) said on p. 242 of his compilation of documentation of Linnaean cites "...the present version runs to about 400 somewhat messily typed pages, and that it contains bibliographical data with commentary on Linnaeus's citations for about 450 separately titled books, monographs, or dissertations....and I think I have run down every single one of Linnaeus's not always accurate references..."

An intriguing comment concerning the printing of *Species Plantarum* perhaps applies to *Systema Naturae*. W.T. Stearn 1957, in the preface to the Ray Society's 1959 facsimile edition of *Species Plantarum*, observed that no two copies of the original issue appeared to be typographically identical, a situation that he attributed to poor workmanship by employees of Salvius, the printer, thus individual copies of the original had defects of different nature. In those days no automatic feed of paper to the press existed; as errors in typography were discovered, they were corrected, thus different errors were discovered and altered at different times. Some of the literature examined by me had variations on the title page that differ from listings in major library catalogs; this can probably be attributed to the copy by copy corrections that were made. I have listed the titles and author name spellings as actually seen by me, including the use of "v" that was often used for "u", and have noted anglicized etc. alternatives as desirable to aid the user in finding such literature in a library catalog.

My appreciation is extended to the staffs of the following libraries for assistance in seeing items in their rare book collections: Tulane University; Louisiana State University, Baton Rouge; The University of Oklahoma; Library of Congress; The Natural History Museum, London; McGill University; John Crerar Library of the University of Chicago; The University of Florida. I feel especially indebted to Ms. Gina Douglas of the Linnean Society library in London; she not only gave me access to actual items from Linnaeus' personal library, but also allowed me to view the entire Linnaeus library in its vault at the Linnean Society, certainly an exciting moment for a biologist.

#Act. Stockholm See *L. Act. Stockholm*

Ald. aquat. See *Aldr. serp.*

Ald. quad. Misspelled in some places as *Aldg.* See *Aldr. serp.*

Aldr. serp. Aldrovandus, Ulysses (Aldrovandi, Ulysse) (1599-1668). *Opera omnia*. Bononiae. Franciscum de Franciscus. 13 v. The *Ald. aquat.* refers to v. 6, 1613. *De piscibus libri v. et de cetis lib. vnus.* Ioannes Cornelius Vtervenvs...Bononiiae. Bellagamban. In the edition examined, p.

677 that should show *Lacerta crocodilus* actually shows a whale! The *Ald. quad.* refers to v. 9, 1637. *De qvadvpedib' digitatis viiviparis libri tres, et De qvadvpedib' digitatis oviparis libri duo.* Bartholomaeus Ambrosinus. Bonon. N. Tebaldinum. *Aldr. quad.* shows a crocodile sketch. *Aldr. serp.* is v. 10, 1640. *Serpentum, et draconum historiae libri duo* Bartholomaeus Ambrosinus... opus concinnavit.. Bononiae. The colophon shows 1639.

#Amoen. acad. *Amoenitates Academicae.* vols. I-VII. Stockholm and Leipzig. Dissertations edited by Linnaeus and issued from 1749 onward.

Bell. aquat. Bellonius, P. (Peter Belon, Pierre Belon) 1553. *De aquatilibus libri duo, cum ciconibus ad veram ipsorum effigiem, quoad eius fieri potuit, expressis.* Carolus Stephanus, Parisiis.

#Bellon. Itln. Bellonius, P. (Pierre Belon). 1605. *Bellonii Plurimarum.singularium et...rerum in Graecia, Asia....conspectarum observationes.* Antverpiae. Many earlier editions exist. However, Heller's manuscript notes show that Linnaeus apparently used an interpretive edition which is listed here under *Clus. exot.* But Heller indicated that it was a French translation of 1609, which edition I could not find listed in the National Union Catalog, The British Library Catalog, or the French National Library Catalog.

Bell. mus. Should be *Besl. mus.* This misprint was noted by John Heller in his manuscript and called to my attention by Alwyne Wheeler, formerly of the British Museum, who is preparing Heller's manuscript for publication.

Besl. mus. Besleri, Basilus and Michael Rupertvs Besleri (Hortus and Michael Rupert Besler) 1716. *Rariora Mvsei Besleriani que olim. Basilivs et Michael Rupertvs Besleri. collegerunt....* Nuremberg.

#Bont. jav. Bontii, Jacobi (Jacobus Bontius) 1658. *Historiae naturalis & medicae Indiae Orientalis. Libri Sex. V. Historia animalium. In Gulielmi Pisonis (William Piso). De Indiae utriusque re naturali et medica libri. XIV.* Amstelaedami, Elzevirios. *Lacertus volans* is on p. 59, not p. 57 as given by Linnaeus.

#Bradl. natur. Bradley, Richard 1721. *A philosophical account of the works of nature.* W. Mears, London.

E. Brander Erik Brander (1722-1814) who collected specimens mostly from Algiers and the western Mediterranean.

#Brown. jam. Browne, Patrick 1756. *The civil and natural history of Jamaica in three parts.* London, T. Osborne and J. Shipton.

Catesby. car. Catesby, Mark 1754. *The natural history of Carolina, Florida, and the Bahama Islands.* Vol II. London, Benjamin White. Other printings include original printed at expense of the author.

#Clus. exot. Clvsii, Carolus Atrebatis (Carolus Clusius=Charles de l' Écluse) 1605. *Aulae Caesareae quondam familiaris, Exoticorum libri decem: quibus, animalium, plantarum...: Item Petri Bellonii observationes, eodem Carolo Clusio interprete, etc.* Ex officina Plantiniana Raphelengii. Other versions of this exist. The interior of the copy I examined shows: *Petri Bellonii. Cenomani Plumiarum singularium & memorabilium... Carolvs Clvsivs..*

#Column. ecphr. Columna, Fabio (Savio Columna) (Fabio Colonna). 16???. *Minus cognitarum stirpium aliqvot AC etiam rariorum.....Romae.* Guilielmum Facciotum. The earliest edition was 1606; I could not read the date on the Readex microprint card seen.

#Edw. av. Edwards, George 1743-1751. *A natural history of uncommon birds and of some other rare and undescribed animals, quadrupeds, reptiles, fishes, insects, etc.* ..in 7 parts. v. 1. London. Under the same cover of the copy I saw is a French translation dated 1755 and done by M.D. de la S.R.

#Faun. Svec., *Fan. Svec.* Linnaei, Caroli 1746. *Fauna Svecica sistens animalia Sueciae regni.....* Stockholmiae, Laurenti Salvii.

#Fevill. peruv. Feuillé, Louis 1714. *Journal des observations physiques, mathématiques et botaniques...faites...sur les côtes orientales de l'Amerique Méridionale... tome Première.* Paris, Pierre Giffart. The "v" in the reference to *Lacerta Caudiverbera* is definite, but Heller (1958) indicated *Few (ill)* for *Species plantarum* and indeed we confirm it; and in *Systema naturae XIII* the cite is given as "Feuill.". Thus the poor workmanship of the printer seems doubly bad. The illustration on p. 319 is labeled "Salamandre Aquatique" and looks like a gecko with much expanded toe pads.

#Gesn. ovlp. Gesneri, (Gessner), Conr. (Conrad) 1586. *Historiae animalium liber II. quiest de quadrupedibus oviparis.* Roberti Cambieri Francofvrdi. Details dealing with *Crocodylus* and *Lacerta aquatica* appear on the same pages of this edition as cited by Linnaeus. The original work was published in 1551-1558.

Gesn. quad. = *Gesn. ovip.* A mere statement of "quad" could refer to the first part of the title, but the clue is that these animals are oviparous, which eliminates referrals to the other four books of *Historia animalium*.

#Grew mus. Grew, Nehemiah 1681. *Musaeum Regalis Societatis; or A catalogue of and description of the natural and artificial rarities belonging to the Royal Society and preserved at Gresham Colledge (sic); 2 V.* Rawlins, London.

#Gron. mus. Gronovii, Larentii Theodorii (Gronovius, Laurentius Theodorus) 1754. *Museum ichthyologicum sistens piscium etc. 2 v.* Lugduni Batavorum, Theodorum Haak.

#Hassel. Iter. Hasselquists, Frederic (Frederick Hasselquist) 1757. *Iter Palaestinum eller rsa til Heliga Landet förrättad ifån år 1749 til 1752...* Stockholm, Lars Salvii.

Hasselqv. Frederic Hasselquists' collection. He was a student of Linnaeus who collected in Egypt and Palestine.

Hasselqv. Act. Ups. This refers to Hasselquists in a journal *Acta Societatis Regiae Scientiarum Upsaliensis (Kongliga Vetenskaps-Societeten)*. *Acta.* Heller, in the 1959 appendix to the facsimile print of *Species Plantarum* , listed in the journal title "Societas" and that name also appears in the Union List of Serials, a title page before me clearly reads as I have cited.

#Hernand. Mex. Hernandez, Francisco 1651. (1648) . *Rerum medicarum Novae Hispaniae thesaurus, seu plantarum, animalium, mineralium mexicanorum historiae.....*Romae, Vitalis Mascardi. In this citation, Linnaeus on p. 206 referred to *Lacertus orbicularis*, but the statement seen in Hernandez says "lacerto orbiculare."

#It. gotl. Linnaei, Carl 1747. *Wästgöta Resa.* Lars Salvii, Stockholm. This identifies *Coluber Natrix* that is mentioned on p. 220 of the *Systema naturae X*, but 1745. *Öländska och Gothländska resa....* by Linnaeus does not contain mention of *Natrix*. Heller (1958) claimed that *It. gotl.* and *It. oel* refer to the *Öländska* (see *It. oel.*). Linnaeus was inconsistent in use of abbreviation; on p 271 for *Pleuronectes maximus* he used *It. gottl.*

#It. oel. Linnaei, Carl 1745. *Öländska och Gothländska resa....* Stockholm och Upsala, Gottfried Kiesemetter. This is supposed to be the same as *It. gotl.* according to Heller 1958. But *Systema Naturae X* refers to *Bufo bufo* as *It. oel.* 142 and *Rana temporaria* as *It. oel.* 154. I definitely found that the *Öländska*, not the *Wästgöta*, to contain the referral to these species.

#It. Wgot. Linnaei, Carl 1747. *Wästgöta resa.....*Stockholm, Lars Salvii. In checking for *Bufo rubeta* on p. 61, the version I saw mentions a *Rana* and speaks of it at length. For plants, Heller (1958) identified *It. W-góth* as the source for a *Ruppia* on p. 86; I found that correct.

#Jacob. mus. Jacobaeo, Oligero (Jacobaeus, Oligerus [Holger]) 1696. *Muséum regium, seu catalogus rerum tam naturalium, quam artificialium* , etc. Hafniae, Joachim Schmetgen. Linnaeus

says that *Iguana* is t. 4, but in the edition examined the illustration in t. VIII, f. 4. Linnaeus did not mention Jacobaeus' *Chamaeleon* but note that text p. 9 says *Chamaeleon* is VIII fig. 4, but the plate and text do not correspond. Linnaeus's own copy, which I personally examined, shows the date as 1698, but someone has encircled the last two "I" 's of the Roman numeral date. I do not know the basis for the date change, but the note of submission from Jacobaeo is dated 13 May 1695. Presumably some librarian determined that it took but one year from submission of manuscript to publication and detected an error in printing the date.

#Jonst. quad. Jonstonus, Joannes (Jon Johnstone). 1657. *Historiae naturalis. de quadrupedibus libri. VI. V. 1 De quadrupedibus.* Amstelolami, J. Jacobi Fil, Schipper.

#Kaemph. amoen. Kaempfer, Engelbert 1712. *Amoenitatum exoticarum politico-physico-mediciarum asciculi V, quibus...* Lemgoviae, H.W. Meyeri.

Kalm. Pehr Kalm, a Swede, collected in Sweden; he also wrote an account of his travels in North America and of travels in Sweden. But simple reference to *Kalm* refers only to his collection.

#Kalm. act. Stockh. This refers to a dissertation by Kalm in *Act. Stockholm.* See *L. Act. Stockh.*

Kircher Mus. Bonanni, A P Phillippo (Buonanni, F.) 1709 (1710). *Musaeum Kircherianum; sive musaeum A P. Athnnasio Kirchero in Collegio Romano...Romae,* Georgii Plachi caelaturam profitensis & characterum fuforiam propè S. Marcum.

#L. Act. Stockholm. This refers to a Linnaeus dissertation in a Swedish journal that is listed in various ways, the more typical being *Kungliga Svenska Vetenskapsacademiens Handlingar*, *Kongliga Swenska Vetenskapsacademiens*, and *Swenska Wetenskaps Academiens Handlingar*, etc. An actual cover of the journal shows *Kongl. Svenska Vetenskaps Acaademiens Handlingar*. The printer was Lars Salvius, who did *Systema Naturae X*. The Union List of Serials states that through 1756 this was *Swenska Wetenskaps Academi*, but the cover pages I have seen show clearly *Svenska Vetenskaps Academiens* (two words, not *Vetenskapsacademiens*) on separate lines. In answer to my query to the Royal Swedish Academy of Science, Christer Wijkström, the librarian of the Center for Science and History confirmed that it had many minor title variations in early years but recommended that for the first 50 volumes the most common way to cite is *Kongl. Swenska Wetenskaps Academiens Handlingar*.

Levlathan Jobl. This is a referral to the Bible, book of Job.

#Marcgr. bras. Marcgravi, Georgi de Liebstad.(Marggravius, Christian). In Pisonis, Guilielmi *De medicina Brasiliense libri IV....et Georgi Marcgravi 1648. Historiae rerum natvralivm Brasiliae. Libr. octo. qvorum sextus de quadrupedibus & serpentibus.* Lugduni Batavorum.

#Matth. dlosc. Matthioli, Petri Andreae (Mattioli, Matthaеolus, Matthiolus). This refers to Matthioli's commentary on the old Greek herbal of Dioscorides. The earliest edition apparently was 1554. *Commentarii in Libros Sex Pedacii Discoridis ...*[with the Latin text of Dioscorides by J. Ruellis]. Venetiis, Vinc Valgris. Many versions of Matthioli's commentary were published, but Linnaeus was known to own a 1570 edition (*vide* J.L. Heller 1976. *Linnaeus on sumptuous books.* *Taxon* 25:33-52.). Dioscorides of Anazarba in Cilicia, in the first century A.D., wrote the original herbal. An English translation published by Hafner Publishing Co., Inc., New York says that the original herbal was five books. The Hafner edition has an index from Saracen's Latin Index from a 1598 edition of the herbal (Saracenus, Janus Antonio [Sarrasin, Jean Antoine] Pedacii Dioscorides Anazarbaei. Francofurti, A. Wecheli et. al.). The version that I saw indicated that the herbal was illustrated by a Byzantine in A.D. 512, was translated into English by John Goodyer A.D. 1655, edited and first printed by R.T. Gunther. Linnaeus referred to *Lacerta salamandra* as page 274, figure on 274 in the dioscus. The Saracen index refers to book 2, 67. In the Hafner edition, item 67 of book 2 shows *Salamandra terrestris*. Item 69 is Saura, which is lizards.

Merian sur. Meriam (sic), Mario Sibyllam. (Merian, Mario Sibilla or Mario Sybilla) 1705. *Dissertatio de generatione et metamorphosisibus insectorum Surinamensium: in qua.....His adjunguntur bufonis, lacerti, sepentes, aranea....*Amstelodami, Geraldum Valk. The figure for *Rana paradoxa* is on p. 71 as cited but no plate number 71 as cited by Linnaeus.

Merian surln. Same as *Merian sur.*

#Mus. Ad. Fr. Linnaeus, Car. (Linnaeus) 1754. *Museum S:ae R:ae M:tis Adolphi Friderici Regis....in quo animalia rariora. Tom. I.* Holmiae, Typographia Regia.

Mus. De Geer Refers to the collection of Carl de Geer, a German entomologist.

#Nieremb. Nat. Nierembergii, Joannis Evsebii (Juan Eusebio Nieremberg) 1635. *Historia naturae, maxime peregrinae, libris XVI distincta.....* Antverpiae.

#Olear. mus. Olearium , Adam (Olearius) 1674. *Gottorffische Kunst-Kammer vorinnen Allerhand ungemene Sachen, So theils die Natur.....* Schlesswig, Gottfried Schulken . National Union Catalog says G. Schultzen but Alwyne Wheeler 1980. The sources of Linnaeus' knowledge of fishes. In G. Broberg (ed.) *Linnaeus: progress and prospects in Linnaean research.* Almquist and Wiksell, Stockholm, says Schulken. But the old style German lettering that appears to be "lz" actually is a form that represents "ss", thus I interpret the publisher as "Schussens". I found the statement "Auff Gottfried Schussens Kosten" to be interesting; it literally means "At the cost of Gottfried Schussens." The work was first published in 1666 (*Gottorffische Kunst-Kammer..... Schlesswig.* Johan Holwein), but according to Wheeler the 1674 edition contains the most accurate references, albeit some are in error. The British Library Catalog erroneously shows "Kunst-Cammer."

#Osb. Iter. Osbeck, Per 1757. *Dagbok öfwer en Ostindisk resa åren 1750- 1751, 1752...* Lor. Ludv. Grefing, Stockholm.

Ovled. amer. Oviedo y Valdes, Gonçalo Fernandez de 1547. *Coronica delas Indias. La hystoria general de Las Indias agora nueuaamente impressa corregida emendada. Primera Parte..* Usually filed under Fernandez de Oviedo y Valdes. This edition describes in Libro 13, chapter 3 a lizard, and an illustration on the third page of text of that account it pictures a lizard with a long, serrated dorsal crest, but the name "iguana" does not appear.

#Pis. bras. Piso, Willem (Guiliemi Pisonis). See *Marcg. bras.* But Piso's part actually is 1658...See *Bont. jav.* for details of the 1658 work.

#Raj. quad. Raio, Joanne (John Ray) 1693. *Synopsis methodica animalium quadrupedum et serpentini generis.* S. Smith and B. Walford, Londini. London.

#Rhed. Exp. Redi, Francisci 1675. *Experimenta circa res diversas naturales, speciatim i illas , quae ex Indiis adferentur....*Amstelodami, A. Frisii.

Roes. ran. Roesel von Rosenhof, Avgvstvs Iohannes (August Johann) 1758. *Historia natvralis ranarvm nostrativm....* Norimbergae, I.I. Fleischmanni.

Rolander Daniel Rolander, a pupil of Linnaeus's who collected in Surinam.

Scheuch. sacr. Scheuchzer, Joh. Jacob (Johannes Jacob Scheuchzer) 1731-35. *Kupfer=Bibel/ In welcher Die PHYSICA SACRA, Oder Geheiligte NaturWissenschaftt...Augspurg (sic) und Ulm, C. U. Wagner.* This comprises 4 volumes, bound in 6 (parts 3 and 4 each divided into two parts). The reference to *Boa scytale* appears in vol. 4 but Scheuchzer called it *Serpens Surinanensis* further on in the text. Vol. 4 is 1735. But note that apparently the same work is listed in the National Union Catalog as "*Physica sacra, iconibvs aeneis illus. procurante & sumtus suppediante Johanne Andrea Pfeffel. Avgvstae Vindellicorvm, 1731-1735.*" This latter probably is the Latin version, presumably issued simultaneously.

Seb. mus. Seba, Albertus 1734-1735. *Locupletissimi rerum naturalium thesauri accurata et descriptio, iconibus artificiosissimus expressio, per universam physices historiam. Tomus I, II* Amstelaedami. Janssonio-Waesbergios, & J. Wetstenium, & Gul. Smith. .

#Sloan jam. Sloane, Sir Hans 1725. *Natural history of Jamaica. A voyage to the islands Madera, Barbada, Nieves, St. Christophers and Jamaica, with the natural history of the herbs and trees, four-footed beasts, fishes, birds, insects, reptiles....* Vol. 2. London, British Museum.

#Syst. nat. As in *Lacerta agilis* 36 n. 6 and *Lacerta Chalcides* 36 n. 7 are 6th and 7th eds., respectively, with 36 referring to page number. But in the Pisces section of the Xth Linnaeus would say, e.g., *Syst. nat.* 6. p. 47. The 6th ed. was published in 1748 by Goddef. Kiesewetter, Stockholm. The 7th, also 1748, is a repeat of the 6th but with German, instead of Swedish, names. Linnaeus' s cite for *Lacerta agilis* in the 10th ed. is not the wording that appears in the 6th. In 6th it reads, "Lacerta cauda verticillata tereti, pedibus pentadactylis unguicularis Fn1352 Lacertus."

#Tournef. Itln. Tournefort, Joseph Pitton de 1717. *Relation d'un voyage du Levant, fait par ordre du roy contenant l'histoire ancienne et moderne de plusieurs îles de Archipel de Constantinople....* Paris. I have seen a 1727 printing by A. Lyon, Bruyset, 3 v. It speaks on p. 372-373 of lizards, and in the figure facing 373 is "Lezard appelle Kosloedilos", which appears to be the reference to Tournefort that Linnaeus gives on p. 202 of the *Systema* for *Lacerta stellio* --- "Lacerta coslordilos dicta". Heller (1958) indicated that some of Linnaeus' plant references fit the Paris edition, some the Lyon edition, and others do not seem to fit any edition.

Valent. mus. Valentini, D. Michael Bernhard 1704. *Museum museorum, oder vollständige schau-bühne....* Franckfurt am Mäyn, J. D. Sunners. National Union Catalog says J.D. Zunner.

#Vallisn. nat. Vallisneri, Antonio (Vallisnieri, Antonio) 1733. *Opere fisico-mediche stampate e manoscritte del kavalier Antonio Vallisnieri.... Tomo primo.* Venezia, Sebastiano Coleti

#Vincent. plp. Vincent, Levinus 1725. *Descriptio pipae, seu bufonis aquatici suninamonsis... Harlemi Batavorum.*

Worm. mus. Worm, Olao (Ole) 1655. *Museum wormianum seu historia rerum rariorum, tam naturalium, quam artificialium, tam domesticarum, quam exoticarum, quae.....* Lugduni Batavorum.