



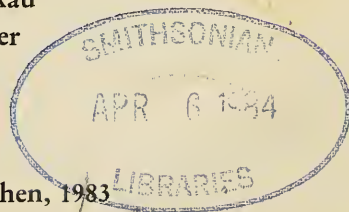
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zu Ehren von
Dr. Johann Baptist Ritter von Spix

Herausgegeben von E. J. Fittkau
Schriftleitung L. Tiefenbacher

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Spix and Wagler type specimens of reptiles and amphibians in the Natural History Museum in Munich (Germany) and Leiden (The Netherlands)

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Abstract

An evaluation of the existing SPIX/WAGLER type material in the museums in Munich and Leiden is given. It transpired that a considerable part of the type material, which was thought to have been destroyed during the second world war, is still extant. The material is described briefly, its present taxonomic status is discussed and, where necessary, lectotypes are selected. Arising from this survey a number of nomenclatural changes are necessary. *Natrix cinnamomea* Wagler is here considered a species incertae sedis, possibly a species of *Pseustes*, which contrasts with the current opinion that this is a species of *Chironius*. *Bothrops Megaera* Wagler and *B. leucurus* Wagler are considered conspecific and should be known under the name *B. leucurus* Wagler. Both *B. Furia* Wagler and *B. tessellatus* Wagler are synonyms of *B. atrox* (L.). *B. taeniatus* Wagler is identical with *B. castelnandi* Duméril & Bibron, and the species subsequently has to be called *B. taeniatus* Wagler. *Leptotyphlops tenella* Klauber is synonymised with *L. albifrons* Wagler. *Emys cayennensis* Schweigger is considered a synonym of *Podocnemis expansa* (Schweigger). *E. Tracaxa* Spix and *E. macrocephala* Spix are conspecific and should be correctly called *Peltocephalus tracaxa* (Spix.). *Podocnemis unifilis* Troschel and *E. dumeriliana* Schweigger are identical; in order to preserve stability suppression of *E. dumeriliana* and maintenance of *P. unifilis* as the valid name for the taxon is suggested (the opinion concerning the complex *Podocnemis/Peltocephalus* has to be revised again according to a recent telephone and letter information of P. C. H. PRITCHARD; see footnote page 342). *Rana mystacea* Spix contained two species, *Leptodactylus mystaceus* (recently incorrectly named *L. amazonicus* Heyer) and *L. spixii* Heyer, recently described. *Rana binotata* Spix and *Hyla abbreviata* Spix are considered conspecific. WAGLER (1830b), acting as first revisor, used the name *Enydriobius abbreviatus* for this taxon which is currently known as *Eleutherodactylus binotatus*. The Commission will be requested to give *R. binotata* precedence over *H. abbreviata*. *Hyla cinerascens* Spix is identical with *H. granosa* Boulenger and would have priority. It is suggested that *H. cinerascens* be suppressed. *Hyla nebulosa* Spix is identical with *Oolygon egleri* Lutz and has priority, we suggest that this taxon henceforth be known as *O. nebulosa* (Spix). The four taxa of the *Bufo typhonius* group described by Spix (*B. naricus* Spix, *B. nasutus* Schneider, *B. acutirostris* Spix and *B. proboscideus* Spix) are treated here as separate taxa, awaiting further study of this group. MEDEM's efforts to reintroduce the specific name *sclerops* for the species widely known as *Caiman crocodilus* are refuted on the basis of type material and misinterpretation of the Rules of Nomenclature. The synonymisation of *Anolis violaceus* Spix with *A. punctatus* Daudin and that of *Gecko (Lophyrus) crucifer* Spix with *Hemidactylus mabouia* (Moreau de Jonnés) are doubted, but because of lack of type material no further action is taken. Brazilian authors are followed in using the name *Mabuya bistrata* (Spix) for Amazonian skinks, where as *Scincus nigropunctatus* Spix is considered *Mabuya spec. Sepe fragilis* Raddi has priority over *Pygopus striatus* Spix, but as this name change would upset a long established name, it is suggested to suppress *Sepe fragilis*.

The books by SPIX (1824, 1825) and WAGLER (1824) on, respectively, turtles and frogs, caimans and lizards and on snakes formed, together with WIED's (1820, 1821, 1825, 1822–31) books on the natural history of Brazil, the basis for the study of the Brazilian herpetofauna for many years. Although the books purportedly only described new species, they included many species that had been described earlier. In some cases this apparently was known to the authors, because they cite earlier references, in other cases they described as new species individual variations or species already known to science. This was probably due to the fact that SPIX was not a specialist in the study of reptiles and amphibians and was not abreast of the current literature. It also may explain his descriptions of individual variations as new taxa. The fact that SPIX was in bad health and knew he had not much longer to live (TIEFENBACHER, 1982) possibly accounts for the hasty and in places careless descriptions. Anyhow, a substantial part of the descriptions (slightly more than 50% for frogs, lizards and snakes, about 25% for turtles and caimans) were based on new taxa which currently are still recognised (table 1).

Table 1

Author	Snakes	Lizards	Amphisbaenians	Caiman	Turtles	Frogs	Caecilians
Wagler, 1824	39(35)	---	3(3)	---	---	---	1(1)
Spix, 1824	---	---	---	---	18(17)	55(51)	---
Spix, 1825	---	38(34)	---	4(4)	---	---	---
Jan, 1859	28(7)	---	---	---	---	---	---
Peters, 1873a	---	---	---	---	---	30(15)	---
Peters, 1877	---	23(10)	---	---	---	---	---
Vanzolini, 1981a	34(16)	24(14)	3(2)	4(1)	13(4)	30(18)	1(0)
present paper	34+21 (18)	25(14)	3(2)	4(1)	14(4)	37+1 (22)	1(0)

The material on which SPIX (1824, 1825) and WAGLER (1824) reported was collected by SPIX himself, accompanied by the botanist C.F.P. MARTIUS during a three year collecting trip to Brazil (PAPAVERO, 1971; TIEFENBACHER, 1982; VANZOLINI, 1981 a).

History

After his return from Brazil in 1820, SPIX started to work on the collections of animals, in order to publish the results as soon as possible. Between 1823 and 1825 he published volumes on monkeys and bats (1823), turtles and frogs (1824), birds (1824–25), caimans and lizards (1825), whereas several other volumes were written by others, using his notes: snakes (1824), fresh-water shells (1827), fishes (1829–31) and arthropods (1836). Most of these latter books were published after SPIX's death in 1826. The material on which these books are based was deposited in the natural history collections of the Royal Bavarian Academy of Sciences. In October 1824 the Rijksmuseum van Natuurlijke Historie, Leiden (RMNH) exchanged mammals, at least two birds, lizards, frogs and insects with the Munich museum (ZSMH), as is evidenced by letters in the archives of the RMNH. Most of this material is still in the collections of the RMNH, in good condition. BOÏE (1826) commented upon SPIX's (1825) book on crocodiles and lizards, at the same time indicating which species the Leiden Museum had obtained from Munich. Most material still could be located in Leiden, but no trace (either in the collections, or in the catalogue) could be found of *Tejusa ameiva*, *T. lateristriga* and *T. ocellifer*. They probably have been exchanged, being considered "double", before the system of numbering and cataloguing specimens was started in the Leiden Museum (probably after 1872).

In 1827 some reorganisations took place in Munich, as a consequence of which the natural history collections were declared "independent", but with the main purpose to serve as a tool in teaching at the University. According to L. MÜLLER (letter to STEJNEGER, 1931), in this period "war unser Museum

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über 30 Jahre lang ein Annex des Zoologischen Instituts und kam unter den Ordinarien desselben ganz herunter". In the same letter MÜLLER comments upon the condition of some of the SPIX specimens: "Die beiden Cotypen von *Hyla ranoides* Spix und der Holotypus von *Hyla stercoracea* Spix sind in einem so schlechten Zustand, daß ich mir kein Urteil über ihre Artzugehörigkeit erlauben kann... Die Exemplare waren in zu schwachem Alkohol erst stark mazeriert und sind dann offenbar auch in halb ausgetrockneten Gläsern aufbewahrt gewesen. Die Muskulatur ist zum Teil aufgelöst, so daß die Haut in zahlreichen Falten zusammengeschrumpft ist; die Epidermis ist derart mazeriert, daß von einer Hautstruktur nichts mehr zu erkennen ist... Viele Spix'sche Typen sind in sehr schlechtem Zustande, einige, die noch W. PETERS in Händen hatte, sind nicht mehr vorhanden." From these sad remarks it is clear that the material collected by SPIX and MARTIUS was put to a harsh test during the first 100 years of its stay in Munich, though this is not very clear from the studies by PETERS (1862 a, 1862 b, 1873 a, 1877) and JAN (1859). PETERS (1873 a) described the collection as well preserved, with partly faded colours, after 50 years in preservative, although he stated that several specimens appeared to have been partly dried out and that several had been badly preserved from the start. This would indicate that the events as described by L. MÜLLER took place between 1820 and 1872, whereas part of the material was lost during the last quarter of the nineteenth century. MÜLLER's remark that "Die SPIX'schen Typen waren zum Teil wohl bereits durch SPIX schlecht präpariert" does agree with PETERS' remarks, but certainly is not applicable to the RMNH material, which is in good condition, though faded.

Towards the end of the twenties of the present century, the Munich collections of natural history were separated from the University institutions and subsequently formed an independent Museum of Natural History in the centre of Munich. During this period the zoological collections as a whole and particularly the herpetological ones under the care of L. MÜLLER developed and prospered. This period rudely came to an end by the outbreak of World War II, and the worst ordeal for the Spix collection was to come. As a precaution against war damage, in early 1944, a large part of the scientific material of the State Zoological Collections in the so-called "Old Academy" had already been moved to places outside Munich. The collections of fish and that of crocodilian skeletons and skulls were packed ready for removal, when during the night of 24/25 of April 1944 a bombing-raid destroyed the entire museum completely with firebombs (also see LUTZ, 1973: 26). The entire fish collection and most of the crocodilian skeletons and skulls were burnt. But also the herpetological material already stored elsewhere, would not survive the war undamaged. It was stored in several cellar-rooms of the big brewery restaurant Heide-Volm in Planegg, south of Munich. On one of the last days of the war, April 11, 1945, a small demolition bomb fell through an airduct into one of the rooms and destroyed one third of the herpetological collection, including most of the chelonians, the mediterranean island lizards, a large part of the amphibians and parts of the SPIX collections. It was to the credit of L. MÜLLER and of the lepidopterologist W. FORSTER, who estimated the damage the next morning and arranged for immediate clearing, that the losses did not become heavier. After the war all shifted zoological collections were again assembled in rooms of the castle of Nymphenburg, which was to serve as a provisional accommodation, but where they remained till the present day. However, a satisfactory solution for the definite housing of the zoological collections in Munich is in sight, because a new building for the Zoologische Staatssammlung München is now under construction. Thus, the Odyssey of the herpetological collections in Munich, and the detrimental effects thereof, finally will come to an end.

After World War II there was a general connotation among herpetologists that all SPIX- and WAGLER-types had been destroyed in Munich (VANZOLINI, 1977; 1981 a) whereas it was not known that at least part of the collection had been safely stored in Leiden for 120 years. Nevertheless, in post-war years several authors studied SPIX/WAGLER-types, but their efforts apparently did not succeed in making clear the fact that a considerable part of those types had escaped destruction. COCHRAN (1955) reported on several of SPIX's frog types, but apparently she saw these during her visit to Munich in October 1938 (W. R. HEYER in litt.; DUELLMAN, 1971b) and part of these were obviously lost during the subsequent years. HELLMICH (1960) reported extensively on part of the lizard types in the SPIX collection, at the same time indicating which specimens had been saved and which had been destroyed. GANS (1961)

©Zoologische Staatssammlung München; download: <http://www.biodiversitylibrary.org/>; www.biologiezentrum.at commenting upon HELLMICH's (1960) paper wrote: "Since the Munich Museum has apparently saved a number of WAGLER's original types of wide ranging forms that enter the Gran Chaco, it would have been more useful to include a brief redescription than to repeat the 1882 opinions of STRAUCH", but he failed to give more details on the type specimens. GANS (1967) in his check list of amphibiae gave the collection numbers of the types of *Leposternon microcephalum* Wagler and of *Amphisbaena vermicularis* Wagler, without comment. HOGE (1964a, b) reported that during his visit to the Munich museum in 1957 he could not find the type specimens of *Natrix cinnamomea* Wagler and *N. sexcarinata* Wagler, nor that of *N. scurrulus* Wagler (HOGE & MARANHÃO NINA, 1964). VANZOLINI (1977: 35), in commenting upon SPIX's book on Brazilian lizards, says that a large part of the lizard types was destroyed in Munich during World War II. Recently (VANZOLINI, 1981a: XXVII) he briefly mentioned the new discovery of type material in Munich and Leiden.

The publication of the books by SPIX (1824, 1825) and WAGLER (1824) produced quite a flow of comments by contemporary writers (BOIE, 1826; FITZINGER, 1826b, 1827; KAUP, 1825, 1827, 1828; WIED, 1822–31), which again caused reactions by SPIX (1826) and WAGLER (1827, 1828a). These comments mainly served to synonymise several nominal species and also to state the respective authors' view on taxonomy. The papers published since 1859 by several authors who studied the SPIX/WAGLER types themselves commenting upon their classification are more important.

JAN (1859) borrowed the snake collection from Munich and received the specimens, with the exception of *Ophis Merremii* Wagler which for unknown reasons was not among the collection, together with the original labels written by (?) WAGLER. Though WAGLER (1824) treated *Amphisbaena oxyura* Wagler, *A. vermicularis* Wagler, *Leposternon Microcephalus* Wagler and *Caecilia annulata* Wagler together with the snakes, JAN (1859) for obvious reasons did not include them in his study. PETERS (1862a, 1873a) studied the frogs described by SPIX, but did not include *C. annulata* in his studies. PETERS (1862a) in his revision of the genus *Hemiphractus*, commented upon *Rana scutata* Spix, redescribed it and provided excellent illustrations of the type specimen. In 1872 (PETERS, 1873a) he studied the entire frog collection ("Hr. v. Siebold... hat mir sämtliche Originalexemplare aus der Sammlung von Spix zur Untersuchung zugesandt"), which at that time seemed to be in fair condition. SPIX (1824) only exceptionally mentioned how many specimens of each nominal frog species he had at his disposal. As a considerable part of the material has now disappeared, it is important to try and ascertain how many specimens originally constituted SPIX's type series. PETERS' (1873a) paper seems to offer an answer to this question. In 23 cases SPIX (1824) mentioned the number of specimens at his disposal or said he had 'several', in 32 cases he does not mention the number. When comparing the numbers received and studied by PETERS (1873a) with those mentioned by SPIX (1824), it soon becomes clear that there is a certain pattern to be discerned. Out of the 32 times SPIX did not mention a number, PETERS (1873a) received only one specimen in 29 cases, in two instances (*Hyla nebulosa* Spix, *Rana megastoma* Spix) he received two specimens and one instance (*Hyla bicolor* [Boddaert]), PETERS did not mention a number either. Therefore, we believe it safe to assume that SPIX (1824) only had one specimen available in all cases where he did not expressly state the number of specimens. In 28 of these descriptions (32 minus *R. megastoma*, *Hyla nebulosa*, *H. variolosa* Spix (see below) and *H. bicolor*) the entire type material apparently consisted of one specimen only, which thus automatically is the holotype. Unfortunately most of these were lost, but in the cases of *R. binotata* Spix, *H. affinis* Spix, *Bufo ephippium* Spix, *B. semilineatus* Spix, *B. acutirostris* Spix and *B. proboscideus* Spix the holotypes still exist. In several cases (*Rana pachypus* variet. 1 and 2, *Bufo ephippifer*) it was possible to decide from indications in his text that SPIX most probably only had one specimen and this was corroborated by PETERS (1873a) only receiving one. In another case (*R. scutata*) additional information about the SPIX type material was provided by WAGLER (1828a) and this data has been considered as being 'original' SPIX data. No reasoning as for the frogs can be applied either to the snakes or the lizards, because JAN (1859), studying the snakes, and PETERS (1877) studying the lizards did not mention the number of specimens in the collection they examined. SPIX (1825) and WAGLER (1824) in many instances did not explicitly state the number of specimens seen by them, or actually, in the case of WAGLER, contradicted themselves in the

French and Latin parts of the book. In most of these cases we have to assume that the descriptions were based on a series of syntypes, from which a lectotype may be selected.

In the present paper we do not elaborate on type localities, because these have been dealt with quite adequately by VANZOLINI (1981a). We here use the names as SPIX and WAGLER did, not correcting them for those currently used in Brazil.

Material

The species will be dealt with in the sequence in which they appear in the pages of WAGLER (1824) and SPIX (1824, 1825). They will be listed under their currently valid names. No elaborate synonymies are given here, because they are provided by PETERS & DONSO-BARROS (1970), PETERS & OREJAS MIRANDA (1970) and WERMUTH & MERTENS (1977) for the reptiles. Literature for amphibians is more dispersed and no comparable reviews are available, though NIEDEN (1923, 1926), GORHAM (1966) and DUELLMAN (1977) together come close. Only synonyms directly related to the original SPIX material, as indicated by comments on the works by SPIX (1825, 1826) and WAGLER (1824) or from important papers dealing with Brazilian herpetology or recent revisions, are cited. References to classic works like DUMÉRIL & BIBRON (1835, 1836, 1837, 1839, 1841, 1844), DUMÉRIL et al. (1854a, b) and BOULENGER (1882, 1885a, b, 1887, 1889, 1893, 1894, 1896) are also included, although in some instances this was not possible because the authors did not include references to the SPIX/WAGLER works. For example, DUMÉRIL & BIBRON (1841: 544) were of the opinion that many illustrations and descriptions of amphibians published up to then, were of a very imperfect quality and among these they included a number of SPIX's illustrations of species of *Hyla*. Because SPIX's descriptions did not provide any data on the shape of the tongue, the arrangement of the vomerine teeth etc., DUMÉRIL & BIBRON did not bother to allocate the following species described by SPIX under *Hyla*: "*Miliaris*, *Lateristriga*, *Ranoides*, *Albopunctata*, *Affinis*, *Papillaris*, *Cinerascens*, *Coerulea*, *Stercoracea*, *Strigilata*, *Nebulosa*, *Geographica* and *Abbreviata*."

It seems useful to say something about the labels accompanying the material. Most SPIX specimens are accompanied by old vellum-paper labels with old-fashioned handwriting, most of it WAGLER's. On these labels are listed the WAGLER or SPIX names and the reference to page and plate in the original publication, and, when appropriate, a reference to other author(s) as well. The locality in all instances is only mentioned as "Brasília", often with the addition "Iter Spixii". All material is also accompanied by recent labels which have the topline printed with "Zoologische Staatssammlung München Nr.". The other information on these labels is handwritten. The locality data on these labels are (much) more elaborate than those on the old parchment labels and in all cases appear to be a transcript of the text in SPIX (1824, 1825) or WAGLER (1824). When comparing data in the old catalogue it is evident that often there is no more information regarding localities than on the old labels ("Brasilien, Spix"). Only in a minority (mostly turtles, frogs, lizards and a few snakes) of these cases more elaborate data are provided, which also seem to have been taken from the original publications. Thus, it appears that detailed locality data were not preserved on the labels, but later were introduced again (possibly by L. MÜLLER) on labels and in the catalogue by comparison with the original publications.

Wagler (1824) Reptilia Serpentes

Hydrodynastes b. bicinctus (Hermann)

Elaps Schrankii Wagler, 1824: 1, pl. I; WAGLER, 1830b: 187

Pseudoeryx annulatus – FITZINGER, 1826b: 887 (partly)

Coluber Cuvieri – KAUP, 1827: 624

Erythrolamprus venustissimus – DUMÉRIL et al., 1854a: 1206 (partly)

Xenodon bicinctus – JAN, 1859: 273

Urotheca bicincta – BOULENGER, 1894: 184

Hydrodynastes b. bicinctus – PETERS & OREJAS-MIRANDA, 1970: 127

Hydrodynastes bicinctus – VANZOLINI, 1981a: XVIII

Material of this species collected by SPINX is no longer available, but identification of the description and the plate does not pose a problem. According to the Munich card index a specimen of *Urotheca bincta* (Herm.) collected by SPINX was registered as ZSMH 1847/0 and is now, apparently, lost.

Hydrops m. martii (Wagler)

Elaps Martii Wagler, 1824: 3, pl. II fig. 2

Pseudoeryx annulatus – FITZINGER, 1826b: 887 (partly)

Hydrops Martii – WAGLER, 1830b: 170; DUMÉRIL et al., 1854a: 484 (partly); JAN, 1859: 273 (partly)

Homalopsis martii – SCHLEGEL, 1837a: 356 (partly)

Hydrops martii – BOULENGER, 1894: 187; VANZOLINI, 1981a: XVIII

Hydrops m. martii – ROZE, 1957: 69; PETERS & OREJAS-MIRANDA, 1970: 129

At present one SPINX specimen of this species is available (ZSMH 1844/0). Its meristic data are as follows: ♂, V 179, A 1/1, C 73/73 + 1, Sc 17-17-15, s-v length 422 mm, tail length 127 mm, head length 16.1 mm, max. teeth 15 + 2, agreeing fairly well with the original description. There are 62 transverse bands on the left side of the body, 65 on the right and 24 on each side of the tail. These counts agree with those given by WAGLER (1830b: 170). The drawing is generalised, in that the transverse bands in the specimen are not as regular as illustrated. The light spot on the upper lip is not under the eye as depicted, but just posterior of it. The specimen has been drawn approximately life size. WAGLER's (1824) description is slightly ambiguous in the Latin text as to the number of specimens seen, as he mentions two different subcaudal counts ("caudalia 74 seu 76"), however, the French text leaves no doubt that there was only one specimen available. We therefore interpret the two subcaudal values as counts of the same specimen and that WAGLER was not certain about the exact number. Consequently ZSMH 1844/0 from Rio Itapicuru, Maranhão, Brazil is the holotype of *Elaps Martii* Wagler, 1824.

Hydrops t. triangularis (Wagler)

Elaps triangularis Wagler, 1824: 5, pl. IIa right hand figure.

Pseudoeryx annulatus – FITZINGER, 1826b: 888 (partly)

Hydrops triangularis – WAGLER, 1830b: 170; BOULENGER, 1894: 187; VANZOLINI, 1981a: XVIII

Hydrops Martii – DUMÉRIL et al., 1854a: 484 (partly); JAN, 1859: 273 (partly)

Hydrops t. triangularis – ROZE, 1957: 74; PETERS & OREJAS-MIRANDA, 1970: 130

The description of this snake was based on a single specimen (WAGLER, 1824: 6). In the ZSMH two specimens of this species are present, said to originate from Ega, lake Tefé, Rio Solimões, Amazonas, Brazil and having been collected by SPINX. ZSMH 1846/0 agrees very well with WAGLER's description. Its meristic data are as follows: ♂, V 158, A 1/1, C 62/62 + 1, Sc 15-15-15, s-v length 484 mm, tail length 127 mm, head length 17.4 mm, max. teeth 14. Differences in scale counts can be explained by the different methods of counting used by WAGLER (starting at chin-shields) and us (Dowling-method). This specimen apparently has been depicted natural size, the coils are rather faithfully reproduced. We consider the specimen the holotype of *Elaps triangularis* Wagler, 1824.

The other specimen (ZSMH 1845/0) does not agree with the description (♀, V 163, A 1/1, C 40/40 + 1, Sc 15-15-15, s-v length 504 mm, tail length 80 mm, head length 17.4 mm, max. teeth 13) or the plate, and though it is provided with a label in WAGLER's (?) handwriting (as is ZSMH 1846/0) we do not accept this specimen as belonging to the type series, as WAGLER (1824: 6) expressly stated he only saw a single specimen ("je n'en ai vu qu'un seul exemplaire dans la riche collection Brésilienne du Musée royal de Munic").

Erythrolamprus aesculapii venustissimus (Wied)

Elaps venustissimus – WAGLER, 1824: 6, pl. IIa left hand figure.

Coluber venustissimus – WIED, 1825: 386; WIED, 1831: pl. 39

Duberria venustissima – FITZINGER, 1826b: 888

Coluber agilis – KAUP, 1827: 624

Erythrolamprus venustissimus – WAGLER, 1830b: 187; DUMÉRIL et al., 1854a: 851 (partly); JAN, 1859: 273

Coronella venustissima – SCHLEGEL, 1837a: 53 (partly)

Erythrolamprus aesculapii – BOULENGER, 1896: 200 (var. B)

Erythrolamprus aesculapii venustissimus – PETERS & OREJAS-MIRANDA, 1970: 112; VANZOLINI, 1981a: XVIII

Although WAGLER's (1824) book allegedly only dealt with new species of snakes, the author states that this species was described earlier by WIED (1821). The description presented was based on a dry (= ? stuffed) specimen, which apparently was lost. There is no mention of this species in the old catalogue of the Munich museum.

Tantilla m. melanocephala (L.)

Elaps melanocephalus Wagler, 1824: 8, pl. II b fig. 1

Duberria melanocephala – FITZINGER, 1826b: 888

Cloelia melanocephala – WAGLER, 1830b: 187 (by inference)

Calamaria melanocephala – SCHLEGEL, 1837a: 38

Enicognathus melanocephalus – DUMÉRIL et al., 1854a: 330

Homalocranium melanocephalus – DUMÉRIL et al., 1854a: 859; JAN, 1859: 273; BOULENGER, 1896: 215

Tantilla m. melanocephala – PETERS & OREJAS-MIRANDA, 1970: 295

Tantilla melanocephala – VANZOLINI et al., 1980: 51, VANZOLINI, 1981a: XVIII

WAGLER (1824) in the Latin text expressly states that this species resembles LINNAEUS' *Coluber melanocephalus* very closely, but that it is, nevertheless, a distinct species. *Elaps melanocephalus* Wagler, 1824 is to be considered an original name, constituting a junior secondary homonym of *C. melanocephalus* L.

WAGLER (1824) examined a total of three specimens. Two of these syntypes (ZSMH 2173/0 from Rio Solimões, Amazonas, Brazil) are still present in Munich, though the old catalogue only lists one specimen under this number. ZSMH 2173/0 contains one male "A" (V ?139, A 1/1, C ?, Sc 15-15-13, s-v length 203 mm, tail length 27 + ... mm, head length 7.7 mm) and one female "B" (V 139, A 1/1, C 31/31 + 1, Sc 15-15-15, s-v length 182 mm, tail length 34 mm, head length 8.0 mm). The male agrees well with the plate, having a transverse, white line posteriorly of the black area covering the head and two light parietal spots. We here select ♂ ZSMH 2173/0 A (with damaged venter and broken tail) as the lectotype of *Elaps melanocephalus* Wagler, 1824; ♀ ZSMH 2173/0 B thus automatically becomes a paralectotype.

Micrurus l. langsdorffi (Wagler)

Elaps Langsdorffi Wagler, 1824: 10, pl. II fig 1; KAUP, 1825: 593; FITZINGER, 1826b: 889; WAGLER, 1830b: 193; JAN, 1859: 273; JAN, 1863b: 114

Elaps corallinus – SCHLEGEL, 1837a: 440 (partly)

Elaps langsdorffii – BOULENGER, 1896: 416

Micrurus l. langsdorffi – PETERS & OREJAS-MIRANDA, 1970: 211; HOGE & ROMANO-HOGE, 1981b: 398

Micrurus langsdorffi – VANZOLINI, 1981a: XVIII

The description does not state how many specimens were available. In the French text it is said that it is "assez rare". BOULENGER (1896: 416) thanks Prof. HERTWIG for the opportunity "to examine the type specimen (♂) from the R. Japura, preserved in the Museum of Munich". The only specimen available at present is ZSMH 2250/0 from the Rio Japurá, Brazil, which is indicated as "Typus". It agrees rather well with the description (♀, V 205, A 1/1, C 45/45 + 1, Sc 15-15-15, s-v length 613 mm, tail length 100 mm, head length 17.7 mm, max. teeth 1) and the drawing, in which the head is natural size but the tail is smaller; the transverse bands on the belly are no longer recognisable. It is not possible to count transverse light bands on the back, because they are very indistinct, often consisting of a few light scales only. The general state of the specimen is fairly good. In the light of BOULENGER's statement that he saw

a male, and considering the fact that ZSMH 2250/0 is a female, we might conclude that originally there were at least two syntypes and consequently we designate ZSMH 2250/0 as the lectotype of *Elaps Langsdorffi* Wagler, 1824.

Oxybelis aeneus (Wagler)

Dryinus aeneus Wagler, 1824: 12, pl. III; FITZINGER, 1826b: 890

Oxybelis aeneus – WAGLER, 1830b: 183; DUMÉRIL et al., 1854a: 819; JAN, 1859: 273; MÜLLER, 1927: 300; PETERS & OREIAS-MIRANDA, 1970: 227; KEISER, 1974: 9; VANZOLINI et al. 1980: 39; VANZOLINI, 1981a: XVIII

Dryiophys aurata – SCHLEGEL, 1837a: 255

Oxybelis acuminatus – BOULENGER, 1896: 192

From the description it is not clear how many specimens were seen by WAGLER. A single female specimen from Ega, Solimões, Brazil (ZSMH 2645/0) is present in the Munich collection. The specimen is in good condition, agrees (V 199, A 1/1, C 173/173 + 1, Sc 17-17-13, s-v length 723 mm, tail length 491 mm, head length 23.7 mm, max. teeth $\pm 18 + 2$) fairly well with the description and drawing and is here selected as lectotype of *Dryinus aeneus* Wagler, 1824. Thus, ZSMH 2645/0 is not the holotype, as stated by KEISER (1974), because it is by no means certain that WAGLER only had one specimen available.

Liophis miliaris (L.)

Natrix Chiametla Wagler, 1824: 14, pl. IIb fig. 2

Coluber miliaris – WAGLER, 1824: errata; FITZINGER, 1826b: 891 (partly); WAGLER, 1830b: 188

Coluber Merremii – FITZINGER, 1826b: 891 (partly)

Coronella Merremii – SCHLEGEL, 1837a: 58

Liophis Merremii – DUMÉRIL et al., 1854a: 708 (partly); JAN, 1859: 273

Rhadinea merremii – BOULENGER, 1894: 168

Liophis miliaris – PETERS & OREJAS-MIRANDA, 1970: 178; VANZOLINI, 1981a: XVIII

Since the name *Chiametla* had previously been coined for this species by SHAW (1802), as indicated by WAGLER, this again does not constitute a description of a new species.

According to WAGLER (1824) this species was very common in the forests of Bahia, and his description was based on two specimens. On the sheet of errata following the main body of the text, WAGLER (1824) states that *N. Chiametla* is identical to *Coluber miliaris* L., an opinion shared by most later authors. In the Munich collection no snakes are associated with the name „*Natrix Chiametla*”. However, ZSMH 1865/0 consists of two females of *L. miliaris* from Brazil, collected by SPIX and having the following meristic data (respectively A and B): V 147, 156, A 1/1, C 51/51 + 1, 55/55 + 1, Sc 17-17-15, s-v length 550 mm, 497 mm, tail length 123 mm, 117 mm, head length 25.4 mm, 21.2 mm, max. teeth 16 + 2, 19 + 2. These data come very close to the data provided by WAGLER (1824) in his description of *N. Chiametla* and we therefore assume these specimens to constitute the original series of *N. Chiametla* sensu WAGLER. ZSMH 1865/0 A, the largest specimen, most probably was the one depicted in pl. IIb fig. 2, as it agrees closely with the plate in size, posture, scalation and pattern.

Leimadophis typhlus (L.)

Natrix G. Forsteri Wagler 1824: 16; FITZINGER, 1826b: 891

Natrix Forsteri Wagler, 1824: pl. IV fig. 1; WAGLER, 1830b: 188

Liophis Merremii – DUMÉRIL et al., 1854a: 708 (partly)

Liophis cobella – JAN, 1859: 273

Liophis typhlus – BOULENGER, 1894: 136; DIXON, 1980: 16

Leimadophis typhlus forsteri – PETERS & OREJAS-MIRANDA, 1970: 150

Dromicus typhlus – VANZOLINI, 1981a: XVIII

The description was based on a single specimen, which is still present in Munich (ZSMH 1768/0). The holotype of both *N. G. Forsteri* Wagler, 1824 and *N. Forsteri* Wagler, 1824 (♀) from Bahia, Bra-

Because of the confused status of the species belonging to the genera *Liophis*, *Leimadophis*, *Dromicus* and *Lygophis*, we here accept a conventional view, until the matter of generic allocation has been sorted out completely (DIXON, 1980).

Leimadophis melanostigma (Wagler)

Natrix melanostigma Wagler, 1824: 17, pl. IV fig. 2; FITZINGER, 1826b: 892

Dromicus melanostigma – JAN, 1863b: 66; JAN & SORDELLI, 1867: 4, livr. 24, pl. V fig. 3; VANZOLINI, 1981a: XVIII

Liophis melanostigma – BOULENGER, 1894: 142

Leimadophis melanostigma – PETERS & OREJAS MIRANDA, 1970: 144

“incertae sedis *melanostigma*” – DIXON, 1980: 11

From the description it could be deduced that WAGLER (1824) had two syntypes (“caudalia 101 et 102”), through this phrase also might indicate that one specimen had different subcaudal counts on left and right hand side. We assume WAGLER dealt with a series of syntypes and consequently the single specimen present in the Munich collection (♂, ZSMH 199/0, V 155, A 1/1, C 100/100 + terminal scale missing, Sc 17-17-17, s-v length 474 mm, tail length 242 + ... mm, head length 18.8 mm, max. teeth 23 + 2) is selected as lectotype of *Natrix melanostigma* Wagler, 1824. The specimen is in good condition and the colour description provided by WAGLER (1824) can be augmented as follows: upper lip white, separated from colour of upper parts of head by a black line on the upper edge of the supralabials, which continues on the neck and passes into a series of black spots that become increasingly indistinct posteriorly and disappear completely at middle of the body. This specimen also was ably depicted by JAN & SORDELLI (1867).

Malpolon m. monspessulanus (Hermann)

Natrix lacertina Wagler, 1824: 18, pl. V; WAGLER, 1830b: 179, 189

Malpolon lacertina – FITZINGER, 1826b: 892

Coelopeltis lacertina – WAGLER, 1830b: 189

Psammophis lacertina – SCHLEGEL, 1837a: 203 (partly)

Coelopeltis insignitus – DUMÉRIL et al., 1854a: 1130 (partly); JAN, 1859: 273

Coelopeltis monspessulana – BOULENGER, 1896: 141 (partly)

Malpolon monspessulanus – MERTENS & WERMUTH, 1960: 184

Malpolon monspessulanum – VANZOLINI, 1981a: XVIII

WAGLER (1824: 19) gave as type locality for his *N. lacertina* the town of Bahia (now Salvador) in Brazil. In 1830 he transferred it to his genus *Coelopeltis*, stated to occur in Europe and Africa. In a footnote on p. 189 he remarks that *N. lacertina* seems to be very abundant in Spain, in another footnote on p. 179 he corrects the Brazilian locality and says that several snakes were collected in Spain and sent to Munich from Brazil, thus causing the confusion.

There has been no disagreement about the correct interpretation of this description. No type material remains in the Munich collection.

Incertae sedis

Natrix cinnamomea Wagler, 1824: 20, pl. VI fig. 1

Coluber cinnamomea – FITZINGER, 1826b: 892

Herpetodryas sexcarinatus – WAGLER, 1830b, 180 (by inference) (partly); BOULENGER, 1894: 72 (partly) (with question-mark)

Leptophis cinnamomea – JAN, 1859: 273

Phrynonax fasciatus – WERNER, 1898: 207

Chironius cinnamomeus – PETERS & OREJAS MIRANDA, 1970: 59; VANZOLINI, 1981a: XVIII

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The history of this name has been confused. WAGLER (1830b) placed it in the synonymy of his *Herpetodryas sexcarinatus* and in this was followed by BOULENGER (1894). Both FITZINGER (1826b) and JAN (1859) accepted *cinnamomea* as a good species. WERNER (1898) considered the specimen he examined in Munich, and which he assumed to be very likely the type of *N. cinnamomea*, despite the differences he noted between it and the description, as identical with *Phrynonax fasciatus* Peters. The specimen apparently seen by WERNER is ZSMH 1679/0 (♂, V 191, A 1, C 125/125 + 1, Sc 17-23-13, s-v length 770 mm, tail length 301 mm, head length 31.7 mm, max. teeth 18), which clearly is *Pseustes poecilonotus polylepis* (Peters) (= *Phrynonax fasciatus* – WERNER). Our data agree sufficiently with that of WERNER (1898) to be certain that we examined the same specimen. WERNER (1898) disregards the differences in counts between those of WAGLER (V 159, A 1/1 [in plate, however, undivided], C 100) and himself, but we are of the opinion that although WAGLER was not always as exact as might be wished, he certainly did not commit such errors, and we therefore are inclined to deny that ZSMH 1679/0 is the holotype of *N. cinnamomea* Wagler, 1824 as assumed by WERNER (1898). According to WIEST (1978) *N. cinnamomea* certainly is not a *Chironius*, considering its elevated number of scale rows at midbody, which can be seen on the plate in WAGLER (1824), and he suggests it might be a *Pseustes*, an opinion we share, although we still think ZSMH 1679/0 is not the specimen that served WAGLER as type. The combination *Chironius cinnamomeus* according to WIEST (1978) has been used incorrectly by several authors (e. g. HOOGMOED, 1979b) for reddish brown specimens of *C. scurrulus* (Wagler).

Unfortunately the holotype of *N. cinnamomea* Wagler, 1824 seems to have been lost prior to 1898, so this problem cannot be solved at this stage. We therefore consider the name *N. cinnamomea* Wagler, 1824 as a nomen dubium.

Oxyrhopus formosus (Wied)

Natrix occipitalis Wagler, 1824: 21, pl. IV fig. 2

Clelia occipitalis – FITZINGER, 1826b: 893

Cloelia occipitalis – WAGLER, 1830b: 187

Lycodon cloelia – SCHLEGEL, 1837a: 114 (partly)

Scytale coronatum – DUMÉRIL et al., 1854a: 999 (partly)

Brachyruton Cloelia – DUMÉRIL et al., 1854a: 1007 (partly)

Brachyruton Clelia – JAN, 1859: 273

Oxyrhopus cloelia – BOULENGER, 1896: 108 (partly)

Oxyrhopus formosus – PETERS & OREJAS MIRANDA, 1970: 232; VANZOLINI, 1981a: XVIII.

One, well preserved specimen (ZSMH 2053/0, ♂, V 188, A 1, C 91/91 + 1, Sc 19-19-15, s-v length 552 mm, tail length 194 mm, head length 18.4 mm, max. teeth 15 + 2) is still present in the Munich collection. As WAGLER (1824) mentions two subcaudal counts, (“caudalia 94 et 98”) it might be possible that he had more than one specimen before him when describing *N. occipitalis*. We therefore choose to select ZSMH 2053/0 from Rio Solimões, Amazonas, Brazil as the lectotype of *Natrix occipitalis* Wagler, 1824. The specimen has been depicted approximately natural size, but the head has been drawn very badly: too short and too thick. The specimen has a fairly long, roundly truncate snout and a depressed head. A dark spot covers the head from the anterior level of the eyes backwards and extends onto the neck. The snout in front of the eyes is light. The dorsal scales are dark tipped. There is no discernable trace of transverse bands.

Chironius bicarinatus (Wied)

Natrix bicarinata – WAGLER, 1824: 23, pl. VII

Coluber bicarinatus – WIED, 1825, 284; WIED, 1831: pl. 26

Tyria exoleta – FITZINGER, 1826b: 893 (by inference)

Herpetodryas carinatus – WAGLER, 1830b: 180

Herpetodryas carinatus – SCHLEGEL, 1837a: 175 (partly); DUMÉRIL et al., 1854a: 207 (partly); JAN, 1859: 273 (partly); BOULENGER, 1894: 73 (var. C)

Chironius bicarinatus – PETERS & OREJAS-MIRANDA, 1970: 59; WIEST, 1978: 79; VANZOLINI, 1981a: XVIII

This is another species of which WAGLER (1824) states that it is identical with a species described by WIED (1820). Of the three specimens WAGLER (1824) apparently had before him („caudalia 137, 140 et 155“) only one female, ZSMH 1752/0 (V 154, A 1/1, C 130/130 + (tip missing), Sc 12-12-10, s-v length 723 mm, tail length 402 + mm, head length 26.9 mm) from Rio Solimões, Amazonas, Brazil is still present. This specimen agrees rather well with the plate, and it could be the depicted specimen, although the white vertebral line is not as distinct as in the drawing. When it really was ZSMH 1752/0 that was depicted, the drawing is slightly larger than natural size.

Chironius scurrulus (Wagler)

Natrix Scurrula Wagler, 1824: 24, pl. VIII

Coluber scurrulus – FITZINGER, 1826b: 893 (by inference); WAGLER, 1830b: 180 (by inference)

Coluber pantherinus – SCHLEGEL, 1837a: 143 (partly)

Coryphodon Pantherinus – DUMÉRIL et al., 1854a: 181 (partly)

Herpetodryas carinatus – JAN, 1859: 273 (partly)

Herpetodryas carinatus var. *scurrula* – JAN, 1863b: 80

Herpetodryas fuscus – BOULENGER, 1894: 75 (var. E)

Chironius scurrulus – PETERS & OREJAS-MIRANDA, 1970: 61; WIEST, 1978: 249; VANZOLINI, 1981a: XVIII

HOGÉ & MARANHÃO NINA (1964: 74) on the authority of HELLMICH reported the type of this species lost due to the aforementioned war-time bombing of the Munich collection. WIEST (1978: 249) repeated this opinion, although, according to an identification label, he actually saw ZSMH 2628/0, a specimen from SPIX's Brazilian trip. As WAGLER (1824: 26) mentioned that there were several specimens preserved in the Munich collection, we can safely assume that this specimen was one of the syntypes. It certainly is not the specimen figured, which had a complete tail, whereas in ZSMH 2628/0 (♂, V 152, A 1, C 45/45 + . . . , Sc 10-10-8, s-v length 1145 mm, tail 330 + . . . , max. teeth 36) the tail is broken and the wound neatly healed. Apart from what was stated above, the specimen agrees well with the description and the plate, and is here designated as lectotype of *Natrix Scurrula* Wagler, 1824.

Pseustes s. sulphureus (Wagler)

Natrix sulphurea Wagler, 1824: 26, pl. IX

Coluber sulphureus – FITZINGER, 1826b: 894 (by inference)

Tropidonotus sulphureus – WAGLER, 1830b: 179 (by inference)

Coluber poecilostoma – SCHLEGEL, 1837a: 153

Spilotes poecilostoma – JAN, 1859: 274

Phrynonax sulphureus – BOULENGER, 1894: 19 (var. A).

Phrynonax s. sulphureus – AMARAL, 1930: 306

Pseustes s. sulphureus – BRONGERSMA, 1937: 5; HOGÉ & ROMANO, 1969: 89; PETERS & OREJAS MIRANDA, 1970: 259

Pseustes sulphureus – VANZOLINI, 1981a: XVIII

From the description it is not clear how many specimens WAGLER (1824) examined, but as he mostly described only one specimen when he had several at this disposition, we consider the only extant specimen (ZSMH 1681/0, ♂, V 208, A 1, C 129/129 + (tip missing), Sc 20-21-12, s-v length 2042 mm, tail length 749 mm, head length 59.2 mm, max. teeth 15) from Brazil as the lectotype of *Natrix sulphurea* Wagler, 1824. The specimen is not very well preserved, it is soft and has lost its epidermis. It agrees well with the description and with the plate, which is about half the natural size.

Incertae sedis or ? *Leimadophis almadensis* (Wagler)

Natrix bahiensis Wagler, 1824: 27; Wagler, 1830b: 179

Natrix Bahiensis WAGLER, 1824: pl. X fig. 2

Coluber Hippocrepis – WAGLER, 1824: errata

Coluber bahiensis – FITZINGER, 1826b: 894

Periops Hippocrepis – WAGLER, 1830b: 189

Periops hippocrepis – WAGLER, 1833: text of pl. XXXI (partly); DUMÉRIL et al., 1854a: 675; JAN, 1859: 274

Coluber hippocrepis – SCHLEGEL, 1837a: 164 (partly); MERTENS & WERMUTH, 1960: 172 (partly, with question-mark); VANZOLINI, 1981a: XVIII

Zamenis hippocrepis – BOULENGER, 1893: 409 (partly)

In the description WAGLER (1824: 28) says that this species is “assez rare” in the surroundings of Bahia (Salvador), and he speaks of “the” specimen after which the description was made, so it is not clear how many specimens originally were available. WAGLER (1830b: 179) corrected the locality for this species to Spain, as he did for several other species (*N. cherseoides*, *N. ocellata*, *N. lacertina*) as well.

WAGLER (1824) in the errata put this species in the synonymy of *Coluber hippocrepis* L., in which he was followed by most other authors, though MERTENS & WERMUTH (1960: 172) queried this synonymisation. Only FITZINGER (1826b) firmly denied that *N. bahiensis* Wagler was identical with *C. hippocrepis* L. and quite correctly pointed out the great differences in scale counts between *N. bahiensis* (V 124, A 1, C 105) and *C. hippocrepis* (V 220–258 [ARNOLD et al., 1978]). Moreover, WAGLER (1824) did not mention, or illustrate, the row of small scales separating the eye from the upper labials, a very distinct feature in *C. hippocrepis*. As pointed out before, we do not think WAGLER capable of making such mistakes in scale counts to explain a difference of roughly 100–125 ventrals. The subcaudal count given by WAGLER (1824) falls within the range (77–107) of *C. hippocrepis* (Boulenger, 1893).

Unfortunately no material of this questionable species has been preserved, so it is not possible to settle this matter beyond doubt, but to us there seems to be a certain resemblance to *Leimadophis almadensis* Wagler, which comes from the same region as *bahiensis* and agrees in pattern and in scale-counts (though there are differences). Therefore we prefer not to assign *Natrix bahiensis* Wagler, 1824 to a certain species, considering our doubts and those pointed out by FITZINGER (1826). We certainly think it should not be synonymised with *Coluber hippocrepis* L.

WAGLER (1824: 27) refers to pl. X fig. 1 for a picture of this species, which is not correct, it should be pl. X fig. 2.

Natrix maura (L.)

Natrix cherseoides Wagler, 1824: 29, pl. X fig. 1

Natrix ocellata Wagler, 1824: 32, pl. XI fig. 1

Coluber cherseoides – FITZINGER, 1826b: 895 (by inference)

Coluber ocellatus – FITZINGER, 1826b: 895 (by inference)

Tropidonotus tessellatus – WAGLER, 1830b: 179

Tropidonotus viperinus – SCHLEGEL, 1837a: 325; JAN, 1859: 274; BOULENGER, 1893: 235

Tropidonotus chersoides – DUMÉRIL et al., 1854a: 562

Natrix maura – MERTENS & WERMUTH, 1960: 185; VANZOLINI, 1981a: XVIII

WAGLER (1824) described this species under two different names and in 1830 put them in the synonymy of *T. tessellatus*, after he had discovered they came from Spain. There has been no argument about those two names being synonyms of *N. maura* and we concur with that opinion. Of the original five syntypes of *N. cherseoides* only two remain (ZSMH 2692/0 A, B, ♂♂, V 151, 151, A 1/1, 1/1, C 54, 67, Sc 21–21–17, 20–19–17, s–v length 300 mm, 276 mm, tail length 77 mm, 81 mm, head length 18.5 mm, 16 mm, max. teeth 12, 12). Of these two syntypes, which both do not agree significantly with the illustration of WAGLER (1824: pl. X fig. 1), we select the largest (ZSMH 2692/0 A) as the lectotype of *Natrix cherseoides* Wagler, 1824, ZSMH 2692/0 B automatically becomes a paralectotype. The two specimens of „*Natrix viperinus*” from Spain, collected by SPIX, mentioned in the old catalogue of the Munich museum (ZSMH 1467/0) probably also were syntypes of *N. cherseoides*, but they were lost during World War II. No trace could be found of the holotype of *N. ocellata* Wagler, 1824.

Here again it should be pointed out that WAGLER (1824: 29) erroneously referred to pl. X fig. 2, where it should have been pl. X fig. 1.

Leimadophis almadensis (Wagler)

Natrix almada Wagler, 1824: 30

Natrix almadensis Wagler, 1824: pl. X fig. 3

Coronella almadensis – FITZINGER, 1826b: 895

Liophis Reginae – WAGLER, 1830b: 188 (partly)

Liophis Wagleri Jan, 1859: 274 (partly); JAN, 1863a: 297 (partly); JAN, 1863b: 53 (partly); JAN & SORDELLI, 1866: 1, livr. 18, pl. III fig. 3

Liophis almadensis – BOULENGER, 1894: 134; DIXON, 1980: 4, 17 (partly)

Leimadophis almada – VANZOLINI, 1947: 285

Leimadophis almadensis – PETERS & OREJAS-MIRANDA, 1970: 142

Dromicus almadensis – VANZOLINI, 1981a: XVIII

WAGLER (1824) used two names for this taxon: *N. almada* in the description and *N. almadensis* in the caption of the plate. VANZOLINI (1947) and PETERS & OREJAS-MIRANDA (1970) commented upon these names. We agree with the last two authors that the name *almadensis* has been used most widely and that there is no reason to change this use. VANZOLINI (1981a) apparently changed his earlier views and also used *almadensis*. FITZINGER (1826b), who can be regarded the first revisor, used *almadensis* and in our opinion this settles the matter finally.

There is a discrepancy between the Latin and French texts of WAGLER (1824). In the former he mentions two ventral counts („scuta abdominalia 140 et 152“), but in the latter he speaks of the single specimen received by SPIX from the environs of Almada. At the moment two specimens are present in the Munich collection that qualify as syntypes of *Natrix almadensis* Wagler, 1824, viz., ZSMH 2747/0, an adult male from Brazil, collected by SPIX (V 155, A 1/1, C 64/64 + 1, Sc 19-19-17, s-v length 347 mm, tail length 104 mm, head length 16.5 mm, max. teeth 20 + 2), registered as *L. reginae* and allegedly a type of *N. semilineata* Wagler, 1824, and ZSMH 2688/0, a juvenile from Almada, Bahia, Brazil, collected by SPIX (V 153, A destroyed, C 65/65 + 1, Sc 18-19-17, s-v length 134 mm, tail length 36 mm, head length 9 mm, max. teeth 19 + 2), agreeing very well with WAGLER's pl. X fig. 3.

ZSMH 2747/0 undoubtedly is *L. almadensis*, as proved by its scale counts and pattern. The fact that its scale counts agree fairly well with those in the description of *N. almadensis* lead us to suppose it was an adult syntype for WAGLER's description. It does not at all agree with the description and/or picture of *N. semilineata*, the label bearing the remark that it is a type of *N. semilineata* is not an original one, but one written at a later date, so we do not accept this evidence as very important. HOGE, working in Munich, on March 15, 1957 examined this specimen and came to the same conclusion as we did.

Because the juvenile has been depicted by WAGLER (1824) we here select ZSMH 2688/0 as lectotype of *Natrix almadensis* Wagler, 1824. The specimen agrees well with the illustration, which is approximately natural size, though its head-pattern is much more distinct than shown. ZSMH 2747/0 becomes a paralectotype of *N. almadensis*. Both specimens also formed part of the syntypes of the composite *Liophis Wagleri* Jan, 1859 and ZSMH 2688/0 was ably depicted by JAN & SORDELLI (1866) under that name, and we here select it as lectotype of this name also.

Leimadophis reginae (L.)

Natrix semilineata Wagler, 1824: 33, pl. XI fig. 2

Coluber Reginae – WAGLER, 1824: errata; FITZINGER, 1826b: 896

Liophis Reginae – WAGLER, 1830b: 188 (partly)

Liophis Wagleri Jan, 1859: 274 (partly); JAN, 1863a: 297 (partly); JAN 1863b: 53 (partly)

Liphis reginae – BOULENGER, 1894: 137; DIXON, 1980: 15

Leimadophis reginae – PETERS & OREJAS-MIRANDA, 1970: 148

Dromicus reginae – VANZOLINI, 1981a: XVIII

WAGLER (1824), soon after describing *N. semilineata* recognised that this species was identical to *Coluber Reginae* L. and made the correction in the errata. He was followed by most authors, except JAN (1859, 1863a, b), who combined *N. almadensis* Wagler and *N. semilineata* Wagler into his com-

posite *Lophis Wagleri*. Investigation of the type material present in Munich proved this. Thus, DIXON (1980) incorrectly assigns *L. Wagleri* Jan to the synonymy of *almadensis*, where it should have been assigned in part to both the synonymies of *L. almadensis* and *L. reginae*.

Two specimens of *L. reginae* in the Munich collection qualify as syntypes of *N. semilineata*, viz., ZSMH 1832/0 from Brazil, collected by SPIX and containing a male (A) and a female (B) of which the meristic data are as follows: V 145, 144, A 1/1, C 75/75 + 1, 70/70 + ..., Sc 17-17-15, ?-17-15, s-v length 340 mm, tail length 131 mm, 154 + (tip missing) mm, head length 17.4 mm, 19.9 mm, max. teeth 23 + 2. Apparently the male (ZSMH 1832/0 A) is the specimen described and (rather poorly) figured by WAGLER (1824), it agrees closely with the illustration, having a distinct black stripe on the flanks and we consequently select it as lectotype of *Natrix semilineata* Wagler, 1824. The female (ZSMH 1832/0 B) obviously is the second specimen alluded to by WAGLER in the French text as not having the distinct, black line on the flanks. In fact, it only is visible on the sides of the tail. This specimen automatically becomes a paralectotype of *N. semilineata*.

Pseustes sexcarinatus (Wagler)

Natrix sexcarinatus Wagler, 1824: 35, pl. XII

Coluber sexcarinatus – FITZINGER, 1826b: 896 (by inference)

Herpetodryas sexcarinatus – WAGLER, 1830b: 180 (partly) (by inference)

Herpetodryas carinatus – SCHLEGEL, 1837a: 175 (partly); DUMÉRIL et al., 1854a: 207 (partly); JAN, 1859: 274 (partly)

Herpetodryas sexcarinatus – BOULENGER, 1894: 72 (partly)

Pseustes sexcarinatus – HOGE, 1964a: 28; PETERS & OREJAS-MIRANDA, 1970: 258; VANZOLINI, 1981a: XVIII

Unfortunately, the type of this species, as noted by HOGE (1964a), apparently was destroyed during the bombing raid in 1945. Formerly it was probably catalogued under ZSMH 1744/0, from South America.

Helicops angulatus (L.)

Natrix aspera Wagler, 1824: 37, pl. XIII

Coluber angulatus – KAUP, 1825: 593

Homalopsis aspera – FITZINGER, 1826b: 896

Helicops asper – WAGLER, 1830b: 171 (by inference)

Homalopsis angulatus – SCHLEGEL, 1837a: 351

Helicops angulatus – DUMÉRIL et al., 1854a: 746 (var. B); JAN, 1859: 274; BOULENGER, 1894: 278; PETERS & OREJAS-MIRANDA, 1970: 122; VANZOLINI, 1981a: XVIII

The original SPIX collection apparently contained both adults and juveniles of this species, as is clear from the French and Latin texts, in which scale counts of two specimens are provided. Of this material only one specimen (ZSMH 1528/0, ♀, V 123, A 1/1, C 82/82 + 1, Sc 19-19-17, s-v length 690 mm, tail length 331 mm, head length 38.8 mm, max. teeth ± 14) from Brazil, collected by SPIX is still extant in the Munich collection and it is here selected as lectotype of *Natrix aspera* Wagler, 1824. The specimen agrees well with the description, the plate could have been made after this specimen as it agrees in size, but the pattern is different.

Thamnodynastes pallidus (L.)

Natrix punctatissima Wagler, 1824: 39, pl. XIV fig. 1; FITZINGER, 1826b: 897

Thamnodynastes punctatissimus – WAGLER, 1830b: 182 (by inference); JAN, 1863b: 105; BOULENGER, 1896: 117

Dipsas punctatissima – SCHLEGEL, 1837a: 292; DUMÉRIL et al., 1854a: 1151; JAN, 1859: 274

Thamnodynastes pallidus – PETERS & OREJAS-MIRANDA, 1970: 300; VANZOLINI et al., 1980: 53; VANZOLINI, 1981a: XVIII

According to the French text, WAGLER (1824: 40) had three specimens at his disposal when describing this species. Of these, only one (ZSMH 2043/0, ♂, V 158, A 1, C 92/92 + 1, Sc ?-17-11, length not

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measurable, max. teeth 16 + 2) is still extant. Its counts do not agree very well with the description and most probably it is not the specimen depicted, but as WAGLER (1824) only described one of the three specimens available to him, we assume that this was one of the other two. It is in poor condition, being very desiccated. Nevertheless, we here select it as the lectotype of *Natrix punctatissima* Wagler, 1824. According to the accompanying data it was collected by SPIX in Bahia, Brazil.

Corallus e. enydris (L.)

- Xiphosoma ornatum* Wagler, 1824: 40, pl. XIV fig. 2
Xiphosoma dorsuale Wagler, 1824: 43, pl. XV
Xiphosoma hortulana – FITZINGER, 1826b: 898; WAGLER, 1830b: 167
Boa hortulana – SCHLEGEL, 1837a: 392
Xiphosoma hortulanum – DUMÉRILO & BIBRON, 1844: 545; JAN, 1859: 274
Corallus hortulanus – BOULENGER, 1893: 101
Corallus e. enydris – STIMSON, 1969: 10; PETERS & OREJAS-MIRANDA, 1970: 73
Corallus enydris – VANZOLINI, 1981a: XVIII

The two taxa WAGLER (1824) described have been correctly assigned to one taxon (*C. e. enydris*), starting with FITZINGER (1826b). Apparently WAGLER was aware of the fact that his *X. dorsuale* was identical with LINNAEUS' *Coluber hortulanus*, but for reasons not evident from the description, he used a new name. Obviously he did not recognise his *X. ornatum* as the juvenile of the same species.

The description of *X. ornatum* seems to be based on one actual specimen only. This has to be deduced from circumstantial evidence, like the fact that in the Latin text only scale counts for one specimen are given and in the French text it is said that “Cette espèce très rare ne paroît pas parvenir à une grandeur considérable” and “toute la partie inférieure de l’animal est d’un blanc jaunâtre”, also alluding to one specimen only. We therefore consider ZSMH 2694/0 (juv., V 287, A 1, C 119 + 1, Sc \pm 43-53-30, s-v length \pm 346 mm (strongly coiled), tail length 110 mm, head length 17.9 mm) from Rio Solimões, Amazonas, Brazil, collected by SPIX, the holotype of *Xiphosoma ornatum* Wagler, 1824. It was reported as such by STIMSON (1969). The specimen agrees well with the description and with the drawing, which is about natural size.

The description of *X. dorsuale* is based on one actual specimen and on the synonyms cited. Consequently we consider ZSMH 1364/0 (♀, V 288, A 1, C 126 + 1, Sc 43-54-28, s-v length 1152 mm, tail length 320 mm, head length 34.3 mm) from Rio Amazonas, Brazil, collected by SPIX, the lectotype of *Xiphosoma dorsuale* Wagler, 1824. This specimen agrees well with pl. XV in pattern, the illustration is slightly less than natural size. STIMSON (1969) incorrectly considered *Xiphosoma dorsuale* Wagler a nomen substitutum for *Boa hortulana* L. As WAGLER did not expressly propose this name as a substitute name, only mentioned a number of synonyms, STIMSON's action is purely conjecture and is not in agreement with art. 72d of the International Code of Zoological Nomenclature.

Corallus caninus (L.)

- Xiphosoma araramboya* Wagler, 1824: 45, pl. XVI
Boa canina – FITZINGER, 1826b: 898; WAGLER, 1830b: 167; SCHLEGEL, 1837a: 388
Xiphosoma caninum – DUMÉRILO & BIBRON, 1844: 540; JAN, 1859: 274
Corallus caninus – BOULENGER, 1893: 102; STIMSON, 1969: 10; PETERS & OREJAS-MIRANDA, 1970: 72; VANZOLINI, 1981a: XVIII

Here again WAGLER (1824) uses a new name for a species well known since LINNAEUS' description, but does not give any specific reasons for this name-change, except that the Brazilians along the Rio Negro call this species Araramboya, a name “que nous lui avons aussi conservé”. Thus, this action cannot be considered as the proposal of a nomen substitutum according to the International Code of Zoological Nomenclature (art. 72d). From the description it is not clear on how many specimens it was based. Considering the fact that formerly in the Munich collection seven specimens collected in Brazil by SPIX

were present (ZSMH 1365/0, 1366/0: 6 specimens), we assume that they, together with the specimens on which the synonyms listed by WAGLER were based, constituted the type series. At present, only one specimen (ZSMH 1365/0, ♀, V 146 + 1/0 + 2 + 0/1 + 50, A 1, C 4 + 1/2 + 1 + 1/2 + 6 + 1/0 + 60 + 1, Sc 51-65-39, s-v length 685 mm, tail length 143 mm, head length 48.6 mm) exists in the Munich collection. It agrees well with the description but the resemblance with the illustration is less, as the position, number and form of the white vertebral spots do not agree. In ZSMH 1365/0 the anterior quarter of the body only has a few white spots occupying one or two scales, posteriorly there are 24 white spots/transverse bands on the body and another 14 on the tail. In the illustration 27 are visible on the body and one probably is hidden by a body-coil. We here select ZSMH 1365/0 from Brazil, collected by SPIX, as lectotype of *Xiphosoma araramboya* Wagler, 1824. The six specimens in ZSMH 1366/0 apparently were lost during the war.

Waglerophis merremii (Wagler)

Ophis Merremii Wagler, 1824: 47, pl. XVII; WAGLER, 1830b: 172

Xenodon merremii – FITZINGER, 1826b: 900; BOULENGER, 1894: 150; PETERS & OREJAS-MIRANDA, 1970: 324

Xenodon rhabdocephalus – SCHLEGEL, 1837a: 87 (partly); DUMÉRIL et al., 1854a: 758 (partly)

?*Xenodon severus* – JAN, 1859: 274

Waglerophis merremii – ROMANO & HOGE, 1973: 209; VANZOLINI et al., 1980: 57; VANZOLINI, 1981a: XVIII

Unfortunately no original typematerial is left in the Munich collection. In the old catalogue no trace can be found of any specimens having been entered, neither did JAN (1859) receive any specimens of this species when he studied the entire SPIX snake collection. So, apparently this material had already disappeared before 1859.

Micrurus s. spixii Wagler

Micrurus Spixii Wagler, 1824: 48, pl. XVIII

Elaps Spixii – KAUP, 1825: 593

Coluber Marcgravii – FITZINGER, 1826b: 901

Elaps Marcgravii – FITZINGER, 1826b: 901; WAGLER, 1830b: 193

Elaps corallinus – SCHLEGEL, 1837a: 440 (partly); JAN, 1859: 275; JAN, 1863b: 112

Elaps spixii – BOULENGER, 1896: 427

Micrurus spixii – VANZOLINI, 1981a: XVIII

Micrurus s. spixii – PETERS & OREJAS-MIRANDA, 1970: 217; HOGE & ROMANO-HOGE, 1981b: 401

Apparently WAGLER (1824) based his description on one specimen only, which is still extant (ZSMH 209/0, ♂, V 210, A 1, C 8 + 13/13 + 1, Sc 15-15-15, s-v length 1079 mm, tail length 63 mm, head length 34.6 mm, max. teeth 2, black bands on body 20, tail 2, head 1). The specimen (from Rio Solimões, Amazonas, Brazil, collected by SPIX) has the hemipenes partly everted, as can be seen in the illustration, and we consider it to be the holotype of *Micrurus Spixii* Wagler, 1824.

Bothrops leucurus Wagler

Bothrops Megaera Wagler, 1824: 50, pl. XIX

Bothrops leucurus Wagler, 1824: 57, pl. XXII fig. 2; HOGE & ROMANO, 1971: 239; HOGE & ROMANO, 1972: 136;

VANZOLINI, 1981a: XVIII; HOGE & ROMANO-HOGE, 1981a: 200; HOGE & ROMANO-HOGE, 1981b: 408

Craspedocephalus Weigeli – FITZINGER, 1826b: 902

Craspedocephalus bilineatus – FITZINGER, 1826b: 904

Bothrops ambiguus – WAGLER, 1830b: 174 (partly)

Bothrops atrox – WAGLER, 1830b: 174 (partly); DUMÉRIL et al., 1854a: 1507 (partly)

Trigonocephalus jararaca – SCHLEGEL, 1837a: 532 (partly)

Trigonocephalus atrox – SCHLEGEL, 1837a: 535 (partly)

Bothrops jararaca – DUMÉRIL et al., 1854a: 1509 (partly); PETERS & OREJAS-MIRANDA, 1970: 46 (partly)

Trigonocephalus Jararaca – JAN, 1859: 275

- Bothrops neuwiedi* juv. – JAN, 1859: 275
Lachesis atrox – BOULENGER, 1896: 537 (partly)
Lachesis neuwiedii – BOULENGER, 1896: 542 (partly)
Bothrops megaera – HOGE, 1966: 110
Bothrops neuwiedi – PETERS & OREJAS-MIRANDA, 1970: 49 (partly)

The nomenclatural history of this species seems rather confused. FITZINGER (1826b) identified *B. Megaera* as *C. Weigeli* Cuvier and *B. leucurus* as *C. bilineatus* Wied. WAGLER (1830b) himself put *Megaera* in the synonymy of *B. ambiguus* (Gmelin) and *leucurus* in that of *B. atrox* (L.). JAN (1859) identified the first nominal species as *T. jararaca* and the second as a juvenile of *B. neuwiedi*. BOULENGER (1896) considered *Megaera* a synonym of *L. atrox* (L.) and *leucurus* one of *L. neuwiedii* (Wagler). This state of affairs lasted more or less until 1966, when HOGE revived *B. megaera* from the synonymy of *B. atrox*, where it had been placed since 1896 (VANZOLINI, 1981a: XVIII [footnote]). However, HOGE (1966) did not give any arguments for his action. PETERS & OREJAS-MIRANDA (1970) considered *Megaera* a synonym of *B. jararaca* and *leucurus* one of *neuwiedi*. HOGE & ROMANO (1971) and HOGE & ROMANO-HOGE (1981a, b) briefly pointed out that *B. Megaera* Wagler was a junior secondary homonym of *Coluber Megaera* Shaw and therefore they used the first available name, *B. leucurus* Wagler, for this taxon. We accept the synonymy of *Megaera* and *leucurus* on the authority of HOGE & ROMANO (1971) and HOGE & ROMANO-HOGE (1981a, b), who are well acquainted with poisonous Brazilian snakes. To us it is quite obvious that *B. Megaera* certainly is not identical with *B. atrox* (L.) and that *B. leucurus* is different from *B. neuwiedii* Wagler, whereas the two in our opinion very well might be identical. Unfortunately it is not possible to verify this assumption, because the holotype of *B. Megaera* Wagler, 1824 no longer is extant, nor is it possible to find a trace of it in the old catalogue of the Munich Museum. In compiling the above synonymy (which does not aim at completeness) we accepted the views expressed by HOGE & ROMANO (1971) and HOGE & ROMANO-HOGE (1981a, b).

Of the 36 specimens (apparently forming a litter) of *B. leucurus* mentioned by WAGLER (1824: 58) only two could be retraced in the Munich collection (ZSMH 2698/0, collected in Bahia, Brazil by SPIX). As could be expected from the description and the illustration both are juveniles with a distinct umbilical scar. The meristic data of respectively A and B are: V 200, 201, A 1, C 75/75 + 1, 63/63 + 1, Sc ?-25-19, 23-24-19, s-v length 239 mm, 242 mm, tail length 45 mm, 40 mm, head length 15.3 mm, 15.4 mm. They both agree fairly well with the description and the drawing. Because of its better condition we select ZSMH 2698/0 B as the lectotype and ZSMH 2698/0 A as the paralectotype of *Bothrops leucurus* Wagler, 1824. Both specimens are pale brown with dark brown transverse bands, either continuous on both flanks, or interrupted at the vertebral line, thus forming trapezoid or triangular spots with dark outline and lighter center. Both specimens have 19 bands or spots on the right side of the body. A dark band extends from the eye to the corner of the mouth, bordered by a wide pale band dorsally. Dorsal surface of head brown, separated from the colour of the body by an indistinct pale band. Chin and throat dark brown with lighter spots. Ventrals near the flanks with dark spots, median part of belly indistinctly mottled dark and light. Tip of tail white. The tail is not prehensile.

Bothrops atrox (L.)

- Bothrops Furia* Wagler, 1824: 52, pl. XX
Bothrops tessellatus Wagler, 1824: 54, pl. XXI fig. 2
Bothrops atrox – WAGLER, 1824: errata; WAGLER, 1830b: 174 (partly); DUMÉRIL et al., 1854a: 1507 (partly); JAN, 1859: 275 (juv.) (partly); HOGE, 1966: 113; PETERS & OREJAS-MIRANDA, 1970: 44; HOGE & ROMANO, 1971: 241; HOGE & ROMANO, 1972: 133; HOGE & ROMANO-HOGE, 1981a: 202; HOGE & ROMANO-HOGE, 1981b: 405; VANZOLINI, 1981a: XVIII
Craspedocephalus Jararaca – FITZINGER, 1826b: 902
Craspedocephalus Weigeli FITZINGER, 1826b: 903 (partly)
Bothrops ambiguus – WAGLER, 1830b: 174 (partly)

Trigonocephalus jararaca – SCHLEGEL, 1837a: 532 (partly)

Bothrops jararaca – DUMÉRIL et al., 1854a: 1509 (partly); PETERS & OREJAS-MIRANDA, 1970: 47 (partly); VANZOLINI, 1981a: XVIII (partly)

?*Trigonocephalus jararaca* – JAN, 1859: 275

Lachesis lanceolatus – BOULENGER, 1896: 535 (partly)

Lachesis atrox – BOULENGER, 1896: 537 (partly)

There has been little doubt about the identity of *Bothrops Furia*, which since 1830 has been correctly considered a synonym of *B. atrox* (L.) by most authors (BOULENGER [1896] being the exception). Unfortunately none of the syntypes could be retraced in the Munich collection, so the above assumption cannot be proved beyond doubt.

Bothrops tessellatus posed some more problems to earlier authors. Although WAGLER (1824) in the errata had already synonymised this name with *B. atrox* (L.), FITZINGER (1826b) vehemently denied this and considered it a juvenile specimen of *B. Weigeli* Daud., which according to PETERS & OREJAS-MIRANDA (1970: 55) could not be properly assigned. JAN (1859) correctly considered it a juvenile of *B. atrox*, and BOULENGER (1896) agreed with him. HOGE (1966), HOGE & ROMANO (1971) and HOGE & ROMANO-HOGE (1981a, b) did not mention *tessellatus* in their synonymies, whereas PETERS & OREJAS-MIRANDA (1970: 47) and VANZOLINI (1981a: XVIII) incorrectly put it in the synonymy of *B. jararaca* Wied. Fortunately one of the syntypes is still extant in the Munich collection and its identity could be checked. It is a juvenile specimen (ZSMH 2699/0, V 194, A 1, C 73/73 + ..., Sc 25-25-19, s-v length 365 mm, tail length 67 mm, head length 19.4 mm) from the Rio São Francisco, Brazil, collected by SPIX, agreeing fairly well with the description provided by WAGLER (1824) and also with the drawing (though it should be remarked that the coils in the drawing are the mirror-image of those of the specimen). ZSMH 2699/0 is here designated as lectotype of *Bothrops tessellatus* Wagler, 1824, it undoubtedly is a juvenile of *B. atrox* (L.), having a brown back with darker transverse bands or trapezoid blotches; lower lip and chin very dark brown with a few white blotches, throat whitish; belly anteriorly white, checkered with brown, posteriorly brown, checkered with white, tail ditto, becoming immaculately creamish towards the tip.

The pattern in the drawing, especially that of the ventral parts, does not agree with that of the specimen.

Bothrops spec.

Bothrops leucostigma Wagler, 1824: 53, pl. XXI fig. 1

Craspedocephalus Weigeli – FITZINGER, 1826b: 903 (partly)

Bothrops ambiguus – WAGLER, 1830b: 174 (partly)

Trigonocephalus jararaca – SCHLEGEL, 1837a: 532 (partly)

Bothrops jararaca – DUMÉRIL et al., 1854a: 1509 (partly); PETERS & OREJAS-MIRANDA, 1970: 47 (partly); VANZOLINI, 1981a: XVIII (partly)

Bothrops atrox juv. – JAN, 1859: 275 (partly)

Lachesis lanceolatus – BOULENGER, 1896: 535 (partly)

Several recent authors (PETERS & OREJAS-MIRANDA, 1970; VANZOLINI, 1981a) put this species in the synonymy of *B. jararaca* (WIED), where most of the *Bothrops* species described by WAGLER were allocated. This, in our opinion, is not correct. *B. jararaca* is a species with a very distinct dark postocular stripe and a fairly distinct, though variable, pattern as demonstrated by AMARAL (1977). However, WAGLER depicted a snake hardly having any pattern and no postorbital stripe at all. It could very well be that the lack of pattern is due to the bad state of the specimen described, which was taken from the stomach of a falcon. In our opinion there is a slight resemblance with *B. moojeni* Hoge, a species occurring in the general region from which *B. leucostigma* was said to come.

As the holotype apparently is no longer extant (no trace of it in the old catalogue of the Munich museum), we prefer to refrain from allocating *B. leucostigma* Wagler to a specific species of *Bothrops*.

Bothrops taeniatus Wagler, 1824: 55, pl. XXI fig. 3

Lachesis taeniatus – FITZINGER, 1826b: 903

Bothrops atrox – WAGLER, 1830b: 174 (partly); DUMÉRIL et al., 1854a: 1507 (partly); JAN, 1859: 275 (juv.) (partly);

HOGÉ & ROMANO, 1971: 241 (partly); HOGÉ & ROMANO, 1972: 133 (partly); HOGÉ & ROMANO-HOGÉ, 1981a: 202 (partly); HOGÉ & ROMANO-HOGÉ, 1981b: 405 (partly)

Trigonocephalus jararaca – SCHLEGEL, 1837a: 532 (partly)

Bothrops castelnaudi DUMÉRIL et al., 1854a: 1511; JAN, 1863b: 126; BOULENGER, 1896: 544; PETERS & OREJAS-MIRANDA, 1970: 45

Lachesis atrox – BOULENGER, 1896: 538 (partly)

Bothrops jararaca – PETERS & OREJAS-MIRANDA, 1970: 47 (partly); VANZOLINI, 1981a: XVIII (partly)

Bothrops c. castelnaudi – HOGÉ & ROMANO-HOGÉ, 1981a: 204; HOGÉ & ROMANO-HOGÉ, 1981b: 406

This is another *Bothrops* which has been allocated to different species by different authors. FITZINGER (1826b) agreed with WAGLER (1824) that this was a new species. WAGLER (1830b) himself, however, synonymised it with *Coluber atrox* L., a species which he also synonymised with *B. leucurus* and *B. tessellatus*, thus making it a rather mixed entity. Nevertheless most authors followed WAGLER in considering *taeniatus* a synonym of *atrox*, until PETERS & OREJAS-MIRANDA (1970) abruptly and without presenting any supporting evidence, put it in the synonymy of their (in our view composite) *B. jararaca*. In this opinion they were followed by VANZOLINI (1981a).

Although the holotype unfortunately no longer is extant, we feel confident in putting forward another opinion about the identity of *taeniatus*. From the description and illustration it is clear that *taeniatus* has a body-pattern of transverse dark bands positioned in pairs on a pale brownish-green ground colour, and that the ventral parts are brownish, with white spots, those of which near the flanks forming longitudinal stripes. The type locality is given as “ad flumen Amazonum” in the Latin text and as “la province de Bahia” in the French text. We tend to regard the latter locality as an error on WAGLER’s part. PETERS & OREJAS-MIRANDA (1970) and VANZOLINI (1981a) only cited Amazonas as the type locality. The fact that they put *taeniatus* with this type locality in the synonymy of *B. jararaca*, which is not known further north than the southern part of the province of Bahia, in our opinion does not make a strong case, especially not because the drawing of *taeniatus* does not bear the slightest resemblance to any of the known pattern-variants of *B. jararaca*. The same holds true for the synonymisation of *taeniatus* with *atrox*, a species having triangular- to trapezoid-shaped spots on the flanks, or sometimes even lacking a pattern.

To our knowledge the only species from the Amazon region (or from Bahia for that matter) having a pattern of parallel, transverse dark bars, disposed in pairs, and with a longitudinal row of white spots on the border of the flank and belly, is the species currently known as *B. castelnaudi* D., B. & D. The description and the illustration of *taeniatus* completely agree with that species and consequently we consider *B. taeniatus* Wagler, 1824 and *B. castelnaudi* D., B. & D., 1854 as identical. This has one unfortunate consequence: *B. taeniatus* Wagler, 1824 has priority over *B. castelnaudi* D., B. & D., 1854 and the name of the taxon known until now as *B. castelnaudi* has to be changed into *B. taeniatus*. In order to stabilise nomenclature as much as possible, we here select the holotype of *B. castelnaudi* (MNHN 1582) as the neotype of *B. taeniatus* Wagler, 1824. As *B. castelnaudi* has not been used extensively and has a fairly straight forward synonymy (HOGÉ & ROMANO-HOGÉ, 1981b), we don’t think this action unduly upsets the established nomenclature.

Bothrops n. newwiedi Wagler

Bothrops Newwiedi Wagler, 1824: 56, pl. XXII fig. 1; JAN, 1859: 275; JAN, 1863b: 126

?*Craspedocephalus holosericeus* – FITZINGER, 1826b: 904 (by inference)

Bothrops Newwiedii – WAGLER, 1830b: 174

Trigonocephalus atrox – SCHLEGEL, 1837a: 535 (partly)

Lachesis newwiedi – BOULENGER, 1896: 542 (partly)

Bothrops n. newwiedi – HOGE, 1966: 127; HOGE & ROMANO, 1971: 252; HOGE & ROMANO, 1972: 137; HOGE & ROMANO-HOGE, 1981a: 212; HOGE & ROMANO-HOGE, 1981b: 409

Bothrops newwiedi – PETERS & OREJAS-MIRANDA, 1970: 49 (partly); VANZOLINI, 1981a: XVIII

There have been no problems whatsoever in the interpretation of this description, most authors agreeing that WAGLER (1824) described a new species. A single specimen of this species is present in the Munich SPIX collection (ZSMH 2348/0, ♂, V 170, A 1, C 45/45 + 1, Sc 23-25-19, s-v length 652 mm, tail length 92 mm, head length 28.6 mm), said to have been collected in Brazil by SPIX. There is no old label associated with this specimen, but it does agree very well with the description and the plate, which is slightly less than natural size and shows the same posture of the mouth and position of the teeth as the specimen at hand. The back is light brown with dark brown, black bordered spots. The dorsal surface of the head has a large spot between the eyes with two lateroposterior projections, and two large spots (weakly defined laterally) on the posterior part. The upper lip is white with a narrow black stripe from the eye to the corner of the mouth. Belly creamish with dark brown spots on the anterior margin of each ventral. Ventral surface of tail cream-coloured with a sprinkling of brown spots, except in the median which is free of them. Posterior part of tail light without spots both dorsally and ventrally. The plate is not correct here, because it shows the dorsal pattern continuing to the tip of the tail. ZSMH 2348/0 apparently is the specimen after which both description and plate were made. Because it is not clear from the description how many specimens were available, we prefer to select ZSMH 2348/0 as lectotype of *Bothrops Neuwiedi* Wagler, 1824.

Lachesis m. muta (L.)

Bothrops Sururucu Wagler, 1824: 59, pl. XXIII

Crotalus mutus – FITZINGER, 1826b: 904; SCHLEGEL, 1837a: 570

Lachesis muta – WAGLER, 1830b: 175; JAN, 1859: 275; VANZOLINI, 1981a: XVIII

Lachesis mutus – DUMÉRIL et al., 1854a: 1485; BOULENGER, 1896: 534

Lachesis m. muta – PETERS & OREJAS-MIRANDA, 1970: 136; HOGE & ROMANO-HOGE, 1981a: 245

Here again WAGLER (1824) lists an impressive list of synonyms of this well known species. He does not expressly state any reasons why he uses the name *Sururucu* instead of *mutus* and thus it cannot be considered as the proper proposal of a nomen substitutum. No specimen that could have been described by WAGLER is present in the Munich collection, neither is there an indication of such a specimen in the old catalogue.

Crotalus durissus cascavella Wagler

Crotalus Cascavella Wagler, 1824: 60, pl. XXIV

Crotalus rhombifer – KAUP, 1825: 593

Crotalus horridus – FITZINGER, 1826b: 905; WAGLER, 1830b: 176; SCHLEGEL, 1837a: 561 (partly); DUMÉRIL et al., 1854a: 1472 (partly); JAN, 1859: 275

Crotalus terrificus – BOULENGER, 1896: 573 (partly)

Crotalus durissus terrificus – GLOYD, 1940: 132 (partly); KLAUBER, 1956: 32 (partly); KLAUBER, 1972: 35 (partly)

Crotalus durissus cascavella – HOGE, 1966: 139; PETERS & OREJAS-MIRANDA, 1970: 75; HOGE & ROMANO, 1971: 264; HOGE & ROMANO, 1972: 140; HARRIS & SIMMONS, 1978: 108; HOGE & ROMANO-HOGE, 1981a: 224; HOGE & ROMANO-HOGE, 1981b: 412; VANZOLINI et al., 1980: 68; VANZOLINI, 1981a: XVIII

For a long time this taxon was hidden in the synonymy of the South American rattlesnake *C. durissus terrificus*, although KLAUBER (1956) already indicated that it might prove to be a valid subspecies after further study of the complex of South American rattlesnakes. HOGE (1966) did a further survey of the South American rattlers and distinguished seven subspecies in South America. For the subspecies inhabiting the Caatinga region in NE Brazil the name *cascavella* was available and was revived by him. HOGE (1966) said about the type-specimen "None designated" and proceeded by designating Instituto Butantan Herp. Coll. no. 23 400 from Mina Caraiba, Bahia as neotype, without having ascertained that a WAGLER type was no longer extant. The specimen on which WAGLER's description was based is no lon-

ger extant and in this regard the neotype designation could be considered all right. However, as HOGE (1966) did not state the characters in which *cascavella* differs from other subspecies of *C. durissus* (only provided drawings of them), did not provide reasons why he believed the original type lost and did not provide a description of the specimen, his neotype designation cannot be regarded as valid, according to art. 75 (c) of the International Code of Zoological Nomenclature. It is therefore suggested that HOGE¹⁾ does provide the lacking data as soon as possible. KLAUBER (1972) still adhered to the use of the name *C. d. terrificus* for the South American rattlesnakes, though he mentioned, but did not accept, HOGE's (1966) revision of the group. All other recent authors accepted HOGE's classification and so do we. In the old catalogue of the Munich museum we cannot find any reference to the specimen described by WAGLER.

Leptotyphlops albifrons (Wagler)

Stenostoma albifrons Wagler, 1824: 68, pl. XXV fig. 3; FITZINGER, 1826b: 907; DUMÉRIL & BIBRON, 1844: 327; JAN, 1859: 275; JAN, 1863b: 15

Typhlops albifrons – WAGLER, 1830b: 195

Typhlops Albifrons – GRAY, 1831a: 77

Glaucania albifrons – BOULENGER, 1893: 63

Leptotyphlops tenella KLAUBER, 1939: 59; OREJAS-MIRANDA, 1967: 435; PETERS & OREJAS-MIRANDA, 1970: 172; HOOGMOED, 1977: 114

Leptotyphlops albifrons – SMITH & LIST, 1958: 271; OREJAS-MIRANDA, 1967: 438; PETERS & OREJAS-MIRANDA, 1970: 167; WILSON & HAHN, 1973: 120; HAHN, 1980: 6; VANZOLINI et al., 1980: 14; VANZOLINI, 1981a: XVIII

Leptotyphlops tenellus – HAHN, 1980: 27

Since its description this species has posed a problem and OREJAS-MIRANDA (1967) quite aptly summed up the confused state in which this species was, when he said it had acquired mythological characters.

This species has been used as a dump for many species with a white forehead and allegedly occurred from Central America through South America to Uruguay and Paraguay, also encompassing the Antilles (WERNER, 1917). SMITH & LIST (1958) tried to solve the position of *S. albifrons* by writing to HELLMICH in order to obtain further information about the type-specimen. HELLMICH informed them that the type (formerly under ZSMH 1348/0) was destroyed during the war. We agree with him, as we could not find it either. SMITH & LIST (1958) proposed designation of a topotypical specimen (from the surroundings of the city of Belém) as neotype in order to stabilise the nomenclature of neotropical *Leptotyphlops*. They did not express an opinion about its distribution. OREJAS-MIRANDA (1967) in a revision of Amazonian *Leptotyphlops* considered *albifrons* as distinct from *L. tenella* KLAUBER and provided distinguishing characters. However, he did not see a single specimen of the former taxon, all material from the Belém area identified as *L. albifrons* turned out to be *tenella*. He also favoured the idea of designating a neotype, but due to lack of material he did not do so himself. In his map he restricted the distribution of *albifrons* to Belém, which later was extended to Belém and Rio Grande do Norte, Brazil by PETERS & OREJAS-MIRANDA (1970). WILSON & HAHN (1973) summarised the history of *S. albifrons* and suggested its designation as a nomen dubium, a procedure which had already been opposed by SMITH & LIST (1956), because of the widely distributed use of this name in neotropical snake literature. HAHN (1980) considers the name as valid and repeats the distribution given by PETERS & OREJAS-MIRANDA (1970). CUNHA & NASCIMENTO (1978) dealt with the snakes of the eastern part of Pará, which includes Belém. Most astonishingly these authors only report *L. septemstriatus* (Schneider) and *L. macrolepis* (Peters) and denied the presence of *L. albifrons* and *L. tenella* from the area they studied. However, as OREJAS-MIRANDA has more experience as a monographer of *Leptotyphlops* and as one of us

1) After completion of the manuscript the sad news of Dr. A. R. Hoge's untimely death in December 1982 reached us. We wish to suggest that Dr. Hoge's successor or associates at the Instituto Butantan provide the necessary data.

Most recent authors (SMITH & LIST, 1958; WILSON & HAHN, 1973) considered WAGLER's (1824) description and illustration unidentifiable without a type-specimen at hand and in essence it has been treated as a nomen dubium. THOMAS (1965) examined mainland material of "*albifrons*" and came to the conclusion that several taxa were involved and expressed the opinion that *tenella* might either be "a subspecies of a wide-ranging South American form (presumably true *albifrons*) or a variant (supraoculars and first labials in contact) which occurs throughout much of the range of *albifrons* (as far south as Mato Grosso) but is of particularly high frequency in the northeast." He modestly adds that his knowledge of the *albifrons* group is too meager to venture a solution. However, in our opinion THOMAS (1965) was very close to the truth. The facts that the "distinguishing" characters provided by OREJAS-MIRANDA (1967) and which obviously were compiled from the literature, in our experience all fall within the width of variation of so called *L. tenella*, that since its description no "true" *albifrons* from Belém have been collected and that topotypical material proved to be *tenella*, combined with examination of the illustration and study of the description, have led us to the conclusion that *L. tenella* Klauber, 1939 is nothing but a synonym of *S. albifrons* Wagler, 1824. The correct name for the taxon, widely known since 1939 as *L. tenella*, actually is *L. albifrons* (Wagler, 1824). We are strengthened in our conclusion by several characters mentioned in the description, and (partly) visible in the illustration: the large, round eyes not covered by skin, the large pentagonal ocular scales covered with pits, the quadrangular yellow (white) spot on the tip of the snout, the yellow-tipped tail and the dorsal pattern of wide blackish brown longitudinal stripes separated by narrow, light zig zag lines. These characters only can be found in combination in one eastern Amazonian species, *L. tenella* Klauber, which consequently is a junior synonym of the older *L. albifrons* (Wagler, 1824), which thus has a distribution encompassing the entire Amazonian basin and the Guianas. It still remains advisable to designate as soon as possible a neotype of *L. albifrons* (Wagler) from topotypical material, which apparently exists (OREJAS-MIRANDA, 1967).

Amphisbaenia

Leposternon microcephalum Wagler

Leposternon Microcephalus Wagler, 1824: 70, pl. XXVI figs. 2, 3, 4

Leposternon scutigerum – FITZINGER, 1826b: 907 (by inference)

Leposternon microcephalus – BOIE, 1827: 565; VANZOLINI, 1981a: XVIII

Lepidosternon Microcephalus – WAGLER, 1830b: 197; WIEGMANN, 1834: 21; WIEGMANN, 1836: 154, 157

Lepidosternon microcephalum – DUMÉRIL & BIBRON, 1839: 505; GRAY, 1844: 73; GRAY, 1872b: 39; BOULENGER, 1885b: 462

Leposternon microcephalum – STRAUCH, 1881: 424; HELLMICH, 1960: 104; GANS, 1967: 82; PETERS & DONOSO-BARROS, 1970: 168

There have not been many problems in the allocation of this name. From its description it has been considered a valid species. HELLMICH (1960) and GANS (1967) reported that the holotype of this species (from Rio de Janeiro, Brazil, collected by SPIX) was extant in Munich (ZSMH 3150/0). HELLMICH (1960) provided some additional data on the holotype, which can be emended as follows: ♀, V 215, caudal annuli 13 + terminal plate, lateral annuli in cloacal region 4, scales around midbody 45, s-v length 400 mm, tail length 24 mm, no femoral pores. There are distinct lateral, dorsal and ventral sulci. The caudal annuli were counted from the postcloacal annulus, which itself was not included. The pre-cloacal plate is damaged, but apparently it consisted of six scales. The postcloacal annulus also is damaged and not to be reconstructed. Throat and sides of head also damaged; the skin has been loosened and

sewn again, as is the anterior part of the belly. The drawing is fairly good, except for the second row of scales posterior from the rostral, which actually only is \pm half as wide as the first row. Dorsally of the second supralabial there is a small quadrangular ocular, covering the eye. Thus, the black dot shown in the illustration over the posterior part of the first supralabial, is not the eye. Chin with a large mental, which is partly fused with the large sublabials. The illustration is approximately natural size. The head of the holotype was depicted by WIEGMANN (1836) after drawings sent to him by A. WAGNER. These drawings are poor, but give a better picture than WAGLER's drawings. The specimen ZSMH 666/0, which is mentioned in the old catalogue apparently is lost.

Blanus cinereus (Vandelli)

Amphisbaena oxyura Wagler, 1824: 72, pl. XXV fig. 1; FITZINGER, 1826b: 908; BOIE, 1827: 565

Blanus cinereus – WAGLER, 1830b: 197 (by inference); GRAY, 1844: 72; GRAY, 1872b: 34; MERTENS & WERMUTH, 1960: 89 (with question-mark); VANZOLINI, 1981a: XVIII

Amphisbaena cinerea – DUMÉRIL & BIBRON, 1839: 500; STRAUCH, 1881: 416

Blanus c. cinereus – GANS, 1967: 78

WAGLER (1830b) already corrected the locality of his *A. oxyura* to Spain and synonymised it with *A. cinerea*. This synonymisation has been accepted by all later authors and was not subject to any discussion. The three specimens mentioned by WAGLER (1824) are not present in the Munich collection and cannot be found in the old catalogue either.

Amphisbaena vermicularis Wagler

Amphisbaena vermicularis Wagler, 1824: 73, pl. XXV fig. 2; FITZINGER, 1826b: 908; BOIE, 1827: 565; WAGLER, 1830b: 35; DUMÉRIL & BIBRON, 1839: 489; GRAY, 1844: 71; GRAY, 1872b: 35; STRAUCH, 1881: 395; VANZOLINI, 1949: 106; HELLMICH, 1960: 97; GANS, 1967: 75; PETERS & DONOSO-BARROS, 1970: 38; VANZOLINI, 1981a: XVIII

Another unproblematical name. HELLMICH (1960) and GANS (1967) reported the existence of the "holotype" ZSMH 660/0. HELLMICH (1960) mentioned its length, his data can be completed as follows: V 223, C 27 + 1, lateral annuli 4, scales around midbody 46, precloacal plate with 4 scales, postcloacal scales 13, precloacal pores 4, supralabials 4, infralabials 3, s-v length 212 mm, tail length 31 mm. From the text it is not clear how many specimens WAGLER (1824) had before him when describing this species. In the light of earlier remarks we prefer to select ZSMH 660/0 (from Bahia, Brazil, collected by SPIX) as the lectotype of *Amphisbaena vermicularis* Wagler, 1824.

Amphibia Gymnophiona

Siphonops annulatus (Mikan)

Caecilia annulata Wagler, 1824: 74, pl. XXVI fig. 1; GRAY, 1831a: 110

Coecilia annulata – BOIE, 1827: 566; SCHLEGEL, 1827: 294; FITZINGER, 1826b: 909

Siphonops annulatus – WAGLER, 1828a: 742 (by inference); WAGLER, 1830b: 198 (by inference); DUMÉRIL & BIBRON, 1841: 282; NIEDEN, 1913: 25; GORHAM, 1962: 17; TAYLOR, 1968: 555; VANZOLINI, 1981a: XVIII

This is another species described as new, but which actually had been described a few years earlier under the same name by MIKAN (1820). As no reference to this publication is made by WAGLER in 1824 or 1828, although he does refer to MIKAN's publication in 1830, and because in the French text (WAGLER, 1824: 75) it is repeated that this is a new species, *Caecila annulata* Wagler, 1824 is here considered as a newly proposed name which is a junior primary homonym of *Caecilia annulata* Mikan, 1820 and therefore has to be rejected. From WAGLER's (1824) description it is evident that he had several specimens before him when describing this species. At present, there is no specimen of this species, collected

by SPIX, left in the Munich collections. In the old catalogue of the Munich museum one specimen (ZSMH 1323/0), which is now apparently lost, was listed from Brazil, collected by SPIX. In the Leiden collection there is one specimen (RMNH 2419) of this species collected by SPIX. It is here designated lectotype of *Caecilia annulata* Wagler, 1824.

2 ♀ ♀,	ZSMH 1390/0,	<i>Anilius s. scytale</i> (L.)
2 juvs.,	ZSMH 1379/0,	<i>Boa c. constrictor</i> (L.) (probably ZSMH 1379/0 + 1380/0)
1 juv.,	ZSMH 1361/0,	<i>Epicrates cenchria</i> (L.)
1 ♀,	ZSMH 1751/0,	<i>Chironiscus c. carinatus</i> (L.)
1 ♂,	ZSMH 2643/0,	<i>Chironiscus c. carinatus</i> (L.) (coll. SPIX or LEUCHTENBERG?)
1 ♀,	ZSMH 1523/0,	<i>Helicops leopardinus</i> (Schlegel)
1 ♀,	ZSMH 1773/0,	<i>Leimadophis poecilopyrus</i> (Wied)

Apart from the snakes and amphisbaenians mentioned by WAGLER (1824), SPIX collected several additional species, which apparently were recognised by WAGLER as belonging to species already described previously. For the sake of completeness we here include a list of the additional species collected by SPIX.

2 ♂ ♂, 1 ♀,	ZSMH 1790/0,	<i>Leptophis ahaetulla liocercus</i> (Wied)
1 juv.,	ZSMH 1774/0,	<i>Liophis cobella</i> (L.)
1 ♂,	ZSMH 2143/0,	<i>Oxybelis fulgidus</i> (Daudin)
1 ♂,	ZSMH 2056/0,	<i>Oxyrhopus t. trigeminus</i> D., B. & D.
1 ♂,	ZSMH 1679/0,	<i>Pseustes poecilonotus polylepsis</i> (Peters) (for discussion see under "Incerta sedis", p.)
1 ♂, 1 ♀,	ZSMH 1676/0,	<i>Spilotes p. pullatus</i> (L.)
1 ♀,	ZSMH 2259/0,	<i>Micrurus ibiboboca</i> (Merrem)
1 ♂, 1 ♀,	ZSMH 2668/0 a, b,	<i>Amphisbaena f. fuliginosa</i> (Laur.)
1 ♀,	ZSMH 2668/0 c,	<i>Amphisbaena f. amazonica</i> Vanzolini.
1 ♂, 1 ♀,	ZSMH 657/0,	<i>Amphisbaena f. amazonica</i> Vanzolini.

In the old catalogue only a few more snakes collected by SPIX are listed, which could not be found and which we must assume were destroyed during World War II.

SPIX (1824) Reptilia Testudines²⁾

Podocnemis expansa (Schweigger)

Emys expansa Schweigger, 1812: 299; SCHWEIGGER, 1814: 30; KAUP, 1828: 1150; TEMMINCK & SCHLEGEL, 1838: 48 (partly)

Emys cayennensis Schweigger, 1812: 298; SCHWEIGGER, 1814: 29

Emys Amazonica Spix, 1824: 1, pl. I, pl. II figs. 1–3

Podocnemis expansa – WAGLER, 1830b: 135 (partly), pl. 4 figs. I–XXXI; GRAY, 1844: 45; GRAY, 1855: 61; BOULENGER, 1889: 204; MÜLLER, 1935: 109; WERMUTH & MERTENS, 1961: 296; PRITCHARD, 1964: 29; PRITCHARD, 1967: 158, 221; WERMUTH & MERTENS, 1977: 120; PRITCHARD, 1979: 420, 606, 751; VANZOLINI, 1981a: XIX

2) After the galleyproofs for this paper were ready, personal communications (telephone call October 14, 1983; letter October 29, 1983) were received from Peter C. H. PRITCHARD, Maitland, Florida, who recently investigated the actual specimens of *Podocnemis* and *Peltecephalus* present in the Paris Museum. He arrived at the conclusion that FRETEY (1977) took the wrong specimens for SCHWEIGER's types. As we had nothing to go on but FRE-

Hydraspis expansa – GRAY, 1831b: 41 (partly)

Podocnemis sextuberculata – BAUR, 1893: 213

KAUP (1828) already correctly interpreted SPIX's description of this species. His opinion was endorsed by all subsequent authors, except BAUR (1893) who (wrongly) identified it with *P. sextuberculata* Cornalia, which in his opinion was a junior synonym of *amazonica*. In the meantime it has been well established that *P. sextuberculata* is a good species, different from *P. expansa*. All type material of *Emys Amazonica* Spix, still extant in the Munich and Leiden collections, belongs to *P. expansa*. The following syntypes are present:

ZSMH 3095/0, 1 semiadult shell, dry.

ZSMH 7–14/0, 8 adult skulls, dry.

ZSMH 2730/0, 1 adult skulls, dry.

ZSMH 2446/0, 7 juvs., in alcohol.

ZSMH 2447/0, 4 juvs., in alcohol.

RMNH 3294, 1 juvs., in alcohol.

No adult specimen as figured in pl. I could be traced, but nine adult skulls, one of which possibly belonged to the specimen figured in pl. I were found. Consequently we choose to select one of the juvenile syntypes as the lectotype of *Emys Amazonica* Spix, 1824 (ZSMH 2446/0 A), all other specimens mentioned above automatically becoming paralectotypes. A short description of the lectotype seems warranted: The specimen is quite well preserved, most of the horn shields are still present, only the first right marginal and the right abdominal are missing. Carapace, median length 54.5 mm, maximum length 55 mm, width anteriorly 44.5 mm, posteriorly 47 mm; plastron, median length 48 mm, maximum length 51 mm, width anteriorly 26 mm, posteriorly 23 mm, width just anteriorly of bridge 37.5 mm, just posteriorly 39 mm; maximum height of shell 23 mm. There still is a very distinct umbilicus which is 7.5 mm long and 4.3 mm wide. Five out of the seven juveniles in ZSMH 2446/0 still have a large umbilicus in different stages of reduction.

In the largest specimen it is nearly completely closed. All juvenile paralectotypes have the same general size as the lectotype. The adult shell has a median length of 228 mm, a maximum length of 234 mm. The adult skulls (ZSMH 2730/0, ZSMH 7–14/0) have the following measurements (only max.-mean value-min.): length measured from the snout to the tip of the supraoccipital 125.5–160.8–182 mm, length measured from the snout to the condylus of the basioccipital 95–118–132 mm, maximum width 78–100.7–116 mm, length of lower jaw 94–97.3–106 mm, width of lower jaw 79–85.9–93 mm.

FRETEY (1977) reported the existence of a type specimen (which he incorrectly called the holotype) of *Emys cayennensis* Schweigger in the Paris museum (MNHN 4152). Thus, MITTERMEIER & WILSON's (1974: 158) remark that *cayennensis* might be a juvenile of *P. unifilis*, but that this assumption could no longer be checked "since the types of *Emys cayennensis* no longer exist..." for the latter part is refuted by FRETEY's discovery of one of the three type specimens, which is here designated as lectotype of *Emys cayennensis* Schweigger, 1812 (MNHN 4152). WERMUTH & MERTENS (1977) hesitatingly endorsed the view of MITTERMEIER & WILSON (1974) concerning the identity of *E. cayennensis* Schweigger by placing it in the synonymy of *P. unifilis* Troschel, providing it with a question-mark. Comparison of the description and drawings provided by FRETEY (1977) of MNHN 4152 with material in the collections of RMNH and ZSMH convinced us that it is identical with *P. expansa* (Schweigger). Thus, *E. cayennensis* Schweigger is a junior synonym of *E. expansa* Schweigger (which, among others can be recognised by the presence of two yellow spots with black center on the interparietal). It

TEY's (1977) publication and his concepts about the types published therein, our conclusions about the status of the names *tracaxa*, *unifilis*, *cayennensis* and *dumeriliana* are only based on his data. As it appears there have been some mix-ups of labels which now have been (partly) cleared away by PRITCHARD, it seems wisest to consider our conclusions as very tentative and await PRITCHARD's book on Venezuelan turtles, in which this problem will be dealt with. This probably means that the correct name of the species here called *Peltocephalus tracaxa* is *P. dumerilianus* and that *cayennensis* is a synonym of *unifilis*, as already suggested by MITTERMEIER & WILSON (1974), and which causes problems again, as *cayennensis* would have priority over *unifilis*.

Phrynops g. geoffroanus (Schweigger)

Emys viridis Spix, 1824: 3, pl. II fig. 4, pl. III fig. 1

Emys nasuta – KAUP, 1828: 1150

Phrynops Geoffroanus – WAGLER, 1830b: 136; WAGLER, 1833: pl. XXVI

Phrynops Geoffroyana – WAGLER, 1830b: pl. 5 figs. XLVIII–LI; GRAY, 1844: 41

Hydraspis planiceps – GRAY, 1831b: 40 (partly)

Hydraspis viridis – GRAY, 1831b: 41

Emys platycephala – TEMMINCK & SCHLEGEL, 1838: 47 (partly)

Platemys Geoffroanus – STRAUCH, 1865: 115

Hydraspis geoffroyana – BOULENGER, 1889: 223 (with question-mark)

Phrynops g. geoffroanus – WERMUTH & MERTENS, 1961: 333 (with question-mark); WERMUTH & MERTENS, 1977: 130

Phrynops geoffroanus – VANZOLINI et al., 1980: 143; VANZOLINI, 1981a: XIX (partly)

SPIX (1824) does not mention the number of specimens on which his description of *E. viridis* was based, but from the fact that he only provides a very detailed description and illustration of a shell, we conclude that he only had that shell, which thus can be considered the holotype of *Emys viridis* Spix, 1825. This shell is still extant (ZSMH 3008/0) and is well preserved. The illustrations on pl. II fig. 4 and pl. III fig. 1 are perfect mirror images of it, executed slightly smaller ($4/5 \times$) than natural size. The shell has a median carapace length of 228 mm, maximum carapace length 235 mm, median plastron length 187 mm, maximum plastron length 201 mm and maximum width of the shell is 170 mm.

Platemys spixii Duméril & Bibron

Emys depressa Spix, 1824: 5, pl. III figs. 2, 3 (non *Emys depressa* Merrem, 1820)

Rhinemys radiolata – WAGLER, 1830b: 135

Hydraspis planiceps – GRAY, 1831b: 40 (partly)

Platemys Spixii Duméril & Bibron, 1835: 409; STRAUCH, 1865: 114; STRAUCH, 1890: 105; GOELDI, 1905: 754

Emys platycephala – TEMMINCK & SCHLEGEL, 1838: 47 (partly)

Hydraspis Spixii – GRAY, 1844: 39; GRAY, 1855: 54

Platemys spixii – BOULENGER, 1889: 227; SIEBENROCK, 1909: 580; LUEDERWALDT, 1926: 435; FRÖES, 1957: 22; WERMUTH & MERTENS, 1961: 341; DONOSO-BARROS, 1965: 14; PRITCHARD, 1967: 233; WERMUTH & MERTENS, 1977: 134

Phrynops geoffroanus – VANZOLINI, 1981a: XIX (partly)

Platemys radiolata spixii – PRITCHARD, 1979: 780, 781

From the fact that SPIX (1824) mentioned two localities (province of Rio de Janeiro and Rio São Francisco), we can conclude that he had at least two specimens of this taxon before him when describing *E. depressa*. At present only one shell (ZSMH 3003/0) belonging to a specimen of this taxon is present in the Munich collection. It is provided with four labels (white, large green cardboard, small green paper, large red cardboard) which all list this shell as *Platemys Spixii* and as type of *Emys depressa* Spix. According to the white label this specimen is from Rio de Janeiro, according to the green one (apparently copied from the book) from Rio de Janeiro or river São Francisco, and according to the small green one just from Brazil. As the old catalogue of the Munich museum also lists this specimen as coming from Rio de Janeiro, we are inclined to accept this as locality for this specimen. On the inside of both plastron and carapace (which are separated) is written "Plat. depress. Spix". We accept this specimen as one of the syntypes of *Emys depressa* Spix, 1824, although this certainly is not the shell of the specimen depicted by SPIX, as evidenced by a damaged area in the carapace just to the right of the nuchal scale. This damage apparently was caused to the living animal as it healed neatly, being covered by small horny scales. As SPIX (1824) does not depict such a scar, it certainly was not ZSMH 3003/0 after which

the illustration was made. From the description (and the illustration) it is clear that SPiX based his description on at least one complete specimen. The measurements SPiX provides apparently are not taken from ZSMH 3003/0, which has the following measurements: carapace, median length 148 mm, maximum length 148 mm, maximum width 104 mm; plastron, median length 131 mm, maximum length 138 mm, width anteriorly of bridge 75.9 mm, posteriorly of bridge 66.9 mm. We here select this shell (ZSMH 3003/0) as the lectotype of *Emys depressa* Spix, 1824 (non *E. depressa* Merrem, 1820). On the basis of its completely flat plastron we conclude that it is a female.

SPiX (1824) in describing this taxon wondered whether it might possibly be identical with either *Emys depressa* Merrem or *E. radiolata* Mikan, thus indicating that his own *E. depressa* was not meant in the sense of MERREM (1820). The reason why in this case SPiX knowingly used the same name as MERREM for a species which he obviously considered different, escapes us. Later authors variously interpreted this name, until DUMÉRIL & BIBRON (1835) recognised it as a good taxon which they renamed *Platemys Spixii*, because *E. depressa* Spix, 1824 was a junior primary homonym of *E. depressa* Merrem, 1820. As a consequence of this the lectotype of *E. depressa* Spix, 1824 (ZSMH 3003/0) also becomes the lectotype of *Platemys Spixii* Duméril & Bibron, 1835.

VANZOLINI (1981a) considers *E. depressa* Spix to be a synonym of *Phrynops Geoffroyanus*, but does not give any reasons for this departure from the common opinion, according to which *E. depressa* Spix = *Platemys spixii* Duméril & Bibron, which is considered a valid taxon. Upon comparison of the shell of the lectotype with available descriptions we arrived at the conclusion that it does not at all agree with any description of *P. Geoffroyanus*, but on the contrary quite conforms with descriptions of the taxon known as *Platemys spixii*, which is considered a subspecies of *P. radiolata* by PRITCHARD (1979). We here adhere to the more conservative view of regarding this taxon as a distinct species.

Peltocephalus tracaxa (Spix)

Emys macrocephala Spix, 1824: 5, pl. IV; KAUP, 1825: 593

Emys Tracaxa Spix, 1824: 6, pl. V

Emys tracaxa – KAUP, 1825: 593

Emys expansa – KAUP, 1828: 1150 (partly)

Podocnemis Dumeriliana – WAGLER, 1830b: 135 (partly) (by inference); LUEDERWALDT, 1926: 422

Podocnemis Tracaxa – WAGLER, 1830b: 135 (by inference); FITZINGER, 1836: 126

Hydraspis expansa – GRAY, 1831b: 42 (partly)

Hydraspis Dumeriliana – GRAY, 1831b: 42 (partly)

Peltocephalus Tracaxa – DUMÉRIL & BIBRON, 1835: 378; GRAY, 1844: 45; DUMÉRIL et al., 1854b: pl. 18 fig. 2; GRAY, 1855: 61

Podocnemis dumeriliana – FITZINGER, 1836: 126 (partly); SIEBENROCK, 1902: 169; SIEBENROCK, 1904: 15; GOELDI, 1905: 730; SIEBENROCK, 1909: 566; MÜLLER, 1935: 109; WILLIAMS, 1954a: 282; WERMUTH & MERTENS, 1961: 294, fig. 208; PRITCHARD, 1964: 30; DONOSO-BARROS, 1965: 11; PRITCHARD, 1967: 222; MITTERMEIER, 1975: 13; WERMUTH & MERTENS, 1977: 119; FRAIR et al., 1978: 139; RHODIN et al., 1978: 725; SMITH, 1979: 87, 88

Emys dumeriliana – TEMMINCK & SCHLEGEL, 1838: 48

Peltocephalus Tracaxa – TROSCHER, 1848: 646 (?)

Peltocephalus Dumerilianus – FITZINGER, 1864: fig. 124

Peltocephalus tracaxa – STRAUCH, 1865: 101; GRAY, 1870: 84; PRITCHARD, 1979: 758

Podocnemis tracaxa – BOULENGER, 1889: 206; STRAUCH, 1890: 101, pl. II, fig. 2; GOELDI, 1905: 730; PRITCHARD, 1967: 222

Peltocephalus dumeriliana – FRÓES, 1957: 15

Peltocephalus macrocephala – FRETEY, 1975: 674

Peltocephalus tracaxus – FRETEY, 1977: 111

Peltocephalus dumerilianus – WILLIAMS, 1954b: 3, 6, 7; FRAIR et al., 1978: 142; RHODIN et al., 1978: 727; VANZOLINI, 1981a: XIX

As can be judged from the preceding list of synonyms, the history of this taxon has been complex and confused. SPiX (1824) already started the problem by describing this taxon under two different names

which, upon closer comparison of the plates (tail length), might possibly be based on a female (*E. tracaxa*) and a male (*E. macrocephala*) although the position of the cloaca in the latter is not quite clear. WAGLER (1830b) created the genus *Podocnemis* and considered *macrocephala* a synonym of *E. dumeriliana* Schweigger and at the same time considered *tracaxa* a good taxon. DUMÉRIL & BIBRON (1835) correctly assigned both Spix-names to one taxon, which they placed in a new genus, *Peltocephalus*. Later authors differed in their opinions on the validity of the genus and most again considered the taxon under discussion as belonging to *Podocnemis*, either under the specific name *dumeriliana* or *tracaxa*. Only recently the problems pertaining to the generic position of this taxon were sorted out independently by WILLIAMS (1954b) and FRETEY (1977) on the basis of external and skeletal characters, by FRAIR et al. (1978) on the basis of blood chemistry and by RHODIN et al. (1978) on the basis of chromosomal characters. All these authors came to the conclusion that *Peltocephalus* was a valid genus (a view that we accept), differing from other South American Podocnemidae by the shape of its shell, its extremely large head without frontal furrow, its parrot-like beak and other related skull characters, its interparietal scale which is wider posteriorly than anteriorly, its single supracaudal in adults (for further information see PRITCHARD & TREBBAU: Turtles of Venezuela, in press), its unique hemoglobin polymorphism and its aberrant karyotype (lacking chromosome groups B and D [RHODIN et al., 1978]). Most authors called the taxon under consideration *Peltocephalus* or *Podocnemis dumeriliana* (us). FRETEY (1977) provided an extensive description of the types of both *E. cayennensis* Schweigger and *E. dumeriliana* Schweigger, which are still extant in the Paris museum. He pointed out that the type of *dumeriliana* was a real *Podocnemis*, quite different from *Emys tracaxa* Spix. Consequently he used the name *P. dumeriliana* in the sense of DUMÉRIL & BIBRON (1835) (who were of the opinion that *cayennensis* was the juvenile of *dumeriliana*) and considered this species different from other species of the genus occurring in French Guiana (*P. cayennensis* and *P. unifilis*). However, FRETEY (1977) himself apparently was not certain about the identity of the three *Podocnemis* taxa he distinguished and queried whether or not *unifilis* was a synonym of *cayennensis* and/or *dumeriliana*. Judging by the drawings provided by FRETEY (1977) we come to the conclusion that *cayennensis* and *dumeriliana* are not synonymous, considering the presence of a subocular scale in *dumeriliana* which is absent in *cayennensis*, and the difference in shape of the interparietals: heart-shaped, wider than long in *cayennensis*, elongate, pear-shaped in *dumeriliana*. To us this seems to indicate that *dumeriliana* is identical with the taxon described by TROSCHER (1848) as *Podocnemis unifilis*, a conclusion also reached by GRAY (1872a: 25). PRITCHARD (1979: 758) misinterpreted FRETEY's question about the status of *unifilis* and asserted that according to FRETEY (1977) the type of *E. dumeriliana* Schweigger was identical to *P. unifilis* Troschel and that because of this the name *dumeriliana* was not available for the present taxon, which for such a long time had been known under that name. Apparently by accident PRITCHARD (1979) arrived at the right conclusion, acting on wrong assumptions. For one thing, *E. dumeriliana* is a validly described taxon which has priority over *P. unifilis* and is available for nomenclatural purposes. The logical conclusion thus would be to rename *P. unifilis*, but because this name has been used extensively and consistently since its description, it seems wisest not to do so and to ask the International Commission on Zoological Nomenclature to suppress *E. dumeriliana* Schweigger and place *P. unifilis* on the Official List of Specific Names in Zoology. This seems especially warranted because the specific name *dumeriliana* has been incorrectly and confusingly applied to two widely diverse taxa of South American Pelomedusid turtles (*Peltocephalus tracaxa* and *Podocnemis erythrocephala*). Its new association with yet another taxon (*P. unifilis*) and its eventual taking precedence over its currently accepted name, would cause even more confusion and this, for us, is the reason for the request to the Commission. As has been pointed out above we consider *E. cayennensis* Schweigger a synonym of *E. expansa* Schweigger.

Of the original three specimens of *Emys macrocephala* only two skulls are present in the Munich collection: ZSMH 15/0 (skull, lower jaw and three neck vertebrae of adult specimen [possibly ♂]) and ZSMH 17/0 (skull, without lower jaw, of adult specimen). Both specimens bear red labels on which is stated that they are: „Eines der Typus-Exemplare von *Emys macrocephala* Spix“. On accompanying white labels the locality from which they hail is stated to be „Airon am Rio Yau (Nebenfluß des Rio

Negro)*, exactly the locality mentioned in Spix's description and probably copied from the book. We accept these two skulls as being part of the original series of syntypes. Moreover, a complete, stuffed specimen in the Leiden collection (RMNH 6164) apparently is another syntype. This specimen agrees rather well with the description and also with Spix's illustration of *E. macrocephala*, though there are some differences, like the position of head and legs and in the borders of scales, which make it uncertain whether this specimen was depicted. It does, however, agree quite well with the illustration in having the edges of the horny shields on the carapace and plastron irregularly outlined, wavy, a character mentioned in the description (but see further below) and by not showing concentric grooves on the shields as *Tracaxa* was said and shown to have. Also, the plastron of the stuffed specimen is brown, rather than yellowish as in *Tracaxa*. There are, however, a number of discrepancies between Spix's text and his illustration, e. g. he says that in *macrocephala* there is a posterior pair of marginals (over the tail), whereas pl. IV clearly shows one large, unpaired supracaudal, exactly the situation found in RMNH 6164. Although Spix (1824: 5, 6) distinguished between *macrocephala* and *Tracaxa*, among others on the basis, that the former has two supracaudals and the latter only a single one, he also said that the total number of marginals in both was 24, which is unlikely in the case of a single supracaudal. Another discrepancy between the descriptions and the illustrations is that Spix stated that the margins of the horny shields of the carapace in *macrocephala* were 'less wavy' and in *Tracaxa* 'more wavy', whereas pls. IV and V show exactly the opposite to be true. It is difficult to explain what happened here, possibly a mixing of data took place, the text and/or the illustrations were combined with the wrong name, or Spix was just not very careful in making his descriptions. The label of RMNH 6164 provides the following information: *Emys tracaxa* et *macrocephala* Spix/ voy: Spix fl. Sälmoëns /Brésil. Although the locality (Rio Solimoëns) given is the one Spix mentions for his *Emys Tracaxa*, we are inclined to disregard this, because it seems likely that a certain mixing of data took place, as evidenced by the two names (treated as synonymy) mentioned on the original label. This view is only strengthened by the discrepancies between the text and illustrations in the original publication. Moreover, all other Spix-material of reptiles and amphibians in Leiden is only provided with the data "Brésil, voy(age) Spix" and we therefore think that the more precise locality data accompanying the stuffed turtle might have been taken from Spix's book after receipt of the material as also was done in Munich. As RMNH 6164 is the most complete specimen available, we here select it as the lectotype of *Emys macrocephala* Spix, 1824, which automatically makes ZSMH 15/0 and 17/0 paralectotypes. It is rather difficult to determine the sex of RMNH 6164 because its tail has been cut open and the position of the cloaca is hardly discernable although it seems to be near the top of the tail rather than close to the edge of the plastron. However, based on the length of the tail and because the posterior part of the plastron is slightly concave, we assume that it is a male. Its meristic data are as follows: carapace, median length 382 mm, maximum length 394 mm; plastron, median length 303 mm, maximum length 328 mm; shell, height 135 mm, width 299 mm; skull, median length 124 mm, maximum width 86.5 mm. The meristic data of the two paralectotype skulls (ZSMH 15/0 and 17/0) are: length measured from the snout to the tip of the supraoccipital 154.0 mm, 141.0 mm, length measured from the snout to the condylus of the basioccipital 114.8 mm, 104.9 mm, maximum width 100.2 mm, 88.4 mm, length lower jaw 91.4 mm, —, width lower jaw 79.9 mm, —.

From Spix's (1824: 6) description it is not clear on how many specimens he based the description of *Emys Tracaxa*, he only mentioned that the species was solitary and monogamous. As we don't have an indication how to interpret this into numbers at his disposal, we assume there could have been more than one specimen. Consequently we here designate the only available specimen (ZSMH 16/0, skull and lower jaw, including horns sheaths, of an adult ♀) as lectotype of *Emys Tracaxa* Spix, 1824. This skull is provided with a red label which reads: *Podocnemis dumeriliana* (Schweigger)/Typus v. *Emys Tracaxa* Spix/Spix. Spec. nov. Test. et Ran. /pg. 6 Tab. V. The skull has a length of 128.7 mm, measured from the snout to the tip of the supraoccipital, and of 96.5 mm, measured from the snout to the condylus of the basioccipital. Its maximum width is 85.8 mm, whereas the lower jaw has a width of 69.3 mm and a length of 75.1 mm.

Phrynops rufipes (Spix)

Emys rufipes Spix, 1824: 7, pl. VI

Emys nasuta – KAUP, 1828: 1150

Rhinemys rufipes – WAGLER, 1830b: 134, pl. 3 figs. XLIII – XLV; BAUR, 1893: 213

Hydraspis rufipes – GRAY, 1831b: 41 (partly); GRAY, 1855: 56; SIEBENROCK, 1904: 24; GOELDI, 1905: 753; SIEBENROCK, 1909: 578; LUEDERWALDT, 1926: 429

Platemys rufipes – DUMÉRIL & BIBRON, 1835: 433; STRAUCH, 1865: 117

Emys platycephala – TEMMINCK & SCHLEGEL, 1838: 47 (partly)

Phrynops rufipes – GRAY, 1844: 41; MÜLLER, 1935: 97; FRÖES, 1957: 20; WERMUTH & MERTENS, 1961: 334 (partly); DONOSO-BARROS, 1965: 11; MÜLLER, 1966: 373; MERTENS, 1967: 78; MEDEM, 1973: 49; WERMUTH & MERTENS, 1977: 132; PRITCHARD, 1979: 436 (figs.), 784; VANZOLINI, 1981a: XIX (partly)

Phrynops (P.) rufipes – PRITCHARD, 1967: 234

The allocation of this name has never been disputed, except by KAUP (1828), who supposed that this was a senile adult of *Phrynops nasutus* (Schweigger), and by TEMMINCK & SCHLEGEL (1838), who thought it was an adult of their (very composite) *Emys platycephala*. As was succinctly, and rather harshly, pointed out by WAGLER (1830b: 134) in a footnote, KAUP's opinion was wrong. From the footnote it can be concluded that SPIX had only one specimen of this species before him when describing it ("Am Spixischen Exemplare ist die Krallen . . ."). SIEBENROCK (1904) examined three specimens from the Vienna Museum and one from the collections of the Zoological Anatomical Institute, all collected by NATTERER (not certain for the last specimen). GOELDI (1905) stated that only three specimens of this species were known to exist in the museums of Vienna and Munich. Apparently he misinterpreted SIEBENROCK's (1904) text. MÜLLER (1966) was the first to report a recent specimen, MEDEM (1973) reported additional recent material, PRITCHARD (1979) listed all "known specimens", but neglected SIEBENROCK's (1904) paper, as he does not list the Vienna material from Marabitanos, Rio Negro and Barra do Rio Negro, Solimões. PRITCHARD (1979) also writes about "the holotype, now lost, collected by SPIX in the Rio Solimões". Fortunately this last statement is wrong, because the holotype (ZSMH 3006/0) from "Solimoens, Brasilien" has been located in the Munich collection. This specimen (♂) consists of a shell (bridge sawn through) with horny scutes, a skull + lower jaw (including horns sheath) and a complete skeleton of limbs, tail and neck. The shell agrees very well with the illustration (pl. VI) in SPIX (1824) and apparently served as the model. The carapace has a median length of 196 mm; the median length of the plastron is 151 mm, its maximum length is 175 mm. The dorsal median length of the skull is 44.4 mm (though the tip of the supraoccipital may be missing), the ventral median length (snout to condylus of basioccipital) is 43.6 mm. Maximum width of skull 37.8 mm, of lower jaw 32.9 mm, length of lower jaw 31.0 mm. MÜLLER (1935) reported that the holotype of *P. rufipes* had been skeletonised under the directorate of C. T. VON SIEBOLD (1853–1885), whose interest was mainly in comparative anatomy.

All authors agree that this is a rare species and adding the data provided by SIEBENROCK (1904) and PRITCHARD (1979) we arrive at a total of 12 specimens all from the Upper Amazon region in Colombia and Brasil. Coloured plates of living specimens are provided by MEDEM (1973) and PRITCHARD (1979).

Podocnemis erythrocephala (Spix)

Emys erythrocephala Spix, 1824: 9, pl. VII

Emys expansa – KAUP, 1828: 1150; TEMMINCK & SCHLEGEL, 1838: 48 (partly)

Podocnemis expansa – WAGLER, 1830b: 135 (questionable) (by inference) (partly)

Hydraspis expansa β *erythrocephala* – GRAY, 1831b: 42

Podocnemis Dumeriliana – DUMÉRIL & BIBRON, 1835: 387 (partly); GRAY, 1844: 45 (partly); GRAY, 1855: 62 (partly); STRAUCH, 1865: 103 (partly); STRAUCH, 1890: 94 (partly); GOELDI, 1905: 726

Podocnemis dumeriliana – BOULENGER, 1889: 202 (partly)

Podocnemis erythrocephala – BAUR, 1893: 213; MITTERMEIER & WILSON, 1974: 147; MITTERMEIER, 1975: 13; WERMUTH & MERTENS, 1977: 120; SMITH, 1979: 87, 88; PRITCHARD, 1979: 606 (fig.), 754; VANZOLINI, 1981a: XIX

There has been much confusion about the application of the name *Emys erythrocephala* Spix, and the taxon under discussion was known for many years under the name *Podocnemis cayennensis* (Schweigger), until MITTERMEIER & WILSON (1974) elucidated the situation and came to the conclusion that *cayennensis*, which was described by SCHWEIGGER (1812, 1814) as having two yellow spots on top of the head, was clearly distinct from *erythrocephala* which invariably has a broad reddish band on top of its head. Recent authors, including ourselves, adopted MITTERMEIER & WILSON's views. The correct allocation of *E. cayennensis* Schweigger was discussed under *P. expansa*.

The Munich collection contains one adult shell (ZSMH 2517/0), which, in the light of WAGLER's (1830b) remarks ("das Spixische Original...") can be considered the holotype of *E. erythrocephala* Spix, 1824. The carapace is badly to mutilated, because the part posterior to the attachment of the pelvis has been sawn off. The plastron is intact and agrees completely with the illustration in SPIX (1824: pl. VII), which apparently is a mirror image, because the aberrant outer part of one of the femorals, which in the specimen is on the left side, in the illustration is on the right side. MÜLLER (1935) reports that due to a removal and new arrangement of the material of the Munich collections, the type of *E. erythrocephala* Spix, which had been 'lost' for some time, was found again. Apparently it was a (complete?) skeleton, including the skull. At present the shell bears a label, stating that the skull was destroyed by fire, a fact already reported by MITTERMEIER & WILSON (1974). This specimen, which originally was complete (either stuffed or in alcohol), was also skeletonised under the directorate of C. T. VON SIEBOLD. Measurements of the shell: carapace, no measurements taken; plastron, median length 145 mm, maximum length 170 mm, width anteriorly of bridge 70 mm, posteriorly of bridge 75 mm, height of shell 72 mm.

Platemys platycephala (Schneider)

Emys canaliculata Spix, 1824: 10, pl. VIII

Emys martinella – KAUP, 1825: 593 (with question-mark); KAUP, 1828: 1150

Emys planiceps – KAUP, 1825: 593 (with question-mark)

Platemys planiceps – WAGLER, 1830b: 135 (by inference); GRAY, 1855: 54; STRAUCH, 1865: 114; STRAUCH, 1890: 105

Platemys canaliculata – WAGLER, 1830b: pl. 4, figs. 1–26

Hydraspis planiceps – GRAY, 1831b: 40 (partly); GRAY, 1844: 39

Platemys Martinella – DUMÉRIL & BIBRON, 1835: 407

Emys platycephala – TEMMINCK & SCHLEGEL, 1838: 45 (partly)

Platemys platycephala – BOULENGER, 1889: 227; GOELDI, 1905: 754; SIEBENROCK, 1909: 580; LUEDERWALDT, 1926: 435; FRÖES, 1957: 21; WERMUTH & MERTENS, 1961: 337; PRITCHARD, 1964: 31; DONOSO-BARROS, 1965: 14; PRITCHARD, 1967: 178, 233, 234; WERMUTH & MERTENS, 1977: 133; PRITCHARD, 1979: 626, 778; VANZOLINI, 1981a: XIX

The history of the name *canaliculata* has been pretty straight forward, it was rather soon correctly synonymised with *platycephala*. Of the original four specimens on which SPIX reported only, one fragile and incomplete skeleton of a half-grown specimen is still extant. This specimen (ZSMH 3007/0) is here selected as lectotype of *Emys canaliculata* Spix, 1824. Measurements: carapace, length (median and maximum) 88 mm; plastron, median length 78 mm, maximum length 83 mm, width anteriorly of bridge 46.1 mm, posteriorly of bridge 44 mm; lateral length of skull 20.7 mm, from snout to tip supraoccipital 19.5 mm, from snout to condylus of basioccipital 20.3 mm. The lower jaw is missing, as are parts of the limbs and the pelvis. In the posterior part of the plastron, completely separating the hyoplastra and separating the posterior parts of the hyoplastra, there is an oval, unossified area, which indicates the relatively young age of the specimen. Most likely this specimen was not the basis for SPIX's pl. VIII.

Rhinoclemmys p. punctularia (Daudin)

- Emys dorsualis* Spix, 1824: 11, pl. IX figs. 1, 2
Emys punctularia – KAUP, 1825: 593; KAUP, 1828: 1151; TEMMINCK & SCHLEGEL, 1838: 55
Clemmys dorsata – WAGLER, 1830b: 136 (by inference)
Emys scabra – GRAY, 1831b: 24; GRAY, 1844: 20
Emys Punctularia – DUMÉRIL & BIBRON, 1835: 243
Emys dorsalis – GRAY, 1855: 32 (partly, questionable)
Clemmys punctularia – STRAUCH, 1865: 79
Nicoria punctularia – BOULENGER, 1889: 123; SIEBENROCK, 1904: 5; GOELDI, 1905: 711
Geomyda punctularia – SIEBENROCK, 1909: 497; PRITCHARD, 1964: 24
Geomyda punctularia – LUEDERWALDT, 1926: 414
Rhinoclemmys p. punctularia – FRÖES, 1957: 9; FRETEY et al., 1977: 66; SMITH, 1978: 93; VANZOLINI, 1981a: XIX
Geomyda p. punctularia – WERMUTH & MERTENS, 1961: 93; DONOSO-BARROS, 1965: 3; PRITCHARD, 1967: 98, 109; FRETEY, 1975: 674
Callopsis p. punctularia – SMITH et al., 1976: 216; FRETEY, 1977: 80; ERNST, 1978: 122
Rhinoclemmys punctularia – PRITCHARD, 1979: 182

The nomenclatural history of this taxon has been extensively dealt with by FRETEY et al. (1977), whereas SMITH (1978) and SMITH et al. (1976) dealt with the generic nomenclature.

The allocation of *E. dorsualis* Spix to *punctularia* has hardly ever been doubted and was established directly after publication of the name. GRAY (1855) supposed it to be the juvenile of a different species and the same author in 1870 (p. 32) repeats that *E. dorsalis* Spix seems to be different from the species described under *Rhinoclemmys* (including *punctularia*). The original description was based on two juvenile specimens, of which only one could be retraced in Munich. It is a juvenile (ZSMH 2424/0) preserved in alcohol which is not accompanied by an old label but only by a new one stating that it is the type of *Emys dorsualis* Spix, from Brazil, collected by SPIX. The specimen agrees well with the description and with the illustration (about natural size), although the head-pattern as depicted in Pl. IX fig. 1 does not completely agree with reality. In the illustration there is a yellowish stripe from the left hand side of the head, continuous via the tip of the snout to over the right eye. In reality there is a light stripe on each side of the head, ending medially of the eyes, whereas the light area on the snout most probably is due to abrasion. The meristic data of this specimen, here designated as lectotype of *Emys dorsualis* Spix, 1824, is as follows: carapace, median length 81 mm, maximum length 83.4 mm, width 58.2 mm; plastron, median length 72.2 mm, maximum length 75 mm; height of shell 30.3 mm; skull, lateral length 21.1 mm, width 13.2 mm.

Phrynops gibbus (Schweigger)

- Emys stenops* Spix, 1824: 12, pl. IX figs. 3, 4
Emys nasuta – KAUP, 1828: 1151
Rhinemys nasuta – WAGLER, 1830b: 134
Hydraspis rufipes – GRAY, 1831b: 41 (partly, with question-mark)
Platemys Miliusii DUMÉRIL & BIBRON, 1835: 431 (with question-mark); STRAUCH, 1865: 117
Emys platycephala – TEMMINCK & SCHLEGEL, 1838: 47 (partly)
Phrynops ? Miliusii – GRAY, 1844: 42
Hydraspis Miliusii – GRAY, 1855: 56
Mesoclemmys gibba – LUEDERWALDT, 1926: 428; PRITCHARD, 1964: 32
Batrachemys nasuta – FRÖES, 1957: 18 (partly)
Phrynops rufipes – WERMUTH & MERTENS, 1961: 334 (partly, with question-mark); VANZOLINI, 1981a: XIX (partly)
Mesoclemmys giba (sic!) – DONOSO-BARROS, 1965: 13
Phrynops (Mesoclemmys) gibba – PRITCHARD, 1967: 174, 235; PRITCHARD, 1979: 782
Phrynops gibba – PRITCHARD, 1979: 432, 433, 622
Phrynops nasutus – MERTENS, 1970: 19 (partly, with question-mark)

The allocation of *E. stenops* has been problematical from the beginning, as is evident from the list of synonyms above. Most authors agreed that it either belonged to *Phrynops nasutus* or *P. gibbus* with the notable exception of WERMUTH & MERTENS (1961) who considered it (provided with a question-mark) a synonym of *P. rufipes*, and in this opinion were followed by VANZOLINI (1981a). This view strongly differs from the current opinion. Nearly general agreement on the allocation of *stenops* was reached after BOUR's (1973) paper on *Phrynops*, in which he studied several old types (e. g. those of *E. nasuta*, *E. gibba* and *Platemys Miliusii*). BOUR came to the conclusion that both *stenops* and *Miliusii* were synonyms of *gibbus*, which is distinct from *nasutus*. He repeated this view later in MITTERMEIER et al. (1978: 95) and refuted FRETEY's (1977) opinion that *P. gibbus* and *P. miliusii* were distinct taxa. This seems the appropriate place to point out that though FRETEY (1975, 1977) is of the opinion that in French Guiana three species of *Phrynops (Mesoclemmys)* exist, viz., *P. (M.) gibbus*, *P. (M.) miliusii* and *P. (M.)* sp., only one, viz., *P. (M.) gibbus* is present, the other two being synonymous with it. The synonymisation of *miliusii* has already been dealt with quite competently by BOUR (1973). We here synonymise *Phrynops (Mesoclemmys)* sp. of FRETEY (1975, 1977) with *P. gibbus*, because the differentiating characters mentioned by him (FRETEY, 1979: 149) in our opinion are nothing but individual variations viz., presence of an inframarginal on each side, form of nuchal, extension of V5 between supracaudals. E. g. a specimen of *P. gibbus* captured in Surinam (field no. MSH 1975-301, in collection of RMNH) has a single inframarginal on the right side, none on the left; in a specimen from Venezuela (Zoological Museum Amsterdam 15 147b) V5 has the form as described by FRETEY (1977), whereas in all specimens examined the form of the nuchal is very variable.

SPIX (1824) based his description of *E. stenops* on a single juvenile specimen, which is ably, and in our opinion a little bit idealized, depicted in Pl. IX figs. 3 and 4. The holotype is still extant, it is a recently hatched juvenile (ZSMH 2454/0) preserved in alcohol, which on its label is identified as the type of *Emys stenops* Spix, 1824, collected by SPIX in Brazil. The specimen is in poor (strongly desiccated) condition. The umbilical scar is still very well visible, as is the transverse fold in the plastron (both not depicted). The configuration of the scales on the head, carapace (six instead of five centrals) and plastron (as far as could be ascertained) agrees with that in the figures. The meristic data of the holotype is as follows: median length of plastron 37 mm, maximum length 39 mm; the carapace is too creased to make reliable measurements; head, lateral length 18.8 mm, width 14 mm. The size of the head agrees with that in the figures (natural size), but there is a discrepancy in the size of the shell, which in the figures is much larger than in the specimen (not even identical in the two figures), and the same applies to the measurements given in the text (at least, when our assumption that a Paris foot = 324.8 mm is correct). Whether these differences can be attributed to shrivelling due to desiccation, or are to be blamed on inaccuracy on SPIX's part, remains debatable.

Mauremys leprosa (Schweigger)

- Emys marmorea* Spix, 1824: 13, pl. X; Gray, 1831b: 25
Emys picta – KAUP, 1828: 1151
Clemmys picta – WAGLER, 1830b: 137 (by inference)
Emys Marmorea – DUMÉRIL & BIBRON, 1835: 248
Emys vulgaris – TEMMINCK & SCHLEGEL, 1838: 53 (partly)
Emys Caspica – GRAY, 1844: 19; GRAY, 1855: 22
Clemmys marmorea – STRAUCH, 1865: 75
Clemmys leprosa – BOULENGER, 1889: 105
Clemmys caspica leprosa – MERTENS & WERMUTH, 1960: 62; WERMUTH & MERTENS, 1961: 59
Mauremys caspica leprosa – WERMUTH & MERTENS, 1977: 48; VANZOLINI, 1981a: XIX
Mauremys leprosa – BUSACK & ERNST, 1980: 255

©Zoo. TEMMINCK & SCHLEGEL (1838) suggested that this was an European form (and probably wrote in the RMNH copy of SPIX (1824): “vulgaris ind. de l’Espagne”), a view accepted by most authors, though STRAUCH (1865) still hesitated to place it in the synonymy of *leprosa*. The taxonomic status of *leprosa* has been subject to much dispute but recent results of protein variation studies (BUSACK & ERNST, 1980), indicated that *leprosa* was a valid species, different from *caspica*.

Unfortunately no material of this species collected by SPIX, could be retraced and the type(s) seem(s) to have been destroyed.

Chelus fimbriatus (Schneider)

Chelys matamata – SPIX, 1824: 15; TEMMINCK & SCHLEGEL, 1838: 42

Chelys fimbriata – SPIX, 1824: pl. XI; WAGLER, 1830b: 134; TEMMINCK & SCHLEGEL, 1838: 42; STRAUCH, 1865: 121; BOULENGER, 1889: 209; GOELDI, 1905: 746; LUEDERWALDT, 1926: 426; PRITCHARD, 1964: 31

Chelys Matamata – WAGLER, 1830b: pl. 3 figs. I–XXIV; GRAY, 1831b: 43; DUMÉRIL & BIBRON, 1835: 455; GRAY, 1844: 44; GRAY, 1855: 60

Chelus fimbriatus – FRÖES, 1957: 16; WERMUTH & MERTENS, 1961: 313; DONOSO-BARROS, 1965: 12; FRETEY, 1975: 674; FRETEY, 1977: 121; WERMUTH & MERTENS, 1977: 125; PRITCHARD, 1979: 429, 432, 618, 772; VANZOLINI, 1981a: XIX

SPIX (1824) reported this species under two different names. In the text he used *Chelys matamata* and *C. fimbriata* in the caption of pl. XI. Both names were used extensively by earlier authors. Though SPIX (1824) does not refer to earlier authors we are convinced these names were taken from the literature and do not constitute new names proposed by SPIX, as the title of the book would suggest. This view seems to be in contradiction with our reasoning regarding other names (e. g. *Caecilia annulata*) but as here it concerns a bizarre and well known animal, we assume that SPIX took the names from literature. Moreover, it would be too much of a coincidence when SPIX (1824) had coined two junior primary homonyms for one species at the same time.

Of the six specimens mentioned by SPIX (1824), only two are (partially) left: ZSMH 3015/0, a complete skeleton, and ZSMH 3019/0, an incomplete skull (lower jaw, supraocular, maxillary and premaxillary missing). Judging by the shape of the plastron, ZSMH 3015/0 is not the specimen depicted by SPIX (1824).

Kinosternon s. scorpoides (L.)

Kinosternon longicaudatum Spix, 1824: 17, pl. XII

Kinosternon breviaudatum Spix, 1824: 18, pl. XIII

Emys scorpoides – KAUP, 1828: 1151; TEMMINCK & SCHLEGEL, 1838: 60

Emys odorata – KAUP, 1828: 1151

Cinosternon scorpioidea – WAGLER, 1830b: 137, pl. 5 fig. XXXI

Kinosternon scorpoides – GRAY, 1831b: 34 (with question-mark); GRAY, 1844: 32; GRAY, 1855: 44; PRITCHARD, 1964: 25; VANZOLINI et al., 1980: 139

Cinosternon Scorpoides – DUMÉRIL & BIBRON, 1835: 363

Cinosternon scorpoides – STRAUCH, 1865: 97; STRAUCH, 1890: 90

Cinosternon longicaudatum – STRAUCH, 1865: 98

Swanka longicaudatum – GRAY, 1870: 69

Cinosternum scorpoides – BOULENGER, 1889: 41; SIEBENROCK, 1904: 4; GOELDI, 1905: 709

Cinosternum scorpoides var. *integrum* – LUEDERWALDT, 1926: 411

Kinosternon scorpoides integrum – FRÖES, 1957: 7

Kinosternon s. scorpoides – WERMUTH & MERTENS, 1961: 25; DONOSO-BARROS, 1965: 2; PRITCHARD, 1967: 37, 42; FRETEY, 1975: 674; FRETEY, 1977: 67; WERMUTH & MERTENS, 1977: 8; PRITCHARD, 1979: 490, 529; VANZOLINI, 1981a: XIX

Shortly after their description it was evident that both *longicaudatum* and *brevicaudatum* were synonyms of *scorpoides* since WAGLER (1830b) pointed out that the first was the male, and the second the

At present only the two specimens that served for the description of *K. longicaudatum* are present in the Munich collection. No trace could be found, of the type(s?) of *K. brevicaudatum* either in the collection, or in the old catalogue. The two syntypes of *K. longicaudatum* are ZSMH 2375/0 (adult ♂, preserved in alcohol) and ZSMH 3000/0 (adult ♂, complete skeleton). The size of ZSMH 3000/0 agrees well with that of the specimen described and figured by SPIX (1824), ZSMH 2375/0 is distinctly larger. However, as ZSMH 2375/0 is still complete and ZSMH 3000/0 only represents part of the original animal, we here select ZSMH 2375/0 as lectotype of *Kinosternon longicaudatum* Spix, 1824, and ZSMH 3000/0 automatically becomes a paralectotype. The meristic data for lecto- and paralectotype are, respectively: carapace, median length 152 mm, 143 mm, maximum length 153 mm, 144 mm; plastron, median length 125 mm, \pm 118 mm; head, lateral length 41.2 mm, 39.3 (skull) mm, width 31.5 mm, 29.8 mm.

Geochelone (Chelonoidis) denticulata (L.)

Testudo Hercules Spix, 1824: 20, pl. XIV; GRAY, 1831b: 9 (partly)

Testudo sculpta Spix, 1824: 21, pl. XV

Testudo Cagado Spix, 1824: 23, pl. XVII

Testudo denticulata – KAUP, 1825: 593; KAUP, 1828: 1151; WERMUTH & MERTENS, 1961: 189; PRITCHARD, 1964: 22

Testudo tabulata – WAGLER, 1830b: 138 (partly), pl. 6 fig. IX; GRAY, 1831b: 10 (partly); TEMMINCK & SCHLEGEL, 1838: 69 (partly); GRAY, 1844: 10 (partly); GRAY, 1855: 5 (partly); STRAUCH, 1865: 26; SIEBENROCK, 1904: 6 (partly); GOELDI, 1905: 712 (partly); LUEDERWALDT, 1926: 414 (partly)

Testudo Tabulata – DUMÉRIL & BIBRON, 1835: 89

Testudo carbonaria – DUMÉRIL & BIBRON, 1835: 99 (partly; synonyms *T. cagado*, *T. Hercules*); STRAUCH, 1865: 27 (partly; synonym *T. Cagado*)

Chelonoidis denticulata – FRÖES, 1957: 9 (partly)

Geochelone denticulata – WILLIAMS, 1960: 2; DONOSO-BARROS, 1965: 6; PRITCHARD, 1967: 122, 123, 152; VANZOLINI, 1981a: XIX

Geochelone (Chelonoidis) denticulata – FRETEY, 1975: 674; FRETEY, 1977: 53; PRITCHARD, 1979: 323, 570, 571

Testudo (Chelonoidis) denticulata – WERMUTH & MERTENS, 1977: 78

For a long time the nomenclature of this species was confused and usually this and the following species were considered conspecific, until WILLIAMS (1960) pointed out the many morphological differences between the two. To this can be added ecological differences: in Surinam *G. denticulata* is restricted to rain forest areas, whereas *G. carbonaria* can be found both on savannas (where it is the only tortoise present, and where it seems to be much more numerous than in any other habitat) and in the rain forest, where it can be microsympatric with *G. denticulata*.

The three names SPIX (1824) used for this taxon describe several stages in the development: *T. sculpta* apparently fits the juveniles and half-grown, *T. Hercules* and *T. Cagado* are based on adults. Only four of the original five syntypes of *T. sculpta* are extant in Munich. Three of them (ZSMH 2753/0, juveniles) are preserved in alcohol, one (ZSMH 2738/0, half-grown) is a dry, bony shell, without skull and skeleton, of which the horny scutes have come off and partly are lost. Comparison of pl. XV with ZSMH 2738/0 makes clear that this specimen probably served as model. This conclusion is based on the presence of a light spot (smooth area) in the central area (= original juvenile scute) of the first right lateral. The shell is larger than in the illustration and smaller than in the description, but this does not have to mean much, because apparently one of the syntypes is missing and this could have been used for the description (which SPIX apparently based on a single individual only, even when more were available). The meristic data of the four specimens available (respectively ZSMH 2738/0, 2753/0 A, B, C) is: carapace, median length 122.0 mm, 101.3 mm, 77.3 mm, 66.4 mm, maximum length 126.5 mm, 104.4 mm, 79.5 mm, 69.1 mm, width \pm 99 mm, 87.3 mm, 65.3 mm, 59.3 mm; plastron, median length 111.3 mm, 87.1 mm, 67.1 mm, 58.7 mm, maximum length 118.0 mm, 93.6 mm, 70.5 mm,

62.9 mm; shell height \pm 53.5 mm, 51.8 mm, 32.6 mm, 29.8 mm; head, lateral length \pm , 26.7 mm, 20.9 mm, 18.3 mm, width \pm , 20.1 mm, 15.2 mm, 14.0 mm. Although ZSMH 2738/0 has been figured, we prefer to select ZSMH 2753/0 A (specimen with circular hole in supracaudal) as lectotype of *Testudo sculpta* Spix, 1824, because it is more complete than ZSMH 2738/0, which has only been partially preserved.

No type specimen of *T. Cagado* is extant, but the description and the illustration of this nominal taxon leave no doubt that it is *T. denticulata*. In the old catalogue of the Munich museum there is no mention of the type-specimen of *T. Cagado*, so this probably was already lost before the beginning of this century.

ZSMH 3093/0 (a bony shell) bears a red label stating that this is a 'type', but not stating of which taxon. Another label states that it is *Testudo denticulata* Linné, without locality but probably collected by Spix. Originally it was supposed to be the type of *T. Hercules* Spix, but upon closer examination of the figure it soon becomes clear that this shell did not belong to the specimen that served as model for the illustration of *T. Hercules* since the shape is completely different: it does not flare above the hindlimbs and it is not as strongly arched as in the figure. Because of the doubtful provenance of this specimen and because of the inconsistencies with the illustration, we prefer not to regard this specimen as the (?) type of *T. Hercules* and consequently we must assume that the type-material is lost.

Geochelone (Chelonoidis) carbonaria (Spix)

Testudo carbonaria Spix, 1824: 22, pl. XVI; DUMÉRIL & BIBRON, 1835: 99 (partly, excepting synonyms *T. cagado* and *T. Hercules*); STRAUCH, 1865: 26 (partly, excepting synonym *T. Cagado*); WERMUTH & MERTENS, 1961: 189; PRITCHARD, 1964: 23

Testudo tabulata – KAUP, 1825: 593 (partly); KAUP, 1828: 1151; WAGLER, 1830b: 138 (partly); TEMMINCK & SCHLEGEL, 1838: 18 (partly); GRAY, 1844: 5 (partly); GRAY, 1855: 5 (partly); SIEBENROCK, 1904: 6 (partly); GOELDI, 1905: 712 (partly); LUEDERWALDT, 1926: 414 (partly)

Testudo Boiei Wagler, 1830a: pl. XIII; WAGLER, 1830b: 138, pl. 6 figs. VII–VIII

Testudo Hercules – GRAY, 1831b: 9 (partly)

Chelonoidis denticulata – FRÖES, 1957: 9 (partly)

Geochelone carbonaria – WILLIAMS, 1960: 2; DONOSO-BARROS, 1965: 6; PRITCHARD, 1967: 122, 123, 153; VANZOLINI, 1981a: XIX

Geochelone (Chelonoidis) carbonaria – FRETEY, 1975: 674; FRETEY, 1977: 44; PRITCHARD, 1979: 326, 332, 570, 571

Testudo (Chelonoidis) carbonaria – WERMUTH & MERTENS, 1977: 78

There has been much misinterpretation of this species and until recently it was treated as a synonym or a variety of *G. denticulata*. WILLIAMS (1960) clearly pointed out the differences between the two taxa and since then they have been treated separately. Unfortunately no type-material, neither of *T. carbonaria* Spix, 1824, nor of *T. Boiei* Wagler, 1830 could be located, but the fine drawings of the specimens of both nominal taxa provided by Spix (1824) and WAGLER (1830a) respectively leave no doubt as to their identity. Nevertheless it seems useful, in the light of past disputes, to select lectotypes for both names. We here select pl. XVI in Spix (1824) as lectotype of *Testudo carbonaria* Spix, 1824 and pl. XIII in WAGLER (1830a) as lectotype of *Testudo Boiei* Wagler, 1830.

In the old catalogue of the Munich museum no *T. carbonaria* collected by Spix is mentioned, so possibly the type (s?) was (were?) already lost before the catalogue was prepared in the early years of this century.

Amphibia
Anura

Leptodactylus pentadactylus (Laur.)

Rana gigas Spix, 1824: 25, pl. I

Rana coriacea Spix, 1824: 29, pl. V fig. 2

Cystignathus pachypus – WAGLER, 1830a: text of pl. XXI (partly); WAGLER, 1830b: 203 (partly)

Rana pachypus – TEMMINCK & SCHLEGEL, 1838: 106 (partly)

Cystignathus ocellatus – TSCHUDI, 1838: 38 (partly), 78 (partly); DUMÉRIL & BIBRON, 1841: 396 (partly)

Cystignathus pentadactylus – PETERS, 1873a: 197, 225 (partly)

Rana pentadactyla – PETERS, 1873a: 205

Leptodactylus pentadactylus – NIEDEN, 1923: 472 (partly); LUTZ, 1926a: 143 (partly), 162 (partly), pl. 30 figs. 1, 2, pl. 36 fig. 2; MIRANDA-RIBEIRO, 1926: 147 (partly), 219 (partly); LUTZ, 1930: 31; HEYER, 1979: 26; VANZOLINI, 1981a: XIX

Leptodactylus pentadactylus (sic!) – MIRANDA-RIBEIRO, 1927: 131 (partly)

Leptodactylus p. pentadactylus – MÜLLER, 1927: 279; GORHAM, 1966: 134; BOKERMANN, 1966: 89

Unfortunately the types of *R. gigas* Spix, 1824 and *R. coriacea* Spix, 1824 have been destroyed during World War II. PETERS (1873a) and MÜLLER (1927) examined and described the type of *R. gigas*, which in their opinion was *L. pentadactylus*. According to the old catalogue of the Munich museum the type was catalogued under ZSMH 89/1921.

According to WAGLER (1830b) the description of *R. coriacea* was based on a specimen without epidermis. PETERS (1873a) also examined the type specimen of *R. coriacea* (now lost, formerly under ZSMH 2502/0) and compared it with the type of *R. gigas*. According to him part of the epidermis of *coriacea* had been lost, but it was still evident that *gigas* and *coriacea* were conspecific and represented respectively female and male of *pentadactylus*. PETERS' (1873a) conclusions were adopted by HEYER (1979), who reported both types to be lost.

Leptodactylus ocellatus (L.)

Rana pachypus Spix, 1824: 26, pl. II figs. 1, 2; WIED, 1825: 540; TEMMINCK & SCHLEGEL, 1838: 106 (partly)

Rana pachypus variet. 1 Spix, 1824: 26

Rana pagypus Spix, 1824: pl. III fig. 2

Rana pygmaea Spix, 1824: 30, pl. VI fig. 2

Cystignathus pachypus – WAGLER, 1830a: pl. XXI, text of pl. XXI (partly, excluding synonyms *R. gigas* and *R. coriacea*); WAGLER, 1830b: 203 (partly); PETERS, 1873a: 206

Cystignathus sibilatrix – WAGLER, 1830b: 203 (partly)

Cystignathus ocellatus – TSCHUDI, 1838: 38 (partly), 78 (partly); DUMÉRIL & BIBRON, 1841: 396 (partly); PETERS, 1873a: 199, 225

Elosia nasuta – TSCHUDI, 1838: 36 (partly), 77 (partly)

Leptodactylus ocellatus – MÉHELÿ, 1904: 223; NIEDEN, 1923: 490; LUTZ, 1926a: 144, 164, pl. 31 fig. 3, 4; MIRANDA-RIBEIRO, 1926: 146, 218; MIRANDA-RIBEIRO, 1927: 128; LUTZ, 1930: 30 (partly); COCHRAN, 1955: 315; GALLARDO, 1964: 376; CEI, 1980: 344; VANZOLINI, 1981a: XIX (partly)

Leptodactylus o. ocellatus – GORHAM, 1966: 133

There was much discussion about the true identity of *R. pachypus* Spix, 1824 and *R. pygmaea* Spix, 1824, until PETERS (1873a) settled the matter by comparing the types of *pachypus* with the type of *R. ocellata* L. and found them to be identical. In the same paper PETERS stated that *pygmaea* was a juvenile *pachypus*. It should be stated here that the male depicted by WAGLER (1830a: pl. XXI fig. 1) apparently is the same specimen figured by SPIX (1824: pl. II fig. 1), which can be recognised by the butterfly-shaped figure between the eyes. Of the original ten specimens seen by SPIX (1824) only two, a male and a female (ZSMH 122/0, s-v length: ♂, 118 mm, ♀, 90 mm) are still extant. With the specimens is an old handwritten, parchment label, stating: "*Rana pachypus*/ SPIX. Ran. Brasil t./ 2.- NEUW. Beytr. zur/ Naturg. Brasil. 1 S. 540/ Brasilia/(Iter SPIX)/ Specimen pedib. ant. crassis/♂, pedib. an-

Leptodactylus mystaceus (Spix)

Rana mystacea Spix, 1824: 27 (partly), pl. III fig. 1
Cystignathus mystaceus – WAGLER, 1830b: 203 (partly) (by inference)
Cystignathus ocellatus – TSCHUDI, 1838: 38 (partly), 78 (partly); DUMÉRIL & BIBRON, 1841: 396 (partly)
Rana (Cystignathus) typhonia – PETERS, 1873a: 201 (partly)
Cystignathus typhonius – PETERS, 1873a: 225 (partly)
Leptodactylus mystaceus – MÉHELÿ, 1904: 219 (partly); NIEDEN, 1923: 487 (partly); MIRANDA-RIBEIRO, 1926: 217;
 GORHAM, 1966: 132 (partly); BOKERMANN, 1966: 90 (partly); VANZOLINI, 1981a: XIX (partly)
Leptodactylus amazonicus Heyer, 1978: 38

Unfortunately the two syntypes of SPIX's *Rana mystacea* no longer are extant, they were formerly catalogued as ZSMH 2504/0 („*Leptodactylus typhonius* (Daud), prope flumen Solimoens, SPIX, Typus v. *Rana mystacea* ♂“) and ZSMH 2505/0 („*Leptodactylus mystaceus* Spix, Bahia, SPIX, Typus v. *Rana mystacea* ♀“). HEYER (1978) assumed that PETERS was the last person to examine these types before their destruction, but they were also studied by MÉHELÿ (1904: 222), whereas COCHRAN (1955) during her visit to Munich in 1938 at least examined ZSMH 2505/0. Unfortunately neither of these authors provided a description of the specimens, MÉHELÿ (1904) only made several comparative remarks about them when describing his *L. mystaceus*, which no doubt was another distinct species of the *fuscus*-group (either *bufonius*, *elenae*, *fuscus*, *gracilis*, *latinasus* or *mystacinus*, but most probably *elenae*). PETERS (1873a) was of the opinion that both specimens mentioned and illustrated by SPIX (1824) were *L. fuscus* and noted that SPIX had confused the sexes, according to PETERS the specimen from Bahia (SPIX, 1824: pl. III fig. 3) was a male with external vocal sacs and that from the Rio Solimões (SPIX, 1824: pl. III fig. 1) a female. PETERS' (1873a) opinion about the identification was not shared by MÉHELÿ (1904), NIEDEN (1923) and MIRANDA-RIBEIRO (1926), who thought that *Rana mystacea* Spix was composed of true *L. mystaceus* (SPIX, 1824: pl. III fig. 1) and *L. typhonius* (SPIX, 1824: pl. III fig. 3). MÉHELÿ (1904: 222), who actually examined the SPIX types and called attention to the mistakes in the caption of pl. III (see above, under *L. ocellatus*), reported (as did PETERS (1873a) previously) that the specimen figured in pl. III fig. 3 was an adult male with black external vocal sacs (a fact also mentioned by SPIX (1824)) and stated that the specimen figured in fig. 1 pl. III “is the type of SPIX's *Rana mystacea*”, which in fact constitutes a lectotype designation. The black vocal sacs in our opinion possibly also might point to e. g. *L. fuscus* rather than to *L. mystaceus* as understood by HEYER (1978), or rather *L. spixi* Heyer as he (HEYER, 1983) renamed the “east coast *mystaceus*” after we informed him of MÉHELÿ's (1904) lectotype selection. Unfortunately, HEYER (1978) hardly mentions any characters that cannot be easily computerised (as apparently is the case with the colour of external vocal sacs) and consequently the rather scanty ‘diagnoses’ of the different species do not give a clue as to the state of this character in most species. Also, HEYER (1983) does not say anything about this character in his description of *L. spixi*. However, accepting HEYER's (1978: 30) statement that in coastal Bahia only a single species of this group of frogs is found, combined with VANZOLINI's (1981a: XXIV) reasoning that with Bahia SPIX meant the city of Salvador, we have to conclude that SPIX's (1824) pl. III fig. 3 cannot represent anything but *L. spixi* Heyer. Consequently, we can add to the description of *L. spixi* that males have black external vocal sacs.

Leptodactylus spixi Heyer

Rana mystacea Spix, 1824: 27 (partly), pl. III fig. 3
Cystignathus mystaceus – WAGLER, 1830b: 203 (partly) (by inference)
Cystignathus ocellatus – TSCHUDI, 1838: 38 (partly), 78 (partly); DUMÉRIL & BIBRON, 1841: 396 (partly)
Rana (Cystignathus) typhonia – PETERS, 1873a: 201 (partly); MÉHELÿ, 1904: 219
Cystignathus typhonius – PETERS, 1873a: 225 (partly)
Leptodactylus typhonius – MÉHELÿ, 1904: 222 (partly); NIEDEN, 1923: 486 (partly); MIRANDA-RIBEIRO, 1926: 218 (partly)

© *Leptodactylus mystaceus* – COCHRAN, 1955: 310 (partly); GORHAM, 1966: 132 (partly); BOKERMANN, 1966: 90 (partly); HEYER, 1978: 30, 64; VANZOLINI, 1981a: XIX (partly)
Leptodactylus spixi Heyer, 1983: 270

As stated above (under *L. mystaceus*) there have been many problems in the past concerning the correct identification of the specimen from Bahia, described by SPIX (1824) as *Rana mystacea* and figured in pl. III fig. 3 of his book, and the synonymy presented here reflects this. HEYER (1978: 30) “choose the specimen figured in figure 3, plate 3 as the name bearer of *mystacea*”, which in fact was a lectotype selection. As a result of this he gave a new name to the Central Amazonian *mystaceus*: *L. amazonicus*. However, as explained above, the name *mystacea* had already been associated with the other specimen mentioned under the description of *Rana mystacea* (from the Solimões and figured in pl. III fig. 1) by MÉHELÿ (1904), so HEYER’s (1978) action of restricting the name *mystacea* to his “east coast *mystaceus*” was wrong. Consequently HEYER (1983) corrected his views, placed *L. amazonicus* in the synonymy of *L. mystaceus* (Spix) and described the “east coast *mystaceus*” or *L. mystaceus* sensu HEYER, 1978 under the name *L. spixi* Heyer (1983). For additional remarks see under *L. mystaceus*.

Ceratophrys cornuta (L.)

Rana megastoma Spix, 1824: 27, pl. IV fig. 1
Stombus megastomus – GRAVENHORST, 1825: 921
Ceratophrys dorsatus Wied, 1825: 576 (partly)
Ceratophrys Spixii Cuvier, 1829: 106
Ceratophrys dorsata – WAGLER, 1830a: text of pl. XXII (partly), pl. XXII figs. 1, 2; WAGLER, 1830b: 204 (partly); WIED, 1822–1831: text of pl. 58(A) (partly)
Phrynoceros Vaillanti – TSCHUDI, 1838: 82
Ceratophrys cornuta – SCHLEGEL, 1837–1844: 29, pl. 10 figs. 1, 2; PETERS, 1873a: 203, 225; BOULENGER, 1882: 224; NIEDEN, 1923: 381; MIRANDA-RIBEIRO, 1926: 127, 213; GORHAM, 1966: 37; BOKERMANN, 1966: 89; VANZOLINI, 1981a: XIX
Ceratophrys Daudini – DUMÉRIL & BIBRON, 1841: 440

PETERS (1873a), examining SPIX’s type-material, stated that he received two types of *Rana megastoma* Spix, which, according to him belonged to two different species, viz., *Ceratophrys cornuta* (L.) and *C. dorsata* Wied. At present only one specimen is available (ZSMH 1056/0, adult ♀, s-v length 105 mm, head length 52.4 mm, head width 65.2 mm, tibia 37.4/ 37.5 mm). This specimen undoubtedly belongs to *C. cornuta* (L.) and is the one described and figured by SPIX (1824: 27, pl. IV fig. 1). In the light of PETERS’ (1873a) remarks, this specimen is here designated as lectotype of *Rana megastoma* Spix, 1824.

In the old catalogue of the Munich museum no trace is to be found of another specimen of *Ceratophrys* collected by SPIX, so presumably this specimen was already lost between 1824 and the early 20th Century. Apparently this second specimen was not used for the description, which was entirely based on ZSMH 1056/0 from the Rio Solimões.

Hemiphractus scutatus (Spix)

Rana scutata Spix, 1824: 28, pl. IV fig. 2
Stombus scutatus – GRAVENHORST, 1825: 921
Hemiphractus Spixii Wagler, 1828a: 744
Hemiphractus scutatus – WAGLER, 1830b: 205; PETERS, 1862a: 146; PETERS, 1873a: 205, 225; BOULENGER, 1882: 452; JIMENEZ DE LA ESPADA, 1898: 395; NIEDEN, 1923: 357; NOBLE, 1926: 18; MIRANDA-RIBEIRO, 1926: 116, 212; MYERS & CARVALHO, 1945: 18; BOKERMANN, 1966: 90; TRUEB, 1974: 42; DUELLMAN, 1977: 23; VANZOLINI, 1981a: XIX
Ceratophrys dorsata – TSCHUDI, 1838: 44 (partly), 82 (partly)
Ceratophrys scutata – DUMÉRIL & BIBRON, 1841: 430

Opinions about the validity of this taxon varied just after its description. GRAVENHORST (1825) placed it in his genus *Stombus*, together with two other species (for a discussion of the status of the name *Stombus* see LYNCH (1971)). WAGLER (1828a) based a new genus on *scutata*, at the same time substituting SPIX's original name for *Spixii*, without providing any reasons. In 1830 (WAGLER, 1830b) he correctly synonymised *Spixii* with *scutata*, an action apparently overlooked by both PETERS (1862a) and TRUEB (1974), the latter claiming that PETERS was the one who took that action. TEMMINCK & SCHLEGEL (1838: 106) were of the opinion that it was a juvenile "*Ceratophrys*" and TSCHUDI (1838) identified it with *C. dorsata*.

TRUEB (1974) provided a short nomenclatural history of the species. The holotype of *Rana scutata* Spix, 1824 (at the same time the holotype of *Hemiphractus Spixii* Wagler, 1828) was studied by PETERS (1862a) and NOBLE (1926). According to the old catalogue of the Munich museum it was registered under ZSMH 37/0, which at present cannot be located, and we have to assume it was destroyed during World War II.

Rana palmipes Spix

Rana palmipes Spix, 1824: 29, pl. V fig. 1; WAGLER, 1830b: 203; PETERS, 1873a: 205, 225; BOULENGER, 1882: 48; BOULENGER, 1919: 415; BOULENGER, 1920: 473; MIRANDA-RIBEIRO, 1922a: 802; MIRANDA-RIBEIRO, 1926: 165, 223; BOKERMANN, 1966: 90; VANZOLINI, 1981a: XIX

Rana esculenta – TEMMINCK & SCHLEGEL, 1838: 109 (partly); TSCHUDI, 1838: 39 (partly), 79 (partly)

Rana viridis – DUMÉRIL & BIBRON, 1841: 343 (partly)

Rana esculenta – DUMÉRIL & BIBRON, 1841: 34^o

After its description it took a while before this species was generally accepted as a valid taxon. TEMMINCK & SCHLEGEL (1838), TSCHUDI (1838) and DUMÉRIL & BIBRON (1841) were of the opinion that this was nothing but the common European green frog and supposed it had been collected in Spain or Morocco, as had several other species described by SPIX (1824) and WAGLER (1824). PETERS (1873a) corrected this view and clearly stated that this was a valid species. SPIX (1824) mentioned having four specimens, PETERS (1873a) only received two, and at present no SPIX material of this species can be retraced. The two specimens studied by PETERS (1873a) were catalogued under ZSMH 963/0 and probably were destroyed during World War II.

Thoropa miliaris (Spix)

Rana miliaris Spix, 1824: 30, pl. VI fig. 1

Enydrobius ranoides – WAGLER, 1830b: 202 (partly)

Hylodes ranoides – TSCHUDI, 1838: 36 (partly), 77 (partly)

Ololygon miliaris – PETERS, 1873a: 206, 225

Thoropa miliaris – BOULENGER, 1882: 331; BOKERMANN, 1965: 533; BOKERMANN, 1966: 89; LYNCH, 1971: 130;

LYNCH, 1972: 10; VANZOLINI, 1981a: XIX

Ololygon abbreviatus – MIRANDA-RIBEIRO, 1922c: 840 (partly)

Hylodes miliaris – NIEDEN, 1923: 463

Ololygon miliaris – MIRANDA-RIBEIRO, 1926: 58 (partly), 202 (partly)

Eupsophus miliaris – COCHRAN, 1955: 293

There has been much dispute about the proper allocation of the names *Rana miliaris* Spix and *Hyla abbreviata* Spix. TSCHUDI (1838) considered them conspecific and lumped them in his composite *Hylodes ranoides*. According to PETERS (1873a) the two type-specimens belonged to different taxa and he synonymised *H. abbreviata* with *Hylodes binotatus*, a view accepted by NIEDEN (1923), BOKERMANN (1966) and GORHAM (1966), though the last author provided this synonym with a question-mark.

Unfortunately the type-specimens of both *R. miliaris* Spix, 1824 and *H. abbreviata* Spix, 1824 can no longer be found in the Munich or Leiden collections; the former was listed in the old catalogue under ZSMH 2493/0 and the latter is not mentioned at all. However, comparing the drawings and taking into account PETERS' (1873a) comments we are inclined to follow PETERS and consider *H. abbreviata* a syn-

©Zonym of *Eleutherodactylus binotatus*. Both *H. abbreviata* (SPIX, 1824: pl. XI fig. 4) and *R. binotata* (SPIX, 1824: pl. XX fig. 3) show the second finger distinctly shorter than the first, whereas in *T. miliaris* these fingers are of about equal length. The figure of *R. miliaris* shows a frog with a very long second, and a short third finger which is an unusual arrangement. According to PETERS (1873a) the type-specimen agreed with the figure, but the fingers had been drawn badly. We think that the hands were figured upside down, thus causing the long third finger to appear as the second and so on.

COCHRAN (1955) studied the type of *H. miliaris* and included it in her list of *Eupsophus miliaris* material examined, thereby indicating it agreed with the other specimens studied by her. Unfortunately she did not comment on the type-specimen itself.

The type locality "Amazon River" definitely is wrong, as *T. miliaris* only occurs in SE Brazil.

Leptodactylus labyrinthicus (Spix)

Rana labyrinthica Spix, 1824: 31, pl. VII figs 1, 2

Cystignathus labyrinthicus – WAGLER, 1830b: 203; DUMÉRIL & BIBRON, 1841: 407

Cystignathus ocellatus – TSCHUDI, 1838: 38 (partly), 78 (partly)

Rana pentadactyla – PETERS, 1873a: 206

Cystignathus pentadactylus – PETERS, 1873a: 225 (partly)

Leptodactylus pentadactylus – BOULENGER, 1882: 241 (partly); NIEDEN, 1923: 472 (partly); LUTZ, 1926a: 143 (partly), 162 (partly), pl. 34 fig. 3; MIRANDA-RIBEIRO, 1926: 147 (partly), 219 (partly)

Leptodactylus ?gigas – LUTZ, 1926a: 144, 163, pl. 30 figs. 3, 4, pl. 31 figs. 1, 2

Leptodactylus pentadactylus (sic!) – MIRANDA-RIBEIRO, 1927: 131 (partly)

Leptodactylus pentadactylus labyrinthicus – MÜLLER, 1927: 276; GORHAM, 1966: 135; BOKERMANN, 1966: 89

Leptodactylus vastus Lutz, 1930: 29, 32

Leptodactylus labyrinthicus – HEYER, 1979: 23; VANZOLINI, 1981a: XIX

This taxon for a long time was considered conspecific with *L. pentadactylus*, but HEYER (1979) in his recent revision of the *pentadactylus*-group restored it to specific level. Unfortunately the type (formerly catalogued under ZSMH 2501/0) is no longer extant, but the figures in SPIX (1824: pl. VII figs. 1, 2) apparently are well done (PETERS, 1873a) and leave no doubt about its identity.

Eleutherodactylus binotatus (Spix)

Rana binotata Spix, 1824: 31, pl. XX fig. 3

Hyla abbreviata Spix, 1824: 41, pl. XI fig. 4

Enydrobius abbreviatus – WAGLER, 1830b: 202

Hylodes (sic!) *ranoides* – TSCHUDI, 1838: 36 (partly)

Hylodes ranoides – TSCHUDI, 1838: 77 (partly)

Hylodes binotatus – PETERS, 1873a: 206, 219, 225, 226; BOULENGER, 1882: 209; MIRANDA-RIBEIRO, 1922c: 836; NIEDEN, 1923: 460; MIRANDA-RIBEIRO, 1926: 56, 202

Ololigon abbreviatus – MIRANDA-RIBEIRO, 1922c: 840 (partly)

Ololigon miliaris – MIRANDA-RIBEIRO, 1926: 58 (partly)

Eleutherodactylus binotatus – COCHRAN, 1955: 269; GORHAM, 1966: 60; BOKERMANN, 1966: 43, 88; VANZOLINI, 1981a: XIX

Thoropa miliaris – VANZOLINI, 1981a: XX

WAGLER (1830b) was already of the opinion that *R. binotata* and *H. abbreviata* were conspecific and united them under the name *E. abbreviatus*. TSCHUDI (1838) followed WAGLER in considering the two to be conspecific, but put them in his composite *H. ranoides*. PETERS (1873a) also reached the same conclusion as WAGLER, but he choose to use the name *Hylodes binotatus*, a name which since then has been in constant use for this taxon. However, in synonymising *R. binotata* with *H. abbreviata*, WAGLER (1830b) acted as first reviser and the correct name for the taxon under consideration should be *Eleutherodactylus abbreviatus* (Spix). As this would upset a long established and widely used name (e. g. in biogeographical publications), it seems wisest not to upset nomenclature by a name-change, but ask the International Commission for Zoological Nomenclature to place both names on the Official

List of Specific Names and to give *R. binotata* Spix, 1824 precedence over *H. abbreviata* Spix, 1824 published in the same book. Under *Thoropa miliaris* we already pointed out why we agree with WAGLER (1830b) and PETERS (1873a) and more recent authors in considering *R. binotata* and *H. abbreviata* as conspecific. Thus, we refute VANZOLINI's (1981a) synonymisation of *H. abbreviata* with *T. miliaris*.

As pointed out before, no type of *H. abbreviata* could be located. The holotype of *R. binotata* Spix, 1824 is still extant and catalogued under ZSMH 2695/0 (♀, s-v length 56 mm, head length 20.7 mm, head width 20.0 mm, tibia 31.5/ 31.2 mm long). It is in bad condition, it is flabby with dried legs, and there is hardly any pattern left, a fact already noted by PETERS (1873a). The specimen has been figured natural size.

Hylodes nasus (Lichtenstein)

Hyla ranoides Spix, 1824: 32

Enydobius ranoides – WAGLER, 1830b: 202 (partly)

Hylodos (sic!) *ranoides* – TSCHUDI, 1838: 36 (partly)

Hylodes ranoides – TSCHUDI, 1838: 77 (partly)

Elosia nasus – PETERS, 1873a: 207, 214, 225, 226; BOULENGER, 1882: 193; MIRANDA-RIBEIRO, 1922b: 815; NIEDEN, 1923: 403; MIRANDA-RIBEIRO, 1926: 32, 200; COCHRAN, 1955: 287; BOKERMANN, 1966: 60, 62 (with ?); GORHAM, 1966: 111

Hylodes nasus – MYERS, 1962: 196; LYNCH, 1971: 167; VANZOLINI, 1981a: XIX, (?) XX

PETERS (1873a) compared the types of *Hyla ranoides* Spix with those of *Hyla nasus* Lichtenstein and came to the conclusion they were conspecific. In the same paper he stated that *Hyla stercoracea* was a badly preserved and badly figured specimen of *H. ranoides* (= *H. nasus*). Most authors followed PETERS, except MIRANDA-RIBEIRO (1922c, 1926), who used the name *Hylodes ranoides* for *Eleutherodactylus guentheri* (Steindachner) (COCHRAN, 1955). MIRANDA-RIBEIRO (1922b) disagrees with PETERS' (1873a) synonymisation on the basis of the shape of the eyes in the SPIX figures and details of the body. We are inclined to agree with MIRANDA-RIBEIRO, because his arguments make sense. *Hylodes nasus* has eyes that are placed laterally in the head and are well covered by eyelids. We cannot see how a specimen of this species could be figured in dorsal view, showing the eyes as does pl. VI fig. 3, not even the worst artist could draw such a beast. Moreover, the toes are very long and narrow, with hardly a trace of discs at the tips, whereas these are very evident in *H. nasus*. SPIX's description is very short but does provide some more clues: snout truncate, belly with black and grey lines, toes like those of *Rana*'s, with a scarcely widened tip. At least the first two characters are applicable to *H. nasus*, the last one in our opinion is slightly doubtful. Consequently and taking into account PETERS' (1873a) remarks and the fact that COCHRAN (1955) mentioned two of the types in her list of material, we conclude that at least part (two) of the types of *Hyla ranoides* Spix, 1824 most probably were *Hylodes nasus* (Lichtenstein), but that pl. VI fig. 3 certainly was not based on one of these specimens, but either on a specimen of *Thoropa miliaris* or (most likely) on a species of *Eleutherodactylus*.

Of the three types of *Hyla ranoides* Spix, 1824 reported by SPIX (1824) and PETERS (1873a) only two are accounted for in the old catalogue of the Munich museum (ZSMH 1043/0) and these were reported by COCHRAN (1955: 290). At present they cannot be found and we must assume they were destroyed during World War II.

We also doubt the synonymisation of *Hyla stercoracea* Spix, 1824 with this species. Since PETERS (1873a), this name was considered a synonym of *Hylodes nasus*. GORHAM (1966) questioned this, as did BOKERMANN (1965), who pointed out that either the synonymisation or the locality was wrong, but choose to prefer the last possibility. The figure accompanying this name (pl. X fig. 2) certainly does not show *Hylodes nasus*, but rather a frog with distinct traces of webbing between the toes and eyes that are again well visible from above. The description of *Hyla stercoracea* does not help much either, because it mainly provides details of colouration (disagreeing with the figure) and the few morphological details could apply to a large number of frogs. LUTZ (1973) states that it "is not a *Hyla*", without giving argu-

ments. The general habit and the presence of small webs between the toes lead us to assume that it could nevertheless be a species of *Hyla*, though we would not dare to say which one.

The holotype of *Hyla stercoracea* Spix, 1824 unfortunately is no longer extant. Formerly it probably was ZSMH 1044/0, which in the old catalogue of the Munich museum was listed as “*Elosia nasus* Licht. Teffé, 1 ex., SPIX”. This would agree with both SPIX (1824) and PETERS (1873a), who only reported one specimen. It is in disagreement with COCHRAN (1955: 290) who reported two specimens under this register number, but this probably was in error.

Because the holotype apparently was destroyed it is impossible for us to determine now to which species this specimen belonged, and we therefore prefer not to allocate *Hyla stercoracea* Spix, 1824 to a certain taxon, but rather consider its position incertae sedis. LUTZ (1973: 261) holds the same view on the basis that SPIX’s description does not tally with PETERS’ (1873a) interpretation.

Some more information about the two syntypes of *H. ranoides* and the holotype of *H. stercoracea* was obtained from correspondence between L. MÜLLER and L. STEJNEGER, now in the archives of the Smithsonian Institution (we obtained copies through the courtesy of Dr. W. R. HEYER). STEJNEGER wrote to MÜLLER on February 9, 1931, asking him about the identity of SPIX’s *H. ranoides*. MÜLLER extensively replied on March 4, 1931, enclosing a rather complete description of each specimen, from which it is clear that they were in a bad state (see introduction). MÜLLER does express as his opinion that they probably all belong to the genus *Elosia* (= *Hylodes*), but that it was impossible for him to decide on their specific status. He also comments on SPIX’s localities for these specimens and thinks they are not absolutely trustworthy. He especially doubts the locality “Teffé” (for *H. stercoracea*). Because the types are now lost, it seems useful to reproduce MÜLLER’s descriptions completely.

“Cotyphen von *Hyla ranoides* Spix

Bahia

Nr. 1) Vomerzähne in 2 nach hinten convergierenden Reihen zwischen den mässig grossen Choanen. Die stark mazerierte und wohl auch etwas geschrumpfte Zunge ist breiter wie lang, hinten ganzrandig und besitzt beiderseits ihres Vorderrandes einen kleinen aufrechtstehenden ovalen Lappen. Da diese beiden Lappen durchaus regelmässig und miteinander in Form und Lage absolut identisch sind, glaube ich nicht, dass es sich um künstliche Bildungen handelt. Schnauze abgestutzt, schräg über die Maulspalte vorspringend. Canthus rostralis infolge des schlechten Erhaltungszustandes des Exemplares nicht mehr zu erkennen. Nasenloch etwas weiter vom Auge wie von der Schnauzenspitze entfernt; der Augendurchmesser ist nahezu so lang, wie der Abstand des Auges von der Schnauzenspitze. Das Verhältnis von Interorbitalbreite zur Breite des oberen Augenlids ist wegen Schrumpfung des letzteren nicht mehr festzustellen. Durchmesser des Tympanums gleich $\frac{2}{3}$ des Augendurchmessers. Die Finger und Zehen sind ziemlich stark verschrumpft, doch lässt sich die mediane Furche auf der Oberseite der Haftscheiben bei einigen derselben noch deutlich feststellen. Erste Finger etwas kürzer als der 2te. Tibiotarsalgelenk etwas über die Schnauze hinausreichend. Haftscheiben der Finger und Zehen ziemlich klein, an einzelnen Zehen ist noch eine Spur von Seitensaum zu sehen. Die Subartikultuberkel sind nur mehr ganz schwach, die Metatarsaltuberkel überhaupt nicht mehr sichtbar. Die Länge der Tibia ist gleich der Entfernung der Schnauzenspitze vom Oberarmansatz. Hautstruktur nicht mehr zu erkennen, da Epidermis völlig maceriert. Oberseite dunkler rotbraun, Bauch heller mit noch schwach sichtbarer dunklerer Retikulation.

Kopfrumpflänge: 35 mm; Länge des Hinterbeines (vom After bis zur Spitze der längsten Zehe): 55 mm; Tibia: 17 mm.

Nr. 2) Vomerzähne in 2 schräg nach hinten convergierenden Gruppen zwischen den mässig grossen Choanen. Zunge breit oval, ganzrandig. Schnauze vorn abgestutzt, schräg über die Maulspalte vorspringend. Ueber die Form des Canthus rostralis lässt sich nichts mehr aussagen. Die ziemlich steil abfallende Zügelgegend scheint leicht konkav gewesen zu sein. Der Abstand des Nasenloches von der Schnauzenspitze beträgt $\frac{2}{3}$ seines Abstandes vom Auge. Auge gross, sein Durchmesser ist gleich seinem Abstand von der Schnauzenspitze. Durchmesser des Tympanums gleich $\frac{2}{3}$ des Augendurchmessers. Finger und Zehen stark vertrocknet, doch lässt sich noch an einzelnen Haftscheiben die Medianfurche erkennen. Erster Finger etwas kürzer als der 2te. Das Tibiotarsalgelenk reicht bis zum Nasenloch. Eine schwache Spur von Schwimmhaut ist an der Zehenbasis sichtbar, Zehensäume lassen sich nicht mehr feststellen. Subartikultuberkel mässig gross. Ein mässig grosser, seitlich komprimierter innerer und ein kleiner äusserer Metatarsaltuberkel sind noch sichtbar. Haftscheiben mässig gross. Länge der Tibia gleich der Entfernung von der Achsel bis zu den Weichen. Hautstruktur nicht mehr zu erkennen. Oberseite fahlbraun, Unter-

Kopfrumpflänge: 39 mm; Hinterbein: 60 mm; Tibia: 20 mm.

Holotypus von *Hyla stercoracea* Spix

Teffé, Amazonas

Sehr stark mazeriert und verschrumpft. Vomerzähne in zwei schräg nach hinten konvergierenden Gruppen zwischen den mässig grossen Choanen. Zunge verschrumpft, breit oval. Form des Canthus rostralis und Abstand des Nasenloches nicht mehr feststellbar. Tympanum $\frac{2}{3}$ des Augendurchmessers. Finger und Zehen völlig verschrumpft, trotzdem lässt sich bei einigen Haftscheiben die Medianfurche noch erkennen. Zehensäume, Subartikulationstuberkel und Metatarsaltuberkel sind nicht mehr zu erkennen. Das Tibiotarsalgelenk überragt die Schnauzenspitze. Länge der Tibia gleich der Entfernung vom Hinterrand des Tympanums bis zu den Weichen. Hautstruktur nicht mehr erkennbar. Oberseite dunkel rötlichbraun, Kehle und Bauch hellgrau mit braunen Schnörkelflecken, Unterseite der Extremitäten dunkel violettbraun.

Kopfrumpflänge: 29 mm; Hinterfuß: 50 mm; Tibia: 18 mm."

Ololygon rubra (Laurenti)

Hyla lateristriga Spix, 1824: 32, pl. VI fig. 4

Hyla rubra – DUMÉRIE & BIBRON, 1841: 592 (partly); BURMEISTER, 1856: 109 (partly); PETERS, 1873a: 207 (partly), 226 (partly); BOULENGER, 1882: 403 (partly); NIEDEN, 1923: 310 (partly); MIRANDA-RIBEIRO, 1926: 88 (partly), 208 (partly); BOKERMANN, 1966: 53; DUELLMAN, 1977: 96 (partly)

Hyla leucophyllata – BURMEISTER, 1856: 104

Hyla rubra huebneri – LUTZ, 1973: 157 (partly?)

Ololygon rubra – VANZOLINI, 1981a: XIX (partly)

PETERS (1873a) synonymised three SPIX names (*Hyla lateristriga*, *H. affinis*, *H. coerulea*) with *H. rubra* and was followed by most authors, some of which (e. g. BOULENGER, 1882; NIEDEN, 1923) also included *H. x-signata* Spix (a perfectly good taxon) in this synonymy. LUTZ (1973: 261) apparently did not agree with PETERS (1873a) and, without argumentation other than that the SPIX "descriptions do not tally with PETERS (1872) interpretation of the SPIX species, and the types have perished", she placed *H. affinis* and *H. coerulea* under "doubtful species". However, on p. 157 of the same publication she listed *H. affinis* as a doubtful synonym of *H. rubra huebneri* Melin, a taxon no longer recognised by DUELLMAN (1977).

The holotype of *H. lateristriga* Spix, 1824 does not appear in the old catalogue of the Munich museum and MÜLLER (1927: 267) reports this specimen lost, which probably means that it was lost already before the early years of the twentieth century.

We are inclined to agree with LUTZ (1973) in not considering *H. affinis* and *H. coerulea* synonyms of *O. rubra*, but instead of *O. x. x-signata*. Our reasons for this will be given under that taxon.

Hyla albopunctata Spix

Hyla albopunctata Spix, 1824: 33, pl. VI fig. 5; PETERS, 1873a: 207; COCHRAN, 1955: 80; BOKERMANN, 1966: 44; DUELLMAN, 1971a: 401; DUELLMAN & RIVERO, 1971: 118; LUTZ, 1973: 43; OPIN., 1974: 188; DUELLMAN, 1977: 27 (partly); VANZOLINI, 1981a: XIX

Hyla boans – BOULENGER, 1882: 360 (partly); NIEDEN, 1923: 307 (partly); MIRANDA-RIBEIRO, 1926: 84 (partly), 206 (partly)

Many authors treated this taxon, together with *H. multifasciata* Günther, under the name *H. boans* Daudin. The nomenclatural history of these names has been presented by DUELLMAN (1971a) and by DUELLMAN & RIVERO (1971). As a result of their actions the International Commission on Zoological Nomenclature issued Opinion 1029 in which *H. albopunctata* Spix was placed on the Official List of Specific Names in Zoology. As the SPIX holotype of *H. albopunctata* apparently is lost, DUELLMAN (1971) designated reg. no. 100 000 (University of Kansas Museum of Natural History) as neotype. The species is distributed in C. and S. Brazil, reaching N. Argentina (CEI, 1980; DUELLMAN, 1977).

Hyla nebulosa Spix, 1824 has usually been considered a synonym of *H. albopunctata* (BOKERMAN, 1966; DUELLMAN, 1977; LUTZ, 1973; VANZOLINI, 1981a); PETERS (1873a) identified the holotype as *H. luteola* (= *Phyllodytes luteolus* (Wied)). We don't agree with these authors, but on the basis of the illustration, the description and the type locality (Teffé on the Amazonas), we come to the conclusion that *H. nebulosa* is identical with the taxon currently known as *Oloolygon egleri* (Lutz). This has nomenclatural consequences which will be discussed at the appropriate place.

Oloolygon x-signata x-signata (Spix)

Hyla affinis Spix, 1824: 33, pl. VII fig. 3

Hyla coerulea Spix, 1824: 37, pl. X fig. 1 (non *Hyla caerulea* White, 1790)

Hyla x-signata Spix, 1824: 40, pl. XI fig. 3; BOKERMANN, 1966: 64; RIVERO, 1969: 112

Auletris femoralis – WAGLER, 1830b: 201 (partly) (by inference)

Auletris coerulea – WAGLER, 1830b: 201 (partly) (by inference)

Hyla rubra – DUMÉRIL & BIBRON, 1841: 592 (partly); BURMEISTER, 1856: 109 (partly); PETERS, 1873a: 207 (partly), 214, 226 (partly); BOULENGER, 1882: 403 (partly); BAUMANN, 1912: 108; NIEDEN, 1923: 310 (partly); MIRANDA-RIBEIRO, 1926: 88 (partly), 208 (partly); BOKERMANN, 1966: 43, 48; DUELLMAN, 1977: 96 (partly)

Hyla rubra var. *x-signata* – PETERS, 1873a: 218, 226

Hyla rubra x-signata – MÜLLER, 1927: 266

Hyla x-signata x-signata – LUTZ, 1973: 139; DUELLMAN, 1977: 110

Oloolygon rubra – VANZOLINI, 1981a: XIX (partly), XX

Oloolygon x-signata – VANZOLINI, 1981a: XX

PETERS (1873a) was not very certain about the status of this taxon (“Wenn es daher auch vielleicht nicht als eine verschiedene Art zu betrachten ist, bildet es doch eine sehr ausgezeichnete Varietät”.) and decided to treat it as a variety of *H. rubra*. Most authors since then concurred, until RIVERO (1969) quite clearly pointed out the differences between *Oloolygon rubra* and *O. x-signata*.

Contrary to PETERS (1873a) and DUELLMAN (1977) we consider *H. affinis* Spix, 1824 and *H. coerulea* Spix, 1824 synonyms of *O. x-signata* on the basis of some remarks by MÜLLER (1927), notations in the old catalogue of the Munich museum and examination of the types. MÜLLER (1927: 267) stated that *H. coerulea* was very close to *H. x-signata* and that fresh topotypical material was needed to establish its correct position, because the two SPIX syntypes (ZSMH 2710/0) were not well enough preserved to make a decision. In the old catalogue of the Munich museum these two specimens appear under the name “*Hyla x-signata* Spix”. The specimens (a male and a female) are still available and clearly belong to *O. x. x-signata*. Both specimens are distinctly smaller than pl. X fig. 1 (SPIX, 1824), but the female (s-v length 36 mm) comes closest to it. Therefore, and because of its better preservation, this specimen (ZSMH 2710/0 A) is selected as lectotype of *Hyla coerulea* Spix, 1824, the amle (ZSMH 2710/0 B, s-v length 31 mm) automatically becomes a paralectotype. *H. coerulea* Spix, 1824 is a junior primary homonym of *H. caerulea* White, 1790 and therefore is unavailable (MÜLLER, 1927: 267).

Both the holotype of *H. x-signata* (formerly ZSMH 2494/0, now apparently lost) and that of *H. affinis* (ZSMH 2495/0, ♂, s-v length 34 mm) appear in the old catalogue of the Munich museum as “*Hyla rubra x-signata* Spix”. As the catalogue apparently was prepared in a relatively short period and the author (probably L. MÜLLER) had the opportunity to compare the types of all three Spix names pertaining to this taxon (MÜLLER, 1927: 267), we are inclined to value his judgement higher than that of PETERS (1873a). The more so because we also reached the same conclusion about the three names here considered on the basis of a comparison of descriptions, figures and the types of *H. coerulea* and *H. affinis*. Although both the descriptions and the figures of *H. coerulea* and *H. affinis* are poor, from the examination of the (poorly preserved) types it is clear that they are conspecific with *O. x. x-signata* Spix, the name that should be used for this taxon.

Hyla albomarginata Spix

Hyla albomarginata Spix, 1824: 33, pl. VIII fig. 1; DUMÉRIL & BIBRON, 1841: 555; PETERS, 1873a: 207, 227 (partly); BOULENGER, 1882: 356; WERNER, 1898b: 220; NIEDEN, 1923: 260 (partly); MIRANDA-RIBEIRO, 1926: 74 (partly), 204; LUTZ, 1949: 555; COCHRAN, 1955: 164 (partly); BOKERMANN, 1966: 44; LUTZ, 1973: 59; DUELLMAN, 1977: 26 (partly); VANZOLINI, 1981a: XIX (partly)
Hypsiboas albomarginata – WAGLER, 1830b: 201 (partly)
Hypsiboas albomarginatus – TSCHUDI, 1838: 29, 72
Centrotelma infulata – BURMEISTER, 1856: 97

Unfortunately the holotype (formerly ZSMH 2370/0) must be considered lost; it was studied by PETERS (1873a) and by COCHRAN (1955) in 1938. The description and the illustration in SPIX (1824) do not leave any doubt about the taxon represented and consequently there have been few problems about the application of the name *H. albomarginata*, though there has been a general misconception about the area in which this species occurs. This misconception was perpetuated by DUELLMAN (1977), who listed the range of this species as covering the entire region between Colombia and southern Brazil. As pointed out before by one of us (HOOGMOED, 1979a) all records of this species from the Guianas are based on old material with scanty locality data (GOIN, 1971; LESCURE, 1976) or on misidentified material (BOULENGER, 1900; PARKER, 1935). HOOGMOED (1979a) came to the conclusion that the actual distribution of this taxon would closely agree with that given by LUTZ (1973) and we concur with him. The part of the range roughly north of the Amazon, given by DUELLMAN (1977) probably is attributable to specimens of *H. granosa* Boulenger and to material with wrong locality data.

We do not consider *H. cinerascens* a synonym of *H. albomarginata*, as most authors do. For further comments see under *H. granosa*.

Hyla punctata (Schneider)

? *Hyla papillaris* Spix, 1824: 34, pl. VIII fig. 2; LUTZ, 1951: 315, 332
Hyla variolosa Spix, 1824: 37, pl. IX fig. 4
Auletris variolosa – WAGLER, 1830b: 201
Scinax variolosa – WAGLER, 1830b: 201
 “Rainette ponctuée” – TEMMINCK & SCHLEGEL, 1838: 107
Hypsiboas luteola – TSCHUDI, 1838: 29 (partly), 72 (partly)
Hyla punctata – BURMEISTER, 1856: 104; PETERS, 1873a: 208, 214, 226; BOULENGER, 1882: 357; NIEDEN, 1923: 307; MIRANDA-RIBEIRO, 1926: 88, 208; LUTZ, 1951: 304, 320; BOKERMANN, 1966: 58, 64; DUELLMAN, 1977: 89; HOOGMOED, 1979a: 33; VANZOLINI, 1981a: XIX, XX
Hyla p. punctata – LUTZ, 1973: 67

The holotype of *H. papillaris* Spix, 1824 (formerly ZSMH, but not in the old catalogue) apparently is lost now and for an interpretation we have to rely completely on the description and figure provided by SPIX (1824) and on the study of this specimen by PETERS (1873a). Most authors have accepted PETERS' reasoning that his comparison of the type with the original specimens of SCHNEIDER's *Calamita punctata*, showed that they were conspecific. LUTZ (1951, 1973) doubted the synonymisation of *H. papillaris* Spix with *H. punctata* (Schneider) and in our opinion she had a good point. According to PETERS (1873a) the type of *H. papillaris* had a rudimentary tail, which would mean that it was a nearly metamorphosed individual. With a total snout-vent length of 30 mm this means that it hardly could have been *H. punctata*, whose adults reach snout-vent lengths between 31 and 40 mm (HOOGMOED, 1979a). The fact that it was badly preserved heightens the chances that PETERS (1873a) made a mistake and that *H. papillaris* belongs to another species. LUTZ (1951), on the suggestion of J. VENANCIO, advances the opinion that it might “belong to the *H. appendiculata* [= *H. geographica*] complex.” The fact that the venter of *H. papillaris* is described as being blackish (as it is in metamorphosing *H. geographica*) heightens the probability of this suggestion. As the specimen figured does not look like a recently metamorphosed *H. geographica*, with which one of us (MSH) is well acquainted, and moreover does not

show the remains of the tail PETERS (1873a) describes, we refrain from taking further action here and for the time being leave *H. papillaris* in the synonymy of *H. punctata*, though doubtfully so.

We do not have any doubts about the synonymisation of *H. variolosa* Spix, 1824 with *H. punctata*. Although the specimen PETERS (1873a) studied (formerly ZSMH 2496/0) is lost now, one of the syntypes survived in the RMNH (reg. no. 1879) and this provides us the opportunity to compare it with SPIX's (1824) description and figure. It agrees closely with both, though evidently this is not the specimen figured, because the shape of the spots on the back of the specimen and their arrangement does not agree with those in the figure. SPIX (1824) did not mention the number of specimens he had before him, which usually meant he only had one (see introduction), but apparently in this case he at least had two. Because this specimen was received directly from SPIX under the name *H. variolosa*, we feel confident that this was one of the syntypes and we here designate RMNH 1879 (♀, s-v length 36 mm) from Brazil, collected by SPIX (label data only) as lectotype of *Hyla variolosa* Spix, 1824. On the basis of SPIX's (1824) description we can restrict the type locality to Amazonian Brazil.

Hyla pardalis Spix

Hyla pardalis Spix, 1824: 34, pl. VIII fig. 3; PETERS, 1873a: 209, 226; BOULENGER, 1882: 354; WERNER, 1898: 217; NIEDEN, 1923: 284; MIRANDA-RIBEIRO, 1926: 71 (partly), 203 (partly); COCHRAN, 1955: 76; BOKERMANN, 1966: 58; LUTZ, 1973: 26; DUELLMAN, 1977: 81; VANZOLINI, 1981a: XIX

Hypsiboas crepitans – WAGLER, 1830b: 201 (partly)

Hypsiboas venulosus – TSCHUDI, 1838: 29 (partly), 72 (partly)

Hyla palmata – DUMÉNIL & BIBRON, 1841: 544 (partly)

Hylomedusa palmata – BURMEISTER, 1856: 102 (partly)

SPIX (1824) described this species on the basis of two specimens, which, according to PETERS (1873a), belonged to two species. One specimen (s-v length 50 mm) according to him served as the model for both the description and figure and consequently can be considered the lectotype of *H. pardalis* Spix, 1824, whereas he considered the other specimen (s-v length 60 mm) as *H. crepitans* Wied. As this last species does not occur in Rio de Janeiro, where the specimens are supposed to have come from, this probably was a specimen of *H. circumdata* (Cope). The specimens formerly were registered under ZSMH 2499/0, but now must be considered lost.

Hyla granosa Boulenger

H. cinerascens Spix, 1824: 35, pl. VIII fig. 4; LUTZ, 1951: 315, 331; LUTZ, 1973: 261

H. albomarginata – WAGLER, 1830b: 201 (partly); PETERS, 1873a: 213, 226 (partly); NIEDEN, 1923: 260 (partly); COCHRAN, 1955: 164 (partly); BOKERMANN, 1966: 47 (with question-mark); DUELLMAN, 1977: 26 (partly); VANZOLINI, 1981a: XIX (partly)

H. granosa – MIRANDA-RIBEIRO, 1926: 88, 208; HOOGMOED, 1979a: 5

Most authors placed *H. cinerascens* Spix, 1824 in the synonymy of *H. albomarginata*, but we do not agree with them. The first to have doubts about the proper allocation of the name were DUMÉNIL & BIBRON (1841: 551), who placed it with a question-mark, in the synonymy of their new *Hyla Doumercii*. This last name, according to ANGEL (in LUTZ, 1951: 315, 320), LESCURE (1976) and DUELLMAN (1977), who all investigated the type specimen, is a synonym of *H. crepitans*. LUTZ (1951, 1973) doubted whether *H. cinerascens* was a synonym of *H. albomarginata* and treated it as a separate, though doubtful, taxon. BOKERMANN (1966) considered *H. cinerascens* a doubtful synonym of *H. albomarginata* and stated that either the synonymy or the locality was wrong.

On the basis of the original description, the figure, PETERS' (1873a) additional remarks and personal knowledge of one of us (MSH) of green treefrogs in northern South America, we come to the conclusion that *H. cinerascens* is nothing but *H. granosa* Boulenger, with which it agrees in body shape, size, webbing of hand and feet, colour and distribution. Unfortunately we can not check our hypothesis because the type(s) (formerly ZSMH 2498/0) are lost. COCHRAN (1955) apparently studied two

specimens considered to be cotypes during her visit to Munich in 1938 and listed them as *H. albomarginata*. There is a discrepancy in numbers here as well. SPIX (1824) does not say how many specimens he had before him, PETERS (1873a) only received one, which, as pointed out before, means that SPIX based his description on one specimen only. However, the old catalogue of the Munich museum, COCHRAN (1955) and DUELLMAN (1977) all list ZSMH 2498/0 as containing two specimens. In our opinion one of these specimens may have become associated with the holotype of *H. cinerascens* somewhere between 1872 and the early twentieth century when the catalogue of the Munich museum was produced.

The synonymisation of *H. cinerascens* with *H. granosa* has nomenclatural consequences. *H. cinerascens* Spix, 1824 has priority over *H. granosa* Boulenger, 1882. As *H. granosa* is a well established name (HOOGMOED, 1979a) it seems undesirable to replace it by a name which for a long time has been considered a synonym of a superficially similar species and of which the type has been destroyed. We therefore will propose the International Commission on Zoological Nomenclature to suppress *H. cinerascens* Spix, 1824 in order to stabilize the nomenclature of this taxon.

Dendrobates trivittatus (Spix)

Hyla trivittata Spix, 1824: 35, pl. IX fig. 1

Hyla nigerrima Spix, 1824: 36, pl. IX fig. 2

Hylaplesia trivittata – SCHLEGEL, 1826: 239; SCHLEGEL, 1827: 294

Hylaplesia nigerrima – SCHLEGEL, 1826: 239; SCHLEGEL, 1827: 294

Dendrobates trivittatus – WAGLER, 1830b: 202; PETERS, 1873a: 213, 226; BOULENGER, 1882: 144; MIRANDA-RIBEIRO, 1926: 180, 224; BOKERMANN, 1966: 57, 63; LUTZ, 1973: 263; MYERS et al., 1978: 332, 334; MYERS & DALY, 1979: 14, 22, 23

Dendrobates nigerrimus – WAGLER, 1830b: 202

Hyla tinctoria – TEMMINCK & SCHLEGEL, 1838: 107

Hylaplesia tinctoria – TSCHUDI, 1838: 27 (partly), 70 (partly)

Dendrobates tinctorius – DUMÉRIL & BIBRON, 1841: 652 (partly); BURMEISTER, 1856: 111 (partly)

Dendrobates obscurus Duméril & Bibron, 1841: 655; BURMEISTER, 1856: 111

Dendrobates nigerrimus – STEINDACHNER, 1864: 257

Dendrobates trivittatus var. – PETERS, 1873a: 226

Phyllobates trivittatus – SILVERSTONE, 1971: 263; SILVERSTONE, 1976: 45; VANZOLINI, 1981a: XIX, XX (with question-mark)

There have been no problems with the interpretation of the two SPIX names dealt with here. STEINDACHNER (1864) synonymised *D. obscurus* Duméril & Bibron, 1841 with *D. nigerrimus*, an action we completely support, though SILVERSTONE (1975, 1976) listed this nominal species as „*Dendrobates*; status uncertain”. According to PETERS (1873a), who studied five type specimens (two with three light stripes, one with two light stripes and two without stripes) *H. trivittata* and *H. nigerrima* were extremes in pattern of one species, which he called *Dendrobates trivittatus*. Originally SPIX had six specimens of *H. trivittata* and five of *H. nigerrima*. Apparently six of these original eleven specimens seemed to have disappeared by 1872. SILVERSTONE (1975) believed that all type specimens of *H. trivittata* and *H. nigerrima* had been destroyed during World War II, and was not certain of the relegation of *nigerrima* to the synonymy of *D. trivittatus*. In this hesitation he was followed by VANZOLINI (1981a). Since SILVERSTONE's revision it turned out that of both nominal taxa a specimen of each, collected by SPIX and obtained through exchange with him in 1824, was present in the RMNH collection. These specimens are RMNH 1799 (♂, „*Dendrobates Hyla nigerrima* Spix, Bresil, Spix“, s-v length 38 mm) and RMNH 1836 (♂, „*Dendrobates Hyla trivittata* Spix, Bresil, Spix“, s-v length 36 mm). Although RMNH 1799 is not very well preserved (parts of epidermis lacking and desiccated) it is clear that it is a true *Phyllobates trivittatus*, without any pattern visible. RMNH 1836 is better preserved and with some difficulty a light dorsolateral line can be discerned on each side, with the remains of a vertebral light stripe in the sacral area, the remainder of the back showing a vague, brown reticulum with lighter spots. Moreover, an additional specimen of *D. trivittatus* was discovered in the Munich collec-

tion! This specimen is provided with a label in WAGLER's handwriting („*Hyla trivittata* Spix, Var. *bilin.*, Brasilia, Iter Spixii"). Apparently this is the specimen examined by PETERS (1873a) and said to have only two dorsolateral stripes. These stripes are still discernable, though not very distinct. All three specimens lack teeth, have a glandular back, a first finger that is slightly longer than the second, and generally agree with the description provided by SILVERSTONE (1976). The label data accompanying the Leiden specimens convince us that they were part of the original type series and as RMNH 1799 apparently is the only "surviving" syntype, we here select it as the lectotype of *Hyla nigerrima* Spix, 1824. Of the two syntypes of *Hyla trivittata* Spix available, one (Munich specimen) only shows two dorsolateral stripes and the other (RMNH 1836) shows two dorsolateral stripes and the indication of a third one. Because of this we prefer to select RMNH 1836 as lectotype of *Hyla trivittata* Spix, 1824, the more so because WAGLER already indicated the "aberrant" habitus of the Munich specimen by his annotation var. *bilin.* (= *bilineatus*), a name corroborated by the specimen itself. The Munich specimen is not accompanied by a registration number, but because of data in the card file we assume that this is ZSMH 43/0, which is indicated as "cotypus". This specimen automatically becomes a paralectotype.

Neither of the three specimens now recovered served as a model for SPIX's figures on pl. IX. We doubt whether the so-called patternless *nigerrima* specimens really do occur in nature (SILVERSTONE 1976) and are inclined to think they are an artifact of preservation.

The Munich material, formerly listed under ZSMH 42/0 (*H. trivittata*, 1 specimen) and 44/0 (*H. nigerrima*, 1 specimen) apparently was destroyed.

Hyla bipunctata Spix

Hyla bipunctata Spix, 1824: 36, pl. IX fig. 3; PETERS, 1873a: 214, 226; BOULENGER, 1882: 389; WERNER, 1898: 216; NIEDEN, 1923: 287; MIRANDA-RIBEIRO, 1926: 89, 209; BOKERMANN, 1966: 46; LUTZ, 1973: 203; DUELLMAN, 1977: 37; VANZOLINI, 1981a: XX

Scinax bipunctata – WAGLER, 1830b: 201

Hypsiboas luteola – TSCHUDI, 1838: 29 (partly), 72 (partly)

Hyla pumila Duméril & Bibron, 1841: 565; BURMEISTER, 1856: 110

Hyla b. bipunctata – COCHRAN, 1955: 101

There have been no problems in regard to this species. The two original syntypes (according to SPIX (1824) a male and a female) were formerly registered under ZSMH 2497/0. COCHRAN (1955) apparently studied them, LUTZ (1973) and DUELLMAN (1977) reported them destroyed during World War II and we have to endorse that view. COCHRAN (1955) and DUELLMAN (1977) state that there were four specimens in ZSMH 2497/0, but this is refuted by SPIX (1824), PETERS (1873a) and the old catalogue of the Munich museum, which all only list two specimens, so we assume that originally only two syntypes were present.

Hyla strigilata Spix

Hyla strigilata Spix, 1824: 38, pl. X fig. 3; PETERS, 1873a: 214, 226; BOULENGER, 1882: 390; NIEDEN, 1923: 291; MIRANDA-RIBEIRO, 1926: 80; BOKERMANN, 1966: 63; ?LUTZ, 1973: 195; DUELLMAN, 1977: 104; VANZOLINI, 1981a: XX

Hyla boans – BURMEISTER, 1856: 109 (partly, with question-mark)

Hyla strigillata (sic!) Werner, 1898: 217; MIRANDA-RIBEIRO, 1926: 205

Hyla s. strigilata – COCHRAN, 1955: 158 (partly, specimens from SE Brazil).

As pointed out extensively by PETERS (1873a) there is a considerable discrepancy between the specimen examined by him („Das einzige Original-exemplar") and figure 3 of plate X. LUTZ (1973) attributed this discrepancy to the fact that "the figure may, however, not have been examined by SPIX, as his book was a posthumous publication." This last statement, however, is not true, the book was published in 1824, whereas SPIX died May 13, 1826 (VANZOLINI, 1981a; TIEFENBACHER, 1982). PETERS (1873a) gave an extensive description of the holotype, which serves to identify the species currently named *H. strigilata* (cf. COCHRAN, 1955).

WERNER (1898) reporting on *Hyla* species in the Munich collection, used an incorrect spelling and mentioned only one specimen of this species in the Spix collection (“An dem besterhaltenen Exemplare der SPIX’schen Sammlung von *Hyla*-Arten . . . kann ich noch Folgendes bemerken:“). COCHRAN (1955) mentioned three syntypes of this species in the Munich collection, viz., ZSMH 2369/0 containing one specimen from Bahia, and ZSMH 2531/0, containing two specimens from “Amazonas. Tefé”, data which are supported by the old catalogue of the Munich museum. Apparently something is amiss here. SPIX (1824) did not mention the number of specimens he had, which usually meant he only had one (see above), he only mentioned the province of Bahia as a locality and did not mention Tefé, whereas PETERS (1873a) explicitly mentions only a single specimen from Bahia. It therefore appears that ZSMH 2369/0 was the holotype of *H. strigilata* Spix, 1824, whereas the two specimens from Tefé (ZSMH 2531/0) were wrongly assumed to be syntypes of *H. strigilata* somewhere between 1897 and the early twentieth century, when the old catalogue of the Munich museum was prepared. Anyway, in DUELLMAN’S (1977: 104) checklist the sentence: “Syntypes: Formerly ZSM no. 2531/0; destroyed.” should be changed into: “Holotype: Formerly ZSMH no. 2369/0; destroyed during World War II.”, as this specimen can no longer be found in the Munich collection (neither can ZSM no. 2531/0). As to the real identity of the two specimens in ZSMH 2531/0 we refer to what is said about this subject under *Oolygon nebulosa*.

Oolygon nebulosa (Spix)

Hyla nebulosa Spix, 1824: 39, pl. X fig. 4; PETERS, 1873b: 771; PETERS, 1877: 414; BOULENGER, 1882: 397; GOELDI, 1895: 96; BAUMANN, 1912: 113, 114, 122, 124, 155, 163; NIEDEN, 1923: 295; MIRANDA-RIBEIRO, 1926: 89, 209
Hyla luteola – PETERS, 1873a: 216, 226
Hyla s. strigilata – COCHRAN, 1955: 158 (partly, only specimens from “Teffé”)
Hyla albopunctata – BOKERMANN, 1966: 56; LUTZ, 1973: 262 (partly); DUELLMAN, 1977: 27 (partly); VANZOLINI, 1981a: XX
Hyla egerli Lutz, 1968: 8; DUELLMAN, 1972: 181; LUTZ, 1973: 196; DUELLMAN, 1977: 53; HÜDL, 1977: 353–4, 356–8, 360, 362; HOOGMOED, 1979b: 271

Recently (BOKERMANN, 1966) *H. nebulosa* Spix was synonymised with *H. albopunctata* and subsequent authors endorsed this opinion. As far as we could ascertain, the reasons for this synonymisation were never presented, and we here refute it on the following grounds. Though SPIX’S (1824) description is short and the figure is poor, there is no problem in identifying the present taxon. The diagnostic characters in the description (partly visible in the figure) are the pale brownish ventral parts with black spots, black bars present on the anterior aspect of the thighs, blue spots on the posterior aspect and the depressed head. These characters, in combination with the figure, all indicate that *Hyla nebulosa* Spix, 1824 is identical with the frog recently known under the name *H. egerli* Lutz, 1968 and thus has no relation to *H. albopunctata* Spix whatsoever. *Hyla nebulosa* takes precedence over *H. egerli* and consequently the name of the taxon has to be changed.

Unfortunately the syntypes of *H. nebulosa* cannot be found, neither are they mentioned in the old catalogue and we must assume that they were lost. We do, however, strongly suspect that ZSMH 2531/0 (mentioned by COCHRAN (1955)) as containing two specimens of *H. s. strigilata* from “Teffé”, see above) contained the two specimens of *H. nebulosa*, mentioned by PETERS (1873a) and which cannot be found in the old catalogue. The fact that according to PETERS (1873a) the holotype of *H. strigilata* was similar in habitus to *H. nebulosa* strengthens this supposition. Moreover, all of the species of *Hyla* described by SPIX (1824) from Tefé (*cinerascens*, *trivittata*, *stercoracea*, *nebulosa*, *geographica*, *zonata*), except *nebulosa*, are accounted for in the old catalogue of the Munich museum. As stated above, ZSMH 2531/0 was probably destroyed during World War II, so we cannot check this hypothesis. The taxonomy of the group to which *O. nebulosa* belongs, was dealt with by DUELLMAN (1972) and we may refer to that paper for characters differentiating it from other group members. In order to stabilize nomenclature it seems desirable to designate a neotype for *O. nebulosa*, and to ensure this stability best we choose the holotype of *H. egerli* Lutz, no. 4055 of the Museu Nacional in Rio de Janeiro, which

comes from Belém, Pará, Brazil. For a further description of this specimen we refer to LUTZ (1968). Thus, the type-locality of *O. nebulosa* (Spix, 1824) also becomes Belém, Pará, Brazil.

Ololygon nebulosa occurs from SE Venezuela, through the Guianas and the lower Amazon region to Alagoas in NE Brazil, a distribution which HOOGMOED (1979b) classified as Amazonian.

Hyla geographica Spix

Hyla geographica Spix, 1824: 39, pl. XI fig. 1; MÜLLER, 1922: 170; BOKERMANN, 1966: 51; DUELLMAN, 1973: 526;

DUELLMAN, 1977: 60; VANZOLINI, 1981a: XX

Hyla geographica var. sive *semilineata* Spix, 1824: 40, pl. XI fig. 2

Hypsiboas geographica – WAGLER, 1830b: 200

Hypsiboas venulosa – TSCHUDI, 1838: 29 (partly), 72 (partly)

Centrotelma geographica – BURMEISTER, 1856: 99

Centrotelma calcarata – BURMEISTER, 1856: 100 (partly)

Hyla maxima – PETERS, 1873a: 218, 226; PETERS, 1877: 414; BOULENGER, 1882: 349 (partly); NIEDEN, 1923: 300 (partly)

Hyla Faber – PETERS, 1873a: 218, 226

Hyla faber – PETERS, 1877: 414; BOULENGER, 1882: 351 (partly); NIEDEN, 1923: 283

There has been much confusion about the application of this name, since PETERS (1873a) wrongly synonymised *H. geographica* with *H. maxima* Laurenti (= *H. boans* (L.) and *H. geographica* var. sive *semilineata* with *H. faber* Wied. To further complicate the picture, on p. 226 of PETERS' (1873a) article the synonymisations have been confused, probably due to a printer's error, a mistake corrected by PETERS (1877). According to PETERS (1873a) SPIX's figures are poor, but in our opinion this is not true, they are well executed and are easily recognisable. MÜLLER (1922) pointed out that the description of *H. appendiculata* Boulenger fitted perfectly the type specimen of *H. geographica* Spix, and that the latter name had priority. DUELLMAN (1973, 1977) further sorted out the synonymy of this taxon.

The holotype of *Hyla geographica* Spix, 1824 is listed in the old catalogue of the Munich museum under ZSMH 35/0, that of *Hyla geographica* var. sive *semilineata* Spix, 1824 under ZSMH 47/0. Both cannot be located and must be considered lost.

Phrynohyas venulosa (Laurenti)

Hyla zonata Spix, 1824: 41

Hyla zonalis Spix, 1824: pl. XII fig. 1

Hyla bufonia Spix, 1824: 42, pl. XII fig. 2

Hypsiboas bufonia – WAGLER, 1830b: 200

Hypsiboas venulosus – TSCHUDI, 1838: 29 (partly), 72 (partly)

Hyla venulosa – DUMÉRIL & BIBRON, 1841: 560; BURMEISTER, 1856: 106; PETERS, 1873a: 219, 226; BOULENGER, 1882: 364; BAUMANN, 1912: 103; NIEDEN, 1923: 244; MIRANDA-RIBEIRO, 1926: 76 (partly), 204 (partly); COCHRAN, 1955: 62

Phrynohyas zonata – DUELLMAN, 1956: 35 (partly)

Phrynohyas venulosa – BOKERMANN, 1966: 46, 65; DUELLMAN, 1971b: 11 (partly); LUTZ, 1973: 245; DUELLMAN, 1977: 154 (partly); VANZOLINI, 1981a: XX

WAGLER (1830b) already correctly synonymised *H. zonata* (*zonalis*) with *H. bufonia*, using the last name. His view was corroborated by PETERS (1873a) and all following authors. Most authors since MIRANDA-RIBEIRO (1926) considered *H. resinifictrix* Goeldi a synonym of *P. venulosa*, but recent fieldwork in the Guianas (LESCURE, 1976; HOOGMOED, pers. obs.) has shown that this is a perfectly good species: *P. resinifictrix* (Goeldi), differing from *P. venulosa* in morphology, ecology and mating call.

COCHRAN informed DUELLMAN (1956: 37) that during her visit to Munich she examined many SPIX types, but that of *H. zonata* was not among them; HELLMICH informed him that he did not know that type. However, it is listed in the old catalogue of the Munich museum under ZSMH 48/0, so we must assume it was lost somewhere in the period between preparation of the catalogue and 1938, when

COCHRAN visited Munich. The type of *H. bufonia* also could not be located in Munich; as it was examined by PETERS (1873a) but not listed in the old catalogue of the Munich museum, it apparently was lost during the last quarter of the nineteenth century.

Phyllomedusa bicolor (Boddaert)

Hyla bicolor – SPIX, 1824: 42, pl. XIII figs. 1, 2

Phyllomedusa bicolor – WAGLER, 1830b: 201; TSCHUDI, 1838: 27 (partly), 70 (partly); DUMÉRIEL & BIBRON, 1841: 629 (partly); PETERS, 1873a: 220, 226; NIEDEN, 1923: 337; MIRANDA-RIBEIRO, 1926: 103, 210; FUNKHAUSER, 1957: 38; BOKERMANN, 1966: 45; DUELLMANN, 1977: 159; VANZOLINI, 1981a: XX

SPIX (1824) did not propose a new name for this taxon, but referred to DAUDIN (1802). From SPIX's description it is only clear that he had at least one male and one female. PETERS (1873a) did not state how many specimens he examined either. In the old catalogue of the Munich museum there are four entries (one specimen each) for this species, viz., ZSMH 1190/0, 1192/0, 2514/0 and 2515/0. The first two only have as locality "Brazil", whereas the latter two are said to have come from "Rio Tonantin (To-cantins?) Neben-Fl[uss] d[es] Solimoens, Brasil" and in the margin are marked: "Original!". From this we conclude that ZSMH 2514 and 2515 were the specimens figured by SPIX (1824). All these frogs cannot be found and we must assume they were destroyed.

Bufo marinus L.

Bufo maculiventris Spix, 1824: 43, pl. XIV fig. 1

Bufo Agua – SPIX, 1824: 44, pl. XV; WAGLER, 1830b: 207; TSCHUDI, 1838: 51 (partly), 88 (partly)

Bufo Lazarus Spix, 1824: 45, pl. XVII fig. 1; WAGLER, 1830b: 207

Bufo albicans Spix, 1824: 47, pl. XVIII fig. 2

Bufo aqua – TEMMINCK & SCHLEGEL, 1838: 106 (partly)

Bufo aqua var. A Duméril & Bibron, 1841: 704 (partly)

Bufo marinus – PETERS, 1873a: 220 (partly), 221, 222, 226 (partly); BOULENGER, 1882: 315 (partly); NIEDEN, 1923: 138 (partly); MIRANDA-RIBEIRO, 1926: 134 (partly), 216 (partly); LUTZ, 1934: 143 (partly); BOKERMANN, 1966: 17, 21; MÜLLER, 1969: 341; VANZOLINI, 1981a: XX

Bufo m. marinus – MÜLLER, 1927: 261; CEI, 1968: 10; CEI, 1972: 86

There have been no problems in the allocation of the four SPIX names dealt with here, though earlier authors also included *B. ictericus* Spix in the synonymy of *B. marinus*. According to SPIX (1824) there were four syntypes of *B. maculiventris*, two specimens of *B. Agua*, two syntypes of *B. Lazarus* (formerly ZSMH 2513/0) and two of *B. albicans*. PETERS (1873a) does not mention how many specimens of *B. maculiventris* and *B. Agua* he examined, but of both *B. Lazarus* and *B. albicans* he examined two specimens. At the moment only two specimens of *B. albicans* are left, one (ZSMH 1140/0) in Munich and one (RMNH 2191) in Leiden. The fact that PETERS (1873a) examined two specimens of *B. albicans* from the Munich collection seems to indicate that SPIX originally had at least three specimens, two of which he mentioned in his book, omitting the one he sent to Leiden under that name in 1824. As this last specimen was considered to be *B. albicans* by SPIX and apparently served to establish his ideas about this taxon, in addition to the material still in Munich, it can be considered a syntype of that nominal taxon. We here select ZSMH 1140/0, a halfgrown specimen with a s-v length of 46 mm, a head length of 14.8 mm and tibia lengths of 17.3 – ? mm, as the lectotype of *Bufo albicans* Spix, 1824. Its condition is not very good, the specimen being flaccid. RMNH 2191 (halfgrown, flaccid and bleached) thus becomes a paralectotype. The Munich specimen agrees fairly well with figure 2 on plate XVIII in size and arrangement of the warts on the anterior part of the back, though we cannot be certain that this specimen served as model.

Of the other three SPIX names here dealt with no material could be retraced, either in Munich or in Leiden.

Bufo ictericus Spix

- Bufo ictericus* Spix, 1824: 44, pl. XVI fig. 1; WAGLER, 1830b: 207 (not certain of allocation); MÜLLER, 1969: 340; CEI, 1968: 10; CEI, 1972: 86; CEI, 1980: 182; VANZOLINI, 1981a: XX
Bufo aqua – TEMMINCK & SCHLEGEL, 1838: 106 (partly)
Bufo aqua – TSCHUDI, 1838: 51 (partly), 88 (partly)
Bufo aqua var. C Duméril & Bibron, 1841: 705 (partly)
Bufo marinus – PETERS, 1873a: 220 (partly), 226 (partly); BOULENGER, 1882: 315 (partly); NIEDEN, 1923: 138 (partly); MIRANDA-RIBEIRO, 1926: 134 (partly), 216 (partly); LUTZ, 1934: 143 (partly)
Bufo marinus ictericus – MÜLLER, 1927: 261
Bufo i. ictericus – COCHRAN, 1955: 26; BOKERMANN, 1966: 21

Following TEMMINCK & SCHLEGEL (1838) most authors considered *B. ictericus* a synonym of *B. marinus*. MÜLLER (1927) pointed out that there were constant differences in colour pattern and in parotoid shape between giant toads from SE Brazil and from Amazonia. He revived *ictericus* as a subspecies of *B. marinus*. LUTZ (1925, 1926b, 1934) described *B. paracnemis* from SE Brazil, but did not mention *B. ictericus*, which he (LUTZ, 1934) apparently still considered a synonym of *B. marinus*. COCHRAN (1950, 1955) treated *ictericus* as a full species with two subspecies, but MÜLLER (1969) showed that the differences between these two “subspecies” were not constant and consequently treated the species as monotypic. CEI (1972) and VANZOLINI (1981a) accepted his views.

SPIX (1824) mentioned two syntypes, PETERS (1873a) did not mention the number of specimens he examined. In the old catalogue of the Munich museum there is no mention of this species. The RMNH received one specimen of this species in 1824 from SPIX, which can be considered a syntype. We here select RMNH 2182 (♀, s-v length 156 mm, head length 50.4 mm, head width 62.5 mm, tibiae 52.5/51.9 mm long, parotoid length 51.2/47.4 mm) from “Brésil” (= province of Rio de Janeiro, Brazil), collected by SPIX, as lectotype of *Bufo ictericus* Spix, 1824. The specimen is bleached to such a degree that it is no longer possible to discern the original pattern. Comparison of the specimen with pl. XVI fig. 1 (SPIX, 1824) shows that there exist differences in the shape of the left parotoid and the bony ridges on the head, which make it unlikely that RMNH 2182 served as model for the figure.

Bufo crucifer Wied

- Bufo ornatus* Spix, 1824: 45, pl. XVI fig. 2; LUTZ, 1934: 155
Bufo dorsalis Spix, 1824: 46, pl. XVII fig. 2; LUTZ, 1934: 154
Bufo stellatus Spix, 1824: 46, pl. XVIII fig. 1
Bufo scaber – SPIX, 1824: 47, pl. XX fig. 1; LUTZ, 1934: 154
Bufo semilineatus Spix, 1824: 51, pl. XXI fig. 1; LUTZ, 1934: 154
Bufo Spixii Fitzinger, 1826a: 65
Bufo cinctus – WAGLER, 1830b: 207; PETERS, 1873a: 221
Bufo aqua – TEMMINCK & SCHLEGEL, 1838: 106 (partly)
Bufo aqua – TSCHUDI, 1838: 51 (partly), 88 (partly)
Bufo aqua var. A Duméril & Bibron, 1841: 704 (partly)
Bufo aqua var. C Duméril & Bibron, 1841: 705 (partly)
Bufo melanotis Duméril & Bibron, 1841: 710
Bufo crucifer – PETERS, 1873a: 222, 226; BOULENGER, 1882: 316; NIEDEN, 1923: 144; MIRANDA-RIBEIRO, 1926: 134 (partly, var. *pfrimeri* = *B. guttatus* Schn.), 216; LUTZ, 1934: 150; COCHRAN, 1955: 18; BOKERMANN, 1966: 19, 22, 23, 24; CEI, 1968: 15; CEI, 1972: 89; CEI, 1980: 200; VANZOLINI, 1981a: XX
Bufo crucifer var. *stellata* – LUTZ, 1934: 153
Bufo crucifer var. *Henseli* Lutz, 1934: 153

Soon after their description it became clear that *B. ornatus*, *dorsalis*, *stellatus*, *scaber* and *semilineatus* represented different ages of the species already described by WIED as *B. crucifer* (WAGLER, 1830b), although some authors (TEMMINCK & SCHLEGEL, 1838; TSCHUDI, 1838; DUMÉRIL & BIBRON, 1841) considered some of these names as synonyms of *Bufo marinus*. Even as recently as 1934 LUTZ treated

SPIX (1824) mentioned two syntypes of *B. ornatus*, five of *B. dorsalis*, whereas the number for *B. stellatus* and *B. semilineatus* was not stated and of *B. scaber* he mentioned two specimens. PETERS (1873a) examined two specimens of *B. ornatus*, three of *B. dorsalis* and one each of *B. stellatus*, *B. scaber* and *B. semilineatus*. LUTZ (1934) in his discussion of *B. crucifer* gives the impression of having examined the types, although he does not say so explicitly, or else based his information on PETERS (1873a), which appears most likely. COCHRAN (1955) examined the two syntypes of *B. ornatus* (ZSMH 2691/0). At present the following material is still available.

<i>Bufo ornatus</i>	2 hgr., ZSMH 2691/0, 1 hgr. RMNH 2157
<i>Bufo dorsalis</i>	1 ♀, 1 ♂, 1 hgr., ZSMH 1141/0, 1 ♂, RMNH 2189
<i>Bufo stellatus</i>	no material left (not mentioned in old catalogue of the Munich museum)
<i>Bufo scaber</i>	1 ♂, ZSMH 1343/0, 1 ♂, RMNH 2190
<i>Bufo (Oxyrhynchus) semilineatus</i>	1 juv., ZSMH 1331/0 (holotype)

The condition of the material varies from good (RMNH material, ZSMH 2691/0, 1343/0) to fair (ZSMH 1141/0) or bad (ZSMH 1331/0), all material being bleached to a certain degree.

We here make the following selections: ZSMH 2691/0 A (hgr., s-v length 56 mm, tibia lengths 23.1/23.2 mm) as lectotype of *Bufo ornatus* Spix, 1824, ZSMH 2691/0 B and RMNH 2157 becoming paralectotypes; ZSMH 1141/0 A (♀, s-v length 85 mm, tibia lengths 33.2/33.5 mm, specimen figured) as lectotype of *Bufo dorsalis* Spix, 1824, ZSMH 1141/0 B, C and RMNH 2189 becoming paralectotypes.

Some comments seem to be in place. Of *Bufo scaber*, SPIX reported a specimen of $3\frac{3}{4}$ ' (= ± 100 mm), a size corresponding with that of figure 1 of plate XX. However, both the Munich and the Leiden specimen are distinctly smaller (respectively 65 mm and ± 62 mm). Here again we may assume that the Leiden specimen (identified on the label as "*Bufo aqua*, syn. *B. scabriosus*", under which name it probably was received from SPIX) was not included in the number given by SPIX (1824) and that the original series consisted of at least three specimens, of which the largest apparently was destroyed. RMNH 2190 has well developed, black nuptial pads on the first and second fingers. It will be noted that there is a difference in the label names here, though both *scaber* and *scabriosus* are from the same Latin word, meaning rough. However, as SPIX tended to be a little careless about his use of names (cf. *Hyla zonata/zonalis*) we do not think this difference is very important. It is not clear when the different names arose. As the combination *Bufo scaber* had first been used by SCHNEIDER (1799) and also by DAUDIN (1802) and as SPIX (1824) refers to DAUDIN, we cannot consider his use of the combination as the proposal of a new name and therefore the material still available is not type material of the combination *Bufo scaber* as used by SPIX. However, as FITZINGER (1826a) based his replacement name *B. Spixii* on the material SPIX (1824) named *B. scaber*, both available specimens can be considered syntypes of *Bufo Spixii* Fitzinger, 1826 and we here select ZSMH 1343/0 (♂, s-v length 65 mm, tibia lengths 27.3/27.2 mm) as lectotype, RMNH 2190 becoming a paralectotype.

Apparently only one specimen of *B. (Oxyrhynchus) semilineatus* was available to start with, and consequently ZSMH 1331/0 can be considered the holotype. The old, round, handwritten (probably by WAGLER) parchment label accompanying this specimen reads as follows: „*Bufo/semitaeniatu*s/Spix. R. bras. tab /21. f. 1/ Brasilia /(Iter Spixii).". It is impossible to say whether the name on the label is a wrong notation, or whether the name as it was printed ("*semilineatus*") actually was by mistake. There is no doubt about the identity of the specimen, as it is recognisable in plate XXI figure 1 by the presence of three white tubercles near the corner of the mouth.

Bufo Ephippium Spix, 1824: 48, pl. XX fig. 2

Brachycephalus ephippium – WAGLER, 1830b: 207; DUMÉRIL & BIBRON, 1841: 729; PETERS, 1873a: 222, 226; JIMENEZ DE LA ESPADA, 1875: 120; BOULENGER, 1882: 156; MIRANDA-RIBEIRO, 1920: 313; NIEDEN, 1926: 75; MIRANDA-RIBEIRO, 1926: 177; COCHRAN, 1955: 5; BOKERMANN, 1966: 20; VANZOLINI, 1981a: XX

Ephippipther Spixii Cocteau, 1835: [10]

Brachycephalus Ephippium – TSCHUDI, 1838: 49, 87

There have hardly been any problems with the allocation of this name. The distribution of this species is restricted to the coastal area of E. Brazil, from Bahia in the north to São Paulo in the south. Guiana was cited as locality for this species by DUMÉRIL & BIBRON (1841), BOULENGER (1882) and NIEDEN (1926), but this was based on wrong information, the species certainly does not occur there (LESCURE, 1976: 516; HOOGMOED, 1979b).

The holotype of *Bufo Ephippium* Spix, 1824 is still present in Munich (ZSMH 1021/0, ad., s-v length 18 mm). It is in good condition and perfectly matches the description and the figure (both in size and in colour pattern). COCTEAU (1835) suggested the replacement name *Ephippipther Spixii* and ZSMH 1021/0 also must be considered the holotype of that name.

Physalaemus albifrons (Spix)

Bufo albifrons Spix, 1824: 48, pl. XIX fig. 2

Paludicola albifrons – WAGLER, 1830b: 206; PETERS, 1873a: 223, 226; BOULENGER, 1882: 234; MÉHELÿ, 1904: 215, 216; NIEDEN, 1923: 503; MIRANDA-RIBEIRO, 1926: 159 (partly), 221 (partly)

Chaunus marmoratus – TSCHUDI, 1838: 49 (partly), 87 (partly); DUMÉRIL & BIBRON, 1841: 646 (partly)

Physalaemus albifrons – PARKER, 1927: 460; BOKERMANN, 1966: 17; GORHAM, 1966: 151; LYNCH, 1970: 489; VANZOLINI, 1981a: XX

The two original syntypes were examined by PETERS (1873a) and MÉHELÿ (1904), who both provide the s-v length, whereas PETERS comments on the rough way in which palate and jaws have been dissected. These specimens (formerly catalogued as ZSMH 49/0 and 50/0) at present cannot be found in Munich and must be considered lost.

Bufo g. granulosus Spix

Bufo globulosus Spix, 1824: 49, pl. XIX fig. 1; MIRANDA-RIBEIRO, 1926: 133, 215

Bufo granulosus Spix, 1824: 51, pl. XXI fig. 2; WAGLER, 1830b: 207; PETERS, 1864: 81; PETERS, 1873a: 224, 226; BOULENGER, 1882: 324; NIEDEN, 1923: 145; VANZOLINI, 1981a: XX

Chaunus marmoratus Wagler, 1828a: 744; WAGLER, 1830b: 205; TSCHUDI, 1838: 87 (partly); DUMÉRIL & BIBRON, 1841: 646 (partly)

Bufo strumosus – DUMÉRIL & BIBRON, 1841: 716 (partly)

Bufo g. granulosus – COCHRAN, 1955: 22 (partly); GALLARDO, 1965: 110; BOKERMANN, 1966: 20; CEI, 1968: 12; CEI, 1972: 88

It took a while before it was realised that *B. globulosus* Spix and *B. granulosus* Spix represented the same taxon, before that time they were even regarded as belonging to different genera, but since PETERS (1873a) there have been no problems. GALLARDO (1965) discussed the relationship between several forms of the *granulosus* complex, treating them as subspecies. CEI (1972) does not agree and assumes that at least part of the subspecies are valid species.

GALLARDO (1965) on the authority of HELLMICH reported the holotypes of both nominal taxa lost, and we can only confirm this. The type of *B. granulosus* formerly was registered under ZSMH 40/0, that of *B. globulosus* (apparently a juvenile) under ZSMH 41/0

Bufo „group *typhonius*”

Bufo naricus Spix, 1824: 49, pl. XIV fig. 2

Bufo nasutus – WAGLER, 1830b: 207 (partly); TSCHUDI, 1838: 88 (partly)

Bufo margaritifer – DUMÉRIL & BIBRON, 1841: 718 (partly)

Bufo typhonius – PETERS, 1873a: 224 (partly), 226 (partly); BOULENGER, 1882: 317 (partly); NIEDEN, 1923: 139 (partly); LUTZ, 1934: 156 (partly); COCHRAN, 1955: 39 (partly); BOKERMANN, 1966: 22 (partly); VANZOLINI, 1981a: XX (partly)

Oxyrhynchus typhonius – JIMENEZ DE LA ESPADA, 1875: 171 (partly)

Otilophus typhonius – MIRANDA-RIBEIRO, 1926: 135 (partly), 217 (partly)

Bufo t. typhonius – CEI, 1968: 12 (partly); CEI, 1972: 89 (partly)

The taxonomy of the *Bufo typhonius* group is in a state of chaos. Recent fieldwork (a. o. by one of us, MSH) proved that in a number of places in the Amazonian area several species of this complex group occur sympatrically. Constant external morphological differences are difficult to define because of the great variability within the group, but generally there are differences in adult size, number of eggs, breeding call, calling stations and possibly also in serology. HOOGMOED presently is undertaking a revision of the entire group, so we do not wish to interfere here and present premature opinions, because many taxa still have to be delimited properly. We therefore prefer to indicate the nominal species described by SPIX (1824) with the notation “group *typhonius*”, not making any nomenclatural/taxonomic decisions here. The same reasoning applies to *Bufo nasutus*, *B. acutirostris* and *B. proboscideus*.

Unfortunately the type specimen, according to PETERS (1873a) a young female with a snout-vent length of 39 mm, was lost before the old catalogue of the Munich museum was prepared. At least it is not mentioned in there.

Bufo “group *typhonius*”

Bufo nasutus – SPIX, 1824: 50, pl. XIV fig. 3; WAGLER, 1830b: 207 (partly)

Bufo margaritifer – DUMÉRIL & BIBRON, 1841: 718 (partly)

Bufo typhonius – PETERS, 1873a: 224 (partly), 226 (partly); BOULENGER, 1882: 317 (partly); NIEDEN, 1923: 139 (partly); LUTZ, 1934: 156 (partly); COCHRAN, 1955 (partly); BOKERMANN, 1966: 22 (partly); VANZOLINI, 1981a: XX (partly)

Oxyrhynchus typhonius – JIMENEZ DE LA ESPADA, 1875: 171 (partly)

Otilophus typhonius – MIRANDA-RIBEIRO, 1926: 135 (partly), 217 (partly)

Bufo t. typhonius – CEI, 1968: 12 (partly); CEI, 1972: 89 (partly)

SPIX (1824) tentatively identified his specimen with SCHNEIDER’s *Bufo nasutus* and thus there was no proposal of a new name involved here. The original specimen on which SPIX based his description is still available (ZSMH 1146/0) and has the following morphometric data: s-v length 50.6 mm (PETERS, 1873a: 50 mm), head length 15.0 mm, head width 16.4 mm, tibia lengths 18.7/18.8 mm. In contrast to what PETERS (1873a) said about the specimen it is a male with vocal sacs, but without nuptial pads. The specimen agrees well with the description and the figure in SPIX (1824); at present it is bleached, flaccid and has lost the epidermis.

Bufo “group *typhonius*”

Bufo acutirostris Spix, 1824: 52, pl. XXI fig. 3

Bufo nasutus – WAGLER, 1830b: 207 (partly); TSCHUDI, 1838: 88 (partly)

Bufo margaritifer – DUMÉRIL & BIBRON, 1841: 718 (partly)

Bufo typhonius – PETERS, 1873a: 225 (partly), 226 (partly); BOULENGER, 1882: 317 (partly); NIEDEN, 1923: 139 (partly); LUTZ, 1934: 156 (partly); COCHRAN, 1955: 39 (partly); BOKERMANN, 1966: 17; VANZOLINI, 1981a: XX (partly)

Oxyrhynchus typhonius – JIMENEZ DE LA ESPADA, 1875: 171 (partly)

Otilophus typhonius – MIRANDA-RIBEIRO, 1926: 135 (partly), 217 (partly)

Bufo t. typhonius – CEI, 1968: 12 (partly); CEI, 1972: 89 (partly)

The holotype of *Bufo acutirostris* Spix, 1824 (ZSMH 1147/0, s-v length 35.4 mm (PETERS, 1873a: 37 mm), head length 12.8 mm, head width 13.6 mm, tibia lengths 13.6/13.2 mm) is a young male, fairly well preserved, with the pattern and the structure of the skin still visible. It agrees fairly well with the description and with the figure, though the latter is slightly larger than the specimen itself.

Bufo "group *typhonius*"

Bufo proboscideus Spix, 1824: 52, pl. XXI fig. 4

Bufo nasutus – WAGLER, 1830b: 207 (partly)

Bufo margaritifera – DUMÉNIL & BIBRON, 1841: 718 (partly)

Bufo typhonius – PETERS, 1873a: 225 (partly), 226 (partly); BOULENGER, 1882: 317 (partly); NIEDEN, 1923: 139 (partly); LUTZ, 1934: 156 (partly); COCHRAN, 1955: 39 (partly); BOKERMANN, 1966: 23; VANZOLINI, 1981a: XX (partly)

Otilophus typhonius – MIRANDA-RIBEIRO, 1926: 135 (partly), 217 (partly)

Bufo t. typhonius – CEI, 1968: 12 (partly); CEI, 1972: 135 (partly)

The holotype of *B. proboscideus* Spix, 1824 (ZSMH 1145/0, ♂, s-v length 47 mm, head length 15.4 mm, head width 15.6 mm, tibia lengths 16.5/15.9 mm) is rather badly preserved, it is flaccid and rather bleached, though part of the original pattern is still visible. It agrees fairly well with the description and, with some imagination, also with the illustration, which is of natural size.

As usual with taxa described in this group, soon after its description *B. proboscideus* was synonymised with *B. typhonius*. JIMENEZ DE LA ESPADA (1875) used the name *Oxyrhynchus proboscideus* for a large species with well developed cephalic crests, a distinctly visible tympanum and a pustulous skin. He was of the opinion that the specimens described under that name were identical with *O. proboscideus* (Spix), but after having studied the specimens concerned, we can say that this is not true and that another taxon is involved. The holotype of *B. proboscideus* Spix is an adult male of only half the size of those described by JIMENEZ DE LA ESPADA, the cephalic crests are hardly developed and covered with skin, the tympanum is indistinct and the skin is smooth. It may suffice to say that *B. proboscideus* Spix constitutes a taxon quite different from the preceding ones (*B. naricus*, *B. nasutus* and *B. acutirostris*). Further data will be provided by HOOGMOED in his forthcoming revision of the group.

MYERS & CARVALHO (1945), in describing *Bufo dapsilis*, considered the possibility that their new taxon might be identical with *B. proboscideus* Spix, but rejected this thought on the basis of trivial and invalid arguments, and completely accepted PETERS (1873a) identification of the holotype of *B. proboscideus* as *B. typhonius*, which in our opinion is not correct. Nevertheless, MYERS & CARVALHO (1945) correctly described their specimen as a new taxon, which recently proved to have a much wider distribution than formerly thought (DIXON, 1976; pers. obs. MSH). Again, we will not further expand on this and refer to HOOGMOED's work in progress.

Pipa pipa (L.)

Pipa cururu Spix, 1824: 53

Pipa curucuru Spix, 1824: pl. XXII figs. 1, 2

Asterodactylus pipa – WAGLER, 1830b: 199

Pipa Tedo – TSCHUDI, 1838: 55

Asterodactylus pipa – TSCHUDI, 1838: 89

Pipa americana – DUMÉNIL & BIBRON, 1841: 773; PETERS, 1873a: 225, 226; BOULENGER, 1882: 459; NIEDEN, 1923: 17

Pipa pipa – BARBOUR, 1923: 3; MIRANDA-RIBEIRO, 1926: 198, 226; DUNN, 1948: 9; BOKERMANN, 1966: 85; GORHAM, 1966: 4; VANZOLINI, 1981a: XX

Apparently no material of this species from the SPIX collection survived, it is not even mentioned in the old catalogue of the Munich museum, though BARBOUR (1923) cites MÜLLER that the three SPIX types "are still well preserved in the Munich Museum". From the beginning there was no doubt whatsoever that *Pipa cururu/curucuru* was a synonym of *P. pipa*, though BOKERMANN (1966) quite correctly point-

ed out that the material mentioned by Spix from Bahia (where *P. pipa* does not occur) very probably belonged to *P. carvalhoi* (Miranda-Ribeiro). Examination of the figures shows dermal flaps at the corners of the mouth, but not at the tip of the snout, where one is present as well in *P. pipa*, the rounded bodyform reminds one of *Pipa snethlagae* Müller rather than *P. pipa*. However, we prefer to attribute these differences to the poor quality of the figures and consequently consider *P. cururu* Spix, 1824 and *P. curucuru* Spix, 1824 as synonyms of *P. pipa*.

It should be noted here that there has been some mixing up of numbers in plate XXII. The upper figure (the largest) represents a female and should be number one, whereas the lower (smallest) figure represents a male and should be number two. These observations are corroborated by pencilled changes in the Munich copy of Spix (1824).

Also, it should be noted that the name “*cururu*” has been misspelled several times, starting with Spix himself, who wrote „*Curucuru*“ (twice) in the caption of plate XXII. WAGLER (1830b) cited Spix’s name as *Pipa Curururu*, TSCHUDI (1838) as *P. currucuru* and *P. curururu*, DUMÉRIl & BIBRON (1841) as *P. curururu*, NIEDEN (1923), BARBOUR (1923) and MIRANDA-RIBEIRO (1926) as *P. curucuru*, BOKERMANN (1966) as *P. cururu* and DUNN (1948) and GORHAM (1966) as *P. cururu* and *P. curucuru*. In the 1981 reprint of Spix (1824, 1825) and WAGLER (1824) under the title “Herpetology of Brazil” (SSAR), the caption of plate XXII of the frog-part reads: “*Pipa Curururu*” (twice). Comparison with the original books present in Munich and Leiden showed that the caption there, without any doubt read “*Pipa Curucuru*”. Closer examination of the reprint showed that the second “r” in “*Curururu*” differed from the first and third by having a thicker vertical leg. Our assumption was that the original “c” had been tempered with and altered into an “r” in the copy of the book used for the reprint. Upon our request dr. KRAIG ADLER (pers. comm.) kindly examined that copy and confirmed our suspicion, the second “r” indeed had been altered from a “c”. The use of “*curururu*” in our opinion constitutes a subsequent incorrect spelling of “*curucuru*” and therefore it is not an available name.

Spix (1825) Reptilia Crocodylia

Paleosuchus palpebrosus (Cuvier)

Jacaretinga moschifer Spix, 1825: 1, pl. I (?); Spix, 1826: 601

Crocod[ilus] trigonatus – BOIE, 1826: 118

Crocodylus palpebrosus – FITZINGER, 1827: 742

Champsia palpebrosa – WAGLER, 1830b: 140 (by inference); NATTERER, 1840: 317, 324

Alligator palpebrosus – GRAY, 1831b: 63 (partly)

Alligator Palpebrosus var. A Duméril & Bibron, 1836: 67

Caiman palpebrosus – GRAY, 1844: 67; GRAY, 1872b: 28; BOULENGER, 1889: 296; MÜLLER, 1924a: 315

Jacaretinga trigonatus – VAILLANT, 1898: 171 (Spix’s pl. I), 174

Jacaretinga palpebrosus – VAILLANT, 1898: 171 (Spix’s description only), 173; CARVALHO, 1955: 132

Paleosuchus palpebrosus – SCHMIDT, 1928: 210; MEDEM, 1958: 229 (Spix’s pl. I); WERMUTH & MERTENS, 1961: 352;

DONOSO-BARROS, 1966: 17; WERMUTH & MERTENS, 1977: 140; VANZOLINI, 1981a: XX

Crocodylus palpebrosus – WERNER, 1933: 35

Paleosuchus trigonatus – MEDEM, 1958: 229 (Spix’s description only)

Spix’s material of this species apparently no longer exists. No trace could be found of the specimen entered in the old catalogue of the Munich museum as “*Caiman palpebrosus*” under reg. no. ZSMH 138/0. We must assume, with MEDEM (1967), that it is lost (probably was destroyed during World War II). This is especially unfortunate as there are some doubts about the correct identity of *Jacaretinga moschifer* Spix, 1825. Most authors agree that it is a synonym of *Paleosuchus palpebrosus* (Cuvier), the exception being BOIE (1826) who considered both species of *Paleosuchus* as one, for which he

used the name *Crocodylus trigonatus* Schneider. VAILLANT (1898: 173–4) in a footnote pointed out that in his opinion SPIX's *J. moschifer* was a composite of two species, the description being applicable to *P. palpebrosus*, and plate I showing a specimen of *P. trigonatus*. MEDEM (1958, 1967) completely agreed with VAILLANT (1898) and argued (MEDEM, 1958: 230) that in his opinion it was “best placed in the synonymy of *trigonatus*, especially in view of the *trigonatus* pattern of the lower jaw in SPIX's figure, and the configuration of the snout.” MEDEM (1967: 142–3) repeats this view, stating “Seria lo más indicado, incluir a *moschifer* definitivamente en la sinonimia de *trigonatus* ya que no solamente la Tabla I de SPIX comprende una ilustración en colores bien elaborada de *trigonatus*, sino también en el texto se notan algunas discrepancias: mientras la descripción del color corresponde a *palpebrosus*, la de la cabeza reza “*caput acutum*” (p. 1), lo que es característico de *trigonatus*.” MEDEM's view was not followed by WERMUTH & MERTENS (1961, 1977). We cannot support VAILLANT's and MEDEM's opinion, though we must admit that the snout of the caiman in plate I is rather narrow and pointed and consequently resembles that of *P. trigonatus*. The colour pattern of body and mandible, however, is that of *P. palpebrosus* and not that of *P. trigonatus*, in which the transverse banding of the body is never as distinct as depicted here. VAILLANT's (1898) argument that SPIX's description mentions four lumbar scutes between the hindlimbs, whereas the plate only would show two, is not valid, because the narrowest scale row between the hindlimbs in the plate shows three scales. MEDEM (1958) showed in a satisfactory way that this number is variable in both species of *Paleosuchus*, though much more so in *trigonatus* than in *palpebrosus*. Moreover, we do have some additional information about the lost type specimen, which seems to refute VAILLANT's and MEDEM's opinions. As stated before, the type specimen formerly was catalogued under ZSMH 138/0 and identified as *Caiman palpebrosus* by MÜLLER. As MÜLLER had a special interest in crocodylians and was intimately acquainted with all South American species of caimans (MÜLLER, 1924b: 455) we do not doubt his identification and adhere to the common practice of synonymising *J. moschifer* Spix with *P. palpebrosus* (Cuvier), though we have to admit that plate I is badly executed and might give rise to misinterpretation.

Caiman c. crocodilus (L.)

- Jacaretinga punctulatus* Spix, 1825: 2, pl. 11; SPIX, 1826: 601
Crod. [= *Crocodylus*] *sclerops* – BOIE, 1826: 118
Alligator sclerops – FITZINGER, 1827: 742
Champsia sclerops – WAGLER, 1830b: 140, pl. 7 figs. I, 1–4, 42
Alligator Sclerops – GRAY, 1831b: 62 (partly)
Alligator punctulatus – DUMÉRIL & BIBRON, 1836: 91
Champsia punctulata – NATTERER, 1840: 317, 323
Jacare punctulatus – GRAY, 1844: 65
Jacare punctulata – GRAY, 1872b: 26
Caiman sclerops – BOULENGER, 1889: 294; SIEBENROCK, 1905: 31; SCHMIDT, 1928: 225
Jacaretinga sclerops – VAILLANT, 1898: 182
Jacaretinga crocodilus – MÜLLER, 1924a: 315
Jacaretinga c. crocodilus – WERNER, 1933: 28
Caiman crocodilus – CARVALHO, 1955: 136; VANZOLINI, 1981a: XX
Caiman crocodilus jacare – WERMUTH & MERTENS, 1977: 138

At present no material of this species collected by SPIX is preserved in the Munich or Leiden collections. Formerly there were two SPIX specimens of “*Jacaretinga crocodilus*”, from Brazil, registered in the old catalogue of the Munich museum under ZSMH 2481/0 and 2482/0. The former specimen was said to be the “Typus”, presumably of *J. punctulatus* Spix, 1824. Unfortunately both specimens apparently were lost during World War II.

WERMUTH & MERTENS (1961) did not list *J. punctulatus* Spix in any of their synonymies, whereas in 1977 they synonymised it with *Caiman crocodilus jacare*, a subspecies of the spectacled caiman, occurring well to the south of the Amazon river, whence SPIX's specimens came (“prope Ecgam, in ripa Soli-

moens"). As the subspecies of *C. crocodilus* occurring in the northern Amazon basin is the nominate form, *J. punctulatus* Spix must be considered a synonym of *C. c. crocodilus* (L.), an opinion strengthened by SPIX's description and illustration (in which the tell-tale dark spot on the lower jaw, which characterises *yacare*, is not mentioned, respectively shown).

MEDEM (1981) tried to reintroduce the old name *Caiman sclerops* (Schneider) for the species which since many years has been known as *C. crocodilus* (L.). He based this attempt on his apparent aversion of the law of priority (MEDEM, 1981: 53) (which has been accepted by the international scientific community) and on a wrong application of the Rules of Nomenclature. MEDEM himself admits the existence of type material of *Lacerta crocodilus* L., which of course was a mixture of several species, as also evidenced by that type material itself. Apart from the actual type material, LINNAEUS (1758) cited a considerable number of older authors, and consequently the material that formed the basis of their descriptions and/or illustrations, forms part of LINNAEUS' type-series as well. Among these synonyms is plate 104 of SEBA (1734) (which MEDEM (1981: 61) designated as lectotype (iconotype) of *Crocodilus sclerops* Schneider, 1801). The "holotype" of *L. crocodilus* L. is still present in the University of Uppsala (MEDEM, 1981: figs. 41A-C), whereas "paratypes" are present in Uppsala and Stockholm (MEDEM, 1981). As LINNAEUS (1758) did not base his description on a single specimen and did not explicitly name one as holotype either, we must accept that his description was based on a mixed series of syntypes, consisting of actual specimens, plates and descriptions. LÖNNBERG (1896) considered the specimens described by LINNAEUS (1749) in the *Amphibia Gyllenborgiana* as the "type specimen", but this cannot be a holotype in the sense of the International Code for Zoological Nomenclature, because the 1749 description is not valid. We therefore suggest selection of the specimen indicated by LÖNNBERG (1896) as "type specimen" and by MEDEM (1981) as "holotipo" (Univ. Uppsala, s-v length 60 cm, discoloured and desiccated) as lectotype of *Lacerta crocodilus* L., 1758, in order to prevent further nomenclatural problems that could upset the well established use of *Caiman crocodilus* (L.). MEDEM's (1981) objections against the use of the specific name *crocodilus* for the South American spectacled caiman on the basis of its being a nomen oblitum are not valid, because the 50 years rule (art. 23a and b of the 1964 version of the "Code") was abolished during the XVIIth International Congress of Zoology in Monaco, 1972 (Bull. Zool. Nomencl., 29 (4): 177) and replaced by art. 23 (a-b). As the name *Caiman crocodilus* (L.) is deeply entrenched in modern (especially conservation) literature, it would be very unfortunate indeed to start reusing an old name. We are therefore glad to establish that MEDEM's (1981) action was not based on firm facts and can be disregarded.

Melanosuchus niger (Spix)

- Caiman niger* Spix, 1825: 3, pl. IV; SPIX, 1826: 602; BOULENGER, 1889: 292; SIEBENROCK, 1905: 38; MÜLLER, 1924a: 316; SCHMIDT, 1928: 213
Cr[ocodilus] lucius – BOIE, 1826: 118
Alligator lucius – FITZINGER, 1827: 743
Alligator Sclerops – GRAY, 1831b: 62 (partly); DUMÉRIL & BIBRON, 1836: 79 (partly)
Champsia nigra – WAGLER, 1830b: 140 (by inference), pl. 7 F I f. 1–2, figs. 5–41; NATTERER, 1840: 316, 320
Jacare nigra – GRAY, 1844: 65; GRAY, 1872b: 25
Jacaretinga niger – VAILLANT, 1898: 182
Melanosuchus niger – WERNER, 1933: 31; CARVALHO, 1955: 135; WERMUTH & MERTENS, 1961: 352; WERMUTH & MERTENS, 1977: 139

From SPIX's (1825) text it is not clear how many specimens of this taxon were available to him, but according to a citation in TIEFENBACHER (1982: 9) SPIX and MARTIUS collected at least two skeletons of adults. In the old catalogue of the Munich museum three specimens of this species are listed as belonging to the SPIX collection: ZSMH 3/0 as *Caiman niger* (1 skull in the exhibition), 2480/0 as *Jacaretinga nigra* (marked as "Typus") and 3039/0 as *Melanosuchus niger* (1 skull, marked as "Typus"). Moreover, one additional specimen was registered under 3045/0 (*M. niger*, „vermutlich N. Brasilien, SPIX?"), which possibly formed part of SPIX's collection. At the moment only two specimens are left:

the juvenile ZSMH 2480/0, completely preserved in spirits, and the adult skull + lower jaw ZSMH 3039/0. ZSMH 2480/0 ("Brasilia, Iter SPIX") is in fair condition, the epidermis has disappeared from head, back and belly but is still present on legs and tail. The s-v length is 250 mm, tail length 298 mm, head length 81.6 mm, head width 36.2 mm, head depth 31.6 mm, 17 rows of dorsals, 2 rows of lumbar scales, 4 rows of postoccipitals, 4 rows of cervicals, 22 rows of ventrals. Although this specimen was not described, nor depicted, we here select it as lectotype of *Caiman niger* Spix, 1825, as it is beyond doubt that it formed part of SPIX's original material. The adult skull + lower jaw ZSMH 3039/0 ("Amazonas, Spix") automatically becomes a paralectotype. According to data on one of the labels accompanying it, this skull belonged to a skeleton that was destroyed by fire in the exhibition in 1944. Measurements of the skull: tip of snout – occipital 43 cm, tip of snout-posterior edge of lower jaw 54.5 cm, distance between corners of lower jaw 22.7 cm, greatest width of skull at quadratojugals 25.5 cm, width of pileus immediately posteriorly of orbits 10.5 cm. According to TIEFENBACHER (1982: 9) this specimen came from the environs of Manaus.

Caiman l. latirostris (Daudin)

Caiman fissipes Spix, 1825: 4, pl. III; SPIX, 1826: 602

Croc[odilus] acutus – BOIE, 1826: 118 (with question-mark)

Alligator fissipes – FITZINGER, 1827: 742

Champsia fissipes – WAGLER, 1830a: pl. XVII; WAGLER, 1830b: 140; NATTERER, 1840: 316, 321

Alligator Sclerops – GRAY, 1831b: 62 (partly)

Alligator Cynocephalus – DUMÉRIL & BIBRON, 1836: 86

Jacare fissipes – GRAY, 1844: 64

Jacare latirostris – GRAY, 1872b: 25 (partly)

Caiman latirostris – BOULENGER, 1889: 293; SIEBENROCK, 1905: 35; SCHMIDT, 1928: 216; CARVALHO, 1955: 136;

WERMUTH & MERTENS, 1961: 350; FREIBERG & CARVALHO, 1965: 355

Jacaretinga latirostris – VAILLANT, 1898: 191; WERNER, 1933: 30

Caiman l. latirostris – WERMUTH & MERTENS, 1977: 138

At present only a single adult skull + lower jaw of this species, collected by SPIX in Brazil is extant in the Munich collection (ZSMH 2515/0 a). According to the old catalogue this skull formerly formed part of a complete skeleton, the remainder of which probably was destroyed during World War II. SPIX's description apparently is based on an adult specimen, of which he provided measurements and scalecounts. As the skull at hand is only of a half grown specimen, we have to accept that SPIX had more material at his disposition, of which this was one. We therefore select the skull + lower jaw ZSMH 2515/0 a as the lectotype of *Caiman fissipes* Spix, 1825. Measurements: tip of snout – occipital 18.2 cm, tip of snout – posterior edge of lower jaw 23 cm, distance between corners of lower jaw 9.6 cm, greatest width of skull at quadratojugals \pm 11.2 cm (at right hand side a small piece is missing), width of pileus immediately posteriorly of orbits 6 cm, width of snout directly anteriorly of orbits 9.2 cm, tip of snout – orbit 10.7 cm. In each half of the jaws there are 18 teeth. On the left hand side a small hole is present in the upper jaw on the border between premaxilla and maxilla, to accommodate the fourth tooth of the lower jaw.

FREIBERG & CARVALHO (1965) doubt the synonymisation of *C. fissipes* with *C. latirostris* and suggest that further research would be warranted.

Iguana iguana iguana (L.)

Iguana squamosa Spix, 1825: 5, pl. V

Iguana viridis Spix, 1825: 6, pl. VI

Iguana coerulea Spix, 1825: 7, pl. VII (non *Iguana coerulea* Daudin, 1802)

Iguana emarginata Spix, 1825: 7, pl. VIII

Iguana lophyroides Spix, 1825: 8, pl. IX

Iguana delicatissima – BOIE, 1826: 118

Iguana tuberculata – BOIE, 1826: 118; FITZINGER, 1827: 743; DUMÉRIL & BIBRON, 1837: 203; GRAY, 1845: 186; PETERS, 1877: 407, 413; BOULENGER, 1885b: 189; GOELDI, 1902: 514

Hypsilophus Iguana – WAGLER, 1830b: 147

Iguana Tuberculata – GRAY, 1831a: 36

Hypsilophus tuberculatus – FITZINGER, 1843: 55

Iguana i. iguana – HELLMICH, 1960: 52; CUNHA, 1961: 91; PETERS & DONOSO-BARROS, 1970: 149; VANZOLINI, 1981a: XX

Iguana iguana – LAZELL, 1973: 7; ETHERIDGE, 1982: 29

SPIX (1825) described the present species under five different names, one of which, *Iguana coerulea* Spix, 1824, apparently is a junior primary homonym of *I. coerulea* Daudin, 1802. SPIX's mistake was soon recognised by BOIE (1826) who synonymised all five names with *I. delicatissima* Laurenti, 1768, at the time generally considered to be identical with *I. tuberculata* Laurenti, 1768 (= *I. i. iguana* (L., 1758)). In a comment SPIX (1826) refutes BOIE's remarks without giving additional information, only saying that his 1825 text should be carefully reread and that of all described forms several (up to five) specimens are available and in good condition. However, all later authors followed BOIE and rightfully considered the five names synonyms of *I. i. iguana*.

PETERS (1877) re-examined the SPIX material, but unfortunately did not mention how many specimens of each species he examined, as he did for the frogs (PETERS, 1873a). The next author with direct access to the type-material of the SPIX names is HELLMICH (1960), who provided museum numbers and measurements of the available specimens.

At present seven specimens of *I. i. iguana*, which served as types for SPIX's names are present in the Munich collection and one is in Leiden. Two specimens qualify as syntypes of *Iguana squamosa* (♀, ZSMH 537/0; ♂, ZSMH 2716/0), whereas from the old catalogue it is clear that specimens registered under ZSMH 542/0 and ZSMH 3217/0 have been lost during World War II. The meristic data for the two remaining specimens are, respectively for ZSMH 537/0 and 2716/0: s-v length 285 mm, 275 mm, tail length 515 mm, 730 mm, length 4th toe 57 mm, 59 mm, enlarged tooth-like scales on gular fold 12, 10, femoral pores 15/14, 17/18. Both specimens have as collecting locality "Bahiae, Parae", exactly the notation in the original text. ZSMH 537/0 conforms best to the description and illustration of *Iguana squamosa* Spix, 1825 and is here selected as lectotype. ZSMH 2716/0 thus becomes a paralectotype. The condition of both types is poor, ZSMH 537/0 has a completely cut belly, ZSMH 2716/0 has a broken tail and is missing most of the epidermis.

SPIX apparently had material of *I. viridis* from two localities: Rio São Francisco and Rio Itapicuru. At present only one specimen of this material remains (♂, ZSMH 540/0, s-v length 250 mm, tail length 710 mm, length 4th toe 51 mm, enlarged tooth-like scales on gular fold 8, femoral pores 14/16). The exact locality is unknown, because both forementioned localities are mentioned on the label. The specimen agrees only partially with the data and picture provided by SPIX (1825), which could be explained by the disappearance of the other syntype(s). We here select ZSMH 540/0 as lectotype of *I. viridis* Spix, 1825. Its condition is rather poor, the head, throat and gular fold show several holes caused by small shot, whereas the dorsal surface of the head is split by a small caliber bullet.

Iguana coerulea Spix, 1825 is a junior primary homonym of *I. coerulea* Daudin, 1802. At present no material is left, though in the old catalogue of the Munich museum, under ZSMH 71/0, two specimens

from "Rio S. Francisco, Brasilien" are indicated as "Typus v. *Iguana coeruleo* Spix". We have to assume that these specimens were destroyed during World War II. Apparently this name was based on juveniles.

The description of *I. emarginata* does not give a clue either as to the number of specimens examined, but the description and the illustration of this aberrant specimen are so specific and agree in such detail with ZSMH 535/0, that we have to accept this specimen as the holotype of *Iguana emarginata* Spix, 1825. ZSMH 535/0 is a young specimen from the Rio São Francisco (s-v length 142 mm, tail length 390 mm, length 4th toe 31 mm, enlarged tooth-like scales on gular fold 10, femoral pores 16/16). The name was prompted by the emargination of the gular fold (SPIX, 1825: pl. VIII).

I. lophyroides apparently was described on the basis of several syntypes ("non rara") from Rio de Janeiro and Bahia. HELLMICH (1960) reported four existing syntypes, two each in ZSMH 536/0 and 546/0, which is in accordance with the data in the old catalogue. At present only three specimens remain in Munich, one in ZSMH 536/0, two in ZSMH 546/0, whereas an additional specimen (received under this name from SPIX and reported upon by BOIE (1826)) is present in Leiden (RMNH 2780). Of these four specimens ZSMH 546/0 A (s-v length 78 mm, tail length 208 mm, length 4th toe 20 mm, enlarged tooth-like scales on gular fold 8, femoral pores 14/14) agrees best with SPIX's description and illustration and is here selected as lectotype of *Iguana lophyroides* Spix, 1825. ZSMH 536/0, 546/0 B and RMNH 2780 become paralectotypes.

There are some discrepancies between our findings and those of ETHERIDGE (1982: 29, 30) concerning types in the Munich collection. E. g. we cannot find any indication either in the catalogue or in the collection that ZSMH 520/0 is a syntype of *I. squamosa* Spix, or for that matter, was a specimen collected by SPIX. Actually, according to the old catalogue of the Munich museum it contains "*Liolaemus pictus* D. u. B., Puerto Montt, Südchile, 4 Expl., leg. Heppke" which still is extant. There is no indication that ZSMH 540/0 was the holotype of *I. viridis* Spix, so we preferred to select it as lectotype. ZSMH 535/0 only contains a single specimen, which we regard as the holotype of *I. emarginata* Spix, there is no indication that two specimens were ever registered under this number, as ETHERIDGE (1982: 30) stated.

Uranoscodon superciliosa (L.)

Lophyrus Xiphosurus Spix, 1825: 9, pl. X; SPIX, 1826: 602

Lophyrus aureonitens SPIX, 1825: 12, pl. XIIIa; SPIX, 1826: 603

Uranoscodon superciliosa – KAUP, 1826: 90

Ophryessa superciliosa – BOIE, 1826: 119; FITZINGER, 1827: 743

Ophryessa superciliosa – WAGLER, 1830b: 149; DUMÉRIL & BIBRON, 1837: 238; GRAY, 1845: 196; PETERS, 1877: 407, 413; BOULENGER, 1885b: 111; GOELDI, 1902: 527

Oph[yessa] Superciliosa – GRAY, 1831a: 40

Oph[yessa] Margaritaceus – GRAY, 1831a: 40 (partly)

Hypsibatus superciliosus – FITZINGER, 1843: 57

Uranoscodon superciliosa – CUNHA, 1961: 70; PETERS & DONOSO-BARROS, 1970: 275

Uranoscodon superciliosum – VANZOLINI, 1981a: XX, XXI

At present three specimens of this species that served SPIX as types for the description of *L. Xiphosurus* are still available: ZSMH 3189/0 (2♂) and RMNH 2915 (1♀, reported by BOIE (1826)). Their meristic data are respectively (ZSMH 3189/0 A, B; RMNH 2915): s-v length 113 mm, 114 mm, 127 mm, tail length 251 mm, 280 mm, 301 mm. The two Munich specimens originate from the Rio Solimões, Brazil, the Leiden specimen only is provided with the locality "Brésil". As SPIX (1825) expressly stated that under the name *L. Xiphosurus* he described a male, we here select ZSMH 3189/0 B as the lectotype of *Lophyrus Xiphosurus* Spix, 1825. ZSMH 3189/0 A and RMNH 2915 thus automatically become paralectotypes.

According to the old catalogue of the Munich museum ZSMH 113/0 was the "Typus" of *Lophyrus aureonitens* Spix, 1825. Unfortunately this specimen (from Rio Amazonas, Brazil) is no longer present

and presumably was lost during World War II. From the plate and the description it is clear that *L. cauanat reonitens* was a juvenile *U. superciliosa*.

Enyalius catenatus (Wied)

- Lophyrus rhombifer* Spix, 1825: 9, pl. XI
Lophyrus margaritaceus Spix, 1825: 10, pl. XII fig. 2
Lophyrus albomaxillaris Spix, 1825: 11, pl. XIII fig. 2; SPIX, 1826: 603
Ur[aniscodon] rhombifer – KAUP, 1826: 90
Ur[aniscodon] margaritaceus – KAUP, 1826: 90
Ophryessa catenata – BOIE, 1826: 119; FITZINGER, 1827: 744
Ophryessa margaritaceus – FITZINGER, 1827: 744
Lophyrus Rhombifer – SPIX, 1826: 603
Enyalius catenatus – WAGLER, 1830b: 150 (by inference); BOULENGER, 1885b: 118; GOELDI, 1902: 525; ETHERIDGE, 1969: 244; ETHERIDGE, 1970b: 118
Enyalius margaritaceus – WAGLER, 1830b: 150
Oph[ryessa] Rhombifer – GRAY, 1831a: 40
Oph[ryessa] Margaritaceus – GRAY, 1831a: 40
Enyalus rhombifer – DUMÉRIL & BIBRON, 1837: 231
Hypsibates catenatus – FITZINGER, 1843: 57
Hypsibates margaritaceus – FITZINGER, 1843: 58
Enyalius rhombifer – GRAY, 1845: 195
Agama catenata – PETERS, 1877: 407, 409
Ophryoëssa catenata – PETERS, 1877: 413
Ophryoëssa catenata var. Peters, 1877: 413
Enyalius c. catenatus – JACKSON, 1978: 20; VANZOLINI, 1981a: XXI

This species was described by SPIX (1825) under three different names. According to ETHERIDGE (1969), SPIX (1825) depicted an adult male (*L. margaritaceus*), an adult female (*L. rhombifer*) and a juvenile female (*L. albomaxillaris*), which show patterns shared by several species of *Enyalius*. At the same time ETHERIDGE reported all type material lost or destroyed and on the basis of measurements of the illustrations came to the conclusion that the three either belonged to *E. catenatus* or to *E. brasiliensis* (Lesson), “so that the synonymy of SPIX’s three species with *catenatus* must be considered tentative”. Since ETHERIDGE’s paper it has been established that material of these nominal species, collected by SPIX, still exists both in Munich and in Leiden. All specimens involved turned out to belong to *E. catenatus* (distinct from *E. brasiliensis* a. o. by having smooth subdigital lamellae).

Lophyrus margaritaceus Spix was considered a valid species by most authors before 1843. DUMÉRIL & BIBRON (1837) placed it in the synonymy of their *Enyalus rhombifer* with a question-mark, FITZINGER (1843) still considered it specifically distinct from *catenatus*, PETERS (1877) considered the Munich specimens which he examined under this SPIX name a variety of *Ophryoëssa catenata*, not realising that he was dealing with males of this sexually dimorphic species, and BOULENGER (1885b) listed it without hesitation as a synonym of *E. catenatus* and in this was followed by all recent authors.

At present only one specimen of SPIX’s original series of *L. rhombifer* is still extant (RMNH 2911, juv., s-v length 41 mm, tail length 68 mm). It is a very young specimen of *E. catenatus*, badly preserved, flaccid, bleached and having lost all of its epidermis. No traces of the original pattern can be discerned. From SPIX’s description and illustration it is evident that he had before him at least one adult female (ETHERIDGE, 1969) and the juvenile is not mentioned. As we may assume that it helped SPIX to establish his concept of *L. rhombifer* (the name under which it was received in Leiden from Munich), it can be considered one of the syntypes. We here select it (RMNH 2911) as lectotype of *Lophyrus rhombifer* Spix, 1825. According to the old catalogue of the Munich museum, ZSMH 110/0 was a type of *L. rhombifer* (“Rio Solimoëns, Brasilien”), but this specimen (probably the one PETERS (1877) reported on) has disappeared and must be considered lost.

The only remaining material of *L. albomaxillaris* also is to be found in Leiden. The specimen (RMNH 3058) is a slightly older juvenile than RMNH 2911 and belongs to the same taxon. Its condition also is rather poor, it is also flaccid and bleached, its bones are largely decalcified, but it still shows traces of the original pattern. For instance, it shows a very distinct demarcation between the white upper lips (supralabials, suboculars and lorilabials) and the brown sides and upper surface of the head. The vertebral pattern only is vaguely discernable, whereas the pattern of the limbs and throat is much more distinct. As SPIX (1825) mentioned two localities (Pará, Rio de Janeiro) whence he had obtained this taxon, we must assume that he had more specimens before him and consequently we select RMNH 3058 (juv., s-v length 45 mm, tail length 89 mm, tibiae 13/11.8 mm, length left hindlimb 42 mm, scales around midbody 155) as lectotype of *Lophyrus albomaxillaris* Spix, 1825. The specimen formerly registered under ZSMH 501/0 from "Brasilien" and indicated as type of this nominal taxon, now apparently is lost.

JACKSON (1978) examined both RMNH 2911 (lectotype *L. rhombifer*) and RMNH 3058 (lectotype *L. albomaxillaris*) and identified them as *E. c. catenatus* (Wied) (JACKSON in litt. to HOOGMOED 21-II-1976; JACKSON, 1978: 20). We do not feel very confident about this identification because both specimens are in poor condition and seem to combine characters of *E. c. catenatus* and *E. c. pictus* (Wied) (the enlarged supraoculars are smooth and smaller than or equal to the circumorbitals, ventrals keeled). We therefore prefer to refer to them as *E. catenatus* (Wied).

At present three syntypes of *L. margaritaceus* are still extant, two in Munich (ZSMH 2743/0) and one in Leiden (RMNH 3061). Of these three only RMNH 3061 was examined by JACKSON (1978) for his revision of the genus *Enyalius*. According to him (JACKSON, 1978: 20) this was a specimen of *E. c. catenatus* and consequently he listed *L. margaritaceus* as a synonym of that taxon.

The three syntypes (all ♂; s-v length, of respectively ZSMH 2743/0 A, B; RMNH 3061, 90 mm, 89 mm, 95 mm, tail 195 mm, 197 mm, 204 mm, tibiae 29.6/29.9 mm, 27.8/27.5 mm, 30.1/30.3 mm long, scales around midbody 138, 146, 141), using JACKSON's (1978) key and descriptions, key out to *E. catenatus*, though it is not possible for us to say to which subspecies, because they apparently combine characters of both *E. c. catenatus* and *E. c. pictus*. The canthus rostralis is distinctly curved inward and only reaches $\frac{2}{3}$ – $\frac{3}{4}$ the distance between supraciliars and nasal; the supraoculars are smooth, distinctly enlarged near the circumorbital scales and diminish in size towards the supraciliars; the circumorbital scales are as large as or slightly larger than the enlarged supraoculars and are distinct from the surrounding head scales, which are slightly convex and have a smooth appearance, as does the upper surface of the head; the parietal is nearly as wide as long; the two postmentals are wider than long; the mental is much wider than long; ventrals keeled; infratibials weakly keeled, as wide as long; the subdigital lamellae are smooth; the scales on the sole are relatively large, indistinctly keeled and slightly imbricate; scales on the tail are in oblique vertical rows, forming verticils with 6–5 dorsal and 4–3 ventral scales; the tibiae are 30.89–33.22% of the snout-vent length; when the hindlimb is carried forward along the body, the heel (nearly) reaches the tympanum and the fourth toe extends beyond the tip of the snout; the throat is purplish with a distinct, sharply circumscribed white patch on the lowermost part of the gular sac. This combination of characters does not exactly fit any of the subspecies of *catenatus* distinguished by JACKSON (1978), though it is quite obvious that the specimens certainly do not belong to *bibronii* Boulenger. As we lack enough comparative material we leave the decision as to which taxon exactly these syntypes of *L. margaritaceus* should be referred to, to future workers.

We here select ZSMH 2743/0 A as lectotype of *Lophyrus margaritaceus* Spix, 1825 because it shows a distinct row of supratemporals, as does the specimen depicted on plate XII figure 1 (SPIX, 1825). ZSMH 2743/0 B and RMNH 3061 become paralectotypes. The illustration is slightly larger than natural size of any of the two Munich syntypes, but approximately agrees in size with RMNH 3061. From SPIX's (1825) text it is clear that he based his description of *L. margaritaceus* on several specimens, which originated from Bahia and the Solimões. There is no way of ascertaining how many specimens SPIX originally had, but the locality Solimões probably is wrong, because *E. catenatus* is not known from the Amazonian forest (ETHERIDGE, 1969, 1970b; JACKSON, 1978). The only species of *Enyalius*

known from the Amazonian region is *E. leechii* Boulenger, known only from a single specimen from Santarem and distinguished from all other species of *Enyalius* except *E. brasiliensis* (Lesson) by having distinctly keeled subdigital lamellae.

Plica umbra ochrocollaris (Spix)

Lophyrus ochrocollaris Spix, 1825: 10, pl. XII fig. 2

Ur[aniscodon] *Umbra* – KAUP, 1826: 90

Ophryessa ochrocollaris – BOIE, 1826: 119; FITZINGER, 1827: 744 (by inference)

Hypsibatus Umbra – WAGLER, 1830b: 150; FITZINGER, 1843: 58

Oph[yessa] Picta – GRAY, 1831a: 40 (partly)

Uperanodon ochrocollare – DUMÉRIl & BIBRON, 1837: 248

Uraniscodon umbra – GRAY, 1845: 223; BOULENGER, 1885b: 179; GOELDI, 1905:

Hyperanodon umbra – PETERS, 1877: 408, 413

Plica umbra – CUNHA, 1961: 80

Plica umbra ochrocollaris – ETHERIDGE, 1970a: 251; ETHERIDGE, 1970c: 231 (partly); VANZOLINI, 1981a: XXI (partly)

SPIX (1825) reports this taxon from “sylvis fluminis Amazonum” and from his description it is not clear how many specimens he had before him. According to the old catalogue of the Munich museum ZSMH 747/20 was one of the types, but it is no longer extant and apparently was lost during World War II. The Leiden collection contains one SPIX specimen, which can be assumed to have formed part of the type series. The specimen (RMNH 2899, ♂, s-v length 75 mm, tail length 174 mm) is in fair shape, it is missing part of the epidermis and its colours have faded, though the pattern on the posterior part of the head and adjacent region of the neck is still distinct. It is clear that this specimen is not the one described or pictured, it is slightly smaller, has only 12 scales in the crest on the neck and has a pattern differing in details from the one depicted. Nevertheless, as this seems to be the only syntype left, we here select it as lectotype of *Lophyrus ochrocollaris* Spix, 1825.

Plica plica (L.)

Lophyrus Panthera Spix, 1825: 11, pl. XIII fig. 1

Ur[aniscodon] *picta* – KAUP, 1826: 91 (partly)

Ophr[yessa] Panthera – BOIE, 1826: 119

Lophyrus (Ophryessa) ochrocollaris – FITZINGER, 1827: 744

Hypsibatus pictus – WAGLER, 1830b: 150 (partly); FITZINGER, 1843: 58 (partly)

Oph[yessa] Picta – GRAY, 1831a: 40 (partly)

Uperanodon pictum – DUMÉRIl & BIBRON, 1837: 251 (partly)

Uraniscodon pictum – GRAY, 1845: 223 (partly)

Hypsibatus panthera – PETERS, 1877: 413

Uraniscodon plica – BOULENGER, 1885b: 180; GOELDI, 1902: 522

Plica plica – CUNHA, 1961: 78; ETHERIDGE, 1970a: 242

Plica umbra ochrocollaris – ETHERIDGE, 1970c: 231 (partly); VANZOLINI, 1981a: XXI (partly)

The only record available for a specimen of this species collected by SPIX is in the old catalogue of the Munich museum, from which it is clear that ZSMH 746/20 probably was the type of *L. Panthera* Spix, 1825. Unfortunately this specimen is now lost. The specimen described by SPIX was long considered a synonym of *Agama picta* Wied (= *Enyalius catenatus pictus* (Wied)). From PETERS' (1877) text it is clear that only one type specimen of *L. Panthera* was involved and he was inclined to consider it a juvenile specimen of *Hypsibatus punctatus* Dumérl & Bibron (= *Plica plica* (L.) but for the low number of labials. In the end he decided to treat it as a separate species: *H. panthera*. BOULENGER (1885b) correctly associated *L. Panthera* Spix with *P. plica* and so did ETHERIDGE (1970a). Strangely enough ETHERIDGE (1970c) associated *L. Panthera* Spix with *P. umbra ochrocollaris* and so did VANZOLINI (1981a).

©ZooKeys 720: 386–400 (2017) We would like to point out that although the type specimen is lost, there can be no doubt about its being a juvenile *Plica plica* (L.). This is clear from the description (colour description, banding on body and limbs, large interparietal scale, rounded tail, snout-vent length) and the illustration (pattern on body and limbs, ditto on interparietal, presence of spine-like scales in front of ear, depressed body, long slender limbs), which both clearly point to *Plica plica* (L.) and not to *P. umbra ochrocollaris* (Spix).

Tropidurus torquatus torquatus (Wied)

Agama hispida Spix, 1825: 12 (partly, as far as description regards female)

Agama tuberculata Spix, 1825: pl. XV fig. 1; BOIE, 1826: 119

Tropidurus *Tuberculata* – GRAY, 1831a: 41 (partly)

Tropidurus torquatus – FITZINGER, 1827: 745 (partly); WAGLER, 1830b: 147 (partly); FITZINGER, 1843: 72 (partly); PETERS, 1877: 409; BOULENGER, 1885b: 176; GOELDI, 1902: 518; PETERS & DONOSO-BARROS, 1970: 270; VANZOLINI et al., 1980: 102 (partly)

Ephymotes torquatus – DUMÉRIL & BIBRON, 1837: 344 (partly)

Taraguira torquata – GRAY, 1845: 220 (partly)

Tropidurus t. torquatus – BURT & BURT, 1931: 298; CUNHA, 1961: 74

Tropidurus hispidus – VANZOLINI, 1981a: XXI (partly)

SPIX (1825) apparently had his plates made before he wrote the text of the book and when the drawings were made he discerned between *Agama hispida* and *A. tuberculata*. Only later he came to the conclusion that they represented the same species and that the first name applied to the male, the second to the female. There has been much confusion whether SPIX's original assumption was right and both names were either treated as one species or as two different ones, until PETERS (1877) examined the SPIX material again and pointed out that two species were involved: *Tropidurus torquatus* and *T. hispidus*. His opinion has been accepted by all subsequent authors, though there was much dispute whether these two taxa deserved the rank of species or subspecies. Pending an extensive study of this lizard group (VANZOLINI et al., 1980), which seems to be composed of a superspecies, including species with their own „Rassenkreis“, we here accept a moderately conservative view and regard them as subspecies (also see below).

From PETERS' (1877) text it could be concluded he only saw one specimen, a female, of *A. tuberculata* and several males of *A. hispida*. As the Munich collection at present contains two specimens of *T. t. torquatus* collected by SPIX, we nevertheless must assume SPIX had several specimens at his disposal.

HELLMICH (1960) reported the existence of the type of *Agama tuberculata* Spix, 1824 (ZSMH 531/0). This specimen is still available in the Munich collection, where an additional specimen collected by SPIX (ZSMH 523/0) was found. Both specimens are females, their respective meristic data are: s-v length 75 mm, 64 mm, tail length 112 mm, 108 mm, scales around midbody 112, 108, of which 44 ± 4 , 48 are keeled. The preservation of both specimens is poor, they are flaccid, of both the tail is broken and of ZSMH 531/0 the right flank is torn open. Attached to ZSMH 531/0 is an old label in WAGLER's handwriting: „*Agama* . . . , *Tropidurus torquatus* Wied, *Agama torquatus* Spix, Taf. XV fig. 1 Brasil“. ZSMH 531/0 agrees best with the description and the illustration and is here selected as lectotype of *Agama tuberculata* Spix, 1824. ZSMH 523/0 becomes a paralectotype. Apparently these specimens are the ones from Rio de Janeiro, which was one of the two localities mentioned by SPIX (1825: 13).

Tropidurus torquatus hispidus (Spix)

Agama hispida Spix, 1825: 12 (partly, as far as the description regards male), pl. XV fig. 2; BOIE, 1826: 119

Agama nigrocollaris Spix, 1825: 13, pl. XVI fig. 2

Agama cyclurus Spix, 1825: 14, pl. XVII fig. 1

Uraniscodon hispida – KAUP, 1826: 91

Tropidurus torquatus – FITZINGER, 1827: 745 (partly), 746; WAGLER, 1830b: 147 (partly); VANZOLINI et al., 1980: 102 (partly); VANZOLINI, 1981a: XXI

Tropidurus *Torquatus* – GRAY, 1831a: 41 (partly)

Tropidurus *Tuberculata* – GRAY, 1831a: 41 (partly)

Tropidurus *Cyclurus* – GRAY, 1831a: 42

Ecphymotes torquatus – DUMÉRIL & BIBRON, 1837: 344 (partly)

Tropidurus microlepidotus Fitzinger, 1843: 72

Taraguira torquata – GRAY, 1845: 220 (partly)

Tropidurus hispidus – PETERS, 1877: 410, 413, 414; BOULENGER, 1885b: 177; GOELDI, 1902: 521; PETERS & DONOSO-BARROS, 1970: 265; VANZOLINI, 1981a: XXI

Tropidurus torquatus hispidus – BURT & BURT, 1931: 296; HELLMICH, 1960: 32; CUNHA, 1961: 76

Originally SPIX (1825) differentiated between *A. tuberculata* and *A. hispida*, but in the final publication he considered them respectively female and male of one species (see above). *A. nigrocollaris* and *A. cyclurus* already were correctly synonymised by BOIE (1826) and KAUP (1826), an opinion shared by all subsequent authors and substantiated by our own examination of the type material still available.

From PETERS' (1877) text it is obvious he saw several male specimens of the present taxon under the name *A. hispida*. At present in the Munich collection only one specimen, a female at that (ZSMH 524/0, is present and said to be a „nicht näher bezeichneter Cotypus“ (HELLMICH, 1960). As this specimen clearly qualifies as *T. t. hispidus* we are inclined to consider it as one of SPIX's original syntypes, despite the fact that it is not a male. The same applies to RMNH 2912, another female, which according to label and catalogue data, and according to BOIE (1826) was received under the name *Agama hispida* from the Munich Museum. For these reasons we also accept it as being one of the SPIX syntypes. The meristic data for these two specimens is, respectively: s-v length 90 mm, 95 mm, tail length 94 mm, 83 + (tip missing) mm, scales around midbody 74 ± 3 , 74, of which 32 ± 3 , 43 are keeled. ZSMH 524/0 is flaccid, the skin of the neck is torn open, RMNH 2912 is in good condition, except that on several parts of the body the epidermis has disappeared. Neither one of these two specimens agrees with the illustration provided by SPIX, but they do agree with the more general part of the description in which is stated that the dorsal scales are keeled, larger than the ventrals, which is exactly the character that separates *torquatus* and *hispidus*. Because of its better preservation we here select RMNH 2912 as lectotype of *Agama hispida* Spix, 1825, ZSMH 524/0 automatically becoming a paralectotype. Apparently these specimens are the ones from Bahia, the other locality to which SPIX (1825) alluded in his description.

According to PETERS (1877) there were two specimens of *A. nigrocollaris* and both are still present in the Munich collection (ZSMH 528/0 A, B: ♀, juv. ♀, s-v length 69 mm, 45 mm, tail length 109 mm, 72 mm, scales around midbody 70, 68 ± 3 , of which 30, 26 ± 3 are keeled). They do agree with the description and ZSMH 528/0 A rather nicely agrees with the illustration. We therefore select ZSMH 528/0 A as the lectotype of *Agama nigricollis* Spix, 1825 and ZSMH 528/0 B as paralectotype. According to SPIX (1825) these specimens came from the interior of Bahia.

The old catalogue of Munich museum lists ZSMH 530/0 as a specimen of *Tropidurus hispidus*, collected by SPIX, but as this specimen now apparently is lost, it is impossible to say whether it belonged to *hispidus* or *torquatus*. We therefore did not include it in table 5.

PETERS (1877) examined one juvenile *T. t. hispidus* which served SPIX (1825) as type for his *A. cyclurus*. This specimen is still extant (ZSMH 525/0) although it is in poor condition, once having dried out, and with the skin torn at many parts of the body. Because of this no reliable meristic data could be taken. It is clear, however, that the dorsal scales are keeled and larger than the ventrals, which makes its identification as *T. t. hispidus* possible. As it closely agrees with SPIX's (1825) illustration in size of the interparietal, total size and very spinose dorsal scales, we assume SPIX only had this specimen available and thus it should be considered the holotype of *Agama cyclurus* Spix, 1825, which according to the original description originated from the vicinity of Bahia.

Agama semitaeniata Spix, 1825: 13, pl. XVI fig. 1; BOIE, 1826: 119; FITZINGER, 1827: 745; GRAY, 1845: 220
Platynotus semitaeniatus WAGLER, 1830b: 146 (by inference); SCHMIDT & INGER, 1951: 451; VANZOLINI et al.,
 1980: 94; VANZOLINI, 1981a: XXI
Tropidurus *Semitaeniatus* – GRAY, 1831a: 41
Steirolepis semitaeniata – FITZINGER, 1843: 73
Tropidurus (*Platynotus*) *semitaeniatus* – PETERS, 1877: 414
Tropidurus semitaeniatus – BOULENGER, 1885b: 178; GOELDI, 1902: 521; PETERS & DONOSO-BARROS, 1970: 269

PETERS (1877) reported the presence of three of SPIX's syntypes in the Munich collection. At present these three specimens (ZSMH 116/0 A, B, C) are still extant, whereas an additional one was found in Leiden (RMNH 2907). The latter specimen was mentioned by BOIE (1826). The meristic data of these specimens are, respectively: sex ♀, ♀, subad. ♀, ♀, s-v length 55 mm, 60 mm, 40 mm, 64 mm, tail length 96 mm, 109 mm, 71 mm, 121 mm, scales around midbody 168, 162, –, 167. The Munich specimens are flaccid, wrinkled and have broken tails; the Leiden specimen is in good condition, with an intact tail, lacking its epidermis in some places only and with a slightly crushed anterior part of the head. ZSMH 116/0 A agrees most closely with the measurements in SPIX's description. RMNH 2907 approximately has the same size as the illustration, but its pattern is more gaudy, having lighter spots sprinkled on the back and the vertebral stripe reaching the base of the tail. Because of its much better condition we here select RMNH 2907 as lectotype of *Agama semitaeniata* Spix, 1825. The three specimens in ZSMH 116/0 automatically become paralectotypes. Apparently SPIX (1825) had more material available than is present now, because in the description he alludes to male and female, and all known syntypes are females.

WAGLER (1830b) based his genus *Platynotus* on this taxon. Strangely enough it was not mentioned by DUMÉRIL & BIBRON (1837). PETERS (1877), after examining all SPIX's types of *torquatus*, *hispidus* and *semitaeniatus* in the Munich collection came to the conclusion that *Platynotus* could hardly be considered a subgenus of *Tropidurus* and since that time virtually all authors (except AMARAL (1932), who described it under the name *Tapinurus scutipunctatus*) considered it a member of the genus *Tropidurus*. SCHMIDT & INGER (1951) resurrected *Platynotus* on the basis of its very flattened habit and in this they were followed by VANZOLINI et al. (1980) and VANZOLINI (1981a). We also are inclined to consider this a valid argument and acted accordingly.

Polychrus marmoratus (L.)

Polychrus marmoratus – SPIX, 1825: 14, pl. XIV; BOIE, 1826: 119 (partly); FITZINGER, 1827: 745; WAGLER, 1830b: 149 (by inference); DUMÉRIL & BIBRON, 1837: 65; GRAY, 1845: 183; PETERS, 1877: 410, 414; BOULENGER, 1885b: 98; GOELDI, 1902: 517; PETERS & DONOSO-BARROS, 1970: 234; VANZOLINI, 1981a: XXI
Polychrus virescens – WAGLER, 1828b: pl. XII; FITZINGER, 1843: 61 (partly)
Polychrus Marmoratus – GRAY, 1831a: 47
Polychrus m. marmoratus – CUNHA, 1961: 88

Though purportedly SPIX's (1825) book only dealt with new Brazilian species, there never has been any doubt that here SPIX described the well known *Lacerta marmorata* L. Although SPIX does not refer to LINNAEUS' description, there hardly can be any doubt that he does not intend to make a proposition for a new name here, because the species was widely known and had been published in the combination *P. marmoratus* by several well known and widely read writers. Therefore we do not consider this description as constituting a new one.

At present the Munich collection contains one specimen collected by SPIX (ZSMH 488/0, ♀ + 7 eggs, s-v length 149 mm, tail length 390 mm) and depicted by him in pl. XIV and also again by WAGLER (1828b: pl. XII, specimen on the right). Another specimen ZSMH 487/0 with locality "Brazil", but without collector, has been depicted by WAGLER (1828b) on the same plate on the left. These specimens cannot be considered types.

- Polychrus acutirostris* Spix, 1825: 15, pl. XIVa; SPIX, 1826: 603; WAGLER, 1828b: p. 3 of text pl. XII; WAGLER, 1830b: 149; BOULENGER, 1885b: 99; GOELDI, 1902: 517; HELLMICH, 1960: 49; PETERS & DONOSO-BARROS, 1970: 233; VANZOLINI et al., 1980: 98; VANZOLINI, 1981a: XXI
- Polychrus marmoratus* – BOIE, 1826: 119 (partly)
- Ecphymotes acutirostris* – FITZINGER, 1827: 745; GRAY, 1845: 185
- P[olychrus] Acutirostris* – GRAY, 1831a: 47
- Laemantus acutirostris* – DUMÉRIL & BIBRON, 1837: 75
- Polychrus marmoratus acutirostris* – CUNHA, 1961: 87

The old catalogue of the Munich museum lists one specimen of this species (ZSMH 490/0), which probably was the type. It could not be found anymore, and we have to assume it was destroyed during World War II.

?Anolis p. punctatus Daudin

- Anolis violaceus* Spix, 1825: 15, pl. XVII fig. 2; BOIE, 1826: 119; WAGLER, 1830b: 148
- Anolis Sebae* – FITZINGER, 1827: 746
- Anolis Violaceus* – GRAY, 1831a: 46
- Anolis punctatus* – DUMÉRIL & BIBRON, 1837: 112; GRAY, 1845: 205; PETERS, 1877: 410, 414; BOULENGER, 1885b: 57; GOELDI, 1902: 528
- Dactyloa punctata* – FITZINGER, 1843: 67
- Anolis p. punctatus* – PETERS & DONOSO-BARROS, 1970: 64; VANZOLINI, 1981a: XXI

WAGLER (1830b: 148) in a footnote commented upon *Anolis violaceus* Spix, stating that it was based on a very young and damaged specimen, and that the name better could be suppressed. From this it can be concluded that there was only the single holotype, which apparently also was examined by PETERS (1877), but of which at present no trace can be found in the Munich catalogue or collection.

Although the presently, widely accepted, opinion is that *A. violaceus* is a synonym of *A. punctatus*, we have our doubts about this notion and feel that it might as well be a synonym of *A. ortonii* Cope, with which *A. violaceus* agrees much more in body colour and pattern than with *A. punctatus*. However, because of the nomenclatorial problems involved (*violaceus* would have priority over *ortonii*), because no type specimen is present, and because we are not completely certain of our divergent identification, we refrain from taking this step and hesitatingly confirm ourselves with the present usage.

Hemidactylus mabouia (Moreau de Jonnès)

- Gecko aculeatus* Spix, 1825: 16, pl. XVIII fig. 3; SPIX, 1826: 603
- ?*Gecko cruciger* Spix, 1825: 16
- ?*Lophyrus cruciger* Spix, 1825: pl. XIII fig. 3
- Gecko spec.?* – BOIE, 1826: 119
- Gecko armatus?* – BOIE, 1826: 119 (partly)
- Hemidactylus armatus* – FITZINGER, 1827: 746 (by inference); WAGLER, 1830b: 143 (partly); FITZINGER, 1843: 105 (partly)
- Gecko Mabouia* – GRAY, 1831a: 51 (partly)
- Hemidactylus Mabouia* – DUMÉRIL & BIBRON, 1836: 362 (partly); GRAY, 1845: 154 (partly)
- Hemidactylus tuberculatus* – PETERS, 1877: 411 (partly), 414 (partly)
- Hemidactylus mabouia* – BOULENGER, 1885a: 122 (partly); GOELDI, 1902: 510 (partly); CUNHA, 1961: 52; WERMUTH, 1965: 79; VANZOLINI, 1968a: 60; KLUGE, 1969: 28; PETERS & DONOSO-BARROS, 1970: 142; VANZOLINI, 1978: 328; VANZOLINI, 1981a: XXI

At present two syntypes of *Gecko aculeatus* Spix, 1824 are extant in the Munich collection (ZSMH 166/0 A, B; ♂, ♂, s-v length 53 mm, 61 mm, tail length 15 + ... mm, 51 (of which 46 mm are regenerated) mm, femoral/preanal pores 35, 33). In ZSMH 166/0 A traces of the pattern, consisting of transversely placed ^-shaped bands with concave arms, are still recognisable (one on the neck, three on the

body, one on the base of the tail). This same specimen has a label, saying "166/0 a Typus von *Gecko aculeatus* Spix, Rio de Janeiro Spix leg.", tied to its right arm. As this specimen agrees in size with the illustration in Spix (1825) and fairly well with the description (though it has 35 preanal/femoral pores, instead of 32), we here select it as the lectotype of *Gecko aculeatus* Spix, 1825; ZSMH 166/0 B automatically becomes a paralectotype. For good measure the specimens were checked against the recent description of *Hemidactylus agrius* Vanzolini, but it soon became clear that these specimens are true *H. mabouia* (cf. VANZOLINI, 1978).

Originally Spix (1825) figured *cruciger* as a member of *Lophyrus*, but in his text (apparently prepared after the plates were ready (Spix, 1825: 13)) associated it with *Gecko*. Close examination of the illustration (Spix, 1825: pl. XIII fig. 3) convinced us that the identification of *cruciger* with a gekkonid is very unlikely. In particular the shape and size of the head and the shape, size and arrangement of the toes on the hindlimbs are to us more reminiscent of an *Anolis* (possibly *A. fuscoauratus* d'Orbigny) than of a gekko. Unfortunately Spix (1825) did not allude to the obvious discrepancy in names between text and plate, so we are not aware of his reasons for making this change. The specimen Spix used for his very brief and exceptionally useless description already was lost at the time Peters (1877) studied the Spix collection and only on the basis of the fact that the back was said to be tuberculous ("verrucoso"), he assumed that it was identical with *H. mabouia* and in this assumption was followed by all subsequent authors. We do not feel very comfortable about this synonymization and only hesitatingly put it in the synonymy of *H. mabouia*.

Phyllopezus p. pollicaris (Spix)

Thecadactylus pollicaris Spix, 1825: 17, pl. XVIII fig. 2; Spix, 1826: 603

Gecko armatus? – BOIE, 1826: 119 (partly)

Ascalobotes pollicaris – FITZINGER, 1827: 746

Hemidactylus armatus – WAGLER, 1830b: 143 (partly); FITZINGER, 1843: 105 (partly)

Gecko Mabouia – GRAY, 1831a: 51 (partly)

Hemidactylus Mabouia – DUMÉRIL & BIBRON, 1836: 362 (partly); GRAY, 1845: 154 (partly)

Hemidactylus tuberculosus – PETERS, 1877: 411 (partly), 414 (partly)

Hemidactylus mabouia – BOULENGER, 1885a: 122 (partly); GOELDI, 1902: 10 (partly)

Phyllopezus pollicaris – MÜLLER & BRONGERSMA, 1933: 160; VANZOLINI et al., 1980: 85; VANZOLINI, 1981a: XXI

Phyllopezus p. pollicaris – VANZOLINI, 1953b: 354; HELLMICH, 1960: 20; WERMUTH, 1965: 147; VANZOLINI, 1968a: 51; VANZOLINI, 1968b: 100; PETERS & DONOSO-BARROS, 1970: 226

The four syntypes of this species were extensively discussed by MÜLLER & BRONGERSMA (1933), who also selected a lectotype (ZSMH 2510/0), which they called „der Typus“. At that moment three specimens were available in Munich (ZSMH 2510/0, 165/0 A, B) and one in Leiden (RMNH 2750). HELLMICH (1960: 20) reported that all Munich material („1 Holotypus und 2 Paratypoide“) had been destroyed during World War II. However, during the present study we did find ZSMH 165/0 A, B (♂, ♀, s-v length 75 mm, 69 mm, tail length 67 mm, 69 mm, of which 62 mm, 67 mm are regenerated), and also RMNH 2750 is still extant. The lectotype really seems to have been lost. When in the future the need arises to indicate a neotype, it should preferably be selected from the three remaining paralectotypes, which are all in good condition.

Gymnodactylus g. geckoides Spix

Gymnodactylus geckoides Spix, 1825: 17, pl. XVIII fig. 1; WAGLER, 1830b: 144; PETERS, 1877: 411, 414; BOULENGER, 1885a: 39; GOELDI, 1902: 511; VANZOLINI, 1981a: XXI

Ascalobotes geckoides – BOIE, 1826: 119; FITZINGER, 1827: 746

Cyrtodactylus Spixii Gray, 1831a: 52

Gymnodactylus scaber – DUMÉRIL & BIBRON, 1836: 421 (partly, with question-mark)

Gonyodactylus spinulosus Fitzinger, 1843: 92

Gymnodactylus Geckoides – GRAY, 1845: 175 (partly)

GRAY (1831a) suggested *Cyrtodactylus Spixii* and FITZINGER (1843) *Gonyodactylus spinulosus* as replacement names for this taxon, but they did not state any reasons for doing this.

Some early authors (DUMÉRIL & BIBRON, 1836) were of the opinion that this was another Mediterranean species incorrectly reported from Brazil (cf. *Natrix maura*, *Malpolon monspessulanus*, *Mauremys leprosa*). PETERS (1877), though confirming its specific identity, also repeated this opinion („In den mediterranen Gegenden zu Hause, kann wohl durch Schiffe nach Amerika gebracht sein“) in a slightly adapted form. Since then it has been shown that this is a species endemic to the dry regions of eastern South America (WERMUTH, 1965).

There is no mention of this species in the old catalogue of the Munich museum, neither could we find any specimens. Thus, apparently the type(s) of *Gymnodactylus geckoides* Spix, 1824, at the same time being the type(s) of the replacement names *Cyrtodactylus Spixii* Gray, 1831 and *Gonyodactylus spinulosus* Fitzinger, 1843, has (have) been lost during the latter part of the nineteenth century.

Tupinambis nigropunctatus Spix

Tupinambis nigropunctatus Spix, 1825: 18, pl. XX; BOIE, 1826: 119 (with question-mark); PETERS, 1877: 411; BOULENGER, 1885b: 337; GOELDI, 1902: 43; CUNHA, 1961: 103; PETERS & DONOSO-BARROS, 1970: 271; HOOGMOED & LESCURE, 1975: 161; VANZOLINI, 1981a: XXI

Ameiva nigropunctatus – FITZINGER, 1827: 746 (by inference)

Ctenodon nigropunctatus – WAGLER, 1830b: 153

Teius Monitor – GRAY, 1831: 29 (partly)

Salvator nigropunctatus – DUMÉRIL & BIBRON, 1839: 90

Teius nigropunctatus – GRAY, 1845: 16

Podinema nigropunctatum – PETERS, 1877: 414

Tupinambis teguixin – PRESCH, 1973: 741 (partly)

At present four specimens, which formed part of the syntypes, are still extant in the Munich collection (ZSMH 627/0, 628/0; 629/0, 3208/0; juv., ♂, ♂, ♂, s-v length \pm 65 mm, 264 mm, 340 mm, 319 mm, tail length. The tips of the tails of 627/0, 628/0 and 3208/0 have been broken off and lost. 84 + . . . mm, 420 + . . . mm, 512 mm (regenerated from 252 mm), 273 + . . . mm). ZSMH 627/0 is an embryo in very bad condition, extremely hard, wrinkled and completely bleached; ZSMH 628/0 is in good condition, the left eye has been removed; ZSMH 629/0 is in good condition, although patches of skin are loosely attached, due to the fact that the animal was shedding its skin when preserved; ZSMH 3208/0 is in good condition. The three males all agree fairly well with the description, but only ZSMH 629/0 shows close resemblance to the illustration, viz., the configuration of black patches on frontal, internasal, supraoculars, right temporal area and neck, is nearly identical. However, the pattern on prefrontals, postfrontals and on the back is different, e. g., on the back no distinct light bands are present. On the regenerated part of the tail of ZSMH 629/0 no pattern is visible, whereas the specimen in the illustration apparently has a complete tail, showing a banded pattern up to the tip. ZSMH 3208/0 has a very distinct dorsolateral series of white spots, a feature not visible in the depicted specimen. We suppose that the illustration is a composite of several specimens, although we cannot be certain, because ZSMH 630/0 (which is mentioned in the old catalogue of the Munich museum) apparently is lost and could not be compared with the illustration.

PRESCH (1973) united *nigropunctatus* with *teguixin* on the basis of the argument that there was overlap in all distinguishing characters. HOOGMOED & LESCURE (1975) denied this, provided new distribution areas for the two taxa involved and suggested that the allopatric distribution might mean that they were subspecies of one species, which then should be called *teguixin*. VANZOLINI et al. (1980), essentially agreed with HOOGMOED & LESCURE (1975) by stating that PRESCH's definition of *teguixin* was wrong and that the situation as described by BOULENGER (1885b) was the correct one. VANZOLINI (1981a: XXI) in a footnote repeats his 1980 opinion, but adds that PRESCH (1973) is right in that the

Amazonian Tupinambis should be called *teguixin* instead of *nigropunctatus*. ANDERSSON (1900) pointed out that the four remaining syntypes of *Lacerta teguixin* L., 1758 all were *T. nigropunctatus* Spix. He cites LÖNNBERG (1896) for reasons why he did not synonymise *nigropunctatus* with *teguixin*. PRESCH (1973) selected "UZZM, Linnaeus Coll. no. 14" as lectotype of *Lacerta teguixin* L. and restricted its type locality to the vicinity of Paramaribo, Surinam. As VANZOLINI (1981a) quite correctly points out, some nomenclatorial problems are involved, and as at the time being we do not have the opportunity to pursue this matter further, we adhere to the generally accepted usage of the names involved, as published by PETERS & DONOSO-BARROS (1970), and gladly leave this problem to the next revisor of the group.

However this may be, we here select as lectotype of *Tupinambis nigropunctatus* Spix, 1825 ZSMH 629/0 from Brazil, collected by SPIX. ZSMH 627/0, 628/0 and 3208/0 automatically become paralectotypes. SPIX (1825: 19) mentioned Pará as type locality for this species and this was interpreted as Belém by VANZOLINI (1981a).

Tupinambis teguixin (L.)

Tupinambis monitor s. *nigropunctatus* Spix, 1825: 19

Tupinambis Monitor – SPIX, 1825: pl. XIX

Tejus monitor – BOIE, 1826: 119

Tejus Monitor – FITZINGER, 1827: 746

Podinema Teguxin – WAGLER, 1830b: 153

Teius Monitor – GRAY, 1831a: 29 (partly)

Salvator Merianae Duméril & Bibron, 1839: 85 (partly)

Teius Teguxin – GRAY, 1845: 16 (partly)

Podinema teguixin – PETERS, 1877: 411, 414

Tupinambis teguixin – BOULENGER, 1885b: 335; GOELDI, 1902: 537; HELLMICH, 1960: 61; PRESCH, 1973: 741 (partly); VANZOLINI et al., 1980: 119; VANZOLINI, 1981a: XXI

Tupinambis t. teguixin – PETERS & DONOSO-BARROS, 1970: 272

When describing this taxon, SPIX (1825) apparently was not very confident about his own classification. He considered this species as being either a species different from the preceding one (= *T. nigropunctatus*) or just the female of it. The specimen on which the illustration was based is still extant (ZSMH 626/0, juv., s-v length 157 mm, tail length 325 mm, preanal/femoral pores 5/14–5/13, transverse ventrals 35), the pattern on head and limbs agrees completely with the illustration. It is difficult to decide about the pattern on the body, because the skin is partly damaged in that area. The condition of the specimen is rather poor, it is flaccid and the lower jaw is damaged.

As SPIX (1825: 19) refers to DAUDIN, the original describer of *monitor*, there is no proposition of a new name involved and consequently ZSMH 626/0 is not a type, but only a figured specimen, a conclusion also reached by HELLMICH (1960).

Crocodilurus lacertinus (Daudin)

Crocodilurus amazonicus Spix, 1825: 19, pl. XXI; SPIX, 1826: 603; FITZINGER, 1827: 746

Crocodilurus ocellatus Spix, 1825: 20, pl. XXII fig. 1; SPIX, 1826: 603; FITZINGER, 1827: 746

Tejus crocodilinus? – BOIE, 1826: 119

Crocodilurus lacertinus – WAGLER, 1830b: 153; PETERS, 1877: 411, 414; BOULENGER, 1885b: 380; GOELDI, 1902: 546; HELLMICH, 1960: 81; CUNHA, 1961: 116; PETERS & DONOSO-BARROS, 1970: 102; VANZOLINI, 1981a: XXI

Teius Bicarinata – GRAY, 1831a: 29

Crocodilurus Lacertinus – DUMÉRIL & BIBRON, 1839: 46; GRAY, 1845: 25

BOIE (1826) already suggested that *ocellatus* might be the juvenile of *amazonicus*, a supposition vehemently, but not very convincingly, denied by SPIX (1826): "Beyde unterscheiden sich wie der Luchs und Löwe... H. BOIE, scheint es, ist gewohnt, was kleiner in dem Werke abgebildet ist, auch sogleich ohne Rücksicht auf die Beschreibung zu nehmen, als eine Jugendvarietät zu erklären." However, he

forgot that BOIE had before him one of SPIX's own syntypes of *ocellatus*, which indeed clearly is a juvenile *C. lacertinus* (RMNH 3394). FITZINGER (1827) still doubted BOIE's suggestion, but apparently thought it quite possible. All other authors followed BOIE. DUMÉRIL & BIBRON (1839) received RMNH 3394 on loan and reported extensively on it. GOELDI (1902) stated that this species was rare in museums, being only known from five specimens: two each in London and Paris and one in Leiden. No mention was made of the Munich specimens.

At present three specimens of this species from the SPIX collection are extant: two syntypes of *C. ocellatus* Spix, 1825 and one type of *C. amazonicus* Spix, 1825. ZSMH 638/0 is indicated as being the type of *C. amazonicus* (HELLMICH, 1960: 82), it is provided with an old label (presumably in WAGLER's handwriting), a. o. stating that it comes from Brazil and hailed from SPIX's journey. It is an adult male (s-v length 236 mm, tail length 357 mm (regenerated from 224 mm), head length 52.7 mm, supralabials 9, infralabials 11 (of which 7 large), preanal/femoral pores 4/8–4/9, ventrals in 34 transverse rows) in good condition, with only part of the belly soft but with the epidermis still present, and with a transverse cut in the posterior part of the back. This specimen agrees well with both the description and the illustration, which is slightly smaller than natural size. There are no indications that more specimens were used for the description of *C. amazonicus*, and because of its nearly perfect match of description and illustration, we assume ZSMH 638/0 to be the holotype of *Crocodilurus amazonicus* Spix, 1825.

It is not clear from the description of *C. ocellatus* on how many specimens it was based, but as there exist at least two presently, we have to accept these as syntypes. One of these syntypes is RMNH 3394, which has been reported upon by several authors (BOIE, 1826; DUMÉRIL & BIBRON, 1839; GOELDI, 1902), the other is ZSMH 639/0. Both are juveniles with, respectively, the following meristic data: s-v length 92 mm, 77 mm; tail length 99 mm (regenerated from 52 mm), 146 mm; head length 23.4 mm; supralabials 10–11, 9, infralabials (large ones only) 7–8, 7; preanal/femoral pores 3/7–3/7, 4/6–4/8; ventrals in 36, 35 transverse rows. Both specimens are in fair condition, though rather soft; RMNH 3394 has a large, gaping wound (arrow shot?) in the throat. They both agree rather well with the description and illustration, though there is a rather marked difference regarding the pattern of the back, which according to the description and illustration would be immaculate, but in both available specimens the back shows an irregular pattern of dark and light spots. In the description SPIX (1825) stated that there were three rows of white spots on the flanks, but in the illustration only two are shown, which agrees with the situation in both syntypes. HELLMICH (1960: 82) stated that the white spots on the flanks of ZSMH 639/0 were arranged in 2–3 rows. Neither of the two syntypes agrees closely with the illustration or the description, though ZSMH 639/0 agrees in size. RMNH 3394 certainly is not the specimen figured, because it has a short, regenerated tail. It seems possible that the original type-series was larger and that one or more specimens have been lost. We here select ZSMH 639/0 as lectotype of *Crocodilurus ocellatus* Spix, 1825, RMNH 3394 automatically becomes a paralectotype.

Kentropyx calcaratus Spix

Kentropyx calcaratus Spix, 1825: 21, pl. XXII fig. 2; CUNHA, 1961: 107; PETERS & DONOSO-BARROS, 1970: 151;

HOOGMOED, 1973: 293; VANZOLINI, 1981a: XXI

Lacerta striata – BOIE, 1826: 119

Pseudoameiva calcarata – FITZINGER, 1827: 747 (by inference)

Trachygaster calcaratus – WAGLER, 1830b: 154

Teius Calcaratus – GRAY, 1831a: 31

Centropyx calcaratus – DUMÉRIL & BIBRON, 1839: 149; GRAY, 1845: 24; PETERS, 1877: 412, 414; BOULENGER, 1885b: 341; GOELDI, 1902: 543

Once again SPIX (1825) did not state how many specimens he had at hand. At present no material of this species could be located in Munich or Leiden. According to the old catalogue of the Munich museum a specimen of this species, which probably was the type, was registered under ZSMH 109/0, but

now apparently it is lost. The illustration of this species by SPIX (1825: pl. XXII fig. 2) is not very well executed as regards the pattern. It is clear that an adult male, with large preanal spurs, was depicted.

HOOGMOED (1973) pointed out that *Lacerta vittata* Schinz, 1822 has priority over *Kentropyx calcaratus* Spix, 1825 and that a proposal to suppress *L. vittata* would be made to the International Commission on Zoological Nomenclature. So far, no such action has been taken.

Ameiva ameiva (L.)

Tejus Ameiva – SPIX, 1825: 21, pl. XXIII; BOIE, 1826: 120; SPIX, 1826: 603

Tejus lateristriga – SPIX, 1825: 22; SPIX, 1826: 603

Tejus Lateristriga – SPIX, 1825: pl. XXIV fig. 1

Tejus tritaeniatatus Spix, 1825: 22, pl. XXIV fig. 2; SPIX, 1826: 603

Ameiva lateristriga – FITZINGER, 1827: 747

Cnemidophorus ameiva – WAGLER, 1830b: 154

Teius Ameiva Vulgaris – GRAY, 1831a: 29

Teius Lateristriga – GRAY, 1831a: 30

Teius Tritaeniatatus – GRAY, 1831a: 30

Ameiva vulgaris – DUMÉRIL & BIBRON, 1839: 100

Ameiva Surinamensis – GRAY, 1845: 18

Ameiva surinamensis – BOULENGER, 1885b: 352; GOELDI, 1902: 544

Ameiva a. ameiva – HELLMICH, 1960: 64; CUNHA, 1961: 113; PETERS & DONOSO-BARROS, 1970: 19

Ameiva ameiva – VANZOLINI et al., 1980: 106; VANZOLINI, 1981a: XXI

SPIX (1825) described this species under three different names, each indicating a certain category, viz., the adult male (*Ameiva*), the semiadult to juvenile male (*lateristriga*) and the juvenile or female (*tritaeniatatus*). Two of these names already had been coined by earlier authors: *Ameiva* by LINNAEUS (1758) and *lateristriga* by CUVIER (1817). The first of these two names had been widely used until 1823, when LICHTENSTEIN proposed a new name (*A. vulgaris*) for it. The second name was coined by CUVIER (1817: 28) in his widely used handbook, and based on a Seba plate. Although SPIX (1825) purportedly only described new species, it has been shown before that he also included some species, (well) known by the time of publication of his book, using their currently valid name. In some cases he refers to older descriptions, in others, including the present case, he does not, thus suggesting a new description. In the case of *Tejus Ameiva* it would seem very unlikely that SPIX intended to propose such a widely known name as new. In the case of *Tejus lateristriga*, SPIX has been accepted as the original author (PETERS & DONOSO-BARROS, 1970), but as pointed out above, this name was validly proposed earlier by CUVIER (1817) in the combination *Am[eiva] lateristriga*. As CUVIER's handbook was widely used, we assume SPIX had access to it and knew the name *lateristriga*, and consequently we interpret his use of *T. lateristriga* as a subsequent use of *A. lateristriga* Cuvier, 1817. Only the name *tritaeniatatus* remains as a newly proposed name.

SPIX (1826) stated that he had four specimens of *T. Ameiva*, three of *T. lateristriga* and two of *T. tritaeniatata*, a total of nine specimens. HELLMICH (1960: 65) reported that the "Typus" of "*Tejus Ameiva* Spix" had survived the war and was stored in one bottle with a smaller specimen (ZSMH 2703/0). These specimens still exist and are in fair condition, meristic data, respectively for A and B: s-v length 173 mm, 146 mm; tail length 336 mm (regenerated from 258 mm), 332 mm; ventrals 30, 30; femoral pores 17–18, 21–20. The illustration (SPIX, 1825: pl. XXIII) is of about the same size as ZSMH 2703/0 A, the general impression of the illustration agrees with A, but in details there are differences. Therefore we are not completely certain that ZSMH 2703/0 A served as example for pl. XXIII.

In the same paper, HELLMICH (1960: 65) reported the existence of several other "types" of SPIX: three specimens in ZSMH 3205/0 and two more specimens of which no registration number was mentioned. Thus, according to HELLMICH (1960) seven specimens of *A. ameiva* collected by SPIX survived the war in Munich. At present in the Munich collection the following SPIX material of *A. ameiva* is present: 2 juv. ♂, ZSMH 3205/0, supposedly "cotypen v. *Tejus tritaeniatatus* Spix", 1 juv. ♂, ZSMH 705/0, sup-

possibly “*Typus* (?) v. *Tejus tritaeniatus* Spix” and 2 juv. ♂, ZSMH 2700/0, “?Cotypen v. *Tejus lateristriga* Spix”. Moreover, there is one specimen in Leiden (RMNH 3382), which was received from the Munich museum under the name *Tejus tritaeniatus* Spix. Comparison of these specimens with the descriptions and illustrations shows that there has been a mix-up of labels and/or specimens. The two male specimens ZSMH 3205/0 do not at all agree with the description and/or illustration of *T. tritaeniatus* Spix, but they do with those of *T. lateristriga* Spix, and ZSMH 3205/0 B probably served as model for the illustration (SPIX, 1825: pl. XXIV fig. 1). The two juvenile males in ZSMH 2700/0 do agree fairly well with the description of *T. lateristriga* Spix, but instead of vertical rows of white spots on the flanks they have vertical white bars. Consequently we regard them all four as part of the series SPIX had before him when describing *T. lateristriga*, though this total of four does not tally with his own statement (SPIX, 1826) that he had three *lateristriga*. Moreover, according to the old catalogue of the Munich museum, ZSMH 633/0 (1 ex.) and 650/0 (3 ex.) were entered as *A. surinamensis* (*T. lateristriga*) and apparently were lost during the war, thus making the known total of specimens of *T. lateristriga* collected by SPIX (according to the old catalogue) eight, even more different from SPIX’s own account of three. It is possible that SPIX did not use all material he collected for his descriptions, which might account for the widely differing numbers. It is also possible that the original material has been mixed to a certain degree, and we even cannot exclude the possibility that some alien material slipped in.

The juvenile male ZSMH 705/0 and the juvenile RMNH 3382 (s-v length 92 mm, 79 mm, tail length 213 mm, 176 mm, femoral pores 17–18, 21–22) agree well with the description of *T. tritaeniatus* Spix; ZSMH 705/0 very nicely fits the illustration (SPIX, 1825: pl. XXIV fig. 2) in size, shape (curve in tail) and pattern, although the pattern, because of darkening, has become less distinct than in the illustration. In ZSMH 705/0 the uppermost white line (= dorsolateral stripe) has nearly disappeared, the back has become darker, thus obscuring the black spots, the black lateral band does not contain a single white spot, as shown in the illustration. We nevertheless assume this specimen to be the one depicted. RMNH 3382 does show some white spots in the black lateral band near the insertion of the forelimbs, near the hindlimbs it is rather discoloured. SPIX (1825: 22) in the description states that there are “rarely white spots in the lateral band towards the hindlimb” and from this it is clear that he had at least two specimens before him, which agrees with his 1826 statement. Of these two specimens apparently the one with the white spots in the black lateral band was sent to Leiden. Thus, these two specimens are considered syntypes of *Tejus tritaeniatus* Spix, 1825, and we here select ZSMH 705/0 as lectotype, RMNH 3382 automatically becoming a paralectotype.

The question how many specimens of *A. ameiva* SPIX had before him remains unclear; in 1826 he stated that the Munich museum had a total of nine specimens. At that time the Leiden museum already had received one specimen (in 1824) from the Munich museum and it is not clear whether this was still included in SPIX’s count or not. But, considering what has been said above about the subject of the original number of specimens, this question cannot be answered in a reliable way. However, the illustrated specimens could be located without too much trouble.

VANZOLINI et al. (1980) quite correctly observe that several races of this species have been described without the “slightest scientific base”. We agree with them that this widely distributed species is badly in need of a revision and until that study has been completed, we prefer to use the binominal.

Cnemidophorus ocellifer (Spix)

Tejus ocellifer Spix, 1825: 23, pl. XXV

Tej[us] murinus – BOIE, 1826: 120; FITZINGER, 1827: 747

Seps murinus – WAGLER, 1830b: 154 (partly)

Teius Ameiva Vulgaris – GRAY, 1831a: 29 (partly)

Cnemidophorus murinus – DUMÉRIL & BIBRON, 1839: 107

Cnemidophorus ocellifer – PETERS, 1877: 414; BOULENGER, 1885b: 372; GOELDI, 1902: 546; BURT, 1931: 43; HELLMICH, 1960: 72; CUNHA, 1961: 128; PETERS & DONOSO-BARROS, 1970: 95; VANZOLINI et al., 1980: 111; VANZOLINI, 1981a: XXI

©Z. Spix (1826) did not react to BOIE's suggestion that *Tejus ocellifer* Spix was a juvenile of *Tejus murinus*, quite contrary to his usual vehement reaction, and we assume he agreed with BOIE's opinion (incorrect this time). PETERS (1877) reported that there were two specimens in the Munich collection indicated as being *T. ocellifer*, the largest of which apparently served as model for the illustration (SPIX, 1825: pl. XXV). One of these two apparently was lost during the last quarter of the nineteenth century, because in the old catalogue of the Munich museum only a single specimen of this species (ZSMH 111/0), stated to be the "Typus von *Teyus ocellifer*", figures and this specimen was reported to be lost during the war by HELLMICH (1960: 72). As we could neither locate it, we have to accept that it was indeed destroyed.

Mabuya bistriata (Spix)

Scincus bistriatus Spix, 1825: 23, pl. XXVI fig. 1

Mabuya aurata – BOIE, 1826: 120

Mabuya agilis – FITZINGER, 1827: 747

Euprepis agilis – WAGLER, 1830b: 162 (partly)

Tiliqua bistriatus – GRAY, 1831a: 69

Eumeces Spixii Duméril & Bibron, 1839: 642 (partly)

Mabouya agilis – GRAY, 1845: 94 (partly)

Euprepes (Mabuia) auratus – PETERS, 1877: 412, 414

Mabuia aurata – BOULENGER, 1887: 189 (partly); GOELDI, 1902: 37 (partly)

Mabuya m. mabouya – DUNN, 1935: 544 (partly); CUNHA, 1961: 96 (partly); PETERS & DONOSO-BARROS, 1970: 199 (partly)

Mabuya bistriata – WILLIAMS & VANZOLINI, 1980: 99; REBOUÇAS-SPIEKER, 1981a: 122; REBOUÇAS-SPIEKER, 1981b: 162; VANZOLINI, 1981a: XXI; VANZOLINI, 1981b: 196; VANZOLINI & WILLIAMS, 1981: 253; ?HARDY, 1982: 76

PETERS (1877: 412) reported that there were two specimens of this species in the SPIX collection, which both had 32 longitudinal scalerows and four supraorbitals, whereas one had the eye over the seventh, the other one over the sixth supralabial. In the old catalogue of the Munich museum only one specimen (supposedly the type) is mentioned under ZSMH 112/0 from Pará, Brazil. Apparently one specimen was lost during the latter part of the last century. The remaining specimen at present cannot be found and we must assume it was destroyed during World War II.

Fortunately, the Leiden museum received a specimen under the name *Scincus bistriatus* from Munich in 1824. This specimen (RMNH 2512) was commented upon by BOIE (1826: 120), although he did not mark it as one of the species received. From the text, however, it is clear that he did, because he wrote: „Dieselbe Art erhielten wir auch von Wien unter dem Namen *Mabuya aurata* Fitz.“ The use of the word „auch“ implies that Leiden also received material of this species from sources other than Vienna, and placed in the context of the article we may assume Munich was meant. The specimen is still in good condition, though rather hard (semiadult, s-v length 54 mm, tail length 29 mm (regenerated from 23 mm), ventrals 39 (smooth), longitudinal scalerows 32, supraciliaries 4 (2nd largest), transverse dorsals 57 (tricarinate), scales on neck hexagonal, eye over 5th supralabial, subdigital lamellae 4th finger 14–14, ditto 4th toe 18–18, internasal and frontal in contact, parietals in contact behind interparietal, one pair of enlarged nuchals). It agrees well with the description and the illustration, though it is distinctly smaller than the sizes mentioned by SPIX (1825). Thus, RMNH 2512 definitely is not the specimen described, nor the one depicted, but as it undoubtedly belonged to Spix's original type-series, we here designate it the lectotype of *Scincus bistriatus* Spix, 1825.

DUMÉRIL & BIBRON (1839) proposed *Eumeces Spixii* as a replacement name for the taxon formerly described under the names *Scincus agilis* Raddi, *S. bistriatus* Spix and *S. nigropunctatus* Spix. They based this description on a list of synonymies and on material from Cayenne and Brazil in the Paris museum. Consequently, all SPIX's syntypes of *S. bistriatus* (included in the list of synonyms of *E. Spixii*) formed part of DUMÉRIL & BIBRON's type-series of *E. Spixii* (art. 73c (1) of the International Code for

Zoological Nomenclature); to stabilize nomenclature we here designate RMNH 2512 also the lectotype of *Eumeces Spixii* Duméril & Bibron, 1839.

Until quite recently *S. bistriatus* was considered a synonym of the widespread lizard *Mabuya m. mabouya*. WILLIAMS & VANZOLINI (1980: 99, 100) all of a sudden used the name *Mabuya bistriata* for part of the Amazonian skinks without any comment, apart from the statement that REGINA REBOUÇAS-SPIEKER was reviewing the “*Mabuya mabouya*” complex. REBOUÇAS-SPIEKER (1981a, b), VANZOLINI (1981a, b) and VANZOLINI & WILLIAMS (1981) followed the same procedure. HARDY (1982) cites REBOUÇAS-SPIEKER (1981a) and without further justification states that the skinks of Tobago belong to *M. bistriata*, a statement which strikes us as rather loose, the more so because the specimen HARDY figures does not look very much like the specimens of *M. bistriata* we examined. From correspondence with VANZOLINI it has become clear that the paper on the “*Mabuya mabouya*” complex is nearly finished. We agree with REBOUÇAS-SPIEKER (1974) that the occurrence of a single subspecies (*Mabuya m. mabouya*) over an area reaching from the Lesser Antilles to approximately 24°S in mainland South America is highly unlikely and that the situation merits more detailed study. We adopt the views of the Brazilian authors until a more complete study of the group is available.

Mabuya spec.

Scincus nigropunctatus Spix, 1825: 24, pl. XXVI fig. 2; BOIE, 1826: 120

Mabuya nigropunctata – FITZINGER, 1827: 747 (by inference)

Euprepis agilis – WAGLER, 1830b: 162 (partly)

Tiliqua nigropunctatus – GRAY, 1831a: 69

Eumeces Spixii Duméril & Bibron, 1839: 642 (partly)

Mabouya agilis – GRAY, 1845: 94 (partly)

Eupr[epes] (Mabuia) Cepedii – PETERS, 1877: 413

Euprepes (Mabuia) auratus var. *Cepedii* – PETERS, 1877: 414

Mabuya agilis – BOCOURT, 1879: 395 (partly)

Mabuia agilis var. *nigropunctata* – BOULENGER, 1887: 192 (partly); GOELDI, 1902: 37

Mabuya m. mabouya – DUNN, 1935: 544 (partly); CUNHA, 1961: 96 (partly); PETERS & DONOSO-BARROS, 1970: 199 (partly)

Species inquirenda – VANZOLINI, 1981a: XXI

Although SPIX (1825) in his description did not state the number of specimens on which this species was based, in our opinion it is clear that he only had one specimen before him which was illustrated on pl. XXVI fig. 2. Both from the illustration and from the description it is clear that this is just a specimen of a species of *Mabuya* with regenerated tail. PETERS (1877) examined this specimen and stated that it agreed with the illustration, that it had 30 longitudinal scalerows, three supraoculars and that the eye was situated over the 5th supralabial. He regarded it as belonging to the variety *Cepedii* (cf. BOCOURT, 1879: pl. XXII B figs. 5, 5a, 5b) of the species *Euprepes auratus*. VANZOLINI (1981a: XXI) in a footnote stated: “*Scincus nigropunctatus* cannot be identified with any lizard collected in Brazil so far”, and consequently considered it a species inquirenda.

VANZOLINI (1981a), in his footnote, implicitly doubts the locality data (Ecjá, Amazonas, Brazil) for this taxon. In analogy with what happened in some snakes, an amphisbaenian and a turtle, we might expect that when the locality is wrong, the specimen could have come from Spain. However, the only species that might qualify in that case would be *Chalcides bedriagai* (Boscá), but that species does not resemble SPIX's pl. XXVI fig. 2: it has much shorter legs and neither does it have 30 scales around the midbody. We therefore reject the suggestion that *S. nigropunctatus* might be based on a non-Brazilian lizard. Provisionally we identified it as a species of *Mabuya*, which until recently we would unhesitatingly have identified as *Mabuya mabouya*. Now that it turns out that several species seem to be involved under that name, we refrain from further identification until the group has been reviewed.

Unfortunately, the holotype of *Scincus nigropunctatus* Spix, 1825 was lost before the old catalogue of the Munich museum was prepared, because it is not mentioned in it. Nevertheless, we feel confident

that in due time it will be possible to correctly assign this name on the basis of the original description at and illustration, and the additional data provided by PETERS (1877).

Leposoma scincoides Spix

Leposoma scincoides Spix, 1825: 24, pl. XXVII fig. 2; BOULENGER, 1885b: 386; GOELDI, 1902: 548; RUIBAL, 1952: 485; CUNHA, 1961: 136; PETERS & DONOSO-BARROS, 1970: 165; VANZOLINI, 1981a: XXI
Lepidosoma scincoides – WAGLER, 1830b: 157; PETERS, 1862b: 190, pl. II figs. 1, 1a–f; PETERS, 1877: 414
Pantodactylus d'Orbignyi Duméril & Bibron, 1839: 431 (partly)
Lepisoma scincoides – GRAY, 1845: 60 (partly)

According to PETERS (1862b) only a single specimen (the holotype) was present in the Spix collection. PETERS (1862b) augmented SPIX's rather superficial description by providing a more detailed description, detailed measurements and very precise drawings of head, tongue and anal region of the type specimen, which was formerly registered under ZSMH 641/0 from Brazil. This specimen apparently is lost, but thanks to PETERS' (1862b) added data, its allocation never has been disputed.

Heterodactylus imbricatus Spix

Heterodactylus imbricatus Spix, 1825: 25, pl. XXVII fig. 1; SPIX, 1826: 604; FITZINGER, 1827: 747; GRAY, 1838: 392; DUMÉRIL & BIBRON, 1839: 447; GRAY, 1845: 59; REINHARDT & LÜTKEN, 1861: 214; PETERS, 1862b: 172; PETERS, 1877: 413, 414; BOULENGER, 1885b: 422; GOELDI, 1902: 550; PETERS & DONOSO-BARROS, 1970: 144; DIXON, 1973: 7; VANZOLINI & RAMOS, 1977: 35; VANZOLINI, 1981a: XXI
Tachydromus imbricatus – BOIE, 1826: 120 (by inference)
Chirocolus imbricatus – WAGLER, 1830b: 157
Heterodactylus *Imbricatus* – GRAY, 1831a: 66

According to PETERS (1862b) SPIX's description was based on a single specimen, and he provided some additional data on it. Unfortunately he did not provide the same details as for *L. scincoides*. This holotype of *Heterodactylus imbricatus* Spix, 1825 formerly was registered as ZSMH 108/0, from the interior of the province of Rio de Janeiro, Brazil. Apparently it was lost during the war. There has been no argument about the validity of this taxon.

Ophiodes striatus (Spix)

Pygopus striatus Spix, 1825: 25, pl. XXVIII fig. 1; SPIX, 1826: 604
Pygopus cariococca Spix, 1825: 26
Pygopus Caryococca Spix, 1825: pl. XXVIII fig. 2; SPIX, 1826: 604
Pygodactylus Gronovii – BOIE, 1826: 120; FITZINGER, 1827: 748
Ophiodes striatus – WAGLER, 1828a: 740; WAGLER, 1830b: 159; GRAY, 1839: 334; DUMÉRIL & BIBRON, 1839: 789; GRAY, 1845: 99; GRAVENHORST, 1851: 379; BOCOURT, 1881: 458; BOULENGER, 1885b: 296; GOELDI, 1902: 532; HELLMICH, 1960: 54; WERMUTH, 1969: 28; PETERS & DONOSO-BARROS, 1970: 209; VANZOLINI, 1981a: XXI
Ophiodes Striatus – GRAY, 1831a: 73
Ophiodes fragilis – PETERS, 1877: 413, 414
Ophiodes s. striatus – CUNHA, 1961: 177

From SPIX's (1825) text it is not clear on how many specimens he based his description of *P. striatus* or that of *P. cariococca*. However, as the Munich collection at present contains three specimens of this species collected by SPIX (ZSMH 590/0, 593/0, 166/47), it is clear that at least the description of *P. striatus* was based on several syntypes. ZSMH 593/0 (adult) apparently is the specimen on which the illustration of *P. striatus* was based: it agrees in size, pattern and even the coils of body and tail are faithfully reproduced. HELLMICH (1960: 54) reported this specimen as „der Typus“ of *P. striatus*. Its condition is very poor, both head and body are damaged, the tail is broken but still attached, whereas its tip is dried out (s–v length 195 mm, tail length 299 mm, length of hindlimbs 4.9 mm). ZSMH 166/47 is another adult specimen (s–v length 105 mm, tail length 178 mm, length of hindlimbs 5.2 mm) from

Brazil, collected by SPIX, which is in better condition than ZSMH 593/0. Both specimens lack old labels and ZSMH 166/47 apparently was only found and registered in 1947, after the war. We nevertheless regard them as syntypes of *Pygopus striatus* Spix, 1825, and despite its poor condition we prefer to select here as lectotype ZSMH 593/0, ZSMH 166/47 automatically becoming a paralectotype.

ZSMH 590/0, registered as “Typus” and collected by SPIX in Brazil, has an old parchment label, written in the same hand (WAGLER’s) that wrote the snake labels. It reads: “*Seps fragilis*/Raddi Storia di/alc. Rett. nuov./Pygopus Caryococca/Spix. Lac. br. t. 28/fig. 2 Brasilia/Iter Spix/Pullus”. From this label and from PETERS’ (1877) remark that this „ist nur das Junge“, it becomes clear that this was the specimen on which the description of *P. caryococca* was based. Careful comparison of the specimen (juv., s-v length 78 mm, tail length 79 + ... mm, length of hindlimbs 3.0–3.2 mm) with the illustration of *P. Caryococca* (SPIX, 1825: pl. XXVIII fig. 2) shows that there is complete agreement in size and shape (except for the missing tail-tip, which apparently originally was present. Also the snout-vent length mentioned in the description ($6\frac{1}{2}' - 3\frac{3}{4}' = 2\frac{3}{4}' = 74.4$ mm) agrees closely with that of ZSMH 590/0, which confirms our conviction that no other specimens were used for the description of *P. caryococca* and that ZSMH 590/0 can be regarded as the holotype of *Pygopus caryococca* Spix, 1825. The trivial name *Caryococca* is regarded as a subsequent incorrect spelling, although SPIX himself used it twice (SPIX, 1825; SPIX, 1826).

BOIE (1826) already supposed that *P. caryococca* was the juvenile of *P. striatus* (or rather *P. Gronovii* as he called it), but this was vehemently denied by SPIX (1826). All later authors followed BOIE.

RADDI (1820: 341; 1827: 490) described *Seps fragilis* on the basis of material from the surroundings of Rio de Janeiro. WAGLER (1828a: 741; 1830b: 159) observed that SPIX’s *P. striatus* and RADDI’s *S. fragilis* probably were identical. Apparently only PETERS (1877: 413) noted this remark and correctly repeated that the two were identical and that the valid name should be *Ophiodes fragilis* (Raddi). No other author picked up this lead, and neither BOULENGER (1885b), WERMUTH (1969) or PETERS & DONOSO-BARROS (1970) listed *Seps fragilis* Raddi in any of their synonymies. This curious neglect of names proposed by RADDI also was reported by VANZOLINI (1977: 25). After comparing RADDI’s (1820, 1827) description of *S. fragilis* with that of *P. striatus* and *P. caryococca*, and with actual specimens, we come to the same conclusion as WAGLER (1828a, 1830b) and PETERS (1877); all these names refer to the same species, which should be called *Ophiodes fragilis* (Raddi, 1820), because *S. fragilis* Raddi, 1820 has priority over *Pygopus striatus* Spix, 1825. Applying the rule of priority in this case would seriously upset the nomenclature of this taxon, which virtually since 1828 has been referred to as *O. striatus* (Spix, 1825). We therefore think that the best solution in this case would be to ask the International Commission on Zoological Nomenclature to suppress *Seps fragilis* Raddi, 1820 and place *Pygopus striatus* Spix, 1825 on the Official List of accepted names.

Review

SPIX (1824, 1825) and WAGLER (1824) together described 39 snakes, 38 lizards, 3 amphisbaenians, 4 caiman, 18 turtles, 55 frogs and 1 caecilian as new for Brazil. After revision of part of the type material by JAN (1859) and PETERS (1873a, 1877) these totals were drastically reduced (table 1), but still differed considerably from the present opinion about the status of the SPIX/WAGLER taxa. In recent years it became increasingly clear that several of these taxa had been incorrectly synonymised and part of them (especially frogs) should be recognised as valid taxa. This largely explains the differences between VANZOLINI’s (1981a) and our own views.

We hope that in the preceding pages we succeeded in giving a fair picture of what remains from the original SPIX/MARTIUS collection of reptiles and amphibians from Brazil. According to TIEFENBACHER (1982) SPIX/MARTIUS returned with “130 Amphibien”, but he did not mention the number of reptiles they brought back with them, unless of course, these were included in the “Amphibien”, as was usual

Wagler's name	Present name	Original number	Known material	Present status
<u>Elaps Schrankii</u>	<u>Hydrodynastes b. bicinctus</u> (Hermann)	?	ZSMH 1847/0	lost
<u>Elaps Martii</u>	<u>Hydrops m. martii</u> (Wagler)	1	ZSMH 1844/0	holotype
<u>Elaps triangularis</u>	<u>Hydrops t. triangularis</u> (Wagler)	1	ZSMH 1846/0	holotype
<u>Elaps venustissimus</u> Wied, 1821	<u>Erythrolamprus aesculapii venustissimus</u> (Wied)	1	ZSMH 1845/0	doubtful status
<u>Elaps melanocephalus</u>	<u>Tantilla m. melanocephala</u> (L.)	3	ZSMH 2173/0	lost, no type
<u>Elaps Langsdorffii</u>	<u>Micrurus l. langsdorffii</u> (Wagler)	?	ZSMH 2250/0	A: lectotype
<u>Dryinus aeneus</u>	<u>Oxybelis aeneus</u> (Wagler)	?	ZSMH 2645/0	B: paralectotype
<u>Natrix Chiametla</u> Shaw, 1802	<u>Liophis mliariis</u> (L.)	several	ZSMH 1865/0	lectotype
<u>Natrix G. Forsteri</u>	<u>Leimadophis typhlus</u> (L.)	1	ZSMH 1768/0	2 ex., no type-material
<u>Natrix Forsteri</u>	<u>Leimadophis melanostigma</u> (Wagler)	2?	ZSMH 199/0	A: illustrated specimen
<u>Natrix melanostigma</u>	<u>Malpolon m. monspessulanus</u> (Hermann)	?	----	lectotype
<u>Natrix lacertina</u>				lost
<u>Natrix cinnamomea</u>	<u>Incertae sedis</u>	1	----	lost
<u>Natrix occipitalis</u>	<u>Oxyrhophus formosus</u> (Wied)	2?	ZSMH 2053/0	lectotype
<u>Natrix bicarinata</u> (Wied, 1820)	<u>Chironius bicarinatus</u> (Wied)	3	ZSMH 1752/0	no type
<u>Natrix scurrula</u>	<u>Chironius scurrulus</u> (Wagler)	several	ZSMH 2628/0	lectotype
<u>Natrix sulphurea</u>	<u>Pseustes s. sulphureus</u> (Wagler)	?	ZSMH 1681/0	lectotype
<u>Natrix bahiensis</u>	<u>Incertae sedis</u>	1	----	lost
<u>Natrix chersaeoides</u>	<u>?Leimadophis almadensis</u> (Wagler)	5	ZSMH 2692/0	lost
	<u>Natrix maura</u> (L.)			A: lectotype
			ZSMH 1467/0	B: paralectotype
<u>Natrix almada</u>	<u>Leimadophis almadensis</u> (Wagler)	2	ZSMH 2688/0	2 ex., lost
<u>Natrix almadensis</u>			ZSMH 2747/0	lectotype
<u>Natrix ocellata</u>	<u>Natrix maura</u> (L.)	1	----	paralectotype
<u>Natrix semilineata</u>	<u>Leimadophis reginae</u> (L.)	2?	ZSMH 1832/0	lost
<u>Natrix sexcarinata</u>	<u>Pseustes sexcarinatus</u> (Wagler)	1	ZSMH 1744/0	A: lectotype
<u>Natrix aspera</u>	<u>Helicops angulatus</u> (L.)	several	ZSMH 1528/0	B: paralectotype
<u>Natrix punctatissima</u>	<u>Thamnodynastes pallidus</u> (L.)	3	ZSMH 2043/0	lost
<u>Xiphosoma ornatum</u>	<u>Corallus e. enydris</u> (L.)	1	ZSMH 2694/0	lectotype
<u>Xiphosoma dorsuale</u>	<u>Corallus e. enydris</u> (L.)	1	ZSMH 1364/0	lectotype
<u>Xiphosoma araramboya</u>	<u>Corallus caninus</u> (L.)	7	ZSMH 1365/0	lectotype
<u>Ophis Merremii</u>	<u>Waglerophis merremii</u> (Wagler)	several	----	6 ex. lost
<u>Micrurus Spixii</u>	<u>Micrurus s. spixii</u> Wagler	1	ZSMH 209/0	lost
<u>Bothrops Megaera</u> (Shaw, 1802)	<u>Bothrops leucurus</u> Wagler	1	----	holotype
<u>Bothrops Furia</u>	<u>Bothrops atrox</u> (L.)	?	----	lost, no type
<u>Bothrops leucostigma</u>	<u>Bothrops spec.</u>	1	----	lost
<u>Bothrops tessellatus</u>	<u>Bothrops atrox</u> (L.)	several	ZSMH 2699/0	lectotype
<u>Bothrops taeniatus</u>	<u>Bothrops t. taeniatus</u> Wagler	1	----	lost
<u>Bothrops Newiiedi</u>	<u>Bothrops n. newiiedi</u> Wagler	?	ZSMH 2348/0	lectotype
<u>Bothrops leucurus</u>	<u>Bothrops leucurus</u> Wagler	36	ZSMH 2698/0	A: paralectotype
<u>Bothrops Surucucu</u>	<u>Lachesis m. muta</u> (L.)	?	----	B: lectotype
<u>Crotalus Cascavella</u>	<u>Crotalus durissus cascavella</u> Wagler	?	----	lost
<u>Stenostoma albifrons</u>	<u>Leptotyphlops albifrons</u> (Wagler)	1	ZSMH 1348/0	lost
<u>Leposternon Microcephalus</u>	<u>Leposternon microcephalum</u> Wagler	1	ZSMH 3150/0	holotype
<u>Amphisbaena oxyura</u>	<u>Blanus cinereus</u> (Vandelli)	3	----	doubtful, lost
<u>Amphisbaena vermicularis</u>	<u>Amphisbaena vermicularis</u> Wagler	?	ZSMH 660/0	lost
<u>Caecilia annulata</u>	<u>Siphonops annulatus</u> (Mikan)	?	ZSMH 1323/0	lectotype
			RMNH 2419	

in Spix's days. In the old catalogue of the Munich museum 71 amphibians and 201 reptiles from the Spix collection are mentioned, and to this number should be added the nine amphibians and 14 reptiles present in the Leiden museum, which makes a grand total of at least 80 amphibians and 215 reptiles which were known to exist around the beginning of this century, after much material had been lost already in the nineteenth century. Of these known specimens at present 28 amphibians and 151 reptiles are still extant (tables 2–5 and listing on p. 400–403), 156 in the Munich collection and 23 in the Leiden museum. From these data it is clear that TIEFENBACHER's (1982) information is at least incomplete.

Table 3

Spix's name	Present name	Original number	Known material	Present status
<u>Emys Amazonica</u>	<u>Podocnemis expansa</u> (Schweigger)	adults juvs.	ZSMH 3095/0 ZSMH 7-14/0 ZSMH 2730/0 ZSMH 2446/0 ZSMH 2447/0 RMNH 3294	1 ad., shell, paralectotype 8 ad., skulls, paralectotypes 1 ad., skull, paralectotype 1 juv., A: lectotype 6 juvs., B-G: paralectotypes 4 juvs., paralectotypes 1 juv., paralectotype
<u>Emys viridis</u>	<u>Phrynops g. geoffroanus</u> (Schweigger)	1	ZSMH 3008/0	1 ad., shell, holotype
<u>Emys depressa</u>	<u>Platemys spixii</u> Duméril & Bibron	2?	ZSMH 3003/0	1 ad., shell, lectotype
<u>Emys macrocephala</u>	<u>Peltocephalus tracaxa</u> (Spix)	3	ZSMH 15/0 ZSMH 17/0 RMNH 6164	1 ad., skull, paralectotype 1 ad., skull, paralectotype 1 ad., lectotype
<u>Emys Tracaxa</u>	<u>Peltocephalus tracaxa</u> (Spix)	?	ZSMH 16/0	1 ad., skull, lectotype
<u>Emys rufipes</u>	<u>Phrynops rufipes</u> (Spix)	1	ZSMH 3006/0	1 ad., skeleton, holotype
<u>Emys erythrocephala</u>	<u>Podocnemis erythrocephala</u> (Spix)	1	ZSMH 2517/0	1 ad., shell, holotype
<u>Emys canaliculata</u>	<u>Platemys platycephala</u> (Schneider)	4	ZSMH 3007/0	1 hgr., skeleton, lectotype
<u>Emys dorsualis</u>	<u>Rhinoclemmys p. punctularia</u> (Daudin)	2	ZSMH 2424/0	1 juv., lectotype
<u>Emys stenops</u>	<u>Phrynops gibbus</u> (Schweigger)	1	ZSMH 2454/0	1 juv., holotype
<u>Emys marmorea</u>	<u>Mauremys leprosa</u> (Schweigger)	?	----	lost
<u>Chelys matamata</u> (Bruguière, 1792)	<u>Chelus fimbriatus</u> (Schneider)	6	ZSMH 3015/0	1 ad., skeleton, no type
<u>Chelys fimbriatus</u> (Schneider, 1783)			ZSMH 3019/0	1 ad., skull, no type
<u>Kinosternon longicaudatum</u>	<u>Kinosternon s. scorpioides</u> (L.)	2	ZSMH 2375/0 ZSMH 3000/0	1 ad., lectotype 1 ad., paralectotype
<u>Kinosternon brevicaudatum</u>	<u>Kinosternon s. scorpioides</u> (L.)	?	----	lost
<u>Testudo Hercules</u>	<u>Geochelone denticulata</u> (L.)	?	----	lost
<u>Testudo sculpta</u>	<u>Geochelone denticulata</u> (L.)	5	ZSMH 2753/0 ZSMH 2738/0	1 juv., A: lectotype 2 juvs., B-C: paralectotypes 1 shell, paralectotype
<u>Testudo carbonaria</u>	<u>Geochelone carbonaria</u> (Spix)	?	----	lost
<u>Testudo Cagado</u>	<u>Geochelone denticulata</u> (L.)	1	----	lost

Spix's name	Present name	Original number	Known material	Present status
<u>Rana giras</u>	<u>Leptodactylus pentadactylus</u> (Laur.)	?(1)	ZSMH 89/1921	lost
<u>Rana pachypus</u>				
<u>Rana pagypus</u> }	<u>Leptodactylus ocellatus</u> (L.)	10(several)	ZSMH 122/0	A: lectotype B: paralectotype
			ZSMH 117/0	lost
			?RMNH 2041	no type
<u>Rana pachypus</u> Variet. 1	<u>Leptodactylus ocellatus</u> (L.)	1(1)	ZSMH 2503/0	lost
<u>Rana pachypus</u> Variet. 2	<u>Leptodactylus fuscus</u> (Schneider)	1(1)	----	lost
<u>Rana mystacea</u>	<u>Leptodactylus mystaceus</u> (Spix)	2(2)	ZSMH 2504/0	lost
	<u>Leptodactylus spixi</u> Heyer		ZSMH 2505/0	lost
<u>Rana megastoma</u>	<u>Ceratophrys cornuta</u> (L.)	?(2)	ZSMH 1056/0	1 ex., lectotype
<u>Rana scutata</u>	<u>Hemiphractus scutatus</u> (Spix)	1(1)	ZSMH 37/0	lost
<u>Rana palmipes</u>	<u>Rana palmipes</u> Spix	4(2)	ZSMH 963/0	2 ex., lost
<u>Rana coriacea</u>	<u>Leptodactylus pentadactylus</u> (Laur.)	?(1)	ZSMH 2502/0	lost
<u>Rana miliaris</u>	<u>Thoropa miliaris</u> (Spix)	?(1)	ZSMH 2493/0	lost
<u>Rana pygmaea</u>	<u>Leptodactylus ocellatus</u> (L.)	?(1)	----	lost
<u>Rana labyrinthica</u>	<u>Leptodactylus labyrinthicus</u> (Spix)	?(1)	ZSMH 2501/0	lost
<u>Rana binotata</u>	<u>Eleutherodactylus binotatus</u> (Spix)	?(1)	ZSMH 2695/0	holotype
	<u>Hyliodes nasus</u> (Lichtenstein)			
<u>Hyla ranoides</u>	<u>?Thoropa miliaris</u> (Spix)	3(3)	ZSMH 1043/0	2 ex., lost
	<u>?Eleutherodactylus spec.</u>			
<u>Hyla lateristriga</u>	<u>Olooligon rubra</u> (Laur.)	?(1)	----	lost
<u>Hyla albopunctata</u>	<u>Hyla albopunctata</u> Spix	2(1)	----	lost
<u>Hyla affinis</u>	<u>Olooligon x. x-signata</u> (Spix)	2(1)	ZSMH 2495/0	holotype
<u>Hyla albomarginata</u>	<u>Hyla albomarginata</u> (Spix)	2(1)	ZSMH 2370/0	lost
<u>Hyla papillaris</u>	<u>Hyla punctata</u> (Schneider)	?(1)	----	lost
<u>Hyla pardalis</u>	<u>Hyla pardalis</u> Spix	2(1)	ZSMH 2499/0	2 ex., lost
<u>Hyla cinerascens</u>	<u>Hyla granosa</u> Boulenger	?(1)	ZSMH 2498/0	2 ex., lost
<u>Hyla trivittata</u>	<u>Dendrobates trivittatus</u> (Spix)	6	ZSMH 42/0	lost
			ZSMH 43/0	lost
<u>Hyla nigerrima</u>	<u>Dendrobates trivittatus</u> (Spix)	5	RMNH 1836	lectotype
			ZSMH 44/0	lost
<u>Hyla bipunctata</u>	<u>Hyla bipunctata</u> Spix	2(2)	RMNH 1799/0	lectotype
<u>Hyla variolosa</u>	<u>Hyla punctata</u> Schneider	?(1)	ZSMH 2497/0	2 ex., lost
			ZSMH 2496/0	1 ex., lost
			RMNH 1879	lectotype
<u>Hyla coerulea</u>	<u>Olooligon x. x-signata</u> (Spix)	2(2)	ZSMH 2710/0	A: lectotype B: paralectotype
<u>Hyla stercoracea</u>	<u>Incertae sedis</u>	?(1)	ZSMH 1044/0	lost
<u>Hyla strigilata</u>	<u>Hyla strigilata</u> (Spix)	?(1)	ZSMH 2369/0	lost
<u>Hyla nebulosa</u>	<u>Olooligon nebulosa</u> (Spix)	?(2)	?ZSMH 2531/0	lost
<u>Hyla geographica</u>	<u>Hyla geographica</u> Spix	?(1)	ZSMH 35/0	lost
<u>Hyla geographica</u> var. sive	<u>Hyla geographica</u> Spix	?(1)	ZSMH 47/0	lost
<u>semilineata</u>				
<u>Hyla x-signata</u>	<u>Olooligon x. x-signata</u> (Spix)	?(1)	ZSMH 2494/0	lost
<u>Hyla abbreviata</u>	<u>Eleutherodactylus binotatus</u> (Spix)	?(1)	----	lost
<u>Hyla zonata</u>				
<u>Hyla zonalis</u> }	<u>Phrynohyas venulosa</u> (Laur.)	?(1)	ZSMH 48/0	lost
<u>Hyla bufonia</u>	<u>Phrynohyas venulosa</u> (Laur.)	?(1)	----	lost
<u>Hyla bicolor</u> (Boddaert, 1772)	<u>Phyllomedusa bicolor</u>	?(?)	ZSMH 1190/0	lost
			ZSMH 1192/0	lost
			ZSMH 2514/0	lost
			ZSMH 2515/0	lost
<u>Bufo maculiventris</u>	<u>Bufo marinus</u> L.	4(?)	----	lost
<u>Bufo Agua Daudin, 1802</u>	<u>Bufo marinus</u> L.	2(?)	----	lost, no types
<u>Bufo ictericus</u>	<u>Bufo ictericus</u> Spix	2(?)	RMNH 2182	lectotype
<u>Bufo ornatus</u>	<u>Bufo crucifer</u> Wied	2(2)	ZSMH 2691/0	A: lectotype B: paralectotype
			RMNH 2157	paralectotype
<u>Bufo Lazarus</u>	<u>Bufo marinus</u> L.	2(2)	ZSMH 2513/0	2 ex., lost
<u>Bufo dorsalis</u>	<u>Bufo crucifer</u> Wied	5(3)	ZSMH 1141/0	A: lectotype B-C: paralectotypes
<u>Bufo stellatus</u>	<u>Bufo crucifer</u> Wied	?(1)	----	lost
<u>Bufo albicans</u>	<u>Bufo marinus</u> L.	2(2)	ZSMH 1140/0	lectotype
			RMNH 2191	paralectotype
<u>Bufo scaber</u> Daudin, 1802	<u>Bufo crucifer</u> Wied	2(2)	ZSMH 1343/0	no type
			RMNH 2190	no type
<u>Bufo ephippium</u>	<u>Brachycephalus ephippium</u> (Spix)	1(?)	ZSMH 1021/0	holotype
<u>Bufo albifrons</u>	<u>Phyllalaemus albifrons</u> (Spix)	2(2)	ZSMH 49/0	lost
			ZSMH 50/0	lost
<u>Bufo globulosus</u>	<u>Bufo g. granulosus</u> Spix	?(1)	ZSMH 41/0	lost
<u>Bufo naricus</u>	<u>Bufo "group typhonius"</u>	?(1)	----	lost
<u>Bufo nasutus</u> Schneider, 1799	<u>Bufo "group typhonius"</u>	?(1)	ZSMH 1146/0	no type
<u>Bufo semilineatus</u>	<u>Bufo crucifer</u>	?(1)	ZSMH 1331/0	holotype
<u>Bufo granulosus</u>	<u>Bufo g. granulosus</u> Spix	?(1)	ZSMH 40/0	lost
<u>Bufo acutirostris</u>	<u>Bufo "group typhonius"</u>	?(1)	ZSMH 1147/0	holotype
<u>Bufo proboscideus</u>	<u>Bufo "group typhonius"</u>	?(1)	ZSMH 1145/0	holotype
<u>Pipa cururu</u>				
<u>Pipa curucuru</u> }	<u>Pipa pipa</u> (L.)	3(?)	----	lost

Spix's name	Present name	Original number	Known material	Present status
<u>Jacaretinga mqschifer</u>	<u>Paleosuchus palpebrosus</u> (Cuvier)	?	ZSMH 138/0	lost
<u>Jacaretinga punctulatus</u>	<u>Caiman c. crocodilus</u> (L.)	?	ZSMH 2481/0	lost
			ZSMH 2482/0	lost
<u>Caiman niger</u>	<u>Melanosuchus niger</u> (Spix)	?	ZSMH 3/0	lost
			ZSMH 2480/0	1 juv., lectotype
			ZSMH 3039/0	skull, paralectotype
			? ZSMH 3045/0	lost
<u>Caiman fissipos</u>	<u>Caiman l. latirostris</u> (Daudin)	?	ZSMH 2515/0a	skull, lectotype
<u>Iguana squamosa</u>	<u>Iguana i. iguana</u> (L.)	?	ZSMH 537/0	lectotype
			ZSMH 542/0	lost
			ZSMH 2716/0	paralectotype
			ZSMH 3217/0	lost
<u>Iguana viridis</u>	<u>Iguana i. iguana</u> (L.)	?	ZSMH 540/0	lectotype
<u>Iguana coerulea</u>	<u>Iguana i. iguana</u> (L.)	?	ZSMH 71/0	2 ex., lost
<u>Iguana emarginata</u>	<u>Iguana i. iguana</u> (L.)	?	ZSMH 535/0	holotype
<u>Iguana lophyroides</u>	<u>Iguana i. iguana</u> (L.)	?	ZSMH 536/0	1 ex., lost
				1 ex., paralectotype
			ZSMH 546/0	A: lectotype
				B: paralectotype
<u>Lophyrus Xiphosurus</u>	<u>Uranoscodon superciliosa</u> (L.)	?	RMNH 2780	paralectotype
			ZSMH 3189/0	A: paralectotype
				B: lectotype
<u>Lophyrus rhombifer</u>	<u>Enyalius catenatus</u> (Wied)	?	RMNH 2915	paralectotype
<u>Lophyrus margaritaceus</u>	<u>Enyalius catenatus</u> (Wied)	?	RMNH 2911	lectotype
			ZSMH 2743/0	A: lectotype
				B: paralectotype
				paralectotype
<u>Lophyrus ochrocollaris</u>	<u>Plica umbra ochrocollaris</u> (Spix)	?	RMNH 3061/0	lost
			ZSMH 747/20	lost
			RMNH 2899	lectotype
<u>Lophyrus Panthera</u>	<u>Plica plica</u> (L.)	?(1)	ZSMH 746/20	lost
<u>Lophyrus albomaxillaris</u>	<u>Enyalius catenatus</u> (Wied)	?	RMNH 3058	lectotype
<u>Lophyrus aureonitens</u>	<u>Uranoscodon superciliosa</u> (L.)	?	ZSMH 113/0	lost
<u>Agama hispida</u>	<u>Tropidurus torquatus hispidus</u> (Spix)	?	ZSMH 524/0	paralectotype
			RMNH 2912	lectotype
<u>Agama tuberculata</u>	<u>Tropidurus t. torquatus</u> (Wied)	?(1)	ZSMH 523/0	paralectotype
			ZSMH 527/0	2 ex., lost
			ZSMH 531/0	lectotype
<u>Agama semitaeniata</u>	<u>Platynotus semitaeniatus</u> (Spix)	?(3)	ZSMH 116/0	A-C: paralectotypes
			RMNH 2907	lectotype
<u>Agama nigrocollaris</u>	<u>Tropidurus torquatus hispidus</u> (Spix)	?(2)	ZSMH 528/0	A: lectotype
				B: paralectotype
<u>Agama cyclurus</u>	<u>Tropidurus torquatus hispidus</u> (Spix)	?(1)	ZSMH 525/0	holotype
<u>Polychrus marmoratus</u> (L. 1758)	<u>Polychrus marmoratus</u> (L.)	?	ZSMH 488/0	no type
<u>Polychrus acutirostris</u>	<u>Polychrus acutirostris</u> Spix	?	----	lost
<u>Anolis violaceus</u>	? <u>Anolis p. punctatus</u> Daudin	1(1)	----	lost
<u>Gecko aculeatus</u>	<u>Hemidactylus mabouia</u> (Moreau (de Jonnés)	?	ZSMH 166/0	A: lectotype
				B: paralectotype
<u>Gecko cruciger</u>	? <u>Hemidactylus mabouia</u> (Moreau (de Jonnés)	?	----	lost
<u>Lophyrus cruciger</u>				
<u>Thecadactylus pollicaris</u>	<u>Phylllopezus p. pollicaris</u> (Spix)	?	ZSMH 165/0	A: paralectotype
				B: paralectotype
			ZSMH 2510/0	lectotype, lost
			RMNH 2750	paralectotype
<u>Gymnodactylus geckoides</u>	<u>Gymnodactylus g. geckoides</u> (Spix)	?	----	lost
<u>Tupinambis nigropunctatus</u>	<u>Tupinambis nigropunctatus</u> Spix	?	ZSMH 627/0	paralectotype
			ZSMH 628/0	paralectotype
			ZSMH 629/0	lectotype
			ZSMH 630/0	lost
			ZSMH 3208/0	paralectotype
<u>Tupinambis monitor s. nigropunctatus</u>	<u>Tupinambis teguixin</u> L.	?	ZSMH 626/0	no type
<u>Tupinambis Monitor</u> Daudin, 1802				
<u>Crocodylus amazonicus</u>	<u>Crocodylus lacertinus</u> (Daudin)	?	ZSMH 638/0	holotype
<u>Crocodylus ocellatus</u>	<u>Crocodylus lacertinus</u> (Daudin)	?	ZSMH 639/0	lectotype
			RMNH 3394	paralectotype
<u>Kentropyx calcaratus</u>	<u>Kentropyx calcaratus</u> Spix	?	ZSMH 190/0	lost
<u>Tejus Ameiva</u> (L., 1758)	<u>Ameiva ameiva</u> (L.)	4	ZSMH 2703/0	2 ex., no types
<u>Tejus lateristriga</u> (Cuvier, 1817)	<u>Ameiva ameiva</u> (L.)	3	ZSMH 633/0	1 ex., no type, lost
			ZSMH 650/0	3 ex., no types,lost
			ZSMH 2700/0	2 ex., no types,lost
			ZSMH 3205/0	2 ex., no types,lost
<u>Tejus tritaeniatus</u>	<u>Ameiva ameiva</u> (L.)	2	ZSMH 705/0	lectotype
			RMNH 3382	paralectotype
<u>Tejus ocellifer</u>	<u>Cnemidophorus ocellifer</u> (Spix)	?(2)	ZSMH 111/0	lost
<u>Scincus bistriatus</u>	<u>Mabuya bistrata</u> (Spix)	?(2)	ZSMH 112/0	lost
			RMNH 2512	lectotype
<u>Scincus nigropunctatus</u>	<u>Mabuya spec.</u>	?(1)	----	lost
<u>Leposoma scincoides</u>	<u>Leposoma scincoides</u> Spix	?(1)	ZSMH 641/0	lost
<u>Heterodactylus imbricatus</u>	<u>Heterodactylus imbricatus</u> Spix	?(1)	ZSMH 108/0	lost
<u>Fygopus striatus</u>	<u>Ophiodes striatus</u> (Spix)	?	ZSMH 593/0	lectotype
			? ZSMH 594/0	?lost
			ZSMH 166/47	paralectotype
<u>Fygopus cariococca</u>	<u>Ophiodes striatus</u> (Spix)	?	ZSMH 590/0	holotype
<u>Fygopus Caryococca</u>				

Das in den Museen München und Leiden noch vorhandene Typenmaterial von SPIX und WAGLER wird dargestellt und besprochen. Es stellte sich heraus, daß ein großer Teil des Typenmaterials, das im letzten Weltkrieg zerstört worden schien, noch vorhanden ist. Das Material wird kurz beschrieben, sein augenblicklicher, taxonomischer Status wird diskutiert und Lectotypen werden nach Möglichkeit bestimmt. Entsprechend dem gegenwärtigen Forschungsstand wird eine Anzahl von nomenklatorischen Änderungen notwendig. *Natrix cinnamomea* Wagler wird hier als *species incertae sedis* angesehen – vielleicht eine Spezies von *Pseustes* – was von der augenblicklichen Meinung, daß dies eine Spezies von *Chironius* sei, abweicht. *Bothrops Megaera* Wagler und *B. leucurus* Wagler werden für conspezifisch gehalten und sollten den Namen *B. leucurus* Wagler tragen. Sowohl *B. Furia* Wagler als auch *B. tessellatus* Wagler sind synonym mit *B. atrox* (L.). *B. taeniatus* Wagler ist identisch mit *B. castelnaudi* Duméril & Bibron und demnach muß man diese Art *B. taeniatus* Wagler nennen. *Leptotyphlops tenella* Klauber wird mit *L. albifrons* Wagler synonymisiert. *Emys cayennensis* Schweigger wird als Synonym von *Podocnemis expansa* (Schweigger) angesehen. *Emys Tracaxa* Spix und *E. macrocephala* Spix sind conspezifisch und müssen korrekterweise *Peltocephalus tracaxa* (Spix) heißen. *Podocnemis unifilis* Troschel und *Emys dumeriliana* Schweigger sind identisch; um Stabilität in der Namensgebung zu erhalten, wird vorgeschlagen, *E. dumeriliana* zu unterdrücken und *P. unifilis* als validen Namen für das Taxon beizubehalten. (Aufgrund telefonischer und brieflicher Auskunft von P.C.H. PRITCHARD nach Abschluß des vorliegenden Manuskripts muß die Meinung zum Komplex *Podocnemis/Peltocephalus* noch einmal revidiert werden; siehe Fußnote S. 342.) *Rana mystacea* Spix enthielt zwei Arten: *Leptodactylus mystaceus* (neuerdings unkorrekterweise als *L. amazonicus* Heyer bezeichnet) und den vor kurzem beschriebenen *L. spixi* Heyer. *Rana binotata* Spix und *Hyla abbreviata* Spix werden als conspezifisch angesehen. WAGLER (1830b) benutzte als erster Überarbeiter den Namen *Enydriobius abbreviatus* für dieses Taxon, das jetzt allerdings als *Eleutherodactylus binotatus* bekannt ist. Der Nomenklatur-Kommission wird vorgeschlagen, *Rana binotata* den Vorzug vor *Hyla abbreviata* zu geben. *Hyla cinerascens* Spix stellte sich als identisch mit *H. granosa* Boulenger heraus und hat Priorität. Es wird vorgeschlagen, *H. cinerascens* zu unterdrücken. *Hyla nebulosa* Spix ist identisch mit *Oloolygon egleri* Lutz und hat Priorität; wir schlagen vor, daß dieses Taxon *Oloolygon nebulosa* (Spix) heißen soll. Die vier von Spix beschriebenen Formen der *Bufo typhonius*-Gruppe (*B. naricus* Spix, *B. nasutus* Schneider, *B. acutirostris* Spix, *B. proboscideus* Spix) werden hier als eigene Taxa behandelt; sie müssen zukünftig in einer Revision dieser Gruppe neu bearbeitet werden. MEDEM's Versuch, den Artnamen *sclerops* für die allgemein als *Caiman crocodilus* bekannte Art wieder einzuführen, wird auf der Basis des Typenmaterials und wegen Fehlinterpretation der Nomenklaturregeln abgelehnt. Die Synonymisierung von *Anolis violaceus* Spix mit *A. punctatus* Daudin und die von *Gecko (Lophyrus) cruciger* Spix mit *Hemidactylus mabouia* (Moreau de Jonnés) wird bezweifelt; aber da kein Typenmaterial zur Verfügung steht, wird gegenwärtig keine Entscheidung getroffen. Bei der Verwendung des Namens *Mabuya bistriata* (Spix) für amazonische Skinke wird der Gewohnheit brasilianischer Autoren gefolgt, wogegen *Scincus nigropunctatus* Spix als *Mabuya* spec. angesehen wird. *Seps fragilis* Raddi hat Priorität über *Pygopus striatus* Spix, da jedoch die Namensänderung einen lang eingeführten Namen außer Kraft setzen würde, wird vorgeschlagen, *Seps fragilis* zu unterdrücken und *Pygopus striatus* Spix beizubehalten.

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