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Robert C. Feuer

Philadelphia College of Pharmacy and Science, Philadelphia, Pennsylvania

Hobart M. Smith

University of Colorado, Boulder

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THE CONTRIBUTIONS OF THE 1822 WORKS OF JAROCKI AND FLEMING TO HERPETOLOGICAL NOMENCLATURE

Robert C. Feuer¹ and Hobart M. Smith¹

Two great synoptic works on amphibians and reptiles, of considerable unfamiliarity to herpetologists yet of marked historical importance, appeared in 1822: one in English, by Fleming, the other in Polish, by Jarocki. Both works are rare and seldom examined, but Jarocki's has the additional handicap of being written in a language very little known to systematists in general. An analysis of the nomenclatural contributions of these two works, and of their mutual priority, is long overdue.

The question of priority is important because in both works some new names were proposed for the same taxa. Neave credited Fleming with priority, without documentation, but our evidence conclusively gives Jarocki priority. According to the Director of the Biblioteka Narodowa in Warsaw, Zbigniew Daszkowski, a short review of Jarocki's "Zoologia" with a statement that "three volumes have been published so far" appeared in the number (3) of *Gazeta Literacka* [the Literary Gazette] dated 19 Feb. 1822. Number 5 of the same gazette, dated 5 Mar., gave a bibliographical description of volume 3 of the "Zoologia" in a column entitled "Chronicle of National Literature—New Works Which Have Appeared in Print." The evidence justifies the conclusion that volume 3 of Jarocki's work, in which amphibians and reptiles are treated, appeared no later than February 1822.

The work by Fleming, on the other hand, was indicated by Miss Ann Lucas, British Museum (Natural History) Library, as having appeared no earlier than May and no later than June 1822. A letter received from the National Library of Scotland states that Fleming's work was entered "at Stationer's Hall" on 28 June 1822 and that an undated advertisement received during the period May-July 1822 advised that "this day is published, in two handsome volumes octavo, with engravings, price L1.10s in boards, *The Philosophy of Zoology* . . ."

Several inquiries elsewhere have yielded no further information pertinent to date of publication. Since the available data clearly indicate publication of Jarocki's work at least by 19 Feb. 1822, and of Fleming's work sometime during May or June but no later than 28 June, acceptance of nomenclatural priority of Jarocki over Fleming is inescapable, except by exercise of the plenary powers of the International Commission on Zoological Nomenclature.

In conjunction with a review of the names in which priority is involved, the entire nomenclatural contribution of both works, at least at the generic level, should be reviewed. We here deal with

¹Philadelphia College of Pharmacy and Science, 43rd St., Kingsessing and Woodland avenues, Philadelphia, Penn. 19104; and Department of Biology, University of Colorado, Boulder 80302.

the herpetological names only, leaving those applied to birds, mammals, and other groups for investigation by others.

JAROCKI

Sixty-five generic names were used by Jarocki, including 4 for anurans (*Bufo*, *Hyla*, *Pipa*, *Rana*), 5 for salamanders (*Axolotus*, *Proteus*, *Salamandra*, *Triton*, *Siren*), 1 for caecilians (*Coecilia*), 6 for turtles (*Chelonia*, *Chelys*, *Emys*, *Ophichelone*, *Testudo*, *Trionyx*), 3 for crocodylians (*Alligator*, *Crocodylus*, *Gavial*), 3 for amphisbaenians (*Amphisbaena*, *Bipes*, *Chirotes*), 22 for lizards (*Acontias*, *Agama*, *Ameiva*, *Anguis*, *Anolius*, *Basiliscus*, *Chalcides*, *Chamaeleo*, *Cordylus*, *Draco*, *Dracoena*, *Gecko*, *Iguana*, *Lacerta*, *Lacertus*, *Lophyrus*, *Monitor*, *Ophisaurus*, *Polychrus*, *Scincus*, *Stellio*, *Uroplatus*), and 21 for snakes (*Acanthophis*, *Acrochordus*, *Boa*, *Bungarus*, *Coluber*, *Crotalus*, *Elaps*, *Erix*, *Erpeton*, *Hurria*, *Hydrus*, *Langaia*, *Naja*, *Platurus*, *Pseudoboa*, *Python*, *Scytale*, *Tortrix*, *Trimesurus*, *Typhlops*, *Vipera*).

Of these 65 names, 3 were not listed by Neave: *Anguis*, *Dracoena* and *Iguana*. Neave explicitly equated *Anguis* and *Anguis* and implicitly equated *Iguana* and *Iguana*; both of these alternate names have priority over Jarocki's usages, the different characters of which are character-equivalents with early classical Latin (u was written as v, j as i). *Dracoena*, not listed by Neave or Romer, has apparently been regarded as an erroneous subsequent spelling, judging from the fact that it was explicitly based upon the tautonym *Lacerta dracoena* Linnaeus, which was originally spelled *dracaena*. The least disturbing and therefore most acceptable conclusion at this point is to assume that both spelling variants (*Dracoena*, *dracoena*) in Jarocki were inadvertent errors which have no nomenclatural status. Even if the generic spelling were regarded as an occupied name, it would remain a junior synonym of *Dracaena* Daudin, 1802.

The only acceptably new names, at least not previously used, are *Axolotus*, *Langaia*, *Ophichelone*, and *Trimesurus*. *Axolotus* was suppressed by the International Commission (1963:102) in order to conserve *Ambystoma* Tschudi, 1838. *Ophichelone*, based upon *Testudo serpentina* Linnaeus, is antedated by *Chelydra* Schweigger, 1814. *Langaia* is a junior synonym and an invalid emendation of *Langaha* Brugnière, 1784, but has previously been attributed, erroneously, to Fleming (1822). *Trimesurus*, erroneously attributed first to Gray, 1840, is a junior synonym and an invalid emendation of *Trimeresurus* Lacépède, 1804. Had Jarocki's *Lacerta*, based on *Lacerta orbicularis* Linnaeus, not been antedated by *Lacertus* Lacépède, 1788, an invalid emendation of *Lacerta* Linnaeus, 1758, it would be available for *Phrynosoma* Wiegmann, 1828.

FLEMING

Seventy-two generic names were used by Fleming, including 4 for salamanders (*Apneumona*, *Salamandra*, *Sirena*, *Triton*), 4

for anurans (*Bufo*, *Hyla*, *Pipa*, *Rana*), 1 for caecilians (*Cecilia*), 8 for turtles (*Chelonia*, *Chelonura*, *Chelys*, *Cistuda*, *Coriudo*, *Emys*, *Testudo*, *Trionix*), 3 for crocodilians (*Alligator*, *Crocodylus*, *Gaviala*), 3 for amphisbaenians (*Amphisbaena*, *Bipes*, *Chirotes*), 24 for lizards (*Acontias*, *Agama*, *Ameiva*, *Anguis*, *Anolius*, *Ascalabotes*, *Basiliscus*, *Calotes*, *Chalcides*, *Chameleon*, *Cordylus*, *Custa*, *Dracaena*, *Draco*, *Iguana*, *Lacerta*, *Lophurus*, *Mastigura*, *Monitor*, *Ophisaurus*, *Polychrus*, *Scincus*, *Stellio*, *Trapelus*), and 25 for snakes (*Acanthophis*, *Acrochordus*, *Boa*, *Caudisona*, *Cerastes*, *Chersea*, *Cobra*, *Coluber*, *Crotalus*, *Elaps*, *Erpeton*, *Hemachatus*, *Hydrophus*, *Langaia*, *Natrix*, *Naja*, *Pelamis*, *Platurus*, *Pseudoboa*, *Scytalus*, *Tortrix*, *Trigonocephalus*, *Trimeresura*, *Typhlops*, *Vipera*).

Neave regarded 14 of these generic names as new and not previously used: *Apneumona*, *Chameleon*, *Chelonura*, *Chersea*, *Cistuda*, *Coriudo*, *Custa*, *Gaviala*, *Hemachatus*, *Hydrophus*, *Langaia*, *Lophurus*, *Mastigura*, *Trimeresura*. As indicated in the preceding discussion, Jarocki's *Langaia* antedates and therefore replaces Fleming's *Langaia*, leaving but 13 names not used before Fleming. Romer rejected *Ascalabotes* of Cuvier, 1817, originating the name with Lichtenstein, 1823. Were the rejection of Cuvier, 1817, as a source for this name upheld (we are aware of no reason, however), Fleming's usage would antedate Lichtenstein's, restoring the total of 14 names originating with Fleming.

The 13 names we believe properly credited as originating with Fleming are allocated as follows: *Apneumona*=junior synonym of *Proteus* Laurenti, 1768; *Chameleon*=junior synonym and invalid emendation of *Chamaeleo* Laurenti, 1768; *Chelonura*=junior synonym of *Chelydra* Schweigger, 1812; *Chersea*=junior synonym of *Vipera* Laurenti, 1768; *Cistuda*=junior synonym of *Terrapene* Merrem, 1820; *Coriudo*=junior synonym of *Dermochelys* Blainville, 1816; *Custa*=junior synonym of *Tupinambis* Daudin, 1803 (Peters et al., 1970:271); *Gaviala*=junior synonym and invalid emendation of *Gavialis* Oppel, 1811; *Hemachatus*=valid, recognized name; *Hydrophus*=junior synonym of *Aipysurus* Lacépède, 1804; *Lophurus*=junior synonym of *Lyriocephalus* Merrem, 1820; *Mastigura*=junior synonym of *Uromastix* Merrem, 1820; and *Trimeresura*=junior synonym and invalid emendation of *Trimeresurus* Lacépède, 1804.

TYPE-SPECIES

Neither Jarocki nor Fleming indicated author for their generic names, and likewise neither usually indicated whether any given name was proposed as new or not. Accordingly, we regard as "new" only those names not previously used in that exact spelling. For such names it is important that type-species be known in order to permit an incontrovertible nomenclatural allocation.

A total of 17 occupied (i.e., acceptable for nomenclatural consideration) generic names originated with either Jarocki or Fleming. Three other names used by Jarocki are not considered as occupied and therefore do not exist nomenclaturally: *Anguis*, *Dracoena*,

Iguana (see preceding account for explanation). The 17 occupied names have the following type-species:

1. *Apneumona* Fleming (1822:303), type-species by monotypy "*A. anguina*" = *Proteus anguinus* Laurenti.

2. *Axolotus* Jarocki (1822:179), type-species by subsequent designation (Smith and Tihen, 1961:216) "*Axolotus pisciformis*," ex *Siren pisciformis* Shaw = *Ambystoma mexicanum* Shaw. For an English translation of the section of Jarocki on *Axolotus*, see Szarski, Smith, and Smith (1970:6-7).

3. *Chamelon* Fleming (1822:272), no species listed; as an apparent unjustified emendation of *Chamaeleo* Laurenti, 1768, it thereby takes the type-species of the latter name, to wit, *Chamaeleo parisiensium* Laurenti = *Chamaeleo chamaeleon* (Linnaeus, 1758). The earlier generic name *Chamaeleon* Gronovius, 1763, was eliminated by the International Commission on Zoological Nomenclature (Opinion 89, 1925) through rejection of Grovoni's work of 1763 for nomenclatural purposes.

4. *Chelonura* Fleming (1822:270), type-species by monotypy "*Testudo serpentina*" [Linnaeus, 1758] = *Chelydra serpentina* (Linnaeus).

5. *Chersea* Fleming (1822:295), type-species by monotypy "*C. vulgaris*," ex *Vipera vulgaris* Sonnini and Latreille, 1802 = *Vipera aspis* (Linnaeus, 1758).

6. *Cistuda* Fleming (1822:270), no species mentioned; type-species by present designation *Testudo carolina* Linnaeus, 1758 = *Terrapene carolina* (Linnaeus). The name *Cistuda* Say, 1825, long used for this genus in the 19th century literature, was an emendation of Fleming's *Cistuda* and therefore invalid at the outset, since Article 69 of the International Code states that generic names published without species names, prior to 1931, are not thereby unavailable but take as type-species the first one subsequently designated for it.

7. *Coriudo* Fleming (1822:271), type-species by monotypy "*Testudo coriacea*" [Linnaeus, 1766] = *Dermochelys coriacea* (Linnaeus).

8. *Custa* Fleming (1822:274), type-species "*L. teguixin*" ex *Lacerta teguixin* Linnaeus, 1758 = *Tupinambis teguixin* (Linnaeus), by subsequent designation (Peters and Donoso-Barros, 1970:271).

9. *Gaviala* Fleming (1822:276), type-species by monotypy *Lacerta gangetica* [Gmelin, 1789] = *Gavialis gangeticus* (Gmelin).

10. *Hemachatus* Fleming (1822:295), type-species by monotypy "*H. vulgaris*," a new species-group name (although not so designated by Fleming), a junior synonym, almost universally overlooked, of *Coluber haemachata* Lacépède, 1789 = *Hemachatus haemachatus* (Lacépède).

11. *Hydrophus* Fleming (1822:292), type-species by monotypy "*H. ayspissurus*." Neave regarded this name as an emendation

of *Hydrophis* Latreille, 1801; since Fleming did not so state, and did cite a species name, the latter must be regarded as the type-species, and *Hydrophus* an independently new name, not a substitute new name. The species name is also new, although not so designated, and has almost universally been overlooked. It appears to be derived, with a misspelling, from Lacépède's *Aipysurus laevis* of 1804, of which it is here designated a synonym. Therefore *Hydrophus aypisurus* Fleming, 1822 = *Aipysurus laevis* Lacépède, 1804, and the genus *Hydrophus* Fleming, 1822, becomes a junior synonym of *Aipysurus* Lacépède, 1804, instead of *Hydrophis* Latreille, 1801.

12. *Langaia* Jarocki (1822:102), type-species *Langaia nasuta* ex *Langaha nasuta* Brugnière, 1784, by monotypy. It is by no means certain whether the Jarocki spelling was a deliberate emendation (and therefore nomenclaturally occupied) or an inadvertent misspelling (and therefore unoccupied); Neave and most others considered it occupied, and we accept that decision.

13. *Lophurus* Fleming (1822:278) was treated without any species-group names. It might be regarded as an emendation of *Lophyrus* Duméril, 1806, itself unavailable as a junior homonym of *Lophyrus* Poli, 1791, a molluscan; to so conclude, however, would effect replacement of *Gonocephalus* Kaup, 1825, a long-established genus. Precisely what species Fleming had in mind is not evident, but it is illuminating to observe that the two species Jarocki placed in his probably equivalent genus *Lophyrus* were *Lacerta scutata* and *Lacerta superciliosa*, both Linnaean names. The latter is now placed in the monotypic genus *Uranoscodon* Kaup, 1825; the former is placed in the monotypic genus *Lyriocephalus* Merrem, 1820. The least disruptive allocation of *Lophurus* Fleming is to the genus *Lyriocephalus*, of which it would be a junior synonym; accordingly, we here designate *Lacerta scutata* Linnaeus the type-species of *Lophurus* Fleming, 1822, a junior synonym of *Lyriocephalus* Merrem, 1820.

14. *Mastigura* Fleming (1822:277), type-species by monotypy "*M. spinipes*" = *Stellio spinipes* Daudin, 1802 = *Uromastix spinipes* (Daudin), type-species also of *Uromastix* Merrem, 1820 (the name was also spelled *Uromastyx* by Merrem in the same work, but that spelling has not been adopted and is thus invalid).

15. *Ophichelone* Jarocki (1822:21), type-species by monotypy *Testudo serpentina* Gmelin ex *Testudo serpentina* Linnaeus, 1758 = *Chelydra serpentina* (Linnaeus).

16. *Trimeresura* Fleming (1822:291) is presumably an emendation of *Trimeresurus* Lacépède, 1804, the type-species of which (*Vipera viridis* Daudin, 1803) automatically becomes that of *Trimeresurus* also. The result would be the same if Fleming's name were regarded as independently proposed, for the only species placed in it is "*T. viridis*" = *Trimeresurus gramineus* (Shaw, 1802).

17. *Trimesurus* Jarocki (1822:103) is also clearly an emendation or *lapsus* for *Trimeresurus* Lacépède, 1804. Neave stated that

the orthography *Trimesurus* originated with Gray, 1840, perhaps regarding one usage deliberate, the other inadvertent. We see no reason for discrimination in this way and regard the spelling as deliberate with Jarocki and therefore originating in 1822. The type-species is therefore the same as for *Trimeresurus* Lacépède, namely *Vipera viridis* Daudin, 1803=*Coluber gramineus* Shaw, 1802=*Trimeresurus gramineus* (Shaw).

SUMMARY

Jarocki (1822) has priority over Fleming (1822), the former appearing at least by February, the latter in May or June. The only new generic names originating from Jarocki are *Axolotus*, *Langaia*, *Ophichelone*, and *Trimesurus*, none of which is valid today: all are junior synonyms except *Axolotus*, which has been suppressed in order to conserve *Ambystoma* Tschudi, 1838. The only new generic names originating from Fleming are *Apneumona*, *Chameleon*, *Chelonura*, *Chersea*, *Cistuda*, *Coriudo*, *Custa*, *Gaviata*, *Hemachatus*, *Hydrophus*, *Lophurus*, *Mastigura*, and *Trimeresura*, only one of which (*Hemachatus*) is valid today. The type-species and present allocation of all genera are summarized. *Lacerta scutata* Linnaeus, 1758, is here designated the type-species of *Lophurus* Fleming in order to prevent replacement of *Gonocephalus* Kaup, 1825, or *Uranoscodon* Kaup, 1825. Two generally overlooked species-group names were created by Fleming: *Hemachatus vulgaris*, a junior synonym of *Hemachatus haemachatus* (Lacépède), and *Hydrophus aypisurus*, a junior synonym of *Aipysurus laevis* Lacépède. The spelling variants *Angvis*, *Jguana*, and *Dracoena* occurring in Jarocki are regarded as having no nomenclatural status: they are "unoccupied."

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