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TRIODON MACROPTERUS VERSUS TRIODON BURSARIUS; AN ATTEMPT TO ESTABLISH THE CORRECT NAME AND AUTHORSHIP

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A visit to the Leiden Museum by Professor Dr. L. F. de Beaufort, assembling data for his next volume on the Fishes of the Indo-Australian Archipelago, prompted me to investigate the nomenclatorial difficulties still existing around the Plectognath genus *Triodon* and its single known species.

One of the principal items consulted, Herre's 1953 Check List of Philippine Fishes, itself not without serious flaws and therefore illustrative for the present problem, proved a very satisfactory starting-point, especially as it contains the only recent and rather extensive compilation of previous literature on the subject. Still, Herre's enumeration of references is not at all exhaustive, and numerous additions taken both from systematic literature and from general works, and a few from anatomical papers, can be added. A considerable number of these, though obviously still far from complete, can be found in the list of literature at the end of the present paper.

Perusing through some sixty odd papers, it appeared that the genus *Triodon* hitherto has been ascribed mostly to Cuvier, occasionally to Reinwardt, or to Reinwardt in Cuvier, 1829. It further was clear that the name used for the single known species of the genus has almost invariably been *Triodon bursarius*, the authorship going to Cuvier, Reinwardt, or Reinwardt in Cuvier, but Reinwardt apparently having preference in most publications. *Triodon macropterus* Lesson hardly ever occurred (Dareste, 1849: *Triodon macrop-tère*), but it was given together with *Triodon bursarius*, without showing preference, in some of the old French "Dictionnaires" (Guichenot in Guérin, 1839; Drapiez, 1845, 1853; Ba(udement?) in d'Orbigny, 1869). Finally, it was interesting to observe that nowhere any references are given to a publication by Reinwardt.

C. G. C. REINWARDT, 1773-1854

Caspar Georg Carl Reinwardt, professor and director of the Royal Cabinet of Natural History at Amsterdam, in 1814 accepted an appointment as Director of Agriculture, Arts, and Sciences on Java and adjacent islands. He left the Netherlands on October 29, 1815, arriving at Batavia April 27, 1816; he returned from Java on June 26, 1822, again reaching the Dutch shore on October 31, 1822.

During the approximately six years Reinwardt spent in the Netherlands East-Indies, only a single voyage outside Java was made: leaving Batavia on February 27, 1821, he visited Amboina and neighbouring Moluccan islands from June 27 to September 5, 1821, subsequently returning via Celebes to Java, where he landed at Besoeki on December 16, 1821.

Cuvier (1829, p. 370; not p. 588, as stated by Herre, 1953, p. 838) indicated that Reinwardt's specimens of *Triodon* were collected in "la mer des Indes" (not Sumatra, as stated by Herre, l.c.). This would mean that these examples probably were collected during Reinwardt's 1816 voyage across the Indian Ocean, while such specimens could be expected to have been sent to the Netherlands in one of the early shipments. Unfortunately, the first three shipments of material collected by Reinwardt were stowed aboard the ships "Amsterdam" (date of departure: end of October 1817), "Vrouwe Ida Alijda" (date of departure: September 1818), and "Admiraal Evertsen" (date of departure: January 1819), all three of which got lost during the only three shipwrecks occurring during the period with ships sailing between the East-Indies and the Netherlands. The first safe arrival of Reinwardt material, on the ship "Johanna" (date of departure: September 1820), only arrived in the Netherlands in January 1821. As, moreover, it is known that material collected by Reinwardt near the Cape of Good Hope has been aboard the "Amsterdam", we may safely assume that specimens of *Triodon* collected in the Indian Ocean, and notes or manuscripts concerning such specimens, would have been lost during one of these disastrous shipwrecks ¹).

The possibility that Reinwardt published on any Indian Ocean specimens of *Triodon* in the only likely journal at the time issued in Batavia, the *Verhandelingen van het Bataviaasch Genootschap* (Transactions of the Batavian Society, of which Reinwardt was a member), led me to search through that periodical, but the result was negative.

The collection of the Leiden Museum contains two specimens of *Triodon* collected by Reinwardt: a stuffed example with the indications "voy. Rein-

1) Data taken from the *Konst- en Letter-Bode*, Haarlem, 1819 (I), pp. 99-101, 433; 1819 (II), pp. 193, 194; 1821 (I), p. 84; and Veth, 1884.

wardt, Moluques" (reg. no. RMNH 1531), and a specimen preserved in spirits with the indications "Reinwardt, Ceram" (reg. no. RMNH 4018). In fact, Reinwardt never visited Ceram, though he tried to but was driven back by the storm (Reinwardt in Vriese, 1858, p. 451), but he visited "Pelaau" (Palao) on the island of Haroekoe, at about half an hour sailing distance from Ceram (l.c., p. 441), and some other places with intense traffic to that island (p. 432). It seems very likely that both Leiden specimens were the only ones collected by Reinwardt, acquired during his 1821 visit to the Moluccas. Thus Cuvier's indication of the locality should read "mer des Indes orientales", while his references to Reinwardt must have been based only on the notes made by Valenciennes during a visit to Leiden in 1824 (Veth, 1879, p. 38), where the two still available examples evidently were examined, or on correspondence with Reinwardt.

Taking into account the facts as stated in the previous paragraphs, there can be little doubt that, if indeed Reinwardt ever published on the subject, his paper must have been issued between the years 1821 and 1829. Unfortunately, both Bosgoed (1873) and Dean (1916-1923) not even mention a single Reinwardt paper, while none such was found during a careful perusal of the *Konst- en Letter-Bode* and some similar periodicals, nor references to any zoological papers by Reinwardt in the *Bulletin des Sciences Naturelles* (Férussac), Paris, and *Isis*, Jena. Furthermore, no zoological publications are mentioned in the extensive biography of Reinwardt by Vriese (1858), which contains numerous reprints of Reinwardt papers on various subjects, all non-zoological. Finally, as already stated before, no Reinwardt publications are ever referred to in the numerous papers pertaining to the present subject, as listed at the end of this discourse.

As it seems extremely unlikely that a crucial Reinwardt publication has been constantly overlooked, his authorship of *Triodon (bursarius)* cannot be accepted, and both the genus and species should be ascribed either to Cuvier or to Lesson.

CUVIER

As publication date of Cuvier's *Règne Animal*, 2nd edition, vol. 2, containing the paragraph on *Triodon*, the year 1829 has been unanimously accepted, but during the present research a more accurate dating proved necessary.

A reference in *Isis*, Jena, vol. 22 (pt. 7, column 779, 1829) is of little use as the dates of publication of the subsequent *Isis* issues is uncertain. A better result was obtained by consulting the *Bulletin des Sciences Naturelles*, vol. 18 (no. 55, p. 95, July 1829), where a reference restricts the date

of publication to before July, but unfortunately the time elapsing between the issue of the original work and its reference in "Férussac" seems very variable. Most successful proved a consultation of *The Foreign Quarterly Review*, vol. 4 (no. 7, pp. 329, 347, April 1829). While on page 347, in a "List of the principal new works published on the continent, from January to March, 1829, inclusive", Cuvier's *Règne Animal* is only mentioned, on page 329 the following statement seems enlightening: "Baron Cuvier has just published a second edition of his valuable "*Règne Animal*" ...". Especially as here the word "just" is used, it seems reasonable to restrict the publication date of Cuvier's *Règne Animal* to March 1829, at least not before the second half of February 1829.

LESSON

The fish part by Lesson in Duperrey's "*Voyage autour du Monde ... sur ... la Coquille ... 1822-25*" (*Zool.*, vol. 2, pt. 1) is usually taken to have been published in 1830 or even 1831, while the Atlas including the fish plates is dated accordingly, probably for convenience' sake.

Recently, Herre (1953, p. 838) referred to the Atlas as published already in 1826, which would mean that the exquisite fish plate 4, representing *Triodon macropterus* Lesson, with the latin name as legend and wholly acceptable for nomenclatorial purposes, was published several years before Cuvier's *Règne Animal*, 2nd edition. Still, Herre ascribed the species to Cuvier!

As the publication of the whole Atlas only about a year after the return of the *Coquille* to France seemed highly improbable, I asked Dr. Herre for an explanation. He kindly informed me (in litt., November 28, 1960) that he had given 1826 as the date for the Atlas because both the copies he had seen — one at Stanford and one at the Bureau of Science, Manila — bore that date on the title page. He added that, therefore, the species should be named *Triodon macropterus* Lesson.

As it was usual at the time, when publishing works of this kind and size, to have them issued in small parts (*livraisons*), and as it was unlikely that a whole volume would already have been published a year after the return of the *Coquille*, it was evident that the date 1826 should appertain only to the first or one of the first *livraison(s)*, and it was necessary to search for the publication dates of the successive installments and for information on their contents.

While Isis, Jena, not even mentioned the *Coquille* reports, and *The Foreign Quarterly Review*, vol. 4 (no. 7, p. 348, April 1829) only listed the *livraison* including the *Triodon* plate among the publications issued

"from January to March, 1829, inclusive", the Bulletin des Sciences Naturelles (Férussac), vol. 16 (no. 207, p. 272, February 1829) provided better information. From this it became evident that, while the textual part had progressed only to the "Observations générales sur l'histoire naturelle", the plate representing *Triodon macropterus* had been issued in livraison 9. As the relevant issue of the Bulletin was published in February, it seems evident that livraison 9 of the Coquille report must have been published at least before the middle of that month, and probably already in January 1829. Only the first livraison was published in 1826 (Bulletin, vol. 9, no. 291, p. 337, November 1826), which sufficiently accounts for Dr. Herre's mistake.

These findings agree with the information provided by Sherborn & Woodward (1901, p. 391), who indicate that livraison 9 has been announced in the Bibliographie Française of February 28, 1829. Holthuis (1961, p. 169) found that, for the Crustacea parts, the announcements in this Bibliographie appeared between 12 and 54 days after the actual date of publication. Accepting about the same period of delay for the fish parts, it seems beyond doubt that Lesson's plate of *Triodon macropterus* appeared in January or, less likely, in the beginning of February, 1829.

FINAL REMARKS

The date of publication for Cuvier's Règne Animal, 2nd edition, being now established in March or, less probably, the second half of February, 1829, while Lesson's *Triodon* plate evidently appeared already before the middle of February, most probably in January, 1829, Lesson's name must have priority over Cuvier's, in contradistinction to common usage. This view is further supported most convincingly by the cross-references given by Cuvier (p. 370: "*Triod. macroptère*, Less. et Garn., Voyage de Duperrey, Poiss., no. 4") and in Lesson's text (p. 103: "Cuv., Règ. an., t. 2, p. 370"), which plainly show that Cuvier's publication was issued after Lesson's plate but before Lesson's text. Lesson must have been unacquainted with Cuvier's (or Reinwardt's) name when his plate was prepared, not having had access to either Valenciennes's notes (see below) or Cuvier's manuscripts, so he proposed a different name.

There remains the question how Reinwardt's name ever got into the picture, but to this there are two reasonable answers, both of which may be true. As already stated before, Valenciennes visited the Leiden Museum towards the end of 1824, in order to assemble data for Cuvier and Valenciennes's Histoire Naturelle des Poissons. With numerous specimens collected by Kuhl and van Hasselt, the major part of which still is in the collections of the Leiden Museum, he probably examined the Reinwardt

specimens, making extensive notes and copying Reinwardt's proposed name which must have been attached on labels. Presumably, these notes were afterwards used, not only for the *Histoire Naturelle des Poissons*, but also for Cuvier's new edition of the *Règne Animal*.

Another explanation can be deduced from the following statement by Cuvier (1828, p. 259): "*M. Reinwardt*, savant professeur d'histoire naturelle à Leyde, n'a pas été moins généreux que M. Temminck, et nous a donné une pleine communication de tout ce qu'il a recueilli dans le pénible voyage qu'il a fait dans l'archipel des Indes."

As only one or two months before the appearance of Cuvier's *Règne Animal*, 2nd edition, Lesson apparently was still unaware of the existence of Reinwardt's specimens and proposed name (*bursarius*), it seems plausible to assume that, on the other hand, Cuvier was unaware of the existence of Lesson's specimens of *Triodon* until he received the ninth installment of the Coquille report including Lesson's plate of the species. Then Cuvier's reference to the Lesson plate must have been a last minute addition to his manuscript or possibly even his proofs, while his description, presumably already prepared, probably was based only on Valenciennes's notes or (and) the Reinwardt letters, thus on the Reinwardt specimens now in the Leiden Museum collections. I am unaware of the existence of any Reinwardt specimens presented to the Paris Museum, which would be preferable for the choice of a lectotype, but consider the Leiden specimens as syntypes of *Triodon bursarius* Cuvier.

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