

**NOMENCLATURE AND IDENTITY OF THE TONGUE SOLES
PARAPLAGUSIA BILINEATA, “CYNOGLOSSUS BILINEATUS” AND
PARAPLAGUSIA BLOCHII (TELEOSTEI: PLEURONECTIFORMES)**

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ABSTRACT. — *Pleuronectes bilineatus* Bloch, 1787 (now *Paraplagusia bilineata*), “*Cynoglossus bilineatus* (La Cepède, 1802)”, and *Paraplagusia blochii* Bleeker, 1851, are objective synonyms as they are based on the same type material. “*Achirus bilineatus* La Cepède, 1802” was not proposed as a new species but was a new combination of *Pleuronectes bilineatus*. *Paraplagusia blochii* was not a new species but a new replacement name for *Pleuronectes bilineatus*. “*Cynoglossus bilineatus* (La Cepède, 1802)” should be called *C. quadrilineatus* (Bleeker, 1851). *Paraplagusia bleekeri*, new species, is proposed for the species erroneously called *Paraplagusia blochii* by earlier authors.

KEY WORDS. — *Pleuronectes bilineatus*, *Cynoglossus bilineatus*, *Paraplagusia blochii*, *Paraplagusia bleekeri*, nomenclatural acts

INTRODUCTION

Paraplagusia bilineata (Bloch, 1787), “*Cynoglossus bilineatus* (La Cepède, 1802)” and *Paraplagusia blochii* Bleeker, 1851 are presently recognised as three valid species of tongue soles of the family Cynoglossidae (e.g., Menon, 1980; Chapleau & Renaud, 1993; Munroe, 2001). While reviewing the nomenclature of various marine fishes that enter estuaries and brackish waters, I examined the original description, later uses and synonyms of *Par. bilineata* and found that later authors variously attributed this name to Bloch, La Cepède or Cuvier. I found that all these names were actually based on the same material and are objective synonyms.

Abbreviations used: MNHN, Muséum National d’Histoire Naturelle, Paris; RMNH, Nationaal Natuurhistorisch Museum, Leiden; ZMB, Museum für Naturkunde, Berlin.

PARAPLAGUSIA BILINEATA

The fish usually referred to as *Paraplagusia bilineata* was originally described by Bloch (1787: 29, pl. 188) as *Pleuronectes bilineatus* in volume 3 of his *Naturgeschichte der ausländischen Fische*. Paepke (1999: 68) designated ZMB 2432 as the lectotype. This is the only known surviving specimen of the material used by Bloch. Bloch’s unpublished

catalogue mentions only three specimens. Paepke did not explain why he considered ZMB 2432 as part of the type series.

In the original description, Bloch did not explicitly state how many specimens he examined. The closest information is the mention on p. 30 of “Diese Zunge is ein Bewohner der chinesischen Gewässer, wenigsten soll die meinige von einem Ostindienfahrer erhandelt sein. ... Die eigentliche Grösse kann ich nicht bestimmen, der meinige ist wenigstens nicht grösser, als die von ihr genomene Zeichnung” [This sole inhabits the Chinese waters, at least mine is said to have been obtained from an East Indiaman. ... The real size I cannot determine, that of mine at least is not larger than the drawing taken of it]. In both sentences he used the feminine singular, which can only refer to “this sole”. While the first sentence could suggest that Bloch had a single specimen, the second indicates that more than one specimen was involved. “Not larger than the drawing taken of it” is an awkward phrasing that makes sense only if it means that there is more than one specimen, of which the largest is drawn natural size. [Note that “Ostindienfahrer” (in English an East Indiaman) was a type of boat operating for one of the various East India Companies].

In volume 9 of the same work, Bloch (1795: 99) included a post-scriptum to the description of *Pleur. bilineatus*, in which he mentioned that he received two more specimens from

Mr. John in Tranquebar. There is no additional information, except for the local name, aralmin.

Volume 3 of Bloch's work was issued almost simultaneously in German and French, the plates being the same, with captions in Latin, German, French and English. The German text appeared in 1787 and the French translations in 1788 (Paepke, 1999: 202). Throughout the work, the German and French texts are generally identical, but there are exceptions. In the French translation of the *Pleur. bilineatus* account (Bloch, 1788: 22), the last paragraph is modified and more information included: "This fish inhabits the seas of China and those of the East Indies; at least the four specimens that I have come from these countries. Of these four specimens, I owe two to the kindness of Mr. Spengler, inspector of the natural history cabinet of the king of Denmark, and the two others to Mr. Chemnitz, preacher of the garrison of Copenhagen. The first one writes me having received them from China, and the second from the East Indies. Its flesh is probably of a good taste, as that of the other soles. It feeds like them, on shells and small crabs. One takes it with the hook and with the net. I could not determine its real size. The drawing that one sees here, is made after the largest of my specimens". This is followed by the description of the liver, spleen, stomach and intestine. The author of the 1788 translation is C. J. T. de Laveaux. I did not search for the history and Bloch's involvement in the translation as this is irrelevant as far as nomenclature of the present names is concerned. But clearly Bloch had enough time to update the text before the publication of the French translation.

There are two other editions in French. In the 1796 edition (p. 1145), the origin of the specimens is given only as Tranquebar. The text of the translation is otherwise the same as the German one, except for the mention of the liver, spleen, stomach and intestine.

A third French edition, edited by Castel, was published in An IX [Year 9] of the French Republican Calendar [23 Sep.1800 – 22 Sep.1801, taken here as 1801]. Because the original 12-volumes work was too expensive for most interested persons as well as too bulky, the publisher Déterville had asked René-Richard Castel to prepare a new "portable" and cheaper edition. Castel re-organised the text in a systematic sequence, did some editing, and added some chapters of his own on cetaceans. Figures were copied, black and white, in smaller size and organised in fewer plates. For bibliographic purposes, the work should be cited as Castel (1801). The text is similar to that of the 1788 translation.

From the above, we know that Bloch had two specimens from "Chinese waters", and two from Tranquebar which he had received later. The type series includes only the two 'Chinese' specimens, and the drawing shows the largest one in natural size. The specimen on the drawing is 295 mm SL, 330 mm TL (P. Keith, pers. comm.; P. Bartsch, pers. comm.). At some stage, Bloch had only three specimens left in his collection as shown by his catalogue (Paepke, 1999: 68); the

whereabouts of the fourth specimen is not known, but it is likely to have been used for exchange and it could possibly survive in another museum (if so, then probably in Germany). Paepke gave the size of the only surviving specimen (ZMB 2432) as 140 mm SL and the locality is mentioned as "Indian Ocean" in the ZMB catalogue.

There is no way to know whether ZMB 2432, 140 mm SL, is the smaller 'Chinese' specimen (syntype), or one of the Tranquebar specimens (non-type material). The locality "Indian Ocean" would hint at Tranquebar, but judging from the many geographic confusions in Bloch's work, it is not clear that this is usable information. In conclusion, it is not possible to confirm that ZMB 2432 is part of the type series; then, it cannot be recognised as the lectotype. The only specimen whose type status is certain is the one illustrated on plate 188 and I designate it as lectotype of *Pleur. bilineatus*. As the lectotype is lost, should it become necessary to have a specimen as primary type, it will be easy to designate a neotype. I do not designate a neotype here and leave it to authors familiar with the group to designate one if necessary. I could have designated ZMB 2432 as neotype, but I think it would be more useful to have a specimen with an unambiguous locality.

"*CYNOGLOSSUS BILINEATUS*"

The fish referred to as "*Cynoglossus bilineatus*" by authors is said to have been described by La Cepède (1802: 659, 663) as *Achirus bilineatus*. There is no indication that La Cepède had examined material. His account included references to: (1) "*Pleuronectes bilineatus*. Linné, édition de Gmelin"; (2) "Bloch, pl. 188"; (3) "Pleuronecte, sole à deux lignes. Bonnaterre, planches de l'Encyclopédie méthodique".

Source (1) is Gmelin (1789: 1235). It explicitly refers to Bloch (1787: 29, pl. 188). It includes no information not already appearing in Bloch's text and therefore seems based exclusively on Bloch's data. Moreover, it is not known that Gmelin had examined any material. Source (2) is plate 188 of Bloch (1787); there is no mention of the text. Source (3) is Bonnaterre (1788: 79, pl. 91 fig. 377). The figure is a black and white copy of Bloch's figure. The description is that given by Bloch. There is also explicit reference to the French edition of Bloch (1788: 21), but no mention of inner anatomy.

In conclusion, La Cepède's account of *Achirus bilineatus* is based only on Bloch's *Pleur. bilineatus*. *Achirus bilineatus* was not, therefore, a new species but a new combination of *Pleur. bilineatus*. As a result, the name *bilineatus* is not available for a species of *Cynoglossus*. Menon (1977: 36) listed the synonyms of his "*Cynoglossus bilineatus*". Among these, the earliest available name for this species is *Plagusia quadrilineata* Bleeker, 1851, thus the valid name of the species is *Cynoglossus quadrilineatus* (Bleeker, 1851).

PARAPLAGUSIA BLOCHII

The fish referred to as *Paraplagusia blochii* is usually considered to be a species described by Bleeker (1851a: 21; repeated in 1851b: 411). In fact, Bleeker did not describe a new species, but, instead, had only proposed a new replacement name for the *Pleur. bilineatus* of Bloch (1787). Bleeker's redescription of the species (as *Plagusia blochii*) ends with an explicit reference to Bloch (1787: pl. 188). Likewise, in the introduction (1851a: 5, 1851b: 402), Bleeker explained that there was confusion among authors about the characters of *Plag. bilineata*, that most authors referred under this name to a species with two lateral lines on the blind side, and that the real *Plag. bilineata* has only one. He described the species with two lateral lines on the blind side as *Plag. quadrilineata* and he replaced the name of Bloch's *Plag. bilineata* by *Plag. blochii*, in order to avoid confusion with *Plag. bilineata* as had been confused by earlier authors.

Bleeker's (1851a: 5) text reads as follow: "Regarding *Plagusia bilineata* Cuv. there is still confusion among authors in the report of its characters. Apart from *Pleuronectes bilineatus* Bl. and *Jerree potoo* E. of Russell, in which species the lateral line is double on the left side but single on the right side, authors understand as *Plagusia bilineata* also a species with a double lateral line on the right side, and this species, very different from *Plagusia bilineata*, is probably the one already named *Plagusia quadrilineata* by Kuhl and Van Hasselt and which is described below. For this reason I propose to abandon the name *Plagusia bilineata*, while for the species that I consider the same as *Pleuronectes bilineatus* Bl., I have chosen the name of that ichthyologist".

Plagusia quadrilineata is a *Cynoglossus*, as discussed above. Bleeker's reference to Cuvier is a footnote in Cuvier (1829: 344): "*Pl[agusia] bilineatus*, Bl. 188, ou *Jerré potoo*, E., Russel, 74 [Russell, 1803]". In the *Atlas ichthyologique*, Bleeker (1870: 27) listed *Plag. blochii* in the synonymy of *Paraplagusia bilineata*.

Since *Plag. blochii* is a new replacement name, it takes the same type as *Pleur. bilineatus* and is an objective junior synonym. Therefore, the 'lectotype' of *Plag. blochii* (RMNH 17879) designated by Menon (1980: 16) has no type status.

Authors usually treated *Par. blochii* as the valid name of a species distinct from *Par. bilineata* (e.g., Menon, 1980; Chapleau & Renaud, 1993; Munroe, 2001). As *Plag. blochii* is a replacement name for *Par. bilineata*, it cannot be used for this second species, which is without a name. I name it here *Paraplagusia bleekeri*, new species; a description of the species can be found in Menon (1980: 16, as *Par. blochi*), and a diagnosis in the keys of Munroe (2001) and Chapleau & Renaud (1993). The 185 mm SL specimen that Menon (1980: 16) invalidly designated as 'lectotype' of *Plag. blochii* is designated as holotype of *Par. bleekeri*. This specimens is among those used by Bleeker for his description of *P. blochii*. The type locality is one of the eight localities in Java listed by Bleeker where he collected or observed the species:

Batavia, Cheribon, Tegal, Tjilatjap, Samarang, Rembang, Surabaya, Pasuruan.

It is possible that several species are confused under the name *Par. blochii* of authors.

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