

OPINIONS RENDERED BY THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

OPINIONS 68 TO 77

OPINION 68

THE TYPE SPECIES OF *PLEURONECTES* LINNÆUS, 1758A

SUMMARY.—Fleming, 1828, p. 196, does not designate the type of *Pleuronectes*.

STATEMENT OF CASE.—Chancellor David Starr Jordan has submitted the following case for opinion:

THE TYPE OF *PLEURONECTES* L.

The Linnæan genus *Pleuronectes*, containing many species, was subdivided by Rafinesque, 1810, *Indice d'Ittiologia Siciliana*, pp. 14-15, and by Cuvier, 1817, *Le Règne Animal*, vol. 2, pp. 218-224. In neither case was the name *Pleuronectes* applied to any one of these subdivisions. Such application to a restricted group was first made by Fleming, 1828, pp. 196-199 (*History of British Animals*). He recognizes four genera of flounders, *Pleuronectes*, *Solea* (Rafinesque), *Platessa* (Cuvier), and *Hippoglossus* (Cuvier). The types of the last three genera are clearly *Pleuronectes solea* L., *Pleuronectes platessa* L., and *Pleuronectes hippoglossus* L. As to *Pleuronectes* Fleming says:

"Gen. XLVI. *PLEURONECTES*. Turbot. Mouth entire; teeth numerous, slender. Lateral line curved. Eyes on the left side."

The five species named represent five modern genera, all allies of the turbot. *Pleuronectes maximus* L. is the type of the genus *Psetta* Swainson.

The first species named by Fleming is "96, *P. maximus*. Common Turbot."

Under the rules of the Zoological Congress, does this act of Fleming restrict the name of *Pleuronectes* to the Turbot group? In this case later usage has made *Pleuronectes maximus* L., the Turbot, the type.

Or does Fleming fail to fix the type? In this case we go on to Bleeker, 1862, pp. 422-429 (*Versl. en Mededeel. Kon. Akad. Wetens. Amsterdam*), who makes *Pleuronectes* synonymous with *Platessa* Cuvier, the type being *Pleuronectes platessa* L. In this Bleeker has been followed by common usage.

DISCUSSION.—It is to be noticed that Doctor Jordan does not ask the Commission to determine the type of *Pleuronectes*, but only whether Fleming in 1828 does, or does not, fix the type of this genus.

The question at issue involves an interpretation of the expression used in Article 30g of the International Rules, reading :

The meaning of the expression, "select the type," is to be rigidly construed. Mention of a species as an illustration or an example of a genus does not constitute a selection of a type

as applied to Fleming's action in 1828, p. 196. For earlier opinion on this general point (Art. 30g), see Opinion 45 (The Type of *Syngnathus* L. 1758), p. 103 (as applied to Rafinesque and Swainson).

The details of the premises presented by Doctor Jordan are as follows :

Linnæus (1758a, pp. 268-271) included the following 16 species in his genus *Pleuronectes*: 1, *achirus*; 2, *trichodactylus*; 3, *lineatus*; 4, *ocellatus*; 5, *lunatus*; 6, *hippoglossus*; 7, *cynoglossus*; 8, *platessa*; 9, *flesus*; 10, *limanda*; 11, *solea*; 12, *linguata*; 13, *rhombus*; 14, *maximus*; 15, *passer*; 16, *papillosus*.

Rafinesque (1810, pp. 14-15, and 52-53, Indice d'Ittiologia Siciliana) mentions under his sixth order, I Pleronetti, three genera, as being represented among the Sicilian fishes, as follows :

VI. ORDINE. I. PLERONETTI. (Pages 14-15)

45. *Solea* (Raf. app. gen. 4.) *buglossa*. Raf. (*Pleuronectes solea* Linn.) Sogliola comune. *Linguata*. a Messina *Palaja*. a Catania *Linguatu*.
46. — *Limanda*. Raf. (*Pleuronectes Linguata* Linn.) Sogliola *limanda*. *Lema*, ò *Lima*, ò *Passari*.
47. — *Platessa*. Raf. (Pl. *platessa* Linn.) Sogliola *pianosa*. *Pianussu*, ò *Passera*.
48. — *Rhomboide*. Raf. app. sp. 6. (Pl. *limanda*. var. Lac.) Sogliola *romboide*. *Rumbu impiriali*.
49. — *Cithara*. Raf. app. sp. 7. Sogliola *citara*. *Cantinu*.
50. — *pegusa*. Raf. (Pl. *pegusa*. Lac.) Sogliola *pegusa*. *Linguata ucchiuta*.
51. — *Arnoglossa*. Raf. app. sp. 8. Sogliola *arnaglossa*. *Linguata liscia*.
52. — *cynoglossa*. Raf. app. sp. 9. Sogliola *linguacane*. *Linguata mavista*.
53. *Scophthalmus* (Raf. app. gen. 5.) *maximus*. (*Pleuronectes maximus* Linn.) Rombo massimo. *Rumolo impiriali*.
54. — *Rhombus*. Raf. (Pl. *rhombus* Linn.) Rombo comune. *Rumbu*, ò *Linguata masculu*. a Messina *Passera*.
55. — *diurus*. Raf. app. sp. 10. Rombo doppiacoda. *Rumbu dupiacuda*.
56. *Bothus rumolo*. Raf. car. gen. 23, sp. 54. Boto rumolo. *Rumolo*. a Catania *Luncru*.
57. — *Tappa*. Raf. car. sp. 55. Boto tappa. *Tappa*. a Catania *Panta*.
58. — *Imperialis*. Raf. car. sp. 56. Boto imperiale. *Tappa impiriali*, ò *Linguata impiriali*.

Thus, the genus *Solea* 1810 (see also Quensel, 1806, p. 230, genus *Solea*, with *S. vulgaris*, syn. *Pleuronectes solea* Linn.) contains the species *Pleuronectes solea*, which in 1806 and 1810 became the type of *Solea* by absolute tautonymy (Article 30d), and the Linnæan species *Pleuronectes rhombus* and *Pleuronectes maximus* were placed (1810) in *Scophthalmus*.

Cuvier (1817, pp. 218-224, Règne Animal) distributes the Linnæan species of *Pleuronectes* L. as follows ("Nous les divisions comme il suit"):

Pleuronectes [no species mentioned as type, and no subgenus mentioned as *Pleuronectes*].

subg. *Platessa* Cuvier, 1817, contains—

La Plie franche ou Carrelet (*Pleur. platessa* L.) [type by absolute tautonymy].

Le Flet ou Picaud (*Pleur. fesus* L.).

La Limande (*Pleur. limanda* L.).

subg. *Hippoglossus* Cuvier, 1817, contains—

Le Flétan (*Pleuronectes hippoglossus*) [type by absolute tautonymy], and several species in footnote.

subg. *Rhombus* Cuvier, 1817 [not *Rhombus* Lacépède, 1800, of which the type is *alepidotus* teste Jordan & Evermann, not *Rhombus* Da Costa, 1776, mollusk, not *Rhombus* Humph., 1797, mollusk, not *Rhombus* Montf., 1810, mollusk], contains—

Le Turbot (*Pleuronectes maximus*) ("Le pl. passer d'Artédi et de Linn. n'est point différent du turbot").

La Barbue (*Pleuronectes rhombus*) [type by absolute tautonymy]; he mentions also *Pleuronectes nudus* Risso, *Diaphanus* Sh., *Arnoglossum* Rondelet, and further, in footnote, several other species.

subg. *Solea* Cuvier, 1817, containing—

Pleuronectes solea L. [type by absolute tautonymy].

Pleuronectes cynoglossus L.

subg. *Monochires* Cuvier, 1817 [not clear whether French or Latin], containing—

Le Linguatula Rondelet (*Pleuronectes microchirus*).

subg. *Achirus* Lacépède, 1802, containing—

Pleuronectes achirus L., and in footnote several other species including *Pleuronectes lineatus* [author not given].

subg. *Plagusia* Brown, 1756, not *Plagusia* Latreille, 1806, crustacean.

Fleming, 1828,¹ "in the enumeration of British animals contained in this volume" (p. xviii), "as a compiler" (p. xxi), gives descrip-

¹ "History of British Animals, exhibiting the descriptive characters and systematical arrangement of the genera and species of quadrupeds, birds, reptiles, fishes, mollusca, and radiata of the United Kingdom; including the indigenous, extirpated, and extinct kinds, together with periodical and occasional visitors."

tions, synonymy, and occurrence in British waters for the following fishes that come under consideration in connection with this case:

- g. 46. *Pleuronectes*. Turbot. [5 species reported.]
 - 96. *P. maximus*. Common Turbot.
 - 97. *P. rhombus*. Brill.
- g. 47. *Solea*. Sole. [2 species reported.]
 - 101. *S. vulgaris*. Common sole. Syn. *Pleuronectes solea* Linn.
- g. 48. *Platessa*. Fluke. [5 species reported.]
 - 103. *P. vulgaris*. Plaise. Syn. *Pleuronectes platessa* Linn.
 - 104. *P. flesus*. Flounder. Syn. *Pleuronectes flesus* Linn.
 - 105. *P. limanda*. Dab. Syn. *Pleuronectes limanda* Linn.
- g. 49. *Hippoglossus*. Holibut. [1 species reported.]
 - 108. *H. vulgaris*. Common holibut. Syn. *Pleuronectes hippoglossus* Linn.

The author does not state in connection with any one of these four genera what species he accepts as type species. None of the five species mentioned under *Pleuronectes* appears, from the premises presented, to be the type of *Pleuronectes* by absolute tautonymy, but species No. 97, *Pleuronectes rhombus*, is type of *Rhombus* 1817 (not *Rhombus* Lacép, 1800), by absolute tautonymy, and both *Pleuronectes maximus* and *Pleuronectes rhombus* had been placed in the genus *Scophthalmus* by Rafinesque, 1810. The fact that Fleming gives the vernacular name "Turbot" to the genus *Pleuronectes*, and "Common Turbot" to the species *Pleuronectes maximus*, cannot, "rigidly construed," be taken as designation of type.

In the introduction to this work, Fleming (1828, p. xxi) states that his History (1828) "is destined to serve as an adjunct" to his Philosophy of Zoology (1822), and this statement leads the Secretary to consult said "Philosophy," in order to better understand the premises.

Fleming (1822, v. 2, Philosophy of Zoology), in the general discussion on nomenclature and species, says:

- p. 153, Where synonymes have unavoidably been created in consequence of the want of communication between distant observers, the rule universally known, but not equally extensively observed, is to give the preference to the name first imposed.
- p. 157, Where useless changes are thus produced in nomenclature, their authors, and their names should be overlooked.

In a number of places Fleming clearly determines the type species of a genus, for instance:

- p. 173, 2. MIMETES (of Dr. Leach), *Chimpanze*. . . . The *Simia troglodytes* of authors, is the type of the genus.
- 3. SIMIA. Orang-Outang. . . . The *Simia Satyrus* is the type.
- p. 174, 13. LEMUR. . . . The Lemur *Macaco* is the type of this genus.

In many cases Fleming simply mentions a single species under the genus without stating that it is the type. For instance:

p. 178, 27. RHINOLOPHUS. . . . *Rh. ferrum equinum*.

28. NYCTERIS. . . . *N. hispidus*.

The foregoing citations clearly show that Fleming had a distinct conception of the type species as we understand it to-day.

The practical point arises whether Fleming intended that the citation of a single species should be accepted as a designation by him of the type species. If Fleming avers in any portion of his book that this interpretation is to be made, the Secretary has thus far been unable to find the statement. The general tendency of the entire work toward the naming of a type species is, however, striking for a book published in 1822, and the temptation is very great indeed to make the interpretation that Fleming actually intended to designate a type species for nearly every genus he mentioned.

In his *Philosophy*, Fleming (1822, vol. 2) refers to *Pleuronectes* as follows:

p. 388, 64. PLEURONECTES. With pectoral fins. This genus includes 1. *Pleuronectes* (*P. platessa*). 2. *Hippoglossus* (*R. [P.] hippoglossus*).

3. *Rhombus* (*P. maximus*). 4. *Solea* (*P. solea*).

65. ACHIRUS. Destitute of pectoral fins. *Pleuronectes achirus*.

The point is to be noticed that in 1822 Fleming used *Pleuronectes* for *Pleuronectes platessa*, and *Rhombus* for *Pleuronectes maximus*, while in 1828 he changed his view and used *Pleuronectes* for *Pleuronectes maximus* and *Pleuronectes rhombus*, but he placed *Pleuronectes platessa* in the genus *Platessa*.

Accordingly the premise presented by Doctor Jordan that Fleming (1828, 196-199) was the first to restrict the name *Pleuronectes* to a subdivision of the original genus is found to be erroneous. Such restriction appears to have been made at least as early as 1822 by Fleming, and his 1822 action was reversed in 1828.

It will be noticed that Fleming in 1822 adopted the four subgeneric groups used by Cuvier, 1817, and that he corrected the nomenclatural error of Cuvier, in that Fleming recognized *Pleuronectes* for one of the subgenera, namely, for that group which Cuvier named *Platessa*, and the type of which by absolute tautonymy is *Pleuronectes platessa*. The question is: Did Fleming here select *platessa* as type of *Pleuronectes* s. str.?

At least four views are possible:

(1) *Type by inclusion*.—By the principle of "type by inclusion" *platessa* would become, *ipso facto*, the type of *Pleuronectes* s. str., because *Pleuronectes* s. str., here clearly includes *Platessa* 1817, for

which *platessa* is type by tautonymy. But the proposal to insert into Art. 30 the principle of "type by inclusion" was rejected by the Commission at its Boston meeting.

(2) *Typical subgenus*.—The view might be advanced that Fleming here proposed, apparently for the first time, the typical subgenus *Pleuronectes*, and that by citing only the name *Pleuronectes platessa*, he designated the type by monotypy. Art. 30c.

(3) *Type by renaming*.—The view might be advanced that Fleming deliberately renamed *Platessa* 1817, for which the type had already been determined by absolute tautonymy, hence that *platessa* became automatically type of *Pleuronectes* s. str. Art. 30f.

(4) *Type by monotypy*.—The view might be advanced that Fleming, by quoting only *platessa* under *Pleuronectes*, definitely intended to take this as type.

In respect to this last view (4) different authors might differ in opinion, for the point might be advanced that Fleming did not dispose of all the original species of *Pleuronectes* 1758, and that he simply mentioned *platessa* as an example of *Pleuronectes* s. str., hence, that "rigidly construed" this is not a type selection.

Nevertheless, from the premises here presented it seems clear that Fleming, 1822, actually did propose the typical subgenus of *Pleuronectes*, that he correctly named this subgenus as *Pleuronectes*, and that he mentioned only one species (*platessa*) as representative of this typical subgenus. Accordingly, unless there are important reasons to the contrary, it would seem best to take *platessa* as type of *Pleuronectes*.

While the evidence seems to point to the conclusion that *platessa* should be taken as type species of *Pleuronectes* on basis of Fleming (1822, p. 388), it seems wise, in view of the possibility of a difference of opinion (4), to follow the case further in order to see how the views given under (2) and (3) would coincide with the later history of the generic name.

Without entering upon a detailed discussion of this very confused case of nomenclature, which involves many references in addition to those cited by Doctor Jordan, attention is invited to the facts that—

(a) Fleming's action in 1822 in substituting *Pleuronectes* for Cuvier's genus *Platessa*, 1817, is followed by Bleeker (1862), Günther (1862), Leunis (1883), and Claus (1895), while Jordan² and Evermann (1898), and Apstein (1915) definitely mention *Pleuronectes platessa* as the type of *Pleuronectes*, and

² Jordan (1917a, 13, The genera of fishes) accepts *platessa* as type of *Pleuronectes*.

(b) On the other hand Fleming's action of 1828 in placing *Pleuronectes rhombus* and *Pleuronectes maximus* in the genus *Pleuronectes* is followed later by Fleming (1842), while Jordan & Goss (1889) definitely designate *Pleuronectes maximus* as type of *Pleuronectes*.

In answering Doctor Jordan's question, the Commission is of the opinion that Fleming's action of 1828 (pp. 196-199) is not to be construed as fixing the type of *Pleuronectes*.

Opinion written by Stiles.

Opinion concurred in by 14 Commissioners: Allen, Apstein, Bather, Blanchard, Handlirsch, Hartert, Horváth, Hoyle, Jordan (D. S.), Jordan (K.), Monticelli, Skinner, Stejneger, Stiles.

Opinion dissented from by no Commissioner.

Not voting, 4 Commissioners: Dautzenberg, Kolbe, Roule, Simon.

The foregoing Opinion was submitted to all Commissioners for vote and to more than 350 zoologists, zoological laboratories, colleges, and scientific institutions for comment. No adverse criticism has been received by the Secretary, but the following comments have been sent to him:

Commissioner Allen: It seems to me that Fleming in 1822, by including only *Pleuronectes platessa* L. in his subgenus *Pleuronectes*, distinctly indicates, in view of his clear recognition of the need of type designations, that he regarded *P. platessa* L. as the type and that his action in 1828 has not necessarily any bearing on the case.

Commissioner Bather: I agree with the conclusion arrived at, but I am perhaps more influenced in coming to the conclusion by the fact that Fleming's book of 1828 was professedly a history of British animals only, and that in the absence of any evidence to the contrary it should be so accepted. Therefore, quite apart from the existence of the 1822 work, I should not regard Fleming as fixing types in 1828.

Commissioner Hartert: It is clear that Fleming did not formally fix the types in this case, which is perfectly parallel to that of the genera of the swallows of Forster, 1817. I accepted Forster's genera, but the A. O. U. and as competent nomenclaturists of England and Germany disagreed with my action, holding that Forster did not formally designate the type of *Hirundo*.

Commissioner Hoyle: Fleming, 1828, did not fix the type of *Pleuronectes*, but I am inclined to think (from the data given) that he made *platessa* the type in 1822.

Commissioner D. S. Jordan: I think both cases [*Pleuronectes* and *Sparus*] practically above question—fortunately coinciding with usage.

Commissioner Stejneger: I hold that Fleming, in 1822, actually designated the types [for *Pleuronectes* and *Sparus*] as understood in the International Code of Nomenclature.

Doctor Pappenheim (Berlin) studied the case, upon the request of Commissioner Kolbe, and presented to him the following memorandum:

Ich schlage vor die Fischgattungsnamen "*Pleuronectes* L." und "*Sparus* L." unbedingt zu verwerfen und durch *Platessa* Cuv. und *Chrysophrys* Cuv. zu ersetzen. Als Type für die Gattung *Platessa* hat nach meiner Auffassung die Art *Pl. platessa* (L.), für *Chrysophrys* die Art *aurata* (L.) zu gelten.

Die gegenteiligen Ansichten könnten sich m. M. nur auf Fleming stützen, dessen Arbeiten ein systematischer Wert nicht zukommt. Anderseits genügt zur Begründung der Währung der von Cuvier aufgestellten Namen das in den Anlagen (Letter No. 27 und No. 28) gegebene Material.

Eine Notwendigkeit, bei Verwerfung der Namen "*Pleuronectes*" und "*Sparus*" und auch die Familien Namen "*Pleuronectidæ*" und "*Sparidæ*" aus nomenclatorischer Gründen zu verwerfen, liegt m. M. n. nicht vor, wie ich überhaupt der Meinung bin, dass die angeblich allgemein giltigen, weit international festgelegten Nomenclaturregeln in begründeten Fällen, wie den beiden vorliegenden aus systematisch-morphologischen Gründen vernachlässigt werden können.

Ich werde jedenfalls in Zukunft ohne Rücksicht auf etwaige gegenseitige Entscheidungen der Kommission die Namen "*Pleuronectes*" und "*Sparus*" nicht mehr anwenden.

William C. Kendall, Lewis Radcliffe, and Hugh M. Smith (U. S. Fish Commission) unite in the conclusion that Fleming (1822) should be regarded as having designated *platessa* as the type of *Pleuronectes* and the fact that the disposal of the matter otherwise in 1828 should not affect the question; that if, however, Fleming or other authors cannot be accepted, the question lies between Swainson (1839, v. 2, p. 302) and Bleeker (1862, 428), and that Bleeker does not designate the type in the sense that the exact rule of the Zoological Congress seems to require any more specifically than was evidently intended by Swainson.

Miss Mary J. Rathbun: My opinion is that *platessa* should be regarded as the type of *Pleuronectes* by action of Fleming in 1822, and that Fleming 1828, 196, does not designate the type of *Pleuronectes*.

Favorable replies have been received also from: P. P. Calvert, C. Tate Regan, A. A. Tyler, and H. L. Viereck.

Oldfield Thomas: The tendency of the proposed answers appears to be that Fleming's 1822 quotations of species should be accepted as genuine selections, a view with which I agree.