

## NOTE ON THE NOMENCLATURE OF THE POECILIOID FISHES.

By THEODORE GILL, LL.D.

IT IS generally believed that Agassiz was the first to detach the cyprinodonts from the cyprinoids. After the publication of my note on the nomenclature, however, I came across an earlier paper by Rudolph Wagner,<sup>1</sup> in which he named ("Cyprinoïdæ") and well diagnosed the family; and, singularly enough, this article immediately followed Agassiz's maiden ichthyological contribution, a description of *Cyprinus* [*Barbus*] *uranoscopus*.<sup>2</sup> Agassiz must therefore have been perfectly cognizant of Wagner's article and must be blamed for not having referred to it. Further, Wagner well defined the new family, while Agassiz did not. The differential characters specified by Wagner were as follows:

Die Gattung *Lebias* bildet mit den Gattungen *Poecilia*, *Fundulus*, *Cyprinodon* und *Molienesia* Lesueur, wenn sich letztere Gattung durch weitere Untersuchung bestätigen sollte, eine sehr schöne kleine Familie, welche ich die Familie der Cyprinoiden genannt habe, wegen ihrer grossen Verwandtschaft mit den *Cyprinus*-Arten, wovon sie sich jedoch durch die Zähne in dem Ober- und Unterkiefer, durch die Lage der Rücken- und Schwanzflosse und die Zahl der Strahlen der Kiemenhaut unterscheiden.

This statement of differences is supplemented by a correct formal diagnosis in Latin under the name *Cyprinoïdæ*, and a synopsis of all the genera and species.

Unfortunately, Wagner gave a name in accordance with a custom to some extent prevalent at his time,<sup>3</sup> but now universally discarded. Con-

<sup>1</sup>Beiträge zur Kenntniss der Gattung *Lebias* Cuvier und der verwandten Gattungen, [etc.] < *Isis*, XXI, col. 1050-1058, pl. 12, figs. 1-10, 1828.

<sup>2</sup>Beschreibung einer neuen Species aus dem Gattung *Cyprinus*, Linn. < *Isis*, XXI, col. 1046-1049, pl. 12, fig. 1 (a-d), fig. 2 (a-d), 1828.

<sup>3</sup>As an instance of similar usage the work of Minding (1832) may be cited, wherein the families Clupeoides (p. 78), Cyprinoides (p. 78), Blennioides (pp. 80, 92), Scomberoides (pp. 80, 88, 130), Percoides (p. 87) are named, not because they are typified by the name-giving genera, but because their representatives are like them. The same names are nevertheless given to the families containing the genera. The names are, therefore, descriptive adjectives, and to be considered in connection with the ordinal names, as *Apodes malacopterygii clupeoides*, *Apodes acanthopterygii blennioides* and *scomberoides*, etc.

sequently the name Pæciliidæ must be retained, as urged in my former article, and even the justification for the retention of the name *Cyprinodontes*, that it was the first used, disappears.

This memoir of Wagner appears to have been generally lost sight of, as no reference to it appears in any work I have examined, among which are Cuvier and Valenciennes, Bonaparte's Catalogo (1846),<sup>1</sup> Von Martens's article, and Günther's Catalogue.

The two nominal new species, however, appear to have been based on the different sexes of the previously described *Cyprinodon fasciatus*, *Lebias lineato-punctata* being a female and *L. sarda* a male. Both forms had 10 anal rays, according to Wagner, a number likewise found by Von Martens, although Dr. Günther only specifies "A. 8 (9)."

I may add that the name "Pæciliidæ" was first revived by me in 1865,<sup>2</sup> but I had for the time overlooked it while preparing the synonymy of the family in 1894.

#### ADDENDUM.

The foregoing article was presented for publication May 10, 1895, but various causes have entailed delay in publication. Meanwhile a monograph of "The Cyprinodonts," by Mr. S. Garman, has been published as one of the "Memoirs of the Museum of Comparative Zoology."<sup>3</sup> Although dated July, 1895, the memoir was only received by the present author September 17, 1895. Mr. Garman has given an excellent history of the family of Cyprinodonts, and has made known (pp. 14, 15) the long-neglected contribution by Wagner.

As to the name, Mr. Garman remarks (p. 15):

"The word *Cyprinoïdæ* is incorrectly written: etymologically corrected, it is identical with *Cyprinidæ*. It seems to have been Wagner's intention to coin a different word. This is shown both in the form he gives the name as he writes it, and in the reason given for bestowing it, 'wegen ihrer grossen Verwandtschaft mit den Cyprinus-Arten.' As he failed to give a distinct title, it is left for us to adopt the next subsequent applied to the family as such."

The action of Wagner was, it appears to me, deliberate and intentional, and, as shown above, in consonance with limited usage in his day. The words *Cyprinoïdæ* and *Cyprinidæ* are not identical; the former is a compound of *Κυπρίνιος* (*cyprinus*) and *εἶδος* (form or appearance), while *Cyprinidæ* is the same main word, with the patronymic termination—*ιδαι* (*idæ*),—indicating descendants or family, as in the classical names *Arsacidæ*, *Pelopidæ*, *Seleucidæ* and innumerable others. It was on account of the resemblance of the Cyprinodonts to the Cyprinids that Wagner gave the name *Cyprinoïdæ*, and he gave a distinctive name

<sup>1</sup> Under *Lebias calaritana* (Cat., p. 25, No. 135), "*L. nigropunctata*, Wagn." is mentioned, and by it is probably meant *L. lineato-punctata*, but *L. sarda* is not referred to.

<sup>2</sup> Can. Nat., n. s., II, p. 258.

<sup>3</sup> Vol. XIX, No. 1.

because he did not consider them to be of the same family, although like them.

Mr. Garman thinks that the use of the name *Paciliida* is precluded on account of the previous use of the term *Pacilida* by Kirby, in 1837, for a genus of beetles. The two names, however, differ in etymology and form (one having five syllables and two *i*'s, while the other has only four syllables and a single *i*). *Paciliida* is derived from *Pacilia*, and *Pacilidae* from *Pacilus*. Consequently, the two do not conflict, and it can not be said properly that the name *Paciliida* "was preoccupied in insects" (p. 16). Furthermore, it may be added (though not essential to the question) that *Pacilida* is not in use in entomology. Indeed, the genus *Pacilus*, on which it was based, is now regarded as a mere section or subgenus of *Feronia* (by most European authors) or *Pterostichus* (by most American authors), and is referred to the Harpaline subfamily of the Carabidae.

The name *Poëcilioidei* of Fitzinger, 1832, was applied to an Umbrid only, as remarked by Garman (p. 15), but simply because *Umbra* was the only genus occurring in Austria; evidently the name was derived from *Poëcilia*, and the group<sup>1</sup> intended to be typified by that genus.

Mr. Garman's views as to the subdivisions of the family are quite similar to my own. In his preliminary synopsis (pp. 18, 19), he adopts the subfamilies *Cyprinodontinae*, *Paciliinae*, *Jenynsiinae*, *Anablepinae*, *Gambusiinae* and *Haplochilinae*. These have all been given in my "Families and Subfamilies of Fishes," in which article, however, Günther's name *Fundulinae* is used instead of *Haplochilinae*, and *Orestiinae* is further distinguished. Later on (p. 159) Mr. Garman has substituted for *Gambusiinae* the name *Belonesocinae* and added two other subfamilies, *Orestiasinae* and *Nothobranchiinae*.

I have not hitherto, as a rule, adopted Bleeker's names ending in *ini* for subfamilies, because Bleeker did not give them as subfamily names, but as those of cohorts or stirpes, divisions of his subfamilies for which he used the suffix *formes*. Nevertheless, I am not indisposed to do so, and perhaps Mr. Garman should be followed in taking the Bleekerian names with the modified form *Haplochilinae* and *Belonesocinae*. Bleeker's cohorts were, however, very different in limits from the subfamilies *Fundulinae* and *Gambusiinae*, Bleeker restricting them respectively to the type genera, while most of the genera of *Fundulinae* and *Gambusiinae* were referred to the cohorts or stirpes *Cyprinodontini*.

<sup>1</sup>Fitzinger gave names ending in *oides* only to the groups typified by the genera involved in the names. The groups named after the genera with the suffix *oides* were not ranked as families by Fitzinger, but as groups of genera under families. For example, the *Poëcilioidei* constituted the first group (Gruppe); the *Cyprinoidei* the second group, and the *Salmonoidei* the third group, of what Fitzinger designated as the family *Elliptosomata* (p. 333), while the family *Cylindrosomata* and the group (Gruppe) *Esocoides* (p. 339) included the pikes. Consequently I have not heretofore included Fitzinger's names in the lists of synonyms of families.

The subfamily Orestinae or Orestiasini<sup>1</sup> is of very doubtful validity, and in view of the discovery of *Empetrichthys* and the existence of *Tellia* and an apodal *Cyprinodon*, I am disposed to relegate the representative genus to the subfamily *Fundulina* or *Haplochilina*.

I can not close this addendum without testifying my admiration of the knowledge of the literature of the subject manifested in Mr. Garman's monograph.<sup>2</sup> The work will be of great value, but it will be wished by many, who will have occasion to use it, that he had given in the form of analytical synopses or diagnoses, the benefit of his experience and his views as to the relationships and essential characteristics of the species of polymorphic genera; thereby the wearisome task of identifying specimens would have been much diminished.

<sup>1</sup>The more correct form for the sub-family name would be *Orestiada* (<ὀρεστιάς, ἄδος).

<sup>2</sup>One of the extremely few works bearing on the subject not included in the "Literature" of Mr. Garman's monograph is Minding's "Lehrbuch der Naturgeschichte der Fische" above referred to. It may be well also to add here that the article attributed to JANOS would be rather looked for under KÁROLL, the former being a Christian name, the Hungarian equivalent of John. Mr. Garman evidently allowed himself to be misled by the custom of the Hungarians of putting the family name first and the Christian name last.