

CLASSIFICATION OF THE HOMALOPTERID FISHES.

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The taxonomy of the Homalopterid fishes has been involved in a great confusion and this fact has greatly impeded the progress of my work on the bionomics and evolution of the Homalopteridae. During my visit to Europe in 1927-29 I availed myself of the opportunity of examining the collections of these fishes in the British Museum, as well as in the zoological museums at Paris, Leiden, Amsterdam, Berlin and Genova. With the knowledge thus gained I am preparing an account of the generic classification, bionomics and evolution of the Homalopterid fishes, but as this work is likely to take some time yet and as the study is fairly advanced I have thought it advisable to give in this short note my views on the classification of the family.¹

The Homalopterid fishes constitute a remarkable family of torrent-inhabiting loaches which are characterised by a subterminal and inferior mouth, a flattish lower surface and horizontal paired fins with the anterior rays "simple" As I have indicated elsewhere,² the so-called simple rays are of two kinds. In *Balitora*, for example, the simple rays are apparently produced by the coalescence of the branches of an ordinary ray, whereas in *Gastromyzon* there is only one true simple ray, the neighbouring rays, although appearing simple superficially, being in reality forked. In this last case the primary branching is retained and each of these branches is then modified into a simple ray. On the morphological structure of the "simple" rays the members of the family Homalopteridae can be grouped into two subfamilies—Homalopterinae and Gastromyzoninae.³ The former is characterised by the presence of *two or more* undivided rays in the paired fins, whereas the latter possesses only *one* undivided ray in the paired fins. The genera *Homaloptera*, *Balitora*, *Hemimyzon*, *Sinogastromyzon*, *Sinohomaloptera*, *Chopraia* and *Lepturichthys* are thus referable to the Homalopterinae and the genera *Parhomaloptera*, *Pseudogastromyzon*, *Gastromyzon*, *Crossostoma* and *Formosania* to the Gastromyzoninae. The remaining genera such as *Glanioptis*, *Homalosoma* and *Octonema* are more closely related to the Cobitidae than to the Homalopteridae.

¹ After this article had gone to press I received a copy of Mr. P. W. Fang's very interesting paper entitled "New and Inadequately Known Homalopterid Loaches of China" (*Contributions Biol. Lab. Sci. Soc. China, Zool. Ser. VI, No. 4, pp. 25-43, 1930*), in which he gives a rearrangement and revision of the generic characters of *Gastromyzon*, *Sinogastromyzon* and their related genera. It is not possible to discuss his system of classification in this note, but I hope to do so in the near future when publishing a detailed account of the classification, bionomics and evolution of the Homalopterid fishes.

² Hora, *Phil. Trans. Roy. Soc. London (B) CCXVIII, p. 267 (1930)*.

³ I am retaining the subfamily designations proposed by Fowler (*Proc. Acad. Nat. Sci. Philad. (2) LVII, pp. 475, 477; 1905*), though my characterisation of the two subfamilies is entirely different from that given by Fowler.

Among the Homalopterinae, *Homaloptera*, *Balitora*, *Hemimyzon* and *Sinogastromyzon* form a regular graded series, while the 8-barbelled *Sinohomaloptera*, the many-barbelled *Lepturichthys* and the large-eyed *Chopraia* represent side branches of the main stem of evolution. Similarly among the Gastromyzoninae, *Parhomaloptera*, *Pseudogastromyzon* and *Gastromyzon* constitute a regular series, whereas the many-barbelled *Crossostoma* and *Formosania* seem to have diverged from the main line. A close study of the two subfamilies shows that evolution has proceeded among them along parallel lines and the most specialized forms of the two subfamilies show remarkable convergence of characters. It is interesting to note that both in *Sinogastromyzon* and in *Gastromyzon* the ventral fins are united posteriorly to form a disc for the purposes of adhesion.

For convenience of reference I give below a list of the genera of the Homalopteridae with references to their original descriptions and the names of the type-species with such other information as I consider it is desirable to publish at this stage of my work.

Subfamily **Homalopterinae.**

1. *Homaloptera* van Hasselt, *Algem. Konst-en Letterbode* II, p. 130 (1823).
Type-species :—*Homaloptera wassinki* Bleeker (= *H. fasciata* van Hasselt).
Synonyms :—*Helgia* Vinciguerra, *Homalopteroides* Fowler and *Bhavana* Hora.
2. *Balitora* Gray, *Illustr. Ind. Zoology* I, pl. lxxxviii, fig. 1 (1832).
Type-species :—*Balitora brucei* Gray.
3. *Hemimyzon* Regan, *Ann. Mag. Nat. Hist.* (8) VIII, p. 32 (1911).
Type-species :—*Hemimyzon formosanum* (Boulenger).
Homaloptera abbreviata Günther (Pratt's *Snows of Tibet*, p. 248, pl. iii, fig. B, 1892) and *Psilorhynchus sinenses* Sauvage et Dabry (*Ann. Sci. Nat. Paris* (6) I, art. 5, p. 14, 1874) belong to the genus *Hemimyzon*.
4. *Sinogastromyzon* Fang, *Sinensia* I, p. 35 (1930).
Type-species :—*Sinogastromyzon wui* Fang.
5. *Sinohomaloptera* Fang, *Sinensia* I, p. 26 (1930).
Type-species :—*Sinohomaloptera kwangsiensis* Fang.
6. *Chopraia* Prashad & Mukerji, *Rec. Ind. Mus.* XXXI, p. 188 (1929).
Type-species :—*Chopraia rupicola* Prashad & Mukerji.
7. *Lepturichthys* Regan, *Ann. Mag. Nat. Hist.* (8) VIII, p. 31 (1911).
Type-species :—*Lepturichthys fimbriata* (Günther).

Subfamily **Gastromyzoninae.**

8. *Parhomaloptera* Vaillant, *Notes Leyden Mus.* XXIV, p. 129 (1902).
Type-species :—*Parhomaloptera microstoma* (Boulenger).
9. *Pseudogastromyzon* Nichols, *Amer. Mus. Novitates*, No. 167, p. 1 (1925).

Type-species :—*Pseudogastromyzon fasciatus* Sauvage¹ (= *P. zebroidus* Nichols).

10. *Gastromyzon* Günther, *Ann. Mag. Nat. Hist.* (4) XIV, p. 454 (1874).

Type-species :—*Gastromyzon borneensis* Günther.

Synonyms :—*Lepidoglanis* Vaillant and *Neogastromyzon* Popta.

11. *Crossostoma* Sauvage, *Bull. Soc. Philom. Paris* (7) II, p. 88 (1878).

Type-species :—*Crossostoma davidi* Sauvage.

12. *Formosania* Oshima, *Ann. Carnegie Mus.* XII, p. 194 (1919).

Type-species :—*Formosania formosanum* (Steindachner)² (= *F. gilberti* Oshima).

¹ Sauvage, *Bull. Soc. Philom. Paris* (7) II, p. 88 (1878).

² Steindachner, *Ann. Akad. Wiss. Wien* XLV, p. 82 (1908).