

This article was downloaded by: [JAMES COOK UNIVERSITY]

On: 15 March 2015, At: 23:25

Publisher: Taylor & Francis

Informa Ltd Registered in England and Wales Registered Number: 1072954

Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## Annals and Magazine of Natural History: Series 7

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/tnah13>

### XXV.—On the Presence of a Superbranchial Organ in the Cyprinoid Fish Hypophthalmichthys

G. A. Boulenger F.R.S.

Published online: 01 Dec 2009.

To cite this article: G. A. Boulenger F.R.S. (1901) XXV.—On the Presence of a Superbranchial Organ in the Cyprinoid Fish Hypophthalmichthys, Annals and Magazine of Natural History: Series 7, 8:45, 186-188, DOI: [10.1080/03745480109442908](https://doi.org/10.1080/03745480109442908)

To link to this article: <http://dx.doi.org/10.1080/03745480109442908>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan,

sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

orange above; abdomen orange, with dorsal and lateral series of black spots except on first segment, the ventral surface grey-white. Fore wing yellow, the veins finely streaked with black except on costal area. Hind wing pale yellow.

♀. Head and thorax deep orange; pectus, legs, and ventral surface of abdomen fuscous. Fore wing orange-brown, the costal area to beyond middle, the inner margin finely, and the cilia orange; a black point at lower angle of cell. Hind wing fuscous black; a diffused orange streak on median nervure; the inner margin and cilia orange; an orange discoidal point: the underside orange, with large fuscous patch on terminal area from costa to vein 2.

*Hab.* MASHIONALAND, Salisbury (*Marshall*), 2 ♂, 1 ♀ type. *Exp.*, ♂ 36, ♀ 38 millim.

XXV.—On the Presence of a Superbranchial Organ in the Cyprinoid Fish *Hypophthalmichthys*. By G. A. BOULENGER, F.R.S.

SINCE the discovery by Ehrenberg and by Rüppell of the singular accessory branchial organ known as the "gill-snail" \*, whence the Nile fish *Heterotis* derives its name, more or less similar structures have been described in various other Malacopterygians and in some Ostariophysi of the family Characimidae †. No examples of anything of the sort have yet been furnished by the Cyprinidae, so closely related to the Characimidae; but this is no doubt due to the little attention that has been paid to the anatomy of the exotic genera of this large family. I am now able to fill up this gap in our knowledge by pointing out the presence of a superbranchial organ in the curious Chinese genus *Hypophthalmichthys*, Bleeker ‡, which is thus added to the list of fishes provided with this problematic structure.

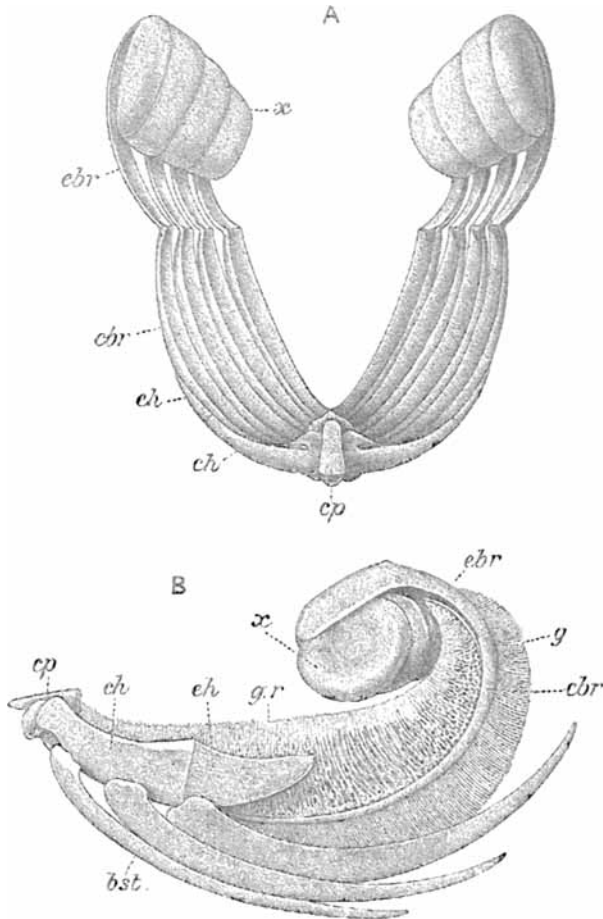
Although several descriptions of *Hypophthalmichthys* have been given, I do not find any allusion to the organ in question, which can only be seen by a removal of the membrane of the branchial chamber; otherwise it only appears as a thick protuberance on each side of the pharynx, filling up the space left by the gill-arches, with folds fitting between every two

\* Hyrtl, Denkschr. Ak. Wien, viii. 1854, p. 85; Hemprich & Ehrenberg, Symb. Phys., Zoot. pl. ix.

† Hyrtl, Denkschr. Ak. Wien, xxi. 1863, p. 7; Sagemehl, Morphol. Jahrb. xii. 1887, p. 307.

‡ For a synopsis of the eight species known, cf. Herzenstein & Warpaehovski, Trud. St. Petersburg. Nat. xviii. 1887, p. 40.

series of gill-rakers. Dr. Günther\* has described the gill-rakers as very long, slender, lanceolate; but this is only true of the species *H. nobilis*, Richards.,—*H. molitrix*, C. & V.,



*Hypophthalmichthys molitrix.*

A. Dorsal view of gill-arches, the epibranchials pushed back to show the superbranchial organ. B. Side view, the epibranchial slightly raised.

*bst.* Branchiostegal. *cbr.* Ceratobranchial. *ch.* Ceratohyal. *cp.* Copula. *cbr.* Epibranchial. *ch.* Epihyal. *g.* Gill-filaments. *gr.* Gill-rakers. *x.* Superbranchial organ.

\* Cat. Fish. vii. p. 298.

the type of the genus, having them, as first pointed out by Bleeker<sup>‡</sup>, fused into thin plates of spongioid appearance, which he describes as "ex parte reticulatim unitis," and which must act as a most efficient sifting apparatus.

Above the gills, apparently coiled like a whelk, is the bulky organ to which attention is drawn. It is not without a certain resemblance at first sight to the gill-snail of *Heterotis*; but on closer inspection it is found not to be spirally coiled at all, but to consist of four distinct parts each attached to the ventral surface of the upper segment of a gill-arch and forming a simple involution. It thus differs very considerably from the organ described in other fishes, and which depends of the fourth branchial arch only.

I do not know of any observations on the habits of *Hypophthalmichthys* which would throw light on the function of the organ to which attention is here drawn.

XXVI.—On a new Form of *Puma* from Patagonia.

By OLDFIELD THOMAS, F.R.S.

THE National Collection owes to the generosity of Mr. C. Arthur Pearson the skin of a fine puma, obtained by Mr. Hesketh Prichard during the recent 'Daily Express' expedition to Patagonia. The skin is remarkably unlike any known form of puma, and appears certainly to represent a new subspecies.

Dr. Matschie has already shown † that the red puma of the tropics, to which he restricts the name *Felis concolor*, is replaced south of 25° S. lat. by the silver-grey form for which Molina's name *F. puma* is used.

Now, again, south of about 41° S. lat., there proves to be another form, represented in the British Museum not only by Mr. Prichard's skin from Santa Cruz, but by a second much younger specimen from the Rio Senguier. Both show the same characteristics, and are equally different from the Argentine silver-grey form.

In commemoration of Mr. Pearson's scientific spirit in sending out the expedition, and in presenting the specimen to the National Museum, I would propose to call it

*Felis concolor Pearsoni*, subsp. n.

General build thick and sturdy, with comparatively short

Verh. Akad. Amsterd. xii. no. 2, 1871, p. 83.

† *Sil. Ges. nat. Fr. Berlin*, 1892, p. 220; 1894, p. 53.