THE GENERIC POSITION OF THE NEPALESE FISH *DIPTYCHUS ANNANDALEI* REGAN.

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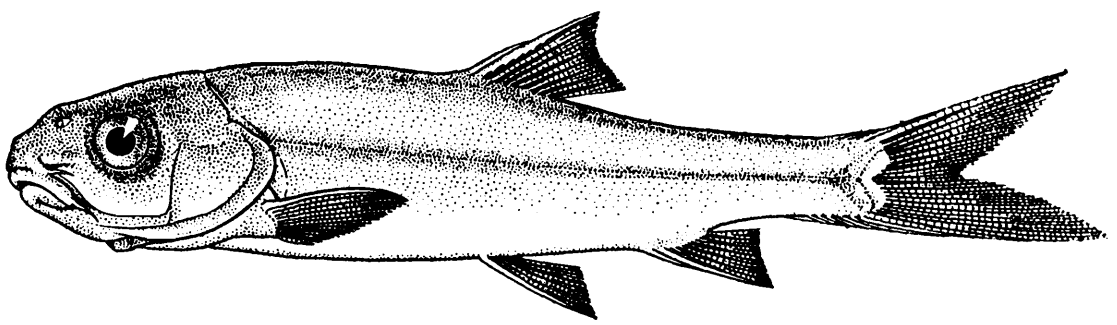
In 1907 Regan [1] described a new species of the genus *Diptychus*, *D. annandalei*, from Pharping and Katmandu in Nepal. His description was based on three [2] young specimens, the largest being 70 mm. in total length. Recently I had occasion to examine these examples and I find that, besides possessing two pairs of short barbels to which Regan had already referred, they are provided with a well-marked, osseous and denticulate dorsal spine. A combination of these two characters clearly shows that the fish cannot be retained in the genus *Diptychus* which is characterised [3] by the presence of a single pair of barbels at the angles of the mouth and a smooth dorsal spine.



TEXT-FIG. 1.—Lateral view of *Diptychus annandalei* Regan, × 3.

Another feature of importance noted by Regan in "*D. annandalei*" is that the body is "nearly entirely naked." This character and the presence of four barbels led Vinciguerra [4] to suggest tentatively that the species is referrable to a distinct genus rather than to *Diptychus*. It was also indicated by him that the absence of scales on the body shows that the species is closely allied to the members of the genus *Gymnodiptychus*.[5]

I have examined the pharyngeal bone and teeth of a specimen of "*D. annandalei*" (fig. 3) and find that the pharyngeal teeth are, like those in *Schizothorax*, more or less hooked at the tip and arranged in

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[1] Regan, C. Tate—*Rec. Ind. Mus.*, I, p. 158 (1907).

[2] There are, however, four specimens in the collection of the Zoological Survey of India labelled as *Diptychus annandalei* Regan (Reg. Nos. F $\frac{1551}{1}$ & F $\frac{1552}{1}$).

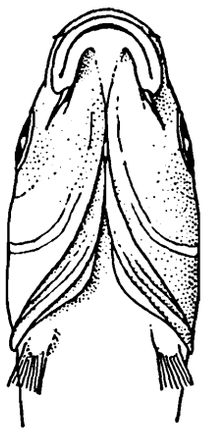
[3] Steindachner, F.—*Verh. Zoo.-bot. Ges. Wien*, XVI, p. 787 (1866).

[4] Vinciguerra, D.—*Ann. Mus. Civ. Stor. Nat. Genova*, (3) VII (XLVII), p. 146 (1916).

[5] Herzenstien, S., 'Ichthyologische Bemerkungen aus dem zoologischen Museum der Kaiserlichen Akademie der Wissenschaften.'—*Mélanges Biol. Bull. Acad. Sc. St. Petersb.*, XIII, p. 225 (1892).

three rows,—the arrangement being 4.3.2-2.3.4.[1] Both in *Diptychus* (fig. 4) and *Gymnodiptychus*, on the other hand, there are only two rows of teeth—the formula being 4.3-3.4.

The nearest allies of the form "*D. annandalei*" are *Schizopygopsis*[2] and *Schizocypris*.[3] But it differs from *Schizopygopsis* chiefly in having (i) four barbels (*versus* none) and (ii) three rows of pharyngeal teeth (*versus* two rows), while from *Schizocypris* it differs among other features in the possession of (i) a more or less narrow and horse-shoe shaped mouth (*versus* broad and transverse), (ii) four barbels (*versus* none or a minute posterior pair) and (iii) hooked pharyngeal teeth (*versus* flat teeth with grinding surfaces).



TEXT-FIG. 2.—Ventral view of *Diptychus annandalei* Regan, showing the characters of the mouth and the lips, × 4.

Judged from the characters present in "*D. annandalei*" referred to above, *viz.* (i) three rows of hooked pharyngeal teeth, (ii) a denticulate dorsal spine and (iii) four barbels, as well as from the general build (fig. 1) and the shape of the mouth and the lips (fig. 2) the fish appears to correspond more closely, if not entirely, to the genus *Schizothorax* than to *Diptychus*, *Gymnodiptychus*[4] or any other allied genus, and should, therefore, be placed in *Schizothorax*. In regard to its specific identity it is difficult to be certain, from the fact that all the specimens are immature and seem roughly to agree with any of the species of the genus *Schizothorax* found in the mountain streams and rivers of the Himalayan region. I am, therefore, inclined to think that "*D. annandalei*" should, for the present, stand as *Schizothorax* sp.

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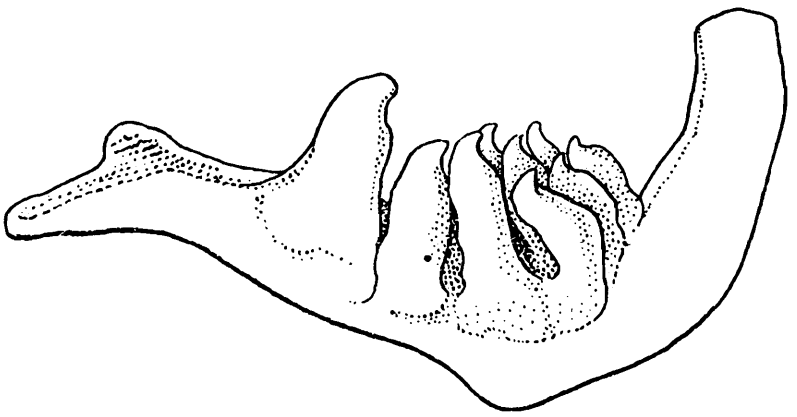
[1] Ordinarily there are ten pharyngeal teeth on each side in *Schizothorax*, 5.3.2—2.3.5. But it has been remarked by Heckel (*Fische Kaschmir's* in Hugel's *Kaschmir und Das Reich Der Seik*, p. 355, footnote, 1848) that the total number of pharyngeal teeth on each side may vary from nine to ten. Of the species of *Schizothorax* that I have examined in this connection *S. nasus* has nine pharyngeal teeth—the formula being 4.3.2—2.3.4.

[2] Steindachner, F.—*Verh. Zoo.-bot. Ges. Wien*, XVI, p. 785 (1866).

[3] Regan, C. Tate—*Ann. Mag. Nat. Hist.* (8) XIII, p. 262 (1914).

[4] At my request Dr. S. L. Hora very kindly wrote to the authorities of the British Museum (Natural History) for a specimen of *Gymnodiptychus dybowskii*, and recently a fine specimen has been presented by the British Museum (Nat. Hist.) to the Zoological Survey of India. My sincere thanks are due to Dr. Hora and the authorities of the British Museum (Nat. Hist.) for their acts of courtesy that afforded me an opportunity of studying the fish. Dr. L. S. Berg (*Faune de la Russie, Poissons*, III, p. 675, 1914) considers the form *Gymnodiptychus dybowskii* congeneric with *Diptychus* Steind. I have very carefully examined the specimen of *G. dybowskii* and do not also find sufficient justification for its generic separation from *Diptychus*.

Having assigned the form "*D. annandalei*" to the genus *Schizothorax* it remains for me to explain the absence of scales in the speci-



TEXT-FIG. 3.—Pharyngeal bone and teeth of *Diptychus annandalei* Regan, × 16.

mens. This is essential, for the fish could not be a *Schizothorax*, if normally its body were "nearly entirely naked." The absence of scales in the specimens under report, however, does not appear to me to be characteristic inasmuch as scales in *Schizothorax* are generally small and in many species they are poorly developed. In immature stages, again, scales are either not developed or extremely minute and liable to drop off owing to improper preservation. As a matter of fact in badly preserved specimens it is often found that the lepidosis is partly or completely lost. In the collection of the Zoological Survey of India there are large series of young specimens of *Schizothorax* from the hill-streams of Chitral in the N. W F. Province and elsewhere. I have examined these specimens and find that scales are not developed in many, have partly dropped off in some and are entirely lost in others.

TEXT-FIG. 4.—Pharyngeal bone and teeth of *Diptychus maculatus* Steind., × 8.

It appears to me that scales are not developed in the specimens under report. If, however, the absence of scales on the body of "*D. annandalei*" be proved by later researches to be a constant feature of the species, then "*D. annandalei*" merits a claim to a distinct genus which will be intermediate between *Schizothorax* on one hand and *Diptychus* on the other. But the question cannot be settled until adult specimens of the fish have been obtained and studied.