A NOTE ON THE SYSTEMATIC POSITION OF THE GENUS *GLANIOPSIS* BOULENGER (FISHES : CYRINOIDEA).

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Though the genus *Glaniopsis* Boulenger has generally been included in the family Homalopteridae, Hora[1] expressed doubts about its systematic position and regarded it a Cobitid rather than a Homalopterid fish. He based his conclusions on an external examination of the only two known specimens of the monotypic genus in the British Museum. During his recent visit to the U. S. A., in the Museum of Comparative Zoology at Harvard College, Cambridge Mass., Hora found a large collection of fishes made by Mr. J. A. Griswold from Mount Kina Balu, Borneo. Several hundred specimens from this collection had been correctly identified as *G. hanitschi* Blgr. and placed in the collection among the Homalopteridae. Through the kindness of Dr. William C. Schroeder, a large number of specimens have now become available for study at Calcutta and an opportunity has, therefore, been taken not only to discuss the systematic position of the genus but also to redescribe the species from abundant material with some details of internal structures.

Glaniopsis hanitschi Boulenger.

1899. *Glaniopsis hanitschi*, Boulenger, *Ann. Mag. Nat. Hist.* (7), IV, p. 228.

1900. *Glaniopsis hanitschi*, Hanitsch, *Journ. Straits Branch Roy. As. Soc.* No. 34, p. 75, pl. ii, figs. 2, 2a.

1916. *Glaniopsis hanitschi*, Weber & de Beaufort, *Fish. Indo. Austral. Archipel.* III, p. 5.

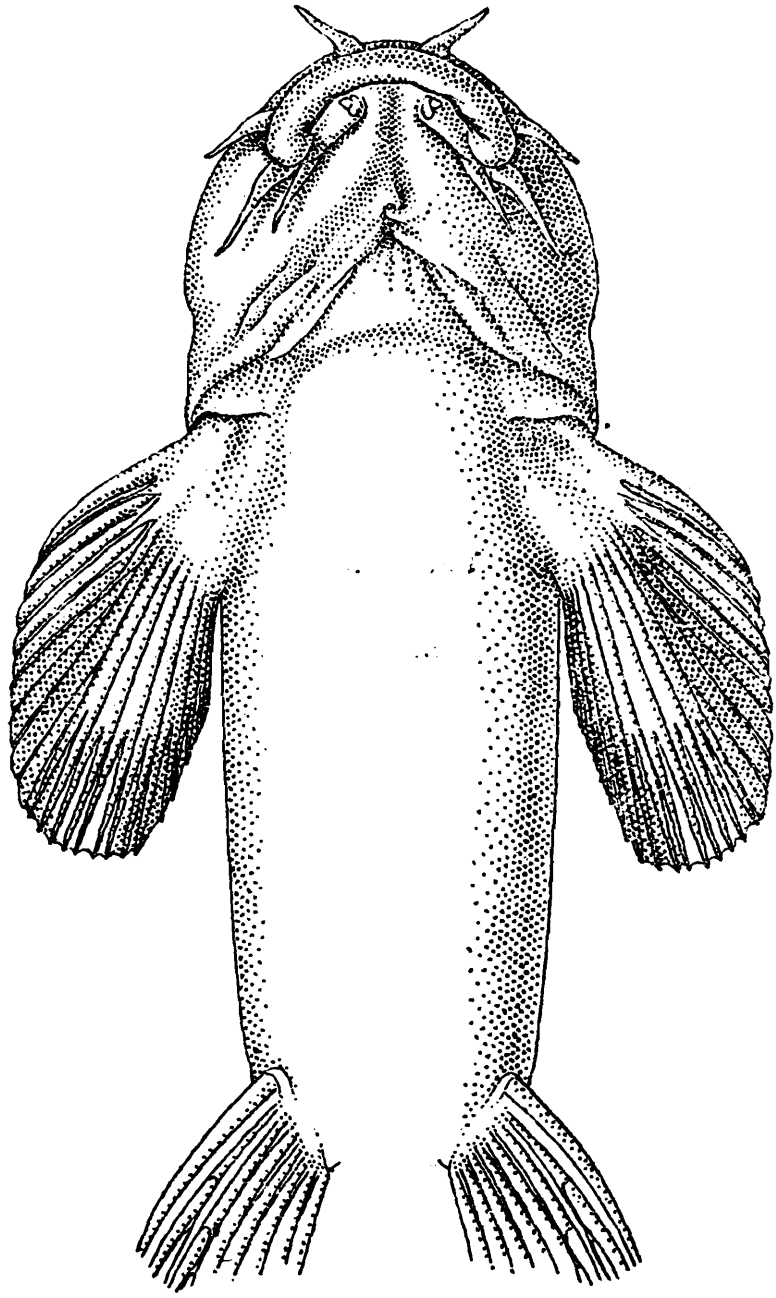
1932. *Glaniopsis hanitschi*, Hora, *Mem. Ind. Mus.* XII, p. 268 (foot-note).

D. 2/6-7 ; A. 1/6 ; P. 1/8-11 ; V 1/7-8 ; C. 16-17

In its general facies, *Glaniopsis hanitschi* is a *Nemachilus*-like loach with a broad head and slightly depressed body. The dorsal and the ventral profiles are almost horizontal or slightly arched. The head is short and broad ; it is scarcely longer than broad. The length of the head is contained from 5·0 to 5·75 times in the total length. The head is greatly depressed and smooth ; the snout is broad and rounded. The eyes are small and dorso-lateral in position ; they are in the middle of the head and are not visible from below. They are contained 5 to 8 times in the length of the head, 2 to 4 times in the snout and 2 to 3 diameters apart. The nostrils are nearer to the eye than to the tip of the snout and are separated by well-developed nasal barbels. The mouth is arched and its gape is equal to half the width of the head ; it is situated slightly behind the tip of the snout on the ventral surface

1. Hora, S. L. *Mem. Ind. Mus.* XII, pp. 267, 268 (1932).

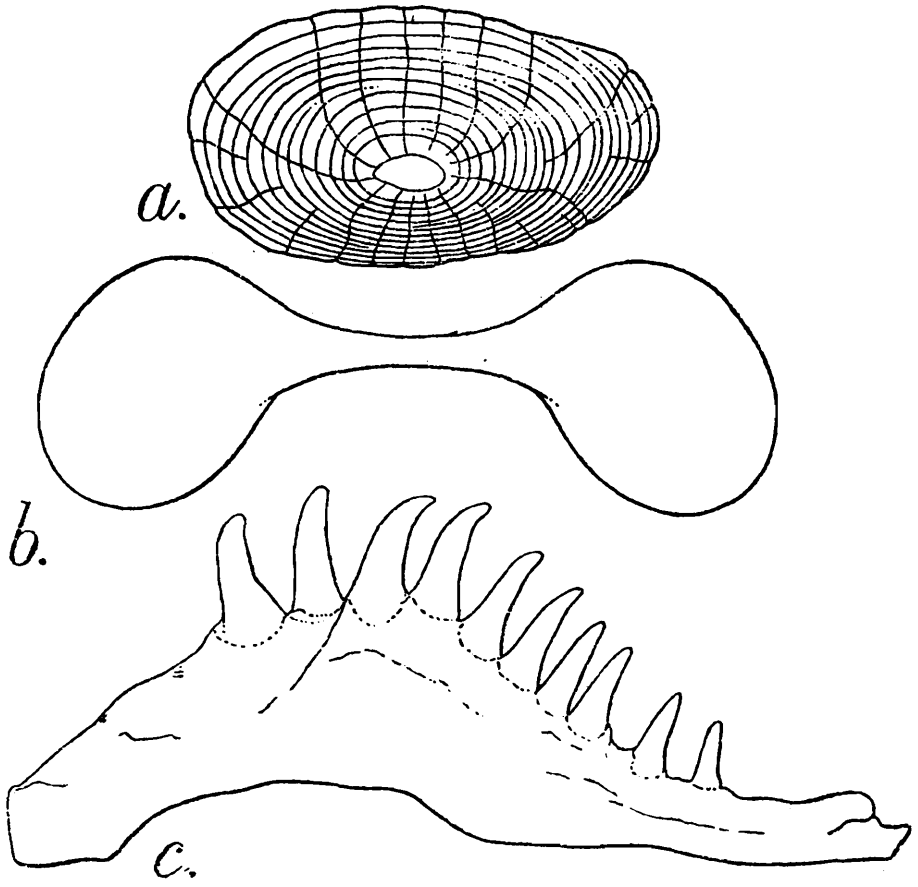
and is bordered by thick, fleshy lips. The lips are continuous at the angles of the mouth, but the lower labial fold is broadly interrupted in the middle. There is a deep groove round the corners of the mouth and there are two barbels on each side at this place. Besides, there are the usual maxillary and outer mandibular barbels. The inner edge of the labial fold of each side is also produced into a short barbel. The upper jaw is beak-like with a corresponding depression in the lower jaw. The gill-openings extend to the ventral surface for a considerable distance, the isthmus being equal to half the length of the head.



Text-fig. 1.—Ventral surface of head and body of *Glaniopsis hanitschi* Boulenger; ×3⅕.

The origin of the dorsal fin is usually slightly behind that of the pelvics and is nearer to the base of the caudal fin than to the tip of the snout; its longest ray is considerably shorter than the head. The pectoral fins are horizontally placed and are provided with muscular bases; they are as long as the head and possess only one undivided ray each. The first five rays are covered with adhesive skin pads on

their ventral surfaces, while the remaining eight rays are progressively more and more directed upwards so as to pump out water entering on the ventral surface, a feature very characteristic of the Gastromyzonid and Homalopterid fishes. The pectorals are separated from the pelvics by a considerable distance—almost half their own length. The pelvics are also horizontally placed with their posterior basal margins approaching each other. There is no free appendage in the axil of the pelvic fins. They are separated from the anal fin by a distance equal to their own length. The anal opening is situated at the tip of a papilla-like growth which lies in a depression in front of the commencement of the anal fin. The anal fin misses the base of the caudal fin. The least height of the caudal peduncle is almost equal to its length. The caudal fin is almost as long as the head, with the free posterior margin lunate ; the upper portion is slightly longer than the lower.



TEXT-FIG. 2.—Air-bladder, scale and pharyngeal teeth of *Glaniopsis hanitschi* Boulenger. *a.* Scale from below the dorsal fin : ×11 *b* ; Air-bladder : ×11 *c* ; Pharyngeal bone and teeth : ×22.

The body is loach-like ; its depth is contained from 7 to 8·5 times in the total length. The body is covered with small scales, except on the ventral surface as far as the origin of the anal fin. The lateral line is complete.

A scale from below the lateral line is oval and marked with conspicuous circuli and radii. The nucleus is eccentric, being situated nearer the base than the apex. There are nine, well-spaced circuli, and 25 radii all round the scale. The circuli and the radii form a beautiful basket-work. In their structure, the scales deviate but little from the Cobitid type.

In spirit specimens, the dorsal surface is olivaceous brown, marked with transverse dark brown bands, spots or interrupted bands. Head is dark olive above. The ventral surface is whitish. The dorsal and the caudal fins are greyish ; the latter is provided with a blackish base. There is a dark mark in the axil of the pelvic fin. The other fins are olivaceous, somewhat lighter below.

The air-bladder is bilobed and the two lobes are connected by a transverse tube. All the structures are enclosed by bone. It is of the type usually found in *Nemachilus* and other hill-stream Cobitid fishes.

Systematic Position.—In its general form and structure, *Glaniopsis* differs little from *Nemachilus* and allied Cobitid genera, but in its greatly depressed head and anterior part of body, and the division of the pectoral fin into an adhesive outer portion and a vibrating inner portion, it shows an advance over the Cobitidae and approaches the Gastromyzoninae. *Glaniopsis* could thus be considered as a less specialised genus in the Gastromyzonid group of fishes.

Table of measurements in millimeters.

Standard length	97	86	83	74	70	69	63	59	53	45	42	33
Length of head ..	18	16	16	15	12	12	12	11	11	9	8	6
Height of head at occiput	9	8	9	6	6	6	7	5	6	5	4	3
Width of head ..	16	13	13	12	11	10	10	8	8	7	6	5
Length of snout ..	9	7	7	5	5	5	5	4	5	3	3	3
Diameter of eye ..	2	2	2	2	2	2	3	2	2	1	1	1
Interobital width	7	8	7	5	5	5	5	4	5	4	4	2
Depth of body ..	11	10	10	10	10	10	10	8	7	6	5	4
Length of caudal peduncle ..	4	3	4	2	2	3	2	2	2	3	2	1
Least height of caudal peduncle	9	8	9	7	7	6	7	5	5	5	4	3
Longest ray of dorsal fin ..	16	14	18	12	12	11	11	10	9	8	7	5
Length of pectoral fin	17	15	15	12	14	12	11	11	10	9	7	5
Length of pelvic fin	15	13	11	10	11	10	9	8	8	7	6	6
Longest ray of anal fin ..	14	11	11	10	9	9	8	9	7	6	5	3
Length of base of anal fin ..	6	4	5	4	4	4	4	4	3	3	3	2