

#### 4. Second Addition to the Fish Fauna of Tsi-nan, China, with Descriptions of Three New Species

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I have had an opportunity of making my first addition to the fish fauna of Tsi-nan in this Journal, Vol. II, No. 4. I subsequently received through the kindness of Mr. Kiyoshi Shibata living there some specimens, among which I found three species quite new to science, and two species as yet unrecorded from Hwang-ho. These I propose to describe here.

##### Family Cyprinidae

##### 52. *Elopichthys bambusa* (Richardson)

A single specimen from the Hwang-ho near Tsi-nan, 194 mm long.

Head 4.0 in length, depth 5.8; eye 6.3 in head, snout 2.9, interorbital space 4.2; D.III, 10; A.III, 10; scales 19-107-7.

##### 53. *Pseudolaubuca tsinanensis* sp. nov.

Head 4.0 in length, depth 5.3; eye 4.8 in head, snout 3.5, interorbital space 4.0; D.III, 7; A.III, 16; P.I, 15; V.I, 7; scales 8-52-4; pharyngeal teeth 5.4.2-2.4.4, slender and hooked at tips.

Body slender and strongly compressed; head naked, moderately long; snout pointed, rather long; no barbels; eye moderately large, median and anterior; mouth rather large, terminal and oblique; lips thin; jaws subequal, the lower projecting beyond the upper; maxillary reaching to below anterior margin or eye; interorbital space strongly convex. Gill opening large; gill-rakers small and weak; pseudobranchiae present; intestine short, with a single convolution; peritoneum pale, no pectoral flap, ventral flap rather long and scaly. Belly trenchant from throat to vent. Lateral line complete, low, decurved, slanting down to over tip of pectorals.

Dorsal and anal without spinous rays; origin of dorsal nearer to base of caudal than to tip of snout by a distance equal to two-thirds of head, its longest soft ray 1.7 in head, upper edge slightly concave; pectorals long,

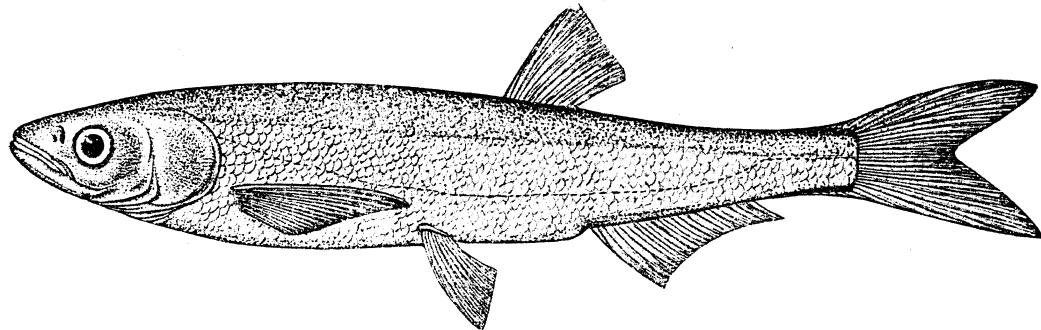


Fig. 1. *Pseudolaubuca tsinanensis* sp. nov. Type.

pointed, scarcely reaching to origin of ventrals; ventrals inserted halfway body length, entirely in front of dorsal, and extending two-thirds to origin of anal; anal rather long, low, its longest ray twice as long as last, and inserted under and behind last ray of dorsal, its edge concave; caudal deeply forked.

Color in formalin entirely pale, slightly dusky above; all fins pale.

Total length 128 mm.

Described from a specimen from Tsi-nan.

Remarks. The present species is closely allied to *P. shawi* Tchang from Se-tchuan, China, but differs from it in having larger head with longer post-orbital, slenderer body, longer pectorals and ventrals, and fewer anal rays.

#### 54. *Culticula emmelas* Abbott

A single specimen from Tsi-nan, 116 mm long.

Head 4.5 in length, depth 4.0; eye and snout 4.0 in head, interorbital space 2.9; D.II, 7; A.II, 11; scales 8.5-46-4.5; pharyngeal teeth 5-5, knife-shaped.

Abdomen keeled between ventrals and anal. Dorsal with two strong spines and seven branched rays.

#### 55. *Hemiculter shibatae* sp. nov.

Head 4.5 in length; depth 4.3; eye 4.5 in head, snout 3.8, interorbital space 3.9; D.II, 7; A.II, 13; P.14; V.8; scales 8-41-2.5, pharyngeal teeth 5.4-2-2.4-5, mostly slightly hooked; gill-rakers small and slender.

Body elongate, compressed, dorsal outline nearly straight, ventral profile strongly curved; abdomen trenchant from insertion of pectorals to vent; head moderately large; snout pointed anteriorly; mouth terminal, oblique; maxillary reaching to vertical through anterior border of nostril; no

barbels; eye rather small, 1.3 in snout, orbit with a free rim and narrow membranous lid all round; interorbital convex; nostrils close together, in front of and above eye, the anterior in a short tube; gill membranes joined to one another and center of isthmus under posterior border of eye; gill opening large; intestine short, with a single convolution; peritoneum black; no pectoral flap; ventral flap short and scaly. Lateral line complete, slanting down to over tip of pectoral, running low to anal axil, thence rising to center of caudal peduncle.

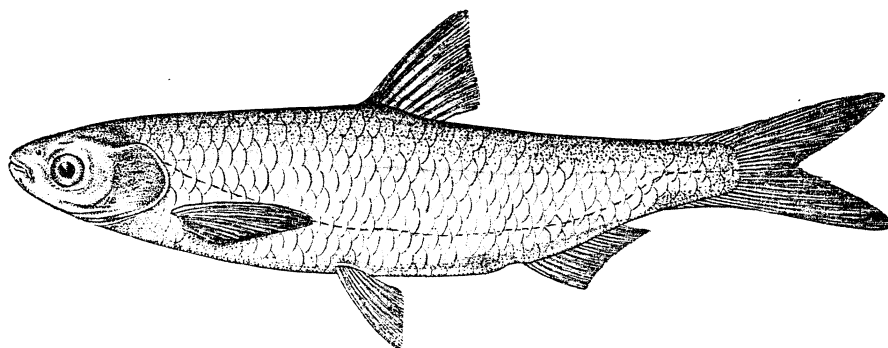


Fig. 2. *Hemiculter shibatae* sp. nov. Type.

Dorsal armed with two smooth spines, first spine nearly as long as the second, its origin equidistant from tip of snout and base of caudal, and slightly behind ventral axil; pectorals short, 1.2 in head, not reaching to origin of ventrals; ventrals reaching three-fifths of distance to anal; anal elongate, entirely behind dorsal; caudal peduncle long, strongly compressed, its depth 2.2 in head; caudal forked with narrow pointed lobes, the lower slightly longer.

Color in formalin back greyish, abdomen silvery white; all fins pale. Total length 108 mm.

Described from a specimen from Tsi-nan.

Remarks. The present species is closely related to *H. bleekeri* Warpachowsky from the Yang-tse-kiang and Shan-si, China, but differs from it in having much deeper body, smaller eyes, shorter pectorals, and dorsal more advanced.

### Family Bagridae

#### 56. *Leiocassis hwanghoensis* sp. nov.

Head 4.3 in length; depth 5.0; width of head 1.35 in its length; eye 9.1 in head; snout 2.75; interorbital space 2.35; D.I, 7; A. 18; P.I, 7; V.6.

Body entirely covered by thin skin, rather plump, and posterior portion

compressed. Head broad, rather depressed; snout produced, projecting beyond the maxillary; eye very small, laterally superior, and covered with thin skin; mouth inferior, as wide as broad snout, upper jaw projecting beyond lower; jaws with broad band of villiform teeth, also on palate in an uninterrupted crescentic band; nasal and median mental barbels about equal and about half as long as maxillary pair, the latter much longer than outer mentals, though considerably shorter than length of head; interorbital space broad, elevated, and flattened; anterior nostril tubular. Gill opening large, gill membranes notched and forming a free fold across isthmus; isthmus broad. Occipital process short, no longer than, and separated by an interspace from, triangular basal bone of dorsal spine, humeral process equal to pectoral spine.

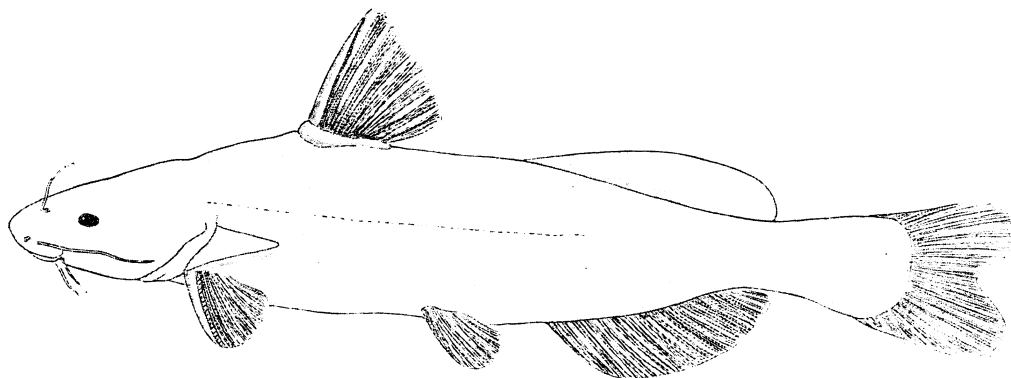


Fig. 3. *Leiocassis hwanghoensis* sp. nov. Type.

Origin of dorsal in advance of tip of pectorals, its spine long, sharp, smooth, lower than body depth, and four-fifths of longest ray; pectorals equal to head without snout, its spines as long as, but stronger than, that of dorsal, strongly denticulated on inner side; ventrals broad, behind dorsal, and not reaching to origin of anal; anal base rather short, shorter than head; adipose fin longer than anal base; caudal emarginate, with rounded lobes. Lateral line incomplete and superior in front; caudal peduncle high, its depth 2.0 in its length.

Color in formalin darker above, abdomen and lower surface of head pale; edge of all fins whitish.

Total length 243 mm.

Described from a specimen from the Hwang-ho near Tsi-nan.

Remarks. This species is allied to *L. ussuriensis* (Dybowski) from Manchuria and North China, but differs from it in having deeper body, smaller eyes, longer humeral process, and occipital process and basal bone of dorsal spine being covered by a thin skin above.

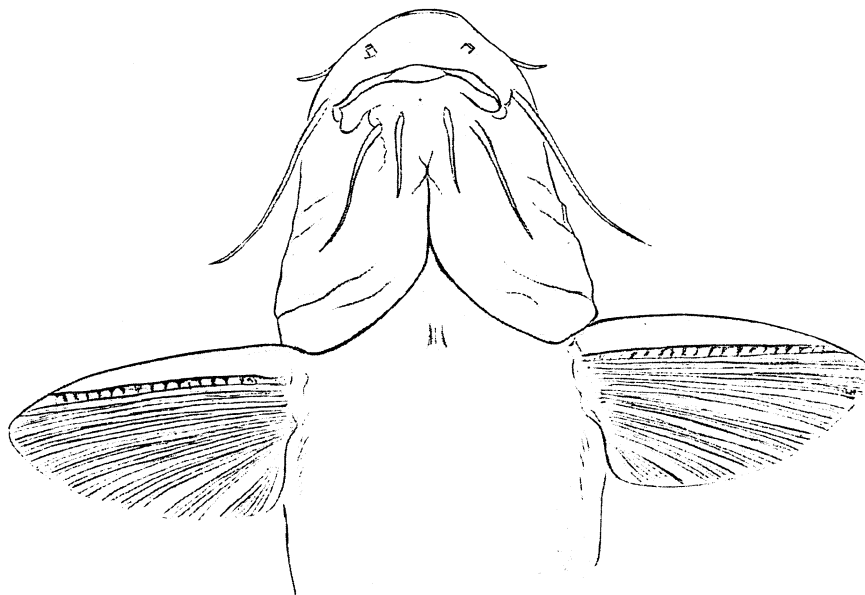


Fig. 4. *Leiocassis hwanghoensis*; ventral view of head.