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THE TWO CHINESE LOACHES OF THE GENUS *COBITIS*¹

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Berg, 1916, recognizes a Chinese *Cobitis*, *Cobitis sinensis* Sauvage and Dabry de Thiersant, 1874, as subspecifically distinct from *C. taenia* which he credits to northern Asia as well as to Europe. Fowler, 1924, synonymizes it with *taenia*; but Nichols and Pope (in press), recognize this and another race of *C. taenia* from China.

Kreyenberg and Pappenheim, 1908, identify all their Yangtze material with *Cobitis* [*Lepidocephalichthys*] *macrostigma* Dabry de Thiersant, 1872, from lakes of central China. However, Mr. Clifford H. Pope's collections from Tungting Lake, Hunan, adjacent to the Yangtze, contain two distinct loaches. One of these is apparently a race of *C. taenia* and is here identified as *sinensis*; the other is clearly referable to *macrostigma*. A drawing by Miss Olive Otis of a specimen of each from Tungting of approximately the same size (*sinensis* 110 mm., *macrostigma* 115 mm., to base of caudal) is here reproduced to show the differences. *C. macrostigma* has a longer peduncle; smaller scales, about 135 versus 100 to 110 before the dorsal; dorsal origin midway between end of snout and middle of peduncle, versus base of caudal. There seems to be a difference in the lips, the free lip between maxillary and mental barbels pointed versus broad, squarish.

Cobitis taenia sinensis Sauvage and Dabry de Thiersant

Cobitis sinensis SAUVAGE AND DABRY DE THIERSANT, 1874, Ann. Sci. Nat., Zool., I, Art. 5, p. 16. 'Ruisseaux du Se-tchuan occidental (A. David).'

Description of a specimen from Tungting Lake, Hunan, Clifford H. Pope.—Length to base of caudal 110 mm. Depth in length 7.3; head 5.4. Eye in head 6; snout 2.3; maxillary 4.2; depth of peduncle 2.1; its length 1.3; pectoral 1.4; ventral 1.6; longest dorsal ray 1.3; longest anal ray 1.5; caudal 1.2. Interorbital in eye 2; posterior barbel 1.

Dorsal $9\frac{1}{2}$; anal 8. Scales before dorsal about 110.

Conspicuous low adipose keels from the upper and lower caudal origins, not quite to dorsal and anal axils respectively. Mouth flanked by 3 barbels, the posterior the longest, adnate to a broad free lip which is adnate at its inner edge to the single

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(paired) mental barbel, the lip between the two squarish. Dorsal origin equidistant from tip of snout and base of caudal; pectoral extending a little more than $\frac{1}{2}$ the distance to ventral; ventral $\frac{1}{2}$ to anal; anal more than $\frac{1}{2}$ to caudal base; caudal narrow, truncate.

About a dozen faint blotches along the mid-line of the back; nine more or less narrow, oval, dark blotches along the side; darkish freckles above this series tending to form two lengthwise stripes; pale below it; a narrow stripe from below eye to snout. Dorsal with faint cross-marks; lower fins pale; caudal with a narrow, oblique, oval black spot on the base of its upper rays, and 3 or 4 broad V-shaped dusky cross-bands.

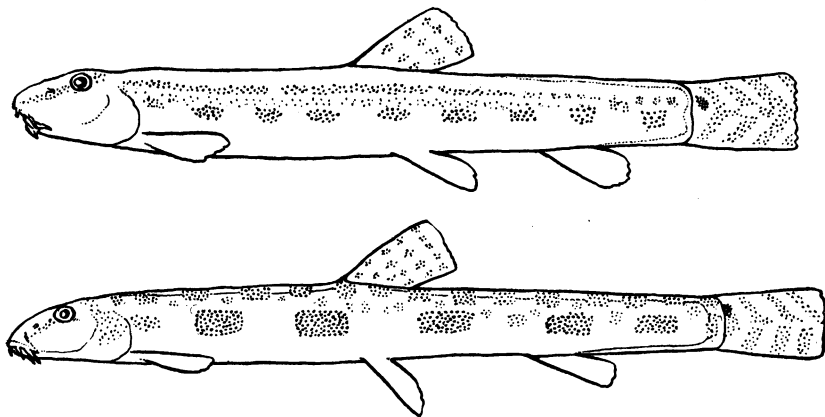


Fig. 1. *Cobitis taenia sinensis* (upper) and *Cobitis macrostigma* (lower) compared.

It is convenient for the present to consider this race of *Cobitis taenia* from the central Yangtze the same as Sauvage and Dabry de Thiersant had from its upper reaches, a point which cannot be settled without seeing material from nearer their locality. As to its range in eastern China, it occurs little changed farther down the river at Ningkwo, Anhwei. A specimen of 112 mm. from there has dorsal equidistant from end of snout and base of caudal; 9 cuboid blotches on side, those in front narrow; black mark on upper caudal base sharp and bold; lower lip squarish, but somewhat pointed at inner edge, which point extends well beyond mandibular barbel. Depth in length 7.5; depth of peduncle in head 1.8; its length 1.2. Scales before dorsal about 110. Another large specimen has about 12 blotches on the side. Eight small specimens, 55 to 74 mm. in length to base of caudal, from the same locality, are more variable than material to hand from any other one point. Depth in length 6.9 to 8.0. Snout in head 2.0 to 2.1; depth of peduncle 2.1 to 2.6; its length 1.3 to 1.5. Dorsal equidistant from base of caudal and end or front part of snout; peduncular keels variable, moderate or little developed. Colors

rather sharp, 10 to 15 blotches along side; mark on upper caudal base sharp and strong. This variability may be explained by supposing that *Cobitis tænia sinensis* is here mixed to some extent with *Cobitis [tænia] dolichorhynchus* Nichols, 1918, a smaller race described from Fukien. A specimen of 43 mm. would pass for the young of *dolichorhynchus*. Depth 5.8; snout 1.9; depth of peduncle 2.3; its length 2. Dorsal equidistant from base of caudal and middle of eye.

Small specimens from Kwei-hwa, Shansi, situate on a small river entering the Yellow River from the northeast, near where that master stream turns south, and others from Hsing-lung-shan, Chihli, are still referable to *C. t. sinensis*, though not typical. A number of specimens 50 to 63 mm. long to base of caudal from the first locality have depth in length 6.7 to 7.5; depth of peduncle in head 2.5 to 2.7; its length 1.0 to 1.4. Dorsal origin equidistant from base of caudal and front of eye, or a point before middle of snout; peduncular keels moderately developed. Blotches on sides narrow, with a tendency to join in a narrow lengthwise stripe; caudal sharply barred, spot on its upper base well defined. Four specimens 59 to 66 mm. long from the last mentioned (Chihli) locality resemble these others in color, one individual having a dark longitudinal streak without blotches on the side and lacking the spot on upper caudal base. They have depth in length 6.6 to 7; depth of peduncle in head 2.1 to 2.3; its length 1.2 to 1.3. Peduncular keels moderately developed; dorsal origin equidistant from base of caudal and fore part of snout. The above specimens are too small for conclusions based on them to be satisfactory. It will be noticed that they vary towards *dolichorhynchus* more or, properly speaking, away from *sinensis* in more posterior position of dorsal origin, but the development of peduncular keels characteristic of *sinensis* holds better than with small Anhwei material.

Three small specimens, 65 to 72 mm. in length, from Chin-ssu, Shansi, in the hills east of the southward-flowing limb of the Yellow River, have a uniform and rather striking color pattern. The locality is not very distant from Kwei-hwa in a south-southeasterly direction, but in what appears to be a rather distinct faunal area, very likely inhabited by a recognizable race of *C. tænia*, towards which *sinensis* from Kwei-hwa varies.

***Cobitis tænia melanoleuca*, new subspecies**

Slender like *sinensis*, but more boldly marked, with posterior dorsal like *dolichorhynchus*. Peduncular keels little developed, especially above. Lip between maxillary and mental barbels broad, squarish, not pointed, the mental barbel little projecting. Depth in length to base of caudal 6.8 to 7. Depth of peduncle in head

2.4; its length 1.3 to 1.5. Dorsal origin equidistant from base of caudal and front of eye. Color sharply marked; 12 to 16 lengthwise blotches on side; spot on upper caudal base inconspicuous or absent; a more or less perfect, more extensive dark bar across caudal base.

The type is No. 8403, American Museum of Natural History; Chin-ssu, Shansi; Clifford H. Pope.

***Cobitis macrostigma* Dabry de Thiersant**

Cobitis macrostigma DABRY DE THIERSANT, 1872, 'Pisciculture en Chine,' Pl. XLIX, fig. 4. Lakes of central China.

Description of a specimen from Huping, Tungting Lake, Hunan, Clifford H. Pope.—Length to base of caudal 115 mm. Depth in length 8; head 5.5. Eye in head 5.5; snout 2.5; maxillary 4.7; depth of peduncle 2.3; its length 0.9; pectoral 1.4; ventral 1.5; longest dorsal ray 1.2; longest anal ray 1.4; caudal 1.2. Interorbital in eye 2; posterior barbel 1.

Dorsal $9\frac{1}{2}$; anal 8. Scales before dorsal about 135.

Conspicuous low adipose keels from the upper and lower caudal origins not quite to dorsal and anal axils respectively. Mouth flanked by 3 barbels, the posterior the longest, adnate to a broad free lip which is adnate at its inner edge to the single (paired) mental barbel, and forms a pointed flap with an angle of slightly less than 90° between these two. Dorsal origin nearly equidistant from tip of snout and middle of peduncle; pectoral extending a little more than one-third distance to ventral; ventral less than $\frac{1}{2}$ to anal; anal $\frac{1}{2}$ to caudal base; caudal narrow, truncate.

About 15 rectangular dark blotches along mid-line of back; about 6 large rectangular blotches along side; a narrow stripe from below eye to snout; caudal with V-shaped cross-marks and dorsal speckled; lower fins plain. A short, oblique black mark on the upper caudal base.

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