

Cobitis elazigensis, a New Species of Cobitidid Fish from Anatolia, Turkey

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(Received December 9, 1986)

Abstract A new cobitidid, *Cobitis elazigensis*, is described from Anatolian Turkey in the province of Elazığ. The new species differs from all other members of the genus by having the following combination of characters: two Canestrini's scales on the pectoral fin, a suborbital spine with a dorso-lateral branch (rarely simple and unbranched), large size, over 180 mm total length, total vertebrae 47–49, lateral spots reduced or absent, a spot at the upper caudal fin base, scales longer than wide with a small focus, dorsal fin rays III, 5–6, usually 6, ventral fin rays III, 6–7, usually 6, and pectoral fin rays I, 7–9.

The Cobitididae or loaches are small fishes having a Eurasian distribution with the genus *Cobitis* found from Morocco and Spain to Japan and China. Six nominal species are recorded from central Anatolian Turkey, namely *C. battalgili* Bacescu, 1962 from Gölhisar (Aegean Sea basin), *C. bilseli* Battalgil, 1942 from Beyşehir Gölü, *C. phrygica* Battalgazi, 1944 from Aci Göl and *C. turcica* Hanks, 1924 from Eregli (internal basins), *C. simplicispina* Hanks, 1924 from Kötschke-Kissik on the Porsuk Çayı (Black Sea basin), and probably the widespread *C. taenia* Linnaeus, 1758 which may occur in the Tigris-Euphrates basin as well as other parts of Anatolia. We follow Pellegrin (1928) and Berg (1949) in regarding *Cobitinula anatoliae* Hanks, 1924 from Ak Göl with only four barbels as an abnormal *C. taenia*.

One of us (M. S.) made collections in the Euphrates River basin near Elazığ in central Anatolia which include a new species of *Cobitis* as described below. Counts and measurements follow Hubbs and Lagler (1958).

Type specimens are deposited at the National Museum of Natural Sciences, Ottawa (NMC).

Cobitis elazigensis sp. nov.

(Figs. 1, 2)

Holotype. NMC85-0679A, 149.4 mm SL, female, Turkey, Elazığ Province, a creek at Cip, 15 km west of Elazığ, in the drainage of the Murat Nehri a tributary of the Euphrates River, 38°42'N, 39°05'E, in mud, creek 2 m wide and 30–50 cm deep, by hand and scoop net, Mustafa Sarıeyüpoğlu, September 1983.

Paratypes. NMC85-0679, 4, 120.2–163.1 mm SL, same locality data as holotype; NMC85-0680, 4, 99.0–160.2 mm SL, same locality data as holotype, collected in 1985.

Diagnosis. A species of *Cobitis* with the following characters: dorsal fin rays III, 5–6, usually 6; ventral fin rays III, 6–7, usually 6; pectoral fin rays I, 7–9; total vertebrae 47–49; males with two Canestrini's scales on the pectoral fin; scales longer than wide with a small focus; suborbital spine with a dorso-lateral branch (rarely simple and unbranched); large size, over 180 mm total length; lateral spots reduced or absent; and a spot at the upper caudal fin base.

Description. Meristic data are as follows with values for the holotype underlined: Dorsal fin rays III, 5(1), III, 6(8); anal fin rays III, 5(9); ventral fin rays I, 6(8), I, 7(1); pectoral fin rays I, 7(1), I, 8(4), I, 9(4); branched caudal fin rays 13(1), 14(8); total vertebrae 47(1), 48(6), 49(2).

Morphometric data are summarised in Table 1. The head and body are compressed. The anterior nasal opening is tubular. There are three pairs of barbels, the mouth is arched and subterminal, and the lower lip is split into two fleshy masses which are thick and folded with well-developed posterior elongations. The head, lips and barbels are all covered with minute papillae. The suborbital spine (Fig. 2) is well-developed with a sharp posterior point and a short, pointed dorso-lateral branch. One specimen, a male 99.0 mm SL, has a simple spine without a branch. The dorsal origin is a little ahead of the ventral fin origin. The first branched pectoral fin ray is broader than other rays in this fin in males. The

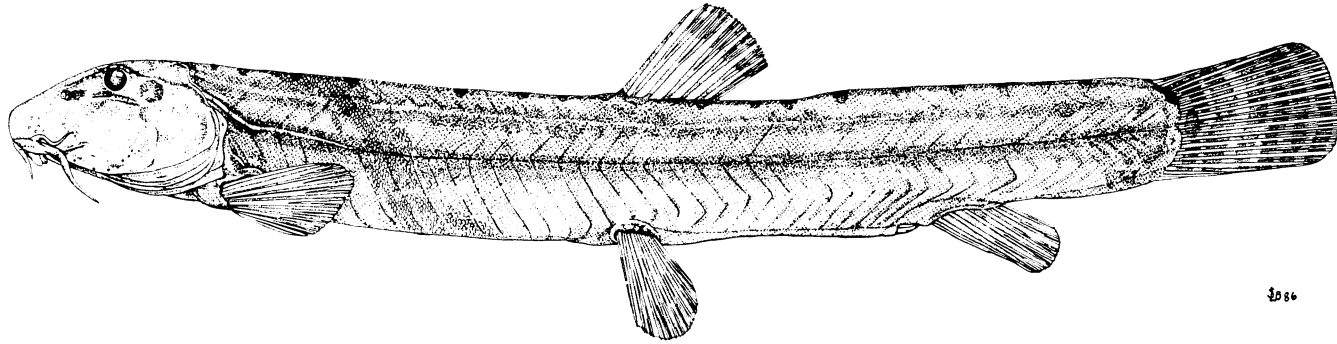


Fig. 1. Holotype of *Cobitis elazigensis* sp. nov., NMC85-0679A, female, 149.4 mm SL.

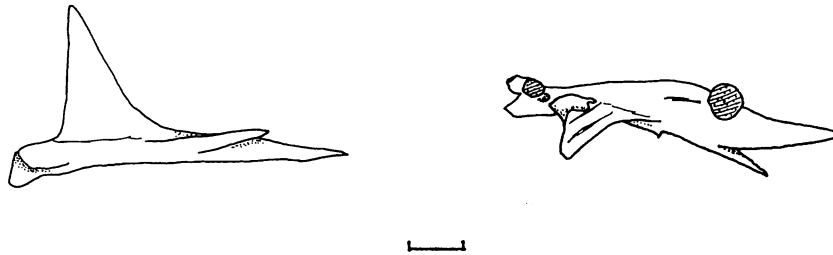


Fig. 2. Left lateral (on left) and dorsal (on right) views of suborbital spine of 160.2 mm SL female *Cobitis elazigensis* sp. nov. (NMC85-0680). Scale=1 mm.

pectoral fin base bears two Canestrini's scales on its inner side. The first Canestrini's scale lies over the first unbranched ray, with some overlap to the first branched ray. The second Canestrini's scale is attached to the first branched ray and overlaps the bases of rays 2 to 5. Both scales are enclosed in a common sac formed from the pectoral fin membrane. These exact arrangements are difficult to determine as the membrane is opaque and pigmented and scales appear to be an irregular bony mass, essentially round in outline without the marked distal extensions seen in other *Cobitis* species. There is a weak dorsal ridge before and behind the dorsal fin and a stronger ventral ridge behind the anal fin. The anus is separated from the anal fin by a short gap. Scales are distributed over the whole body and are overlapping both anteriorly and posteriorly on the flank. The lateral line ends over the middle of the pectoral fin. Scales from below the dorsal fin on the flank are longer than wide being oval tending to sub-rectangular, have a small, sub-central, anterior focus, numerous circuli and numerous

radii both primary and secondary on all fields.

The head is dorsally mottled although this may fade into the dark background pigmentation. The mottling is most evident behind the eyes on the top of the head. There is an oblique spot at the upper base of the caudal fin which in some specimens is very faint. There are up to 6 vertical bands, somewhat irregularly arranged on the caudal fin. The dorsal fin is similarly banded but these are often difficult to distinguish. The other fins are mostly hyaline with pigment concentrated on the rays and neighbouring membrane when present. The pectoral fin has the strongest pigmentation. The flank bears a dark mid-lateral band obscuring some spots posteriorly but there is no clear row of spots. Above this band is a lighter area with, dorsal to it, a darker area which may break into clear or vague spots or show no spots at all. Dorsal to this last region there is an irregular mottling, or a dark area anteriorly and a mottled or lighter area behind the dorsal fin. The mid-line of the back has a series of spots, best developed in most specimens behind the dor-

Table 1. Morphometrics of *Cobitis elazigensis* sp. nov.

Character	Holotype	Paratypes			
		Males (3)		Females (5)	
		Mean	Range	Mean	Range
Standard length (SL) mm	149.4	114.2	99.0-123.4	156.3	149.0-163.1
Predorsal length in SL	2.0	2.0	1.9-2.0	2.0	1.9-2.1
Prepelvic length in SL	1.8	1.9	1.9-2.0	1.9	1.8-1.9
Preanal length in SL	1.3	1.3	1.3	1.3	1.3
Postdorsal length in SL	2.4	2.3	2.2-2.4	2.4	2.3-2.4
Body depth in SL	8.2	7.3	6.9-7.5	7.8	6.3-8.4
Body width in SL	11.2	11.2	10.9-11.3	10.5	8.2-11.5
Head length (HL) in SL	5.7	5.6	5.4-5.9	5.6	5.4-5.8
Head width in HL	2.0	2.0	1.9-2.0	1.8	1.5-2.0
Snout length in HL	2.2	2.3	2.2-2.4	2.2	2.1-2.3
Orbit diameter in HL	6.9	5.8	5.2-6.4	6.7	6.2-7.1
Interorbital width in HL	6.9	7.2	6.4-8.8	7.8	7.1-9.0
Postorbital length in HL	1.9	1.9	1.8-2.0	1.9	1.8-1.9
Longest dorsal fin ray length in HL	1.4	1.2	1.2-1.3	1.3	1.3-1.4
Longest anal fin ray length in HL	1.9	1.8	1.6-2.0	1.7	1.6-1.9
First barbel length in HL	6.7	5.9	5.3-6.4	7.7	5.9-9.1
Second barbel length in HL	7.7	5.3	4.5-6.1	8.5	5.9-16.0
Third barbel length in HL	5.4	4.1	3.7-4.4	5.6	4.8-6.6
Caudal peduncle depth in length	2.0	1.7	1.6-1.8	2.0	1.8-2.1
Pectoral fin length in pectoral-ventral distance	3.1	2.1	1.9-2.4	2.8	2.7-3.1
Ventral fin length in ventral-anal distance	2.2	2.1	2.0-2.2	2.2	2.0-2.4

sal fin, sometimes obscured by background pigmentation in front of the dorsal fin or even absent.

Remarks. The ichthyofauna of this part of Turkey is poorly known and there have been no previous reports of large *Cobitis* species (Ekingen and Sarıeyyüpoğlu, 1981). The systematics of the genus *Cobitis* in Anatolia is poorly known. Descriptions are based on few or immature specimens and assessment of variation in characters is thereby limited. The closest relatives of *C. elazigensis* appear to be those species with two Canestrini's scales after Bacescu (1961) who placed them in the subgenus *Bicanestrinia*. This subgenus contains *C. simplicispina* (the type species), *C. battalgili*, *C. phrygica*, *C. turcica* and the Iranian species *C. linea* (Heckel, 1849). *C. phrygica* and *C. turcica* may be synonyms of *C. simplicispina* (Banarescu and Nalbant, 1964). We have not seen these species and base comparisons among characters on literature reports (Hanko, 1924; Battalgil, 1942; Battalgazi, 1944; Bacescu, 1961, 1962; Bianco and Nalbant, 1980). Our new species is uniquely characterised among these species by large size (and presumably a high vertebral count). The maximum length recorded in the literature for *Bicanestrinia* species appears to be 95.0 mm SL, much less than for *C. elazigensis* in which the smallest male is 99.0 mm SL and females attain 160.2 mm SL. *C. elazigensis* is geographically remote from other *Bicanestrinia* and the only other *Cobitis* species reported from the Euphrates River basin is *C. taenia*. The shape of the sub-orbital spine would appear to eliminate *C. simplicispina* and *C. phrygica* from a close relationship since they have a simple spine without the dorso-lateral branch in some literature reports. However, Bacescu (1961) and F. Krupp (in litt., 1986) have seen specimens of *C. simplicispina* specimens with a branched spine. One of the *C. elazigensis* specimens has a simple unbranched spine and it is evident that this character would benefit from the study of a wide range of material. *C. elazigensis* differs from *C. simplicispina* in having a spot at the upper caudal fin base (cf. Bacescu, 1961 and F. Krupp, in litt., 1986) and in having scales which are longer than wide with a small focus. Branched pectoral fin ray counts are high in *C. elazigensis* compared to *C. phrygica* (5–6), *C. turcica* (7) and *C. simplicispina* (7) and branched ventral fin ray counts are higher than in *C. phrygica* (5) but some counts may merely reflect

specimen size. Morphometry is also a dubious means of comparison. Males are smaller than females in many *Cobitis* species (and judging from our limited sample also in *C. elazigensis*). Some literature data do not take this factor into account and in addition sample sizes are too small for statistical treatment. However, there appear to be differences between the sexes in third barbel length, caudal peduncle shape and pectoral fin length (Table 1). Until the Anatolian *Cobitis* are revised in some detail and these problems are addressed, we are unable to define the sister group of *C. elazigensis* with any confidence.

Acknowledgments

We are grateful to Dr. Don E. McAllister, Research Curator of Fishes, National Museum of Natural Sciences, Ottawa and Dr. F. Krupp, Forschungsinstitut Senckenberg, Frankfurt for their critical comments on the manuscript and to Dr. P. Banarescu, Institutul de Stiinte Biologice, Bucuresti, Rumania for his advice on, and loan of, cobitidid material.

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アナトリアから得られたドジョウ科の1新種 *Cobitis elazigensis*

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トルコのアナトリア地方からドジョウ科の1新種 *Cobitis elazigensis* が得られた。この新種は同属のすべての他種から次の形質を併せ持つことによって区別される。すなわち胸鱗に2枚の Canestrini 鱗を持つこと、眼下棘には通常背側方に向かう1枝があること、全長 180 mm をこえる大型種であること、全脊椎骨数 47-49 であること、体側の斑点は不明瞭またはないこと、尾鰭基底上部に1個の斑点があること、鱗は縦に長く、小さな focus を持つこと、背鰭条 III, 5-6 (通常 6)、腹鰭条 III, 6-7 (通常 6)、胸鰭条 I, 7-9 であることなどである。