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Glyptothorax silviae, a New Species of Sisorid Catfish from Southwestern Iran

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Abstract A new sisorid catfish, *Glyptothorax silviae*, is described from the Iranian provinces of Khuzestan and Lorestan. The new species differs from all other members of the genus in the Tigris-Euphrates basin by the absence of striated or elongate tubercles on the head and body, and variously by possession of a pinnate or incomplete thoracic adhesive apparatus, a long adipose fin equal to the interspace between the dorsal and adipose fins, pectoral fin not extending to the pelvic fin origin, long caudal peduncle (4.7~5.2 in SL) and short head length (3.7~4.1 in SL).

The Sisoridae have their westernmost distribution in Southwest Asia in the basin of the Tigris and Euphrates Rivers. Four species in the genus *Glyptothorax* Blyth have been described from this area (Pietschmann, 1913; Berg, 1918; 1931; Beckman, 1962) and are the only representatives of this genus west of the Indus River basin (Coad, 1979, 1981). Collections made in the Iranian provinces of Lorestan and Khuzestan during 1977-1978 revealed the presence of a fifth species which is described below. Data in the description refer to the holotype followed by data on the paratypes where this differs. The length of the maxillary barbel was measured with the barbel extended at right angles to the long body axis and was from the barbel tip to the point where the barbel joins the body posteriorly. The origin of the adipose fin merges gradually with the dorsal skin surface and is difficult to determine but an attempt at a consistent interpretation was made for the four available *Glyptothorax* species. Other counts and measurements follow Hubbs and Lagler (1958).

Type specimens are deposited at the National Museum of Natural Sciences, Ottawa (NMC). Comparative material was loaned from the British Museum (Natural History) (BMNH) and the Zoologisches Institut und Zoologisches Museum, Universität Hamburg (ZMH).

Glyptothorax silviae, sp. nov.

(Figs. 1~3)

Holotype: NMC 79-0390A, 67.6 mm SL, ? male, Iran, Khuzestan, stream 3 km south of Bagh-e Malek, tributary to Rud-e Zard or Ab-e Ala in the drainage of the Jarrahi River, 31°29′N, 49°54′30″E, altitude 660 m, stream 2~6 m wide, maximum depth 1 m mostly 20

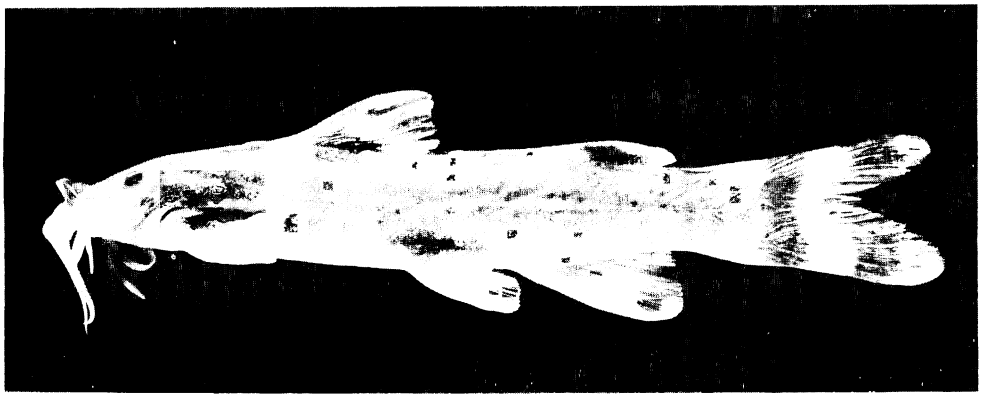

Fig. 1. *Glyptothorax silviae*, holotype, 67.6 mm SL, NMC 79-0390 A.

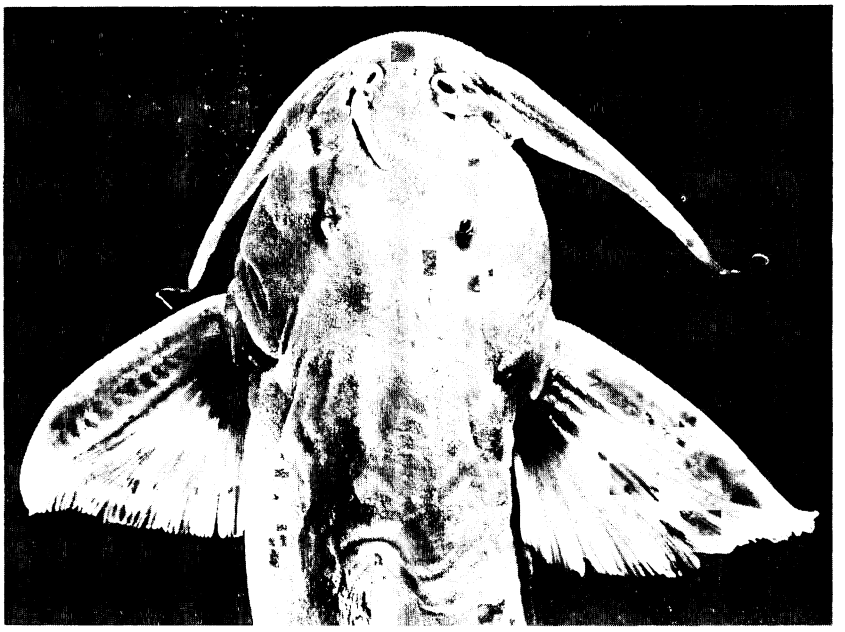

Fig. 2. Dorsal view of head and anterior part of body of paratype, 134.8 mm SL, NMC 79-0280.

cm or less, water clear and colourless, 20°C, conductivity 2.2 millimhos, current slow to medium, some encrusting algae on stone and pebble bottom with mud in crevices, kick sample by dipnet, B. W. Coad and S. Coad, 31 January 1978 at 1420 hours.

Paratypes: NMC 79-0390B, 44.0 and 51.5 mm SL, both ? male, same collection as holotype. NMC 79-0389, 42.3 mm SL, ? male, Iran, Khuzestan, stream tributary to Rud-e Zard or Ab-e Ala, 1 km south of Bagh-e Malek in the drainage of the Jarrahi River, 31°31′N, 49°53′30″E, altitude 690 m, river 10～20 m wide, maximum distance offshore 6 m, maximum depth of dip-net kick sample 30 cm, water partly cloudy, 15°C, conductivity 0.42 millimhos, current medium to fast, bottom stones and pebbles, no aquatic vegetation, B. W. Coad and S. Coad, 31 January 1978 at 1405 hours. NMC 79-0280, 134.8 mm SL, female bearing eggs, Iran, Lorestan, river at "Pol-e Chubee" in Kashkan River drainage on Khorramabad to Kermanshah road via Nurabad (either Kaka Reza River at 33°43′N, 48°15′E or its tributary at 33°47′N, 48°12′E), altitude 1740 m, water clear and colourless, 19°C, bottom stones, some aquatic vegetation, seine, K. Evans and H. Assadi, 6 July 1977.

Comparative material: *Glyptothorax armeniacus*: ZMH 4431, 142.4 and 108.6 mm SL, Turkey, Karasu at Kemaliye, i.e., Firat Nehri or Euphrates River at 39°16′N, 38°29′E, Kosswig, 1970. NMC 80-0805, 119.5 mm SL, Turkey, Karasu, i.e. Firat Nehri or Euphrates River, M. Kuru, 11 April 1971.

Glyptothorax cous: BM(NH) 1968.12.13.471-476, 6 specimens 47.3～107.1 mm SL, Syria, Nahr al Furat or Euphrates River at Al Mayadine, 35°01′N, 40°27′E, W.C. Beckman, 10 July 1958.

Glyptothorax kurdistanicus: ZMH 4430, 129.8 and 133.3 mm SL, Turkey, Karasu at Kemaliye, i.e. Firat Nehri or Euphrates River at 39°16′N, 38°29′E, Kosswig, 10 November 1970. NMC 80-0805, 194.5 mm SL, Turkey, Karasu, Firat Nehri or Euphrates River, M. Kuru, 11 April 1971.

Diagnosis. A species of *Glyptothorax* with the following characters: Dorsal fin rays II,6; anal fin rays II,8; adipose fin long (length about equal to distance between dorsal fin insertion and adipose origin (0.9～1.1)); pectoral fin short, does not extend back to origin of pelvic fin; caudal peduncle deep (depth 47～62% of caudal peduncle length) and long (4.7～5.2 in SL), adhesive apparatus with pin-

Fig. 3. Ventral view of head and anterior part of body of paratype, 134.8 mm SL, NMC 79-0280.

nate lateral branches, markedly longer than wide with a wide and long central depression; head and body dorsally without striated or elongate tubercles; body nearly immaculate; supraoccipital crest does not reach basal bone of dorsal fin.

Description. Dorsal fin rays II,6; anal fin rays II,8; pelvic fin rays I,5: pectoral fin rays I,8 (I,7~9); branched caudal fin rays 16 (15); total gill rakers on first arch 7 (6~9); pectoral spine teeth 12 (7~16); total vertebrae 35 (35~38).

Head depressed, body ovate in vertical cross-section, caudal peduncle laterally compessed. Dorsal profile rises gently from snout to dorsal fin origin and is then horizontal to the tail with a slight rise at the adipose fin. Head length (HL) in total length 5.1 (4.8~5.0), HL in standard length (SL) 4.1 (3.7~4.1); head depth in SL 7.3 (6.1~7.2); body depth in SL 6.2 (4.2~6.4); head width in HL 1.2 (1.2~1.3); head depth in HL 1.8 (1.5~1.8); gape in HL 2.9 (2.8~3.2); maxillary barbel in HL 0.9 (1.0~1.2); interorbital width in HL 3.8 (3.9~4.9); snout length in HL 1.8 (1.8~2.0); eye small, in HL 7.9 (7.9~8.7), in snout length 4.5 (3.9~5.0), in interorbital width 2.1 (1.7~2.2); length of dorsal fin base in length of longest branched ray 1.3 (1.2~1.3); length of dorsal fin base in SL 7.2 (6.6~7.6); length of dorsal fin spine in HL 1.7 (1.7~2.1); pectoral fin length in SL 4.1 (3.6~4.4); pectoral fin length in distance between pectoral fin origin and pelvic fin origin 1.3 (1.1~1.6); pelvic fin length in distance between pelvic fin origin and anus 1.0 (1.0~1.1); distance from anus to anal fin origin in distance from pelvic fin origin to anal fin origin 4.8 (3.4~5.7); length of adipose fin base in length of dorsal fin base 0.7 (0.7~0.8); length of dorsal fin base in distance between dorsal fin origin and adipose fin origin 2.4 (2.1~2.5); length of adipose fin base in distance between dorsal fin insertion and adipose fin origin 1.0 (0.9~1.1); distance between dorsal fin origin and adipose fin origin in predorsal length 1.1 (1.1~1.2); predorsal length in SL 2.8 (2.7~2.9); caudal peduncle depth as a % of caudal peduncle length 60 (47~62); caudal peduncle depth in caudal peduncle length 1.3 (1.2~1.3); caudal peduncle length in SL 5.2 (4.7~5.2).

The thoracic adhesive apparatus (Fig. 3) is longer than wide, bears pinnate lateral branches, and has a wide and long central depression. The head and body dorsally lack striated tubercles (Fig. 2) but are finely papil-

lose particularly ventrally. Anterior to the thoracic adhesive apparatus the ventral head surface is strongly papillose, fading laterally. The lower lip is only weakly papillose while the upper lip is much more strongly papillose. The supraoccipital crest does not touch the basal bone of the dorsal fin. The dorsal spine is smooth and moderately strong. The pectoral spine is much stronger and bears a series of retrorse teeth on its internal edge. The number of teeth increases with size of the specimen. The caudal fin is quite deeply forked and the lower lobe is slightly longer although this is less obvious in the large specimen. The origin of the adipose fin is over or slightly anterior to the origin of the anal fin. The lateral line is complete. The gill openings are wide and extend from above the pectoral fins to almost meet ventrally at the isthmus. There are two rounded, rectangular maxillary tooth plates and laterally, an ovoid palatine tooth plate on each side. The lower jaw bears two tooth plates, separated by a small space, and tapering postero-laterally. These tooth plates all bear villiform teeth. The nasal barbel does not quite reach to the anterior margin of the eye in the largest specimen but extends to the posterior margin in the smallest specimen (Fig. 2). The maxillary barbel extends posteriorly to the insertion of the pectoral fin. The outer lower jaw barbel extends beyond the origin of the pectoral fin while the inner barbel is about half to two thirds this length.

Colour of live type specimens: body mottled light lime-green and brown, eye red, all fins with central black bar on a salmon-pink or peach coloured background, thoracic adhesive apparatus blood red (due to underlying vascular supply). Colour and pigmentation in 45% isopropyl alcohol: body mostly immaculate with very few scattered brown spots dorsally and laterally, overall colour of body and head brown becoming pale brown or cream ventrally. Base of caudal fin with a wide black bar separated from a second distal bar by an unpigmented section of the fin rays. The central-most four rays of the caudal fin are variably black pigmented in the otherwise unpigmented bar. The postero-dorsal and postero-ventral corners of the caudal lobes are not pigmented but the margin of the lobes are pigmented black. The central portion of the adipose fin is pigmented black with the margins of the fin unpigmented in the smaller specimens. There is no bar on the basal part of this fin. The paired fins and the anal fin are unpigmented distally but become yellowish with fleshy tissue proximally and then brown pigmented at their bases. The central bar is not well defined in preserved small specimens.

A light patch is found on the back at the the dorsal fin origin and at the insertion where skin pigmentation is not as heavy as elsewhere. The dorsal fin is darkly pigmented and a central black bar is apparent though poorly defined. The adult female is generally darker in colour than the smaller specimens, such that the caudal bars are not as well-defined, the adipose fin is a dark brown and the light patches at the dorsal fin are poorly defined. However, the bars on the dorsal, anal and paired fins are more obvious.

Remarks. A key to four of the five species of *Glyptothorax* reported from the Tigris-Euphrates basin is given below. *G. steindachneri* Pietschman, 1913 is known only from a brief description, without a figure or details of the thoracic adhesive apparatus, of two syntypes from Mosul which cannot be located in the Naturhistorisches Museum Wien (R. Hacker, Curator of Fishes, pers. comm. 1980). This species may be a synonym of *G. cous*. The relationships of Tigris-Euphrates *Glyptothorax* to those of the Indus River basin have not been investigated.

The closest relative of *G. silviae* appears to be *G. armeniacus* (Berg) which is distinguished chiefly on the basis of its striated tubercles, shorter head length (4.3～4.5 in SL) and longer caudal peduncle (4.0～4.3 in SL).

The new species is named for my wife, Sylvie, in recognition of her assistance with field work in Iran under often trying conditions.

Key to the *Glyptothorax* species of the Tigris-Euphrates basin

1. Head and body dorso-laterally with striated or elongate tubercles 2
   Head and body dorso-laterally without

striated or elongate tubercles .... *G. silviae* sp. nov.

2. Thoracic adhesive apparatus wider than long or about equal; caudal peduncle short (5.9～6.0 in SL) .... *G. kurdistanicus* (Berg, 1931). Thoracic adhesive apparatus markedly longer than wide; caudal peduncle long (4.0～5.3 in SL) 3
3. Pectoral fin extends to origin of pelvic fin (pectoral fin length in SL 3.8～4.1); head long (4.0～4.2 in SL) .... *G. cous* (Linnaeus, 1766). Pectoral fin does not extend to origin of pelvic fin (pectoral fin length in SL 4.3～4.6); head short (4.3～4.5 in SL) .. .. *G. armeniacus* (Berg, 1918).

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南西イランから得られた Sisoridae（ナマズ目）の新種 *Glyptothorax silviae*

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イランのクゼスタンおよびロレスタン地方から，Sisoridae の新種 *Glyptothorax silviae* を記載した．本種は頭部と体に刻条のある，あるいは細長い tubercles がないことで，チグリス－ユーフラテス産の他のすべての *Glyptothorax* 属魚類とは異なっており，また下記の形質の組み合わせでも区別される．胸部吸着器は羽状で不完全．脂鰭は長く，その基底長は背鰭－脂鰭間隔に等しい．胸びれは腹鰭起部に達しない．尾柄は長く，標準体長は尾柄長の 4.7～5.2 倍．頭は短く，標準体長は頭長の 3.7～4.1 倍．