First confirmed record of the Tigris cat, *Glyptothorax cous* (Linnaeus, 1766) in southern Iraq

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Abstract

The Tigris cat, *Glyptothorax cous* (Linnaeus, 1766) (seven specimens) was collected from lower part of the Tigris River in Al-Qurna district, southern Iraq. The current report represents the new record for Tigris cat in the south of Iraq. *G. cous* is characterized by having a flat head, small adipose fin, head, back and flank usually have large, bony, striated and elongated tubercles.

Keywords: New occurrence, Tigris cat, south of Iraq.

Introduction

The family Sisoridae contains 25 genera and 284 species, is distributed in Asia, from the Tigris-Euphrates basin (Turkey, Syria, Iraq and Iran) to South China and Borneo (Froese and Pauly, 2025). *Glyptothorax* Blyth, 1860 is the most species-rich and widely distributed genus in the family, typically inhabited in fast-flowing hill streams or faster-flowing reaches of larger rivers (Sayyadzadeh *et al.*, 2022). It is distinguished from all other sisorid genera by having an adhesive apparatus on the thorax with grooves parallel or oblique to the longitudinal axis of the body (Thomson and Page, 2006). According to Freyhof *et al.* (2021), there are six sisord species in the Euphrates and Tigris drainages, *Glyptothorax armeniacus* is endemic to streams in the Euphrates drainage, *G. cous* is spread in both the Euphrates and Tigris drainages, *G. daemon* from the Greater Zab and Yanarsu in the upper Tigris drainage, *G. kurdistanicus* is endemic to the upper Tigris downstream to the Lesser Zab drainage, *G. silviae* is endemic to Iran, *G. steindachneri* is spread in both the Euphrates and Tigris drainages.

South of Iraq is affected by fluctuating environmental conditions, with climate change, rising temperatures, and decreasing river waters, in addition to water quality problems (Chabuk *et al.*, 2020). The presence of Sisorid catfishes in southern Iraq is very rare. A study by Jawad *et al.* (2009) indicated a new record of *G. kurdistanicus* from the lower reaches of the Tigris River from Thiqar Province, after collecting a single specimen. Abdullah (2015) indicated the presence of *Glyptothorax* sp. in the lower part

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of the Tigris River north of Basra Province, and it is likely to be *G. cous*. The current study aims to confirm the presence of *G. cous* in southern Iraq, from Basra Province.

Materials and Methods

The samples were collected in January 2024 from lower part of the Tigris River in Al-Qurna district (74 km northwest of Basra Province center), southern Iraq, 31° 14' N 47° 44' E, (Figure 1) using a gillnets. The morphological characteristics included eight meristic characters which were counted employing a dissection microscope, and 17 morphometric characters were measured to the nearest mm by using a digital caliper and fish measuring board following Hubbs and Lagler (1958). All morphometric measurements were percentages of standard length. The specimens are deposited in the Marine Science Centre, University of Basrah, Iraq (MSCUB).

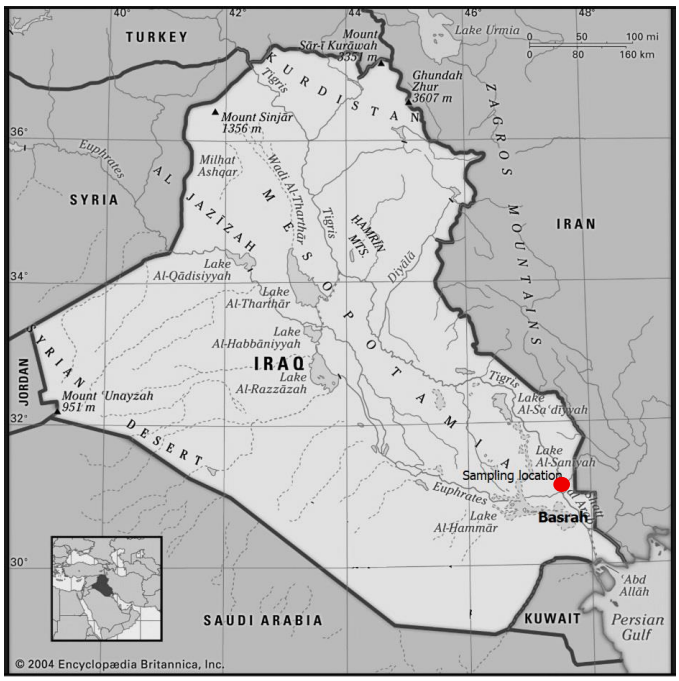

Figure 1: A map showing the sampling location in Basrah city, southern Iraq.

Results

Seven individuals of *Glyptothorax cous* were collected from the lower part of the Tigris River, southern Iraq, belonging to the following classification section:

Class: Actinopterygii
Order: Siluriformes
Family: Sisoridae
Subfamily: Sisorinae
Genus: *Glyptothorax* Blyth, 1860
Species: *Glyptothorax cous* (Linnaeus, 1766)
Synonym: *Silurus cous* Linnaeus, 1766

Description:

The total length of the specimens ranged from 125 - 191 mm, standard length 92 - 150 mm. The Tigris cat *G. cous* (Figure 2,3) was characterized by having flat head (head length 24.03 - 32.09% in standard length, head depth 9.34 - 14.03%), four pairs of barbels, large mouth width, typically, the head, back, and flank exhibit large, bony, striated and elongated tubercles, the thoracic adhesive apparatus is nearly as wide as it is long. Body depth of the specimens ranged from 14.61 - 19.38%, body width 12.71 - 17.75%, caudal peduncle was almost slender (caudal peduncle length 7.16 - 11.83% and caudal peduncle depth 7.04 - 7.86%). Eye very small (1.73 - 3.91%).

Figure 2: Lateral view of *G. cous* from lower part of the Tigris River in southern Iraq.

A short dorsal fin (10.77 - 14.12%) with a strong spine and 5 - 6 rays, adipose fin of moderate length, anal fin rays 8 - 9, pectoral fin with a serrated strong spine and 7 - 8 rays, pelvic fin rays 6. Gill rakers 7 – 8. Vertebrae 34 - 35. Body with large dark-brown blotches and numerous cloudy spots.

Figure 3: Dorsal view of *G. cous* from lower part of the Tigris River in southern Iraq.

Table 1: Morphometric and meristic characters of *G. cous* from southern Iraq.

Morphometric characters	**range**	**Mean ± SD**
Total length (mm)	125 - 191	156.43 ± 20.08
Standard length [SL] (mm)	92 - 150	125.86 ± 17.35
Body depth % in SL	14.61 - 19.38	17.40 ± 1.60
Body width % in SL	12.71 - 17.75	15.08 ± 1.64
Head length % in SL	24.03 - 32.09	28.64 ± 2.74
Head depth % in SL	9.34 - 14.03	12.09 ± 1.56
Head width % in SL	20.26 - 26.02	23.27 ± 1.96
Snout length % in SL	13.86 - 15.75	14.88 ± 0.71
Eye diameter % in SL	1.73 - 3.91	2.81 ± 0.86
Interorbital distance % in SL	3.78 - 5.61	4.62 ± 0.65
Predorsal length % in SL	36.36 - 44.16	40.43 ± 2.40
Dorsal fin length % in SL	10.77 - 14.12	12.86 ± 1.13
Anal fin length % in SL	12.20 - 13.49	12.80 ± 0.53
Pectoral fin length % in SL	22.05 - 26.20	23.80 ± 1.75
Pelvic fin length % in SL	15.38 - 18.34	16.38 ± 1.38
Caudal peduncle length % in SL	7.16 - 11.83	8.92 ± 1.77
Caudal peduncle depth % in SL	7.04 - 7.86	7.47 ± 0.27
Meristic characters		
Dorsal fin spines	1	
Dorsal fin rays	5 - 6	
Anal fin rays	8 - 9	
Pectoral fin spines	1	
Pectoral fin rays	7 - 8	
Pelvic fin rays	6	
Gill rakers	7 - 8	
Vertebras	34 - 35	

Discussion

The Sisorid catfishes are rheophilic, most of the species recorded in Iraq are found in mountain streams, where they use their adhesive system to maintain their position in the current (Coad, 2010). Therefore, their presence in southern Iraq is intriguing. In a river, the presence of rheophilic fish can indicate a healthy and well-functioning ecosystem. These fish are often considered indicator species, meaning their presence or absence can provide valuable information about the overall health of the aquatic environment (Stoffers *et al.*, 2022). Although, the water quality of the Tigris River in southern Iraq, particularly near Basra, is a concern. The results of the Iraq water quality index for the Tigris River of southern Iraq revealed acceptability, during winter, spring, and autumn, while the summer season exhibited poor water quality (Abdullah *et al.*, 2024). Rheophilic regulate their speed and direction in constantly changing water environments by stabilizing their field of view using a natural optomotor reaction, fish

often gravitate towards prominent visual landmarks for guidance while moving through both still and flowing water (Miles *et al*., 2023).

The classification of Tigris cat *G. cous* has a history marked by initial misidentification and later recognition, with its current placement as a valid species within the *Glyptothorax* genus firmly established (Sayyadzadeh *et al*., 2022). Originally described by Linnaeus as *Silurus cous* in 1766, it was later placed in the genus *Arius*, which led to its neglect in studies of the Euphrates-Tigris basin. The species' true identity and classification as a *Glyptothorax* species, as distinct from other similar catfishes, was gradually recognized through taxonomic revisions and molecular studies (Freyhof *et al*., 2021). The scientists described *G. cous* as the initial Sisorid catfish. However, it appears that earlier authors studying the fish of the Euphrates and Tigris were unaware of *G. cous* being recognized as a valid species. The presence of Sisorid species in Iraqi freshwater systems was also subject to taxonomic controversy in early local studies (Khalaf, 1961; Mahdi and Georg, 1969; Al-Nasiri and Hoda, 1976; Al-Rawi *et al*., 1978; Al-Daham, 1982) due to the lack of specimens and uncertainty about their identification.

Tigris cat *G. cous* is distinguished by having a flat head, small adipose fin, head, back and flank usually have large, bony, striated and elongated tubercles. Most of the Morphometric characters of the collected *G. cous* specimens agree to those in Freyhof *et al*. (2021) and Sayyadzadeh *et al*. (2022) respectively, concerning head length (24.03 - 32.09% vs. 27.6 – 32.7% and 31.0 - 31.4%), body depth (14.61 - 19.38% vs. 15.8 - 25.2%), predorsal length (36.36 - 44.16% vs. 38.2 - 43.4% and 38.6 - 40.8%), dorsal fin length (10.77 - 14.12% vs. 13.1 - 13.4%), anal fin length (12.20 - 13.49% vs. 9.2 - 14.7% and 13.0 - 13.3%), pectoral fin length (22.05 - 26.20% vs. 19.2 - 25.8% and 20.6 - 24.2%) and pelvic fin length (15.38 - 18.34% vs. 13.9 - 16.9% and 15.0 - 17.1%).

Conclusions

The presence of Tigris cat, *G. cous* in southern Iraq represents a new record for the region. This occurrence expands the known distribution range of this species within Iraq, and its presence in the Tigris River indicates the importance of this body of water for biodiversity. It also highlights the need for continued research and conservation efforts to protect the unique freshwater ecosystems of the Tigris River.

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أول تسجيل مؤكد لأسماك صقنقور دجلة *Glyptothorax cous* (Linnaeus, 1766) في جنوب العراق

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المستخلص

جُمعت سبع عينات من اسماك صقنقور دجلة *Glyptothorax cous* (Linnaeus, 1766)، من الجزء السفلي من نهر دجلة في قضاء القرنة، جنوب العراق. تمثل هذه الدراسة اول تسجيل موثق لأسماك الصقنقور في جنوب العراق. يتميز هذا النوع برأس مسطح وزعنفة دهنية صغيرة، وعادةً ما يكون للرأس والظهر والجنب درنات كبيرة عظمية مخططة وطويلة.

الكلمات المفتاحية: تواجد جديد، صقنقور دجلة، جنوب العراق.