

A New Locality for the Freshwater Fish *Chondrostoma angorense* Elvira, 1987 (Osteichthyes: Cyprinidae) in the Marmara Region (Turkey)

*Ali Serhan Tarkan¹, Müfit Özuluğ², Özcan Gaygusuz³, Çiğdem Gürsoy Gaygusuz⁴

¹Muğla University, Faculty of Fisheries, 48000, Kötekli, Muğla, Turkey

²Istanbul University, Faculty of Science, Department of Biology, Vezneciler, 34118 Istanbul, Turkey

³Istanbul University, Faculty of Fisheries, Ordu Cad. No: 200, 34470, Laleli, Istanbul, Turkey

⁴Trakya University, Keşan Vocational Higher School, 22800, Keşan, Edirne, Turkey

*E mail: serhantarkan@yahoo.com

Özet: *Marmara Bölgesi'nde (Türkiye) tatlısu balığı Chondrostoma angorense Elvira, 1987 (Osteichthyes: Cyprinidae) için yeni bir lokalite.* Sakarya Nehri havzasından ilk *Chondrostoma* türü *C. nasus* olarak 1987 yılında rapor edildi. Sapanca Gölü'nden ise 1966 yılında rapor verildi. Ancak, 1987 yılında Sapanca Gölü'ndeki örneğin üzerinde yapılan dikkatli incelemeler aslında türün *Vimba vimba* olduğunu ortaya çıkardı. Bu çalışmada, Sapanca Gölü'nden *C. angorense*'nin ilk raporu verildi. Bu türün tanıma özellikleri ve koruma durumu tartışıldı.

Anahtar Kelimeler: Sapanca Gölü, tanımlama, koruma, *Vimba vimba*, ilk rapor.

Abstract: In Lake Sapanca, *C. nasus* was reported in 1966. However, careful examination on this specimen in 1987 revealed that this species was *Vimba vimba*. In the present study, we report the finding of *C. angorense* from Lake Sapanca (Sakarya, Turkey) for the first time. The circumstances of identification and conservation status of the species are discussed.

Key Words: Lake Sapanca, identification, conservation, *Vimba vimba*, first report.

Introduction

Chondrostoma genus belongs to Cyprinidae family and is distributed in Europe, Black Sea, Caspian Sea basins, Euphrates and Tigris river systems. It occurs in fairly shallow water with fast current, often beside the swirls created by piles of bridges or rocks and migrates upstream and enters small tributaries for spawning in shallow water on gravel (Geldiay and Balık 1996).

According to Hanko (1924) from Sakarya River basin (northern of Turkey) *Chondrostoma* species were first reported by Steindachner as *C. nasus* (Linnaeus, 1758) in 1897. Then, Hanko (1924) regarded them as *C. regium* (Heckel, 1843). Several authors accepted the sympatric occurrence of both species. However, Ladiges (1960) reported *C. knerii* (Heckel, 1843) from Lake Sapanca (ZMH 1147), then, same author described it as *C. nasus* after six years (Ladiges 1966). Kuru (1981) emphasized that *C. nasus* was the only species among genus *Chondrostoma* inhabiting Anatolian waters. Careful examination on Ladiges's sample (ZMH 1147) by Elvira (1987) revealed that this species was *Vimba vimba* (Linnaeus, 1758). However, Elvira (1987) examined *Chondrostoma* species from Sakarya and Kızılırmak river basins and mentioned that the examined specimens showed a clear resemblance to *C. nasus* from Europe. Hence, he described a new subspecies as *C. nasus angorensis*. This subspecies was accepted as a valid species named *C. angorense* in Elvira (1997). Up the now, this species has been reported from two localities in northern

Anatolia, Sakarya and Kızılırmak river basins. We report here the finding of *C. angorense* from Lake Sapanca (Sakarya, Turkey).

Material and Methods

In our routine surveys, we encountered one specimen of *Chondrostoma angorense* Elvira, 1987 from the Lake Sapanca. The lake is located in the Marmara region of north-west Turkey (40°41' to 40°30' N, 30°09' to 30°20' E) and one of the most important lakes in the region in terms of fisheries, recreation and drinking water resource. Its surface area is 46.8 km² with a maximum depth of 55 m. It is 30 m above sea level. Its water is used as a source of drinking water by the city and district of Adapazarı and as a recreational area. Although Lake Sapanca water is enriched by water from trout farms, which are common in this region, with more than thirty in the vicinity of the lake, it has an oligotrophic character (Albay *et al.* 2003).

It was caught only one *Chondrostoma* specimen by gillnetting from west part of the lake in 15 March 2006. The samples were fixed and preserved in a 5% formaldehyde solution. Meristic counts and mensural measurements were made on the left side of each specimen. Measurements were made with dial caliper and recorded to 0.1 mm. Meristic counts were made under a binocular dissection microscope. Standard length was measured from the tip of upper lip to the end of hypural complex. The length of the caudal peduncle was measured from behind the base of the last anal-fin ray to

the end of hypural complex, at mid-height of caudal-fin base. Gill rakers were counted on the anterior gill arch. Abbreviations used: SL, standard length; HL, lateral head length; IUSHM, Istanbul University, Science Faculty, Hydrobiology Museum.

Results and Discussion

Our metric and meristic counts are consisted of those in *C. angorensis* given by Elvira (1987), so we described that this species caught from Lake Sapanca was *C. angorensis*.

Chondrostoma angorensis Elvira, 1987

Material. IUSHM 35900-874, 234.4 mm SL; Turkey: Lake Sapanca, 15 March 2006.

Description. Body fusiform. Mouth inferior, upper lip fleshy, the lower lip with a characteristic horny layer. Dorsal and anal fins concave. 24 gill rakers on the first branchial arch; pharyngeal teeth 6-6, dorsal fin rays III 9; anal fin rays III 10; pelvic fin rays I 16; ventral fin rays II 9. Lateral line 62. Few, large tubercles on the head. Head length 21.7% of SL; body depth 24.8% of SL; predorsal length 52.8% of SL; preanal length 71% of SL; depth of caudal peduncle 10.6% of

SL; length of caudal peduncle 17.1% of SL; head depth at eye 12.1% SL; Snouth length 32.9% of HL; Eye diameter 18.7% of HL; 39.6% of HL. Colour: Alcohol preserved specimen is light grey dorsally, creamy white ventrally. The back and upper flanks are covered by small dark pigment dots. The dorsal and caudal fins are dark. The other fins are pale (Fig. 1.).

In Turkey, even though there have been many reports on *C. nasus* (Mermer and Balık 1991; Aslan and Kiziroğlu 2003; Ünver and Ünver 2004), we could find only one report on *C. angorensis* (Kuru 2004) from Turkey after Elvira (1997). This fact suggests that *C. angorensis* might have been wrongly identified as *C. nasus*.

Lake Sapanca has a connection with Sakarya River via Çark River. We think that *C. angorensis* has come to the lake by this way. First occurrence of this species in the lake shows that its distribution range has extended and may also be found from somewhere else in Sakarya and Kızılırmak basins as well as other basins in Turkey. In order to obtain satisfying information about *C. angorensis* in its distribution range, it should be done comprehensive studies on taxonomy and environmental biology this species.



Figure1. *Chondrostoma angorensis*, 234.40 mm SL; Turkey: Lake Sapanca.

Acknowledgements

We wish to thank Mesut Özel who helps in sample collection in the field.

References

- Albay, M., R. Akcaalan, H. Tüfekçi, S.J. Metcalf, A.K. Beattie and A.G Codd. 2003. Depth profiles of cyanobacterial hepatotoxins (microcystins) in three Turkish freshwater lakes. *Hydrobiologia*, 505: 89-95.
- Aslan, A., İ. Kiziroğlu. 2003. A study on the ornithofauna of Sakaryabaşı/Eminekin pond and its vicinity. *Turkish Journal of Zoology*. 27: 19-26.
- Elvira, B. 1987. Taxonomic revision of the genus *Chondrostoma* Agassiz, 1835 (Pisces, Cyprinidae). *Cybiurn* 11: 111-140.
- Elvira, B. 1997. Taxonomy of the Genus *Chondrostoma* (Osteichthyes, Cyprinidae): an Updated Review. *Folia Zoologica* 46: 1-14.
- Geldiay, R., S. Balık. 1996. The Freshwater Fishes of Turkey (in Turkish).

- Ege Üniversitesi Basımevi, İzmir.
- Hanko, B. 1924. Fische aus Klein-Asien. *Annales Musei Natationales Hungarici* 21: 137-158.
- Kuru, M. 1981. Revision of *Chondrostoma* species of Turkey. *Hacettepe Bulletin of Natural Sciences and Engineering*. 10: 111-121.
- Kuru, M. 2004. Recent Systematic Status of Inland Water Fishes of Turkey (in Turkish). *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi*. 3: 1-21.
- Ladiges, W. 1960. Süßwasserfische der Türkei, 1. Teil: Cyprinidae. *Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut*. 58: 105-150.
- Ladiges, W. 1966. Süßwasserfische der Türkei, 4.Teil:Die Gattung *Chondrostoma* (Cyprinidae) in der Türkei. *Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut*. 63: 101-109.
- Mermer, A., S. Balık. 1991. Investigation on biology of *Chondrostoma nasus* Linnaeus, 1758 in Gediz River. *Ege Üniversitesi Fen Bilimleri Enstitüsü Dergisi*. 2(1): 17-23.
- Ünver, B., S. Ünver. 2004. Histological examination of ovarium development of shemaya *Chalcalburnus chalcoides* living in Lake Tödürge (Sivas/Turkey). *Folia Zoologica*. 53: 99-106.