Turkish Journal of Zoology

Volume 35 | Number 6 Article 13

1-1-2011

Range extension and translocation for Rhodeus amarus (Bloch, 1782) (Actinopterygii: Cyprinidae) in northwestern Iran

HAMID REZA ESMAEILI

NARGES NAZARI

ALI GHOLAMIFARD

GHORBANALI GHOLAMHOSSEINI

AZAD TEIMORY

See next page for additional authors

Range extension and translocation for Rhodeus amarus (Bloch, 1782) (Actinopterygii: Cyprinidae) in northwestern Iran

Authors
HAMID REZA ESMAEILI, NARGES NAZARI, ALI GHOLAMIFARD, GHORBANALI GHOLAMHOSSEINI, AZAD TEIMORY, and BRIAN W. COAD

TÜBİTAK

Short Communication

Turk J Zool
2011; 35(6) 883-885
© TÜBİTAK
doi:10.3906/zoo-0906-34

Range extension and translocation for *Rhodeus amarus* (Bloch, 1782) (Actinopterygii: Cyprinidae) in northwestern Iran

Hamid Reza ESMAEILI[1,*], Narges NAZARI[1], Ali GHOLAMIFARD[1], Ghorbanalı GHOLAMHOSSEINI[1], Azad TEIMORY[1], Brian W. COAD[2]

[1]Department of Biology, College of Sciences, Shiraz University, Shiraz, 71454 - IRAN

[2]Canadian Museum of Nature, Ottawa, Ontario, K1P 6P4 - CANADA

Received:14.06.2009

Abstract: Based on the new fish collection, the distribution range of the European bitterling, *Rhodeus amarus* (Bloch, 1782), is extended to a new basin (Urmia) in northwestern Iran.

Key words: *Rhodeus amarus*, range extension, translocation, Urmia basin, Iran

The bitterlings (genus *Rhodeus* Agassiz, 1832) comprise about 18 species in Europe, Asia Minor, the Caspian Sea basin, China, Japan, and Korea, with 1 species in Iran (Coad, 2010). They are small fishes with deep, compressed bodies, an incomplete lateral line (about 10 pored scales or less), large- to moderate-sized scales, females with an ovipositor, males larger than females (unusual in cyprinid fishes), brightly colored and tuberculate when spawning, pharyngeal teeth in 1 row and not or only slightly serrated, mouth small, oblique and subterminal, no barbels, dorsal fin short to moderately long and spineless, an anal fin of similar length, gill rakers short, intestine long and spirally coiled, and peritoneum black (Coad, 2010).

Rhodeus amarus (Bloch, 1782), the European bitterling (= mahi-e-makhraj looleei, meaning "tube-like vent fish"), is the only bitterling native to Iran. There is also the possibility that *Rhodeus ocellatus* (Kner, 1866) could be found in the Tedzhen (= Hari) River basin or the Caspian Sea basin from populations introduced to Turkmenistan (Coad, 2010). *R. amarus* is reported from western Europe, north of the Pyrenees and Alps, to the Caspian Sea basin. In Iran, it has been recorded from Astara to the Gorgan River, including the Anzali Talab (Anzali wetland) on the Caspian coast (Derzhavin, 1934; Holčík and Oláh, 1992; Abbasi et al., 1999; Kiabi et al., 1999; Abdoli, 2000). It probably occurs in the Araks River of Armenia (Pipoyan, 1996), which is shared with Iran in its lower reaches.

We report here on a significant range extension and a presence in a drainage basin remote from previous records for this species. The present record is about 300 km southwest of previous records in the Caspian Sea basin. The capture locality is the Zarrinehrood (= Zarrineh River), at 36°12′03.3″N, 46°25′38.3″E and an altitude of 1436 m, in northwestern Iran, Divan Dareh-Saqez Road, on 27 September 2007 (Figures 1

* E-mail: esmaeili@susc.ac.ir

and 2). The Zarrinehrood drains to Lake Orumiyeh (= Urmia), an endorheic basin. Some morphometric (in mm) and meristic characters (followed according to Hubbs and Lagler, 1958) of the 5 collected specimens are given in the Table. We also collected

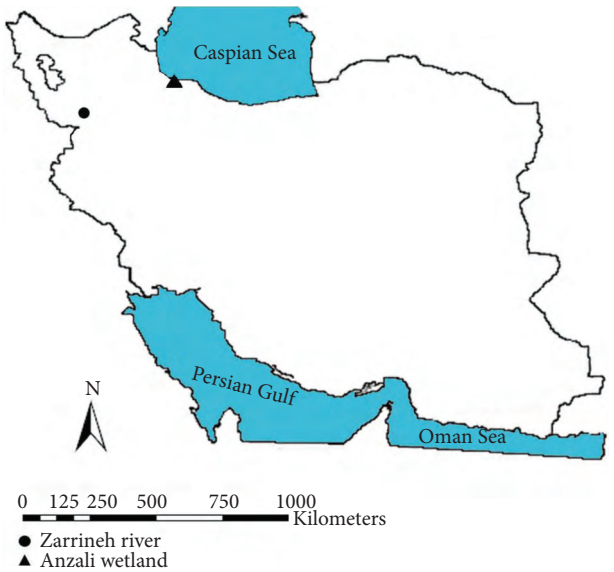

Figure 1. Nearest Caspian Sea locality (Anzali Talab) and introduction site for *Rhodeus amarus*.

Figure 2. *Rhodeus amarus* from the Zarrinehrood, Urmia basin.

specimens of goldfish *Carassius gibelio* (Bloch, 1782); *Pseudorasbora parva* (Temminck and Schlegel, 1846); *Alburnus atropatenae* Berg, 1925; and *Gambusia holbrooki* Girard, 1859 from the same locality. Silver carp, *Hypophthalmichthys molitrix* (Valenciennes, 1844); bighead carp, *Hypophthalmichthys nobilis* (Richardson, 1844); and common carp, *Cyprinus carpio* Linnaeus, 1758 are other commercially exotic species recorded from this river (Coad and Abdoli, 1993; Coad, 1996; Abdoli, 2000). It seems that *R. amarus* was incidentally introduced along with commercially important cyprinds from the Caspian Sea basin to fish farms in northwestern Iran (Urmia basin) and escaped into the wild. As we also collected

Table. Some morphometric (in mm) and meristic characters for 5 specimens of *Rhodeus amarus* from the Zarrinehrood, northwestern Iran.

	Rhodeus amarus					
Fish number	D 193	D 199	D 201	D 203	D 205	Mean
Total length	48.25	36.2	40.85	45.75	45.2	43.25
Fork length	44.25	32.75	38.2	41.15	41.2	39.51
Standard length	39	29.4	33.7	37.5	36.9	35.3
Head length	9.9	8.4	8.85	9.75	10.05	9.39
Head depth	8.55	6.65	7.65	8.4	8.85	8.02
Head width	9.75	4	4.5	4.85	4.85	5.59
Maximum body depth	13.05	9.75	11.1	12.75	12.75	11.88
Minimum body depth	4.45	3.15	3.7	3.9	4.2	3.88
Lateral line scales	35	33	35	35	34	34.4
Dorsal fin rays	III,9	III,9	III,9	III,9	III,9	III,9
Pectoral fin rays	12	13	12	13	12	12.4
Pelvic fin rays	8	8	8	8	8	8
Anal fin rays	III,9	III,9	III,9	III,9	III,9	III,9
Gill rakers	13	13	13	13	13	13
Weight (g)	1.223	0.613	0.955	1.457	1.285	1.11

R. amarus in June 2009 from the same locality, it appears that this species has been established in the Urmia Lake basin.

In recent years, the fish fauna of the Urmia basin have been changed. The introduction and translocation of exotic species for aquaculture, control of malaria, research, and accidental introduction are the main reasons for these ichthyofaunal changes. The introduction of exotic fishes may affect populations of native fishes through predation, competition, habit changes, genetic changes, and introduction of parasites and diseases.

Comparative material from Caspian Sea basin of Iran

CMNFI (Canadian Museum of Nature Fish Collection, Ottawa, Canada) 1970-0510, 21, 34.5-47.5 mm standard length, Gilan, Golshan River (37°26′N, 49°40′E); CMNFI 1970-0512, 25, 26.6-43.9 mm standard length, Gilan, Shalman River (37°08′N, 50°15′E); CMNFI 1970-0514, 2, 36.6-38.3 mm standard length, Gilan, Shafa River estuary (37°35′N, 49°09′E); CMNFI 1970-0520, 7, 28.9-45.0 mm standard length, Gilan, Astara River (ca. 38°25′N, ca. 48°52′E); CMNFI 1970-0526, 4, 30.7-43.2 mm standard length, Gilan, Safid River below Astaneh Bridge (37°19′N, 49°57′30″E); CMNFI 1970-0579, 8, 32.6-49.0 mm standard length, Gilan, Old Safid River estuary (37°23′N, 50°11′E); CMNFI 1970-0580, 5, 35.8-53.8 mm standard length, Mazandaran, river near Iz Deh (36°36′N, 52°07′E); CMNFI 1979-0265, 9, 16.1-47.4 mm standard length, Gilan, Anzali Mordab at Abkenar (37°28′N, 49°20′E); CMNFI 1979-0472, 6, 37.7-47.7 mm standard length, Mazandaran, stream west of Mahmudabad (36°37′N, 52°12′E); CMNFI 1980-0117, 3, 42.2-47.8 mm standard length, Gilan, Golshan River (37°26′N, 49°40′E); CMNFI 1980-0127,9, 32.6-43.0 mm standard length, Gilan, Caspian Sea near Hasan Kiadeh (37°24′N, 49°58′E).

Acknowledgments

We are thankful to M. Ebrahimi for helping with fish collection and Shiraz University for financial support.

References

Abbasi, K., Valipour, A., Talebi Haghighi, D., Sarpanah, A. and Nezami, Sh. 1999. Atlas of Iranian Fishes. Gilan Inland Waters. Gilan Fisheries Research Centre, Rasht. In Farsi.

Abdoli, A. 2000. The Inland Water Fishes of Iran. Iranian Museum of Nature and Wildlife, Tehran. In Farsi.

Coad, B.W. 1996. Exotic fish species in the Tigris-Euphrates basin. Zoology in the Middle East 13: 71-83.

Coad, B.W. 2010. Freshwater Fishes of Iran. www.briancoad.com, downloaded 24 April 2010.

Coad, B.W. and Abdoli, A. 1993. Exotic fish species in the fresh waters of Iran. Zoology in the Middle East 9: 65-80.

Derzhavin, A.N. 1934. Presnovodnye ryby yuzhnogo poberezh'ya Kaspiya. Vstuplenie [Freshwater fishes of the southern shore of the Caspian Sea. Introduction]. Trudy Azerbaidzhanskogo Otdeleniya Zakavkazskogo Filiala Akademii Nauk SSSR, Sektor Zoologii, Baku, 7: 91-126.

Holčík, J. and Oláh, J. 1992. Fish, Fisheries and Water Quality in Anzali Lagoon and its Watershed. Report Prepared for the Project - Anzali Lagoon Productivity and Fish Stock Investigations. Food and Agriculture Organization, Rome, FI:UNDP/IRA/88/001 Field Document.

Hubbs, C. L. and Lagler, K.F. 1958. Fishes of the Great Lakes Region. University of Michigan Press, Ann Arbor.

Kiabi, B.H., Abdoli, A. and Naderi, M. 1999. Status of the fish fauna in the South Caspian Basin of Iran. Zoology in the Middle East 18: 57-65.

Pipoyan, S.Kh. 1996. Bitterling *Rodeus (sic) sericeus amarus*, a new species in the fauna of Armenia. Journal of Ichthyology 36(8): 676-678.