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# *Leiostomus xanthurus*, a Western Atlantic Sciaenid Species in Tokyo Bay

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While conducting a survey of the ichthyofauna of Tokyo Bay during June 1986, the junior authors collected a small sciaenid specimen by cast net in the shallow waters of Tokyo Port near the bay bottom. The fish, 67.3 mm in standard length (SL), was very much alive when captured and showed no sign of having been injured (Fig. 1). It was easily identified as the northwestern Atlantic sciaenid, *Leiostomus xanthurus* Lacepède, and registered as HUMZ 109630 (institutional abbreviations are as listed in Leviton et al., 1985).

The specimen has the following characters (methods follow Sasaki and Kailola, 1988). Dorsal rays X+I, 29; anal rays II, 12; gill rakers 10+1+20; vertebrae 10+15. Proportions as % SL: body depth 33.3; body width 13.7; snout length 11.6; upper jaw length 11.3; lower jaw length 13.5; gill raker length 3.1. Body rather deep, strongly compressed. Snout blunt, with five rostral pores and five marginal pores; chin without barbels, but with five pores; mouth small, nearly horizontal; teeth villiform, set in bands. Preopercular margin entire. Caudal fin emarginate. Gill rakers short and slender. Swimbladder simple, without appendages. Body with 14 dusky oblique stripes and a dusky obscure spot behind upper insertion of gill opening.

All the features of the Tokyo Bay specimen agree well with those of *Leiostomus xanthurus*, as diagnosed by Chao (1978a). Moreover, our direct comparison of the specimen with the Atlantic material of *L. xanthurus* (FAKU 104727, two specimens, 163.3 mm SL, 165.2; FAKU 107631, 145.2; FAKU 107632, 149.5) reveals no noticeable difference. Compared with the larger Atlantic material, the Tokyo Bay specimen has a larger head (34.6% SL vs. 30.9–32.4), larger eye (10.3 vs. 8.1–8.8), shorter pectoral (25.6 vs. 27.0–30.2), longer anal spine (12.3 vs. 8.0–9.1) and less distinct stripes and humeral spot on the body. These differences are apparently due to the smaller size of the Tokyo Bay specimen. Its appearance is similar to the young of the species as described and figured by Hildebrand and Cable (1930), in every respect. Thus the identity of our specimen is unquestionably *L. xanthurus*.

*Leiostomus xanthurus* ranges along the Atlantic coast of the United States and the Gulf of Mexico (Chao, 1978a). It is abundant in estuaries, sounds, along beaches, and is an important food fish in the region (Chao, 1978b). The Tokyo Bay record does not reflect the natural distribution of *L. xanthurus*, a species which has never been reported from waters other than the northwestern Atlantic, as there are no sciaenid species that have a pattern of distribution common to both the New and Old Worlds (Trewavas, 1977; Chao, 1978a). Accordingly we regard the occurrence of *L. xanthurus* in Tokyo Bay as an example of accidental introduction.

Although we do not know the method of transportation, it is possible that this fish arrived in Japan in the ballast water of a ship. Probable

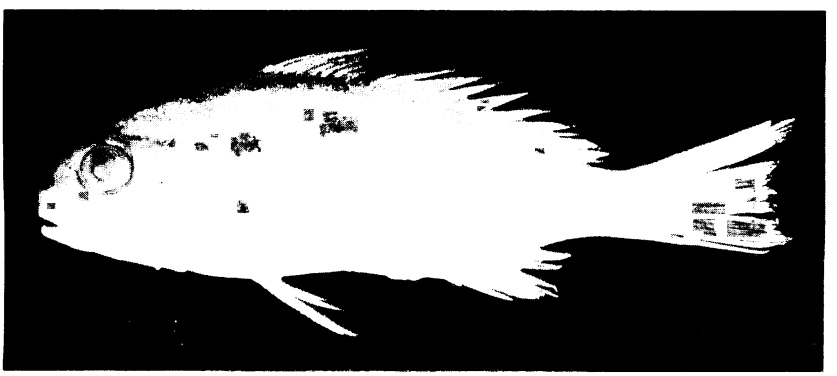

Fig. 1. *Leiostomus xanthurus* from Tokyo Bay. HUMZ 109630, 67.3 mm SL.

examples of long-range shore fish transport by ballast water have accumulated recently (e.g., Carlton, 1985; Paxton and Hoese, 1985; Al-Hassan and Miller, 1987; Winterbottom and Burridge-Smith, 1987). Since the larvae and juveniles of *L. xanthurus* are very abundant in estuaries (Chao and Musick, 1977; Warlen and Chester, 1985), their intake into ballast water tanks is highly probable.

The size of the Tokyo Bay specimen indicates that it was a recent arrival. Although the growth of *L. xanthurus* has been variously estimated—as summarized by Johnson (1978)—the specimen is apparently not older than one year. *L. xanthurus* is a winter spawner (Warlen and Chester, 1985) and 0+ aged individuals of a similar size as the Tokyo Bay specimen are commonly found in the estuarine areas along the U. S. Atlantic and Gulf coasts in summer (see Chao and Musick, 1977, table 1). If our reasoning about its occurrence is correct, the Tokyo Bay specimen demonstrates a previously undocumented case of the interoceanic introduction of shore fishes, viz. from the western Atlantic to the Indo-West Pacific.

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**東京湾から採集された西部大西洋産のニベ科魚類 *Leiostomus xanthurus***

佐々木邦夫・細谷誠一・渡辺　晋

西部大西洋産のニベ科魚類 *Leiostomus xanthurus* の 1 個体（体長 67.3mm）が東京湾で採集された．本種は西

部大西洋に固有な種なので，今回採集された標本は船舶のバラスト・タンクに入って運ばれた可能性が高い．バラスト水に原因すると思われる西部大西洋からインド・西太平洋への沿岸魚の移入の報告は，本例が初めてである．

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