

THE ACANTHURID FISH *NASO LOPEZI* HERRE FROM THE HAWAIIAN ISLANDS.—Four specimens of *Naso lopezi*, heretofore unknown from the Hawaiian Islands, were taken with a 41 ft shrimp trawl by the Bureau of Commercial Fisheries' R/V TOWNSEND CROMWELL during cruise 40 at Sta. 126. This station, one of 10 in the same general area and depth, was occupied at 2100 hr, 2 December 1968 off Haleiwa on the north coast of Oahu (lat. 21° 40' N, long. 158° 07' W) at a depth of 55 fms. The bottom temperature was about 25° C. The bottom type in this area was primarily muddy sand, but there were patches of broken shell, calcareous rubble, and live sponges. Station 126 was unusually rich in sponges, and it was also the most productive in fishes, with 33 species being captured. The dominant fishes were *Trachinocephalus myops*, *Pristipomoides microlepis*, *Dactylopterus orientalis*, *Lagocephalus hypselogeneion*, *Parupeneus chrysomemus*, and *Priacanthus* spp.

*N. lopezi* was described by Herre (1927: 467-468, pl. 7, fig. 2) from four specimens 156-386 mm TL from the Philippine Islands. Fowler and Bean (1929:282-283, fig. 22) recorded another specimen from the Philippines; however, they identified their fish as *Naso vomer* (Klunzinger) and placed *N. lopezi* in the synonymy of *vomer*. Myers (1940) corrected their error. Smith (1966), who reviewed the subfamily Nasinae, agreed with Myers on the validity of *lopezi* and provided additional descriptive information (from Myers) on three Philippine specimens, 420-480 mm FL, from the collection of Stanford University.

Tomiyama and Abe (1958: 123, fig. 362) recorded the species from Japan [as *Callicanthus hexacanthus* (Bleeker)]. They stated that it occurs in their country only as young.

TABLE 1. MEASUREMENTS OF SPECIMENS OF *Naso lopezi* FROM HAWAII EXPRESSED AS PERCENT OF STANDARD LENGTH.

SL (mm)	Depth of Body	Head Length	Eye Diam.	Caudal Fin	1st Dorsal Spine
435	37.1	24.2	4.9	17.8	8.7
273	38.5	25.1	7.1	21.6	10.7
134	42.8	26.9	8.9	21.6	12.7
97.5	44.4	27.8	11.6	22.1	12.2

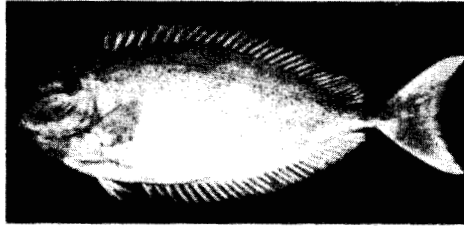


Fig. 1. *Naso lopezi*, USNM 204941, 435 mm SL, Oahu, Hawaiian Islands.

The four Hawaiian specimens are 435, 273, 134, and 97.5 mm in standard length; the largest and smallest have been deposited in the U. S. National Museum (USNM 204941) and the remaining two in the Bernice P. Bishop Museum (BPBM 9177).

Meristic data from the Hawaiian specimens are as follows: D VI,26 to 28; A II,27; P<sub>1</sub> 16 to 18; P<sub>2</sub> I,3; gill rakers 4 + 1 + 9 or 10. Dorsal and anal fin ray counts from western Pacific specimens, collectively, are D V or VI,26 to 31; A II,27 to 30. Only the Fowler and Bean specimen and Japanese specimens are listed with VI dorsal spines.

The teeth are narrow and lanceolate with about six tiny serrations on each upper lateral edge. Many teeth are missing from the jaws of the specimens; the counts range from about 40 upper and 36 lower teeth in the smallest fish to about 70 upper and 65 lower teeth in the largest.

Fixed caudal plates, so characteristic of the genus, vary from about 1% of the standard length of the two smaller specimens, with the lateral keel a mere nubbin, to about 4% in the two larger specimens, with a hemispherical keel which extends laterally up to one-third the length of the basal plate.

Some of the body and fin proportions are relatively constant. For example, the body width is about 14% of the standard length; the least depth of the caudal peduncle is 4% to 5% of the standard length; and the length of the pectoral fins ranges from 15.2% to 17.9% of the standard length. Other measurements display more variation, most of which seems to be a function of increasing size (Table 1).

In terms of standard length, the snout seems unchanging, varying randomly among the four specimens from 15.1% to 15.9% SL; however, as is apparent from a comparison of Figs. 1 and 2, both the body and the snout become more elongate with age. The change

in snout proportions is somewhat more evident when compared to head length; the snout is 5.5% of the head length in the smallest specimen and 6.3% in the largest.

Color in preservative is brownish gray with numerous small dark brown spots or short lines on the body, caudal fin, and a few on the head; there is a nearly continuous narrow dark brown band following the lateral line.

Two other species of *Naso*, *N. tuberosus* (Lacépède) and *N. fageni* Morrow, have small dark spots; however, both, as adults, display a prominent rostral prominence (though not a horn as in *unicornis* and other species) which is entirely lacking in *lopezi* even in the largest adults.

This record of *N. lopezi* brings to six the number of species of *Naso* known from Hawaii. As pointed out by Randall (in Gosline and Brock, 1965), one of these, *Naso annulatus*, is recorded from only a single specimen [the type of *Naso incipiens* (Jenkins)].

If the only record of *N. lopezi* from Oceania were Hawaii, this distribution would not be unusual. On checking the literature we find 28 fishes which are known only from Hawaii and the western Pacific, and another 10 extend their range into the Indian Ocean. Nearly all of these are species from moderate to deep water.

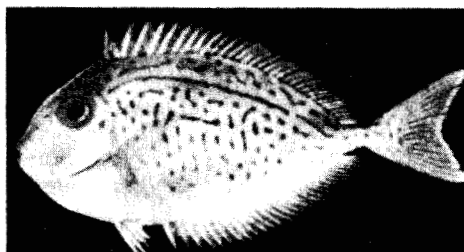


Fig. 2. *Naso lopezi*, BPBM 9177, 134 mm SL, Oahu, Hawaiian Islands.

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