

by Richard N. Uchida

Valid Names	<i>Scyllarides squammosus</i> (H. Milne-Edwards 1837) (Fig. 43) and <i>S. haanii</i> (De Haan 1841) (Fig. 44)
Synonymy	(for <i>Scyllarides squammosus</i>) <i>Scyllarus squammosus</i> H. Milne-Edwards 1837 <i>Scyllarides squamosus</i> Holthuis 1946 (for <i>Scyllarides haanii</i>) <i>Scyllarus haanii</i> De Haan 1841 <i>Scyllarides haanii</i> Holthuis 1946 (from George and Griffin 1973)
Common and vernacular names	Slipper lobster; shovel-nosed lobster; scaly slipper lobster; sea crawfish; Spanish lobster; ulapapa

Distribution

Widely distributed in the NWHI from Middle Bank to Kure Atoll. The NMFS catch data indicate that *Scyllarides squammosus* is distributed at depths from 13 to 137 m, and *S. haanii* is distributed from 33 to 112 m.

Distinguishing characteristics

Scyllarides squammosus—Carapace slightly longer than broad, widest near the posterior margin; surface of carapace and terga granulate; granules low, smooth, and each surrounded by numerous small, fine, stiff setae; anterolateral corner of carapace only slightly wider than width at cervical groove, which is weakly defined; anterolateral margin forms an obtuse angle with anterior margin of carapace; entire lateral margin of carapace armed with small, blunt anteriorly directed spines, those anterior of the cervical groove slightly larger; gastric area of carapace elevated with the cardiac and branchial regions only weakly elevated; four anteriorly directed weak spines on supraorbital region of carapace; posterior transverse groove deep, prominent.

Antennae large, flat, distal segment rounded, the leading edge finely serrated; minute fine, short setae on upper surface penultimate segment small bearing two weak spines directed forward along the inner margin; second segment largest, broad, flat, and coarsely granulate, lateral margin slightly convex, and one weak spine at juncture of the anterior and lateral margins, which form an obtuse angle; inner margin of second segment also armed with two anteriorly directed spines; leading edge of second segment more strongly serrated than distal segment; a coarsely granulated proximal segment extending from outer edge of eye socket to center line in front of rostrum dorsally subtriangular; three spines on inner leading margin of proximal segment; two additional spines at center of distal margin, and a cluster of four spines at the outer distal margin.

First segment of abdomen short, narrow, and usually partially under the carapace; weak ridge along the middorsal line of second, third, and fourth segments; appearing as weak humps when viewed from the side. Sternum deeply emarginate; weak, blunt protuberances on lateral end near juncture with the pereopods.

Scyllarides haanii—*Scyllarides haanii* and *S. squammosus* are morphologically similar and can be confused easily. Differences are: Dorsal carinae of carpus of first and second pereopods low in *S. haanii* but distinct in *S. squammosus* (George and Griffin 1973). Carapace of *S. haanii* broader and more deeply emarginate

along the anterior ventral margin of the carapace. Dorsal midline of abdominal segments 3 and 4 is strongly elevated or humped in *S. haanii* but only a weak ridge in *S. squammosus* (Morin and MacDonald 1984).

Life history

Female *Scyllarides* have never been observed with attached spermatophores or remnants of a spermatophoric mass, suggesting that fertilization is internal (Lyons 1970). Among 1,090 females collected throughout the chain from our NWHI cruises, none had a spermatophoric mass although 33% of the females examined were ovigerous.

Like spiny lobsters (see Uchida, Uchiyama, Humphreys, and Tagami 1980), catches of slipper lobsters during this study varied widely throughout the NWHI. Our data show that catch rates of slipper lobsters were relatively higher at Brooks Banks, Gardner Pinnacles, Maro Reef, Northampton Seamounts, Lisianski Island, and Pearl and Hermes Reef. Contrary to results of trapping at Lisianski where spiny lobsters were not abundant, slipper lobsters occurred in good numbers at this location. The highest catch rates occurred at depths between 20 and 55 m.

Slipper lobsters predominated over spiny lobsters in the catches at Brooks Banks (77%), Northampton Seamounts (89%), Lisianski Island (93%), and Salmon Bank (82%). Overall, however, the percentage of slipper lobsters in the catch throughout the NWHI was only 16%.

The sex ratio of slipper lobsters showed an interesting pattern. Whereas the male to female ratio was near 50:50 or in favor of females at the lower end of the NWHI chain from Middle Bank to St. Rogatien Bank, it was heavily in favor of males at Brooks Banks and northward from Gardner Pinnacles to Kure Atoll. Data combined for all areas showed a sex ratio of 56:44 (males to females).

The proportion of the various sizes of slipper lobsters in the catch also showed abrupt changes in the NWHI. Carapace length-frequency distributions of slipper lobsters taken from Middle Bank to Salmon Bank showed a large proportion of the catch (77%) was made up of lobsters 7.8-10.2 cm; most of the remainder (19%) were in the 5.3-7.7 cm range. In the northern end of the chain, Pearl and Hermes Reef, Midway, and Kure Atoll, however, small, medium, and large lobsters were equally represented; 29% in the 5.3-7.7 cm group, 26% in the 7.8-10.2 cm group, 21% in the 10.3-12.7 cm group, and 22% in the 12.8-15.2 cm group. The remaining 2% of the catch were lobsters >15.3 cm CL.

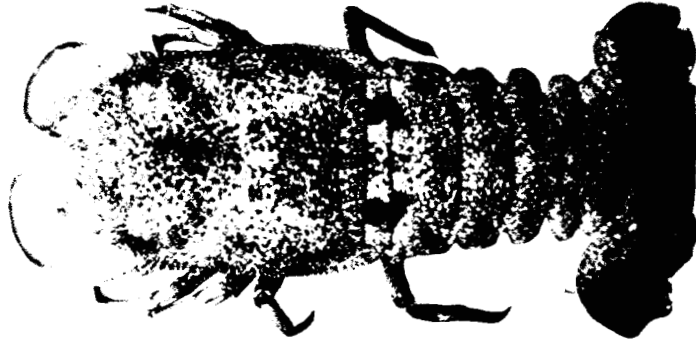


Figure 43.—*Scyllarides squamosus*.

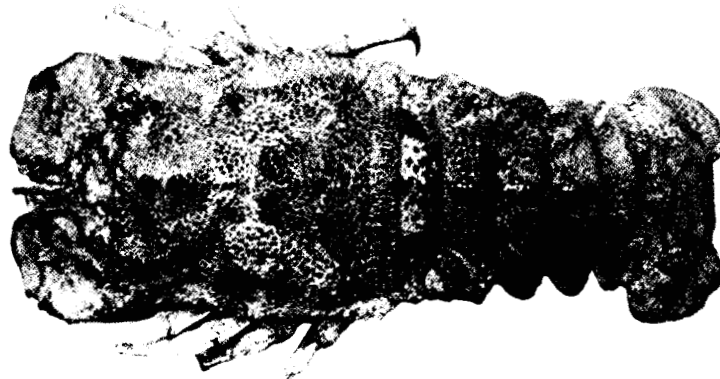


Figure 44.—*Scyllarides haanii*.

Gear and catch

Slipper lobsters are usually taken incidentally while trapping for spiny lobsters. During 1961-75 (1976-78 catches not given in HDAR annual catch reports), annual reported catches of slipper lobsters

ranged from 2 to 126 kg and averaged only 33 kg; however, since the beginning of the NWHI spiny lobster fishery, incidental catches of slipper lobsters have risen. In 1979, the reported catch of slipper lobsters reached 344 kg, presumably almost all of which came from the NWHI.