

endopods slender and with long silky hairs. Legs stout, extending beyond carapace; first legs stoutest, remainder progressively more slender; second pair longest; dactyls of first pair somewhat serrate on lower border, remainder simple; fifth legs of females subchelate. Third maxillipeds stout, basal articles prismatic.

Scyllarus chacei Holthuis

Figure 74

Scyllarus americanus: Hay and Shore, 1918, p. 399, pl. 28, fig. 2.—Bouvier, 1925 (in part), pp. 448–450, pl. 7, fig. 3.—Boone, 1930, p. 84, pl. 23, fig. A. Schmitt, 1935a (in part), p. 174, fig. 39.—Holthuis, 1959, p. 126.

Scyllarus chacei Holthuis, 1960b, p. 152.

Recognition characters.—Carapace with surface squamose in part dorsally, lightly squamose below lateral borders, with feathered setae (some darkened) between squames; middorsal ridge with anterior (pregastric) eminence large, rounded, gastric eminence higher, upturned, cardiac eminence somewhat smaller than pregastric; two coalesced spines over each orbit large and somewhat separated from ridges over branchial areas. Rostrum short, rounded, sides nearly parallel. Anterior border of carapace emarginate. Orbits deeply excavated with a broad anterior notch, a blunt tooth on proximal (fixed) antennal article in center of notch. Anterolateral corners of carapace spiniform, lateral borders roughened with squames; a rather deep notch behind orbit and another one farther back; area between posterior marginal groove and posterior margin of carapace nearly smooth but traversed by two, seldom three, distinct parallel grooves.

Second antennular article elongate, flattened above, anterior margin obliquely truncate. Antennae spatulate, somewhat punctate; distal article with irregularly rounded anterior border cut into seven elongate, somewhat separated, lobes with rounded ends, edges ciliated; medial two lobes shortest and sharpest, lateral lobe obliquely truncate and broadest; penultimate article short, bilobed in dorsal view; proximal movable article cordate, a prominent ridge throughout length to spiniform tip, a less conspicuous and irregularly shaped medial ridge, edges spinose.

Second, third, and fourth abdominal tergites (and to some extent first) with arborescent furrows running inward and forward toward midline; first to fourth segments with median notch in posterior margin very shallow, fourth segment

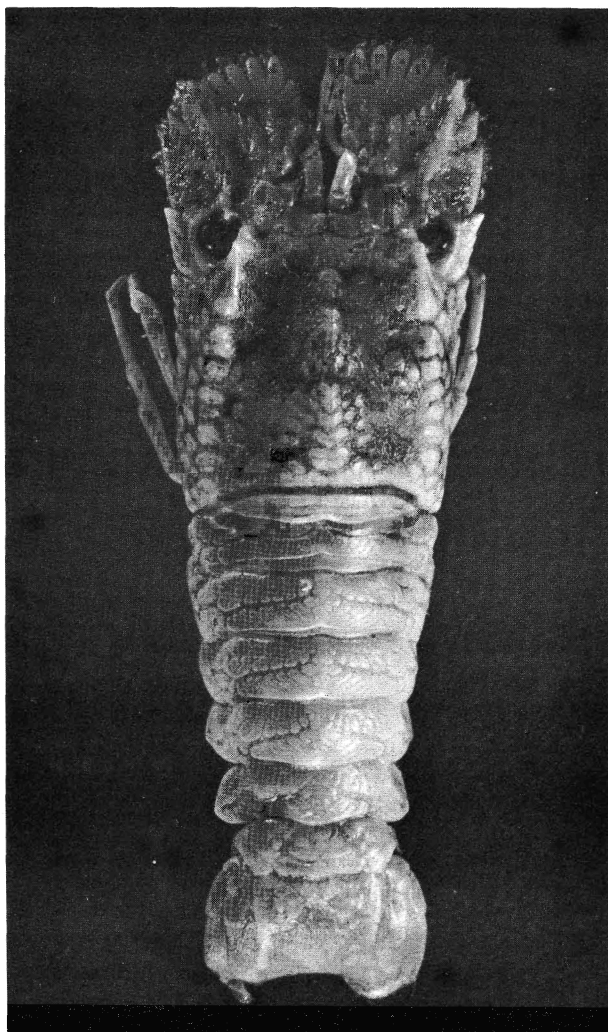


FIGURE 74.—*Scyllarus chacei* Holthuis. Male in dorsal view, approximately $\times 2$. Bob Simpson photo.

not elevated in midline. Third to fifth pleura rounded distally, sixth with a rounded anterolateral lobe. Sternum triangular, broad at base, smooth with furrows ciliated; male with slight midventral elevation on fifth plate, elevation less evident in female.

Measurements.—Length of carapace, 19 mm.; length of abdomen 35 mm.

Habitat.—Nine to 100 fathoms.

Type locality.—North-northwest mouth of Marowijne River, about 20 miles off coast of Surinam.

Known range.—Off Cape Lookout, N.C., through Gulf of Mexico, West Indies, and Caribbean Sea to off Cape São Roque, Brazil.

Remarks.—Ovigerous females have been taken off Florida in March, South Carolina in July, Surinam in August and September, and northeast Brazil in November.

Scyllarus americanus (Smith)

Figure 75

Arctus americanus Smith, 1869b, p. 119.

Scyllarus americanus: Bouvier, 1925 (in part), pp. 448-450.—Holthuis, 1960b, p. 152 (restr.).

Recognition characters.—Carapace with surface squamose in part dorsally, a little squamose below lateral borders posteriorly, lightly tuberculate toward epistome, with feathered setae (some darkened) between squames; middorsal ridge with anterior (pregastric) eminence large, bilobed anteriorly, gastric eminence sharper and more elevated, cardiac eminence not so sharp, bi-

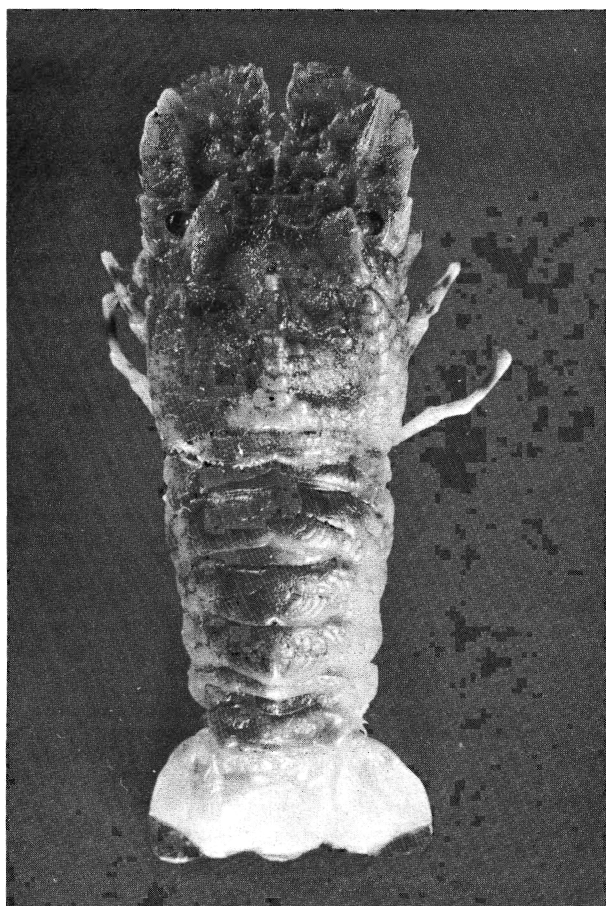


FIGURE 75.—*Scyllarus americanus* (Smith). Ovigerous female in dorsal view, approximately $\times 1.5$. Bob Simpson photo.

lobed; two coalesced blunt spines over each orbit large and somewhat separated from ridges over branchial areas. Rostrum short, rounded at tip, a blunt keellike middorsal tubercle above. Anterior border of carapace emarginate. Orbits deeply excavated, margins broad, with a broad anterior notch; a blunt tooth on proximal (fixed) antennal article in center of notch. Anterolateral corners of carapace spiniform, lateral borders roughened with squames; a rather deep notch behind orbit and another one farther back. Area between posterior marginal groove and posterior margin of carapace faintly squamose and traversed almost always by a single distinct groove.

Second antennular article elongate, flattened above, anterior margin obliquely truncate. Antennae spatulate, somewhat punctate, surface variably covered with feathered setae; distal article with irregularly rounded anterior border cut into six somewhat separated lobes, edges ciliated, medial lobe short, spiniform, next much larger and less pointed, following three about equal in length, tips rounded, lateral lobe about twice width of intermediate lobes; penultimate article short, bilobed in dorsal view; proximal movable article triangular in outline, edges spinose, two lateral spines larger than four variably sized medial spines, a prominent ridge running to apical spine nearly dividing article in half.

Second, third, and fourth tergites of abdomen (and to some extent first) with arborescent furrows running inward and forward toward midline. First to fourth segments with median notch in posterior margin fairly deep and narrow; fourth segment elevated, more or less ridgelike in midline. Third to fifth pleura rounded distally, sixth with a narrowly rounded anterolateral lobe. Sternum triangular, broad at base; smooth with furrows ciliated; male with a low tubercle in center of fifth sternite, female similar.

Measurements.—Ovigerous female: length of carapace, 25 mm., width, 29 mm.; length of abdomen, 45 mm.

Habitat.—Surface to 19 fathoms, usually 3 to 12 fathoms.

Type locality.—Edgmont Key, Fla.

Known range.—Off Bogue Inlet, N.C., to southern Florida; Campeche Banks off Mexico.

Remarks.—Ovigerous females have been taken in southern Florida in September.

Scyllarus nearctus Holthuis

Figure 76

Scyllarus nearctus Holthuis, 1960b, p. 151.

Scyllarus arctus paradoxus: Rathbun, 1900b (in part), p. 309.

Recognition characters.—Carapace with surface squamose in part dorsally, but only on or near ridges and sides, smooth below except a sinuous submarginal row of tubercles and a lightly granulate area posteriorly, densely ciliate above between squames and on smooth areas. Rostrum short and acute; pregastric tooth above it about same size, gastric tooth larger, acute, all three of these directed forward. Cardiac eminence blunt, bilobed at apex. Gastric tooth and cardiac eminence with squames at base, rostrum and pregastric tooth in smooth area. Lateral ridges ending anteriorly in a forwardly directed spine. Front emarginate with a small projection about halfway between rostrum and orbit. Orbits deeply excavated, upper border composed of two spines coalesced at base, lower border an inflated ridge more or less interrupted by two subequal spines at anterolateral corner; anterior notch partially occupied in middle by a large serrulate tooth on first (fused) antennular article and another eminence forming articulation of second antennal article. Anterolateral corners of carapace drawn out to a strong spine, lateral border with a notch behind eye and another less definite notch behind anterior end of branchial ridge. Posterior margin of carapace with a sharp but broadly opened notch in midline; area between posterior marginal groove and posterior margin of carapace traversed by two rows of squames.

Anterior border of first antennular article with low teeth or irregularities; second article cylindrical with a flattened, rounded distal projection; succeeding articles slender, flagella short. Antennae spatulate, fairly smooth, ciliated, edges densely covered with longer feathered setae; distal article semielliptical in outline, edge broken into six well-separated lobes with narrowly rounded tips, inner lobe smallest, outer broadest and subtruncate, a suggestion of a seventh lobe medially; penultimate article short, irregularly spined and lobed; first movable article roughly triangular with apex formed by a strong spine, two spines on outer border and three spines on inner border, apical spine and first two inner spines with small spurs on medial borders, third spine at medio-

posterior border smaller, a definite ridge running across article from articulation to apex.

Second to fifth abdominal segments (and to some extent first) with arborescent furrows running inward and forward toward midline. First to fourth segments with median notch in posterior margin deep and narrow. Third and fourth with distal edge of pleura rounded anteroventrally, angled at posteroventral corner; fifth broadly rounded distally; sixth with anteroventral lobe broad and rounded. Telson with four flattened spines at distal edge of hard portion. Each ramus of uropods with a spine at same level on outer margin.

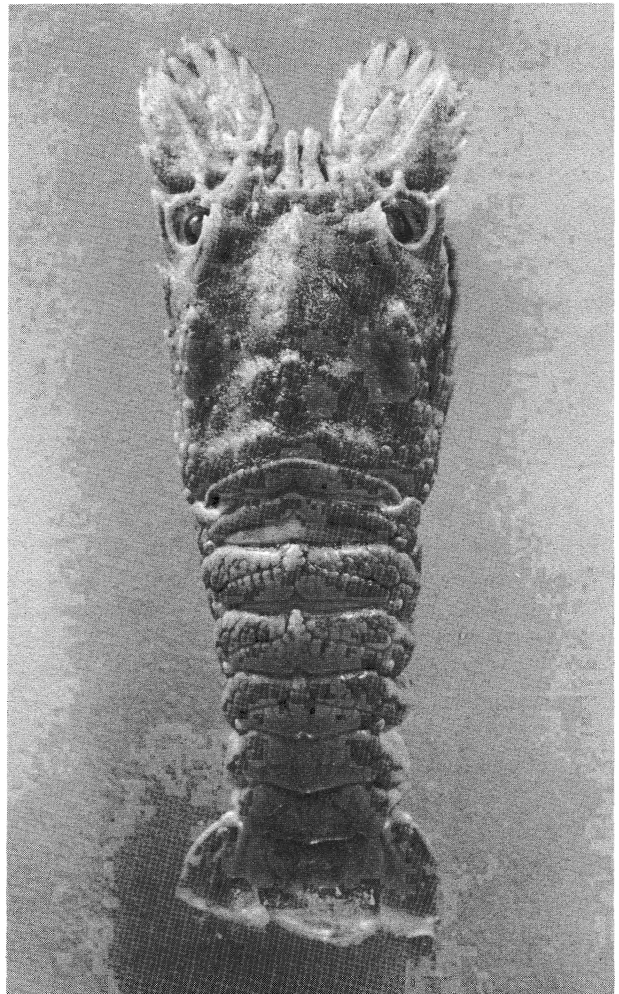


FIGURE 76.—*Scyllarus nearctus* Holthuis. Male paratype in dorsal view, approximately $\times 1.5$. Bob Simpson photo.

Sternum triangular, narrower in males than in females, smooth, a little pubescent in grooves. Male with a strong, shelflike protuberance on sternite between last pair of legs, and with a strong sharply ridged shoulder extending over genital pore. Female with a low eminence on sternite between last pair of legs.

Measurements.—Ovigerous female: length of carapace, 24 mm., width, 26 mm.; abdomen, length, approximately 50 mm.

Habitat.—Thirty to 100 fathoms.

Type locality.—South of Dry Tortugas, Fla.

Known range.—Off Cape Hatteras, N.C., through Gulf of Mexico and West Indies to State of São Paulo, Brazil.

Remarks.—Ovigerous females have been taken off North Carolina in June.

Genus *Scyllarides* Gill, 1898

Gill, 1898, p. 99.—Verrill, 1922, p. 18. (rev.).—Hemming, 1958b, p. 94.

Scyllarides nodifer (Stimpson)

Figure 77

Scyllarus nodifer Stimpson, 1866, p. 48.—Stimpson, 1871b, p. 123.

Scyllarides americanus Verrill, 1922, p. 24, pls. 5-6.

Scyllarides nodifer: Holthuis, 1960b, p. 153.

Recognition characters.—Carapace longer than wide, subtruncate in front, coarsely and unevenly granulate, granules elevated, not crowded, each surrounded by more or less complete circle of stiff hairs; anterolateral corners forming nearly a right angle terminating in an obtuse tooth; cervical notch and groove well marked with numerous denticles on margin in front of and behind notch; posterior transverse groove deep and conspicuous; gastric area with a large, broad-based, prominent median ridge divided into a smaller anterior and larger posterior part, each portion ending in an anterior, large, conical, obtuse or bilobed tubercle with other similar but smaller tubercles and coarse granules around and behind apex; cardiac region with a prominent but less elevated area with larger tubercles than on adjacent surface; a similar ridge on each branchial area. Orbits large, with prominent, thick borders, anterior notch wide and deep.

Antennae with distal article broader than long, edges broadly and evenly rounded, minutely lobulate and crenulate, fringed with short, close hairs; exposed portion forming a half oval, upper

side covered with small, rough granules and small pits bearing tufts of short hairs in large adults, smoother in small individuals. Penultimate movable article showing two lobes beneath. Second movable article distinctly wider than long, broader than distal article; distal lobe terminating in nearly right angled point in large adults, armed with a spine in smaller specimens; edges dentate with many small teeth and some larger ones, a larger stout tooth near inner curve of inner margin; inner lateral lobe stout, thick, enlarged toward end; inner edges of these lobes of both antennae separated by a space about equal to orbit of eye. First movable article irregularly four-lobed above; small outer lateral lobe with about three denticles; median or distal lobe swollen and coarsely granular; inner lobe obliquely oblong with inner edge truncate and denticulate; prefrontal or rostral lobe a little broader than long, widest distally, swollen laterally, with concave sides and a median groove.

Outer maxillipeds large, basal articles stout. Legs projecting beyond carapace; first pair stouter than others, propodus considerably swollen, dactyl stout; fifth pair with propodus most slender; merus and carpus of all pairs, except carpus of first, with a finely serrulate carina ending in a sharp distal tooth; carpi, except first, with a lateral carina ending in a distal tooth; meri of last four legs with a ventrolateral carina ending in a sharp spine distally (carina sharpest on legs three and four) and each with a blunter medial spine distally.

Underside of bases of legs and sternum roughly sculptured, one larger acute or pyramidal elevation on sternum opposite base of each leg.

Abdomen strongly sculptured, elevated areas coarsely granulated and hairy, much like carapace. Second to fourth segments with a median, elevated, obtuse ridge, covered with large granules; fifth segment with slight ridge. Pleura large, angular; that of second segment largest, subacute, both edges with dentations about as large as adjacent granules; those of third to sixth segments more minutely dentate on posterior border, nearly smooth or minutely crenulate on anterior border. Telson broader than long, subtruncate distally; posterolateral angles broadly rounded; granulated and hairy proximally, covered with numerous forked ridges and grooves