

## SYNTAXIDAE

## Furry lobsters

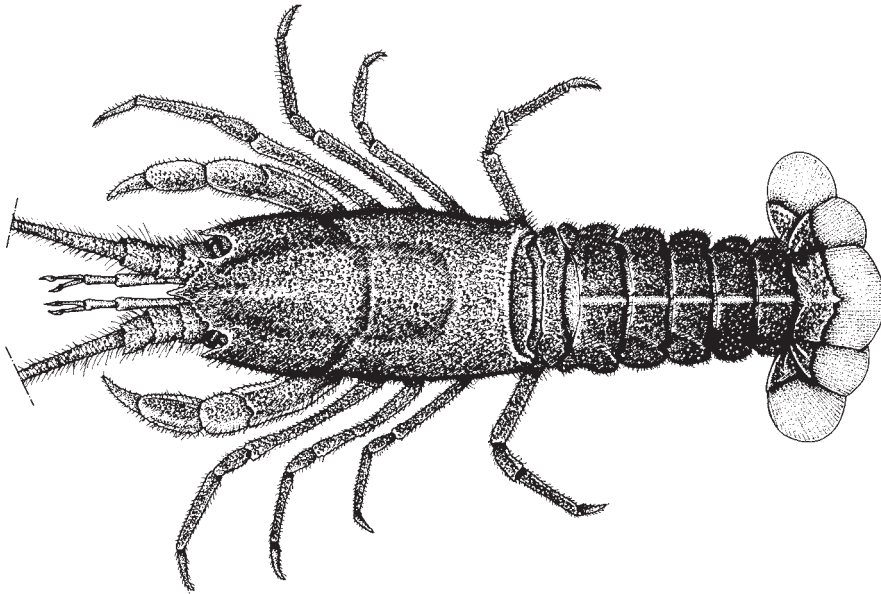
A single species occurring in the area.

*Palinurellus gundlachi* (Von Martens, 1878)

LLQ

**Frequent synonyms / misidentifications:** None / None.

**FAO names:** **En** - Caribbean furry lobster; **Fr** - Cacahouète; **Sp** - Langostita del Caribe.



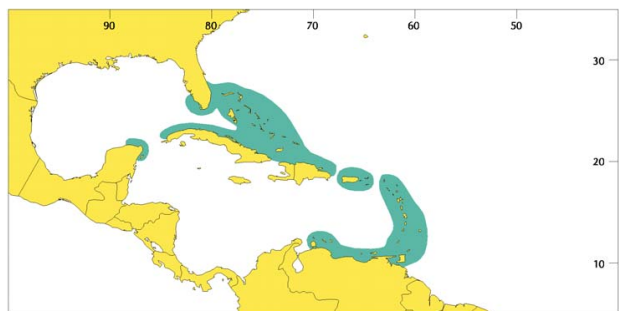
**Diagnostic characters:** A small lobster. Carapace long and rounded, entirely covered with small, rounded nodules and short hair, but without enlarged spines; a small triangular rostrum present between eyes. Antennae shorter than carapace, antennular flagella shorter than antennular peduncles. Abdominal segments slightly keeled along dorsal midline, hairy like the carapace, but without transverse grooves. Legs without true pincers, the first pair not longer than but at least twice as thick as the second. **Colour:** uniformly bright orange.

**Size:** Maximum length about 150 mm.

**Habitat, biology, and fisheries:** Among rocks and corals from the tide zone down to 35 m depth. This species is rather scarce and is of no interest to commercial fisheries. Caught by divers or incidentally during trapping operations set for other species.

**Distribution:** Bermuda, Bahamas, southern Florida, Yucatán, most of the West Indies, and Brazil (Pernambuco and Bahia States).

**Remarks:** This family consists of 2 genera and 3 species worldwide.



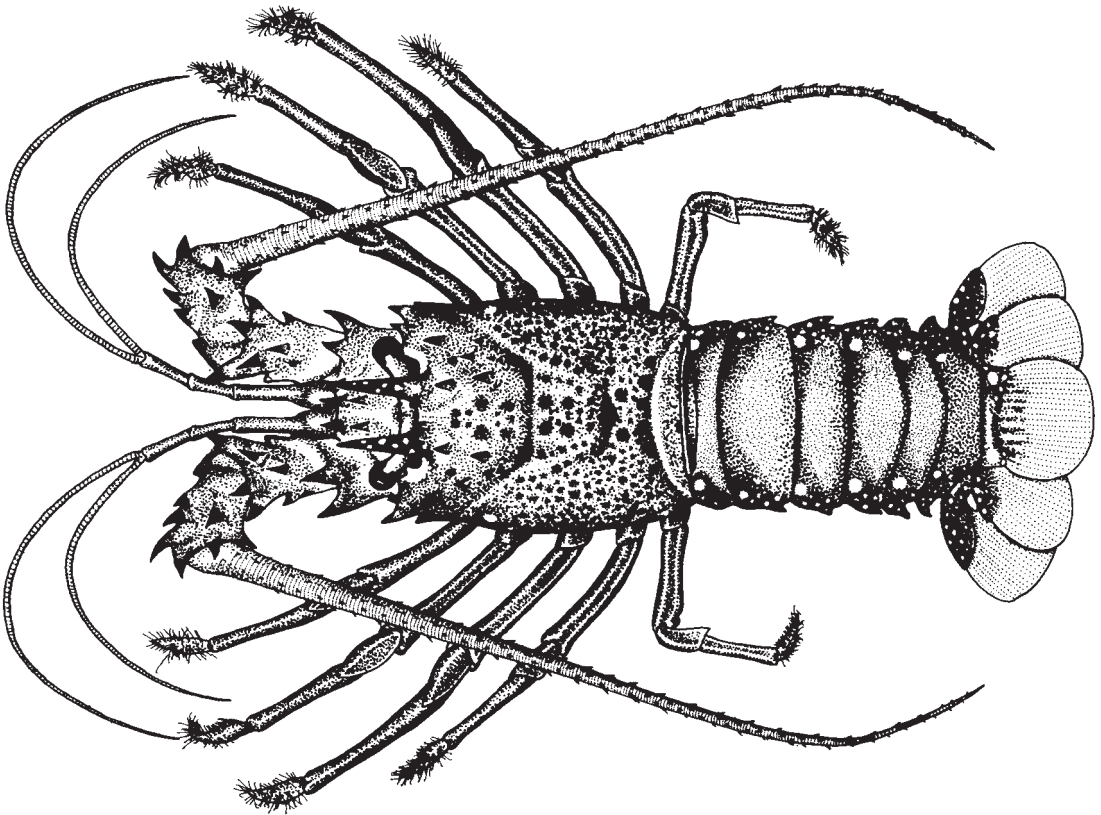
### References

- Davie, P.J.F. 1990. A new genus and species of marine crayfish, *Palibythus magnificus*, and new records of *Palinurellus* (Decapoda: Palinuridae) from the Pacific Ocean. *Invertebrate Taxonomy*, 4:685-695.
- Holthuis, L.B. 1991. FAO Species Catalogue. Vol. 13. Marine lobsters of the world. An annotated and illustrated catalogue of species of interest to fisheries known to date. *FAO Fisheries Synopsis*. 125(13):1-292.
- Manning, R.B. 1978. Lobsters. In: *FAO Species Identification Sheets for Fisheries Purposes. Western Central Atlantic (Fishing Area 31) Volume VI*, edited by W. Fischer. Rome, FAO (unpaginated).

## PALINURIDAE

### Spiny lobsters

**Diagnostic characters:** Moderate to large sized crustaceans. **Carapace (or 'head')** rounded in section (subcylindrical), without a distinct median rostrum, ornamented with spines and nodules of various sizes, sometimes (*Justitia*) with a scale-like sculpturing; **each eye protected by a strong, spiny frontal projection of the carapace (frontal horns)**. Antennae long and whip-like, antennules slender, each consisting of a segmented peduncle and 2 long or short flagella; bases of antennae separated by a broad antennular plate, usually bearing 1 or 2 pairs of spines, but spineless in some species. Tail powerful, with a well-developed fan; abdominal segments either smooth or with one or more transverse grooves. **Legs without true pincers or chelae (claws)**, the first pair usually not greatly enlarged (except *Justitia*). **Colour:** most species brightly coloured and patterned with bands or spots, others uniform, dull.

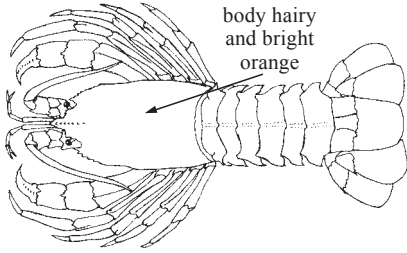


**Habitat, biology, and fisheries:** This family consists of 8 genera and 47 species worldwide. The 6 Western Central Atlantic representatives range in maximum size from 18 to 45 cm. Most are shallow-water forms (rarely extending beyond 100 m depth), living singly or in groups in coral reefs, rocky areas, or other habitats that offer protection, although 1 species, *Justitia longimanus*, is more common in deeper water, down to over 300 m. The spiny lobster fishery in Area 31 is mostly concentrated on *Panulirus argus*, while the other species are usually taken less frequently. All species are primarily caught with traps, but most are also taken by hand or by spearing. The catch of spiny lobsters reported from Area 31 in 1976 totalled 19 338 t (mostly *P. argus*).

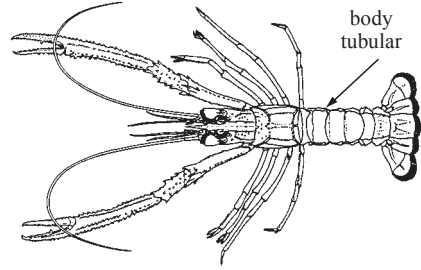
**Similar families occurring in the area**

Synaxidae (*Palinurellus gundlachi*): carapace covered with small, rounded nodules but without enlarged spines; a small median rostrum present; first pair of legs at least twice as thick as the second; entire body hairy and bright orange

Nephropidae: body tubular; a well-developed rostrum present; first 3 pairs of legs ending in true pincers, first pair much larger than the others.



Synaxidae



Nephropidae

**Key to the genera of Palinuridae occurring in the area**

- 1a. First pair of legs enlarged in males, ending in subchelae, with wide, red crossbands (Fig. 1a); carapace ornamented with a strong scale-like sculpture (Fig. 1b); abdomen brick red, with 4 or 5 conspicuous transverse grooves on each somite and with yellowish spots and stripes. . . . . *Justitia*
- 1b. First pair of legs not enlarged, with no trace of a pincer, without crossbands; carapace without a scale-like sculpture; abdomen variously coloured, smooth or with at most 2 transverse grooves per somite . . . . . → 2

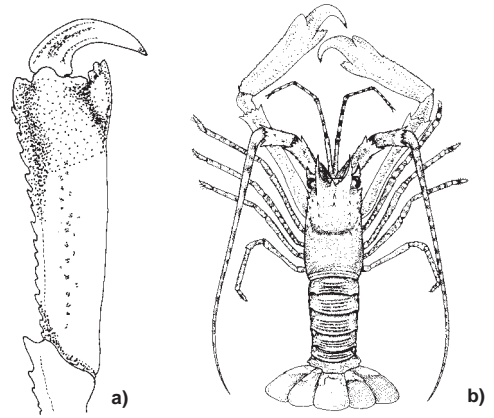


Fig. 1 *Justitia longimanus*

- 2a. Frontal horns over eyes very sharp; antennular flagella longer than peduncle (Fig. 2) . . . . *Panulirus*
- 2b. Frontal horns over eyes blunt, squarish; antennular flagella shorter than peduncle (Fig. 3) . . . . *Palinustus*

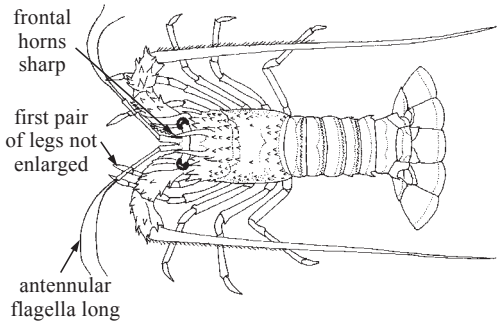


Fig. 2 *Panulirus*

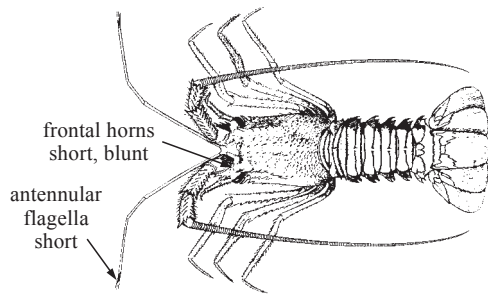
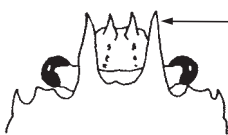









Fig. 3 *Palinustus*



### List of species occurring in the area

The symbol  is given when species accounts are included.

-  *Justitia longimanus* (H. Milne Edwards, 1837).
-  *Palinustus truncatus* A. Milne Edwards, 1880.
-  *Panulirus argus* (Latreille, 1804).
-  *Panulirus echinatus* Smith, 1869.
-  *Panulirus guttatus* (Latreille, 1804).
-  *Panulirus laevicauda* (Latreille, 1817).

### References

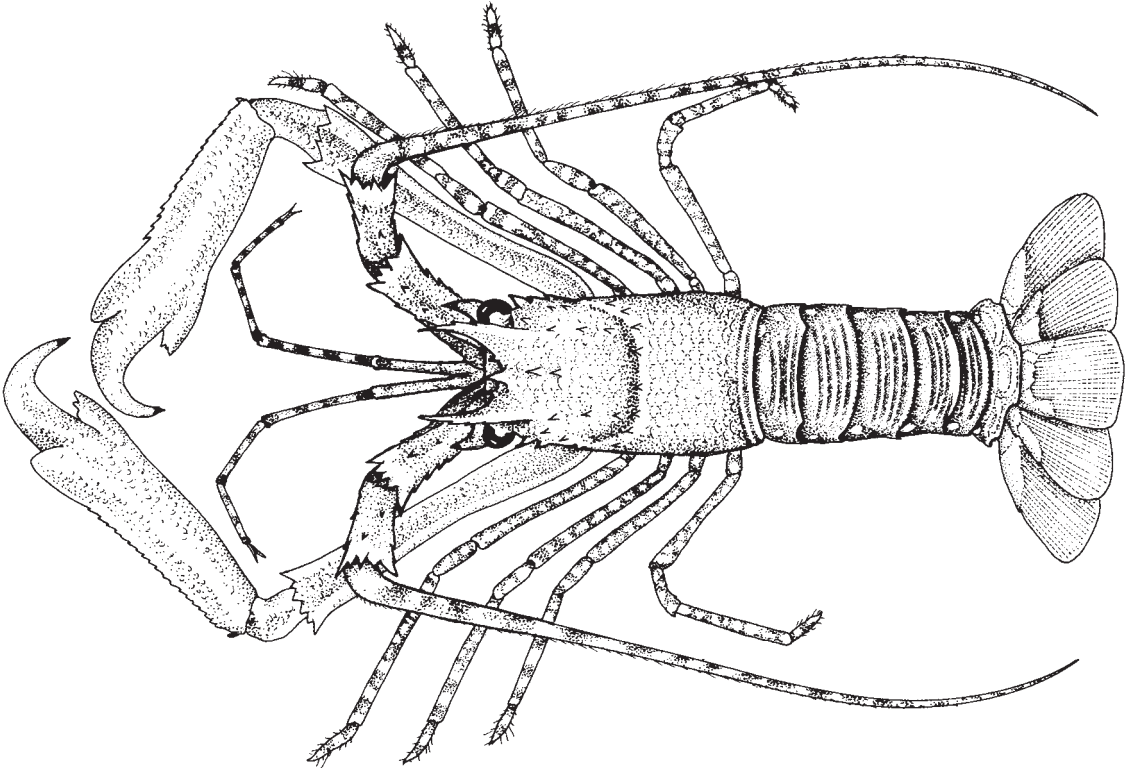
- Briones-Fourzán, P. 1994. Variability in postlarval recruitment of the spiny lobster *Panulirus argus* (Latreille, 1804) to the Mexican Caribbean coast. Proceedings of the Fourth International Workshop on Lobster Biology and Management, 1993. *Crustaceana*, 67(1):26-45.
- Field, J.M. and M.J. Butler. 1994. The influence of temperature, salinity, and postlarval transport on the distribution of juvenile spine lobsters, *Panulirus argus* (Latreille, 1804), in Florida Bay. Proceedings of the Fourth International Workshop on Lobster Biology and Management, 1993. *Crustaceana*, 67(1):26-45.
- Herrnkind, W.F. and M.J. Butler. Settlement of spiny lobster, *Panulirus argus* (Latreille, 1804) in Florida: pattern without predictability? Proceedings of the Fourth International Workshop on Lobster Biology and Management, 1993. *Crustaceana*, 67(1): 26-45.
- Holthuis, L.B. 1991. FAO Species Catalogue. Vol. 13. Marine lobsters of the world. An annotated and illustrated catalogue of species of interest to fisheries known to date. *FAO Fisheries Synopsis*. 125(13):1-292.
- Manning, R. B. 1978. Lobsters. In: *FAO Species Identification Sheets for Fisheries Purposes. Western Central Atlantic (Fishing Area 31) Volume VI*, edited by W. Fischer. Rome, FAO (unpaginated).
- Poupin, J. 1994. *Faune marine profonde des Antilles françaises. Récoltes du navire 'Polka' faites en 1993*. Paris, Études et Thèses. ORSTOM Éditions., 80 p.
- Williams, A.B. 1986. Lobsters - Identification, World Distribution, and U.S. Trade. *Mar. Fish. Rev.*, 48(2):1-36.

*Justitia longimanus* (H. Milne Edwards, 1837)

JUL

**Frequent synonyms / misidentifications:** *Justitia longimana* (H. Milne Edwards, 1837) / None.

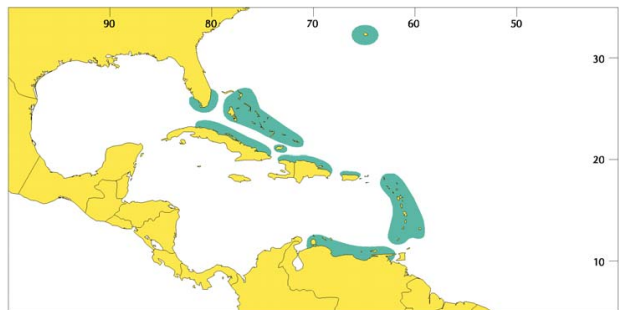
**FAO names:** **En** - West Indian furrow lobster; **Fr** - Langouste caraïbe; **Sp** - Langosta de muelas.



**Diagnostic characters:** Carapace rounded dorsally, covered with spines, including a pair of very strong frontal horns over the eyes, and **ornamented with a strong, scale-like sculpturing**; a median spine but no distinct rostrum on front margin of carapace. Antennae long, their **flagella shorter than the antennular peduncle**; base of antenna separated by broad, **spineless antennular plate**. Tail powerful, with a well-developed fan; **each abdominal segment with 4 or 5 conspicuous transverse grooves**; **first pair of legs greatly enlarged in males and ending in apparent pincers** (fixed finger very small). **Colour:** body brick red, variously spotted and striped with yellow; first pair of legs conspicuously banded with red.

**Habitat, biology, and fisheries:** Inhabits the outer parts of coral reef slopes at depths to over 300 m; often found between 50 and 100 m. In certain areas of upwelling (near Isla Margarita, Venezuela) it has been found at depths of 1 m. Not actively fished commercially in the area, probably because it is scarce in the traditional fishing grounds. With proper gear and a better knowledge of its habits and habitat, future fishery may prove feasible.

**Distribution:** Bermuda, southern Florida, Caribbean arc from Cuba to Isla Margarita (Venezuela), Curaçao, and Brazil (Rio Grande do Norte, Espírito Santo).



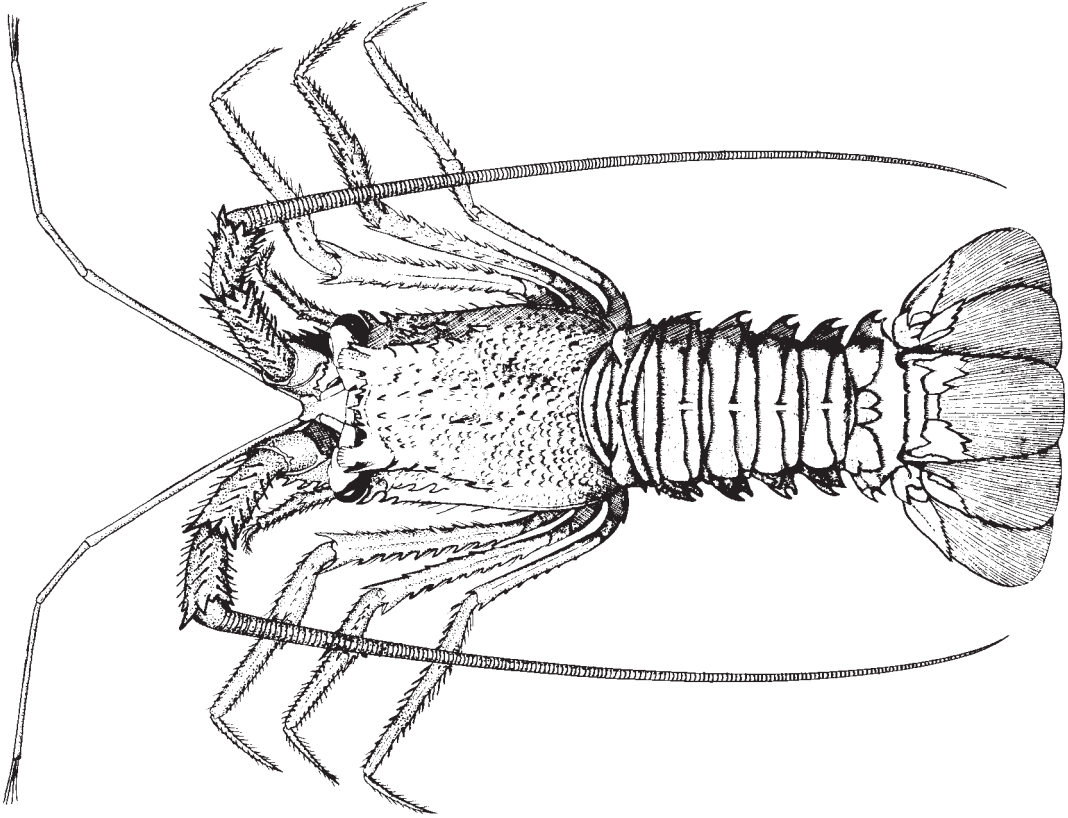


*Palinustus truncatus* A. Milne Edwards, 1880

INR

**Frequent synonyms / misidentifications:** None / None.

**FAO names:** **En** - American blunthorn lobster; **Fr** - Langouste aliousta; **Sp** - Langosta ñata.

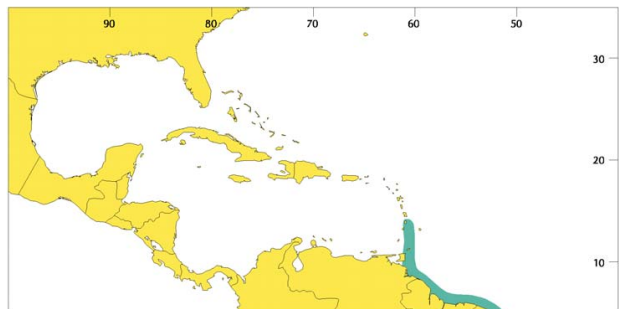


**Diagnostic characters:** Carapace rounded dorsally and covered with numerous spines and nodules of various sizes, including a pair of very strong, broad, and blunt frontal horns over the eyes; one or more spines, but no distinct median row on front margin of carapace. Antennae long, stiff, whip-like, antennules slender, their flagella much shorter than antennular peduncles; bases of antennae separated by a broad antennular plate lacking spines. Tail powerful, with a well-developed fan; each abdominal segment with a transverse groove interrupted on the midline. Legs without pincers. **Colour:** body pale brown, almost cream-coloured, with reddish brown spots that form no distinct pattern; legs cream-coloured with reddish brown hands.

**Size:** Maximum length: 100 mm.

**Habitat, biology, and fisheries:** It has been obtained from depths between 100 and 298 m. This species has also been recorded from the littoral zone and from 4 111 to 4 122 m. The bottom is variously described as brown mud and sand and coral. No fisheries interest so far as the species is apparently rare.

**Distribution:** From Carriacou Island, Lesser Antilles, to Brazil (Amapá and Pará States).

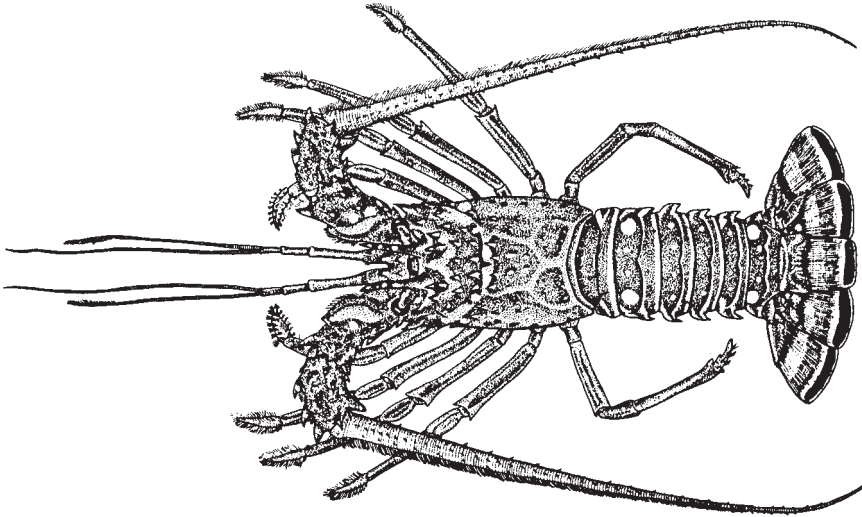


*Panulirus argus* (Latreille, 1804)

SLC

**Frequent synonyms / misidentification:** None / None.

**FAO names:** **En** - Caribbean spiny lobster; **Fr** - Langouste blanche; **Sp** - Langosta común del Caribe.

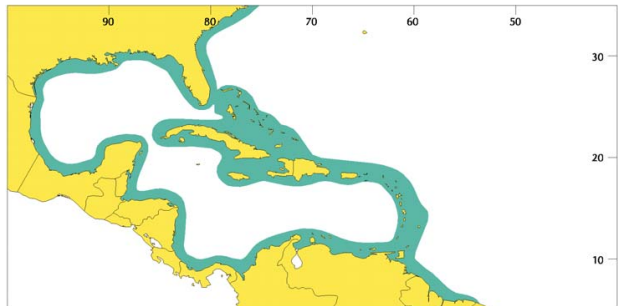


**Diagnostic characters:** Carapace rounded dorsally, covered with numerous spines and nodules of various sizes including a pair of very strong and sharp frontal horns over the eyes; no distinct median rostrum on frontal margin of carapace. Antennae long, stiff, whip-like; antennules slender, their flagella longer than the antennular peduncle; bases of antennae separated by a broad antennular plate **bearing 2 pairs of strong spines**. Tail powerful, with a well-developed fan; **each abdominal segment with a complete transverse groove**. Legs without pincers. **Colour:** variable, mottled greenish purple, also tan, brown, reddish, bluish, or greenish; **tail with 4 conspicuous yellow spots, one on each side of second and last abdominal segments**, in addition to other smaller spots and dark cross-bands; **legs with light and dark longitudinal stripes**.

**Size:** Maximum length: 450 mm; usually about 200 mm.

**Habitat, biology, and fisheries:** Usually recorded from shallow waters but may occur down to about 90 m, perhaps even deeper. Found among rocks, on reefs, in eelgrass beds, or in any habitat providing shelter. The species is gregarious and migratory. Females move to deeper water for spawning. Mass migrations have been reported in the autumn when in single files of up to 50 individuals the lobsters move in a certain direction in day-time, each animal having body contact with the next through the antennae. Of interest to fisheries: *Panulirus argus* is by far the most important commercial palinurid occurring in Area 31. The catch reported in 1976 totaled 19 338 t. From 1984 to 1998 the capture production was 330 112 t (mean capture production was 23 579 t/year); the largest landings were reported from the Bahamas (179 207 t; mean capture production: 11 947 t/year). Other *Panulirus* species probably accounted for part of the catch, but no separate statistics are collected. Outside the area this species is fished in large quantities off the northeastern Brazilian coast (capture production from 1984 through 1998: 124 790 t; mean capture production: 8 319 t/year). Caught mostly with traps, but also taken by hand, speared, and trawled. Fishing gear and catchability for the main fishing methods used in Cuba were discussed by Puga et al. (1996). Marketed fresh; tails are exported frozen or canned.

**Distribution:** Bermuda and from North Carolina southward through the Gulf of Mexico, the Antilles, and coasts of Central and South America to Brazil (from Pará to São Paulo, including the oceanic island of Fernando de Noronha). Scattered records from West Africa (Côte d'Ivoire).

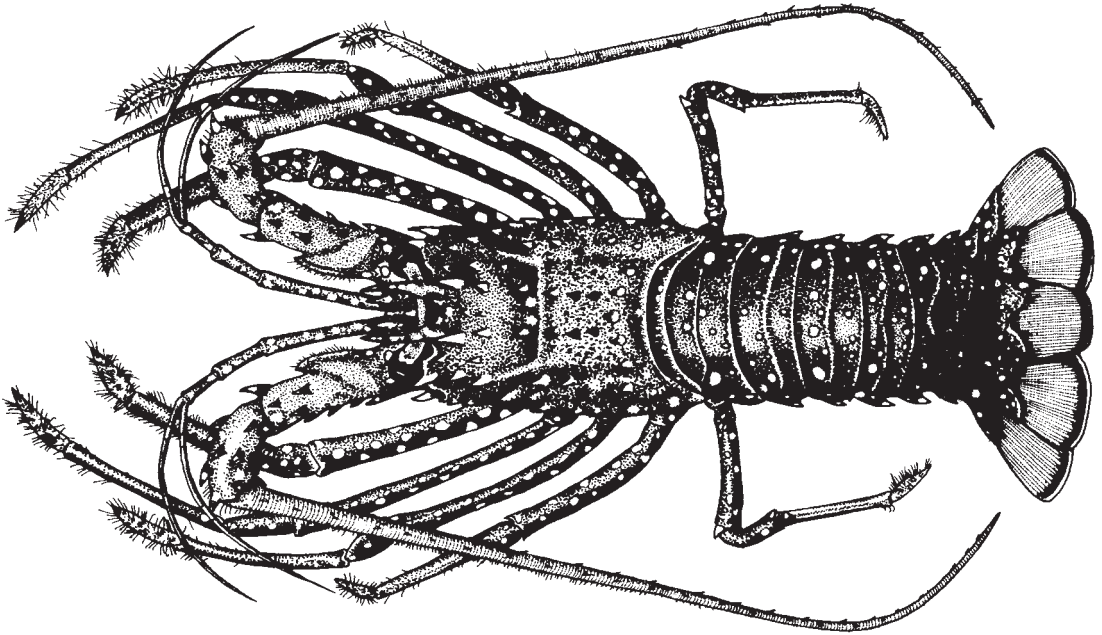


*Panulirus guttatus* (Latreille, 1804)

NLG

**Frequent synonyms / misidentifications:** None / None.

**FAO names:** **En** - Spotted spiny lobster; **Fr** - Langouste brésilienne; **Sp** - Langosta moteada.

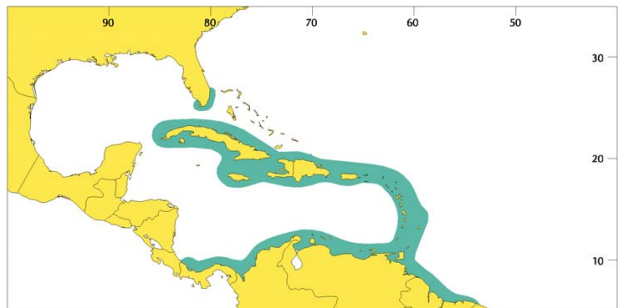


**Diagnostic characters:** Carapace rounded dorsally, covered with numerous spines and nodules of various sizes, including a pair of very strong and sharp frontal horns over eyes; no distinct median rostrum on frontal margin of carapace. Antennae long, stiff, whip-like; antennules slender, their flagella longer than antennular peduncle; bases of antennae separated by a broad antennular plate **bearing 1 pair of strong spines**. Tail powerful, with a well-developed fan; **each abdominal segment with a complete transverse groove**. Legs without pincers. **Colour:** purple or reddish brown, tail dark greenish, completely covered with small, yellowish spots; **legs spotted, except for the next to last segment which is longitudinally striped**.

**Size:** Maximum length: about 200 mm; usually 150 mm.

**Habitat, biology, and fisheries:** A shallow-water species inhabiting rocky areas, found mainly in crevices. Caught sporadically throughout its range. There is no special fishery devoted to this species. It is obtained by hand or speared; occasionally caught in traps mostly set for other species; usually taken along with *Panulirus argus*. Sold fresh and mostly used for local consumption. Separate statistics are not collected for this species.

**Distribution:** Bermuda, Bahamas, southern Florida, Belize, Panama, Caribbean arc from Cuba to Trinidad, Curaçao, Bonaire, Los Roques, Suriname, and Brazil.



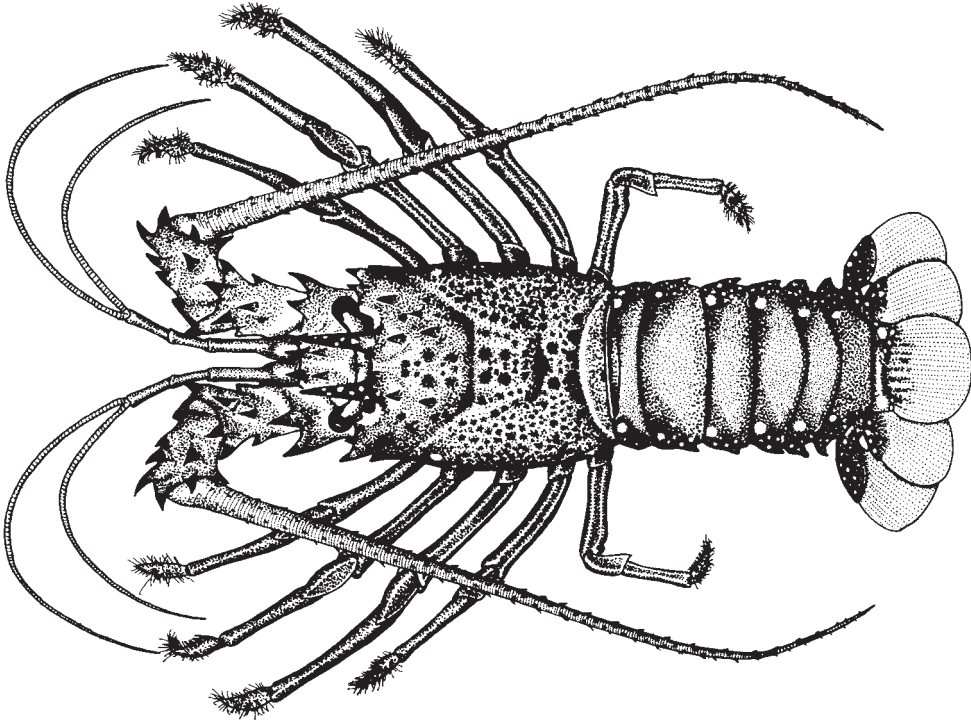


*Panulirus laeviscauda* (Latreille, 1817)

NUL

**Frequent synonyms / misidentifications:** None / None.

**FAO names:** En - Smoothtail spiny lobster; Fr - Langouste indienne; Sp - Langosta verde.

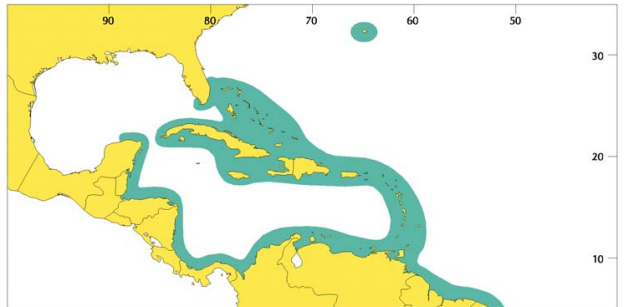


**Diagnostic characters:** Carapace rounded dorsally, covered with numerous spines and nodules of various sizes, including a pair of very strong, sharp frontal horns over eyes; no distinct median rostrum on frontal margin of carapace. Antennae long, stiff, whip-like; antennules slender, their flagella longer than antennular peduncles; bases of antennae separated by a broad antennular plate bearing 2 pairs of strong spines. Tail powerful, with a well-developed fan; **each abdominal segment smooth, without a groove.** Legs without pincers. **Colour:** variable, background greenish, yellowish, or with shades of purple; **each abdominal segment with a posterior line of small light spots;** sides of carapace and last abdominal segment with white spots; **legs longitudinally striped.**

**Size:** Maximum length: about 310 mm; usually to 200 mm.

**Habitat, biology, and fisheries:** Coastal waters down to 50 m; on rock, gravel, and coral bottoms. This species is not actively fished commercially in the area. It is taken incidentally with *Panulirus argus*. The main fishing grounds for *P. laeviscauda* are located to the south of Area 31, off the northeastern Brazilian coast. Separate statistics are not collected for this species. Caught mainly with traps; also taken by hand or with spears. Marketed fresh and frozen.

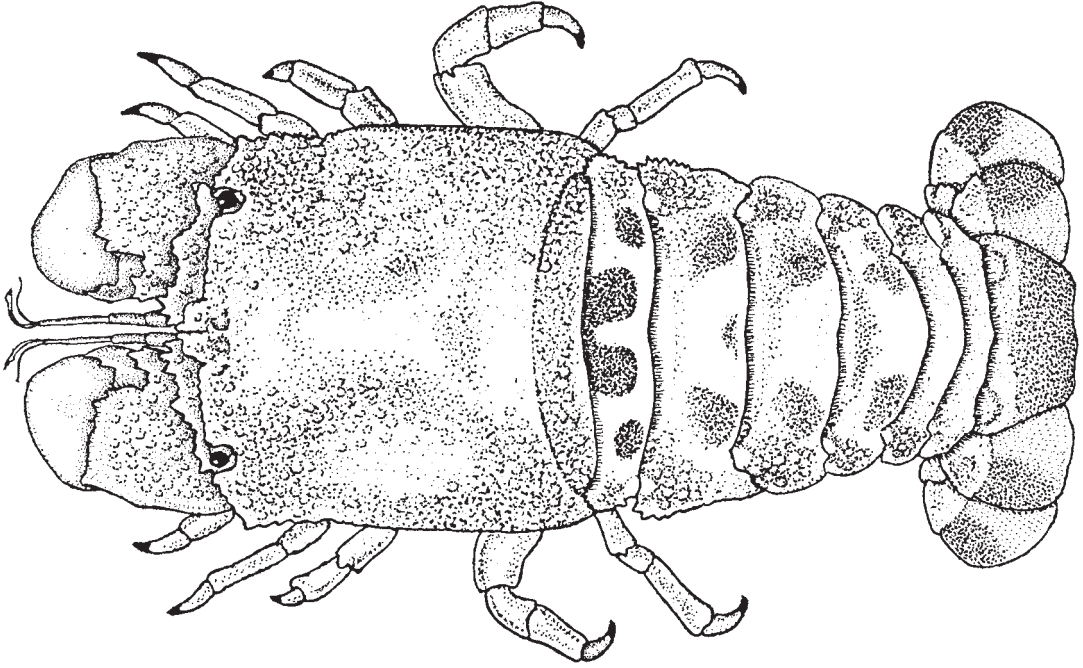
**Distribution:** From Bermuda and southern Florida to Brazil (Maranhão, Ceará, Paraíba, Pernambuco, including the oceanic island of Fernando de Noronha, and Rio de Janeiro States), including Yucatán and the Caribbean Sea.



## SCYLLARIDAE

### Slipper lobsters

**Diagnostic characters:** Small to large crustaceans. **Body more distinctly flattened than in any other group of lobsters.** Carapace (or 'head') usually granular, sometimes with blunt spines; eyes movable but recessed into anterior margins of carapace. **Antennae short and broad, scale-like, lacking long flagella;** antennules short and slender. Tail broad, powerful with a well-developed fan. **All legs without pincers, none of them enlarged.** **Colour:** usually drab, brownish; some species with bright spots anteriorly on abdomen.



**Habitat, biology, and fisheries:** This family comprises 10 species in Fishing Area 31 (7 genera and 71 species worldwide), ranging in size from 5 to 30 cm in total length, and occurring from the coastline to at least a depth of 450 m. All slipper lobsters are benthic species, many of them living on level bottoms (sand, mud, or rock) but some preferring reef areas like the spiny lobsters. There is no established fishery for any of the Western Central Atlantic species, although some of them - especially the larger *Scyllarides* species - are fished locally or caught incidental to spiny lobster fishing operations, and may hence be sporadically seen in local markets.

#### Similar families occurring in the area

No other family of lobsters has such a flattened body or scale-like antennae without flagella.

**Key to the genera of Scyllaridae occurring in the area**

(adapted from Holthuis, 1991)

- 1a. Exopod of third and first maxilliped without a flagellum; the flagellum of the second maxilliped transformed to a single laminate segment (Fig. 1) . . . . . *Scyllarus*
- 1b. Exopods of all maxillipeds with a multiarticulate flagellum . . . . . → 2

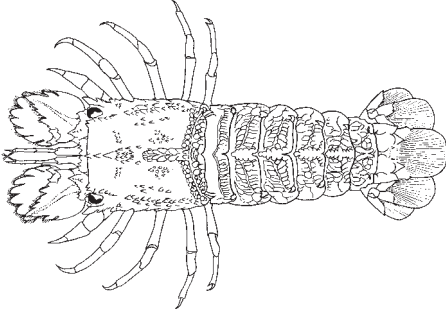


Fig. 1 *Scyllarus*

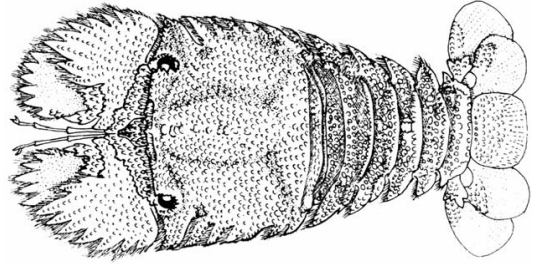


Fig. 2 *Parribacus*

- 2a. Carapace strongly depressed, with a deep cervical incision in the lateral margin; mandible with a simple or 2-segmented palp (Fig. 2) . . . . . *Parribacus*
- 2b. Carapace rather highly vaulted, with a small, shallow cervical incision, which may be lacking altogether; mandible with a 3-segmented palp . . . . . → 3
- 3a. First abdominal somite without a transverse groove dorsally; it is smooth on first abdominal somite and shows a pattern of coloured spots; carapace without postorbital spine; apart from a median ridge, the abdomen shows no dorsal sculpturation (Fig. 3) . . . . . *Scyllarides*
- 3b. First abdominal somite with a distinct transverse groove dorsally; carapace with postorbital spine; abdominal somites with a distinct sculpturation on either side of the median line (Fig. 4) . . . . . *Arctides*

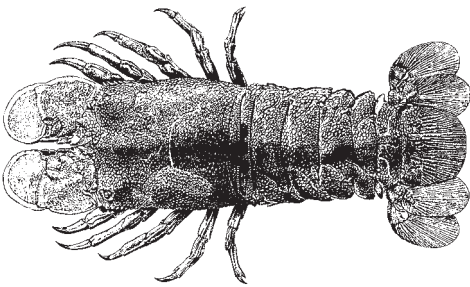


Fig. 3 *Scyllarides*

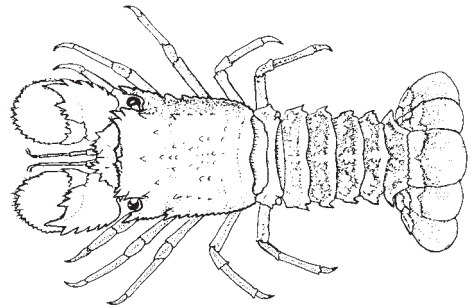


Fig. 4 *Arctides*

**List of species occurring in the area**

The symbol is given when species accounts are included.

*Arctides guineensis* (Spengler, 1799).

*Parribacus antarcticus* (Lund, 1793).

*Scyllarides aequinotialis* (Lund, 1793).

*Scyllarides brasiliensis* Rathbun, 1906.

*Scyllarides deceptor* Holthuis, 1963.

*Scyllarides delfosi* Holthuis, 1960.

*Scyllarides nodifer* (Stimpson, 1866).

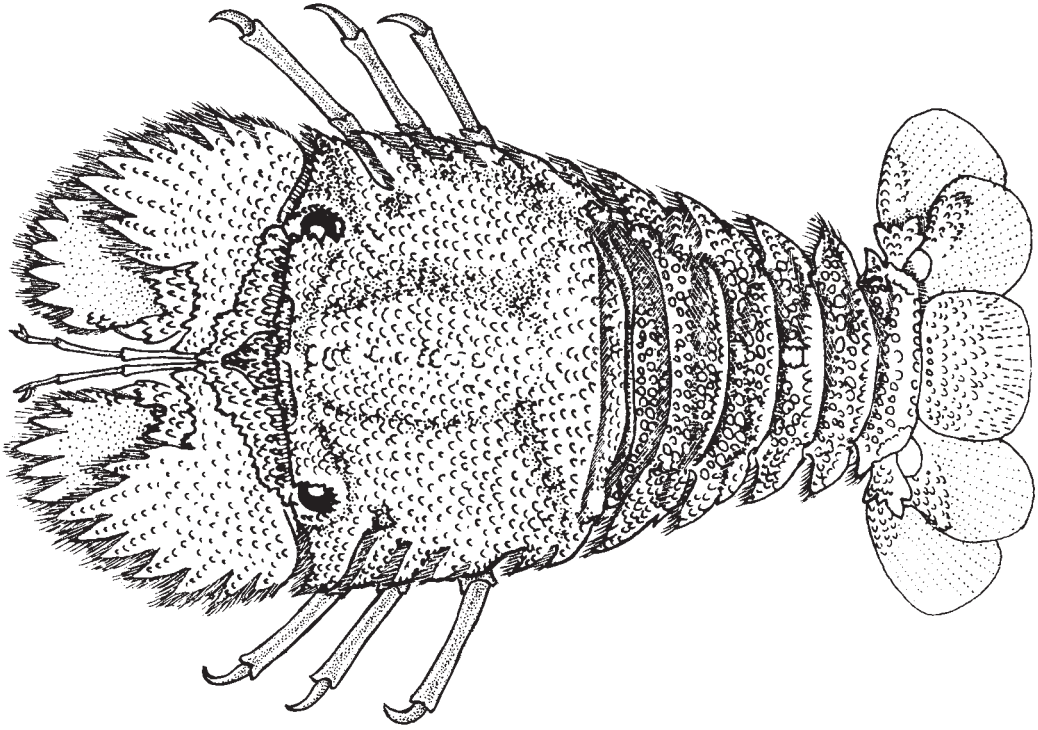
*Scyllarus americanus* (S.I. Smith, 1869).  
*Scyllarus chacei* Holthuis, 1960.  
*Scyllarus depressus* (S.I. Smith, 1881).  
*Scyllarus faxoni* Bouvier, 1917.  
*Scyllarus planorbis* Holthuis, 1969.

## References

- Holthuis, L.B. 1991. FAO Species Catalogue. Vol. 13. Marine lobsters of the world. An annotated and illustrated catalogue of species of interest to fisheries known to date. *FAO Fisheries Synopsis*, 125(13):1-292.
- Lyons, W.G. 1970. Scyllarid lobsters (Crustacea, Decapoda). *Mem. Hour. Cruises*, 1(4):1-74.
- Manning, R.B. 1978. Lobsters. In: *FAO Species Identification Sheets for Fisheries Purposes. Western Central Atlantic (Fishing Area 31) Volume VI*, edited by W. Fischer. Rome, FAO (unpaginated).
- Williams, A.B. 1984. *Shrimps, lobsters, and crabs of the Atlantic coast of the Eastern United States, Maine to Florida*. Smithsonian Institution Press, 550 p.
- Williams, A.B. 1986. Lobsters – Identification, World Distribution, and U.S. Trade. *Mar. Fish. Rev.*, 48(2):1-36.

***Parribacus antarcticus*** (Lund, 1793)

RRN

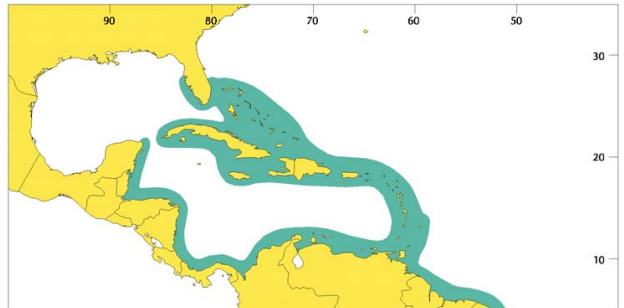
**Frequent synonyms / misidentifications:** None / None.**FAO names:** En - Sculptured mitten lobster; Fr - Cigale savate; Sp - Cigarra chinesa.

**Diagnostic characters:** Body very strongly flattened with pebble-like and scale-like sculpture on surface. Carapace broader than long, its sides very thin and cut into large, flattened, tooth-like triangular projections. Antennae short and broad, scale-like, lacking flagella, their anterior margins cut into moderately large teeth; antennules short and slender. Tail broad, powerful, with a well-developed fan. All legs without pinners, none of them enlarged. **Colour:** dorsal surface tan, extensively marbled with dark purplish grey. A broad pale band extends over the median region of the abdomen. The underside is of a plain, pale yellowish brown colour.

**Size:** Maximum length about 200 mm.

**Habitat, biology, and fisheries:** Shallow waters between 0 and 20 m; in coral and stone reefs with sandy bottoms. It has been reported that it is a nocturnal species hiding in crevices during the daytime, sometimes in small groups. Esteemed for food throughout its range but there is no organized fishery at present. Obtained with dipnets, by hand, or speared. Marketed fresh or cooked and used for local consumption. Separate statistics are not collected for this species.

**Distribution:** Western Atlantic: from southern Florida through the West Indies and along the northeastern coast of South America to Brazil (Ceará; Rio Grande do Norte; Pernambuco, including the oceanic island of Fernando de Noronha; Alagoas; and Espírito Santo States). Indo-West Pacific: from East Africa to Hawaii and Polynesia.



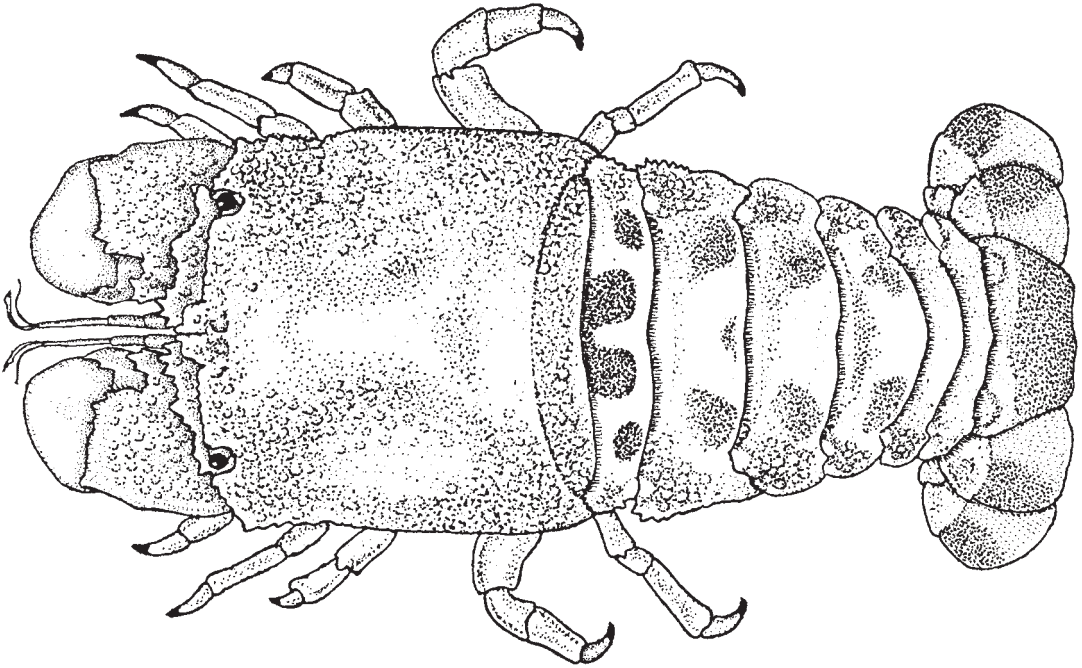


*Scyllarides aequinoctialis* (Lund, 1793)

YLA

**Frequent synonyms / misidentifications:** None / None.

**FAO names:** **En** - Spanish slipper lobster; **Fr** - Cigale marie-carogne; **Sp** - Cigarro español.

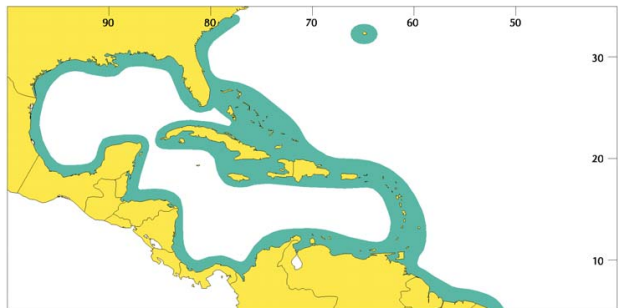


**Diagnostic characters:** Body flattened, **dorsal surface evenly rounded, relatively smooth**, appearing pebbled. **Carapace longer than broad, its lateral margins smooth or finely denticulate. Antennae** short and broad, scale-like, lacking flagella, their **front edges smooth and entire**; antennules short and slender. Tail broad, powerful, with a well-developed fan. All legs without pincers, none of them enlarged. **Colour:** reddish orange to tan or brown, usually variously marked with red, duller in large specimens; **4 conspicuous red spots on first abdominal segment, the inner 2 largest and joined anteriorly**; legs yellowish brown with brownish red spots.

**Size:** Maximum length: over 300 mm.

**Habitat, biology, and fisheries:** Usually found in shallow water from 0.6 to 64 m, inhabiting among rocks, on reefs, on sand, or in any habitat that affords concealment (they bury themselves in the sand). It has been recorded as deep as 180 m. Used for food almost throughout its range. May be common in certain markets but is not of great economic importance. Separate statistics are not collected for this species. Caught mainly with traps set for other species, but also with gill nets and seines. Sold fresh.

**Distribution:** From South Carolina, Bermuda, eastern coast of Florida, and Florida Keys, through the West Indies to Brazil.

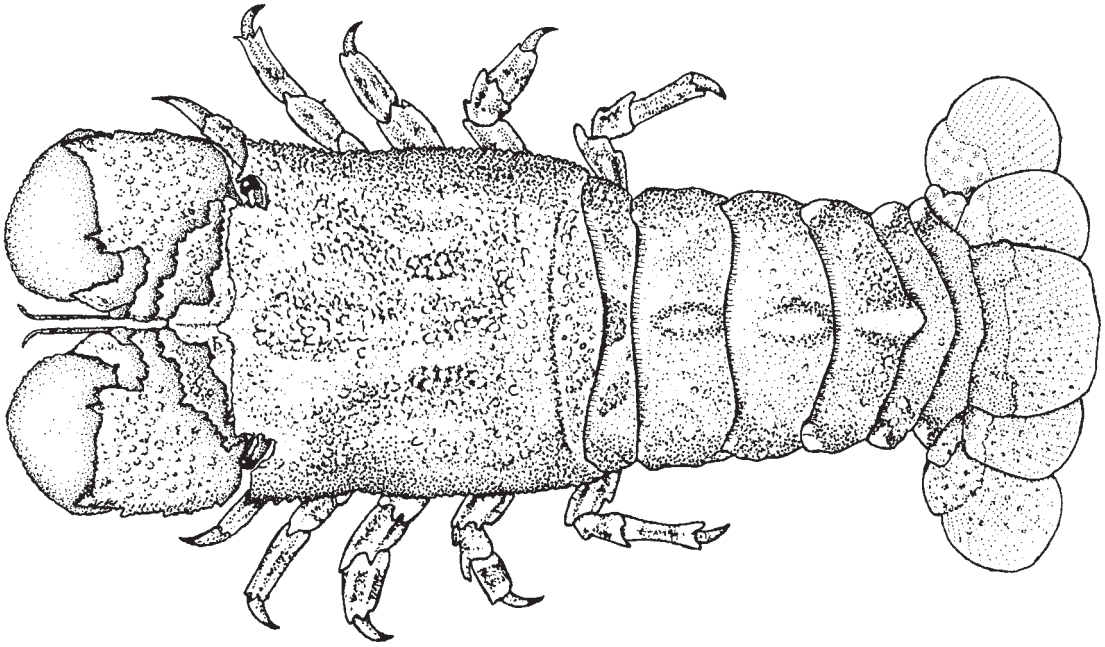


*Scyllarides nodifer* (Stimpson, 1866)

YLO

**Frequent synonyms / misidentifications:** None / None.

**FAO names:** **En** - Ridged slipper lobster; **Fr** - Cigale chambrée; **Sp** - Cigarro de quilla.



**Diagnostic characters:** Body flattened, with pebble-like sculpture and a **broad, low median longitudinal ridge**. Carapace longer than broad, its lateral margins smooth or finely denticulate. Antennae short and broad, scale-like, lacking flagella, their **front edges smooth and entire**; antennules short and slender. Tail broad, powerful, with a well-developed fan. All legs without pincers, none of them enlarged. **Colour:** variable, background tan, yellow-brown, or orange, with red tubercles and reddish spots of varying size; **1 large red spot on middle of first abdominal segment, with a smaller spot on each side, legs conspicuously banded with red.**

**Size:** Maximum length about 300 mm.

**Habitat, biology, and fisheries:** Inhabiting shelf waters to depths of about 100 m, on shell, mud, sand, or coral bottoms. Minor; no special fishery exists for this species. Used for food or bait. May be taken in trapping operations set for other species. Separate statistics are not reported for this species. Sold fresh.

**Distribution:** Bermuda, North Carolina to Florida, entire Gulf of Mexico to Yucatán.

