

Habitat and Biology : Inhabits shallow waters, between 1 and 15 m depth on rocky bottoms.

Size : Maximum total body length 30 cm; common length up to 25 cm.

Interest to Fisheries : *Panulirus japonicus* is fished for commercially in Japan. Longhurst (1970:286) reported the total annual catch of spiny lobsters in Japan to amount to 1 600 tons; by far the larger part of this is made up by the present species. The lobsters in Japan are sold fresh and frozen. The FAO Yearbook of Fishery Statistics reports for Japan no catches of *P. japonicus*, but only for *P. longipes*, viz. 1083 tons for 1987, 969 tons for 1988. However, as *P. longipes* is much less abundant than *P. japonicus*, it is likely that these figures actually correspond to *P. japonicus*, or to a combination of all Japanese spiny lobsters. In Taiwan, the species is found in markets throughout the year, but mostly so from March to October (Chang, 1965:41).

Local Names : JAPAN: Ise-ebi (official name), Japanese crayfish, No-ebi (for old specimens).

Literature : George & Holthuis, 1965:8-14, text-fig. 1a, pl. 1.

Panulirus laevicauda (Latreille, 1817)

Fig. 275

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Panulirus laevicauda Latreille, 1817, Nouveau Dictionnaire d'Histoire naturelle, (ed. 2) 17:295.

Synonyms: *Senex laevicauda* - Von Ihering, 1897.

FAO Names : **En** - Smoothtail spiny lobster; **Fr** - Langouste indienne; **Sp** - Langosta Verde.

Type : Type locality: "M. Delalande fils l'a trouvé sur les côtes du Bresil": Pierre Antoine Delalande (1787-1828) arrived from France in Rio de Janeiro, Brazil on 1 June 1816, "He returned to France after a short voyage through the Province of Rio de Janeiro, carrying the collections obtained" (Papavero, 1971, pp.115, 116). The type locality thus may be restricted to Rio de Janeiro, Brazil. Type material in MP; no longer extant in 1989.

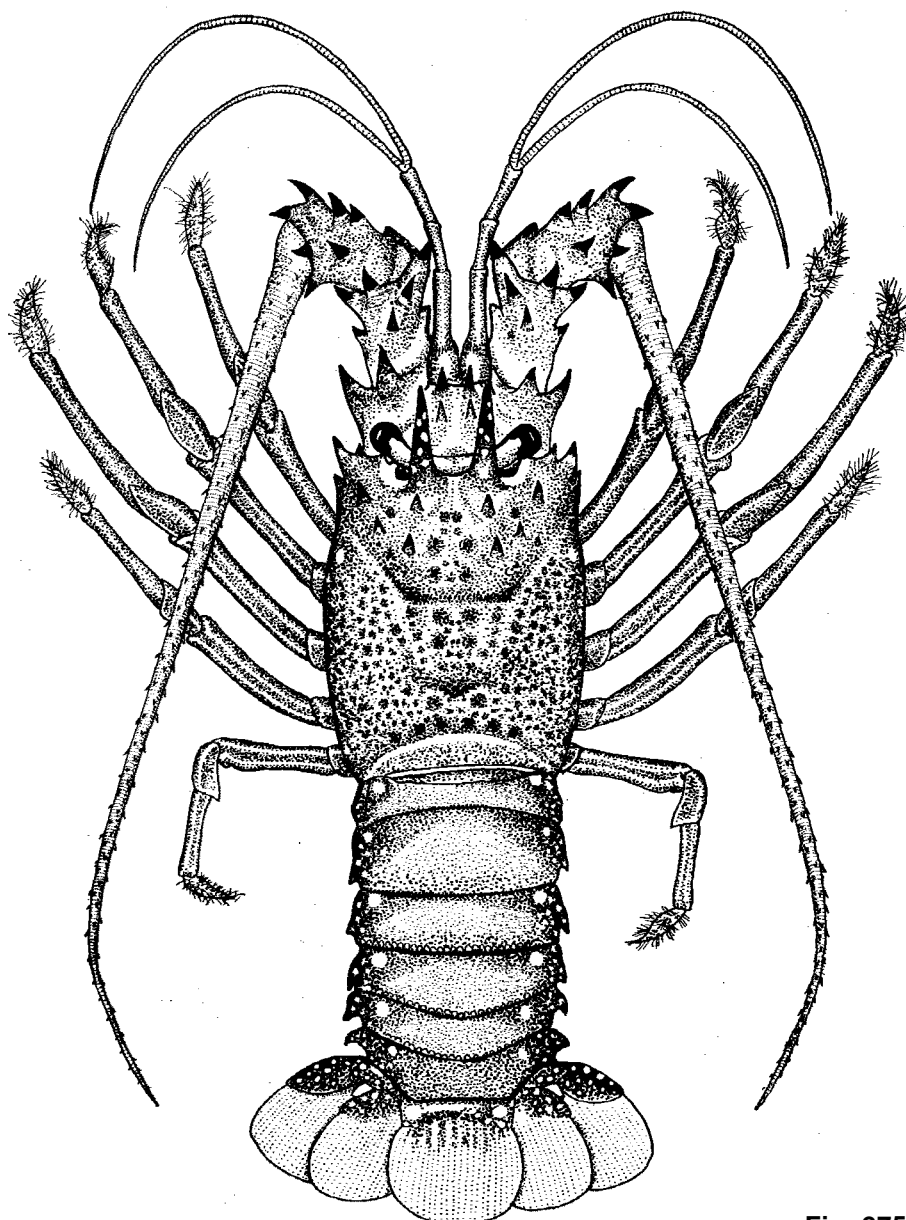


Fig. 275

Geographical Distribution : Western Atlantic: Bermuda and Florida to E. Brazil, including Yucatan and the Caribbean Sea (Fig. 276).

Habitat and Biology : Coastal waters, down to 50 m depth; substrate: rock or coral.

Size : Maximum total body length about 31 cm, common to 20 cm.

Interest to Fisheries : The species is caught throughout its range, but there is no special commercial fishery for it. Sometimes it is taken together with *Panulirus argus*. The yield of its fishery seems to be largest in Brazil.

Local Names : BERMUDA: Smooth-tailed spiny lobster; BRAZIL: Lagosta cabo Verde; MARTINIQUE: Grosses bresiliennes (for large specimens), Homard d'indien; USA: Brazilian lobster, Smooth-tailed crawfish.

Literature : Fischer (ed.), 1978: vol. 6; Williams, 1986:22, figs 52, 79 n-o.

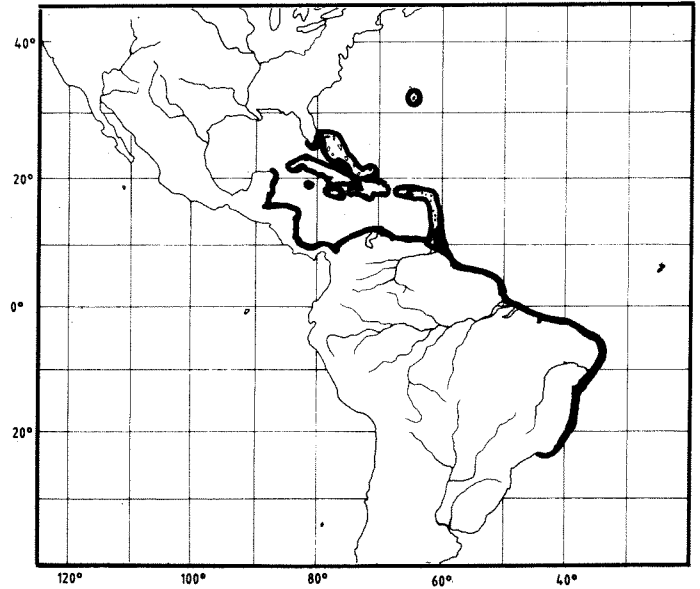


Fig. 276

Palinurus longipes (A. Milne Edwards, 1868)

Fig. 277

PALIN Panul 7

Palinurus longipes A. Milne Edwards, 1868, *Nouvelles Archives Museum Histoire Naturelle*, Paris, 4:87, pl. 21.

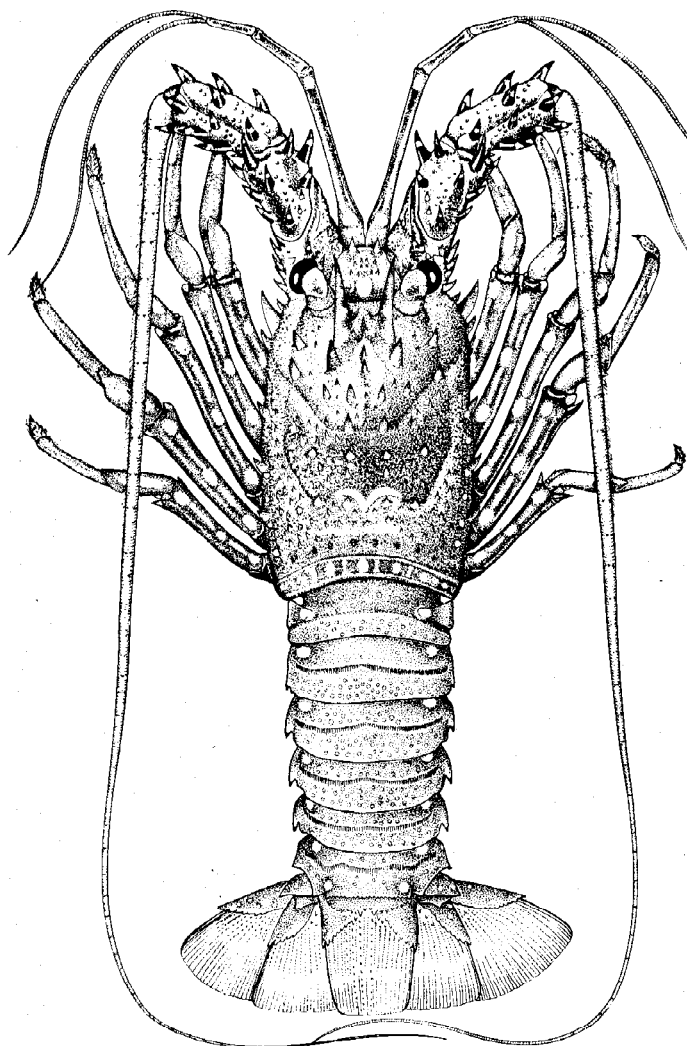
Synonyms: *Palinurus femoristriga* Von Martens, 1872; *Palinurus longitarsus* Lenz & Richters, 1881 (erroneous spelling of *P. longipes*); *Senex femoristriga* - Ortmann, 1891; *Panulirus bispinosus* Borradaile, 1899; *Panulirus japonicus longipes* - De Man, 1916.

FAO Names: **En** - Longlegged spiny lobster; **Fr** - Langouste diablotin; **Sp** - Langosta duende.

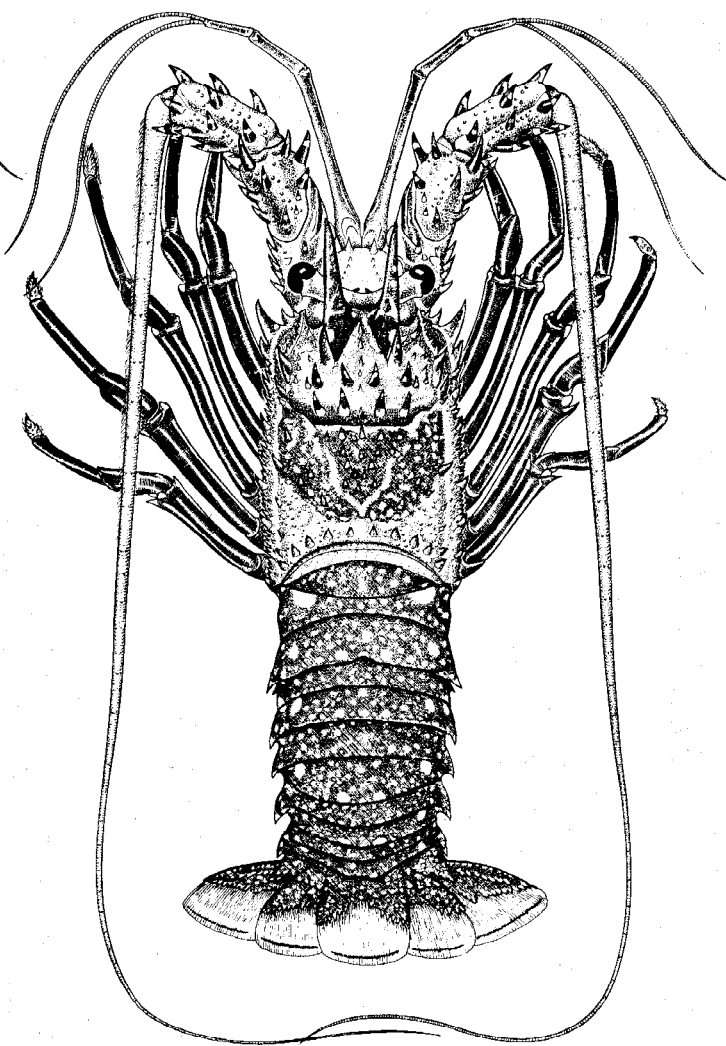
Type : Type locality of *P. longipes*: "trouvée sur les côtes de l'île Zanzibar", through the lectotype selection by George & Holthuis (1965:25); the paralectotype came from "Maurice" (=Mauritius). Type material in MP, no longer extant in 1989.

Type locality of *P. femoristriga*: "Amboina", Moluccas, Indonesia. Holotype (or lectotype) female in ZMB, no. 1333, preserved in alcohol; could not be located in 1989.

Type locality of *P. bispinosus*: "Sandal Bay, Lifu, Loyalty Islands". Holotype male, ZMC, in alcohol, condition good.



a. *P. longipes longipes*



b. *P. longipes femoristriga* (after George & Holthuis, 1965) Fig. 277

Geographical Distribution : Indo-West Pacific region: East Africa to Japan and Polynesia. Two subspecies can be recognized: *P. l. longipes* (Fig. 277a) is the western form occurring from East Africa to Thailand, Taiwan, the Philippines and Indonesia and the eastern subspecies *P.l. femoristriga* (Fig. 277b) inhabiting Japan, the Moluccas, New Guinea, eastern Australia, New Caledonia and Polynesia (Fig. 278). Intermediate forms have been observed, especially in the area of overlap between the two ranges.

Habitat and Biology : The species lives in clear or slightly turbid water at depths of 1 to 18 m (also reported from 122 m), in rocky areas and coral reefs. The animals are nocturnal and not gregarious.

Size : Maximum total body length 30 cm, average length 20 to 25 cm. Maximum carapace length 12 cm, average carapace length 8 to 10 cm. The smallest ovigerous female has a total length of 14 cm.

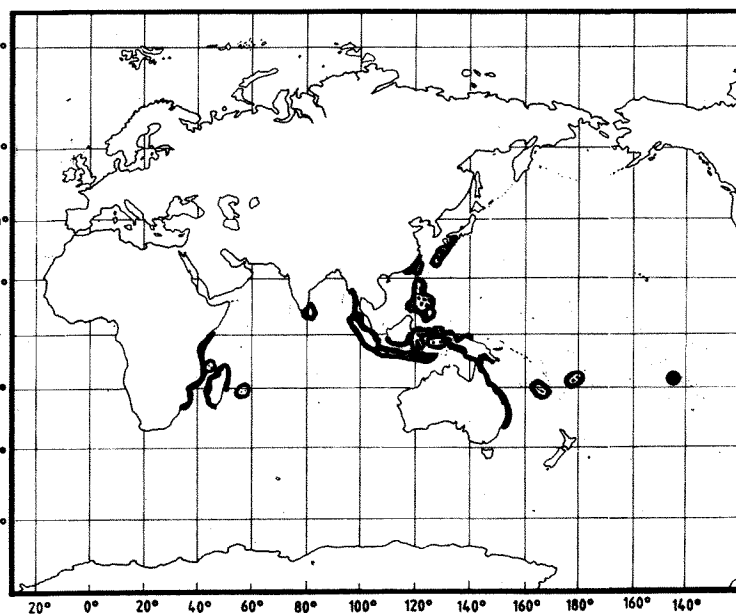


Fig. 278

Interest to Fisheries : The species is caught throughout its range, mostly by hand when diving or with spears, also with traps, tangle nets and lobster pots. In Taiwan it is also known to be taken as by-catch by trawls. Fishing is of local interest only. The animals are sold fresh in the markets and directly to restaurants. The FAO Yearbook of Fishery Statistics reports for this species catches in Japan of 1083 tons in 1987 and 969 tons in 1988. As *P. longipes* is not particularly common in Japan, and as *P. japonicus* was not listed in those statistics it is likely that the figures refer to the latter species or to both.

Local Names : AUSTRALIA: Blue spot rock lobster, Coral crayfish, Painted crayfish, Red cray, Tropical rock lobster, Tropical spiny lobster; White whiskered rock lobster; JAPAN: Kanoko ise-ebi; MOZAMBIQUE: Lagosta de coral; NEW CALEDONIA: Langouste rouge; PHILIPPINES: Banagan (also used for other spiny lobster species), Coral crayfish, Marine crayfish, Marine rock lobster, Tropical rock lobster, Tropical spiny lobster; SOUTH AFRICA: Long-legged crayfish; THAILAND: Kung mangkon (also used for other species of spiny lobster); TUVALU: Oula.

Literature : George & Holthuis, 1965:21-28, text-fig. 1e, pl. 5, Fischer & Bianchi (eds), 1984:vol. 5; Williams, 1986:20, figs 46,79 f-g

Panulirus marginatus (Quoy & Gaimard, 1825)

Fig. 279

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Panulirus marginatus Quoy & Gaimard, 1825, in L. de Freycinet, *Voyage autour du monde sur les corvettes l'Uranie et la Physicienne*, Zool.:537, pl. 81.

FAO Names : En - Banded spiny lobster; Fr - Langouste bordée.

Type : Type locality: "Iles Sandwich" (= Hawaiian islands). Type material no longer extant in MP in 1989.



abdominal somites (lateral view)
(from George & Holthuis, 1965)

Geographical Distribution : Only known from the Hawaiian Islands, including Pearl and Hermes Reef, and Laysan Island (Fig. 280).

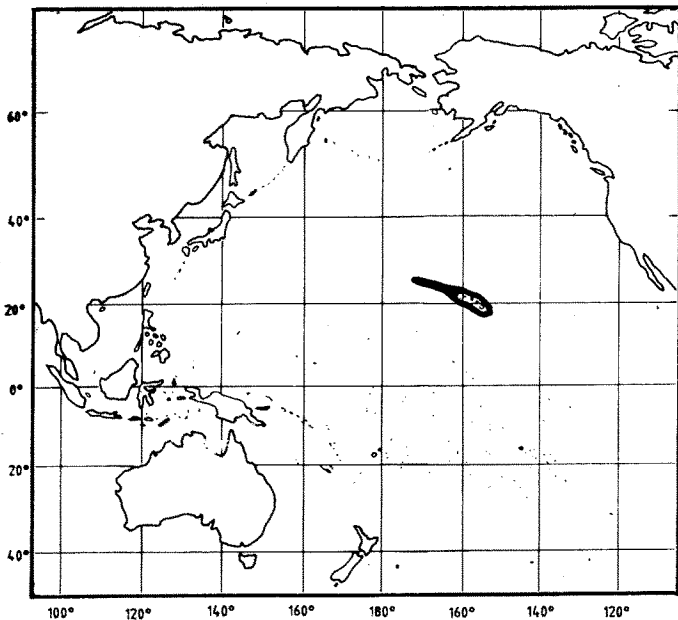
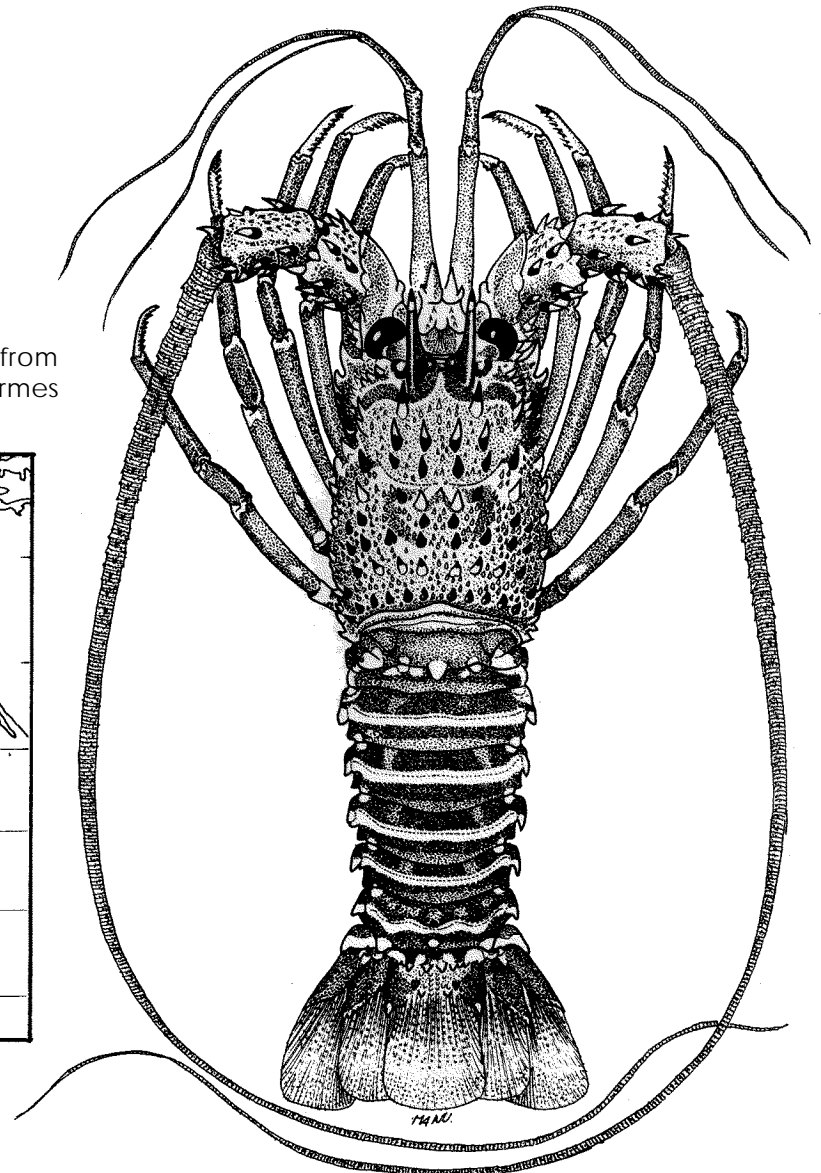


Fig. 280



(after George & Holthuis, 1965)

Fig. 279

Habitat and Biology : The species has been reported from depths down to 143 m, but usually in shallow water, in well protected places on a rocky substrate, under rocks and in rock crevices. The animals are nocturnal.

Size : Total body length to 40 cm, carapace length to 12 cm.

Interest to Fisheries : Used as food throughout its range. Fished with traps or nets. Also taken by hand, in daytime by diving, at night with lights and spears. Sold fresh in local markets. The 1971 USA fishery statistics indicate a total of 5 725 pounds (= 2 600 kg) of lobsters caught in the Hawaiian Islands, of which 5 371 pounds in Oahu, 263 pounds in Maui, 70 pounds in Hawaii and 21 pounds in Lanai. Of these slightly more were caught in gill nets (3 253 pounds) than in traps (2 113 pounds) and 339 pounds were registered as fished by hand. These figures include the catches of *P. penicillatus*.

Local Names : HAWAII: Ula (general name for spiny lobsters).

Literature : George & Holthuis, 1965: 14-17, text-fig 1 b, pl. 2; Williams, 1986:20, figs 45,79 d-e.

Panulirus ornatus (Fabricius, 1798)

Fig. 281

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Panulirus ornatus Fabricius, 1798, Supplementum Entomologiae systematicae:400.

Synonyms: *Palinurus sulcatus* H. Milne Edwards, 1837; *Panulirus sulcatus* - White, 1847; *Palinurus (Senex) sulcatus* - Pfeffer, 1881; *Senex ornatus* - Lanchester, 1900.

FAO Names : En - Ornate spiny lobster; Fr - Langouste ornée; Sp - Langosta ornamentada.

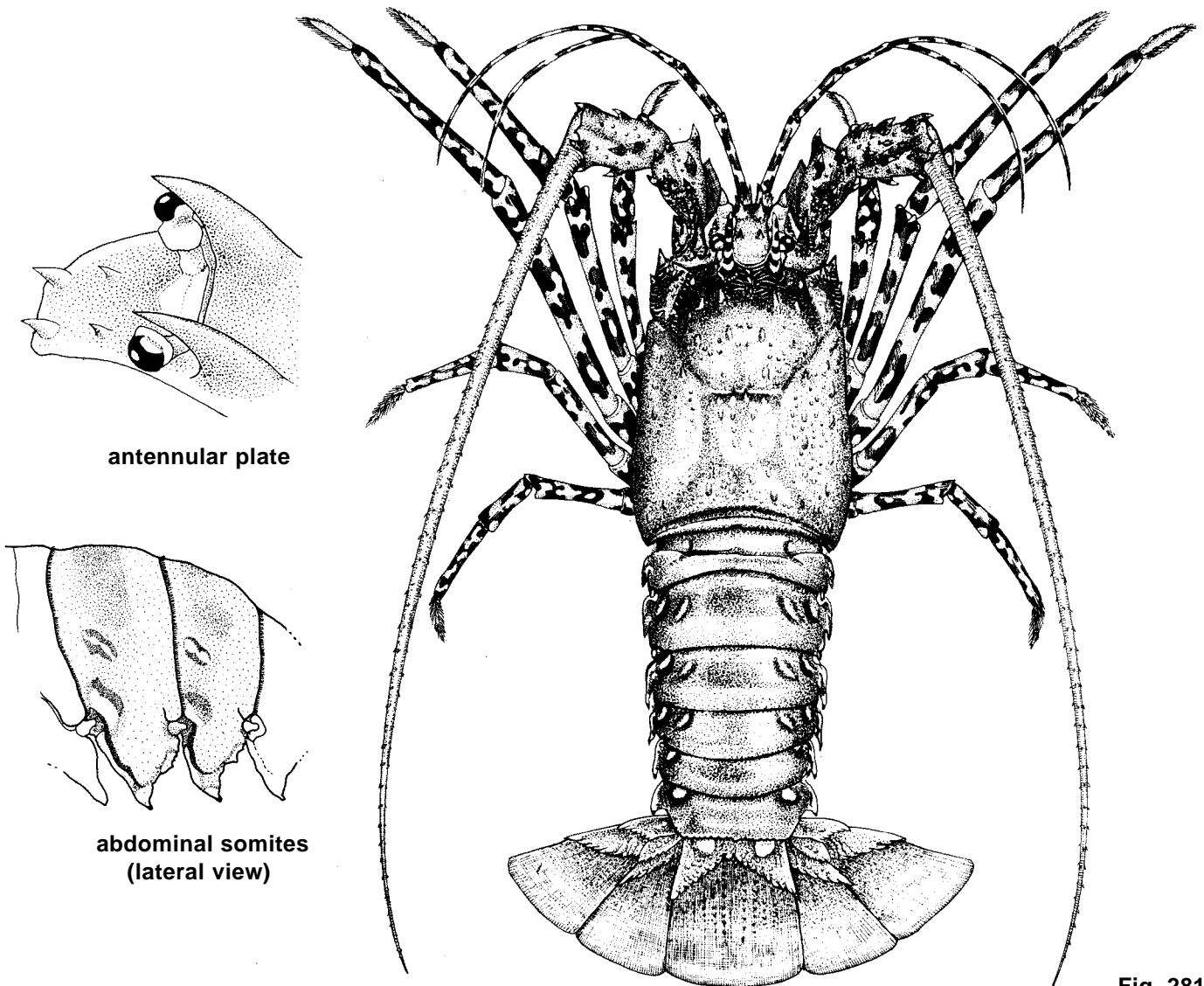


Fig. 281

Type : Type locality of *P. ornatus*: "in Oceano Indico. Dom. Daldorff". I.K. Daldorff, a Danish officer, was stationed from 1790 to 1793 in Tranquebar, SE. India (11°02'N, 79°51'E) in which area he collected; he did not return to India until 1798. His material is from Tranquebar or the nearby region, which may be considered the restricted type locality. Lectotype in UZM, originally preserved dry, recently transferred to alcohol, condition reasonable.

Type locality of *P. sulcatus*: "Habite les côtes de l'Inde". presumed type specimen in MP, no. Pa 448; a dry specimen in reasonable condition labelled "*Palinurus sulcatus* Lmk. Indes".

Geographical Distribution : Indo-West Pacific region from the Red Sea and East Africa (south to Natal) to southern Japan, the Solomon Islands, Papua New Guinea, SW., W., N., N.E. and E. Australia, New Caledonia and Fiji. Recently (1988) a specimen was found on the coast of Israel in the E. Mediterranean (Fig. 282).

Habitat and Biology : In shallow, sometimes slightly turbid coastal waters, from 1 to 8 m depth, with a few records from depths as great as 50 m. On sandy and muddy substrates, sometimes on rocky bottom, often near the mouths of rivers, but also on coral reefs. The species has been reported as solitary or as living in pairs, but has also been found in larger concentrations.

Size : This is one of the largest of the *Panulirus* species and can attain a total body length of about 50 cm, but usually is much smaller (30 to 35 cm).

Interest to Fisheries : *Panulirus ornatus* is fished for throughout its range, but in most places only on a small scale. Taken mostly by hand by divers, or speared. Handnets are used also, but traps prove to be ineffective. Sold mostly fresh or frozen in local markets. In the Philippines a minor export activity has developed. In Australia a commercial fishery was developed since about 1966, it uses freezing installations ashore, as well as freezer boats; these operations cover the Torres Strait area, as well as N.E. Queensland, with an annual catch of over 120 tons tail weight around 1986 (Channells et al., 1987). Mounted dry specimens (sometimes in glass cases) are sold to tourists in several areas (e.g., in Thailand).

Local Names : AUSTRALIA: Coral crayfish, Ornate rock lobster, Painted cray, Tropical rock lobster; FIJI: Coral crayfish, Ornate rock lobster, Painted crayfish, Tropical rock lobster, Uraubola, Urautamata; JAPAN: Nishi ki-ebi; MOZAMBIQUE: Lagosta ornamentada; NEW CALEDONIA: Grosse langouste porcelaine; PAKISTAN: Kikat (Sindhi), Kikka (Baluchi); PHILIPPINES: Banagan; SOUTH AFRICA: Ornate crayfish, Ornate spiny lobster; THAILAND: Kung mangkon.

Literature : Fischer & Bianchi (eds), 1984:vol. 5; Williams, 1986:22, figs 51,79 I-m.

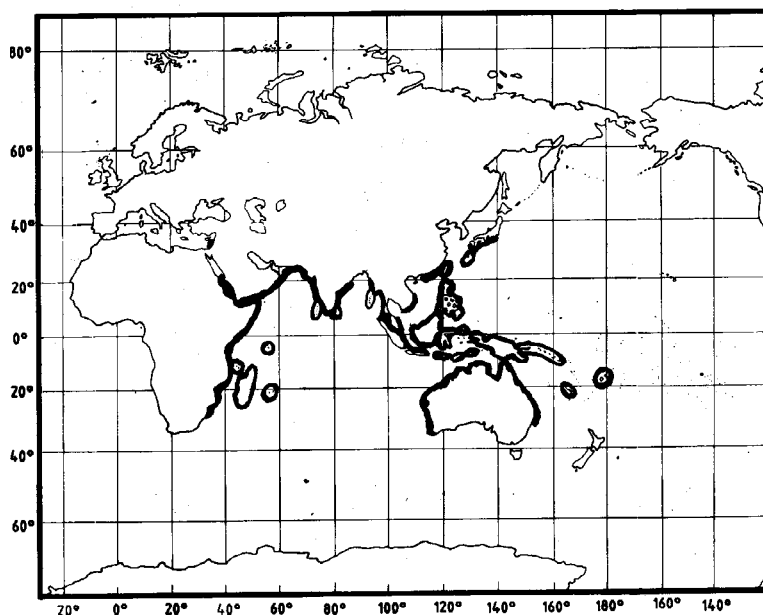


Fig. 282

Panulirus pascuensis Reed, 1954

Fig. 283

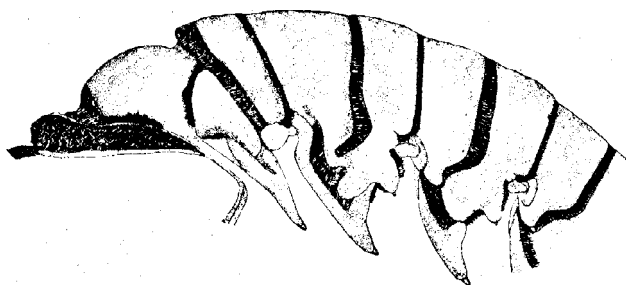
PALIN Panul 18

Panulirus pascuensis Reed, 1954, *Scientia*, Valparaiso, 21:121,136,figs1-9.

Synonyms: *Palinurus paschalis* (Philippi Ms.) Holthuis, 1972.

FAO Names : En - Easter Island spiny lobster

Type : Type locality of *P. pascuensis*: "Isla de Pascua" (= Easter Island, southern Pacific). Holotype male in Museo de la Dirección General de Pesca y Caza de Chile, Valparaiso, Chile.



abdominal somites (lateral view)

(from George & Holthuis 1965)

Geographical Distribution : Easter Island and Pitcairn Island, southern Pacific Ocean (Fig. 284).

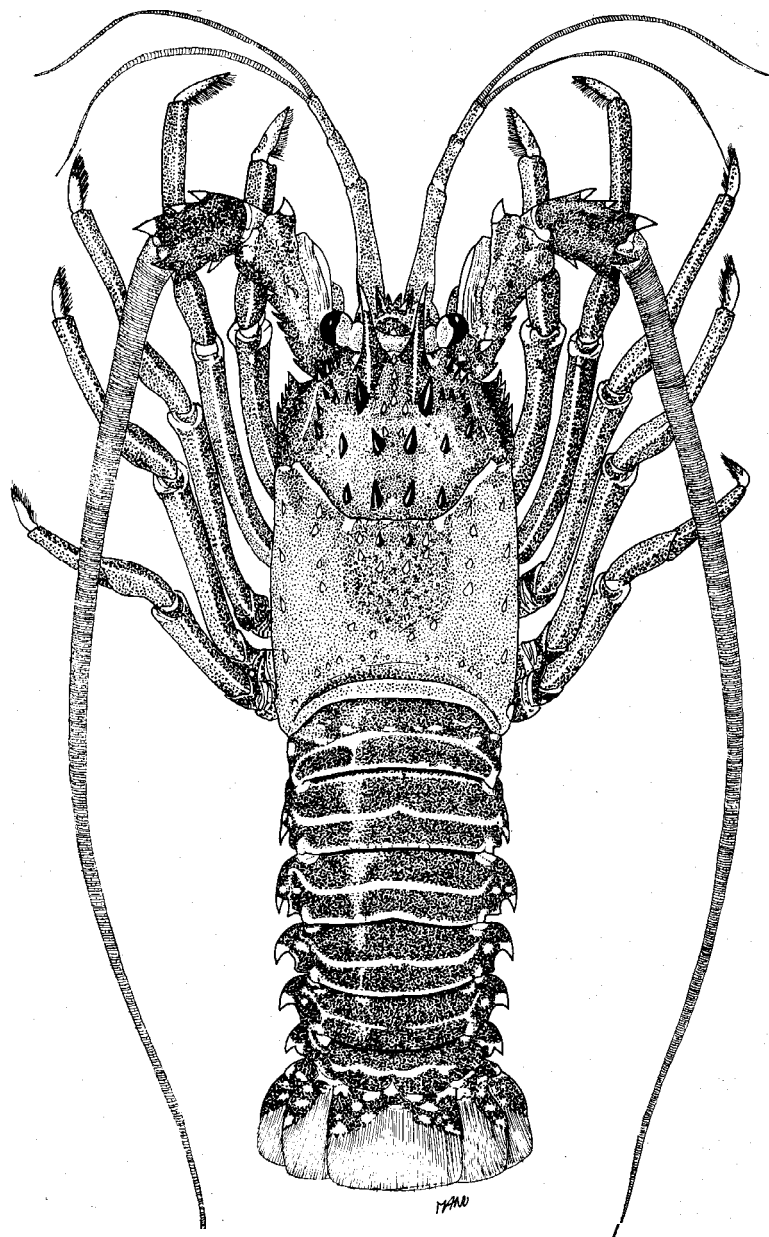
Habitat and Biology : Lives in shallow water (from 0 to 5 m depth) in crevices of a rocky substrate. Impregnated and ovigerous females have been taken in December.

Size : Reported carapace lengths of males 6 to 10 cm; females cl. 6 to 9.5 cm. This corresponds to total body lengths of about 15 to 25 cm (males), and 15 to 24 cm (females); the smallest ovigerous female has a cl. of 6 cm.

Interest to Fisheries : Both at Easter Island and at Pitcairn the species is mainly taken by hand or speared by divers in daytime, and with torch light at night; also gill nets and lobster pots are used. The lobsters are sold fresh for local consumption.

Local Names : CHILE: Langosta de Pascua, Ura (Easter Island).

Literature : George & Holthuis, 1965:17-19, text-fig. 1c, pl.3; Holthuis, 1972:36-44, figs 1,2.



(after George & Holthuis, 1965)

Fig. 283

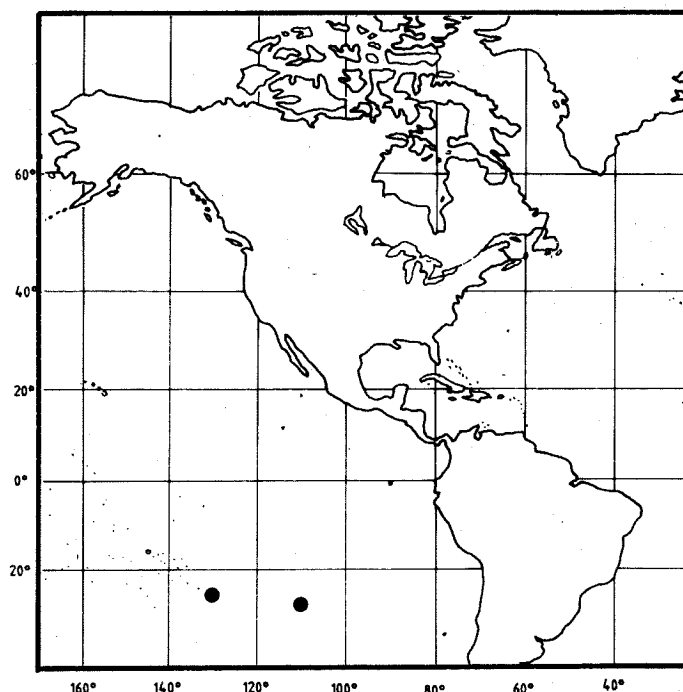


Fig. 284