PALIN

1983

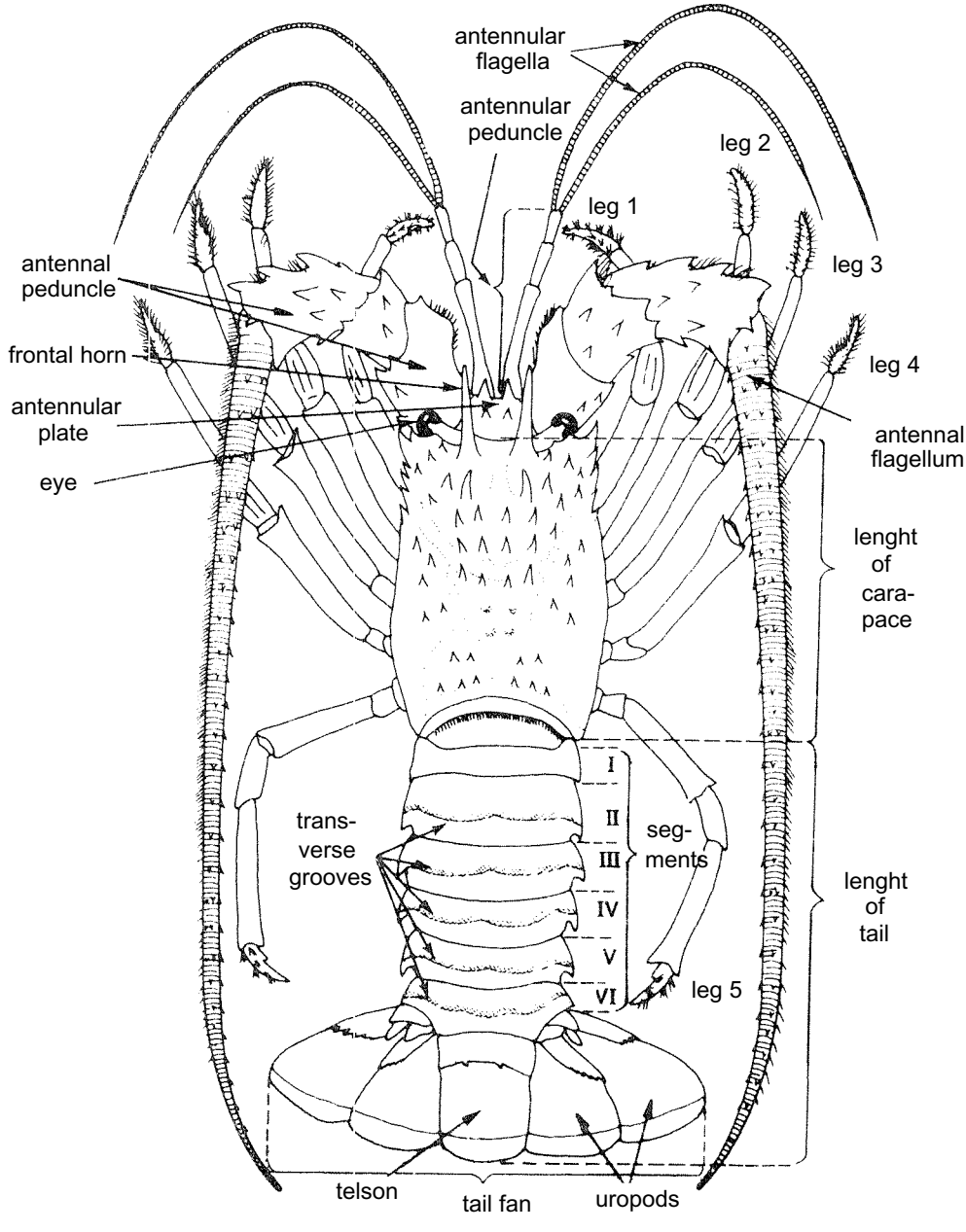
FAO SPECIES IDENTIFICATION SHEETS

FISHING AREA 51
(W. Indian Ocean)

PALINURIDAE

Spiny lobsters

Moderate- to large-sized crustaceans. Carapace (or "head") rounded in section (subcylindrical), without a distinct median rostrum, ornamented with spines and granules 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. In some genera, the bases of antennae are separated by a broad antennular plate usually bearing 1 or 2 pairs of spines, but spineless it, some species; a projection from the base of each antenna forms with the rim of the antennal plate a stridulating organ, through which the animal by movement of the antenna can produce a grating sound. Tail powerful, with a well developed fan; abdominal segments either smooth or with one or more transverse grooves. Legs without true pincers or chelae (except the fifth pair of legs of the female, which ends in a very small pincer), the first pair usually not greatly enlarged (except in males of Justitia).



Colour: most species are brightly coloured and patterned with bands or spots, others uniform.

This family includes 18 Western Indian Ocean representatives (16 species, one with 3 subspecies), ranging in maximum body length from about 10 to 40 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 some species (of the genera Justitia, Linuparus and Puerulus) are more common in deeper water, down to over 300 m. The spiny lobster fishery in Fishing Area 51 is nowhere on a large scale. All species are primarily caught with traps, but most are also taken by hand or by spearing; a few can be trawled. The annual catches of spiny lobsters reported from Fishing Area 51 from 1978 to 1981 varied from 1 460 to 2 615 metric tons.

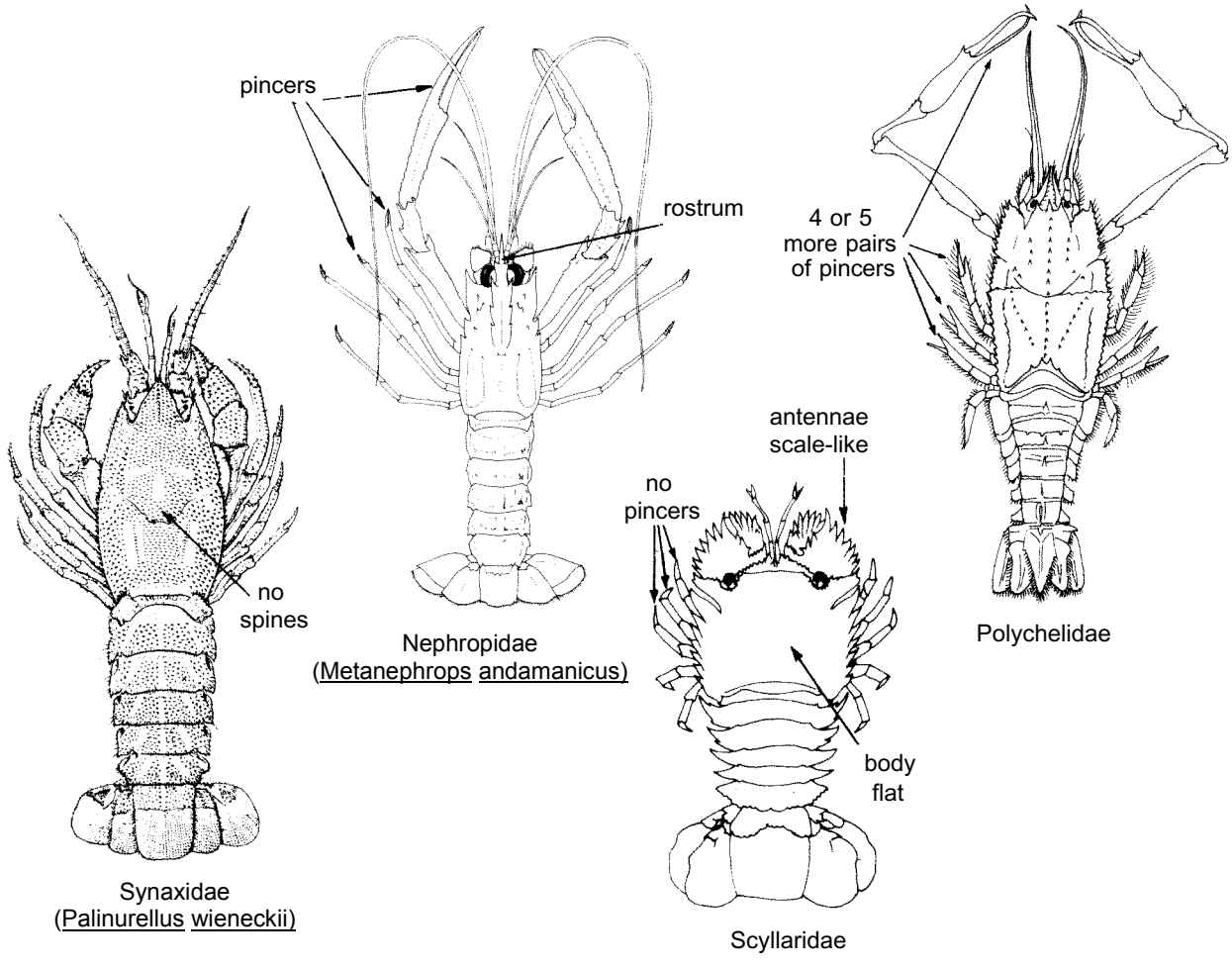
SIMILAR FAMILIES OCCURRING IN THE AREA:

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

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

Scyllaridae: body flattened, firm; rostrum rudimentary or absent; first 4 pairs of legs without pincers; antennae plate-like, without flagellum.

Polychelidae: body flattened, soft; rostrum absent or rudimentary; first 4 pairs of legs with pincers, the first greatly elongated; antennae whip-like. Deep-sea inhabitants.



KEY TO GENERA OCCURRING IN THE AREA:

1a. First pair of legs enlarged in males, ending in apparent (false) pincers, with wide, red crossbands; carapace ornamented with a strong, scale-like sculpture; tail brick red, with 4 or 5 conspicuous transverse grooves on each segment and with yellowish spots and stripes (Fig.1) ..... Justitia

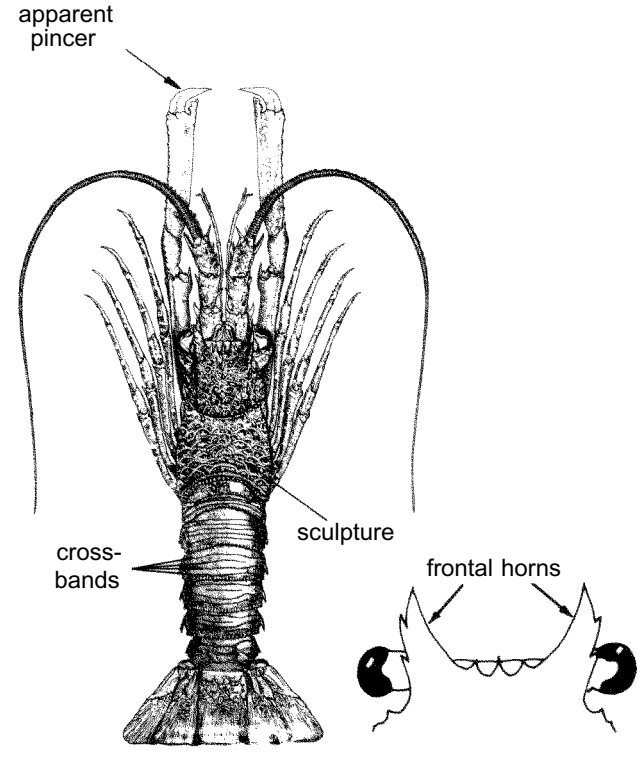
1b. First pair of legs not enlarged, with no trace of a pincer, without crossbands; carapace without a scale-like sculpture; tail variously coloured, smooth or with at most 2 transverse grooves (Figs 2 to 6)

2a. Frontal horns fused to a broad 2- or 4-spined median projection on the anterior margin of the carapace between the eyes (Fig.2); antennal flagella straight, inflexible ..... Linuparus

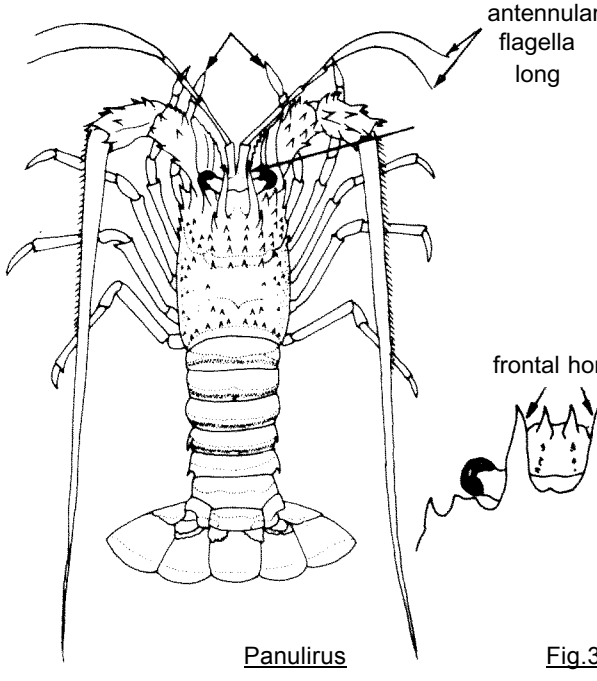
2b. Two distinct, widely separated tooth-like frontal horns, between which the anterior margin of the carapace is visible (Figs 3 to 6); antennal flagella, although large and firm, quite flexible

3a. Flagella of antennulae long, whip-like, longer than peduncle of antennule (Fig.3) ..... Panulirus

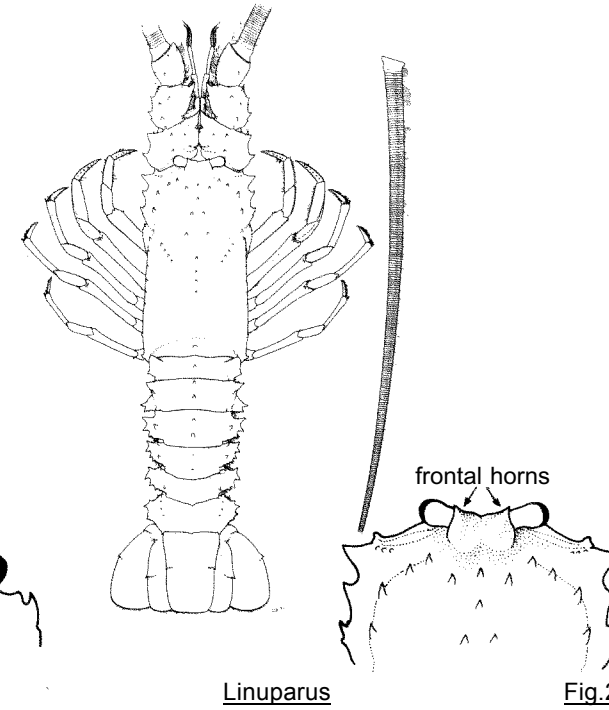
3b. Flagella of antennules short, shorter than last segment of antennular peduncle (Figs 4 to 6)



Justitia Fig.1



Panulirus Fig.3



Linuparus Fig.2

4a. Abdominal segments with squamiform sculpturation before transverse groove; no distinct plate between bases of antennae (Fig.4) ..... Jasus

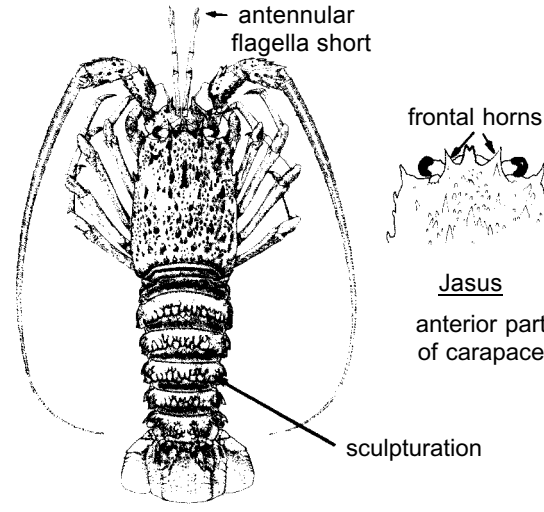
4b. Abdominal segments with a sometimes interrupted transverse groove, but without squamiform sculpturation; a distinct antennular plate between bases of antennae

5a. Frontal horns truncated with anterior margin crenulate; first segment of antennular peduncle reaching beyond antennal peduncle (Fig.5) ..... Palinustus

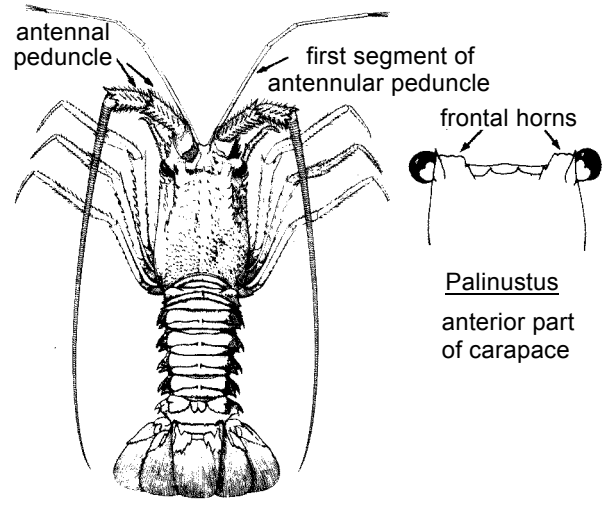
5b. Frontal horns tapering to a sharp point; first segment of antennular peduncle not over-reaching antennal peduncle

6a. Anterior margin of carapace between frontal horns with about 10 small, sharp teeth; pleura of second to fifth abdominal segments ending in a strong tooth with denticles on posterior margin (Fig.6) ..... Palinurus

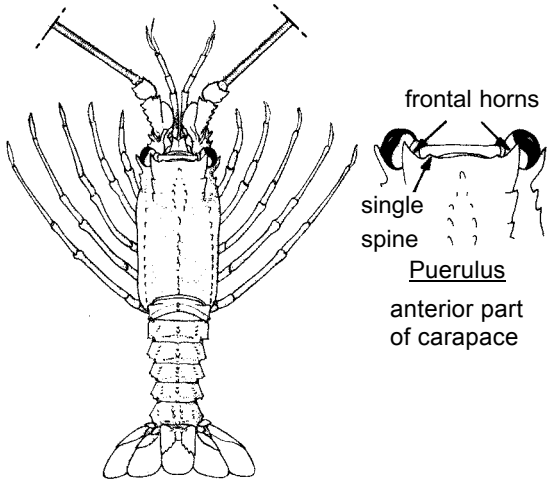
6b. Anterior margin of carapace between frontal horns without teeth, only a single small tooth in basal part of anterior margin of each frontal horn; pleura of second to fifth abdominal segments ending in two about equally strong teeth (Fig.7) .... Puerulus



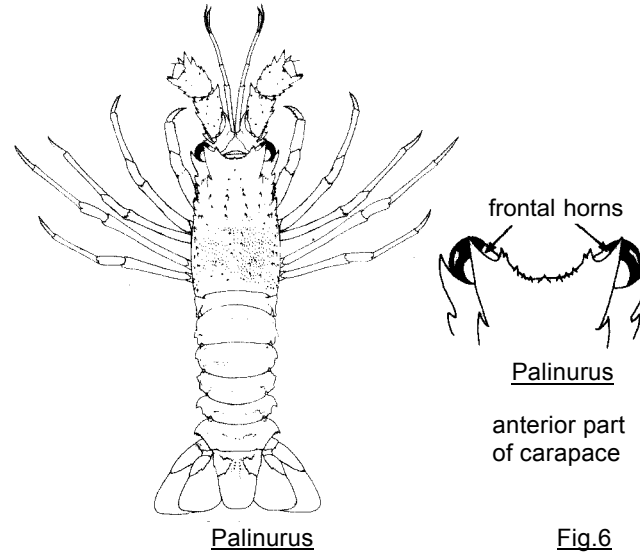
Jasus Fig.4



Palinustus Fig.5



Puerulus Fig.7



Palinurus Fig.6

LIST OF SPECIES OCCURRING IN THE AREA:

Code numbers are given for those species for which Identification Sheets are included

Jasus paulensis (Heller, 1862)	PALIN Jas 1
Justitia japonica (Kubo, 1955)	PALIN Just 1
Justitia mauritiana (Miers, 1882)	
Linuparus somniosus Berry & George, 1972	PALIN Lin 1
Palinurus delagoae Barnard, 1926	PALIN Palin 4
Palinustus mossambicus Barnard, 1926	
Palinustus unicornutus Berry, 1979	
Panulirus homarus homarus (Linnaeus, 1758)	PALIN Panul 6
Panulirus homarus megasculptus (Pesta, 1915)	
Panulirus homarus rubellus Berry, 1974	
Panulirus longipes longipes (A. Milne Edwards, 1868)	PALIN Panul 7
Panulirus ornatus (Fabricius, 1798)	PALIN Panul 8
Panulirus penicillatus (Olivier, 1791)	PALIN Panul 9
Panulirus polyphagus (Herbst, 1793)	PALIN Panul 10
Panulirus versicolor (Latreille, 1804)	PALIN Pariul 11
Puerulus angulatus (Bate, 1888)	
Puerulus carinatus Borradaile, 1910	
Puerulus sewelli Ramadan, 1938	PALIN Puer 1

Prepared by L.B. Holthuis, Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands, and R.W. George, Western Australian Museum, Perth, Australia.

Main species illustrations redrawn from literature; original drawings of Linuparus somniosus and Palinurus delagoae prepared by W. Gertenaar

PALIN Jas 1

1983

FAO SPECIES IDENTIFICATION SHEETS

FAMILY: PALINURIDAE

FISHING AREA 51
(W. Indian Ocean)

Jasus paulensis (Heller, 1862)

OTHER SCIENTIFIC NAMES STILL IN USE: Sometimes incorrectly identified with the South African Jasus lalandii (H. Milne Edwards, 1837)

VERNACULAR NAMES:

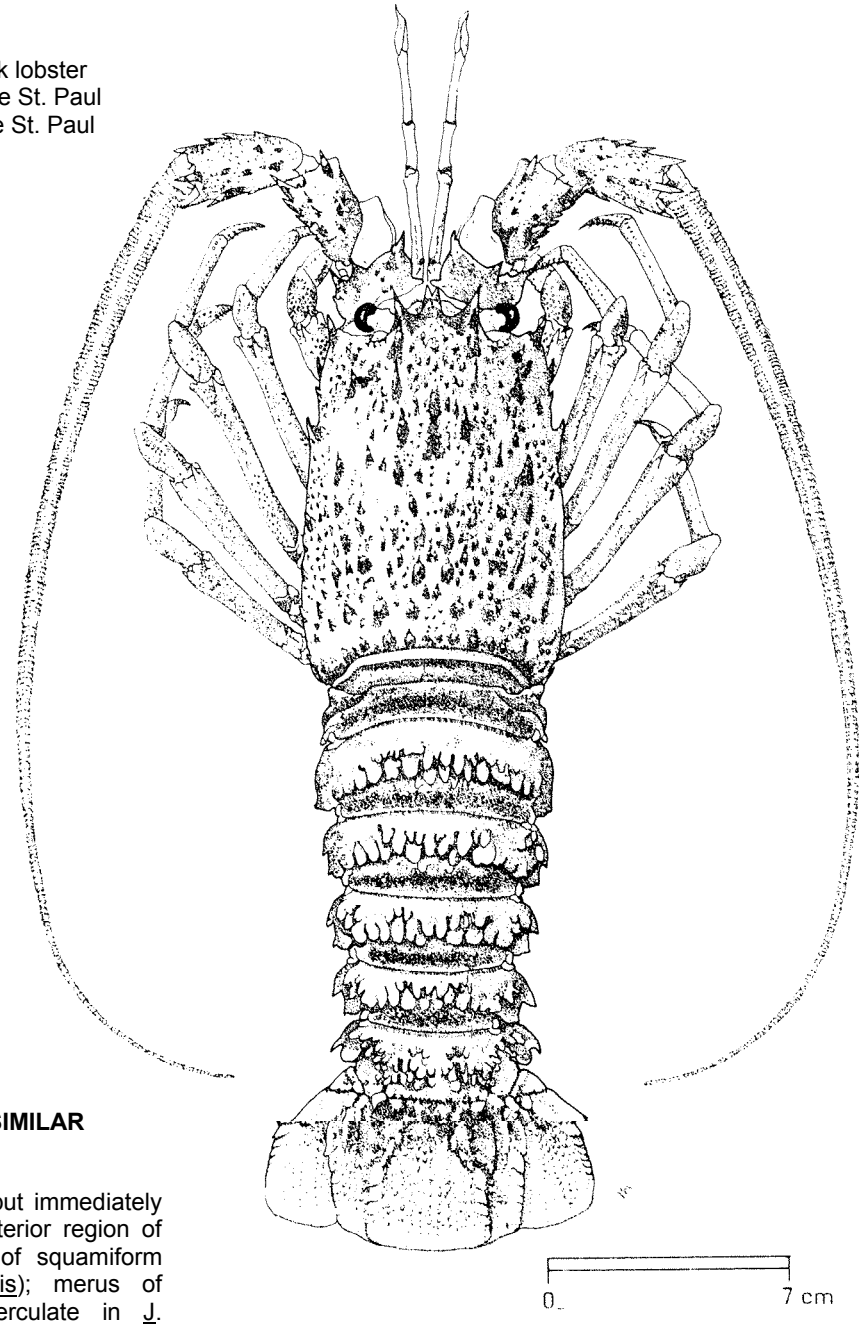
FAO : En - St. Paul rock lobster
Fr - Langouste de St. Paul
Sp - Langosta de St. Paul

NATIONAL:

DISTINCTIVE CHARACTERS:

Carapace cylindrical, closely beset with flattened larger and more cylindrical smaller spines; a small rostrum is present, clasped by 2 lateral processes; 2 strong frontal horns sharply pointed, without denticles. Antennular flagella very short, less than half the length of last segment of antennular peduncle; bases of antennae close together, not separated by an antennular plate; no stridulating organ. Abdominal segments 2 to 6 with a single transverse groove preceded by 1 or 2 rows of large, flattened, squamiform sculpturations, and followed by a single row of very small squamae; anterior and posterior parts of the segments smooth. First 4 legs without pincers; a broad spine in the distal half of the propodus sometimes gives the first leg (which might be swollen), a subchelar appearance.

Colour: brick read to dark brown, sometimes dark purple to almost black. The specimens in shallow water are usually lighter than those from greater depths.



DISTINGUISHING CHARACTERS OF SIMILAR SPECIES OCCURRING IN THE AREA:

Jasus lalandii (not in this area but immediately adjacent (West and South Africa)): anterior region of first abdominal segment with a row of squamiform sculpturations (naked in J. paulensis); merus of walking legs smooth (distinctly tuberculate in J. paulensis).

No other lobster species ire the area shows the squamiform sculpturation on the abdomen, typical of J. paulensis.

Further distinguishing characters of other lobster genera are the following:

Justitia: abdominal segments with 4 or 5 transverse grooves (squamation sulpture in Jasus); upper margin of frontal horns toothed. Carapace (but not abdomen) covered with scale-like sculpturing.

Panulirus: antennular flagella longer than peduncle; antennular plate and stridulating organ present.

Linuparus: frontal horns fused to a quadrangular median process, with 2 points placed over bases of eyes.

Palinurus: anterior margin of carapace between frontal horns and anterior margin of these horns toothed.

Palinustus: antennular plate and stridulating organ present; frontal horns truncated, their distal margin crenulate.

Puerulus: antennular plate and stridulating organ present; frontal horns with a single tooth on anterior margin; carapace strongly ridged.

SIZE:

Maximum: total body length, 37.4 cm; average total body length in catches: 20 to 28 cm (males) and 19 to 21 cm (females).

GEOGRAPHICAL DISTRIBUTION AND BEHAVIOUR:

The species is restricted to St. Paul and Amsterdam Islands in the southern Indian Ocean.

It lives in depths from 0 to 60 m, being most abundant between 10 and 35 m; it prefers rocky or gravel bottoms and is often found in the kelp zone.

PRESENT FISHING GROUNDS:

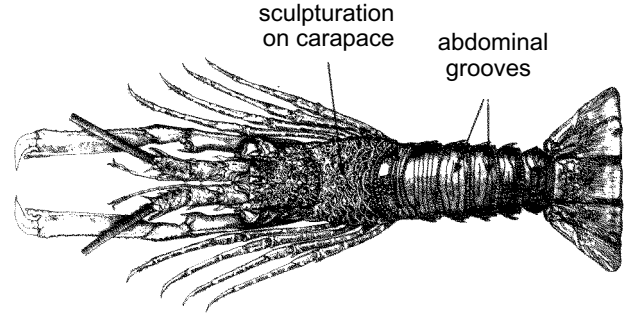
A fishery with lobster pots is run by French fishermen.

CATCHES, FISHING GEAR AND FORMS OF UTILIZATION:

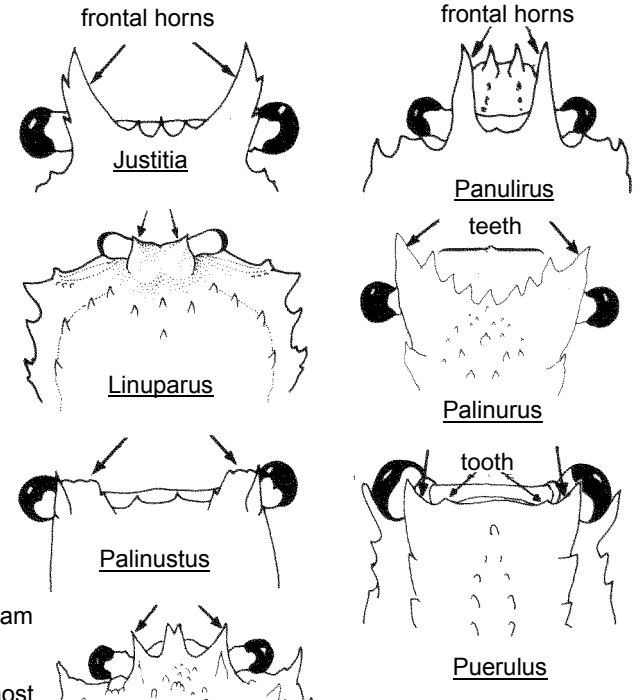
Separate statistics are not reported for this species; the annual catch for 1976 to 1981 is estimated at 210 metric tons.

A factory ship processes the animals that are brought in by small motor boats, the crews of which work the pots.

Marketed canned or frozen.



Justitia



Jasus
front part. of carapace