معهد الكويت للأبحاث العلمية

# KUWAIT INSTITUTE FOR SCIENTIFIC RESEARCH

## A REPORT ON MACRURAN DECAPODA FROM THE NORTH-WESTERN ARABIAN GULF ALONG THE COAST OF KUWAIT

by

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# A RERORT ON MACRURAN DECAPODA FROM THE NORTH-WESTERN ARABIAN GULF ALONG THE COAST OF KUWAIT

Hiroshi MOTOH

For the purpose of elucidating the Macruran fauna of the North-Western Arabian Gulf, a survey was carried out along the coast of Kuwait by the present author and staff members of the Fishery Division, Kuwait Institute for Scientific Research. The present report deals with the collection which was made mainly during the period from March 20 to May 17, 1972 by the author and the members.

The materials used came from the following sources : (1) Alpheid shrimps obtained from the author's shore collection, (2) shrimps, prawns and slipper lobsters caught by the otter trawler " ASMAK No. 4 ", (3) the collections deposited in the laboratory of Fishery Division, Kuwait Institute for Scientific Research (4) edible shrimps and prawns bought at Sief Suq ( a fish market near the Sief Palace, Kuwait City ), (5) and others.

The Macruran Decapoda examined contains 12 penaeid shrimps, 4 caridean shrimps and 1 palinurid lobster. The abbreviations used in this report : TL, BL and CL are : Total Length, Body Length and Carapace Length, respectivily.

The writer wishes to express his hearty thanks to Dr. Ken-Ichi Hayashi, Shimonoseki Fisheries University, for his identification of the specimens except for Alpheid shrimps, and his kind guidance and encouragement during this investigation, and Dr.Yasuhiko Miya, Faculty of Agriculture,Kyushu Univ. for his identification of the Alpheid shrimps. He is also due to Dr. Kiyoshi Uchihashi, Director of the Fishery Division, Kuwait Institute for Scientific Research, and other staff members of the Institute for the facilities during this work.

## Note of the Species

### I. Section PENAEIDEA

**Family Sergestidae**

(1) *Sergestis* sp.

( Pl. III, Fig. 2 )

1 ♂ ; date and locality unknown ( deposited at the laboratory of the Kuwait Institute for Scientific Research ).

**Family Penaeidae**

(2) *Solenocera subnuda* KUBO

( Pl. II, Fig. 4 )

*Solenocera subnuda* : Kubo, 1949, pp. 226, 255–260, fig. 103, table 23———Japan.

*Solenocera subnuda* : Hall, 1962, pp. 11–12, 178, fig. 73———Malay-Asia.

*Material examined :*

| Sex | CL (mm) | Date | Locality | Fishing gear |
|---|---|---|---|---|
| ♂ | 13.6 | Jan. 24 1972 | Bander abbas | unknown |
| ♂ | 15.9 | Jan. 24 1972 | Bander abbas | unknown |

The upper margin of the rostrum is armed with 9 or 10 teeth, the first 3 of them are placed on the carapace behind the orbit.

(3) *Penaeus japonicus* BATE

( Pl. I, Figs. 1,2 )

*Penaeus canaliculatus* : Kishinouye, 1900, pp. 6, 11–12, pl. I———Japan.

*Penaeus japonicus* : Kubo, 1949, pp. 270, 273-278———Japan.

*Penaeus japonicus* : Hall, 1955, p. 71, pl.9. fig. 4———Malaya.

*Penaeus japonicus* : Racek and Hall, 1965, p. 12, pl.I, fig. 1 ——Queensland, Northern Territory, New Guinea, North Borneo, Indonesia.

*Penaeus japonicus* : Hall, 1962, pp. 14, 178, fig. 79———Malay-Asia.

*Penaeus japonicus* : Starobogatov, 1972, pp. 367–368, pl. IV, fig. 27———Tonking Gulf.

*Penaeus japonicus* : Dall, 1957, p. 142———Malay.

This species is rarely found and collected together with the *Penaeus semisulcatus* and *Metapenaeus mutatus*.

### (4) *Penaeus latisulcatus* KISHINOUYE

*Penaeus latisulcatus* : Kishinouye, 1900, pp. 7, 12–13, pl. II, fig. 2, pl. VII, fig. 2———Japan.

*Penaeus latisulcatus* : Kubo, 1949, pp. 278–282———Japan.

*Penaeus latisulcatus* : Racek and Hall, 1965, pp. 12–13_____Western Australia, Northern Territory, Queensland, New Guinea.

*Penaeus latisulcatus* : Hall, 1955, p. 72_____Malaya.

*Penaeus latisulcatus* : Dall, 1957, pp. 142, 149–151, fig. 4_____Malay.

*Penaeus latisulcatus* : Hall, 1962, pp. 14–15, 178, fig. 80———Malay-Asia.

*Penaeus latisulcatus* : Starobogatov, 1972, p. 367, pl.4, fig. 28———Tonking Gulf.

*Penaeus latisulcatus* : Dannevig, 1926, pp. 365–367———Queensland.

### (5) *Penaeus semisulcatus* DE HAAN

( Pl. I, Figs. 3,4 )

*Penaeus monodon* : Kishinouye, 1900, pp. 7–8, 15–16, pl.II, fig. 1———Japan.

*Penaeus semisulcatus* : Dall, 1957, pp. 143, 154–157, fig. 6———Malay.

*Penaeus semisulcatus* : Hall, 1962, pp. 15, 178, fig. 82———Malay-Asia.

*Penaeus semisulcatus* : Racek and Hall, 1965, p. 11———Northern Territory, Queensland, New Guinea, Indonesia, Malaysia, Philippines.

*Material examined :*

| Sex | TL(mm) | BL(mm) | CL(mm) | Date | Locality | Fishing gear |
|---|---|---|---|---|---|---|
| ♂ | 70.0 | 56.7 | 13.9 | Mar. 16, 1972 | 29° 21′ N, 48° 18′ E | Trawler |
| ♂ | — | 119.1 | 31.8 | Mar. 16 1972 | 29° 21′ N, 48° 18′ E | Trawler |
| ♂ | — | 66.7 | 18.3 | Mar. 16 1972 | 29° 21′ N, 48° 18′ E | Trawler |
| ♀ | 85.3 | 70.3 | 18.0 | Mar. 16 1972 | 29° 21′ N, 48° 18′ E | Trawler |
| ♀ | 170.3 | 147.5 | 43.4 | Mar. 29, 1972 | off Gatif | Trawler |
| ♀ | 124.5 | 104.0 | 28.0 | April, 1972 | off Baharein | Trap net |
| ♀ | — | 151.8 | 43.1 | April, 1972 | off Baharein | Trap net |

This species is the most important commercial prawn on the fisheries and mostly caught by the trap net and the beam trawl fishery. The upper margin of the rostrum bears 6 or 7 teeth, the first 3 of them are placed on the carapace behind the orbit, and the lower margin has 2 or 3 teeth.

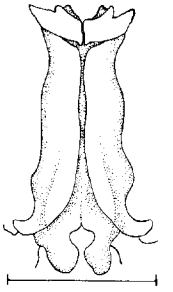
(6) *Metapenaeus mutatus* LANCHESTER

( Text-fig. 1 ; Pl. I, Fig. 5 : Pl. III, Fig. 3 )

*Metapenaeus mutatus* Hall, 1962, pp. 25, 179, fig. 96———Malay-Asia.

*Metapenaeus affinis* : Dall, 1957, p. 183———Malay.

*Metapenaeus affinis* : Starobogatov, 1972, pp. 368-369, p. IV, fig. 60———Tonking Gulf.



5 mm

Text-fig. 1 *Metapenaeus mutatus*, Petasma.

*Material examined :*

| Sex | TL(mm) | BL(mm) | CL(mm) | Date | Locality | Fishing gear |
|---|---|---|---|---|---|---|
| ♂ | 104.8 | 87.5 | 22.8 | Jan. 30, 1972 | Kuwait Bay | Trawler |
| ♂ | 92.4 | 77.8 | 20.4 | Jan. 30, 1972 | Kuwait Buy | Trawler |
| ♂ | 93.0 | 78.0 | 20.4 | Jan. 30, 1972 | Kuwait Bay | Trawler |
| ♀ | 115.8 | 96.7 | 27.3 | Jan. 80, 1972 | Kuwait Bay | Trawler |
| ♀ | — | 73.1 | 19.4 | May 18, 1972 | Fish market in Kuwait City | |
| ♂ | — | — | 14.7 | Oct. 13, 1971 | Fish market in Kuwait City | |
| ♂ | — | 79.4 | 22.4 | Mar. 28, 1972 | 29° 02′ N, 48° 02′ E | Trawler |
| ♂ | — | 88.9 | 23.8 | Mar. 28, 1972 | 29° 02′ N, 48° 02′ E | Trawler |
| ♀ | — | 84.7 | 23.9 | Mar. 28, 1972 | 29° 02′ N, 48° 02′ E | Trawler |
| ♀ | — | 91.2 | 24.3 | Mar. 28, 1972 | 29° 02′ N, 48° 02′ E | Trawler |

*Metapenaeus mutatus* is very abundant off Kuwait, and is one of the most important prawns on commercial fisheries. The mother shrimp of this species is spawned artificially by the researcher of Kuwait Institute for Scientific Reserach and the larvae are reared and cultured for the purpose of the seed production. The upper margin of the rostrum bears 9 or 10 teeth, the first 3 of them are placed on the carapace behind the orbit, and lower margin has no teeth.

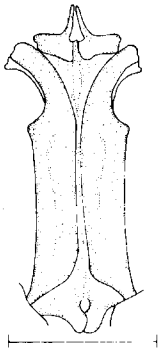
(7) *Metapenaeus stebbingi* NOBILI

( Text-fig. 2 )

*Metapenaeus stebbingi* : Dall, 1957, p. 184———Australia.

*Material examined :*

| Sex | TL(mm) | BL(mm) | CL(mm) | Date | Locality | Fishing gear |
|---|---|---|---|---|---|---|
| ♂ | 57.7 | 49.1 | 11.6 | unknown | (deposited at laboratory of Kuwait Institute) | |
| ♀ | — | 80.0 | 20.3 | | do | |
| ♀ | 76.8 | 63.0 | 17.1 | | do | |
| ♀ | 84.1 | 72.2 | 18.6 | | do | |



3 mm

Text-fig. 2 *Metapenaeus stebbingi*, Petasma.

The upper margin of the rostrum is armed with 7 to 9 teeth, the first one of them is placed on the carapace behind the orbit.

(8) *Trachypenaeus pescadoreensis* SCHMITT

( Text-fig. 3; Pl. II, Fig. 3 )

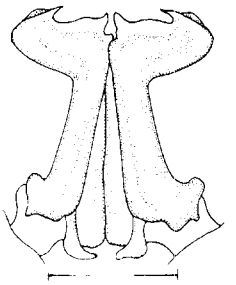
*Trachypenaeus pescadoreensis* : Kubo, 1949, p. 393_____Japan.

*Trachypenaeus pescadoreensis* : Hall, 1962, pp. 29, 181, fig. 111_____Malay-Asia.

*Trachypenaeus pescadoreensis* : Starobogatov, 1972, pp. 372–373, pl.8, fig. 98_____Tonking Gulf.

*Material examined :*

| Sex | TL(mm) | BL(mm) | CL(mm) | Date | Locality | Fishing gear |
|---|---|---|---|---|---|---|
| ♂ | — | 45.6 | 12.4 | unknown | (deposited at the laboratory of Kuwait Institute) | |
| ♂ | — | 42.3 | 12.0 | | do | |
| ♂ | — | 49.9 | 13.4 | | do | |
| ♀ | 63.1 | 55.8 | 15.8 | | do | |
| ♀ | 72.2 | 62.0 | 19.4 | | do | |
| ♀ | — | 53.3 | 15.9 | | do | |
| ♀ | — | 63.6 | 19.4 | | do | |
| ♀ | — | 58.5 | 16.7 | | do | |
| ♀ | — | 57.5 | 18.1 | | do | |
| ♀ | — | 56.8 | 16.2 | | do | |
| ♀ | — | 48.7 | 14.7 | | do | |
| ♀ | — | 58.3 | 18.0 | | do | |




Text-fig. 3 *Trachypenaeus pescadoreensis*, Petasma.

The upper margin of the rostrum is armed with 10 or 11 teeth, the first 2 of them are placed on the carapace behind the orbit.

(9) *Trachypenaeus curvirostris* ( STIMPSON )

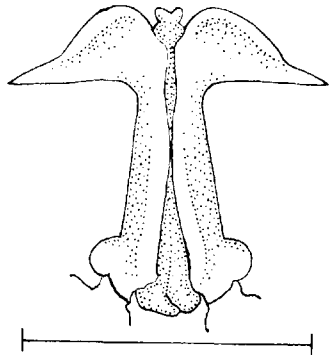
( Text-fig. 4; Pl. III, Fig. 1 )

*Penaeus curvirostris* : Kishinouye, 1900, pp. 10, 23–25, pl. VI, fig. 4———Japan.
*Trachypenaeus curvirostris* : Dannevig, 1926, pp. 353–358, pl. 63, fig. 3———Queensland.
*Trachypenaeus curvirostris* : Dall, 1957, pp. 203–206, fig. 22———Australia.
*Trachypenaeus curvirostris* : Hall, 1962, pp. 29, 181, fig. 110———Malay-Asia.

*Trachypenaeus curvirostris* : Kubo, 1949, pp. 91, 393–394, figs. 41, 141–142——Japan.

*Trachypenaeus curvirostris* : Starobogatov, 1972, pp. 370–371, pl. 7, fig. 87——Tonking Gulf.

*Trachypenaeus curvirostris* : Racek and Hall, 1965, pp. 89——Western Australia, Northern Territory, Queensland, New South Wales, New Guinea, New Britain.




Text-fig. 4 *Trachypenaeus curvirostris*, Petasma.

*Material examined :*

| Sex | TL(mm) | BL(mm) | CL(mm) | Date | Locality | Fishing gear |
|---|---|---|---|---|---|---|
| ♀ | — | 56.7 | 16.7 | Mar. 28, 1972 | 29° 11′ N, 48° 29′ E | Trawler |
| ♀ | — | 63.8 | 18.7 | Mar. 28, 1972 | 29° 11′ N, 48° 29′ E | Trawler |
| ♀ | — | 61.5 | 17.9 | Mar. 28, 1972 | 29° 11′ N, 48° 29′ E | Trawler |
| ♀ | — | 69.9 | 21.1 | Mar. 28, 1972 | 29° 11′ N, 48° 29′ E | Trawler |

## (10) *Metapenaeopsis stridulans* ( Alcock )

## ( Text-fig. 5; Pl. II, Fig. 1 )

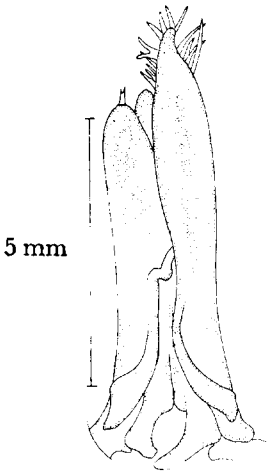
*Metapenaeopsis stridulans* : Hall, 1962, pp. 32, 181, fig. 117——Malay-Asia.

*Metapenaeopsis stridulans* : Racek and Hall, 1965, p. 32, fig. 2 E, A A-A, pl. 9, fig. 5——New Guinea, North Borneo, New Britain.

*Metapenaeopsis stridulans* : Starobogatov, 1972, p. 375, pl. IX, fig. 106——Tonking Gulf.

*Material examined :*

| Sex | TL(mm) | BL(mm) | CL(mm) | Date | Locality | Fishing gear |
|---|---|---|---|---|---|---|
| ♂ | 56.6 | 48.3 | 11.8 | Mar. 16, 1972 | off Gatif | Trawler |
| ♀ | 80.9 | 69.8 | 17.8 | do | do | do |
| ♀ | 63.8 | 53.1 | 12.9 | do | do | do |
| ♂ | — | 47.1 | 11.1 | | unknown | |
| ♂ | — | 57.2 | 13.1 | | do | |
| ♂ | — | 58.6 | 13.9 | | do | |
| ♂ | — | 57.4 | 13.1 | | do | |
| ♂ | — | 54.8 | 12.5 | | do | |
| ♀ | — | 63.0 | 15.9 | | do | |
| ♀ | — | 70.3 | 17.3 | | do | |
| ♀ | — | 64.5 | 17.3 | | do | |
| ♀ | — | 58.9 | 14.2 | | do | |
| ♀ | — | 68.1 | 16.4 | | do | |
| ♀ | — | 57.6 | 13.7 | | do | |
| ♀ | — | 67.9 | 16.8 | | do | |
| ♀ | — | 62.7 | 15.1 | | do | |




Text-fig. 5 *Metapenaeopsis stridulans*, Petasma.

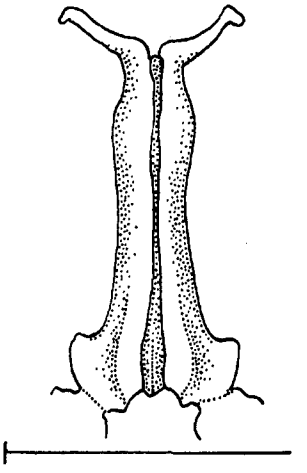
(11) *Parapenaeopsis stylifera* ( H. MILNE EDWARDS )

( Text-fig. 6; Pl. II, Fig. 2 )

*Material examined :*

| Sex | TL(mm) | BL(mm) | CL(mm) | Date | Locality | Fishing gear |
|---|---|---|---|---|---|---|
| ♂ | — | 72.0 | 19.6 | Feb. 10, 1971 | off Failaka | Trawler |
| ♂ | — | 72.3 | 19.6 | do | do | do |
| ♂ | — | 71.6 | 20.0 | do | do | do |
| ♂ | — | 51.6 | 13.6 | do | do | do |

| | | | | | | |
|---|---|---|---|---|---|---|
| ♀ | — | 77.3 | 21.4 | Feb. 10, 1971 | off Failaka | Trawler |
| ♀ | — | 79.2 | 24.8 | do | do | do |
| ♀ | — | 61.0 | 17.3 | do | do | do |
| ♀ | — | 47.1 | 13.3 | do | do | do |
| ♀ | — | 65.1 | 18.5 | do | do | do |
| ♀ | — | 65.4 | 18.4 | do | do | do |
| ♂ | 51.3 | 42.8 | 11.3 | Mar. 28, 1972 | 29° 33′ N, 48° 43′ E | Trawler |
| ♀ | 81.7 | 64.3 | 18.6 | do | do | do |




Text-fig. 6 *Parapenaeopsis stylifera*, Petasma.

This edible species is more or less commonly caught by the otter trawl fishery off Kuwait. The upper margin of the rostrum is armed with 6 or 7 teeth, the first 2 of them are placed on the carapace behind the orbit.

### (12) *Parapenaeopsis probata* HALL

( Pl. II, Fig. 5 )

*Parapenaeopsis probata* : Hall, 1962, pp. 27, 180, fig. 107——Malay-Asia.

*Material examined :*

| Sex | TL(mm) | BL(mm) | CL(mm) | Date, Locality and Fishing gear |
|---|---|---|---|---|
| ♀ | — | 94.3 | 32.8 | unknown |
| ♀ | — | 91.5 | 31.0 | do |

## II. Section **CARIDEA**

### Family Alpheidae

(13) *Alpheus distinguendus* De Man

1 ♀ ; date, locality and fishing gear are unknown (deposited at the laboratory of Kuwait Institute for Scientific Research ).

(14) *Athanas rhotionastis* Banner and Banner

*Material examined :*

| Sex | TL(mm) | BL(mm) | CL(mm) | Date | Locality | Fishing gear |
|---|---|---|---|---|---|---|
| ♂ | — | 14.6 | 5.7 | May 3, 1972 | Salmiyah City | Shore collecting |
| ♂ | — | 13.3 | 5.5 | do | do | do |
| ♀ (Ovig.) | — | 12.6 | 4.9 | do | do | do |
| ♀ (Ovig.) | — | 13.4 | 5.3 | do | do | do |

This species is found under low tidal zone of the rocky shore in Salmiyah city.

(15) *Alpheus* sp.

( Pl. IV, figs. 1,2 )

1 ♀ (ovigerous); total length, 32.9 mm; May 3, 1972; low tidal zone of rocky shore, Salmiyah City, Kuwait.

(16) *Latreutes anoplonyx* Kemp

( Pl. IV, Figs. 3,4 )

*Latreutes anoplonyx* : Hayashi and Miyake, 1968, pp. 144, 149–151, fig. 13 ——— Japan.

*Material examined :*

| Sex | TL(mm) | BL(mm) | CL(mm) | Date | Locality | Fishing gear |
|---|---|---|---|---|---|---|
| ♀ (Ovig.) | — | 19.0 | 6.1 | Apr. 22, 1972 | Kuwait City | Shore collecting |
| ♀ (Ovig.) | — | 29.9 | 9.6 | do | do | do |
| ♀ | 37.6 | 31.6 | 10.5 | do | do | do |

This small species is found under tidal zone.

## III. Section **PALINURIDEA**

### **Family Scyllaridae**

(17) *Thenus orientalis* ( LUND )

( Pl. V, Figs. 1,2 )

*Material examined :*

| Sex | TL(mm) | BL(mm) | CL(mm) | Date | Locality | Fishing gear |
|---|---|---|---|---|---|---|
| ♂ * | — | 139.0 | 54.6 | Mar. 29, 1972 | 29° 20′ N, 48° 17′ E | Trawler |
| ♀ | 130.6 | 127.3 | 50.9 | do | do | do |

( * with 3 Barnacles on the carapace )

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## EXPLANATION OF PLATE I

Fig. 1. *Penaeus japonicus* BATE; dorsal view ( Female, x $\frac{3}{5}$ )

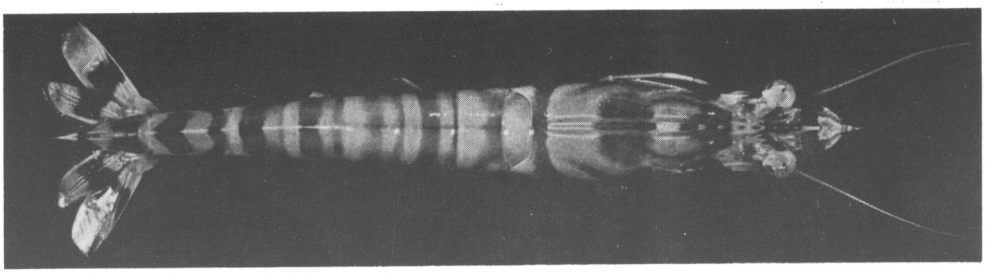
Fig. 2. *Penaeus japonicus* BATE; lateral view ( Female, x $\frac{3}{5}$ )

Fig. 3. *Penaeus semisulcatus* DE HAAN; dorsal view ( Female, x $\frac{1}{2}$ )

Fig. 4. *Penaeus semisulcatus* DE HAAN; lateral view ( Female, x $\frac{1}{2}$ )

Fig. 5. *Metapenaeus mutatus* LANCHESTER; lateral view ( Female, x $\frac{3}{4}$ )

PLATE I



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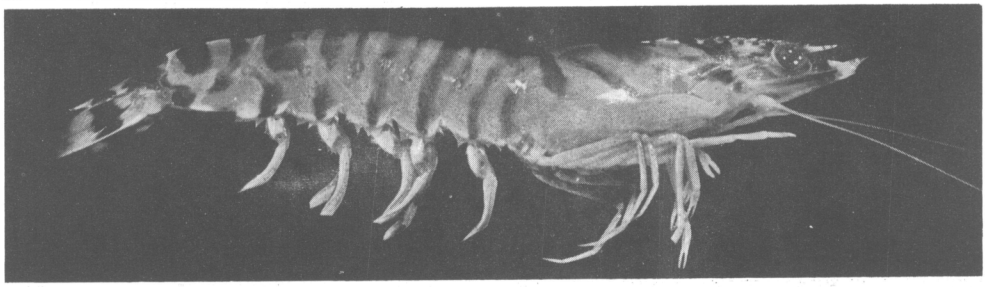

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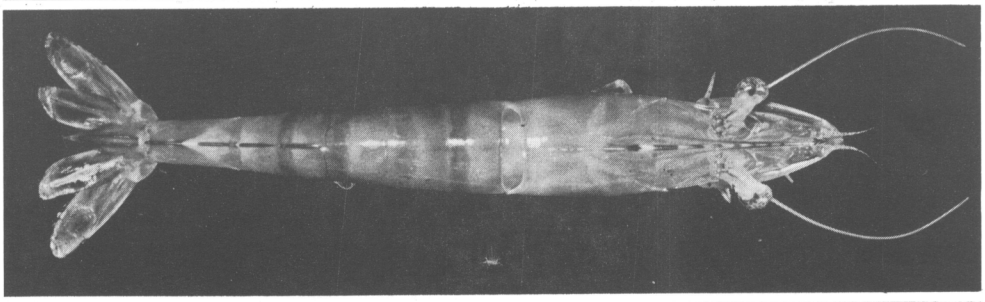

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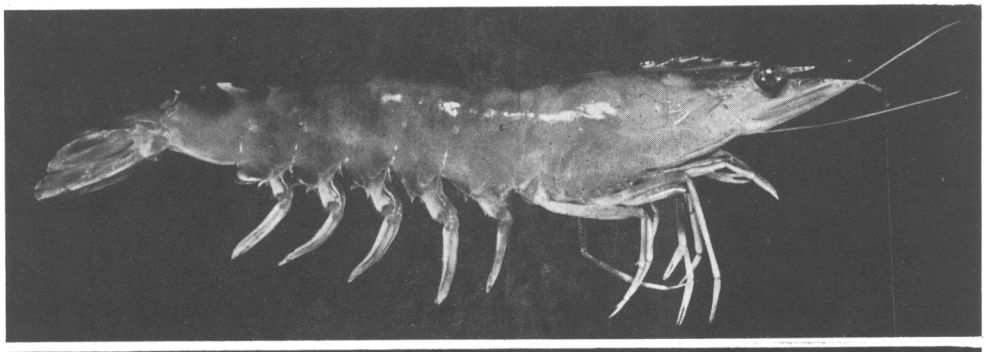

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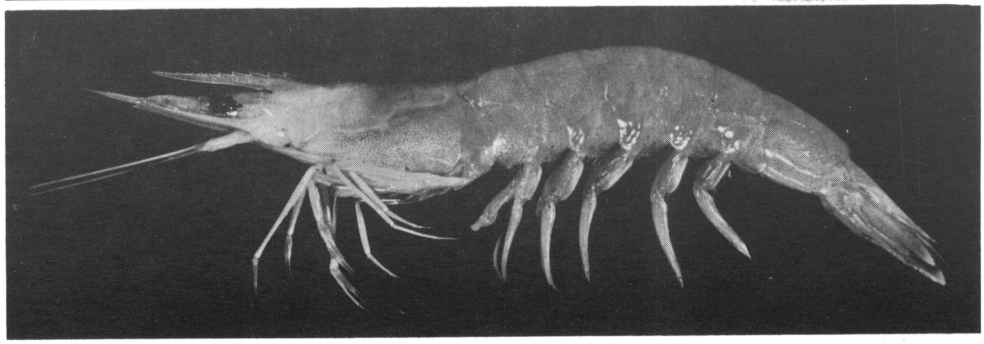

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## EXPLANATION OF PLATE II

Fig. 1. *Metapenaeopsis stridulans* ( ALCOCK ); lateral view ( Male, x $\frac{8}{5}$ )

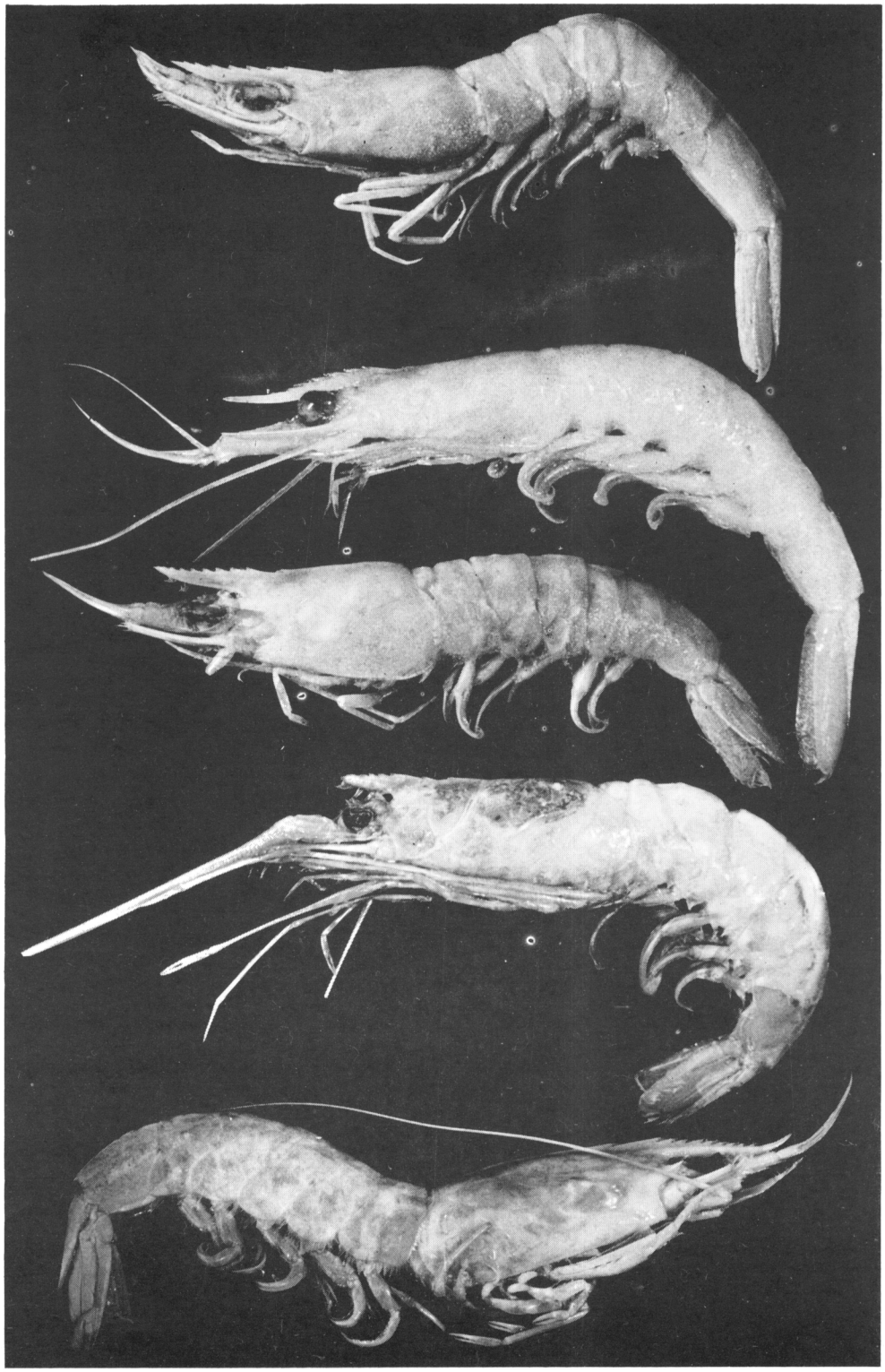
Fig. 2. *Parapenaeopsis stylifera* ( H. Milne EDWARDS ); lateral view ( Female, x $\frac{5}{3}$ )

Fig. 3. *Trachypenaeus pescadoreensis* SCHMITT; lateral view ( Female, x $\frac{7}{5}$ )

Fig. 4. *Solenocera subnuda* KUBO; lateral view ( Male, x $\frac{8}{5}$ )

Fig. 5. *Parapenaeopsis probata* HALL; lateral view ( Female, x $\frac{6}{5}$ )

PLATE II



1

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4

5

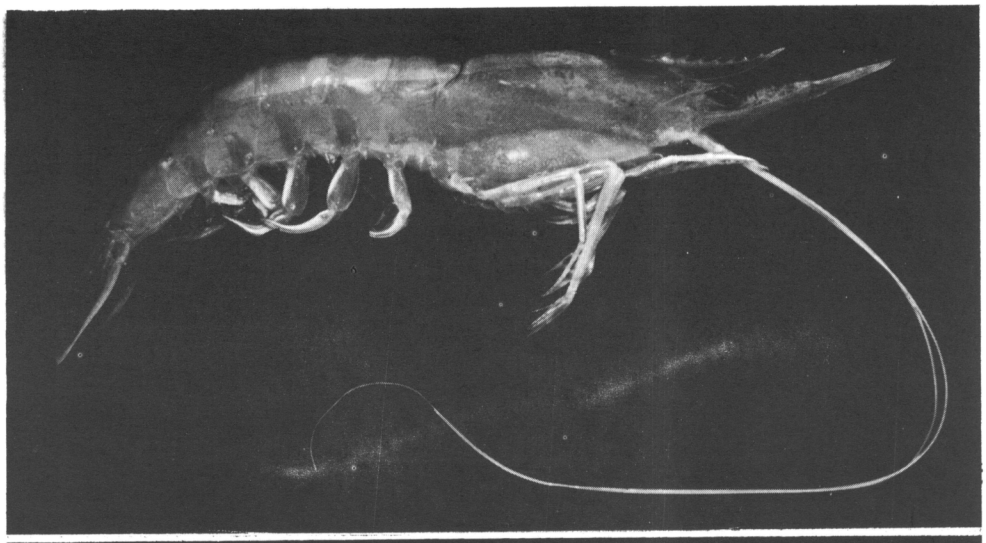
## EXPLANATION OF PLATE III

Fig. 1. *Trachypenaeus curvirostris* ( STIMPSON ) ; lateral view ( Female, x $\frac{1}{1}$ )

Fig. 2. *Sergestis* sp. ; lateral view ( Male, x $\frac{10}{3}$ )

Fig. 3. *Metapenaeus mutatus* LANCHESTER; lateral view ( Male, x $\frac{4}{3}$ )

PLATE III



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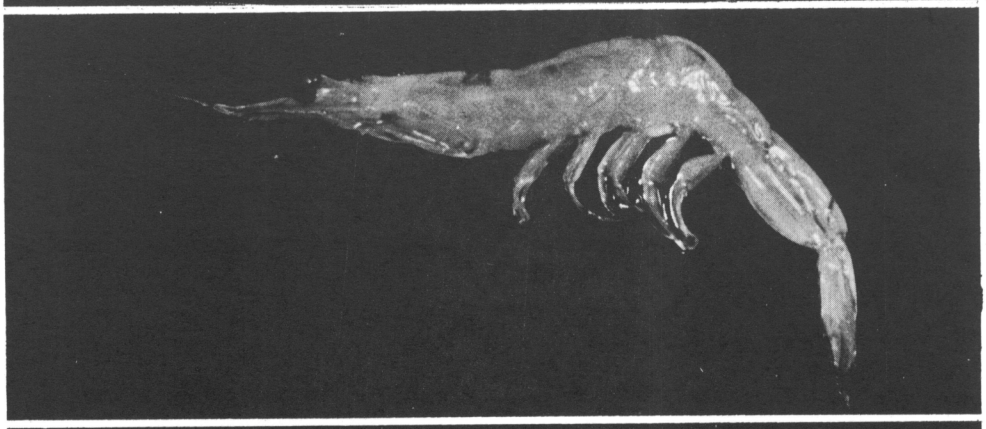

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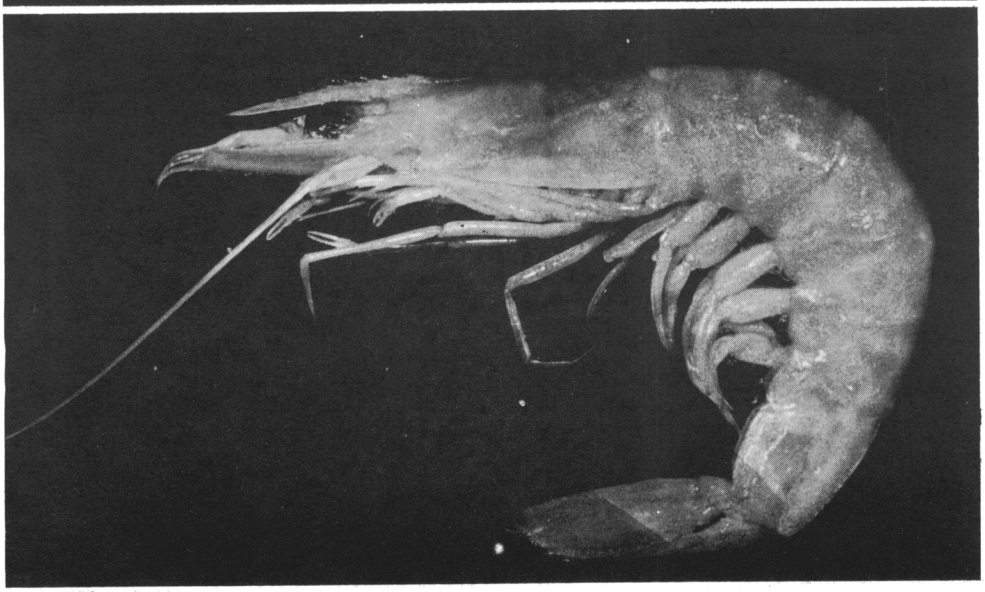


3

## EXPLANATION OF PLATE IV

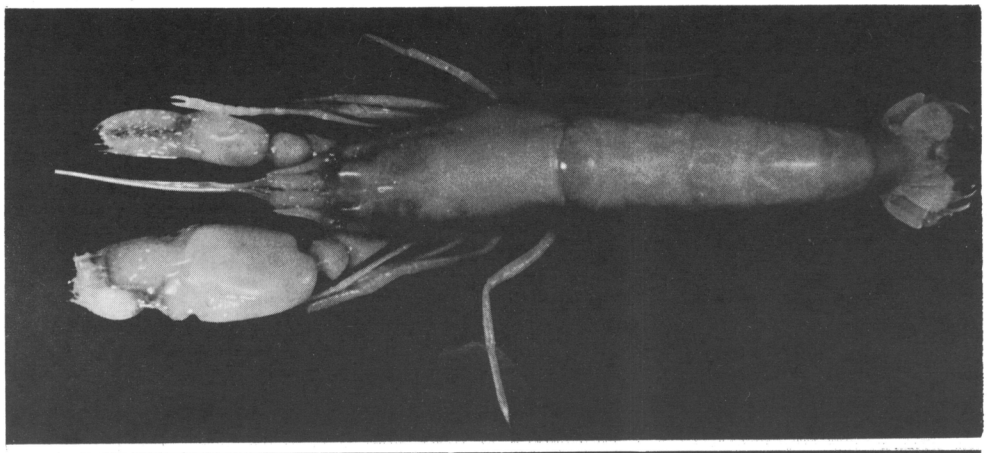
Fig. 1. *Alpheus* sp. dorsal view ( Ovig. female, x $\frac{5}{2}$ )

Fig. 2. *Alpheus* sp. lateral view ( Ovig. female, x $\frac{5}{2}$ )

Fig. 3. *Latreutes anoplonyx* KEMP; dorsal view ( Ovig. female, x $\frac{5}{2}$ )

Fig. 4. *Latreutes anoplonyx* KEMP; lateral view ( Ovig. female, x $\frac{5}{2}$ )

PLATE IV



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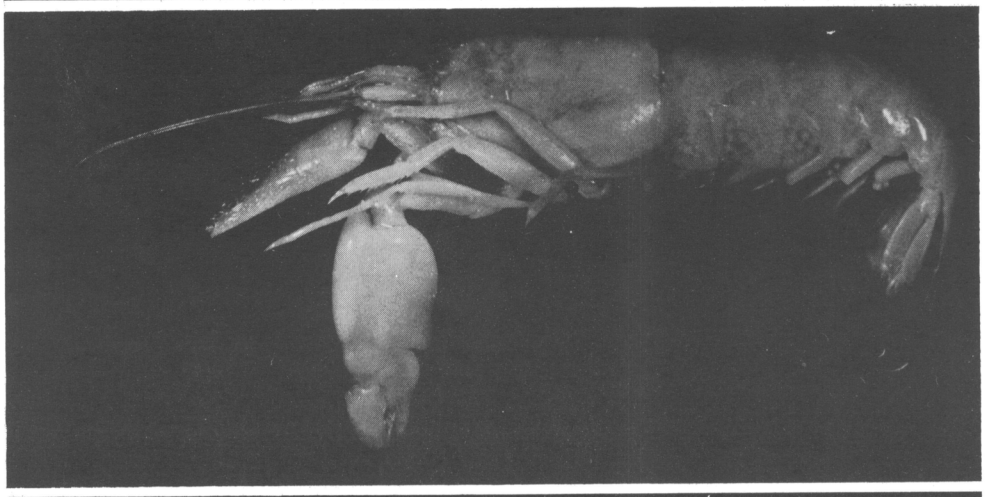

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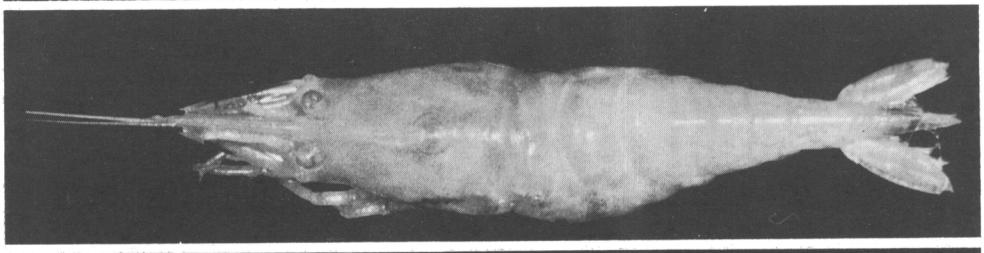

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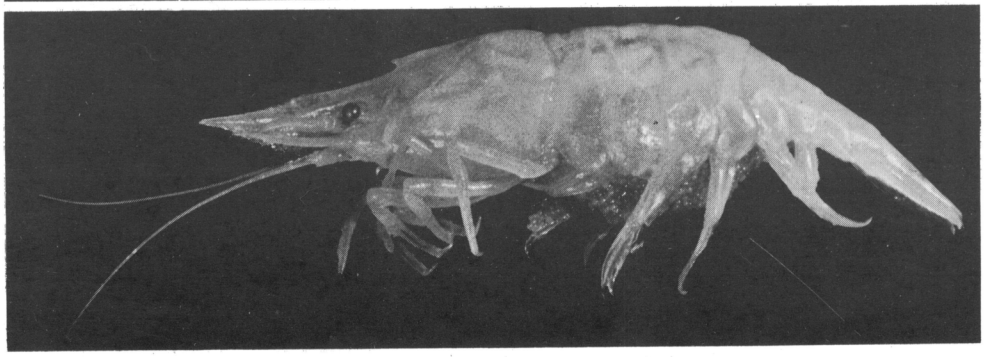
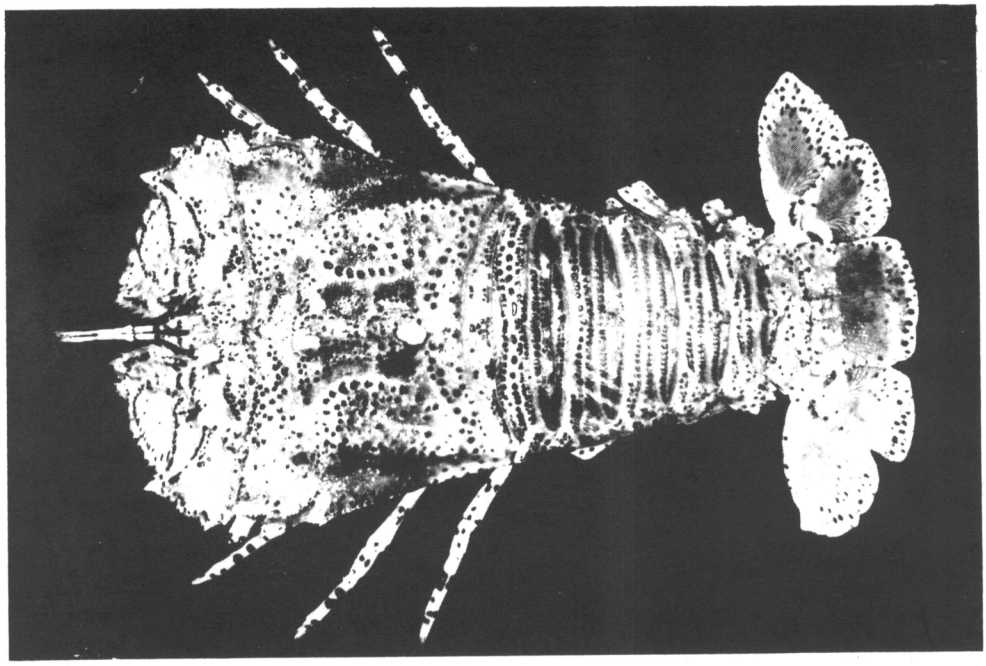


4

## EXPLANATION OF PLATE V

Fig. 1. *Thenus orientalis* ( LUND ); dorsal view ( Male, x $\frac{3}{5}$ )

Fig. 2. *Thenus orientalis* ( LUND ); ventral view ( Male, x $\frac{3}{5}$ )



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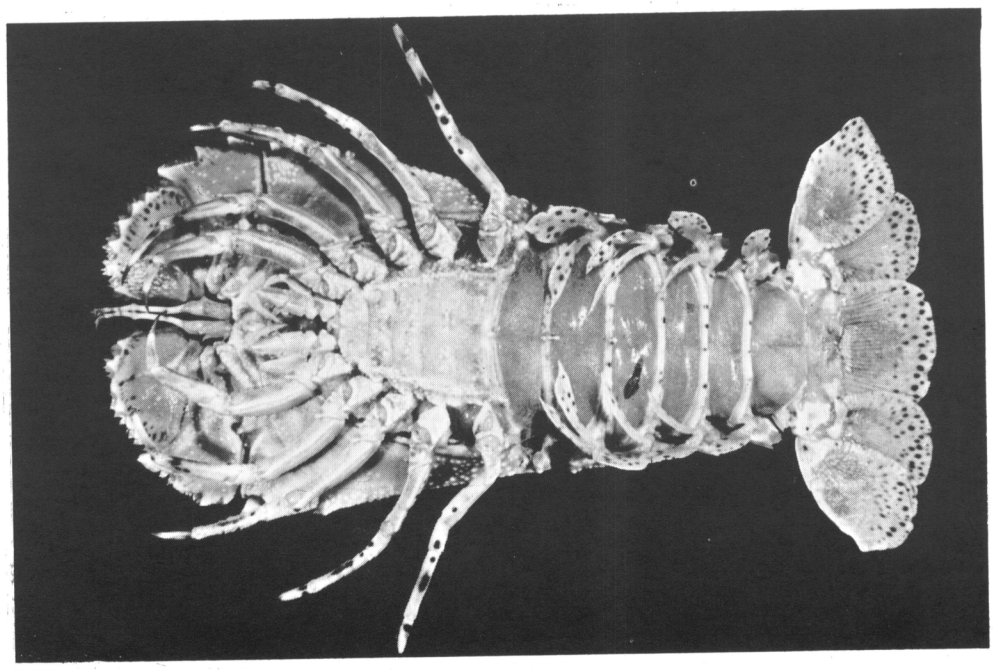

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