

Decapod Crustacea : Dorippidae

Huilian CHEN *

ABSTRACT

The Dorippidae collected by the MUSORSTOM I and II Expeditions during 1976 and 1980 in Philippine waters consist of 9 species belonging to four genera. One new genus and two new species are described. Five species are reported for the first time from the Philippines.

RÉSUMÉ

Les Dorippidae collectés par les Expéditions MUSORSTOM I et II en 1976 et 1980, dans les eaux des Philippines, comprennent 9 espèces appartenant à 4 genres. Un genre et deux espèces sont décrits comme nouveaux. Cinq espèces sont signalées pour la première fois des Philippines.

INTRODUCTION

The Dorippidae collected by the MUSORSTOM I Expedition, have been preliminarily identified and published by SERÈNE and VADON (1981). The present report is based upon two collections of this family obtained by the MUSORSTOM I and II Expeditions, 1976 and 1980, in Philippine waters. A total of 9 species belonging to 4 genera is identified, of which one new genus and two new species are described. Five species (marked with an asterisk) are reported for the first time from Philippine waters. With the exception of one specimen collected at 70-76 m depth, all the specimens are from deeper waters.

I am very grateful to Prof. J. FOREST, Museum National d'Histoire Naturelle, Paris, for providing me with the study material and to Dr. Alain CROSNIER of the Office de la Recherche Scientifique et Technique Outre-Mer, Paris, who was responsible for collecting some of the rare specimens ; to Prof. J. Y. LIU of the Institute of Oceanology, Academia Sinica for guidance in preparing this report ; to Mr. Zhaohong MENG for drawing the figures ; to Mr. Huazhong SONG for preparing the photographs of the specimens.

List of Stations

MUSORSTOM I.

- Station 2. — 19.03.1976, 14°02,8' N, 120°18,8' E, 182-187 m : *Ethusa latidactyla*.
 Station 24. — 22.03.1976, 14°00,0' N, 120°18,0' E, 189-209 m : *Ethusa izuensis*.
 Station 25. — 22.03.1976, 14°02,7' N, 120°20,3' E, 191-200 m : *Ethusa latidactyla*, *Ethusa izuensis*.
 Station 26. — 22.03.1976, 14°00,9' N, 120°16,8' E, 189 m : *Ethusa izuensis*, *Philippidorippe philippinensis*.

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- Station 30. — 22.03.1976, 14°01,3' N, 120°18,7' E, 177-186 m : *Ethusa latidactyla*, *Ethusa izuensis*, *Philippidorippe philippinensis*.
- Station 32. — 23.03.1976, 14°02,2' N, 120°17,7' E, 184-193 m : *Ethusa latidactyla*, *Ethusa izuensis*.
- Station 34. — 23.03.1976, 14°01,0' N, 120°15,8' E, 188-191 m : *Ethusa izuensis*.
- Station 36. — 23.03.1976, 14°01,2' N, 120°20,2' E, 187-210 m : *Ethusa izuensis*.
- Station 43. — 24.03.1976, 13°50,5' N, 120°28,0' E, 448-484 m : *Ethusa indica*.
- Station 44. — 24.03.1976, 13°46,9' N, 120°29,5' E, 592-610 m : *Ethusa indica*.
- Station 47. — 25.03.1976, 13°40,7' N, 120°30,0' E, 685-757 m : *Ethusa indica*.
- Station 51. — 25.03.1976, 13°49,4' N, 120°04,2' E, 170-200 m : *Ethusa latidactyla*.
- Station 56. — 26.03.1976, 13°53,1' N, 120°08,9' E, 129-134 m : *Philippidorippe philippinensis*.
- Station 57. — 26.03.1976, 13°53,1' N, 120°13,2' E, 96-107 m : *Ethusa izuensis*, *Philippidorippe philippinensis*.
- Station 61. — 27.03.1976, 14°02,2' N, 120°18,1' E, 184-202 m : *Ethusa izuensis*.
- Station 62. — 27.03.1976, 13°59,5' N, 120°15,6' E, 179-194 m : *Ethusa quadrata*.
- Station 63. — 27.03.1976, 14°00,8' N, 120°15,8' E, 191-195 m : *Philippidorippe philippinensis*.
- Station 64. — 27.03.1976, 14°00,5' N, 120°16,3' E, 194-195 m : *Ethusa izuensis*.
- Station 71. — 28.03.1976, 14°09,3' N, 120°26,2' E, 174-204 m : *Ethusa izuensis*.
- Station 73. — 28.03.1976, 14°15,0' N, 120°31,2' E, 70-76 m : *Dorippe tenuipes*.

MUSORSTOM II.

- Station 2. — 20.11.1980, 14°01,0' N, 120°17,1' E, 184-186 m : *Ethusa izuensis*.
- Station 6. — 20.11.1980, 13°56,5' N, 120°20,7' E, 136-152 m : *Philippidorippe philippinensis*.
- Station 10. — 21.11.1980, 14°00,1' N, 120°18,5' E, 188-195 m : *Ethusa foresti*.
- Station 12. — 21.11.1980, 14°01,0' N, 120°19,7' E, 197-210 m : *Ethusa latidactyla*, *Ethusa izuensis*.
- Station 18. — 22.11.1980, 14°00,0' N, 120°18,6' E, 188-195 m : *Ethusa izuensis*.
- Station 20. — 22.11.1980, 14°00,9' N, 120°18,1' E, 185-192 m : *Ethusa foresti*.
- Station 25. — 23.11.1980, 13°39,0' N, 120°42,6' E, 520-550 m : *Ethusa indica*.
- Station 26. — 23.11.1980, 13°49,6' N, 120°51,0' E, 299-320 m : *Ethusa indica*, *Ethusa sexdentata*, *Ethusa quadrata*.
- Station 35. — 24.11.1980, 13°27,9' N, 121°11,6' E, 160-198 m : *Ethusa izuensis*.
- Station 36. — 24.11.1980, 13°31,4' N, 121°23,9' E, 569-595 m : *Ethusa indica*, *Ethusa sexdentata*.
- Station 39. — 25.11.1980, 13°02,8' N, 122°37,1' E, 1 030-1 190 m : *Ethusa indica*.
- Station 41. — 25.11.1980, 13°15,3' N, 122°45,9' E, 166-172 m : *Ethusa latidactyla*.
- Station 49. — 26.11.1980, 13°38,4' N, 121°44,1' E, 416-425 m : *Ethusa indica*, *Ethusa sexdentata*.
- Station 50. — 27.11.1980, 13°36,7' N, 120°33,7' E, 810-820 m : *Ethusa desciscens*.
- Station 52. — 27.11.1980, 14°00,7' N, 120°18,7' E, 181-190 m : *Ethusa izuensis*.
- Station 55. — 27.11.1980, 13°53,7' N, 119°58,5' E, 865-866 m : *Ethusa indica*, *Ethusa desciscens*.
- Station 63. — 29.11.1980, 14°07,3' N, 120°15,0' E, 215-230 m : *Ethusa sexdentata*.
- Station 64. — 29.11.1980, 14°01,5' N, 120°18,9' E, 191-195 m : *Ethusa latidactyla*, *Ethusa izuensis*.
- Station 66. — 29.11.1980, 14°00,6' N, 120°20,3' E, 192-209 m : *Ethusa latidactyla*, *Ethusa izuensis*.
- Station 67. — 29.11.1980, 14°00,1' N, 120°18,5' E, 193-199 m : *Ethusa latidactyla*, *Ethusa izuensis*.
- Station 68. — 29.11.1980, 14°01,9' N, 120°18,8' E, 195-199 m : *Ethusa izuensis*, *Ethusa foresti*.
- Station 72. — 30.11.1980, 14°00,7' N, 120°19,4' E, 182-197 m : *Ethusa foresti*.
- Station 78. — 1.12.1980, 13°49,1' N, 120°28,0' E, 441-550 m : *Ethusa indica*.
- Station 79. — 1.12.1980, 13°44,6' N, 120°31,6' E, 682-770 m : *Ethusa indica*.
- Station 80. — 1.12.1980, 13°45,1' N, 120°37,7' E, 178-205 m : *Ethusa foresti*.

Species List

- *1. *Dorippe tenuipes* Chen, 1980
2. *Philippidorippe philippinensis* gen. nov. and sp. nov.
- *3. *Ethusa sexdentata* (Stimpson, 1858)
- *4. *Ethusa latidactyla* (Parisi, 1914)
- *5. *Ethusa indica* Alcock, 1894
6. *Ethusa quadrata* Sakai, 1937
7. *Ethusa izuensis* Sakai, 1937
8. *Ethusa foresti* sp. nov.
- *9. *Ethusa desciscens* Alcock, 1894

SYSTEMATIC ACCOUNT

I. Subfamily DORIPPINAE MacLeay, 1838

Dorippe Weber, 17951. *Dorippe tenuipes* Chen, 1980 (figs. 1-2 c, d ; pl. I, fig. 8).

Dorippe (*Dorippe*) *tenuipes* Chen, 1980 : 156-158, 160, fig. 2, pl. II : 3, 5, 7-8.

Dorippe miersi Serène, 1981 : 1128-1131, figs. 1-3, pl. I : 1-2 ; pl. II : 1-4.

Dorippe frascoe, SERÈNE and VADON, 1981 : 120-121 (non Herbst, 1785).

MATERIAL

MUSORSTOM I.

St. 73. 1 immature ♂ (8,0 × 8,0 mm).

Habitat : Found on muddy sand or shelly bottoms, depth 33-128 m.

Type locality : South China Sea (China).

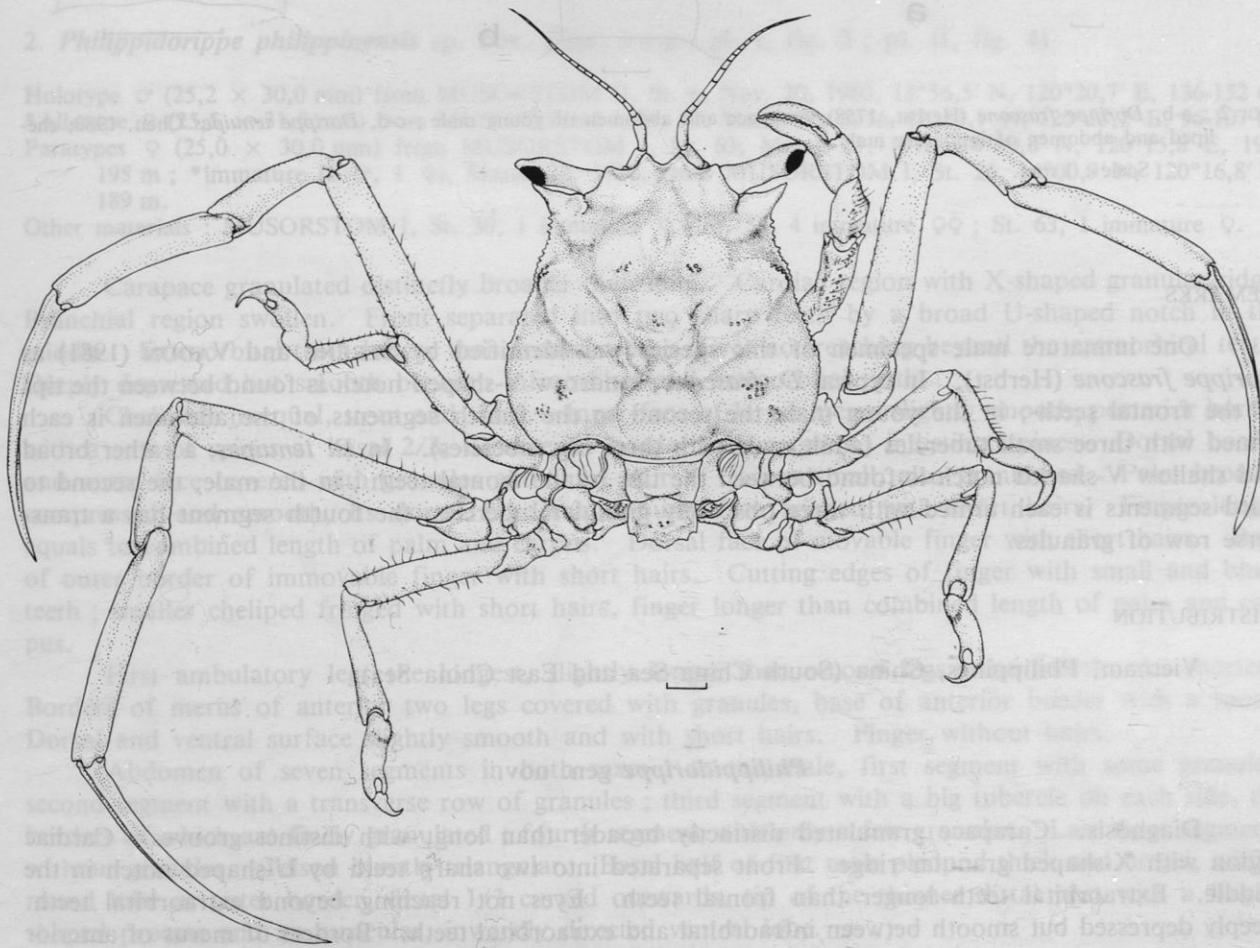


FIG. 1. — *Dorippe tenuipes* Chen, 1980, immature male.

Scale : 1 mm.

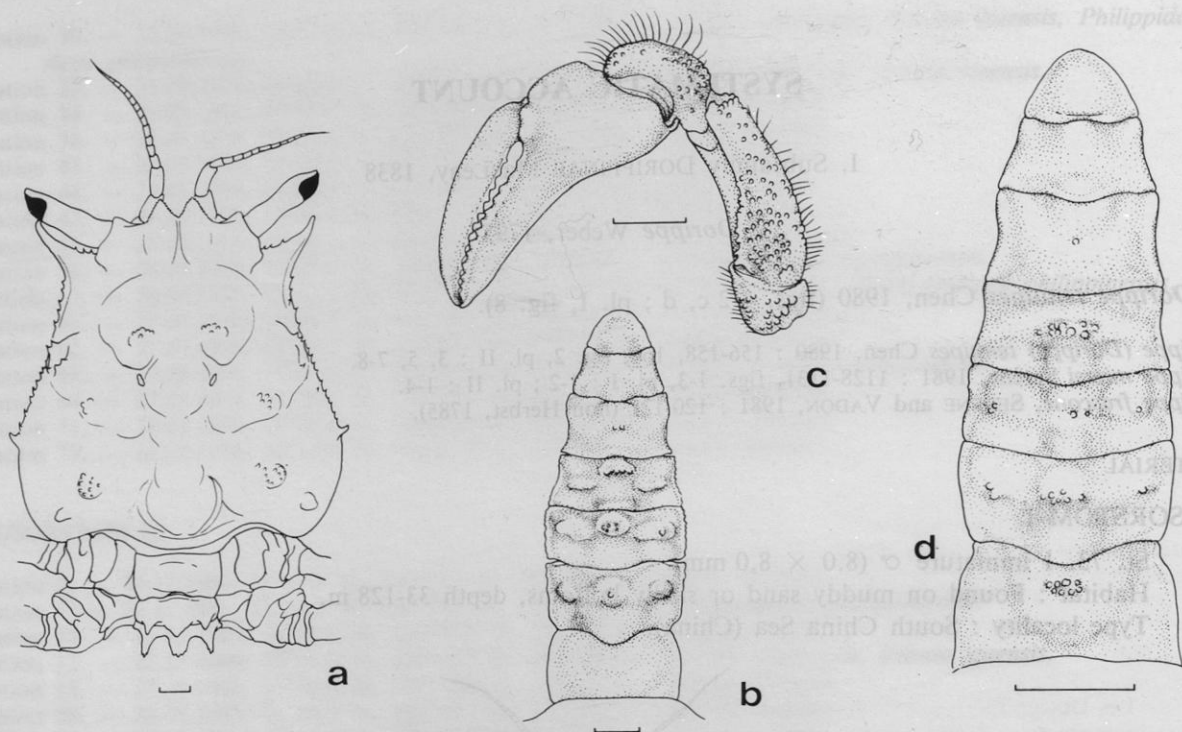


FIG. 2 : a-b, *Dorippe frascione* (Herbst, 1758), carapace and abdomen of young male ; c-d, *Dorippe tenuipes* Chen, 1980, cheliped and abdomen of immature male.

Scale : 1 mm.

REMARKS

One immature male specimen of this species was identified by SERÈNE and VADON (1981) as *Dorippe frascione* (Herbst). In typical *D. frascione*, a narrow V-shaped notch is found between the tips of the frontal teeth ; in the young male the second to the fourth segments of the abdomen is each armed with three small tubercles (adult male with three big tubercles). In *D. tenuipes*, a rather broad and shallow V-shaped notch is found between the tips of the frontal teeth ; in the male, the second to third segments is each armed with three obscurely granular tubercles, the fourth segment has a transverse row of granules.

DISTRIBUTION

Vietnam, Philippines, China (South China Sea and East China Sea).

Philippidorippe gen. nov.

Diagnosis. Carapace granulated distinctly broader than long, with distinct grooves. Cardiac region with X-shaped granular ridge. Front separated into two sharp teeth by U-shaped notch in the middle. Extraorbital teeth longer than frontal teeth. Eyes not reaching beyond extraorbital teeth. Deeply depressed but smooth between infraorbital and extraorbital teeth. Borders of merus of anterior two ambulatory legs covered with microscopic granules. Third segment of male abdomen with tubercle on each side. Basal half of first male pleopod thick and broad, with a round lobe at outer border,

distal 1/3 curved outwards, tip of the thinner distal part with a finger-shaped process and an auricular, inwardly directed ventral lobe.

Type species : *Philippidorippe philippinensis* sp. nov.

Gender : feminine.

Etymology : The generic name is derived from the Philippines, the type locality, and the generic name *Dorippe*.

Remarks : This new genus is closely related to *Dorippoides*, but they can be distinguished as follows :

	<i>Dorippoides</i> Serène and Romimohtarto, 1969	<i>Philippidorippe</i> gen. nov.
1. Cardiac region	without granular ridge	with X-shaped granular ridge
2. First male pleopod	proximal 4/5 stout, distal part laminated and narrowed abruptly, forming a very slender canaliculated process with the tip turned outwards	basal half thick and broad, distal 1/3 curved outwards, tip of the thinner distal part with a finger-shaped process and an auricular, inwardly directed ventral lobe
3. Anterior border of merus of anterior two ambulatory legs	without microscopic granules	with microscopic granules

2. *Philippidorippe philippinensis* sp. nov. (figs. 3 a-g ; pl. I, fig. 3 ; pl. II, fig. 4)

Holotype ♂ (25,2 × 30,0 mm) from MUSORSTOM II, St. 6, Nov. 20, 1980, 13°56,5' N, 120°20,7' E, 136-152 m.

*Allotype ♀ (25,5 × 31,5 mm) from MUSORSTOM I, St. 57, March 26, 1976, 13°53,1' N, 120°13,2' E, 96-107 m.

Paratypes ♀ (25,0 × 30,0 mm) from MUSORSTOM I, St. 63, March 27, 1976, 14°00,8' N, 120°15,8' E, 191-195 m ; *immature (1 ♂, 1 ♀), March 22, 1976, from MUSORSTOM I, St. 26, 14°00,9' N, 120°16,8' E, 189 m.

Other materials : MUSORSTOM I, St. 30, 1 immature ♀ ; St. 56, 4 immature ♀♀ ; St. 63, 1 immature ♀.

Carapace granulated distinctly broader than long. Cardiac region with X-shaped granular ridge. Branchial region swollen. Front separated into two sharp teeth by a broad U-shaped notch in the middle. Extraorbital teeth longer than frontal teeth. Eyes not reaching beyond the extraorbital teeth. Deeply depressed but smooth between infraorbital and extraorbital teeth.

Chelipeds unequal, stout and short. Inner face of larger merus slightly smooth, posterior border with a row of spines at basal 2/3, its anterior border with a row of indistinct spines. Dorsal border and outer face covered with granules and short hairs. Carpus small, also granulated. Palm broadly compressed and smooth, its dorsal border and outer face fringed with short hairs. Finger length equals to combined length of palm and carpus. Dorsal face of movable finger with short hairs. Base of outer border of immovable finger with short hairs. Cutting edges of finger with small and blunt teeth ; smaller cheliped fringed with short hairs, finger longer than combined length of palm and carpus.

First ambulatory legs the longest, slightly longer than second legs ; the fourth, the shortest. Borders of merus of anterior two legs covered with granules, base of anterior border with a tooth. Dorsal and ventral surface slightly smooth and with short hairs. Finger without hairs.

Abdomen of seven segments in both sexes : in the male, first segment with some granules, second segment with a transverse row of granules ; third segment with a big tubercle on each side, the borders of which are finely granulated ; fourth segment with only a few granules. Last three segments without granules. Telson bluntly triangular. Basal half of first male pleopod thick and broad, with a round lobe at outer border, distal 1/3 curved outwards, tip of the thinner distal part with a finger-shaped process and an auricular, inwardly directed ventral lobe.

* Specimens marked with an asterisk are deposited in the Institute of Oceanology, Academia Sinica, Qingdao, China.

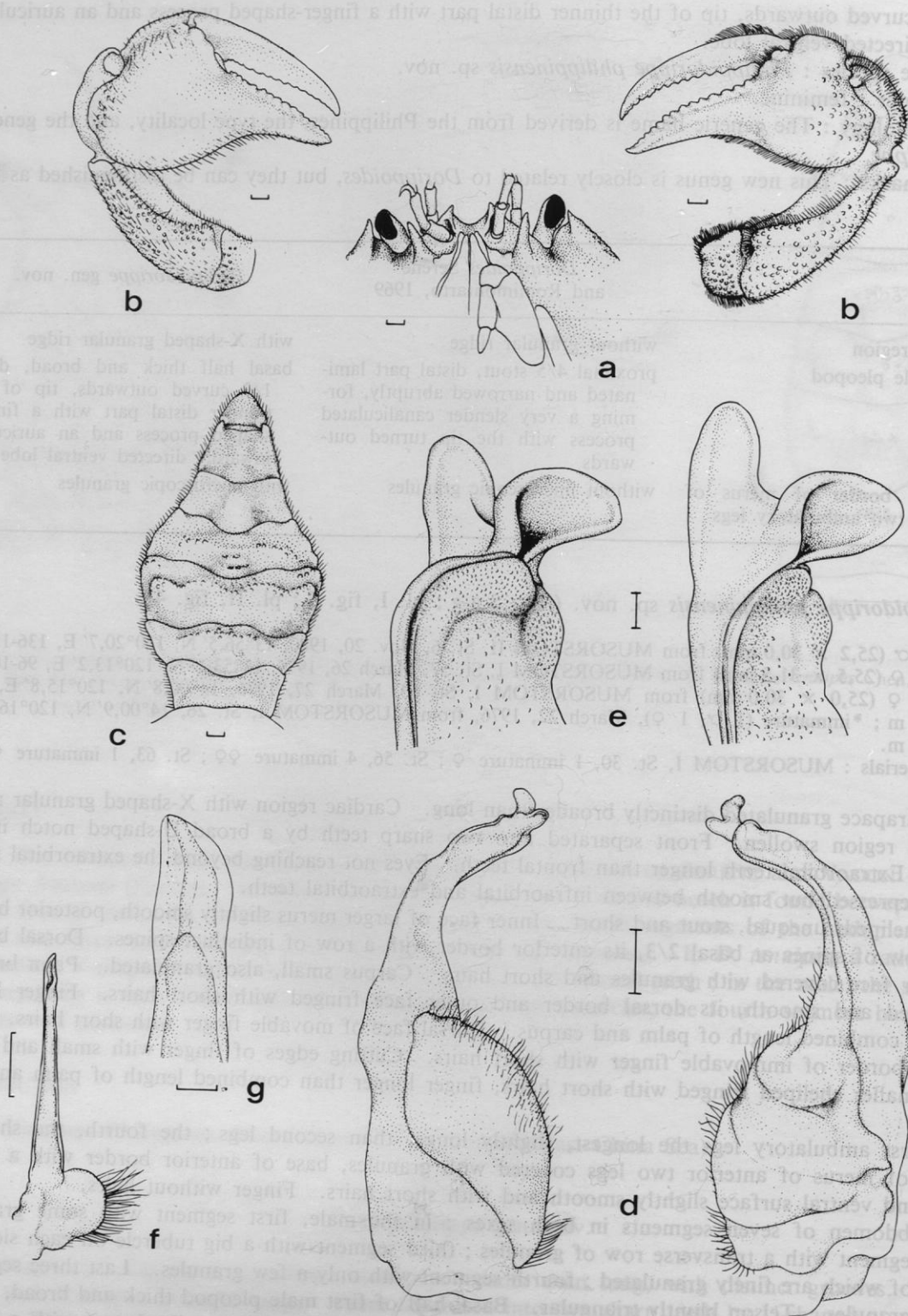


FIG. 3. — *Philippidorippe philippinensis* gen. nov., sp. nov., holotype (male).
 a, anterior of carapace, ventral view ; b, chelipeds ; c, abdomen ; d, first male pleopod ; e, enlarged tip of first male pleopod ;
 f, second male pleopod ; g, enlarged tip of second male pleopod.
 Scale : a-d, f, 1 mm ; e, g, 0,1 mm.

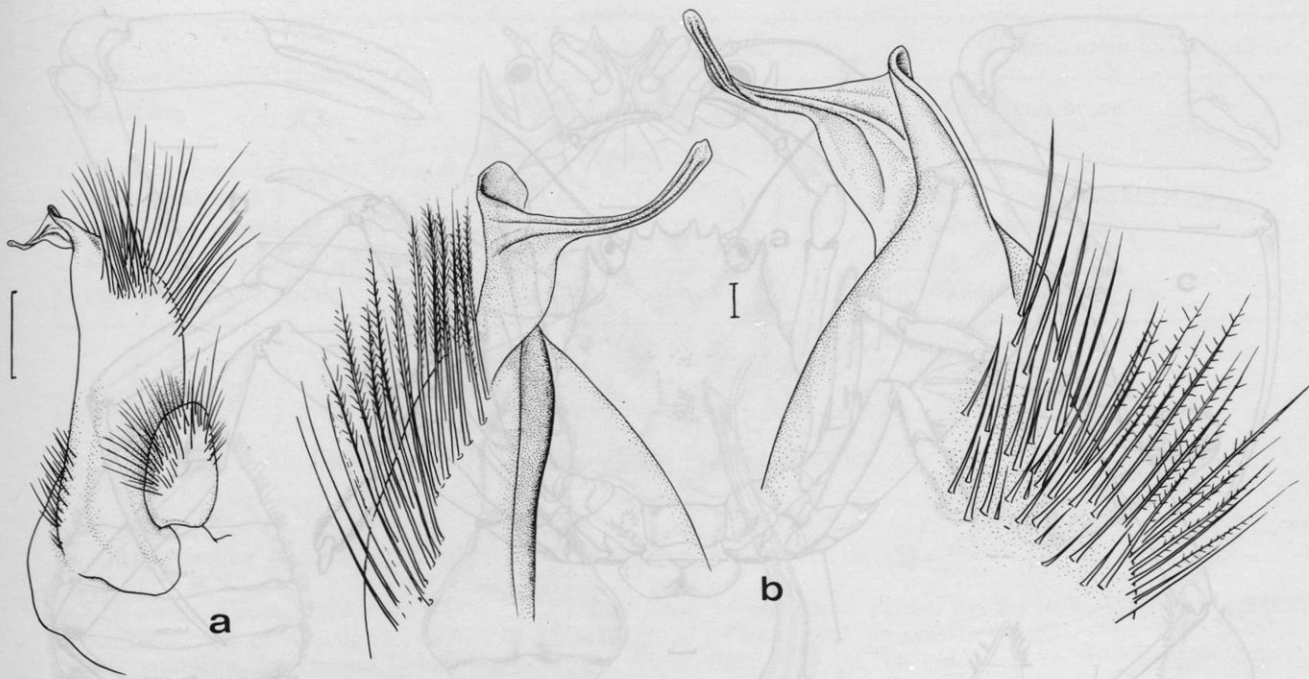


FIG. 4. — *Dorippoides facchino* (Herbst, 1782).

a, first male pleopod ; b, enlarged tip of first male pleopod.

Scale : a, 1 mm ; b, 0,1 mm.

II. Subfamily ETHUSINAE Guinot, 1977

Ethusa Roux, 1830

3. *Ethusa sexdentata* (Stimpson, 1858) (figs. 5, 6 ; pl. II, figs. 1, 2)

Dorippe sexdentata Stimpson, 1858 : 163.

Ethusa sexdentata, STIMPSON, 1907 : 168, pl. 19, fig. 4 ; BALSS, 1922 : 120 ; YOKOYA, 1933 : 109 ; SAKAI, 1937 : 77, pl. 11, fig. 1, text-figs. 1 a, 2 ; 1965 : 22, pl. 11, fig. 2 ; 1976 : 63-64, pl. 23, fig. 1, text-fig. 26 a.

Ethusa andamanica Alcock, 1894 : 405 ; 1896 : 284. Illus. Zool. Invest. Crust. pl. 14, fig. 8 ; DOFLEIN, 1904 : 37, pl. 13, figs. 7-8 ; BOUVIER, 1906 : 482 ; PARISI, 1914 : 302, text-figs. 3-4.

MATERIAL

MUSORSTOM II.

St. 26, 1 ♂ (11,0 × 10,0 mm). — St. 36, 1 ♂ (10,5 × 10,1 mm). — St. 49, 3 ♂♂ (8,3 × 8,0 mm ; 9,5 × 8,1 mm ; 8,4 × 8,0 mm) ; 4 ♀♀ (11,0 × 11,0 mm ; 11,0 × 11,1 mm ; 11,8 × 11,5 mm ; 11,5 × 11,5 mm). — St. 63, 1 ♀ (9,7 × 10,3 mm).

Habitat : Found on muddy sand or shelly bottoms, depth 30-550 m.

Type locality : Japan.

REMARKS

Carapace of young specimens covered with tomentum but adult specimens (19,0 × 18,0 mm ; 16,0 × 14,5 mm collected from the South China Sea) are naked and glossy, but with granules under

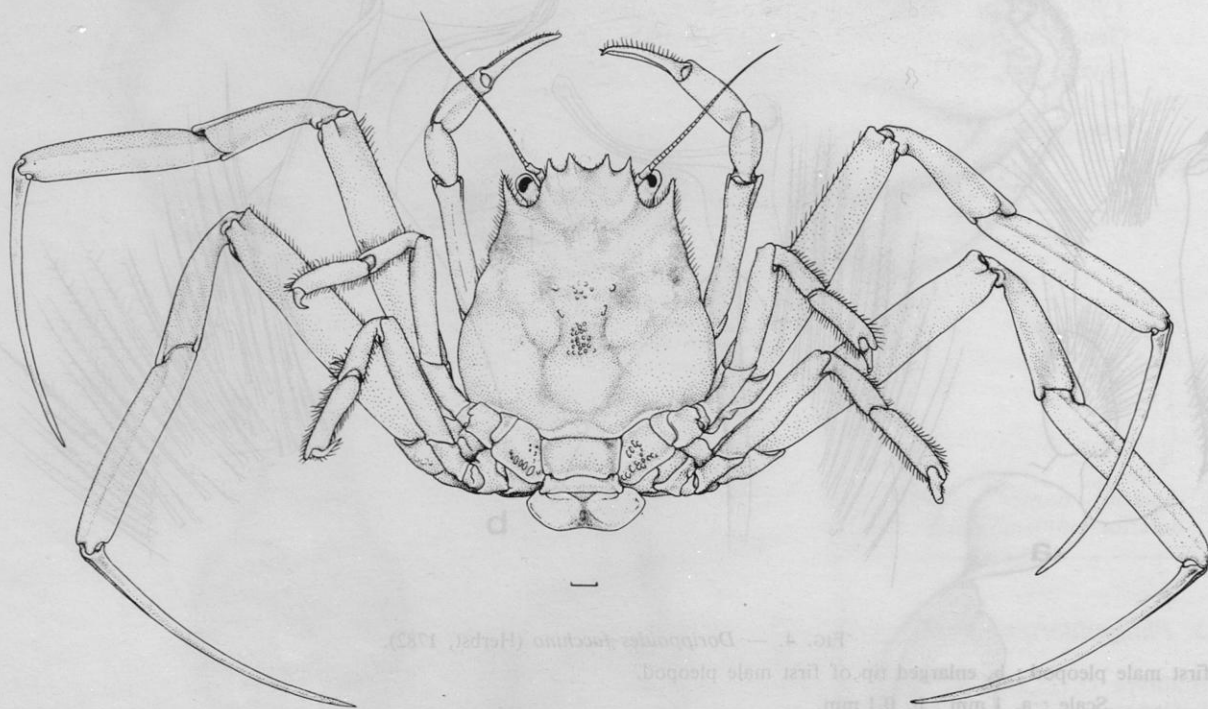


FIG. 5. — *Ethusa sexdentata* (Stimpson, 1858), male.

Scale : 1 mm.

the lens. Four frontal teeth longer or slightly shorter than, or sometimes equal to, the external orbital teeth.

Male chelipeds asymmetrical or symmetrical. Female cheliped slender and symmetrical. If asymmetrical larger palm swollen and longer than finger. The cutting edges of fingers with or without teeth. If symmetrical, the palm slender and shorter than the finger. Cutting edges of fingers with small teeth.

In the young male with lateral border of the third to fifth abdominal segments strongly convex, in the adult male, slightly convex and tuberculated at the base on each side.

Specimens of the present species were collected from 230-569 m ; SAKAI (1976) reported its occurrence from 30-550 m.

DISTRIBUTION

China (South China Sea and East China Sea), Japan, Indonesia, Philippines and Andaman Sea.

4. *Ethusa latidactyla* (Parisi, 1914) (fig. 7 ; pl. I, fig. 6 ; pl. II, figs. 3, 6)

Ethusina latidactyla Parisi, 1914 : 28, pl. 13, fig. 1.

Ethusa latidactyla, IHLE, 1916 : 139, text-figs. 74-75 ; SAKAI, 1937 : 78, text-fig. 1 b ; 1965 : 23, pl. 11, fig. 3 ; 1976 : 64, pl. 23, fig. 2, text-fig. 26 b.

Ethusa aff. *hirsuta* Serène and Vadon, 1981 : 118-119.

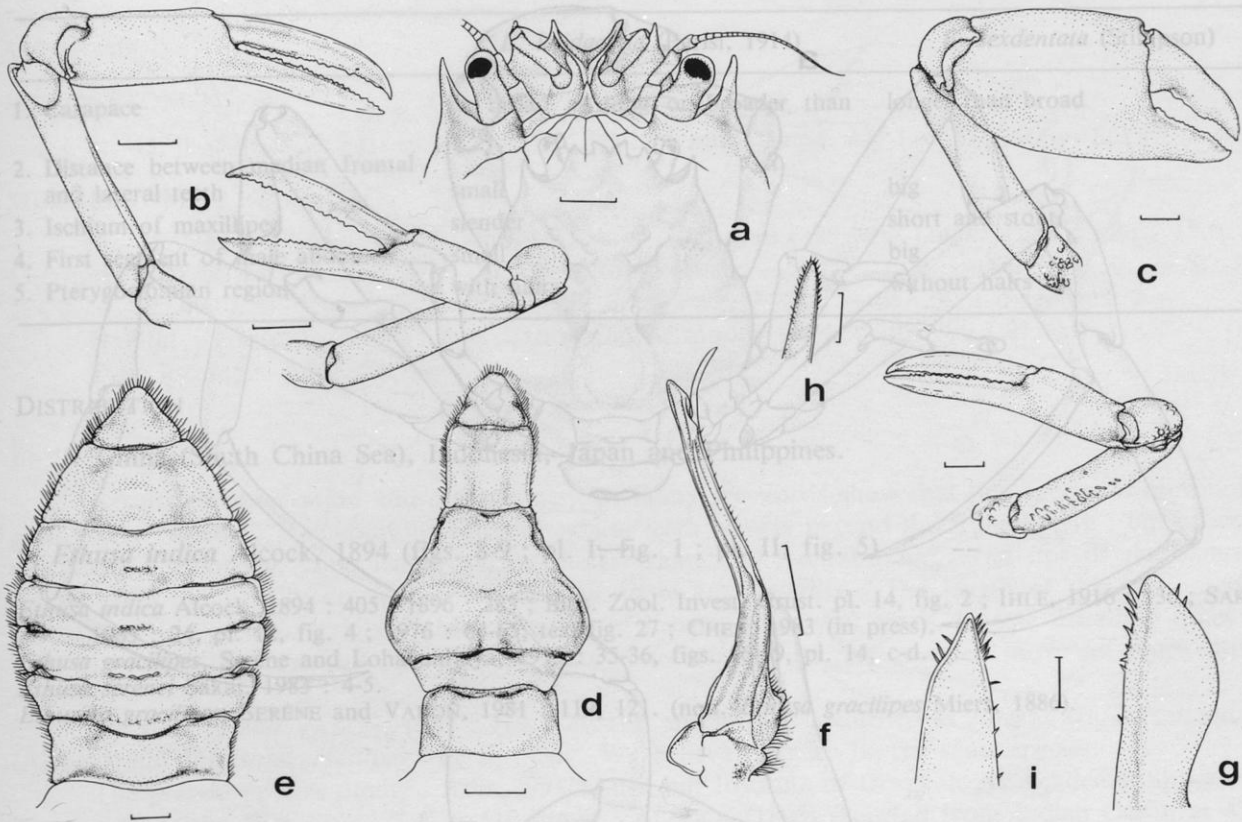


FIG. 6. — *Ethusa sexdentata* (Stimpson, 1858).

a, anterior of carapace, ventral view; b, male chelipeds; c, another male chelipeds; d, male abdomen; e, female abdomen; f, first and second male pleopods; g, enlarged tip of first male pleopod; h, enlarged tip of second male pleopod; i, enlarged tip of first male pleopod of another specimen.

Scale : a-f, 1 mm ; g-i, 0,1 mm.

MATERIAL

MUSORSTOM I.

St. 2, 1 ♀ (9,0 × 9,0 mm). — St. 25, 1 ♂ (7,0 × 7,0 mm). — St. 30, 1 ♂. — St. 32, 1 ♀ (10,0 × 10,0 mm). — St. 51, 1 ♂, 1 ♀.

MUSORSTOM II

St. 12, 1 ♂, 1 ♀. — St. 41, 5 ♂♂, 4 ♀♀. — St. 64, 2 ♂♂, 1 ♀. — St. 66, 2 ♂♂ (9,1 × 9,1 mm ; 10,0 × 10,5 mm), 3 ♀♀ (15,0 × 16,0 mm ; 14,0 × 15,0 mm ; 10,5 × 11,0 mm). — St. 67, 2 ♂♂, 1 ♀.

Habitat : Found on soft mud or sandy bottom, depth 50-274 m.

Type locality : Sagami Bay (Japan).

REMARKS

This species closely resembles *Ethusa sexdentata* (Stimpson, 1858), but they can be distinguished as follows :

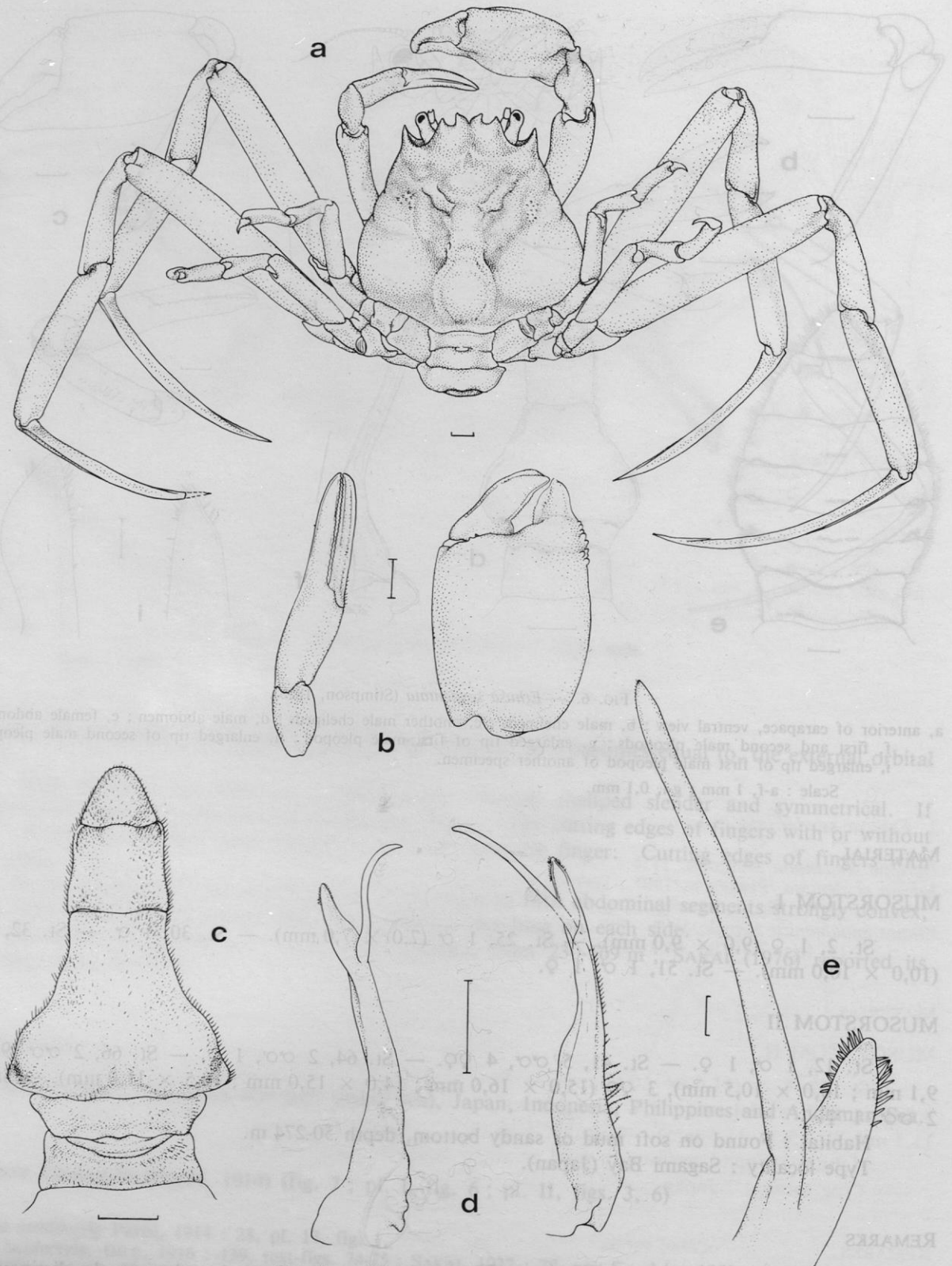


FIG. 7. — *Ethusa latidactyla* (Parisi, 1914).
 a, entire animal (male); b, chelae; c, male abdomen; d, first and second male pleopods; e, enlarged tips of first and second male pleopods.
 Scale: a-d, 1 mm; e, 0.1 mm.

MATERIAL	<i>E. latidactyla</i> (Parisi, 1914)	<i>E. sexdentata</i> (Stimpson)
1. Carapace	as broad as long or broader than long	longer than broad
2. Distance between median frontal and lateral teeth	small	big
3. Ischium of maxilliped	slender	short and stout
4. First segment of male abdomen	small	big
5. Pterygostomial region	with hairs	without hairs

Habitat: Found in deep waters, soft mud or muddy sand, depth 299-1,312 m.
 Type locality: Andaman Sea.

DISTRIBUTION

China (South China Sea), Indonesia, Japan and Philippines.

5. *Ethusa indica* Alcock, 1894 (figs. 8-9 ; pl. I, fig. 1 ; pl. II, fig. 5)

Ethusa indica Alcock, 1894 : 405 ; 1896 : 283 ; Illus. Zool. Invest. Crust. pl. 14, fig. 2 ; IHLE, 1916 : 136 ; SAKAI, 1965 : 24, pl. 12, fig. 4 ; 1976 : 64-65, text-fig. 27 ; CHEN, 1983 (in press).

Ethusa gracilipes, Serène and Lohavanijaya, 1973 : 35-36, figs. 56-59, pl. 14, c-d.

Ethusa serenei Sakai, 1983 : 4-5.

Ethusina gracilipes, SERÈNE and VADON, 1981 : 119, 121. (non. *Ethusa gracilipes* Miers, 1886).

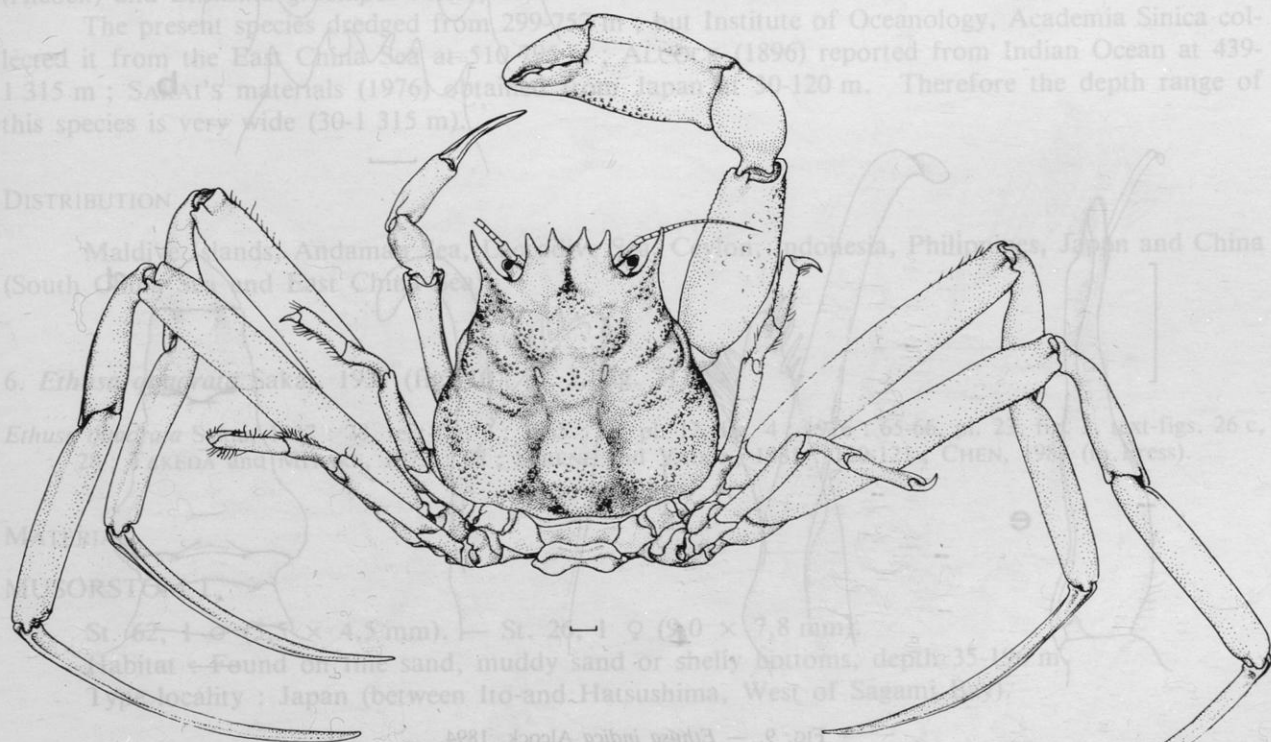


FIG. 8. — *Ethusa indica* Alcock, 1894.

Scale : 1 mm.

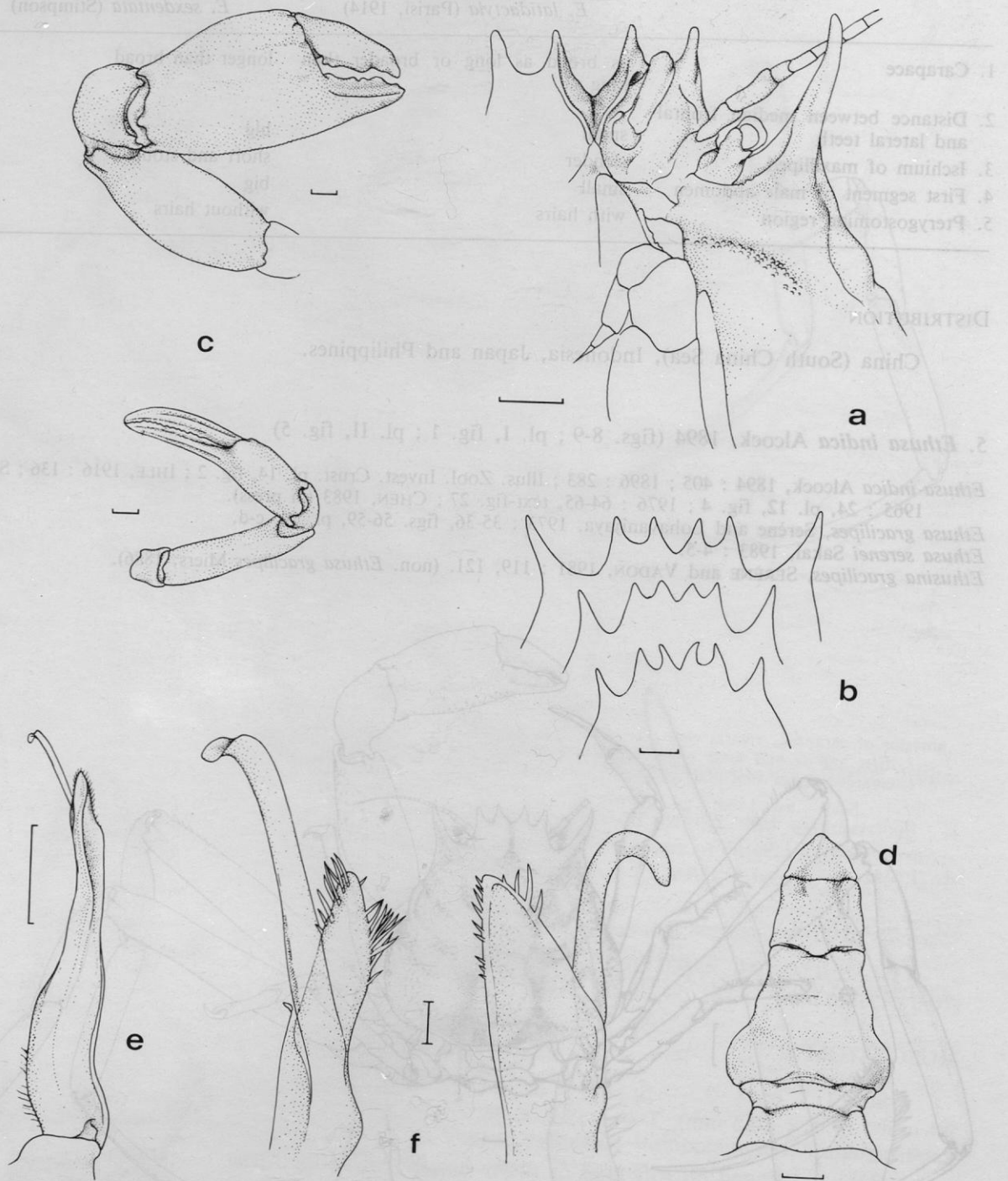


FIG. 9. — *Ethusa indica* Alcock, 1894.

a, anterior of carapace ; b, external orbital and frontal teeth, ventral view ; c, male chelipeds ; d, male abdomen ; e, first male pleopod ; f, enlarged tip of first male pleopod.

Scale : a-e, 1 mm ; f, 0,1 mm.

MATERIAL

MUSORSTOM I.

St. 43, 1 ♂ (6,0 × 5,0 mm), 1 ♀ (11,5 × 11,6 mm). — St. 44, 1 ♂, 5 ♀♀. — St. 47, 2 ♂♂.

MUSORSTOM II.

St. 25, 26 ♂♂ (15,5 × 15,0 mm ; 11,4 × 10,7 mm) ; 28 ♀♀ (14,5 × 14,5 mm ; 13,0 × 13,0 mm ; 14,1 × 14,3 mm ; 13,0 × 13,0 mm) (ovigerous). — St. 26, 1 ♀. — St. 36, 1 ♀. — St. 39, 2 ♀♀. — St. 49, 1 ♀. — St. 55, 2 ♀♀. — St. 78, 3 ♂♂, 7 ♀♀. — St. 79, 1 ovigerous ♀.

Habitat : Found in deeper waters, soft mud or muddy sand, depth 299-1 312 m.

Type locality : Andaman Sea.

REMARKS

Results of observation and measurement of many specimens show that this species is morphologically very variable. Generally its external orbital teeth project beyond the frontal teeth ; but in some specimens it is of the same length as, or shorter than, the frontal teeth. The tips of the external orbital teeth are usually directed outwardly but some are inwardly. The length of the two anterior ambulatory legs is also variable. Measurement of merus of the first leg is 4,4-9,0, usually 5 times as long as broad. But the characteristics of male abdomen and its first pleoped show not much differences.

By SERÈNE and VADON, 1981 : 119, 121, this species was identified as *Ethusa* aff. *investigatoris* (Alcock) and *Ethusina gracilipes* Miers, 1886. We believe them to be the same species.

The present species dredged from 299-757 m ; but Institute of Oceanology, Academia Sinica collected it from the East China Sea at 510-795 m ; ALCOCK (1896) reported from Indian Ocean at 439-1 315 m ; SAKAI'S materials (1976) obtained from Japan at 30-120 m. Therefore the depth range of this species is very wide (30-1 315 m).

DISTRIBUTION

Maldive Islands, Andaman Sea, Laccadive Sea, Ceylon, Indonesia, Philippines, Japan and China (South China Sea and East China Sea).

6. *Ethusa quadrata* Sakai, 1937 (fig. 10 ; pl. I, fig. 7)

Ethusa quadrata Sakai, 1937 : 78, text-fig. 3 ; 1965 : 24, pl. 12, fig. 4 ; 1976 : 65-66, pl. 23, fig. 3, text-figs. 26 c, 28 ; TAKEDA and MIYAKE, 1972 : 68 ; SERÈNE and VADON, 1981 : 120-121 ; CHEN, 1983 (in Press).

MATERIAL

MUSORSTOM I.

St. 62, 1 ♂ (5,5 × 4,5 mm). — St. 26, 1 ♀ (9,0 × 7,8 mm).

Habitat : Found on fine sand, muddy sand or shelly bottoms, depth 35-196 m.

Type locality : Japan (between Ito-and Hatsushima, West of Sagami Bay).

REMARKS

The male chelipeds of this species are either asymmetrical or symmetrical. According to Sakai's original description, only the right cheliped of this species is distinctly longer. The abdomen of both sexes have seven segments ; in the male, the sixth segment is transversely quadrate and the telson is

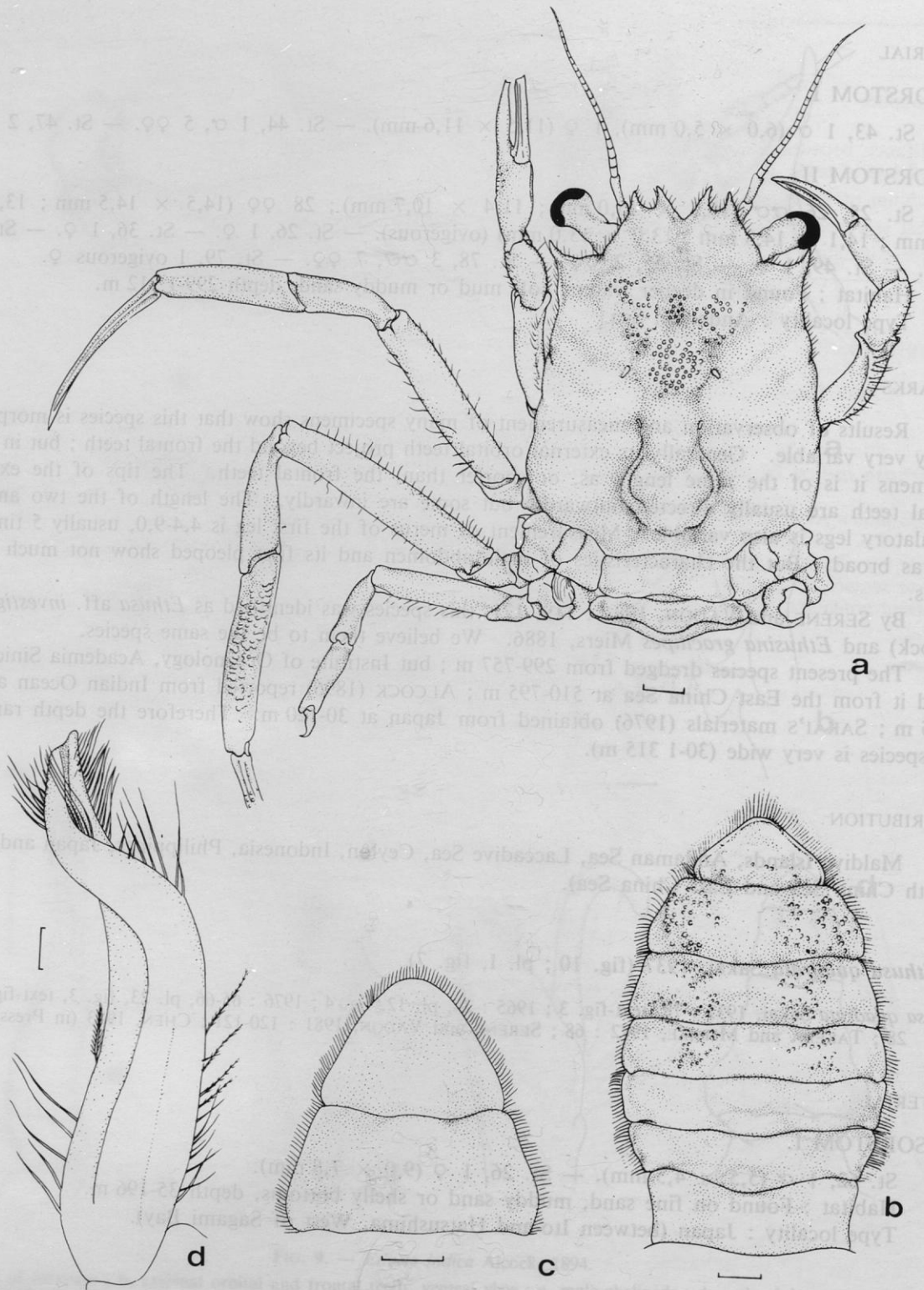


FIG. 10. — *Ethusa quadrata* Sakai, 1937.
 a, dorsal aspect of female ; b, female abdomen ; c, sixth segment and telson of male ; d, first male pleopod.
 Scale : a-c, 1 mm ; d, 0,1 mm.

bluntly triangular. The female abdomen is broader than that of the male but has broadly triangular telson.

DISTRIBUTION

China (South China Sea and East China Sea), Japan and Philippines.

7. *Ethusa izuensis* Sakai, 1937 (figs. 11-12 ; pl. I, fig. 2)

Ethusa izuensis Sakai, 1937 : 80, text-fig. 4 ; 1965 : 23, pl. 12, figs. 1-2 ; 1976 : 66, text-figs. 26 d, 29 ; TAKEDA and MIYAKE, 1972 : 67 ; SERÈNE and VADON, 1981 : 119-121 ; CHEN (in press).

MATERIAL

MUSORSTOM I.

St. 24, 1 ♀ (11,0 × 10,8 mm). — St. 25, 2 ♀♀ (11,5 × 11,0 mm ; 10,3 × 10,5 mm), 1 damaged. — St. 26, 1 ♂, 1 ♀ (8,5 × 7,5 mm ; 7,0 × 6,2 mm). — St. 30, 1 ♀. — St. 32, 1 ♀. — St. 34, 1 ♂, 1 ♀. — St. 36, 1 ♂. — St. 57, 1 ♀ (12,9 × 12,3 mm). — St. 61, 2 ♂♂, 2 ♀♀. — St. 64, 1 ♀. — St. 71, 1 ♂, 1 ♀.

MUSORSTOM II.

St. 2, 1 ♀ (11,3 × 10,7 mm). — St. 12, 1 ♀ (10,5 × 10,0 mm). — St. 18, 1 ♀. — St. 35, 1 ♂ (6,0 × 5,5 mm). — St. 52, 1 ♀. — St. 64, 1 ♀. — St. 66, 1 ♀. — St. 67, 1 ♂ (7,4 × 6,4 mm). — St. 68, 1 ♂, 1 ♀.

Habitat : Found on fine sand or shelly bottoms, 30-210 m.

Type locality : Japan.

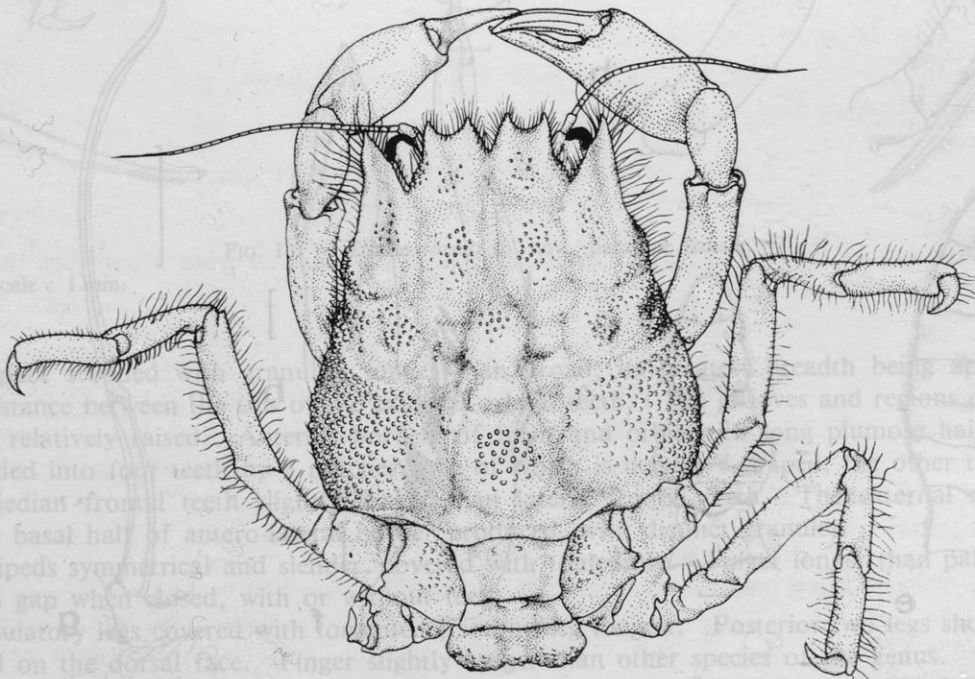


FIG. 11. — *Ethusa izuensis* Sakai, 1937, male.

Scale : 1 mm.

REMARKS

Description and figures of these specimens agree with that of SAKAI except the following two features : first, the movable and immovable fingers of male chelipeds have tomentose and scarcely short hairs, while Sakai described the movable and immovable fingers naked and polished. Second, the sixth segment of female abdomen is longer than SAKAI'S text-fig. 4 b ; its telson is bluntly triangular, while telson of his figure seems to be rounded.

SAKAI, 1937, p. 180, text-fig. 4 a, marked female holotype, but 1976, p. 66, text-fig. 29, marked male holotype while its figures seem to be of female holotype.

Specimens were obtained from 160-210 m, deeper than the depth range reported by SAKAI.

DISTRIBUTION

China (South China Sea and East China Sea), Japan and Philippines.

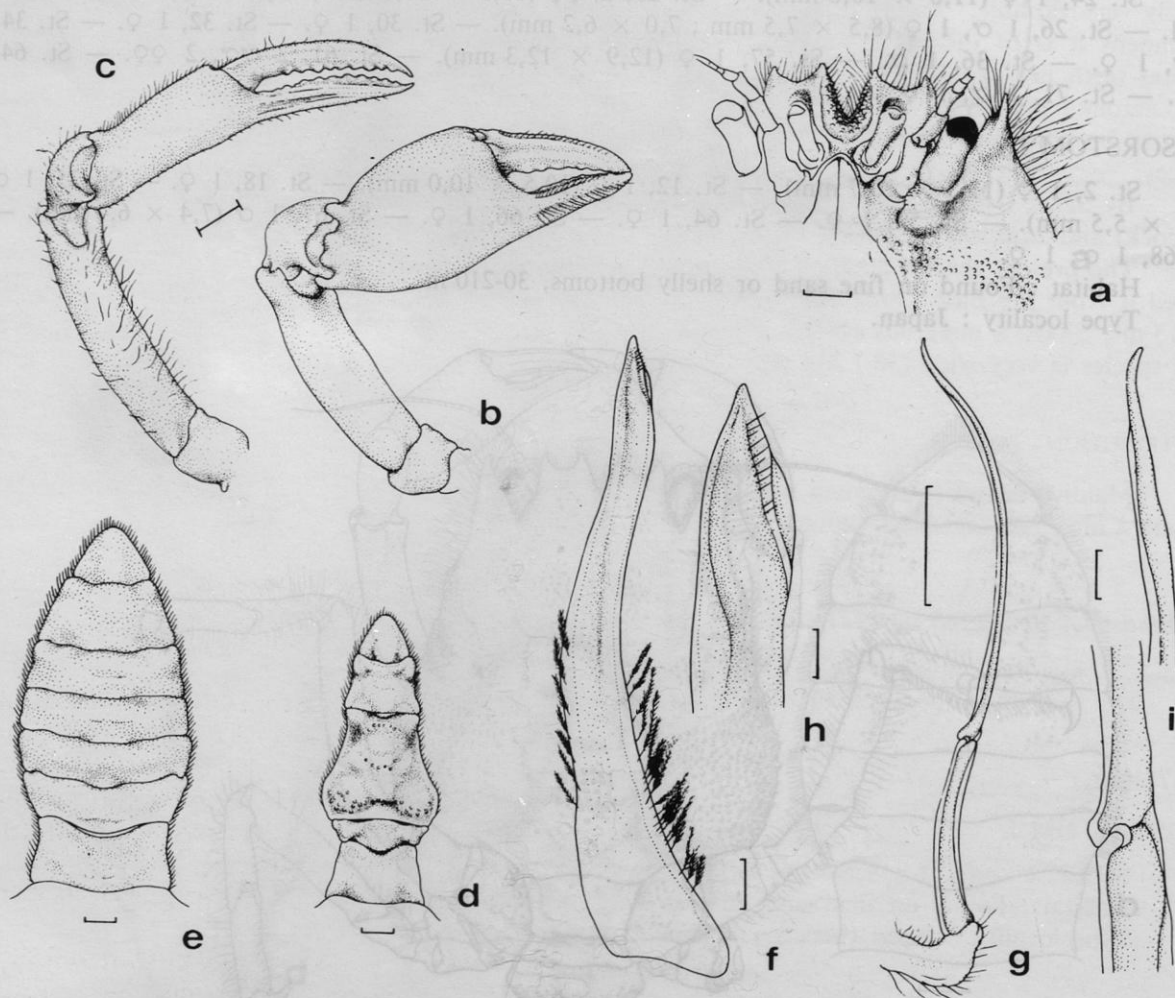


FIG. 12. — *Ethusa izuensis* Sakai, 1937.

a, anterior of carapace ; b, male cheliped ; c, female cheliped ; d, male abdomen ; e, female abdomen ; f, first male pleopod ; g, second male pleopod ; h, enlarged tip of first male pleopod ; i, enlarged part of second male pleopod.

Scale : a-g, 1 mm ; h-i, 0,1 mm.

8. *Ethusa foresti* sp. nov. (figs. 13-14 ; pl. II, figs. 7-8)

Holotype ♀ (8,9 × 7,9 mm) from MUSORSTOM II, st. 72, Nov. 30, 1980, 14°00,7' N, 120°19,4' E, 188-197 m.

Paratypes MUSORSTOM II : *St. 10, 1 ♀ (8,6 × 7,5 mm), Nov. 21, 1980, 14°00,1' N, 120°18,5' E, 188-195 m ; St. 20, 1 ♀ (8,4 × 7,7 mm), Nov. 22, 1980, 14°00,9' N, 120°18,1' E, 185-192 m ; St. 68, 1 ♀ (7,0 × 6,5 mm), Nov. 29, 1980, 14°01,9' N, 120°18,8' E, 195-199 m ; St. 80, 1 ♀ (7,6 × 6,7 mm), Dec. 1, 1980, 13°45,1' N, 120°37,7' E, 178-205 m.

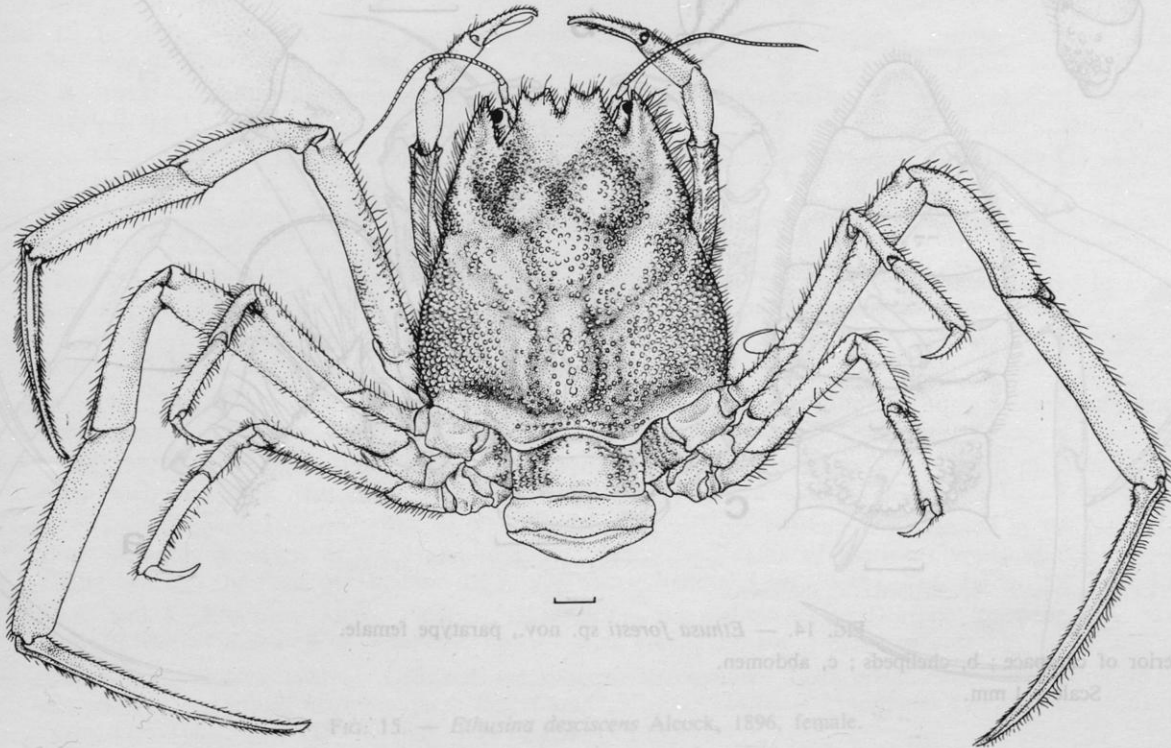


FIG. 13. — *Ethusa foresti* sp. nov., paratype female.

Scale : 1 mm.

Carapace studded with granules, longer than broad, its greatest breadth being approximately twice the distance between the tips of the external orbital teeth. The grooves and regions distinct, cardiac region relatively raised. Anterior borders of front and orbit with long plumose hairs. Frontal border divided into four teeth by 3 notches, one of which is deeply V-shaped, the other two shallow. The two median frontal teeth slightly longer than lateral frontal teeth. The external orbital teeth stout. The basal half of antero-lateral border produced, with distinct granules.

Chelipeds symmetrical and slender, covered with tomentose. Finger longer than palm, its inner border with gap when closed, with or without teeth.

Ambulatory legs covered with tomentose, second leg longest. Posterior two legs short and slender, located on the dorsal face. Finger slightly longer than other species of the genus.

Female abdomen consists of seven segments : first segment 1/2 as long as broad, its surface granulated. Sixth segment trapezoid. Telson bluntly triangular.

Andaman Sea, Laccadive Sea, Indonesia, Philippines and China (South China Sea and East China Sea).

* Specimen marked with an asterisk is deposited in the Institute of Oceanology, Academia Sinica, Qingdao, China.

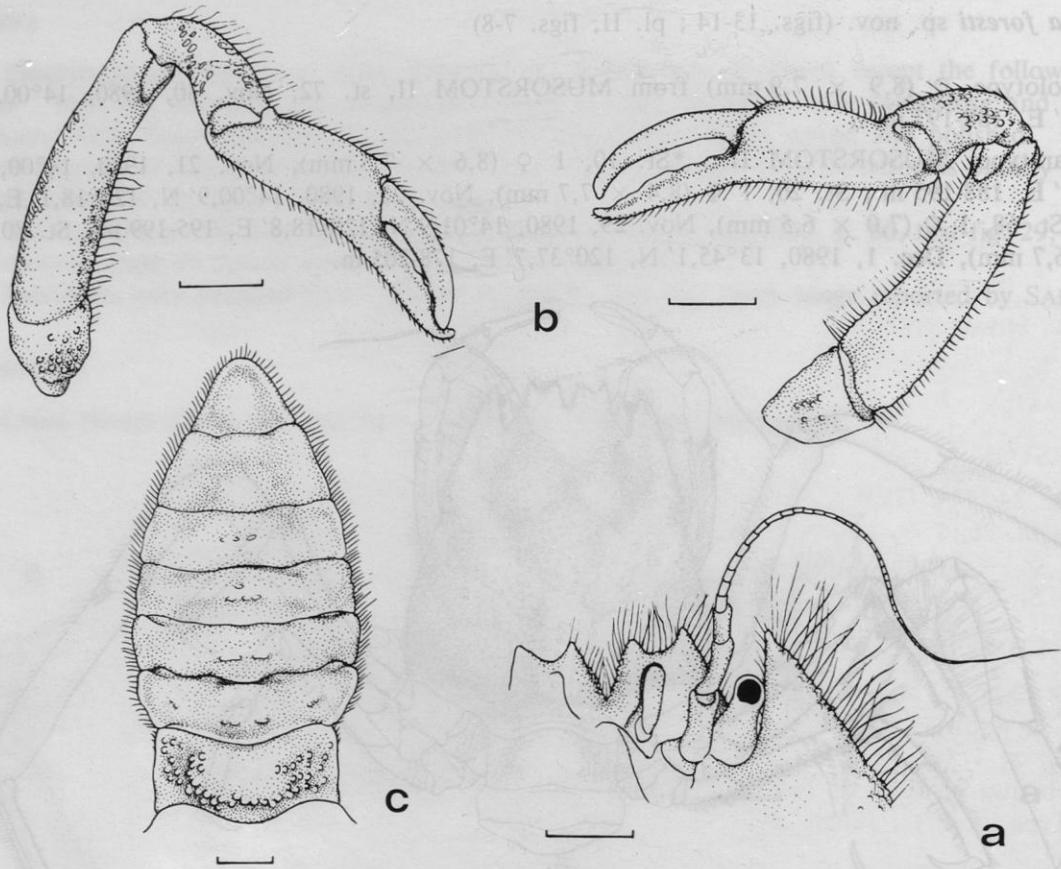


FIG. 14. — *Ethusa foresti* sp. nov., paratype female.

a, anterior of carapace ; b, chelipeds ; c, abdomen.

Scale : 1 mm.

This new species is close to *Ethusa izuensis* Sakai, 1937 reported from Japan, but they differ in the following characteristics.

	<i>Ethusa izuensis</i> Sakai	<i>Ethusa foresti</i> sp. nov.
1. Size of adult	relatively larger	relatively smaller
2. Granulation of carapace	fine	coarse
3. Finger of posterior two ambulatory legs	short	long
4. Basal half of antero-lateral border	not produced, without granules	produced, with granules
5. External orbital teeth	sharp, the tip directed outward	blunt, tip directed inward

Ethusina Smith, 18849. *Ethusina desciscens* Alcock, 1896 (figs. 15-16 ; pl. I, figs. 4-5)

Ethusina desciscens Alcock, 1896 : 286 ; Illus. Zool. Invest. Crust. pl. 62, figs. 2, 2 a ; CHEN, 1983 (in press).
Ethusa gracilipes, IHLE, 1916 : 147, fig. 77 (non. *Ethusa gracilipes* Miers, 1886).

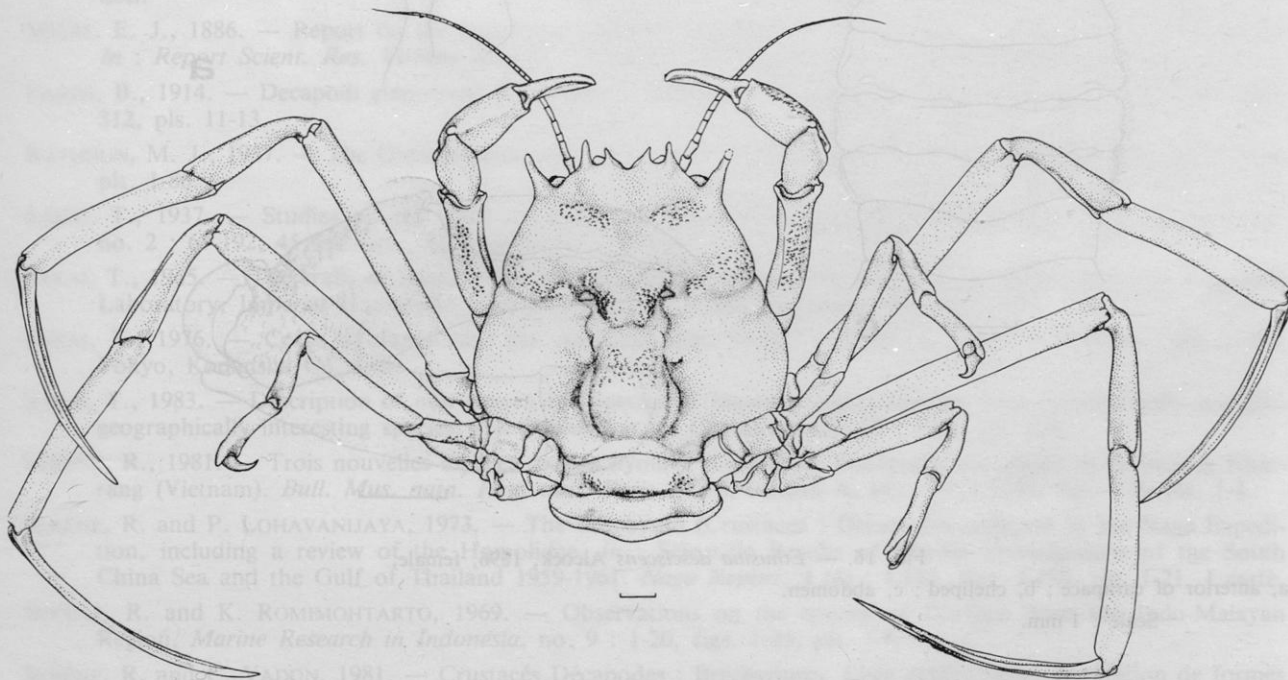


FIG. 15. — *Ethusina desciscens* Alcock, 1896, female.

Scale : 1 mm.

MATERIAL

MUSORSTOM II.

St. 50, 1 ♀ (8,6 × 9,0 mm). — St. 55, 1 ♀ (9,0 × 9,0 mm).

Habitat : Found on soft mud bottoms, depth 485-2 060 m.

Type locality : Adaman Sea and Laccadive Sea.

REMARKS

This species is assigned to *Ethusina* based on the large and swollen basal segment of the antennules and on the very small and immovable eyestalks.

DISTRIBUTION

Andaman Sea, Laccadive Sea, Indonesia, Philippines and China (South China Sea and East China Sea).

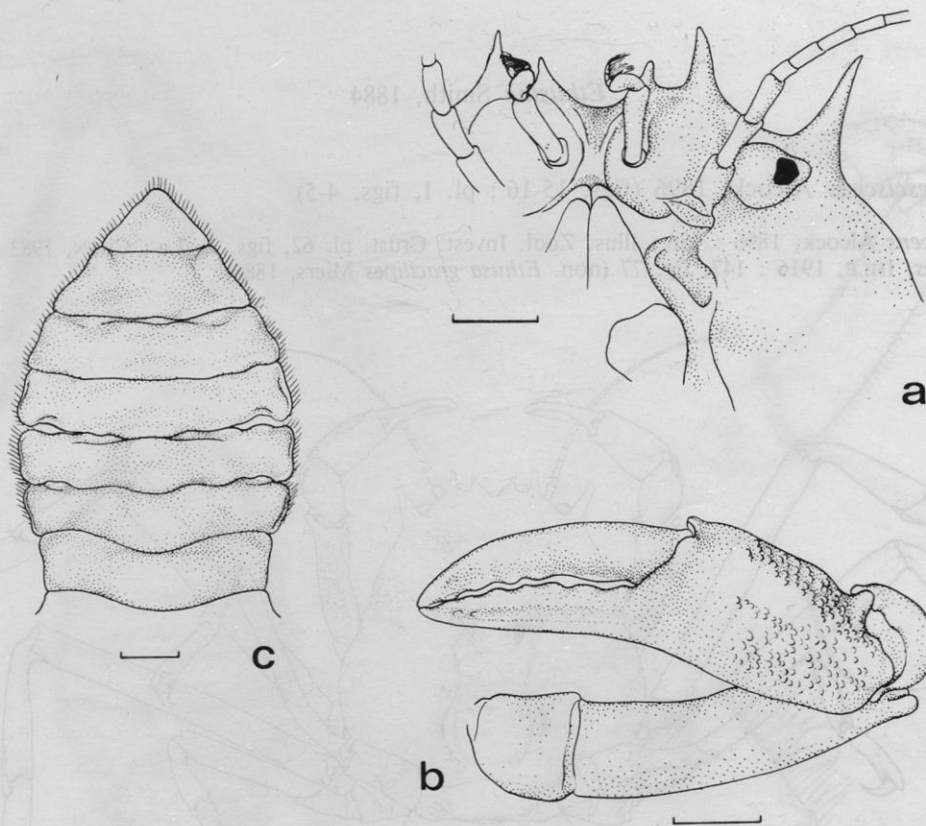


FIG. 16. — *Ethusina desciscens* Alcock, 1896, female.

a, anterior of carapace ; b, cheliped ; c, abdomen.

Scale : 1 mm.

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PLATE I

1. *Ethusa indica* Alcock, 1894, ♂ (12,0 × 11,2 mm).
2. *Ethusa izuensis* Sakai, 1937, ♀ (15,0 × 14,0 mm).
3. *Philippidorippe philippinensis* gen. nov. et sp. nov., holotype ♂ (25,2 × 30,0 mm).
- 4, 5. *Ethusina desciscens* Alcock, 1896, ♀ (8,6 × 9,0 mm).
6. *Ethusa latidactyla* (Parisi, 1914), ♂ (9,6 × 9,6 mm).
7. *Ethusa quadrata* Sakai, 1937, ♀ (9,0 × 7,8 mm).
8. *Dorippe tenuipes* Chen, 1980, immature ♂ (8,0 × 8,0 mm).

PLATE I

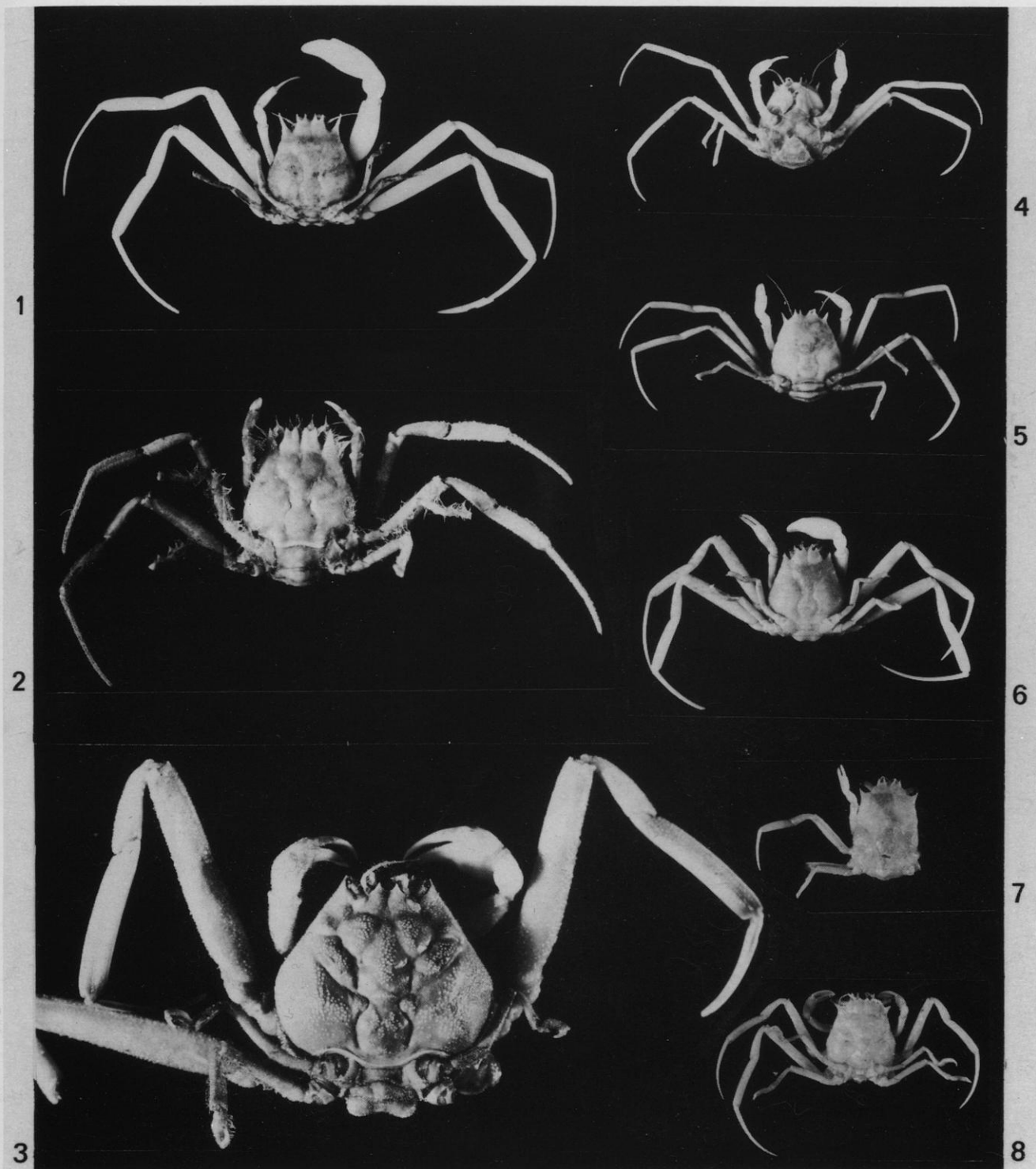


PLATE I

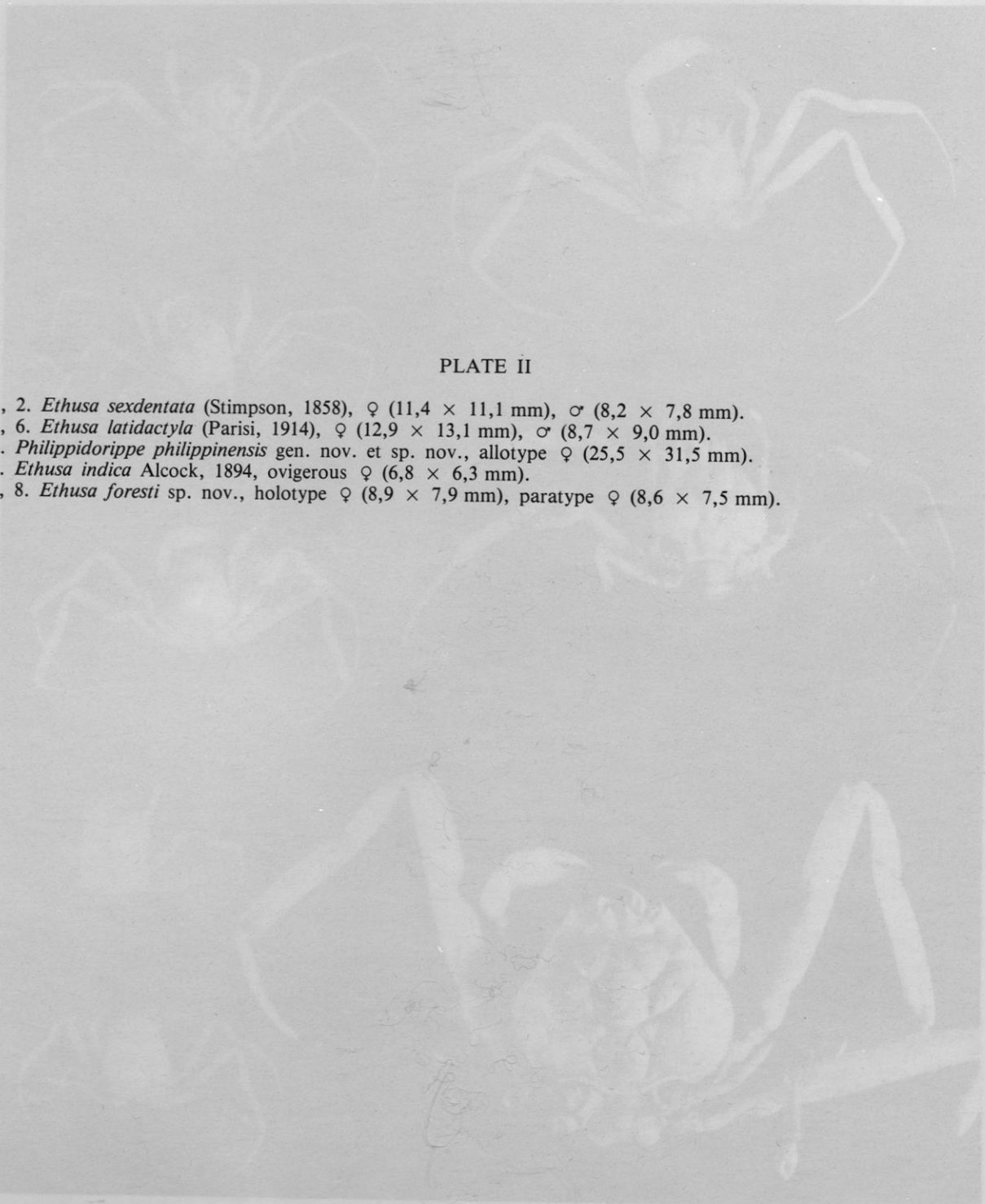


PLATE II

- 1, 2. *Ethusa sexdentata* (Stimpson, 1858), ♀ (11,4 × 11,1 mm), ♂ (8,2 × 7,8 mm).
3, 6. *Ethusa latidactyla* (Parisi, 1914), ♀ (12,9 × 13,1 mm), ♂ (8,7 × 9,0 mm).
4. *Philippidorippe philippinensis* gen. nov. et sp. nov., allotype ♀ (25,5 × 31,5 mm).
5. *Ethusa indica* Alcock, 1894, ovigerous ♀ (6,8 × 6,3 mm).
7, 8. *Ethusa foresti* sp. nov., holotype ♀ (8,9 × 7,9 mm), paratype ♀ (8,6 × 7,5 mm).



Station 25. — 22.03.1976, 14°02,7' N, 120°20,3' E, 191-200 m : *Raninoides* sp. *Lyreidus tridentatus*, *Lyreidus tridentatus*

Station 26. — 22.03.1976, 14°00,9' N, 120°16,8' E, 189 m : *Cosmonöke* sp. *Lyreidus tridentatus*

Station 27. — 22.03.1976, 13°59,8' N, 120°18,6' E, 188-192 m : *Lyreidus tridentatus*

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