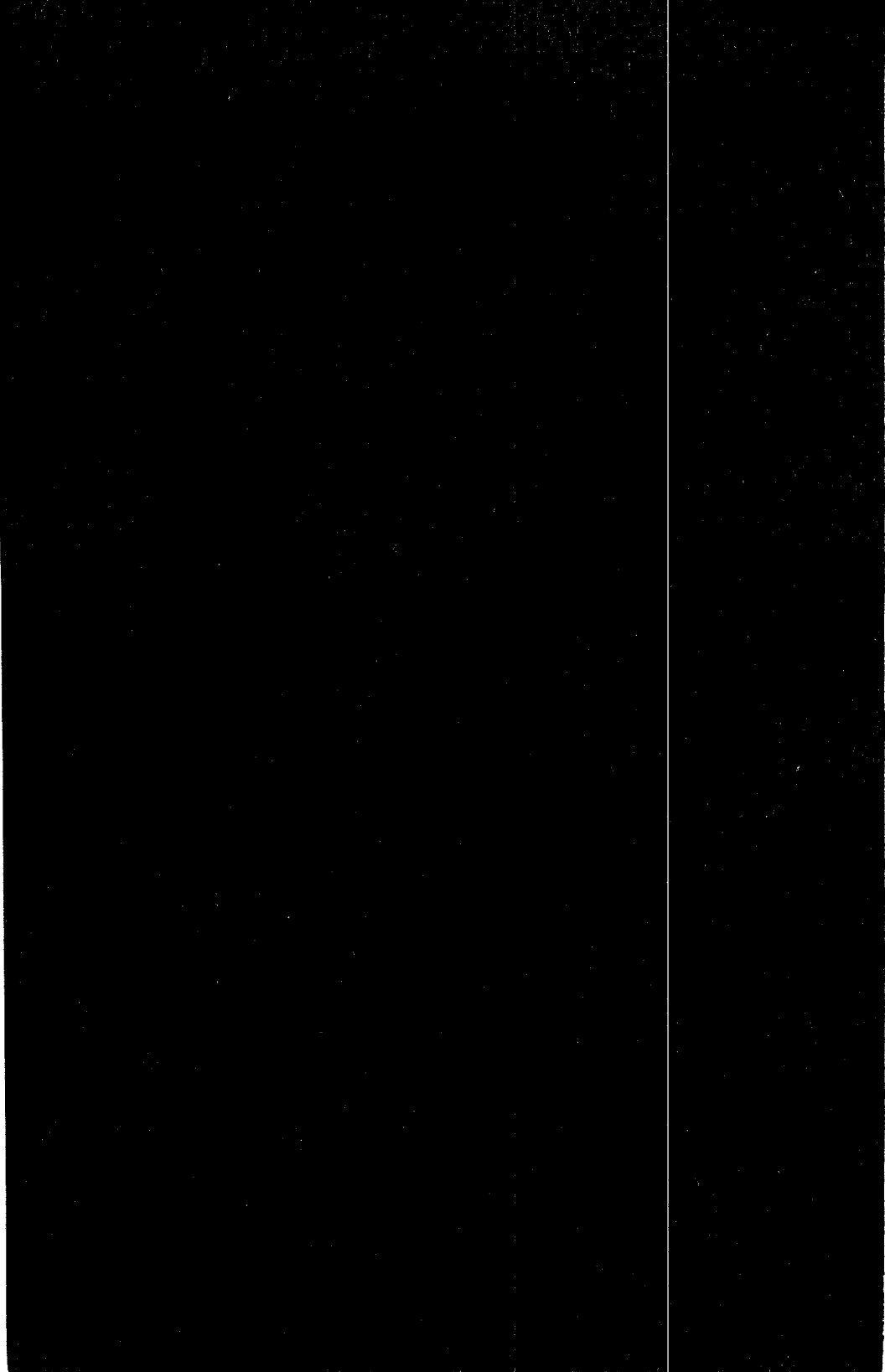


On some species of the genus
Elamena (s.s.) (Crustacea, Decapoda)

by Isabella Gordon

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**ON SOME SPECIES OF THE GENUS *ELAMENA* (S.S.)
(CRUSTACEA, DECAPODA).**

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(With 10 figures)

INTRODUCTION.

There is some difference of opinion regarding the systematic position of the family Hymenosomatidae*, to which the genus *Elamena* belongs. Some authors, following H. Milne-Edwards, have placed the family in the Brachyura Catometopa near the Pinnotheridae or the Mictyridae (e. g. Alcock, 1900 †, p. 282). Most recent authors, however, have followed de Haan (1839 ‡, p. 75) and Ortmann (1893 §, p. 31) in referring it to the Oxyrhyncha, alongside the Maiidae.

We are at present very far from possessing a clear knowledge of the species referred to this family ||. The descriptions and figures of many of the older authors are a constant source of difficulty and the identity of numerous species described in the earlier half of the nineteenth century remains obscure. The confusion is accentuated by differences of opinion regarding the genera (Kemp, 1917, p. 244). The truth of this statement is borne out by the fact that Tesch (1918), who studied the 'Siboga' material at the same time as Kemp was working on the Indian Museum Collection, arrived at conclusions that are often at variance with those of Kemp. For example, Tesch retains the genera *Hymenicus* Dana and *Trigonoplax* H. Milne-Edwards, while Kemp regards the former as a synonym of *Halicarcinus* White and the latter as, at most, a subgenus of *Elamena* H. Milne-Edwards.

Although fully aware of the inadequate state of our knowledge of the genus *Elamena*, Tesch gave a key to the determination of eleven species, based largely on differences in the chelipeds and the shape of the carapace. Of these species, Kemp synonymizes *E. kirki* Filhol with *E. producta* Kirk and refers *E. filholi* de Man to the genus *Rhynchoplax*, *E. pilosa* A. Milne-Edwards to the genus *Halicarcinus*, while of *E. minuta* A. Milne-Edwards he says 'whatever it may be [it] is certainly not an *Elamena*' (Kemp, 1917, p. 250). The

* Hymenosomidae Ortmann (1893, p. 31) *et auct.*; Hymenosomatidae Kemp (1917, p. 243).

† Alcock, 1900, Journ. As. Soc. Bengal, lxi, pp. 279-456.

‡ de Haan, 1833-1850, Siebold's Fauna Japonica, Crustacea.

§ Ortmann, 1893, Zool. Jahrb. Syst. vii. pp. 23-88.

|| Some fifty-eight of fifty-nine species have been described to date.

genus, which now comprises 8-10 species, is badly in need of thorough revision, but this could not be attempted without a re-examination of such type-specimens as are still in existence. Unfortunately only five species* of the genus *Elamena* (s.s.) are represented in the British Museum Collection; and I have also been able to examine cotypes of *E. gracilis* Borradaile. A careful comparison of these species shows, however, that they differ quite appreciably from each other, especially as regards the abdomen and first pleopods of the male. I have thought it advisable, therefore, to publish some notes and figures so that future workers on the family Hymenosomatidae may give more attention to these characters.

Of the species dealt with below, there can be no doubt as to the correct determination of *E. gracilis* Borradaile (cotypes examined), *E. sindensis* Alcock from Karachi, and *E. mathaei* (Desmarest) from the Red Sea. The specimens from the Great Barrier Reef referred provisionally to *E. truncata* may prove not to agree with specimens of that species from Japanese waters. As far as I have been able to judge, they are more likely to prove identical with *E. truncata* than the specimen from Abrolhos for which a new specific name is proposed (see *E. albrothensis* on p. 70).

In division 3 of his key, Tesch (1918, p. 20) distinguishes *E. truncata* from all the succeeding species, because the front is 'truncate', not 'shortly triangular'. Of the species that I have examined only *E. sindensis* and *E. gracilis* seem to me to have the front shortly triangular. Owing to variation within certain species, however, such a distinction is not very satisfactory.

So far as I have been able to determine, the male abdomen in each species examined comprises five pieces, but the two distal sutures are often faint and difficult to observe (see Kemp, 1917, p. 273, and Chopra and Das, 1930, Rec. Ind. Mus., Calcutta, xxxii, pt. iv. p. 427).

I take this opportunity of re-describing and re-figuring the type-specimens of '*Elamena*' *whitei* Miers because Miers' original description and figure are inadequate. The species, however, does not belong to the genus *Elamena* and I have referred it to *Hymenicus* Dana, which is a synonym of *Halicarcinus* White.

I agree with the view expressed by Kemp (1917, p. 274) and others that the genus *Trigonoplax* can only be regarded as a subgenus of *Elamena*. Tesch states that 'the absence of a septum between the antennulae' is characteristic of the genus *Trigonoplax*, but it is obvious that he is referring to the vertical plate or keel (*k*) on the ventral surface of the

* *E. whitei*, which is really a *Halicarcinus*, included.

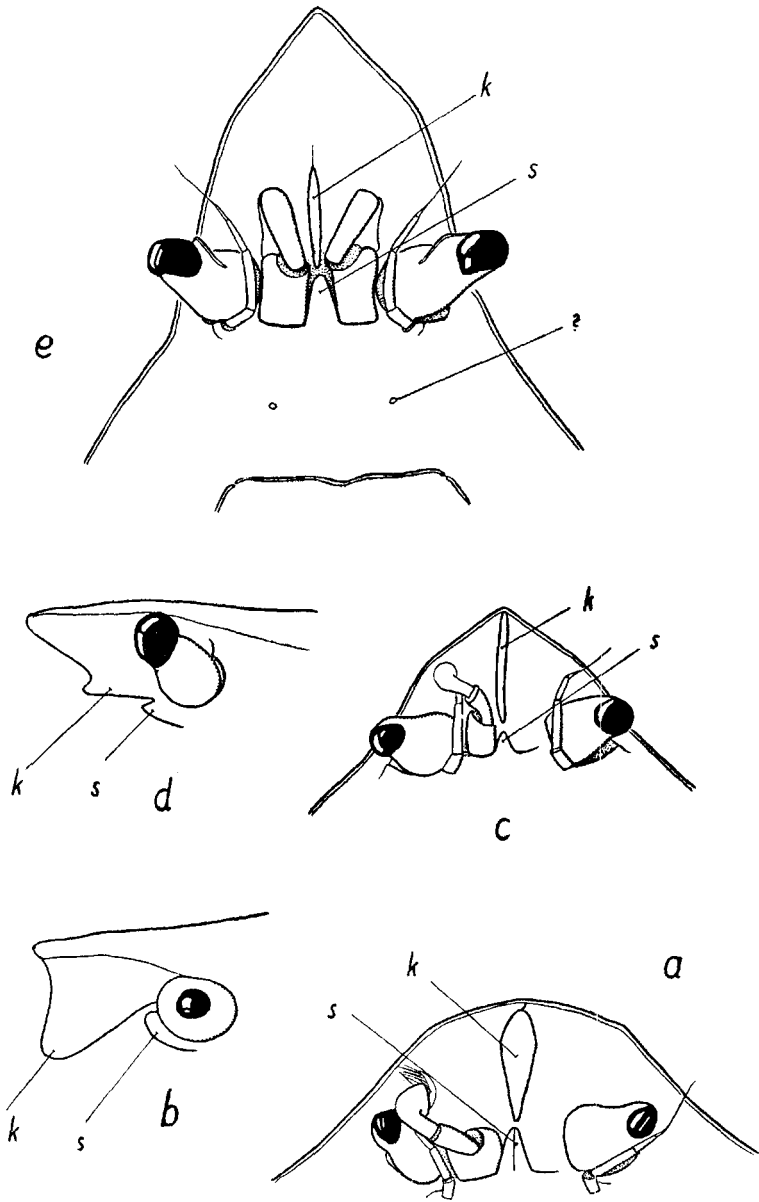


FIG. 1 *a, b, Elamena mathaei* (Desmarest), ♂. Rostrum in ventral and in lateral aspects. *c, E. gracilis* Borradaile, ♂ cotype. Rostrum in ventral aspect. *d, E. (Trigonoplax) unguiformis* de Haan, ♀, from Singapore. Rostrum in lateral aspect. *e, E. (Trigonoplax) unguiformis* de Haan, ♂, from Inland Sea, Japan. Rostrum in ventral aspect; the opening of the antennal gland is not clearly visible. All $\times 16$.

k, vertical keel on ventral surface of rostrum;
s, inter-antennular septum.

rostrum, not to the inter-antennular septum (*s*) (fig. 1 *a-c*). The latter is present in both *Trigonoplax* and *Elamena*, but is very short and is sometimes difficult to detect until the antennules are pushed apart. The rostral keel is very deep in all the species of *Elamena*, s.s., that I have examined; it extends right forward to the anterior margin of the rostrum and, in some specimens of *E. truncata* at least, may be visible in dorsal aspect. Owing to the presence of this vertical keel the rostrum, in frontal aspect, is as Kemp has pointed out, T-shaped (fig. 1 *a, b*). In the British Museum Collection there are only three specimens of *Trigonoplax*, a female from Singapore determined by Lanchester (1900, P. Z. S. p. 761), a male from Inland Sea, Japan (reg. no. 1907.4.27.5), and an unregistered male from the Gulf of Martaban. These specimens have all been referred to *Elamena (Trigonoplax) unguiformis* de Haan. In each the rostral keel is present on the posterior half of the rostrum only, and is not very prominent (fig. 1 *d & e*); according to Kemp and Tesch it may be altogether absent.

Genus ELAMENA H. Milne-Edwards, 1837.

1917. Kemp, Rec. Ind. Mus. Calcutta, xiii, pt. v, pp. 270-279.

1918. Tesch, 'Siboga' Monograph, 39 c, pp. 19-26.

Elamena mathaei (Desmarest). (Figs. 1 *a, b, 2, 3*)

1918. Tesch, 'Siboga' Monograph, 39 c, p. 21, for references and synonymy.

Nec 1920. Stebbing, Annals Durban Museum, ii, pt. 6, p. 269, pl. xxx.

Material.—Ghardaqa, Red Sea, 5 ♂♂, 5 ♀♀ (three ovigerous). Collected by Dr. R. Gurney.

Remarks.—There can, I think, be no doubt as to the correctness of the determination in this instance.

The carapace, in each specimen, is rather wider—between the posterior pair of angular lobules—than long, the ratio of maximum width to length varying from 1.18-1.03:1. The front is rather more prominent in the smaller than in the larger individuals (fig. 2 *a*), but it is not easy to decide whether it is 'shortly triangular' or 'truncate' (see Tesch, 1918, p. 30, division 3 of key).

There is a distinct lobule on the pterygostomian region opposite the ischio-meral suture of the external maxilliped and a smaller lobule at the antero-external angle of the buccal cavity. The orbit is too shallow to contain the eyes and there is little, if any, trace of a postocular tooth.

The cheliped of the male is approximately twice the length of the carapace; the chela is greatly inflated and that of the

largest specimen is represented in fig. 2 *c*. The fingers are nearly as long as the dorsal border of the palm; even in the smaller males the depth of the palm is rather more than $\frac{2}{3}$ of the length of the dorsal border. The dactylus of the third walking leg is represented in fig. 3 *b*.

The male abdomen consists of five pieces as represented in fig. 2 *c*, but the two distal sutures are so faint that they can only be seen with difficulty. The first pair of pleopods are very characteristic, and are more twisted and more expanded near the apex than in the other species examined.

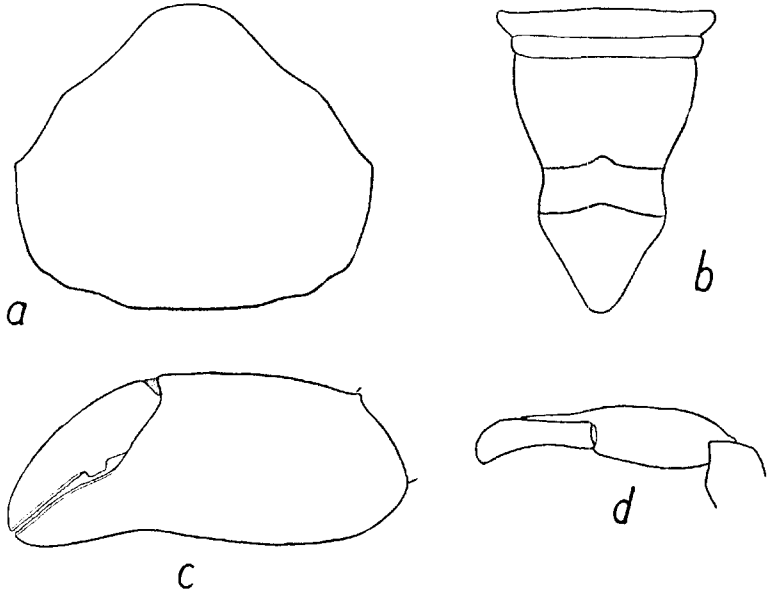


FIG. 2.—*Elamena mathaei* (Desmarost). *a*, outline of carapace of ♀, \times approx. 6; *b*, abdomen of largest ♂; *c*, chela of largest ♂, \times 9; *d*, chela of ♀, \times 9.

There is a subterminal group of ten to twelve long curved setae, each of which appears to be plumose distally (fig. 3 *a* & *c*).

The cheliped of the female is shorter than that of the male—not more than $\frac{5}{4}$ of the carapace length—and much more slender, with broadly spatulate fingers which are almost or quite in contact throughout their entire length (fig. 2 *d*).

Size.—All the specimens are of small size—the largest, an ovigerous female, is just under 6 mm., while the smallest ovigerous female is 3.7 mm. long.

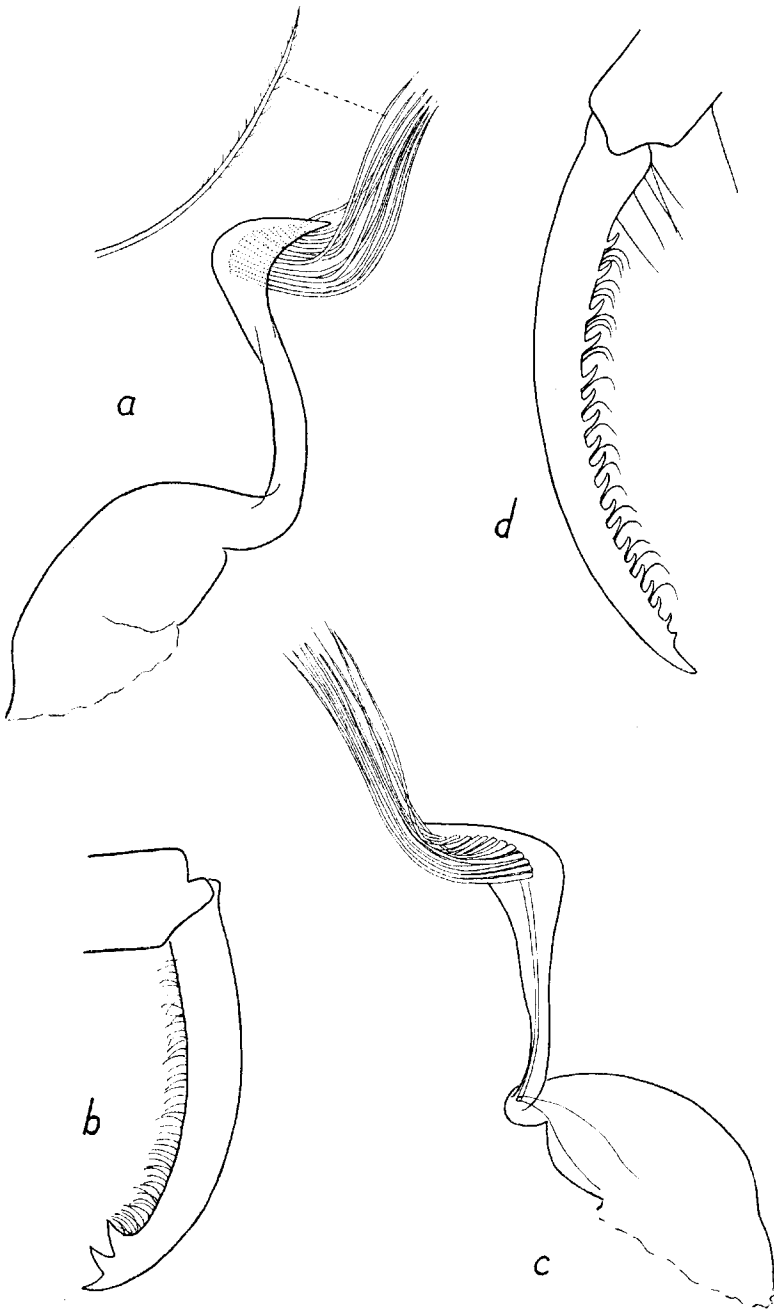


FIG. 3.—*Elamena mathaei* (Desmarest). *a* & *c*, first pleopod of male from two different aspects (*c* is the sternal or convex side), $\times 50$. *b*, dactylus of third walking leg of ♂, $\times 20$. *Halicarcinus whitei* (Miers), ♂ (Reg. no. 19.57). *d*, dactylus of walking leg, $\times 15$.

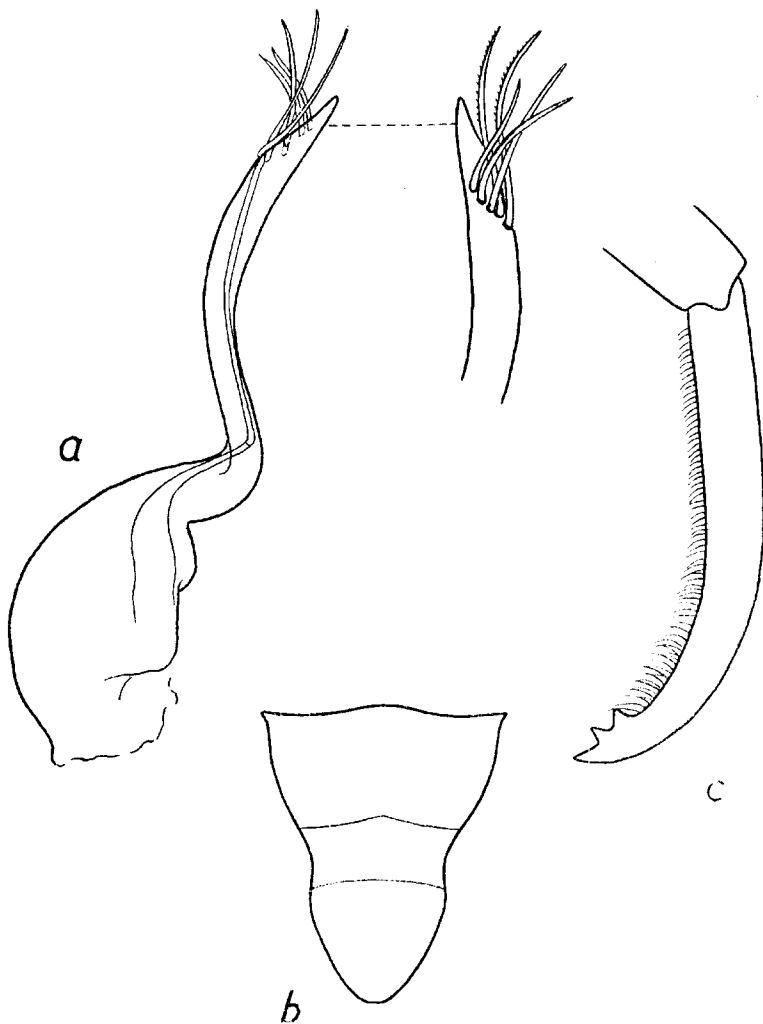


FIG. 4.—*Elamena sindensis* Alcock, ♂. *a*, first pleopod, $\times 50$; *b*, distal portion of abdomen, the two proximal segments omitted, $\times 22$; *c*, dactylus of third walking leg, $\times 22$.

Elamena sindensis Alcock. (Fig. 4.)

Elamena truncata Laurie, 1906, Rept. Pearl Oyster Fisheries, Ceylon, v, p. 248. 3 ♀♀.

Elamena sindensis Kemp, 1917, Rec. Ind. Mus. Calcutta, xiii, pt. 5, p. 274.

Elamena sindensis Tesch, 1918, 'Siboga' Monograph, 39 c, p. 24 (earlier references).

Material.—3 ♂♂, 13 ♀♀ (eight ovigerous) from Karachi, in the British Museum Collection (register numbers 82.3 and 83.5); 3 ♀♀ from Ceylon.

Remarks.—This species differs from all the other species of *Elamena*, s.s., dealt with in this paper in two respects: (1) the front is narrower and more advanced (see Alcock, 1902, Illustrations Zoology 'Investigator', pl. lxiv, fig. 3); (2) thus the length of the carapace usually exceeds the maximum width. In two specimens the carapace width was exactly equal to the length; the ratio varies from 0.91-1 : 1.

The lobule on the pterygostomian region midway between the base of the cheliped and the anterior angle of the buccal cavity is even more prominent than in *E. mathaei*. The postocular tooth, if present, is very inconspicuous.

The cheliped of the male is much more robust than that of the female; the fingers are shorter than the dorsal border of the palm (5 : 6); the palm itself is 2/3 as high as long, but the males are of rather small size. In the female the fingers are rather longer than the dorsal border of the palm and are narrower and more pointed than those of *E. mathaei*; the inner margin is distinctly crenulate.

The abdomen of the male is rather similar to that of *E. mathaei*, but the apex is broader so that the lateral margins are less sinuous (fig. 4 b).

The first pleopod is represented in fig. 4 a from the sternal side; beyond the base it is twisted in a loose S curve; the subterminal setae, five in number, are rather short and stout, and each bears minute spinules at least on the convex side.

The dactylus of the third walking leg is represented in fig. 4 c.

When Dr. C. J. Shen examined the specimens in the British Museum Collection some years ago he was of the opinion that the three small females referred by Laurie (1906, p. 248) to *E. truncata* belong to *E. sindensis*, and with this I agree. In each case the carapace is rather longer than wide and the rostrum is less truncate than in *E. truncata*.

Size.—The specimens vary in length from 4-6.6 mm.

Elamena truncata (Stimpson). (Fig. 5.)

Trigonoplax truncata, 1858, Stimpson, Proc. Ac. Nat. Sci. Philad. x, p. 109.

Trigonoplax truncata, 1907, Stimpson, Smithsonian Inst. Misc. Coll. xlix, p. 146.

Elamena truncata, 1917, Kemp, Rec. Ind. Mus. xiii, p. 272.

Elamena truncata, 1918, Tesch, 'Siboga' Monograph, 39 c, p. 22, pl. 1, fig. 4, and other references, in part.

Elamena truncata, 1930, Chopra & Das, Rec. Ind. Mus. xxxii, p. 424.

Elamena truncata, 1932, Sakai, Sci. Rep. Tokyo Bunrika Daigaku, B. 4, pp. 44, text-fig. 2.

Elamena truncata, 1935, Sakai, 'Crabs of Japan', Tokyo, Sansendo Co. Ltd. p. 72, fig. 30.

Nec *Elamena truncata*, 1906, Laurie, Rept. Pearl Oyster Fisheries . . .
 Manaar, v, p. 428.

Nec *Elamena truncata*, 1931, Montgomery, Journ. Linn. Soc. Lond.,
 Zool. xxxvii, p. 426, pl. 27, fig. 2.

Material.—Great Barrier Reef, Australia. 6 ♂♂, 5 ♀♀ (one ovigerous).

Remarks.—The species, *E. truncata*, has been recorded far more frequently than any other, and appears to have a very wide distribution in the Indo-Pacific Ocean (see Tesch, 1918, p. 24). It is highly probable, however, that more than one species is represented *, and it is desirable that all the extant material be re-examined and compared with the types or, failing these, with material from Japanese waters.

The specimens from the Great Barrier Reef were referred to *E. truncata* in the first instance by F. A. McNeill of the Australian Museum, Sydney. They certainly seem to agree with Sakai's figures of Japanese material, and exhibit the variations mentioned by that author. It is unfortunate that Sakai did not figure the first pleopod or the abdomen of the male.

The lobe on the pterygostomian region is much broader than in either of the preceding two species, and is followed by another lobe situated just anterior to the base of the cheliped (cf. fig. 10 *a*, *l*¹, *l*²). In ventral view the postocular tooth is rather pronounced.

The male abdomen is more narrowly triangular than in either *E. mathaei* or *E. sindensis* (fig. 5 *d*). The first pleopod is bent at an angle of about 90° a short distance beyond the base, and is slightly twisted; there are four or five subterminal setae, each bearing minute spinules on the distal half (fig. 5 *a* & *b*).

The chela of the male is much inflated, the fingers are rather shorter than the palm, hollowed and rather spatulate at the tips; there is a blunt tooth near the base of the movable finger, and the palm is 5/6 as deep as long. The chela of the female is much more slender, the fingers are rather longer than the palm, and almost as slender as those of *E. sindensis*, but hollowed and somewhat spatulate at the tips. The dactylus of the third leg is represented in fig. 5 *c*. The carapace is always rather broader than long—the ratio of maximum width to length varies from 1.17–1.06 : 1.

Size.—The carapace of the largest male measures 5 mm., that of the largest female 6 mm. in width.

* The female specimen figured by Tesch on plate 1, fig. 4 *b*, may belong to *E. abrolhensis* described below. Kemp, 1917, p. 274, has referred the *E. truncata* of Lenz to *E. mathaei*.

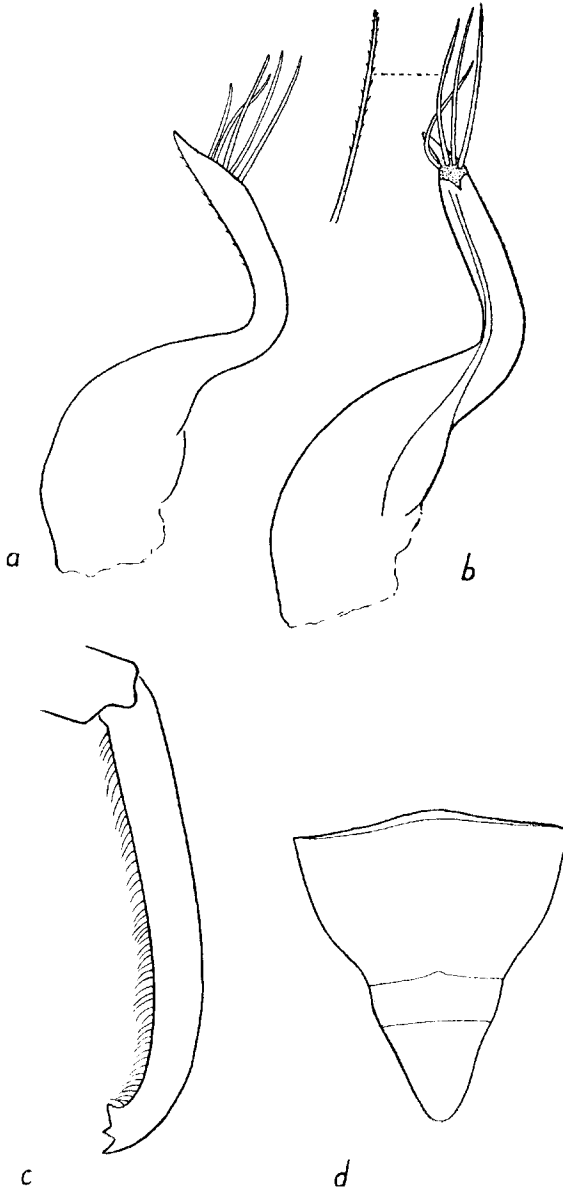


FIG. 5.—*Elamena truncata* (Stimpson), ♂. *a* & *b*, first pleopod of two different males (*b* is sternal aspect), $\times 50$; *c*, dactylus of third walking leg, $\times 20$; *d*, distal portion of abdomen the two proximal segments omitted.

Elamena abrolhensis, sp. n. (Figs. 6 *b*, *c*, 7 *a*, *c*, 10 *a*.)

Elamena truncata Montgomery, 1931, Journ. Linn. Soc. Lond., Zool. xxxvii, p. 426, pl. 27, fig. 2.

? *Elamena truncata*, Tesch, 1918, 'Siboga' Monograph, 39 *c*, p. 22 in part—see pl. i, fig. 4 *b*.

Material.—1 ♂ (*c.l.*=5.9, *c.b.*=6.6 mm.), from Sandy Island, Abrolhos. Holotype, reg. no. 1931.7.24.37.

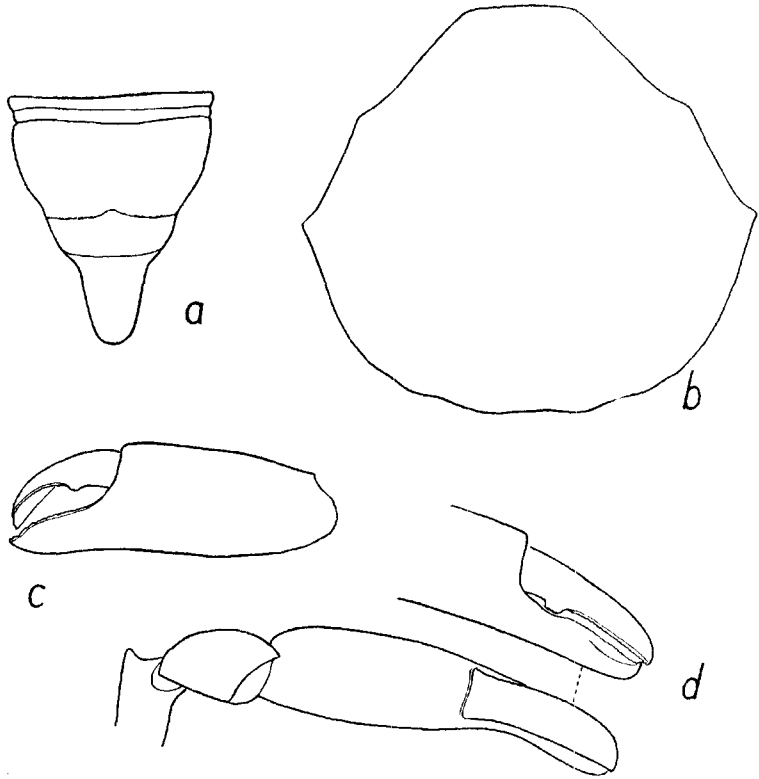


FIG. 6.—*Elamena abrolhensis*, sp. n., ♂. *b*, outline of carapace, $\times 9$. *c*, chela, $\times 7$. *Elamena gracilis* Borradaile, ♂ cotpye. *a*, abdomen, $\times 15$; *d*, chela, $\times 12$.

Description.—The outline of the carapace is rather similar to that of *E. mathaei*, but the angles on each lateral margin are more pronounced, and the front is broader and rather more truncate (fig. 6 *b*). The ratio of maximum width to length is 1.12 : 1. The rostral keel is not visible in dorsal

view; the dorsal surface of the carapace is slightly convex*, and the rim of the carapace is not upturned. As in *E. truncata* there are two lobes on the pterygostomial region, that just anterior to the cheliped base being rather small (fig. 10 a, 1¹ & 1²). In ventral and lateral views the postocular tooth is distinct.

Only the left cheliped now remains; it is not quite twice the length of the carapace. The movable finger is approximately three-quarters of the dorsal border of the palm; the palm itself is almost twice as long as high (fig. 6 c). The fingers when closed probably meet only at the tips, leaving a rather wide gap.

The abdomen differs markedly in shape from that of *E. truncata* from the Great Barrier Reef (cf. figs. 5 d & 7 c).

The first pleopod is also quite distinct; the distal part is longer relatively to the base, is twisted in a loose S-shaped spiral, and there is a subterminal group of about twelve setae, each of which appears to be devoid of spinules or plumules (fig. 7 a).

The dactylus of the third walking leg is broader in proportion to its length than in *E. mathaei*, *E. truncata*, or *E. sindensis* (cf. figs. 7 b, 5 c, & 4 c).

Remarks.—The differences in the male abdomen and first pleopod as well as in the shape of the carapace necessitate the separation of this specimen from those collected at the Great Barrier Reef, and referred provisionally to *E. truncata*. It is probable that part of Tesch's material of *E. truncata* may also be referable to this species—at any rate, the female represented in pl. i, fig. 4 b, is very similar to the Albrohos specimen (cf. with fig. 6 b).

Elamena gracilis Borradaile. (Fig. 6 a, d, 7 d, 1 c.)

1903. Borradaile, 'Fauna . . . Maldive and Laccadive Archipelagoes', ii, pt. 2, p. 684.

Material.—The male and ovigerous female cotypes from Hulule, Malé Atoll, sent on loan by Mr. J. H. Loehhead of the Cambridge University Museum.

Description.—Both these cotypes are considerably more narrowly triangular than that figured by Borradaile (p. 684, fig. 122), and the characteristic angle at the junction of antero- and postero-lateral borders is situated further back. The ratio of maximum width to length of the carapace in both specimens is 1.14 : 1, whereas in the figured female it is about 1.22 : 1.

* The sunken condition of the dorsal surface, frequently observed in the genus *Elamena*, may be an artefact; most of the specimens of *E. truncata*, for example, are slightly convex.

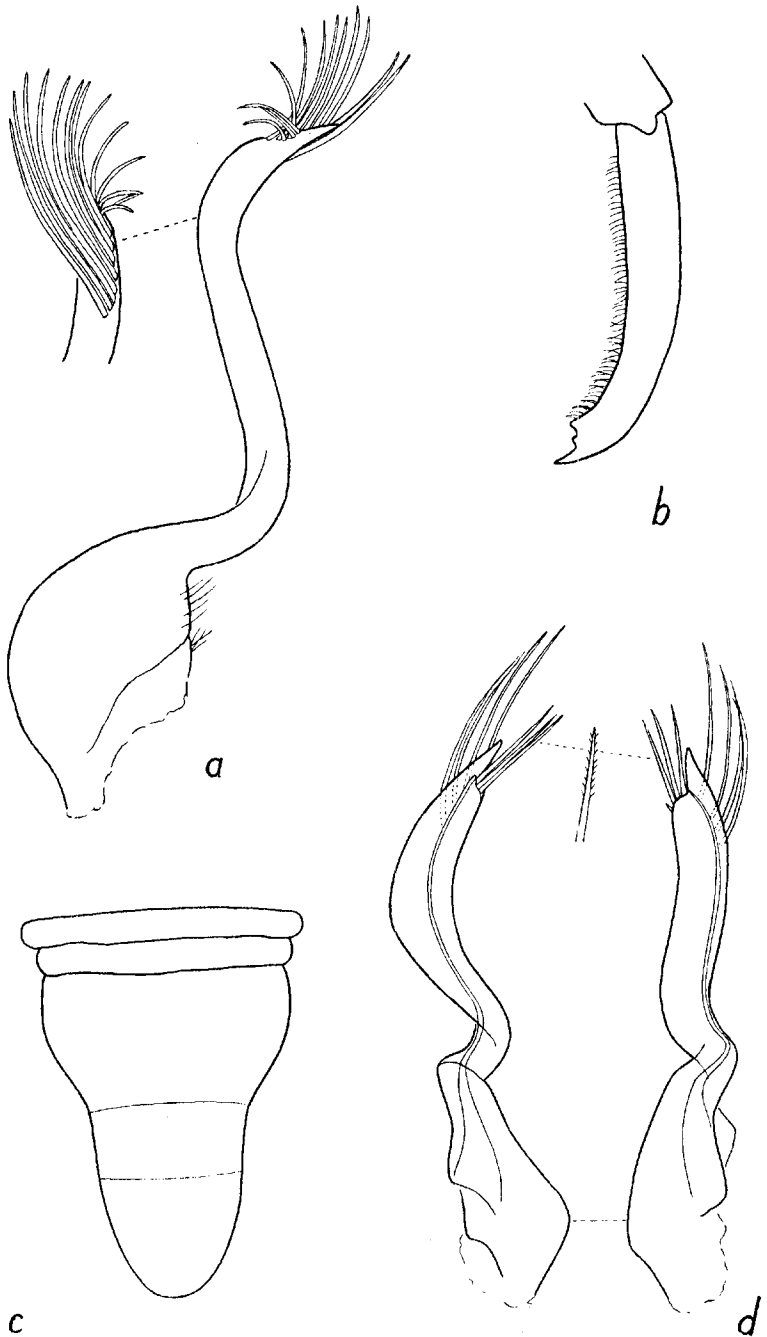


FIG. 7.—*Elamena abrothensis*, sp. n. *a*. First pleopod, $\times 60$; *b*, dactylus of third walking leg, $\times 12$; *c*, abdomen, $\times 8$. *Elamena gracilis* Borradaile, ♂ cotype. *d*, first pleopod in two different aspects, $\times 50$.

The ventral rostral keel is deep, and extends to the anterior margin of the rostrum, so that in the male it is just visible in dorsal aspect (fig. 1 c).

The postocular lobule is small, but distinct. There is no lobe on the pterygostomian region apart from that at the antero-lateral angle of the buccal cavity.

The chelipeds of the male (*c.b.* just under 4 mm.) are very similar to those of the female (*c.b.* just under 6 mm.), but they are slightly unequal; the fingers are shorter than, not equal to *, the dorsal border of the palm, and there is a broad tooth near the proximal end of the movable one (fig. 6 d). They are considerably more robust than the walking legs.

The abdomen of the male differs in shape from that of all the previously described species (fig. 6 a).

The first pleopod of the male is spirally twisted immediately beyond the expanded base, and bears two groups of sub-terminal setae, three short and four longer and more slender ones, as represented in fig. 7 d. The short straight setae have each a few spinules on the distal half; the longer setae appear to have neither spinules nor pinnules.

The walking legs are all detached from the specimens; the dactylus of one is unusual in that it has three, instead of the usual two, teeth near the claw.

Remarks.—Kemp (1917, Rec. Ind. Mus. xiii, pt. v, p. 279), who had not seen the specimens, was not sure whether this species should be referred to *Elamena*, s.s., or to *Trigonoplax*. In shape of carapace the two cotypes from Hulule are rather similar to *Elamena (Trigonoplax) unguiformis* de Haan, as figured by Kemp (1917, p. 278, fig. 28). Although the male cotype is of small size the larger chela is more robust than that of the female, and in older specimens it is probable that the difference may be more striking. The vertical keel on the lower surface of the rostrum is so conspicuously developed that I have no hesitation in referring the species to *Elamena*, s.s. (fig. 1 c).

Halicarcinus whitei (Miers). (Figs. 3 d, 8, 9, 10 b.)

Halicarcinus depressus White, 1846, Ann. Mag. Nat. Hist. (1) v, p. 187 (nec *Hymenosoma depressum* Jacq. & Lucas).

Halicarcinus depressus White, 1847, List Crust. Brit. Mus. Coll. p. 34.

Elamene whitei Miers, 1876, Ann. Mag. Nat. Hist. (4) v. p. 221.

Elamene whitei Miers, 1876, Cat. Crust. New Zealand, p. 52, pl. i, fig. 4.

Elamena whitei Tesch, 1918, 'Siboga' Monograph, 39 c, p. 20 (in key), p. 24.

Nec *Elamena whitei* Filhol, 1885, Miss. Io Campbell . . . Recueil de Mémoires Passage de Vénus, iii, pt. 2, p. 403, pl. 47, figs. 2-3.

* Or, as in Borradaile's figure, slightly longer than the palm.

Material.—The type-specimens comprising :—

- a. 1 ♂, accompanied by a label, presumably in White's writing, '*Hymenosoma depressum* Hombr. & Jacq. pl. 5, fig. 34'. New Zealand. Reg. no. 45.30. (*c.l.*=11.3, *c.b.*=10.8 mm.).
- b. 2 ♂♂, 1 ovigerous ♀, Bay of Islands, New Zealand. Reg. no. 19.57 (larger ♂ *c.l.*=14, *c.b.*=12.5 mm., ♀ 9.4 and 8.7 mm.).

These specimens were dry, but have now been relaxed and placed in the spirit collection.

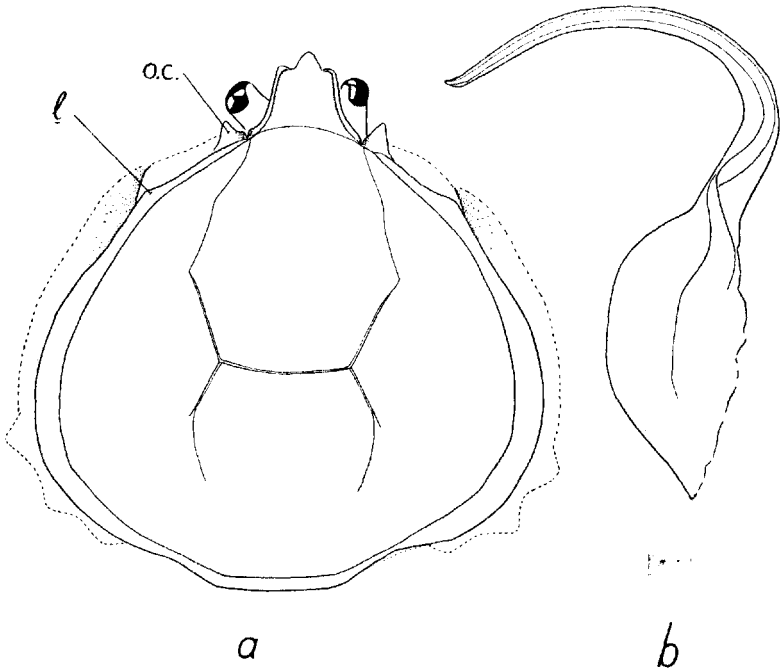


FIG. 8.—*Halicarcinus whitei* (Miers). *a*, carapace of smallest male (Reg. no. 45.30) in dorsal aspect (\times approx. 6); *b*, first pleopod of male (Reg. no. 19.57), $\times 20$; *o.c.*, postocular lobe.

Description.—The dorsal surface of the subcircular carapace is flat, but the cardiac and gastric regions, which are bounded by fine lines or sutures, are slightly raised. A clearly defined line or suture marks the inner edge of the slightly raised rim that constitutes the lateral and posterior margins of the carapace, and is continued across the base of the rostrum.

Teeth or spines are absent from the lateral margins, but there is an obtuse lobule (*l*) some distance behind the prominent postocular lobe (*o.c.*, fig. 8 *a*). The prominent rostrum is directed downwards at a slight angle to the dorsal surface, and the median lobe is situated at a lower level than the lateral ones. The sides of the carapace project beyond the rim of the dorsal surface, and are represented in fig. 8 *a* by broken lines.

The epistome is rather short, and there is a conical spine or process external to, and rather in advance of, the antennal gland, which may be termed the antennal spine (*a.s.*, fig. 9 *a*). The postocular lobe is also conspicuous in ventral aspect (*o.c.*). A long low rostral keel extends backwards from the median lobe to touch the anterior end of the narrow inter-antennular septum (*k & s*, fig. 9 *a*).

The chelipeds of the male are equal, and much more robust than the walking legs. The distal portion of the right cheliped of the smallest male (45·30) is represented in fig. 9 *b*; the chela is considerably shorter than the maximum width of the carapace (3 : 4 approx.), and the dactylus bears a prominent tooth concealed by a felt of fine hairs, which is most pronounced on the inner surface. In the largest specimen the chelipeds are twice as long as, and the chela is equal to, the maximum width of the carapace; with the exception of the distal half of the fingers, the chela is clothed with a fine brownish felt. The fingers are slightly longer than the dorsal margin of the palm, and are sharply pointed, but, as they are bent inwards somewhat, the tips may appear rather truncated (fig. 9 *c*).

The right cheliped of the single female specimen is missing; the left one is shorter than, and almost as slender as, the walking legs, and is just a trifle longer than the carapace. The sharp-pointed fingers are relatively longer than in the male, and there is no conspicuous tooth on the dactylus*.

The walking legs are very slender, the first two pairs are subequal and are scarcely twice the length of the carapace. The dactylus is rather longer than the propodus, and the ventral (posterior) margin is armed with a series of 14–18 recurved teeth as represented in fig. 3 *d*. The chelipeds and walking legs and sides of the carapace are clothed with longish hairs, which are replaced on the chelae of the larger males by the much shorter dense felt mentioned above.

The distal portion of the male abdomen is represented in fig. 9 *b*; the first pleopod is very curved, as shown in fig. 8 *b*.

Remarks.—This species falls into section 4 of Tesch's key to the genera of the family Hymenosomidae (Tesch, 1918,

* Ratio of length of dactylus to upper border of palm 1·25 : 1.

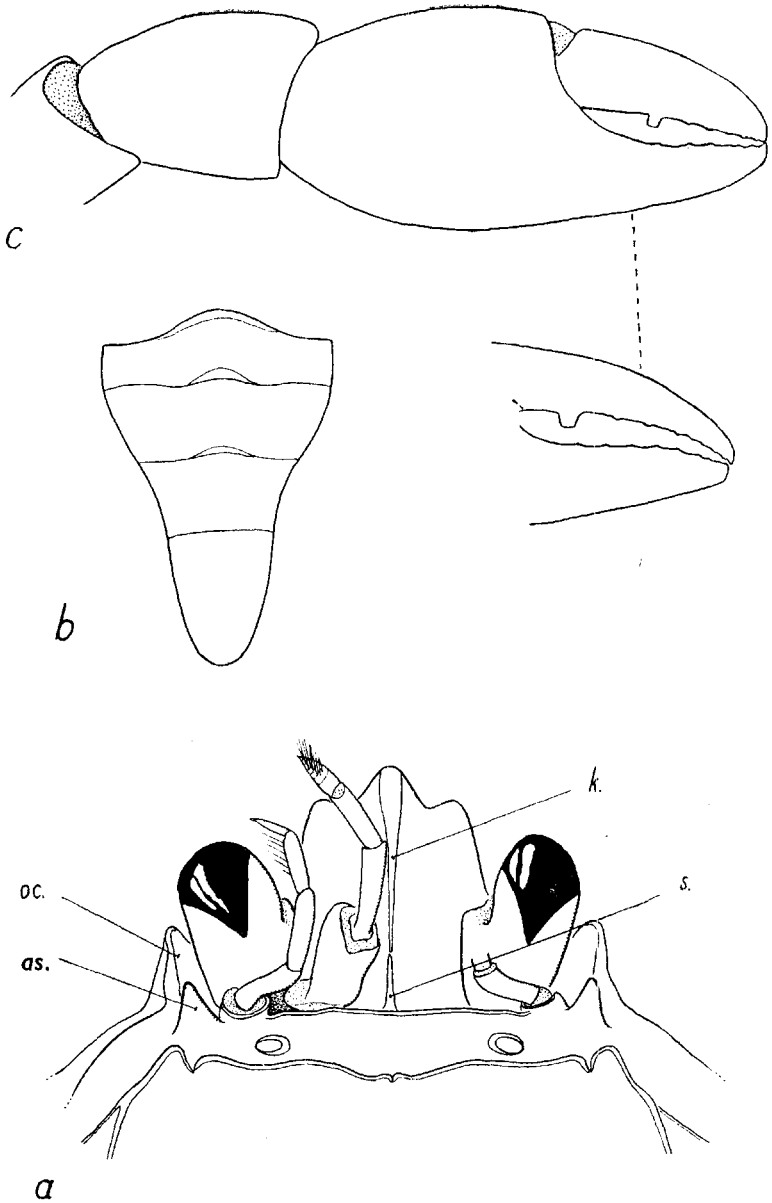


FIG. 9.—*Halicarcinus whitei* (Miers). *a*, anterior portion of carapace, in ventral aspect (Reg. no. 19.57), \times approx. 14; *b*, distal portion of abdomen of male (Reg. no. 45.30); *c*, distal portion of cheliped of male (Reg. no. 45.30), \times approx. 8. *k.*, *s.*, as in fig. 1; *oc.*, postocular lobe; *as.*, antennal spine.

p. 4), since it has a line or suture subparallel to the lateral and posterior margins of the carapace, and continued across the base of the rostrum. The long walking legs place it in

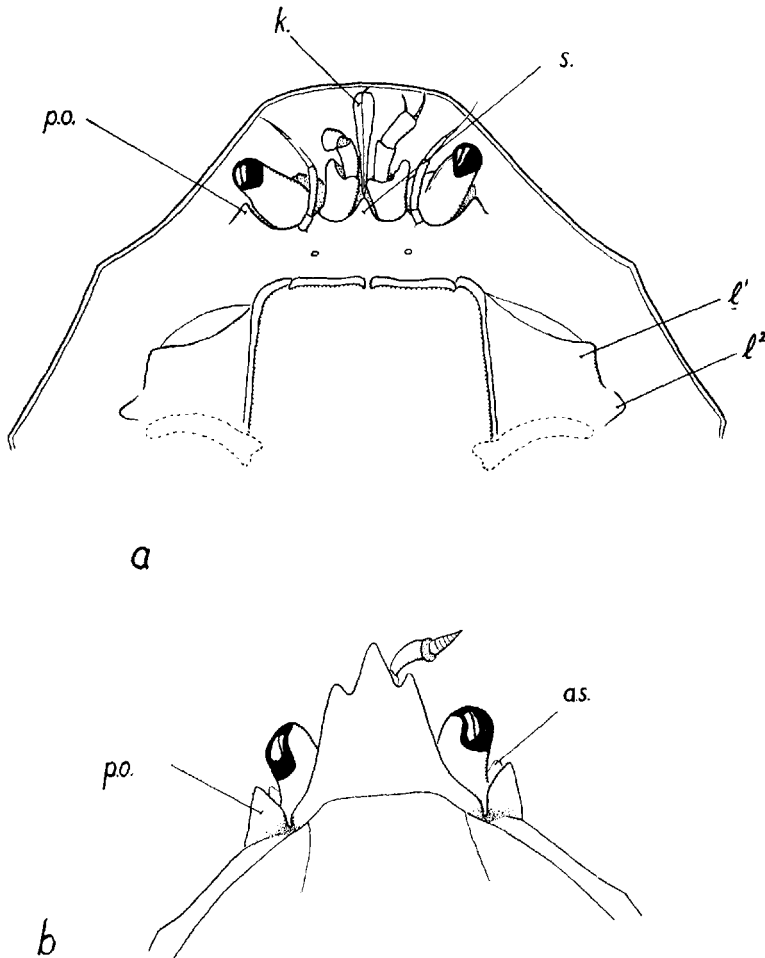


FIG. 10.—*a*, *Elamena abrothensis*, sp. n., holotype, anterior portion of carapace in ventral aspect, $\times 13$. *Halicarcinus whitei* (Miers), ♂ (Reg. no. 19.57). *b*, anterior portion of carapace, $\times 8$.

k & *s* as in fig. 1; *p.o.*, postocular lobe; *l'* & *l''*, lobes on pterygostomian region.

section 6, which contains the two genera *Hymenicus* Dana (= *Halicarcinus* White) and *Rhynchoplax* Stimpson, and the form of the rostrum would appear to place it in the former.

The external maxillipeds do not cover the entire buccal cavern, but they are broader than those of the genus *Rhynchoplax*. The male abdomen appears to consist of six pieces, but I think there are seven, and that the second segment is of unusually small size (see Kemp, 1917, p. 250, key to genera). I therefore refer the species to the genus *Halicarcinus* White.