4. Genus ZOZYMUS LEACH.

Zozymus kükenthali DE MAN.

Z. gemmula DE MAN, 1888, p. 273, pl. X, fig. 4.
Z. kükenthali DE MAN, 1902, p. 593.

MATERIAL. — Banda Neira, 24-II-29, 1 ♂, 1 ♀ (slightly broken).

REMARKS. — These two specimens agree well with De Man's descriptions; the areolation of the carapace is apparently more distinct than in the type (1) (De Man, 1888, pl. X, fig. 4).

The male though smaller is very similar to the female in general appearance, its measurements are as follows : *l.* of carapace 7.3, *b.* of carapace 11.2 and *b.* of fronto-orbital border 7.5 mm. The terminal segment of the abdomen is a little shorter than its basal width and obtusely rounded distally; the sixth segment is as long as wide.

DISTRIBUTION. — Previously recorded from Amboina.

5. Genus EUXANTHUS DANA.

Euxanthus sculptilis DANA.

E. sculptilis ALCOCK, 1898, pp. 110 and 111.
E. huonii LANCHESTER, 1900, p. 735.

MATERIAL. — Banda Neira, 24-II-29, 1 ♀.

REMARKS. — There is still some difference of opinion as to whether or not *E. huonii* Lucas is a synonym of *E. sculptilis* Dana. The two forms are very similar and such differences as are mentioned by *e. g.* Lanchester are slight. A re-examination of the types of both species (if they are still available) is desirable.

This specimen has the dark colour restricted almost entirely to the fingers whereas in the « Alert » specimen (Miers, 1884, p. 204) it extends well on to the palm especially on the inner surface. The extent of the colour may vary with age and (or) sex but it would be necessary to have a large series of specimens to decide this point. The variation in the curvature of the postero-lateral border might also vary with age.

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(1) I have not been able to examine the type of this species, which is no longer in the collection of the Zoologisches Institut, Göttingen. In 1923 it was sent to the late Professor Odhner (letter from Prof. R. W. Hoffmann, 27.III.1933).

6. Genus XANTHO LEACH.

Xantho (=Leptodius) exaratus var.

MATERIAL. — Ambon, **21-II-29**, 1 ♂.

REMARKS. — This specimen is very near to *Xantho* (= *Leptodius*) *exaratus* (H. Milne-Edwards) (1) but the carapace is appreciably shorter in proportion to the breadth; the four teeth on the antero-lateral border are narrower and more widely separated from each other basally; the fronto-orbital border is narrower

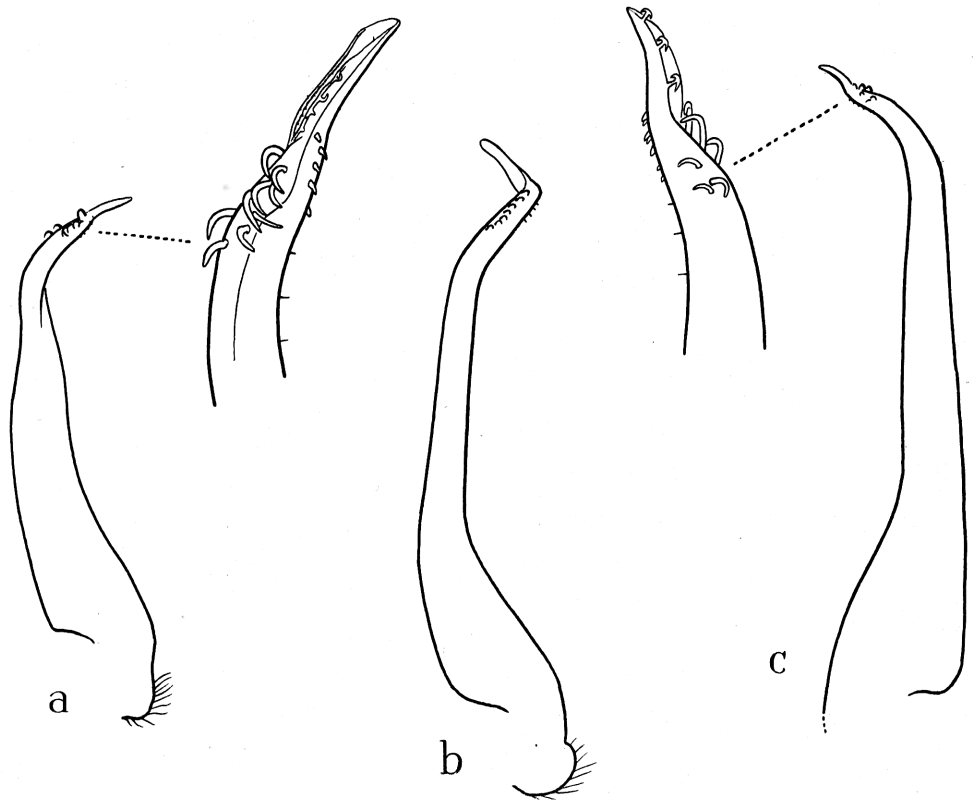

FIG. 16. — First pleopod of male of : *a. Xantho* (=*Leptodius*) *exaratus* var. *b. Xantho* (=*Leptodius*) *exaratus* (H. MILNE-EDWARDS). *c. Xantho* (=*Leptodius*) *exaratus* var. *gracilis* (DANA). (×20 and 60.)

due to the slightly smaller size of the orbits; the carapace and chelipeds are more granular; the two terminal abdominal segments are rather shorter and broader; the first pleopod is less slender with apex as represented in fig. **16***a* (*cf.* fig. **16***b* and fig. **22**B, in Gordon, **1931**, p. **547**); the fingers of the chelae are rather narrower and less curved distally.

(1) See GORDON, 1931, pp. 543-545, fig. 20 and 22.

The specimens described by Miers (1884, pp. 214, 530) as *Leptodius exaratus* var. *gracilis* are somewhat intermediate, as regards the first pleopod, between *X. exaratus* and the specimen from Ambon (fig. 16*c*). They are very similar to *Leptodius gracilis* Dana as figured by Rathbun (1906, pl. IX, fig. 2) and may be identical with that species. The front, however, differs from that figured by Dana (1855, pl. II, fig. 13) in that each half is divided into a small outer and a wide median lobule. A thorough re-examination of all the species, and especially those of the « *exaratus* »-group, is desirable.

Measurements in mm. :	X. *exaratus* var. ♂	X. *exaratus* ♂	♂	X. *exaratus* var. *gracilipes*. ♀
l. of carapace...	9.7	10.1	10.4	10.1
b. of carapace...	15.6	15.0	15.2	15.7
l. of fronto-orbital border	8.8	9.6	9.7	10.0
l. of front...	4.3	4.3	4.4	4.7

7. Genus ETISUS H. MILNE-EDWARDS.

Etisus laevimanus RANDALL.

Etisus laevimanus ALCOCK, 1898, p. 131.

Chlorodopsis espinosus BORRADAILE, 1902, p. 262, text-fig. 57.

MATERIAL. — Eiland Weim, 26-II-29, 2 young ♀.

REMARKS. — These specimens agree closely with the immature specimens described by Borradaile as *Chlorodopsis espinosus* (1) and referred to *Etisus laevimanus* by Odhner (1925, p. 83).

The fronto-orbital border is much wider in the young than in the adult, varying from two-thirds to less than a half of the greatest width of the carapace. Immature specimens would therefore run down to the genus *Chlorodopsis* in Alcock's key (1898, pp. 71-76). The inner orbital border also varies considerably with age. In young specimens there is, between upper and lower inner-orbital-angles, a wide hiatus, which is filled almost entirely (2) by the produced outer angle of the basal antennal segment. As the crabs increase in size the upper and lower orbital angles gradually converge until, in adults, they meet above the prolongation of the basal antennal segment. The flagellum is always excluded from the hiatus.

The tip of the first pleopod of the male is represented in fig. 14A, *c*.

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(1) I have been able to examine these specimens through the kindness of C. Forster-Cooper, Esq., University Museum, Cambridge.

(2) The prolongation of the basal antennal segment is as wide as, but may only fill the lower two-thirds or three-fourths of the hiatus.

8. Genus ETISODES DANA.

Etisodes anaglyptus (H. MILNE-EDWARDS).

ALCOCK, 1898, p. 133.

MATERIAL. — Banda Neira, **24-II-29**, 5 m., **1** young ♀.

9. Genus ACTAEA DE HAAN.

Actaea cavipes (DANA).

ALCOCK, 1898, pp. 139 and 147.
ODHNER, 1925, p. 68.

MATERIAL. — Eiland Weim, **26-II-29**, 1 young ♂.

Actaea hirsutissima (RÜPPELL).

ALCOCK, 1898, pp. 138 and 141.
ODHNER, 1925, pl. 69, pl. IV, fig. 13.

MATERIAL. — Banda Neira, **24-II-29**, 1 ♀, 1 ♂ with Rhizocephalan parasite on abdomen.

Actaea pulchella A. MILNE-EDWARDS.

ODHNER, 1925, p. 39, text-fig. 3, pl. II, fig. 16.

MATERIAL. — Banda Neira, 5 m., **24-II-29**, 1 ♀ (*c. l.* = **12.3**, *c. b.* = 18.2 mm.).

? Actaea rufopunctata (H. MILNE-EDWARDS).

ALCOCK, 1898, pp. 138 and 142.
ODHNER, 1925, p. 60.

MATERIAL. — Banda Neira, **24-II-29**, 1 ♂ without chelipeds and with part of the dorsal surface of carapace missing.

Actaea tomentosa (H. MILNE-EDWARDS).

ALCOCK, 1898, pp. 138 and 140.
ODHNER, 1925, p. 70.

MATERIAL. — Eiland Weim, **26-II-29**, 1 ♂.

Genus PHYMODIUS A. MILNE-EDWARDS.

Alcock (1898, pp. 162-163) regarded *Phymodius monticulosus* as distinct from *Ph. ungulatus;* Rathbun (1907, p. 47), on the other hand, writes « I find it necessary on examination of considerable material to unite the *ungulatus* form with the *monticulosus* or *obscurus* form of *Phymodius*, or, in lieu of this, to make five or six intergrading species ». This is quite the reverse of what one would have expected from these two distinguished carcinologists.

The material in the present collection, though consisting of only six specimens, seemed to point to the existence of two distinct species and I decided to re-examine all the material in the British Museum Collection. This led to a revision of the species of the genus, which, unfortunately, is not as complete as I would have liked it to be (1). I am convinced, however, that *Ph. ungulatus* and *Ph. monticulosus* are distinct species and, with a little practice, it is possible to distinguish the females as well as the males. With regard to the material that I re-examined from the U. S. National Museum Miss Rathbun writes (2) « I approve your separation of *ungulatus* but that still leaves a motley collection. Those which have no spines (to speak of) on the ambulatories have a different shape of carapace from those with evident spines on the legs. The specimens 68182 and 17308 that you examined are of this sort ». Both species show considerable variation which seems to depend largely on age and sex; all the *monticulosus* material appeared to me to belong to a single species.

I also think that *Ph. nitidus* (Dana, 1852) and *Ph. sculptus* (A. Milne-Edwards, 1873) are almost certainly synonymous, although I have not examined any type specimens of the former. Rathbun seems to regard them as distinct « the manus of *sculptus* is devoid of tubercles, the front of the carapace is thicker than in *nitidus*, etc. » (3). The presence or absence of tubercles on the palm of the chela is probably not of specific importance; Klunzinger (1913, p. 221) described material from the Red Sea which varied greatly in this respect as his varietal names imply (3). Should the two species prove to be really distinct, most of Klunzinger's material would be referable to *Ph. nitidus*.

Alcock's (1898, p. 161) definition of the genus requires two slight modifications. (1) The carapace is usually finely granulose in small specimens, *Ph. nitidus* and *Ph. sculptus* excepted, and conspicuously so in *Ph. granulosus*. (2) The proportion of the merus of the cheliped which projects beyond the carapace varies with age and sex and also from species to species.

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(1) The subgenus *Cyclodius* probably should also be included in *Phymodius* but I have not seen any type specimens.

(2) Letter dated, 13.XI.1933.

(3) *Phymodius sculptus* and vars. *granosimana* and *spinosimana*.

TYPICAL SPECIES. — The typical species of the genus may be distinguished as follows :

I. Lobe 2M longitudinally divided.

A. Walking legs sparsely setose.

1. Front as in fig. 17*a*, *a'*.
♂, 1st pleopod as in fig. 18*a*.
Abdominal segments 6 and 7 as in fig. 19*a*. — *Ph. obscurus* = *monticulosus*

2. Front as in fig. 17*b*, *b'*.
♂, 1st pleopod as in fig. 18*b*.
Abdominal segments 6 and 7 as in fig. 19*c*. — *Ph. ungulatus*

3. Front as in fig. 19*d*.
♂, 1st pleopod as in fig. 21*a*. — *Phymodius* sp.? p. 43 (prob. var. of *nitidus*)

B. Walking legs heavily setose.
Front as in fig. 20*b*.
♂, 1st pleopod as in fig. 21*b*.
Abdominal segments 6 and 7 as in fig. 19*b*. — *Ph. granulatus*

II. Lobe 2M entire; walking legs heavily setose.

Front as in fig. 20*a*, *a'*.
♂, 1st pleopod as in fig. 21*a*, *a'*.
Abdominal segments 6 and 7 as in *monticulosus*. — *Ph. sculptus* ? = *Ph. nitidus*

ATYPICAL SPECIES. — Rathbun (1906, p. 858; 1911, p. 206) referred to this genus an atypical species *Ph. laysani* and in the British Museum Collection are five specimens belonging to a closely related new species. The two forms differ from typical *Phymodius* species in several respects. (1) The carapace is deeper. (2) The orbits are shallower and more inclined backwards (*i.e.* dorsally) with margin entire instead of lobulate. (3) The outer frontal lobule is not distincly separable from the inner orbital angle (*cf.* fig. 23*a* with *b* or *c*). (4) The chela is of the characteristic form represented in fig. 25*a* and *b*, with short fingers (dactylus abruptly curved distally) hollowed out but not hoofed at the tips.

These two species appear to be of small size; it might be convenient to refer them to a new subgenus or even genus but for the present I have left them in *Phymodius*.

TYPICAL SPECIES

Phymodius monticulosus (DANA) (1) = **Phymodius obscurus** (LUCAS).

ALCOCK, 1898, p. 163.

RATHBUN, 1907, p. 46 (*Ph. ungulatus* in part).

MATERIAL EXAMINED :

Paris Museum Collection :

(a) Cotype of *Ph. obscurus* lent by Prof. Gravier.

(b) 1 ♂ determined by G. Nobili from Obock, Dr. Jousseaume, 1897.

U. S. Museum, Washington :

(a) Port Lloyd, Bonin Ids. No. 13904, 1 ♂ (RATHBUN, 1907, pl. III, fig. 3, 3*a*).

(b) Fakarava, Id., Paumotus, No. 33405, 2 ♂ (RATHBUN, 1907, pl. IV, fig. 1, 1*a* and 3, 3*a*).

(c) Tari-Tari, Id., No. 33403, 1 ♂, 2 ♀ (♂ RATHBUN, 1907, pl. IV, fig. 4, 4*a*).

(d) Tongatabu, No. 33402, 1 ♂ (RATHBUN, 1907, pl. III, fig. 2, 2*a*).

(e) Honolulu, No. 17308, 3 ♂, 2 ♀ (1 ♂ RATHBUN, 1907, pl. III, fig. 4, 4*a*).

(f) Cocoanut, Id., Oahu, T. H. Stn. 5, No. 64182. July 1930, 1 ♂ U. S. Bur. Fish donor.

(g) Northwest, Id., Capricorn Group, Queensland, No. 64638, 1 ♂. Dec. 1925 from Austr. Mus.

British Museum Collection :

(a) Samoa Ids. Upolu, 74.54, 17 ♂, 4 ♀.

(b) Samoa Ids. 76.17; 3 ♀, 1 ♂ all young, along with *Ph. ungulatus.*

(c) Samoa Ids. 77.35; 1 ♂ along with *Ph. ungulatus.*

(d) Philippines, Zamboanga. H. M. S. « Challenger », 84.31 4 ♀ (2 ovig.) (MIERS, 1886, p. 139 in part).

(e) Aden; low water, coral reef. 85.14, 1 ♂.

(f) Madagascar, 88.5; 1 ♂.

(g) Zamboanga, 92.4.18, 146-156 Odhner det. 9 ♀ (1 ovig), 6 ♂.

(h) Abrolhos. Percy Sladen Expedition, 1931.7.24.90-94, 6 ♂, 2 ♀ (MONTGOMERY, 1931, p. 442 as *Ph. ungulatus*).

(i) The material in the dried collection includes 2 ♂, 2 ♀ from the U. S. Exploring Expedition reported on by Dana. 61.44 (1 ♂ Upolu) and 1 ovig. ♀ from the « Samarang » Collection 47.21. Eastern Seas (« *Xantho peuce* »).

In present Collection :

Mansfield Eiland, 1.III.1929, 2 ♀.

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(1) RATHBUN (1906, p. 858) would give the preference to *Ph. obscurus* since Dana refers to Lucas' figure in his description. I have not been able to ascertain the exact date of publication of the plates of the Crustacea section of Lucas' work.

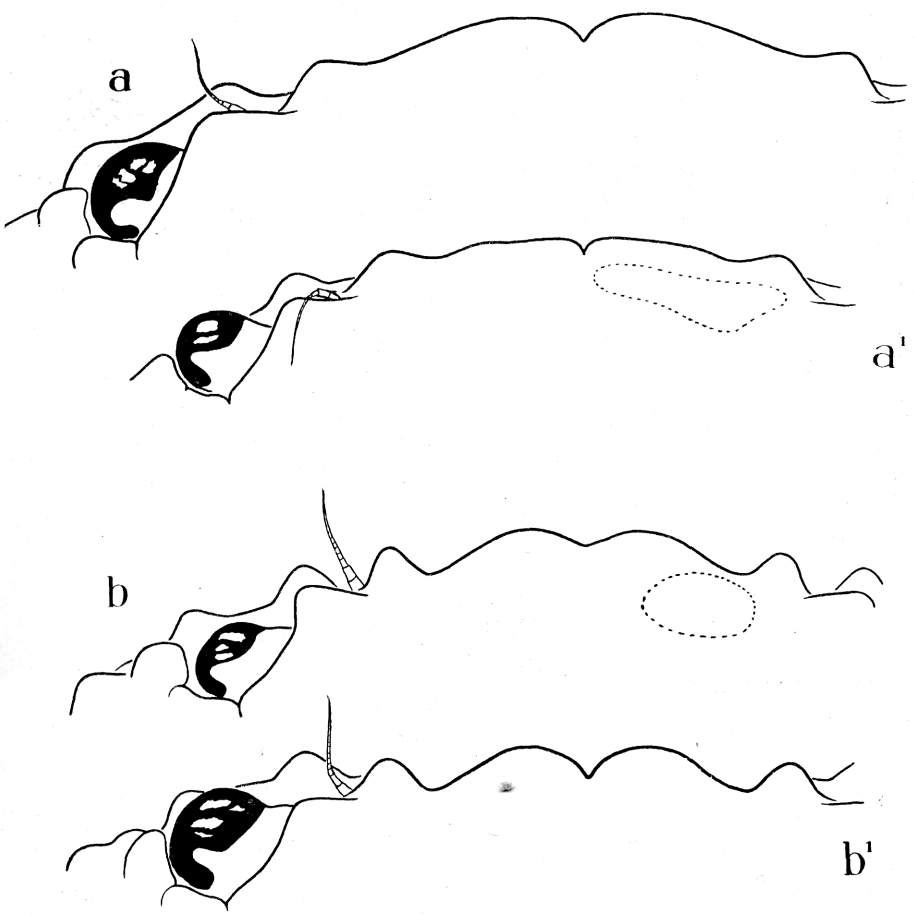

FIG. 17. — Fronto-orbital border of carapace of :
Phymodius monticulosus (DANA). — *a*. 74.54; *c. l.* = 18.5, *c. b.* = 25.6 mm.;
*a*¹. 1931.7.24.90-94; *c. l.* = 15.6, *c. b.* = 21.9 mm.

Phymodius ungulatus (H. MILNE-EDWARDS). — *b*. 82.19; *c. l.* = 15, *c. b.* = 21.9 mm.;
*b*¹. U.S. Mus. 65237; *c. l.* = 16.7, *c. b.* = 24.4 mm. : × 8.

Phymodius ungulatus (H. MILNE-EDWARDS).

ALCOCK, 1898, p. 162.

RATHBUN, 1906, p. 46 (in part).

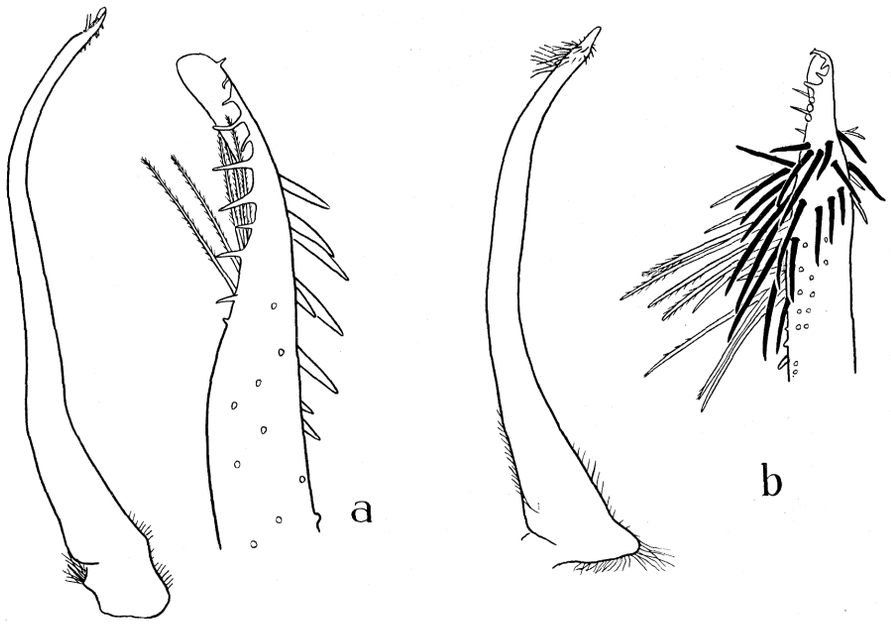

FIG. 18. — First pleopod of male of : *a. Phymodius monticulosus* (DANA). *b. Phymodius ungulatus* (H. MILNE-EDWARDS). × 10 and 75 (apex).

MATERIAL EXAMINED :

Paris Museum Collection :

1 ♂ G. Nobili det. 1906, Kikitea g. Seurat, 1905.

U. S. Museum, Washington :

(a) Borabora, Society Ids. 33404, 1 ♂, 2 ♀ (RATHBUN, 1907, pl. III, fig. 1, 1*a*; pl. IV, fig. 2, 2*a*).

(b) Basilian Strait, Little Santa Cruz, Id., 65237, 1 ♂, Feb. 28, 1914, M. Ward det.

(c) Coetivy W. Indian Ocean, H. M. S. Sealark. J. Stanley Gardiner : 41256, 1 ♂.

British Museum Collection :

(a) Seychelles, 75.20, 2 ♂.

(b) Samoa Ids., 76.17, 2 ♂ (one rather broken).

(c) Samoa Ids., 77.35, 2 ♂, 3 ♀.

(d) Madagascar, 82.6, 2 ♂, 3 ♀ (2 ovig).

(e) Ceylon, Galle, 82.19, 2 ♂, 2 ♀.

(f) Philippines, Zamboanga H. M. S. « Challenger », 84.31, 1 ♂ with *Ph. monticulosus* (MIERS, 1886, p. 139, in part).

(g) Apia, Samoa, 1931.5.26.6, 2 ♂.

In present Collection :

Banda Neira, 24.II.1929, 3 ♂, 1 ♀.

PHYMODIUS MONTICULOSUS (= PH. OBSCURUS).	PHYMODIUS UNGULATUS.
Carapace.	**Carapace.**
Front as represented in fig. 17*a*, *a'*; depressed; outer angle small and much less separated from the broad slightly convex median lobe.	*Front* as represented in fig. 17*b*, *b'*; outer angle well developed and deeply separated from the markedly convex median lobe.
Lobes 2F wide, extending to median depression of front which appears double-rimmed in frontal aspect (fig. 17*a'*).	Lobes 2F much narrower and widely separated from each other (fig. 17*b*).
Gastric region more convex but lobules 1M, 2M and 3M less deeply separated from each other; 2M and 3M often subdivided into secondary lobules in younger specimens, much worn, as a rule, in older specimens.	Gastric region flatter, lobes deeply separated; secondary lobulation occasionally faintly indicated.
Antero-lateral lobes less prominent, never distinctly spinose in young specimens. Arch of front and antero-lateral borders more convex.	Antero-lateral lobes more prominent, the posterior pair often distinctly spinose in young specimens. Arch of front and antero-lateral lobes less convex.
Lobes 4L and 1R larger; a distinct additional lobule between 1R and 2R belonging most probably to 1R.	Lobes 4L and 1R smaller (about equal to last two antero-lateral lobes); 2R usually more or less subdivided into a small outer and larger inner lobe.
Lobes 2P much shorter, only present externally, *i.e.* anterior to each fourth walking leg.	Lobes 2P much longer, reaching almost to the median line.
Terminal abdominal segments as in fig. 19*a*.	Terminal abdominal segments as in fig. 19*c*.
Epistomial border less concave.	Epistomial border more concave.

(Comparing specimens of approximately equal size and of the same sex.)

Appendages.	**Appendages.**
(a) FEMALES.	(a) FEMALES.
In specimens of all sizes the merus of the cheliped scarcely projects beyond the carapaces so that the rounded anterior angle of the mero-carpal articulation fits into the depression between the third and fourth antero-lateral lobes.	Specimens of very small size may have the merus as short as in *Ph. monticulosus*. As a rule (carapace breadth 12 mm. or more) 1/3 to 1/2 of the merus projects beyond the carapace.
. . . . .	Chelipeds more spinose in small, more nodular in large specimens than in *Ph. monticulosus*.

PHYMODIUS MONTICULOSUS
(= PH. OBSCURUS).

Appendages (ctd.).

(b) MALES (1).

Small males resemble the females in having short meri (occasionally also specimens up to 26 mm. in breadth). As a rule males of 20 mm. breadth or over have ¼ to ½ of the merus projecting. (Thus the senile males resemble those of *Ph. ungulatus* in this respect.)

Fingers of chela in smaller specimens (2) but little curved distally so as to enclose a narrow gap when in contact.

The first pleopod more slender and as represented in fig. 18*a*, with 2-5 long, slightly plumose setae in the concavity of the apex.

PHYMODIUS UNGULATUS.

Appendages (ctd.).

(b) MALES.

All males examined (breadth 12 mm and over) have ± ½ of the merus projecting beyond the carapace. (If small males of the two species are compared the difference is distinct.)

Fingers of chela in smaller specimens as a rule more curved so as to leave a wider gap when closed.

The first pleopod more robust, as represented in fig 18*b*, and easily recognisable under low magnification by the large number of long backwardly directed spines near the apex.

Walking legs not heavily setose in either form.

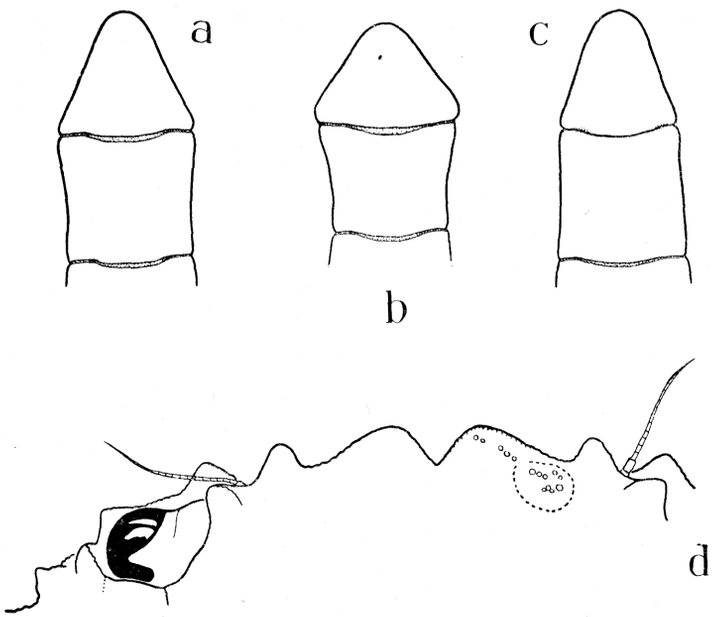

FIG. 19. — Terminal abdominal segments of male of : *a. Phymodius monticulosus* (DANA). *b. Phymodius granulatus* (TARG. TOZZ.). *c. Phymodius ungulatus* (H. MILNE-EDWARDS). *d.* Fronto-orbital border of *Phymodius* sp. ? (aff. *nitidus*). (*a.-c.* ×8; *d.* 11.)

(1) The chelae are unequal in adult males. But in the material examined they are not more unequal in *Ph. monticulosus* than in *Ph. ungulatus* (*cf.* ALCOCK, 1898, p. 164).

(2) There are many senile males (*b* = 23 — 33 mm) of *Ph. monticulosus* in the Brit. Mus. Coll. but no specimen of *Ph. ungulatus* exceeding 23 mm.

Phymodius nitidus (DANA) ? = **Phymodius sculptus** A. MILNE-EDWARDS.

Phymodius nitidus RATHBUN, 1906, p. 858.
Phymodius sculptus ALCOCK, 1898, p. 164.
Phymodius sculptus KLUNZINGER, 1913, pp. 221-224.

MATERIAL EXAMINED. — Referred to *Phymodius sculptus* :

Paris Museum :

Seychelles, M. L. Rousseau, cotype ♂, dried.

Turin Museum :

Red Sea, 1 ♂ Nobili det.

British Museum :

(a) Daidalus Shoal, Red Sea, 74.89, 4 ♀, 5 ♂.
(b) Ceylon, Herdman Colln., 1907.5.22.239, 2 ♂ (LAURIE, 1906, p. 405).
(c) Christmas Island, 1909.5.19, 50-51, 1 ♂, 1 ♀ (CALMAN, 1909, p. 705).
(d) Galle, Ceylon, 82.19, 3 ♂, 2 ♀.

Referred to *Phymodius nitidus*.

U. S. Nat. Museum :

Pukoo, Molokai, H. I. from College of Hawaii, 48933, 1 ♂ (RATHBUN, 1906, p. 858).

DESCRIPTION. — This species can at once be distinguished from the other typical species of the genus by the « smooth, polished, convex but flat-topped lobules » of the carapace and the absence of a longitudinal groove on lobe 2M (at most there is only a trace at the anterior margin). The front is depressed and rather similar to that of *Ph. monticulosus* (*cf.* fig. 20*a*, *a'* and 17*a*, *a'*). Lobe 2F is very low but extends to the median frontal groove giving the front a double-rimmed appearance in face view. The third and fourth antero-lateral lobes of adults are more prominent than in any of the other typical species (1); the fourth (occasionally also the third) ends in a sharp forwardly directed spine so that the width is rather greater in proportion to the length of the carapace.

The chelipeds are only slightly unequal in the male; in the cotype of *Ph. sculptus* at least half of the merus projects beyond the carapace (*l.* = 16, *b* = 25.4 mm.), in the largest ♀ (*l.* = 12.1, *b.* = 18.9 mm.) almost 1/3 of the merus projects. In the smallest female (9.4 × 14.6 mm.) from the U. S. National Museum the upper half of the hand bears 4 rows of tubercles; in a rather larger male (10.8 × 17 mm.) the tubercles are still present, though worn, and in the largest specimens they are almost or entirely absent. The two acute spines at the inner angle of the wrist of young specimens also become worn and only a blunt lobe remains in older specimens.

(1) NOBILI (1906, p. 266) states that the last tooth is always spiniform in *Ph. granulatus* but in the Brit. Mus. material this is rarely the case in young and never in adult specimens.

The terminal abdominal segments of the male are very similar to those of *Ph. monticulosus* (see fig. 19*a*). The first pleopod is of the type represented in fig. 21*a*, *a'*.

The walking-legs are biunguiculate, the two subterminal spines on the dactyli subequal and rather short. They are thickly fringed with soft hairs as in *Ph. granulatus*.

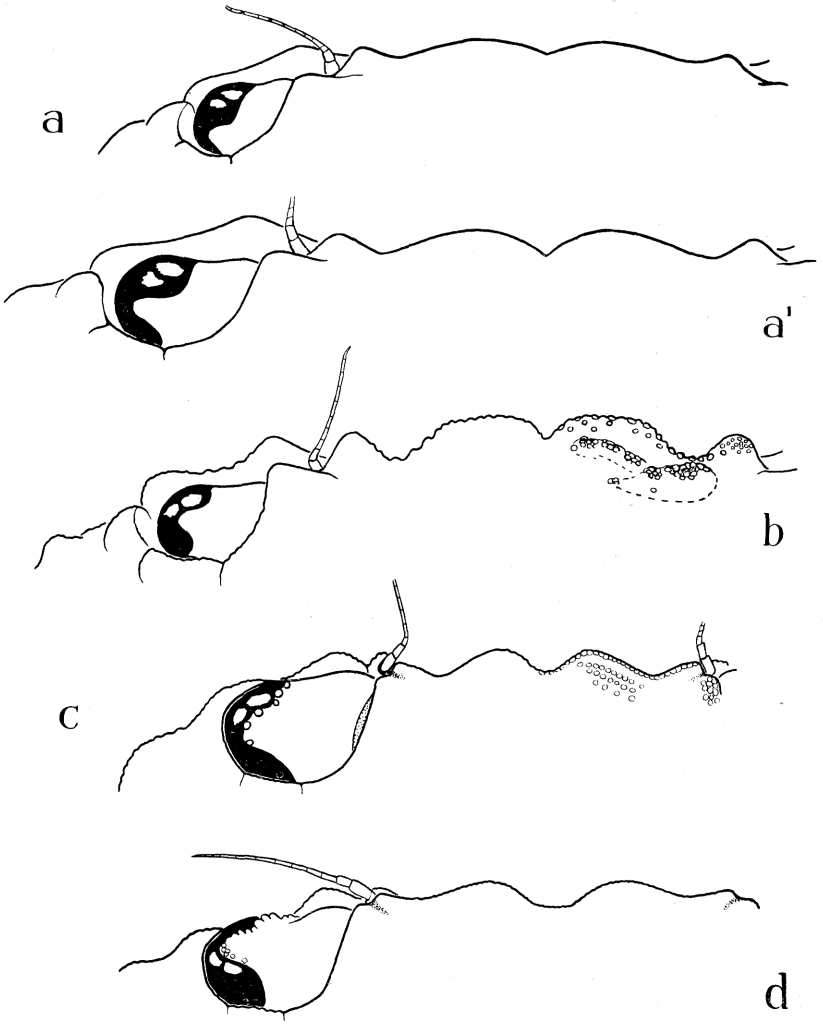

FIG. 20. — Fronto-orbital border of : *a. Phymodius nitidus* (DANA), U.S. Mus., *c. l.* = 12.5, *c. b.* = 19.4 mm. (RATHBUN det.). *a*[1]. *Phymodius sculptus* A. MILNE-EDWARDS. Paris Mus. Cotype; *c. l.* = 16, *c. b.* = 25.4 mm. *b. Phymodius granulatus* (TARG. TOZZ.) 69.49; *c. l.* = 15.4, *c. b.* = 22 mm. *c. Phymodius odhneri* n. sp.; *c. l.* = 7.1, *c. b.* = 9.8 mm. *d. Phymodius laysani* RATHBUN; *c. l.* = 8, *c. b.* = 11.2 mm. (RATHBUN det.). (*a.-b.*×8; *c*, *d.*×15.)

REMARKS. — The cotype of *Ph. sculptus* that I examined was a dried specimen and therefore I could not examine the pleopods. It was of much larger size than any of the specimens referred by Miss Rathbun to *Ph. nitidus* and the