BIOLOGICAL RESULTS OF THE SNELLIUS EXPEDITION

V. THE DROMIACEA, OXYSTOMATA, AND OXYRHYNCHA OF THE SNELLIUS EXPEDITION

BY

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The present paper deals with the material of the Brachyura of the tribes Dromiacea, Oxystomata, and Oxyrhyncha obtained by the Snellius Expedition and placed at my disposal through the kindness of Prof. Dr. H. Boschma. At the same time it contains some remarks on the material of the Rijksmuseum van Natuurlijke Historie at Leiden.

I want to express my thanks to Prof. Dr. A. Schellenberg for the loan of material belonging to the genus *Tiarinia* and to the Director and Members of the staff of the Zoological Museum at Amsterdam, who made it possible for me to examine specimens from the Siboga Expedition and the Collection-de Man.

The drawings on plates VII—XI were made by Mr. L. P. Pouderoyen.

DROMIACEA de Haan

DROMIIDAE Alcock

Dromidiopsis Borradaile

Dromidiopsis dormia (L.)

Cancer dormia Linnaeus, 1763, Amoen. Acad., vol. 6, p. 413.

Amboina; pier; May 6, 1930. — 1 ♂.

In 1923 Rathbun stated that the specimens attributed by various authors to *Dromia dormia* (L.), in reality belonged to two different species: *Dromidiopsis dormia* (L.) and the new species *Dromia dehaani* Rathbun.

The young ♀ from the Java Sea mentioned by Ihle (1913) belongs to *Dromidiopsis dormia* (L.); while the ♀ from Japan is a *Dromia dehaani* Rathbun. The Collection-de Man (Museum Amsterdam) contains another ♀

of *Dromia dehaani* from the east-coast of the Malay Peninsula obtained from the Raffles Museum.

According to Borradaile (1900) one of the characters of *Dromidiopsis* is, that the sternal sulci in the ♀ reach to the chelipeds, converge without joining and end in a single ill-marked tubercle. In the young ♀ from the Java Sea (cl. 41½, cb. 27 mm [1])) the sulci are shorter, ending at the level of the first pair of walking legs with a pair of very indistinct tubercles; the distance between the tubercles is 5 mm.

Cryptodromia Stimpson

Cryptodromia canaliculata Stimpson

Cryptodromia canaliculata Stimpson, 1859, Proc. Ac. Nat. Sc. Philadelphia, 1858, p. 240.

Kera, near Timor; November 15—16, 1929. — 1 ♀.
Obi latoe; shore or reef; April 23—27, 1930. — 1 ♀.

Cryptodromia canaliculata var. **sibogae** Ihle

Cryptodromia canaliculata var. *sibogae* Ihle, 1913, Brach. Siboga-Exp., Monogr. 39b, p. 42.

Kera, near Timor; November 11—13, November 15—16, 1929. — 1 specimen with Sacculinid, and 1 ovigerous ♀, chelipeds missing.
Near Koepang, Timor; reef; December 8, 1929. — 1 specimen with Sacculinid.
Beo, Karakelong, Talaud Islands; reef; June 14—21, 1930. — 1 ♂.
Amboina; October 13—20, 1930. — 3 ♂♂, 3 ♀♀ (1 ovigerous).

The "Suprasuturalwulst" never has a distinct tooth, but sometimes (especially in the ovigerous ♀ from Amboina) a tubercle is present.

Cryptodromia coronata Stimpson

Cryptodromia coronata Stimpson, 1859, Proc. Ac. Nat. Sc. Philadelphia, 1858, p. 240.

Kera, near Timor; November 22—23, 1929. — 1 badly damaged ♀.
Obi latoe; shore or reef; April 23—27, 1930. — 1 ♀.

Cryptodromia hilgendorfi de Man

Cryptodromia hilgendorfi de Man, 1887, Arch. Naturg., Jahrg. 53, vol. 1, p. 404, pl. 18 fig. 3.

Maratoea; reef; August 14—18, 1929. — 1 ♀.
Amboina; September 10—17, October 15, 1930. — 2 ovigerous ♀♀.

In one of the ♀♀ from Amboina the left half of the frontal margin is curiously deformed: from the median it rises rather more steeply than the right half, the lateral tooth is apparently broken off, but the margin forms a second broad, blunt tubercle, reaching the same height as the right lateral tooth, but on a greater distance from the median.

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1) Throughout the present paper the abbreviation cl. is used for "carapace length", cb. for "carapace breadth".

Cryptodromia de Manii Alcock (Pl. VII fig. 1)

Cryptodromia de Manii Alcock, 1900, Journ. As. Soc. Beng., vol. 68, pt. 2, p. 144.
Amboina; September 11—17, 1930. — 1 ♀.

According to Alcock: "A tooth on the hepatic region, dorsad of the antero-lateral border, and just behind the outer orbital angle, is characteristic."

Until now the species was known from the type specimen only, in too bad a state to be decently figured, as Alcock states.

Cryptodromia tuberculata Stimpson

Cryptodromia tuberculata Stimpson, 1859, Proc. Ac. Nat. Sc. Philadelphia, 1858, p. 239.

Kafal, Misool group; shore or reef; October 3, October 5, 1929. — 1 ♂.
Near Manoembai, Aroe Islands; shore; October 11—14, 1929. — 1 ♀.
Atapoepoe, Timor; reef; November 19, 1929. — 1 ovigerous ♀.
Kambang, near Timor; shore or reef; November 26, November 28, 1929. — 1 ♂.
Near Hainsisi, Semaoe, near Timor; shore; November 27, 1929. — 1 ♀.
Pelokan, Postiljon Islands; shore or reef; December 20, 1929. — 1 ♂.
Aloang, Paternoster Islands; shore and reef; February 8, 1930. — 1 ♂ and 1 ovigerous ♀.
Pasih Ipah, near Soela Mangoli and Taliaboe; shore; March 18—19, 1930. — 6 ♂ ♂, 3 ♀ ♀ (1 ovigerous).
Ternate; shore; April 1—2, 1930. — 1 ♂.
Haroekoe; shore and reef; May 3—7, 1930. — 2 ♀ ♀ (1 ovigerous).
Merampi, Kenoesa Islands; shore; May 20, 1930. — 2 ♂ ♂, 1 ♀.
Ake Selaka, Kaoe Bay, Halmahera; shore and reef; May 28, 1930. — 1 ♂, 1 ♀.
Morotai; June 3—10, 1930. — 5 ♀ ♀.
Amboina; September 10—17, 1930. — 1 ♂, 1 ♀.
Ternate; September 29, 1930. — 1 ♀.
Roemah tiga, Amboina; October 17, 1930. — 1 ♀.
Leti; October 31, 1930. — 2 ♂ ♂.

The ♀ from Atapoepoe has 3 subhepatic teeth, of the suprasutural teeth only 1 (on either side) is distinctly developed; the ♂ from Kambang has 3 subhepatic and 2 suprasutural teeth on the left side, and 2 subhepatic and 1 suprasutural on the right.

Cryptodromia tuberculata var. **pileifera** Alcock

Cryptodromia tuberculata var. *pileifera* Alcock, 1900, Journ. As. Soc. Beng., vol. 68, pt. 2, p. 141.

Paleleh, Celebes; shore; August 21, 1929. — 1 ovigerous ♀.
Kafal, Misool group; shore or reef; October 3, October 5, 1929. — 1 ♀.
Wotap, Tenimber Islands; shore or reef; October 20—23, 1929. — 1 ovigerous ♀.
Near Koepang, Timor; November 18—20, 1929. — 1 ♀.
Near Hainsisi, Semaoe, near Timor; shore; November 27, 1929. — 1 ovigerous ♀.
Pelokan, Postiljon Islands; December 20, 1929. — 1 ♂.
Sambardjaga, Postiljon Islands; December 21, 1929. — 1 ovigerous ♀.
Aloang, Paternoster Islands; shore or reef; February 8, 1930. — 1 ovigerous ♀.
Pasih Ipah, near Soela Mangoli and Taliaboe; shore; March 19, 1930. — 2 ♀ ♀.

Merampi, Nenoesa Islands; shore; May 20, 1930. — 1 ♂.
Morotai; June 3—10, 1930. — 1 ♂, 1 ♀.
Flores; August 18—19, 1930. — 1 ovigerous ♀.
Locality unknown. — 1 ♂.

Cryptodromia tumida Stimpson

Cryptodromia tumida Stimpson, 1859, Proc. Ac. Nat. Sc. Philadelphia, 1858, p. 240.

Kafal, Misool group; shore and reef; October 3, October 5, 1929. — 1 ♂, 2 ovigerous ♀♀.
Wotap, Tenimber Islands; shore and reef; October 20—23, 1929. — 2 ♂♂, 2 ♀♀ (1 ovigerous).
Kera, near Timor; November 15—16, November 22—23, 1929. — 3 ♀♀ (2 ovigerous), 1 ♂.
Koepang, Timor; November 30, December 5, 1929. — 1 ♂, 2 ♀♀.
Pelokan, Postiljon Islands; shore and reef; December 20, 1929. — 1 ♂, 1 ♀.
Taliaboe, Soela Islands; shore; March 18, 1930. — 2 ♀♀ (1 ovigerous).
Pasih Ipah, near Soela Mangoli and Taliaboe; shore; March 19, 1930. — 1 ♀.
Beo, Karakelong, Talaud Islands; June 14—21, 1930. — 2 ♀♀ (1 ovigerous).
Flores; August 18—19, 1930. — 1 young ♀.

The form of the hinder margin of the abdomen is very different in our specimens as well as in those collected by the Siboga Expedition. In some the telson has the same form in the ♂ as in the ♀; our ♂ from Kafal has the three spines described and figured by Sakai (1936b) as characteristic for his variety *trispinosa*, but the three spines are of equal length. In others again there are no spines, but the three corresponding parts are rounded, and then the lateral parts are shorter or longer than the median part; sometimes all three are of equal length.

Lateral parts shorter for instance in the 2 ♂♂ from Station 225, Siboga Expedition (cl. 8½ and 5 mm); lateral parts longer in 3 ♂♂ from the same locality (cl. 8 and 6 mm); all three of equal length in 4 ♂♂ (cl. 8, 6, 5½ and 5 mm) also from Station 225. None of the specimens belongs to the subspecies *bispinosa* Sakai.

In the ♀ from Pasih Ipah and the young ♀ from Flores the sternal grooves are short, ending at the level of the second pair of ambulatory legs.

Cryptodromia trituberculata nov. spec. (Pl. VII figs. 2, 3)

Obi latoe; shore or reef; April 23—27, 1930. — 1 ♂, holotype, the cheliped and fourth leg of the right side and the second left ambulatory leg are missing.

Carapace broader than long (cl. 4 mm, cb. 4½ mm), covered by a short tomentum, and with a distinct cervical groove.

Front cut into three teeth, the middle one is on a lower plane and very small, hardly visible from above. The lateral ones are rather blunt and gently sloping down to the indistinct inner supra-orbital teeth. The outer supra-orbital tooth is better developed.

Antero-lateral border with 3 broad teeth, on the right side they are of equal size, on the left the first is smaller than the corresponding one on the other side, the second broad.

On the ventral side we find a large infra-orbital tooth, a subhepatic tooth, visible from above between the outer orbital angle and the first antero-lateral tooth, and a smaller suprasutural tooth.

Carpus of cheliped with 3 nodules on its anterior margin; palm with small nodules, fingers gaping in the basal half; their inner edges toothed.

The propodi of the first and second ambulatory legs are short and broad; the dactyli armed on their inner margin with three spines and with some longer hairs near the base of their horny tips. The last leg is longer than the penultimate, both end in a claw-like dactylus; their propodi have spines at the end of both borders, that on the anterior border being large enough to form a chela with the dactylus.

Hinder margin of the telson with a deep incision, but I am not sure that it is not damaged; lateral margins with small spines. Posterior margin of fourth and fifth abdominal segment with 4 tubercles, one on either side of the median, and one at each outer angle.

This species resembles *mariae* Ihle (1913) by the shortness of the median frontal tooth, but *mariae* has no subhepatic or suprasutural tooth, and the second antero-lateral tooth is very small; the lateral frontal teeth are better developed than in our specimen. The pereiopods too are different.

DYNOMENIDAE Ortmann

Dynomene Latr.

Dynomene hispida Desm.

Dynomene hispida Desmarest, 1825, Cons. Cl. Crust., p. 133, pl. 18 fig. 2.

Near Koepang, Timor; November 18—20, 1929. — 1 rather damaged ♂ (the chelipeds and some of the legs are missing).

Dynomene praedator A. M.-Edwards (Pl. VII fig. 4)

Dynomene praedator A. Milne-Edwards, 1879, Ann. sc. nat. (6), Zoologie, vol. 8, pt. 3, p. 8, pl. 14 figs. 20—26.

Amboina; September 11—17, 1930. — 2 ♂♂.
Pelokan, Postiljon Islands; shore and reef; December 20, 1929. — 2 ♂♂.
Obi latoe; shore and reef; April 23—27, 1930. — 3 ♀♀, 2 ♂♂.

There are no spines on the antero-lateral margin of the cephalothorax, but 4 small tubercles; probably these are indicated by Milne-Edwards as: "des granulations aplaties et peu visibles existent le long de ces bords."

In his figure 21 just behind the right orbit one of these tubercles is figured.

LATREILLIIDAE Alcock

Latreillia Roux

Latreillia pennifera Alcock

Latreillia pennifera Alcock, 1900, Journ. As. Soc. Beng., vol. 68, pt. 2, p. 168.

Station 60*, 6° 58'.0 N, 121° 52'.5 E; trawl, 72—80 m; September 5, 1929. — 1 ♀, on the right side the second, third and fifth pereiopod and propodus and dactylus of the fourth are missing.

OXYSTOMATA de Haan

LEUCOSIIDAE Dana

Randallia Stimpson

Randallia granulosa (Alc. and And.)

Leucosilia granulosa Alcock and Anderson, 1894, Journ. As. Soc. Beng., vol. 63, pt. 2, p. 207.

Station 104*, 5° 50'.0 S., 134° 04'.0 E.; dredge, depth 100 m; October 15, 1929. — 1 ♂, cl. 8 mm.

In 1896 Alcock changed the name to *pustulilabris*, because of the very similar name *granulata* used by Miers for a species belonging to the genus *Leucosilia* as defined by Alcock; in my opinion, however, there is no objection to using the older name.

In our specimen the front is separated from the rest of the carapace by a conspicuous transverse groove, as mentioned in Alcock's description; there is no distinct angle marked by a strong epibranchial spine, between the antero- and postero-lateral margin; the lateral margin of the carapace is rounded at the junction. In this respect our specimen differs from the original description, and agrees with the ♂ (cl. 8½ mm) from Station 305 of the Siboga Expedition (Ihle, 1918).

Iphiculus Adams and White

Iphiculus spongiosus Adams and White

Iphiculus spongiosus Adams and White, 1848, Samarang, Crustacea, p. 57, pl. 13 fig. 5.

Near Koepang, Timor; dredge, 6—15 m; December 4, 1929. — 2 ♂♂.

Myra Leach

Myra kesslerii (Paulson)

Callidactylus Kesslerii Paulson, 1875, Crust. Rot. Meer, p. 80, pl. 11 fig. 1.

New Caledonia; coll. Frank. — 1 ♀.

The collection of the Leiden Museum contains one dried specimen that belongs to this species, for the side-wall of the hepatic region is not distinctly facetted; a strong mamillary tubercle is present. The lateral margin is armed with a spine, just above the first pair of ambulatory legs. The fingers of the chelipeds are longer than the hand.

Ihle (1918) has already stated that the processes on the posterior border of the carapace are not always broad and blunt, but that in 3 specimens the middle one is more or less spine-like, and that the lateral ones in one ♂ are "etwas mehr verlängert, aber am Ende noch abgerundet". In our specimen the posterior border is provided with three short spines. In *Myra fugax* these spines vary in the same way.

Myra fugax (F.)

Leucosia fugax Fabricius, 1796, Ent. Syst. Suppl., p. 351.

Near Koepang, Timor; small dredge, 10—15 m; December 2, 1929. — 1 ♂ (*M. penthacantha* Alcock).

According to Rathbun (1910a) *penthacantha* differs from *fugax* "in lacking the fringe of hairs along the inner part of the apposed edges of the external maxillipeds". In our specimen, however, this fringe of hairs is present, as was also the case in the specimens examined by Ihle (1918) and Chopra (1933a). The "fringe of hairs" observed by Chopra a little on the outside of the apposed edges of the external maxillipeds in the adult specimens, which he failed to find in the young ones, is missing in our specimen too.

Arcania Leach

Arcania novemspinosa (Adams and White)

Iphis novemspinosa Adams and White, 1848, Samarang, Crustacea, p. 56, pl. 13 fig 1.

Near Koepang, Timor; dredge, 10—15 m; December 2, 1929. — 2 ♂♂.

Philyra Leach

Philyra platychira de Haan

Philyra platychira de Haan, 1848, Fauna japonica, Crust., p. 132, pl. 33 fig. 6.

Near Koepang, Timor; dredge, 6—15 m; December 4, 1929. — 1 ♂.

Leucosides Rathbun

Leucosides elata (A. M.-Edwards)

Leucosia elata A. Milne-Edwards, 1874, Nouv. Arch. Mus., Paris, vol. 10, p. 41, pl. 2 fig. 2.

Mamoedjoe, Celebes; reef or shore; August 4—5, 1929. — 1 ♂.
Morotai; June 3—10, 1930. — 1 ♂.

Leucosides haematosticta (Adams and White)

Leucosia haematosticta Adams and White, 1848, Samarang, Crustacea, p. 54, pl. 12 fig. 2.

Near Koepang, Timor; dredge, 6—15 m; December 4, 1929. — 1 ♂.

Leucosides perlata (de Haan)

Leucosia perlata de Haan, 1841, Fauna japonica, Crust., p. 134.

Maratoea; reef; August 14—18, 1929. — 1 ♂.
Wotap, Tenimber Islands; shore or reef; October 20—23, 1929. — 2 ♀♀.

Leucosides pubescens (Miers)

Leucosia pubescens Miers, 1877, Trans. Linn. Soc. (2), vol. 1, Zool., p. 238, pl. 38 figs. 22—24.

Near Koepang, Timor; dredge, 6—15 m; December 4, 1929. — 2 ♂♂.

CALAPPIDAE de Haan

Calappa Weber

Calappa hepatica (L.)

Cancer hepaticus Linnaeus, 1767, Syst. Nat., ed. 12, vol. 1, pt. 2, p. 1048.

Paleleh, Celebes; shore; August 22, 1929. — 1 ♀.
Omapui, near Sibutu; shore; September 13, 1929. — 1 ♂.
Los, Misool group; shore and reef; October 3, October 6, 1929. — 2 ♂♂.
Kafal, Misool group; shore or reef; October 3, October 5, 1929. — 1 ♂.
Wotap, Tenimber Islands; shore and reef; October 22—23, 1929. — 6 ♀♀, 3 ♂♂; including 2 young ♀♀ and 1 young ♂.
Kera, near Timor; November 11—13, November 15—16, November 22—23, 1929. — 3 ♂♂, 3 ♀♀ and 2 young specimens.
Near Koepang, Timor; November 18—20, December 2, December 4, 1929. — 4 ♂♂, 4 ♀♀ and 1 young specimen.
Sarasa, Postiljon Islands; shore; December 22, 1929. — 2 ♂♂.
Sapoeka besar, Postiljon Islands; shore and reef; December 21—23, 1929. — 10 ♂♂, 7 ♀♀.
Sailoes besar, Paternoster Islands; shore or reef; February 9, 1930. 1 ♂.
Haroekoe; shore and reef; May 3—7, 1930. — 2 ♂♂ and 2 specimens with a Sacculinid.
Morotai; June 3—10, October 1, 1930. — 8 ♀♀, 4 ♂♂.
Kaledoepa, Toekang Besi Islands; August 27, 1930. — 2 ♂♂, 1 ♀.
Batoe Merah, Amboina; October 15, 1930. — 1 ♀.
Locality unknown. — 3 ♀♀, 1 ♂.

In some specimens from Sapoeka besar the first postero-lateral tooth is rather well developed, and in 1 ♀ (cb. 50 mm) and 3 ♂♂ (cb. 55, 54, and 50 mm) the antero-lateral teeth of the carapace are better developed than in most specimens belonging to this species. Still the teeth on the clypeiform expansions are not strong enough to bring them to the variety *spinosissima* M.-Edw.

Calappa hepatica var. **spinosissima** H. M.-Edw.

Calappa spinosissima H. Milne-Edwards, 1837, Hist. nat. Crust., vol. 2, p. 106.

Wotap, Tenimber Islands; shore and reef; October 20—23, 1929. — 2 ♂♂.
Kera, near Timor; November 11—13, November 15—16, 1929. — 2 ♀♀, 1 ♂.

In these 5 specimens the teeth on the antero-lateral border of the clypeiform expansions are always present; the number of teeth on the postero-lateral border of these expansions differs from 2 (♀ Kera) to none (♂ Kera). Only one tooth is present in both ♂♂ from Wotap and in the second ♀ from Kera there are 2 teeth on the right side and one on the left.

The serrations of the antero-lateral border of the carapace are spine-like in the ♂♂ from Wotap and the ♂ and 1 of the ♀♀ from Kera; in the other ♀ from Kera they are missing.

Sometimes three of the tubercles on the outer surface of the palm, 2 near the articulation with carpus and one more in the middle, have spinous points (1 ♂ from Wotap and ♂ from Kera); in the other ♂ from Wotap, however, the third spine is missing, as is also the case in one ♀ from Kera and there the remaining two are indistinct on the right palm; in the second ♀ from Kera there are no distinct spines on the palm.

Calappa lophos (Herbst) (Pl. VIII fig. 5)

Cancer lophos Herbst, 1785, Krabben, vol. 1, pt. 2, p. 201, pl. 13 fig. 77.

Near Koepang, Timor; dredge; December 2, December 4, 1929. — 2 young specimens.

To this species probably belongs another young specimen from Koepang, dredge, 6—10 m, December 4, 1929. Length and breadth of the carapace are 8 mm, while the teeth are but slightly developed; granulae on the hinder part of the carapace.

The front is not bilobed, but nearly straight.

Matuta F.

Matuta banksii Leach

Matuta banksii Leach, 1817, Zool. Misc., vol. 3, p. 14.

Paleleh, Celebes; shore; August 22, 1929. — 4 ♂♂, 1 ♀.
Off Bongao, Tawitawi, Sulu Islands; handnet, surface; September 9, 1929. — 2 ♂♂.
Near Manoembai, Aroe Islands; shore; October 11—14, 1929. — 1 ♂.
Pankaja, Spermonde Archipelago; March 3, 1930. — 1 ♂.
Haroekoe; shore or reef; May 3—7, 1930. — 1 ♂.
Amboina; September 11—17, 1930. — 1 ♀.

Matuta lunaris (Forskål)

Cancer lunaris Forskål, 1775, Desc. Anim., p. 91.

Paleleh, Celebes; shore; August 22, 1929. — 2 ♀♀.

Beo, Karakelong, Talaud Islands; shallow water, from fishermen's nets; June 14—21, 1930. — 11 ♂♂, 2 ♀♀.
Amboina; September 11—17, 1930. — 1 ♂.

Matuta planipes F.

Matuta planipes Fabricius, 1798, Ent. Syst. Suppl., p. 369.

Tarakan; handnet, surface; August 16, 1930. — 2 ♂♂.
Batoe Merah, Amboina; October 15, 1930. — 1 ♀.

OXYRHYNCHA Latr.

MAIIDAE Alcock

INACHINAE Alcock

Anacinetops Miers

Anacinetops stimpsoni Miers (Pl. VII figs. 5, 6)

Anacinetops stimpsoni Miers, 1879, Ann. Mag. Nat. Hist. (5), vol. 4, p. 3.

Kera, near Timor; November 21—23, 1929. — 1 ovigerous ♀.

Our ♀ differs from Miers' short description by the form of the basal antennal joint. Miers states: "There are two very small tubercles at the distal end of the slender basal antennal joint." Ortmann (1894) figures 2 spine-like teeth, but he remarks: "Festes Stielglied der äusseren Antennen etwa doppelt so lang wie breit, am distalen Ende mit 2 kleinen Höckern, einem an der äusseren, einem an der inneren Ecke." In our ♀ the outer edge of this joint ends in a rather blunt tooth, visible in dorsal view, the inner edge is not prolonged.

Camposcia Desmarest

Camposcia retusa Latr.

Camposcia retusa Latreille, 1829, Règne Animal, ed. 2, vol. 4, p. 60.

Kafal, Misool group; shore or reef; October 3, October 5, 1929. — 1 ♀.
Sissie, Misool group; October 6, 1929. — 1 specimen with Sacculinid.
Kera, near Timor; November 15—16, November 22—23, 1929. — 4 ♂♂, 2 ♀♀.
Near Koepang, Timor; November 18—20, November 29, December 5, 1929. — 5 ♂♂, 1 ♀ and 2 specimens with Sacculinid.
Obi latoe; shore and reef; April 23—27, 1930. — 2 ♀♀.
Beo, Karakelong, Talaud Islands; June 14—21, 1930. — 1 ♂.

Oncinopus de Haan

Oncinopus aranea de Haan

Inachus (Oncinopus) aranea de Haan, 1839, Fauna japonica, Crust., p. 100, pl. 29 fig. 2.

Suvadiva atoll, Maldive Islands; lagoon, dredge, 80 m, probably less; May 4, 1929. — 4 ♂♂, 4 ♀♀, in one of the ♀♀ the rostrum is broken off.

All these young specimens have the propodi of the first and second pairs of ambulatory legs long and slender, as in the figures given by Adams and White (1850) (*O. neptunus*) and by Borradaile (1903) (*O. aranea*). In de Haan's types these joints are much shorter and broader.

Achaeus Leach

Achaeus inimicus Rathbun

Achaeus inimicus Rathbun, 1911, Trans. Linn. Soc. (2), vol. 14, Zool., p. 246, pl. 20 fig. 3.

Station 60*, 6° 58'.0 N, 121° 51'.5 E; dredge, depth 72—80 m; September 5, 1929. — 1 ♀ with eight eggs.

This specimen with soft carapace and without legs probably belongs to this species; the bottle contains a cheliped.

There is a large supra-orbital spine, directed, as stated by Rathbun, a little outward and forward; the gastric and cardiac spines are present too; of the three branchial spines the large one is probably broken off, the place is indicated by a small heightening of the cephalothorax. On either side two hepatic spines, but the posterior has no bifid tip; the other three ventral spines are present too, and behind the posterior the lateral margin of the cephalothorax bears a row of small spinules. The cheliped agrees with the description given by Rathbun.

Achaeus japonicus de Haan

Inachus (Achaeus) japonicus de Haan, 1839, Fauna japonica, Crust., p. 99, pl. 29 fig. 3.

Off Bongao, Tawitawi, Sulu Islands; dredge, 27 m; September 27, 1929. — 1 ♂.

Achaeus lorina (Adams and White) de Man

Inachus lorina Adams and White, 1848, Samarang, Crustacea, p. 3, pl. 2 fig. 2.
Achaeus lorina (Ad. and White) de Man, 1902, Abh. Senck. Naturf. Ges., vol. 25, pt. 3, p. 654.

Sipankot, near Sibutu, Sulu Islands; divinghood, 3—6 m; September 10—14, 1929. — 1 ♀, with the exception of its chelipeds the specimen has lost all its pereiopods; the bottle contains 4 walking legs.

Our specimen, a ♀, agrees in nearly every respect with de Man's description of *A. lorina*.

There are three gastric tubercles, one in the median line and two lateral; a much smaller fourth tubercle in the median anterior to the two lateral ones; the two cardiac tubercles are lower than the median gastric one (according to de Man they are more prominent), the posterior third tubercle is much smaller. On the right side there is a very small tubercle near the posterior margin of the carapace, just over the fifth pair of legs; on the left side this tubercle is obsolete. Two branchial tubercles and two small spines on the swollen hepatic region. The tubercles on the ventral region and the armature of chelipeds and legs agree with the description given by de Man.

I am not sure that the specimen really belongs to *Achaeus lorina,* as the figure given by Adams and White shows only one gastric and one cardiac tubercle; moreover no other tubercles on these regions are mentioned in the description. Not having seen the type, I base this determination on de Man's authority, but I think it probable that the Snellius specimen as well as those described by de Man belong to a species different from *A. lorina.* Judging from the short description recently (1938) given by Balss of an *Achaeus* spec. from "Gilbert Inseln, Aranuka" this specimen belongs to the same species as our ♀.

Achaeus anauchen nov. spec. (Pl. VIII figs. 1, 2)

Station 60*, 6° 58'. 0 N, 121° 51'. 5 E; dredge, depth 72—80 m; September 5, 1929. — 1 ovigerous ♀ with soft carapace; the legs are missing, the bottle contains one cheliped.

Body short, broad, without neck-like constriction behind the orbit; a ridge on the cephalothorax from one hepatic region to the other; with two tubercles on the gastric part of it; this gives the animal a somewhat hump-backed appearance. Another characteristic feature is the absence of an epistome.

The rostral spines are short; a supra-ocular spine is present; a spine near the end of the eye-peduncle; the eyes are without pigment.

Basal antennal joint with three spines, the anterior much larger than the others, and visible in dorsal view.

The cardiac region probably bears two spines, but in our ♀ they are broken off, leaving two tubercles.

The branchial regions are smooth, the swollen hepatic region bears two spines.

The lateral border is armed with small spinules; on the ventral side two spines, one on the pterygostomian and one on the branchial region.

The merus of the outer maxillipeds is narrower than the ischium, and armed with four spines on the inner margin (the anterior largest); two rows of spinules on the ischium.

Inner margin of palm, carpus, merus and ischium of cheliped armed with spines and long hairs; carpus with two spines on the upper surface; outer margin of merus with three spines, at the base of each spine a long hair is inserted.

The most characteristic feature of this species, that with much hesitation I place in the genus *Achaeus*, is the absence of an epistome.

Achaeus spec.

Suvadiva atoll, Maldive Islands; lagoon, dredge, 80 m, probably less; May 4, 1929. — 1 badly damaged, ovigerous ♀.

A rather broad, short form with two large median spines, one gastric and one cardiac. No post-ocular neck, orbit without spine, eye-peduncle with tubercle.

OPHTHALMINAE Balss

Pseudomicippe Heller

Pseudomicippe tenuipes A. M.-Edw. (Pl. VIII figs. 3, 4)

Pseudomicippe tenuipes A. Milne-Edwards, 1865, Ann. soc. ent. France, p. 139, pl. 5 figs. 2, 2a.

Near Koepang, Timor; shore or reef; December 3, 1929. — 1 ovigerous ♀.

The deflexed rostral spines are rather broad and somewhat flattened; their inner edge being obtusely angular. Eye-stalks long and slender. The orbit is broad and the posterior part with two small incisions. A large tubercle above the orbit, and two smaller ones between the orbits. A median row of four tubercles, the anterior largest, on the gastric region; a much smaller tubercle between gastric and cardiac region. Besides these there are on the gastric region three lateral pairs of tubercles; the two anterior pairs large, the third very small.

On the cardiac region four tubercles, placed in a quadrangle, two on either side of the median; two large median intestinal tubercles.

A broad post-ocular spine; the hepatic region swollen, armed with small spines, two dorsal and two ventral; branchial region with tubercles.

Distal tooth of the basal antennal joint directed obliquely forwards. The anterior angle of the buccal frame is produced and a distinct ridge runs from this tubercle to the first pterygostomian spine; second pterygostomian spine just at the base of the chelipeds.

First pair of walking legs long, longer than the chelipeds, which are rather slender; no crista on the carpus, an indistinct one on the upper border of the palm. Fingers, when closed slightly gaping at the base; faintly toothed.

A ridge on the lateral margins of the abdominal segments, and a large tubercle in the middle of each segment. The last segment broadly triangular.

It is possible that *Chorinus algatectus* Sluiter (1881) belongs to this species.

Criocarcinus H. M.-Edw.

Criocarcinus superciliosus (L.)

Cancer superciliosus Linnaeus, 1767, Syst. Nat., ed. 12, vol. 1, pt. 2, p. 1047.

Wotap, Tenimber Islands; shore or reef; October 20—23, 1929. — 1 ♀.
Kera, near Timor; November 15—16, November 22—23, 1929. — 2 ♂♂, 1 ovigerous ♀.
Near Koepang, Timor; November 18—20, 1929. — 1 ♂ and 1 specimen with Sacculinid.
Sapoeka besar, Postiljon Islands; shore or reef; December 21—23, 1929. — 1 ♀.

Cyclocoeloma Miers

Cyclocoeloma tuberculata Miers

Cyclocoeloma tuberculata Miers, 1880, Ann. Mag. Nat. Hist. (5), vol. 5, p. 228 and 230, pl. 13 figs. 1, 2.

Kisar; 1898, leg. Schädler, coll. Leiden Museum. — 1 ovigerous ♀.

Our specimen agrees in every respect with Miers' description and figures; until now this species was known from the type-specimen, a ♂, only.

The short, broad and somewhat upturned rostral horns are separated by a narrow fissure.

The eyes are enclosed in tubular orbits, formed by a projecting supra-ocular roof (having the distal part somewhat hollowed, the tips rounded and slightly curved upwards), a broad, blunt post-ocular tooth and a broad projection of the basal antennal joint; all three in close contact.

No spines on the carapace or legs; a group of stiff, hooked hairs on the rostral horns and a smaller group on the gastric region, immediately behind the orbit.

Two tubercles on the gastric region in the median and at either side of the anterior of these two, two very small tubercles; the median cardiac tubercle larger than the gastric one; one median intestinal tubercle and a tubercle on the posterior margin, immediately behind the intestinal tubercle.

A rounded tubercle on each hepatic region; a very small branchial tubercle, lateral of the gastric one, and a large branchial tubercle (largest of all) immediately behind the first.

ACANTHONYCHINAE Alcock

Huenia de Haan

Huenia proteus de Haan

Maja (Huenia) proteus de Haan, 1839, Fauna japonica, Crust., p. 95, pl. 23 figs. 4—6.

Mamoedjoe, Celebes; shore or reef; August 4—5, 1929. — 1 ♂.
Near Koepang, Timor; shore or reef; December 3, 1929. — 1 ♂.
Ternate; pier, divinghood, ± 4 m; April 1, 1930. — 1 ♂.

Menaethius H. M.-Edw.

Menaethius monoceros (Latr.)

Pisa monoceros Latreille, 1825, Encycl. Méth., vol. 10, p. 139.

Maratoea; reef; August 14—18, 1929. — 1 ♀.
Sipankot, near Sibutu, Sulu Islands; shore; September 10—14, 1929. — 5 ♀♀ (4 ovigerous), 3 ♂♂; in 1 ♂ and 4 ♀♀ the rostrum is probably broken off.
Wotap, Tenimber Islands; shore and reef; October 20—23, 1929. — 1 ♂ and 1 ovigerous ♀.
Kera, near Timor; 0—1 m; November 11—13, 1929. — 1 ♂ and 2 young specimens.
Near Koepang, Timor; reef; December 8, 1929. — 1 specimen with Sacculinid.
Tanah Djampea; divinghood, 2—3 m; February 21—23, 1930. — 1 ovigerous ♀.
Obi latoe; shore and reef; April 23—27, 1930. — 2 ♀♀ (1 ovigerous).
Beo, Karakelong, Talaud Islands; shore or reef; June 14—21, 1930. — 1 ovigerous ♀.
Amboina; September 10—17, 1930. — 2 ♀♀ (1 ovigerous).
Endeh, Flores; November 6—8, 1930. — 1 ovigerous ♀, rostrum broken off.

In some specimens (2 ♂♂ and 2 ♀♀ from Sipankot, the ♂ from Tanah Djampea, both ♀♀ from Obi latoe, and the ♀ from Beo) the rostrum is slightly bifid at the tip.

Xenocarcinus White

Xenocarcinus depressus Miers

Xenocarcinus depressus Miers, 1874, Zoology Erebus and Terror, Crust., p. 1.

Ternate; divinghood; April 1, June 6, 1930. — 2 ♂♂, 4 ♀♀.

All our specimens have the short dactyli, armed with 3—4 teeth, and a rather long claw, which are, according to Gordon, characteristic for this species.

PISINAE Alcock

Tylocarcinus Miers

Tylocarcinus styx (Herbst)

Cancer styx Herbst, 1803, Krabben, vol. 3, pt. 3, p. 53, pl. 8 fig. 6.

Sissie, Misool group; shore or reef; October 6, 1929. — 1 ♂, 1 ovigerous ♀.
Kera, near Timor; November 11—13, 1929. — 1 ovigerous ♀.
Near Koepang, Timor; shore or reef; December 3, 1929. — 1 ovigerous ♀.
Koepang, Timor; shore or reef; December 5, 1929. — 1 ♂.
Pelokan, Postiljon Islands; shore or reef; December 20, 1929. — 1 ♂.
Obi latoe; shore and reef; April 23—27, 1930. — 9 ♂♂, 8 ♀♀ (3 ovigerous).
Beo, Karakelong, Talaud Islands; June 14—21, 1930. — 2 ♂♂.
Amboina; October 14, October 17, 1930. — 1 ♂.

The rostral spines of one of the ♂♂ from Beo are longer than is usual in this species, more than half the length of the carapace, but slightly divergent and the tips not bent inwards; they resemble those of a *Tiarinia*.

The pleopods of this ♂ agree with those of the ordinary ♂♂ of *Tylocarcinus styx*.

In some young specimens (the ♂ from Pelokan and some specimens from Obi latoe) the tubercles on the cephalothorax are but slightly developed, especially in the anterior part.

Naxioides A. M.-Edw.

Naxioides spinigera Borradaile

Naxioides spinigera Borradaile, 1903, Fauna and Geogr. Mald. and Laccad. Arch., vol. 2, pt. 2, p. 687, pl. 4 fig. 3.

Suvadiva atoll, Maldive Islands; lagoon, dredge, 80 m, probably less; May 4, 1929. — 1 young specimen.

The specimen is without legs and the bottle contains only one cheliped and one walking leg, both with a small spine at the end of the merus. Our specimen agrees with the description given by Borradaile; and is best characterized by the two spines on the cardiac region, and the upright spine on the supra-ocular eave, which is, however, slightly bent forwards at the tip.

Cl. 5 mm; total length (incl. rostral spines) fully 8 mm.

HYASTENINAE Balss

Hoplophrys Henderson

Hoplophrys ogilbyi McCulloch

Hoplophrys ogilbyi McCulloch, 1908, Rec. Austr. Mus., vol. 7, p. 51.

Ternate; pier, divinghood, ± 4 m; April 1, 1930. — 1 ♂, cl. 5, cb. 3 mm.
Amboina; September 11—17, 1930. — 1 ♂, cl. 12½, cb. 9 mm.

As stated by McCulloch the specimens attributed to this species differ from *oatesii* Henderson in: "the spines of the carapace being much larger and stronger. The epibranchial spine is not bifid". Sakai (1932) describes a *Hoplophrys oatesii* Henderson with a "simple and acute" epibranchial spine; probably it belongs to *ogilbyi* McCulloch.

Perinea Dana

Perinea tumida Dana

Perinea tumida Dana, 1852, U. St. Expl. Exp., Crust., p. 114, pl. 4 figs. 1a-f.

Kera, near Timor; November 11—13, 1929. — 1 ♂.
Near Koepang, Timor; shore or reef; December 3, 1929. — 1 ♀.

In the ♂ the rostral teeth are short and separated by a rounded notch; in the ♀ they are more prominent, the tips bent inwards, and the space between them angular.

In both specimens the tubercle on either side of the cardiac region is larger than in Dana's figure (as was also the case in the specimens examined by Rathbun (1906) and Calman (1909)).

In the ♀ the distal spine of the basal antennal joint is more prominent than in the ♂.

Hyastenus White

Hyastenus aries (Latr.) (textfigs. 1, 2)

Pisa aries Latreille, 1825, Encycl. Méth., vol. 10, p. 140.

Padang; 1 ♂, 1 ♀; collection Leiden Museum.

The specimens are characterized by the small epibranchial and the two gastric spines. The first pleopod of the ♂ is slender (textfigs. 1, 2).

Hyastenus brockii de Man (textfig. 3)

Hyastenus brockii de Man, 1888, Arch. Naturg., Jahrg. 53, vol. 1, p. 221, pl. 7 fig. 1.

Ternate; pier, divinghood, ± 4 m; April 1, 1930. — 1 ♂, cl. 16 mm, incl. rostral spines.
Amboina; May 6, September 11—17, 1930. — 1 ovigerous ♀, cl. 16½ mm and 1 specimen with Sacculinid.

Rostral horns of the ♀ about as long as the cephalothorax, slender, divergent and slightly decurved; those of the ♂ are shorter and less widely divergent.

Anterior angle of the supra-ocular eave spine-like produced; posterior angle tuberculiform and widely separated from the post-ocular spine, which is not expanded distally.

Of the 6 tubercles on the gastric region (2 median and 4 lateral) the one immediately behind the orbit is best developed; the cardiac region bears no tubercles; the ♀ has a small intestinal tubercle, in the ♂ this region is damaged.

The epibranchial spines are rather small and blunt; there are 3 obscure branchial tubercles (the posterior on a line with the epibranchial spine).

A small hepatic tubercle in the ♀, in the ♂ this tubercle is hardly visible.

Three pterygostomian spines and the anterior angle of the buccal frame is produced.

A spine at the outer anterior angle of the basal antennal joint; floor of the orbit deeply hollowed.

This description of the cephalothorax agrees in every respect with that given by de Man, and is followed in his description by the remark: "Die Füsse verhalten sich ungefähr wie bei der anderen Art" (*ovatus* Dana).

Now the first pair of walking-legs in our specimens of *H. ovatus* Dana

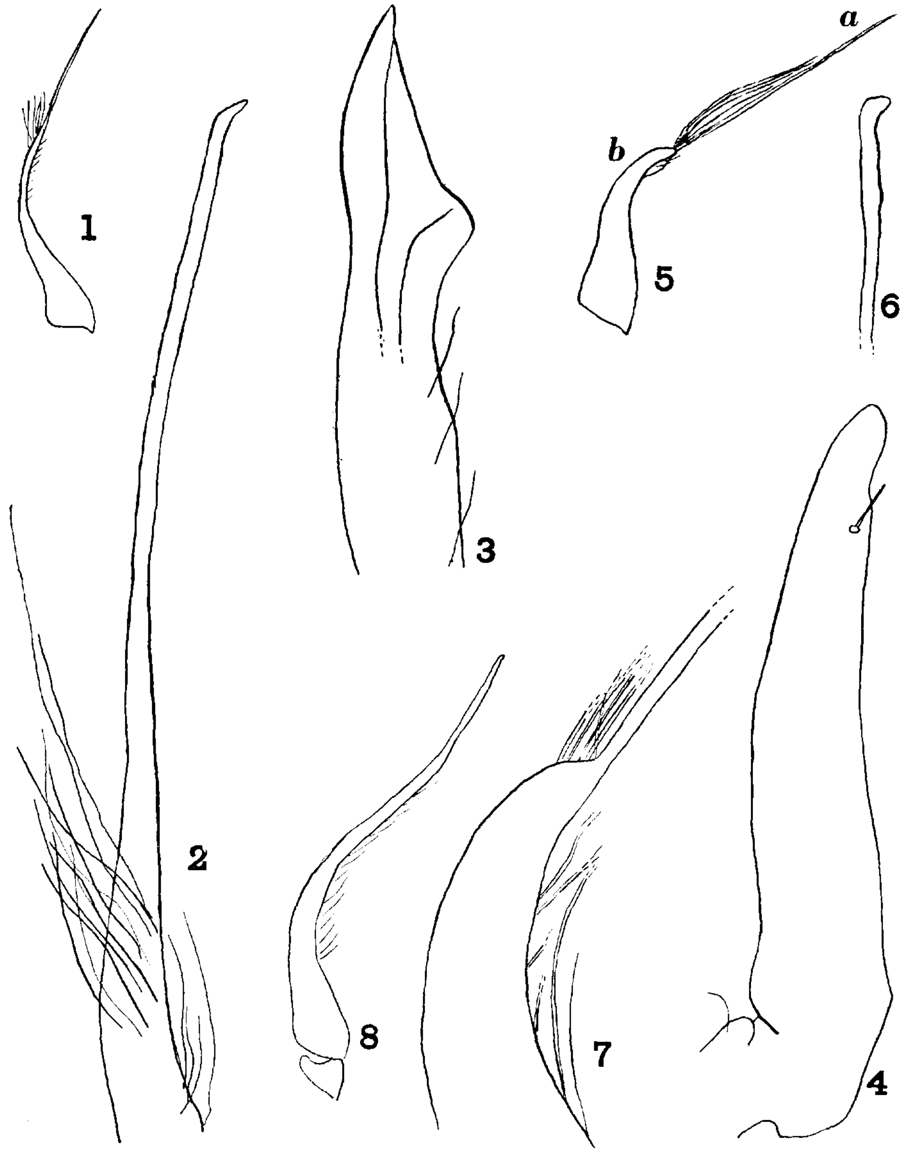


Fig. 1. *Hyastenus aries* (Latr.), first pleopod of a ♂ from Padang, cl. 35 mm, × 5¼. Fig. 2. Apex of the same, × 25½. Fig. 3. *Hyastenus brockii* de Man, apex of the first pleopod of a ♂ from Ternate, cl. 16 mm, × 75. Fig. 4. *Hyastenus bispinosus* nov. spec., first pleopod of a ♂ from Lembeh Strait, cl. 6 mm, × 75. Fig. 5. *Hyastenus diacanthus* (de Haan), first pleopod of a ♂ from Japan, cl. 35 mm (cotype), × 5¼. Fig. 6. Part a of fig. 5, × 25½. Fig. 7. Part b of Fig. 5, × 25½. Fig. 8. *Hyastenus diacanthus* de Haan, first pleopod of a ♂ from Japan, cl. 34 mm (cotype), × 5¼.

have a stout spine at the anterior angle of the meri; in the ♂ *brockii*, however, there is a small spine on the posterior part of the upper border of the merus; in the ♀ the merus is smooth. The wrist of the chelipeds is smooth in *ovatus*; provided with some tubercles in our specimens belonging to *brockii*. The ambulatory legs of *ovatus* are slender, those of *brockii* much stronger developed.

The dactyli of the walking legs in our specimens are armed with strong hooked teeth, of the same form as those mentioned by Calman for *H. uncifer* Calman (1909), whereas *ovatus* has only small spines. *Uncifer* however has strong hepatic, epibranchial and intestinal spines.

Hyastenus bispinosus nov. spec. (Pl. IX figs. 4, 5, textfig. 4)

Lembeh Strait; September 25, 1930. — 2 ♂♂, 1 ♀ and 1 young specimen. cl. ♀ (holotype) 7½ mm, cl. ♂ (allotype) 6 mm, ♂ 5½ mm, young specimen 3 mm (incl. rostral spines).

Rostral horns short, not yet half the length of the cephalothorax, not widely divergent, space between the tips nearly as long as each horn; slightly deflexed in the largest ♂.

Antero-external angle of supra-ocular eave spine-like; posterior angle slightly tuberculiform. Post-ocular tooth short, broad, not widened near the base.

Gastric region rather swollen; surface of cephalothorax pitted; in the ♀ a distinct epibranchial spine, in the other specimens this spine apparently is broken off, a tubercle is still visible. In the ♀ there is a trace of a branchial tubercle at the level of and near the epibranchial spine. Intestinal region somewhat pointed.

The spine at the antero-external angle of the basal antennal joint is visible in dorsal view. Two pterygostomian tubercles, the anterior is largest. Buccal frame broadened anteriorly, corners tuberculiform.

First pair of ambulatory legs longest of all; dactyli of walking legs toothed; palms of chelipeds slender; fingers without hiatus between them, bluntly toothed.

Carapace and legs covered with short and some longer hairs.

Differs from *inermis* Rathbun (1911) and *irami* Laurie (1906) in having epibranchial spines; in *irami* moreover the rostral spines are longer.

Hyastenus diacanthus (de Haan) (textfigs. 5—8)

Pisa (Naxia) diacantha de Haan, Fauna japonica, Crust., p. 96, pl. 24 fig. 1.

Boo Islands; October 5, 1930. — 1 ovigerous ♀.

The first pleopod of a ♂ (cl. 35 mm) from de Haan's type-material is much broader than a pleopod of an *aries* ♂ of the same length.

In the smaller ♂♂ from de Haan's type-material, already in a ♂ of 34 mm carapacelength, the pleopods are of quite another type; still there are differences with our *aries* ♂, there is no question of a flagellum, this part of the pleopod being much broader, and the bundle of hairs seen in *aries* on the inner side at the base of the flagellum is absent. The pleopods of de Haan's smallest ♂♂ are like those figured by Sakai (1934).

Hyastenus elongatus Ortmann

Hyastenus diacanthus var. *elongatus* Ortmann, 1894, Zool. Jahrb., Syst., vol. 7, p. 55.

Suvadiva atoll, Maldive Islands; lagoon, dredge, 80 m, probably less; May 4, 1929. — 1 young specimen, with one rostral horn and the legs broken off; the bottle contains 2 chelipeds and 7 legs.

This specimen probably belongs to this species; cl. 4 mm, cb. 2½ mm, length rostral horn 2 mm.

Hyastenus hilgendorfi de Man (textfigs. 9, 10)

Hyastenus hilgendorfi de Man, 1888, Journ. Linn. Soc., Zool., vol. 22, p. 14, pl. 1 figs. 3, 4.

Near Koepang, Timor; small dredge, 10—15 m; December 2, 1929. — 1 ♂, 1 ♀ (cl. ♂ 17, ♀ 12 mm).

Amboina; May 6, September 11—17, 1930. — 6 ♂♂, 4 ♀♀ (1 ovigerous) (cl. ♂♂ 21, 2 ♂♂ of 18, 16½, 13 and 7 mm, ♀♀ 16, 13, 11 and 10 mm).

Two ♂♂ from Amboina (cl. 18 mm) have nearly parallel rostral horns; in the third ♂ these are widely divergent; in the other ♂♂ the tips of the rostral horns are widely apart as stated by Laurie (1906) and by Chopra and Das (1937).

Rathbun states that *auctus* Rathbun (1916) differs from *hilgendorfi* except in the form of the carapace and the very high gastric region, in having no sub-branchial tubercles (missing in our specimens too) and fewer gastric tubercles; but de Man describes and figures three gastric tubercles and these are present in *auctus*, according to Rathbun's description.

Hyastenus macrospinosus Ward

Hyastenus macrospinosus Ward, 1934, Bull. Raffl. Mus. Singapore, no. 9, p. 6, pl. 1 figs. 4, 4a.

Maratoea; August 14—18, 1929. — 1 young ♀.

The collection of the Snellius Expedition contains a much damaged ♀ (with only the last right leg; the bottle contains 5 legs, the chelipeds are missing) which probably belongs to this species according to the armature of the first leg.

Length of the carapace, including the rostral spines, fully 5 mm.

The rostral spines are slender, divergent at the tips, a little less than half the length of the carapace.

The anterior angle of the supra-ocular eave is spine-like, but not "developed into a strong, acclivous spine" (Ward); the posterior angle is

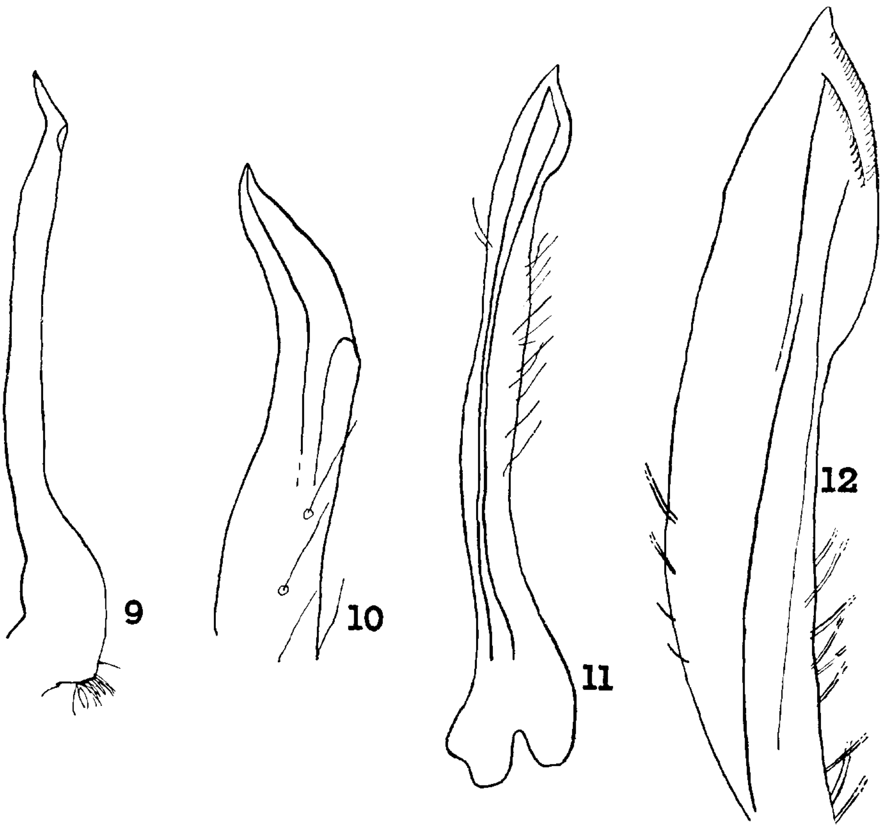


Fig. 9. *Hyastenus hilgendorfi* de Man, first pleopod of a ♂ from Amboina, cl. 18 mm, × 24. Fig. 10. Apex of the same. × 75. Fig. 11. *Hyastenus oryx* A. M.-Edw., first pleopod of a ♂ from Koepang, cl. 14 mm, × 25½. Fig. 12. Apex of the same, × 75.

broadened. There is a broad post-ocular process; and between this process and the supra-ocular eave a small opening. Ward says: "The space between it [the supra-ocular eave] and the post-ocular tooth is filled by a small blunt spine, the margins of which are fused with the supra-ocular eave and the post-ocular tooth." No trace of this tooth is seen in our specimen; the presence of such an intercalated spine would compel us to place the species in another genus.

No tubercles on the cardiac region in our specimen; there is no trace of an epibranchial nodule either.

The outer angle of the basal antennal joint is prolonged into a spine.

The first pair of ambulatory legs have the merus armed with a series of spines and the carpus with two spines, the anterior longest; the posterior of the left leg being a mere tubercle. The other legs are unarmed; hairy.

Hyastenus minutus nov. spec. (Pl. IX figs. 6, 7)

Ternate; pier, divinghood, ± 4 m; April 1, 1930. — 1 ♂, cl. 4 mm, length of rostral horns not yet 1 mm.

Rostral horns short, rather broad, widely divergent.

Antero-external angle of supra-ocular eave spine-like produced, hinder angle tuberculiform. Post-ocular tooth broad, not widened distally.

Hepatic region somewhat swollen; an obscure tubercle on either side of the gastric region, immediately behind the orbit. A small, but distinct epibranchial spine.

Two spines at the antero-external angle of the basal antennal joint, one points forwards and outwards. External angle of the buccal frame produced; the left maxilliped with a tubercle on its exognath; two spines on the pterygostomian region.

Palms of chelipeds long and slender; fingers about half the length of the palm; chelipeds and walking legs smooth; a long, stiff hair about the middle of the upper border of the merus of the walking legs; dactyli of these legs with rather strong teeth.

It differs from *minimus* Rathbun (1924a) by the fewer tubercles on the carapace and the two spines at the antero-external angle of the basal antennal joint; in *scrobiculatus* Rathbun (1916) both spines are directed obliquely forward.

Hyastenus oryx A. M.-Edw. (textfigs. 11, 12)

Hyastenus oryx A. Milne-Edwards, 1872, Nouv. Arch. Mus., Paris, vol. 8, p. 250, pl. 14 fig. 1.

Maratoea; August 14—18, 1929. — 2 ♂♂, 3 ♀♀.
Off Bongao; Tawitawi, Sulu Islands; dredge, 27 m; September 9, 1929. — 1 young ♂ with soft carapace.
Sipankot, near Sibutu, Sulu Islands; shore; September 10—14, 1929. — 1 ♂.
Near Koepang, Timor; November 18—20, 1929. — 1 ♂.
Batoe Merah, Amboina; October 5, 1930. — 1 ovigerous ♀.

Hyastenus ovatus (Dana)

Lehaina ovata Dana, 1852, U. St. Expl. Exp., Crust., p. 93, pl. 2 fig. 1.

Suvadiva atoll, Maldive Islands; lagoon, dredge, 80 m, probably less; May 4, 1929. —

1 young ♀ with soft carapace and without legs; the bottle contains 4 legs and 1 cheliped; 1 larger ♀, without rostrum, and of which the second pair and the third left walking leg are missing.

Balss recently (1938) described a new species of *Pseudomicippe* Heller, *Ps. incerta* Balss, which probably agrees with these specimens. Balss states: "Zu dieser im tropischen Indopacific verbreiteten Gattung stelle ich die folgende neue Art, welche allerdings durch die starken Rostralhörner und die Bewehrung der Schreitfüsse mit Stacheln von den anderen Arten abweicht."

The tubercle above the orbit, characteristic for all the species of the genus *Pseudomicippe* is absent too.

Our specimens differ from those described by Balss:

1. No small spines ending in more than one spinule on the posterior margin.

2. Of the armature of the walking legs only the large spine on the merus of the first pair (also figured by Dana) is present. Meri with some knobbed hairs.

The rostral horns are long, slender, divergent, slightly bent downwards. Supra-ocular eave with a large anterior and a smaller posterior spine; separated from the rather strong post-ocular tooth by a large, rounded incision. In the largest specimen the post-ocular spine is broadened and bent upwards at the tip. On the ventral side the orbit is very imperfect. The basal antennal joint is not broadened; a large spine at the outer anterior angle; this spine is for a large part visible from above.

Pterygostomian region with a strong spine and a second, very small one, immediately behind the first. Buccal frame broadened anteriorly, outer angle very much swollen.

Both specimens have a distinct epibranchial and intestinal spine; the spine behind the orbit (hepatic) described by Dana is best developed in the smaller specimen; in the larger specimen some other spines are present too. A branchial spine at the same level as the epibranchial (both only on the right side, the left side is damaged). A second, smaller, blunter branchial spine is seen anterior to the first mentioned. A low cardiac spine. Two low median gastric tubercles and two still lower lateral ones, on a line with the hepatic. Between the orbits there are some tubercles on two longitudinal rows, but here the carapace is abruptly broken off.

Hyastenus planasius (Ad. and White) (textfig. 13)

Pisa planasia Adams and White, 1850, Samarang, Crustacea, p. 9, pl. 2 figs. 4, 5.

Near Koepang, Timor; dredge; December 2, December 4, 1929. — 1 ♂, 2 ♀♀ (1 ovigerous).

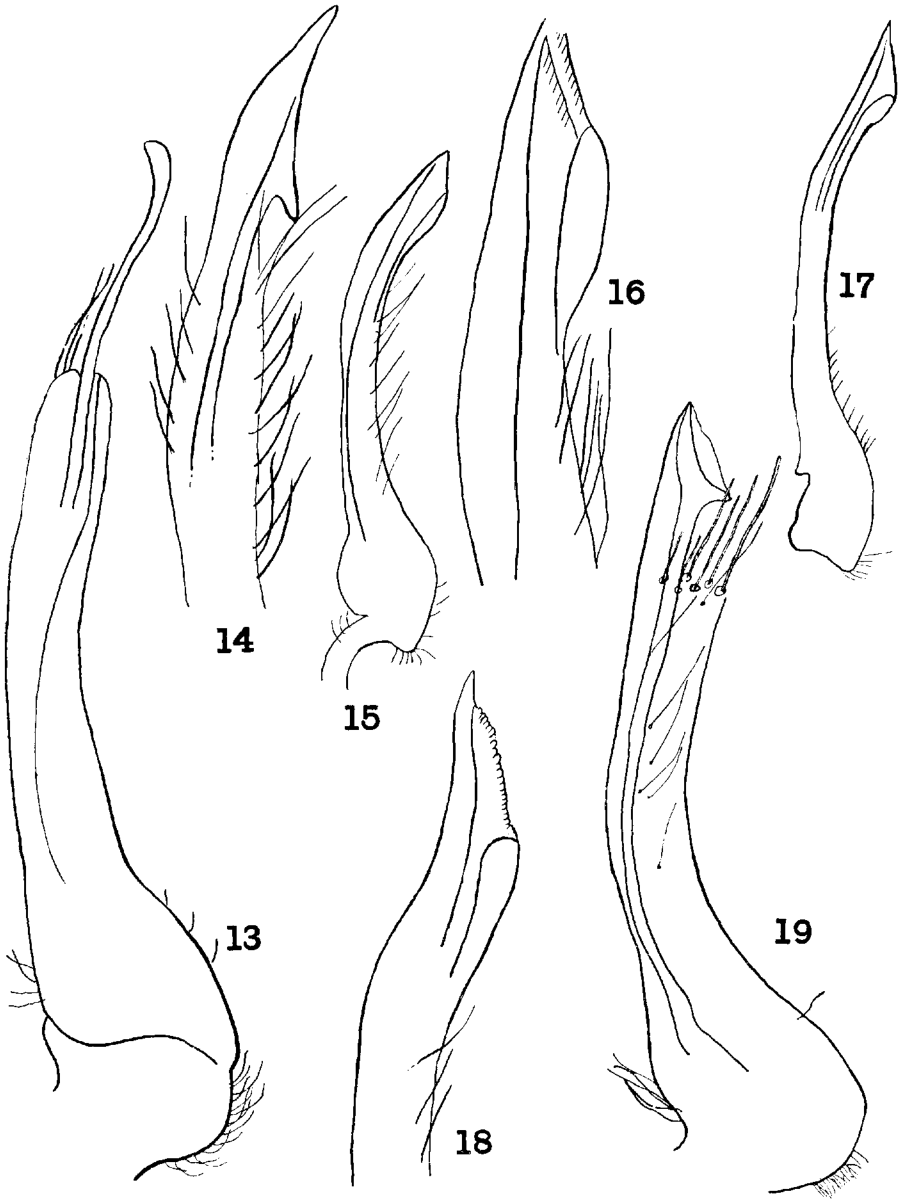


Fig. 13. *Hyastenus planasius* (Adams and White), first pleopod of a ♂ from Koepang, cl. 9 mm, × 75. Fig. 14. *Hyastenus pleione* (Herbst), apex of a first pleopod of a ♂ from Endeh, cl. 22 mm, × 25½. Fig. 15. *Hyastenus sebae* White, first pleopod of a ♂ from near Koepang, cl. 9 mm, × 25½. Fig. 16. Apex of the same, × 75. Fig. 17. *Hyastenus subinermis* Zehntner, first pleopod of a ♂ from Amboina, cl. 14 mm, × 25½. Fig. 18. Apex of the same, × 75. Fig. 19. *Hyastenus ternatensis* nov. spec., first pleopod of a ♂ from Ternate, cl. 5 mm, × 75.

Three specimens with the short, parallel, at the tips somewhat incurved rostral spines characteristic for this species.

The antero-external angle of the orbit in the figure of the ♂ given by Adams and White is produced spine-like, but our specimens have that angle rounded, not produced at all, like that of the ♀ figured by these authors. The posterior angle is lobiform and separated by a deep notch from the broad post-ocular tooth, which is provided with a small tubercle at the anterior margin near the base.

There are more tubercles on the cephalothorax than those enumerated by Adams and White. Gastric region with three faint tubercles in the median line; the first and second wide apart and half way this intervening space on each side a very low lateral tubercle. An indistinct tubercle on the summit of the cardiac region and on the hinder slope two tubercles still less developed. A prominent intestinal tubercle in the ♂ and the ovigerous ♀; in the other ♀ this tubercle is hardly visible.

The branchial region with four small tubercles, as stated by Adams and White, and a broader one in the groove separating branchial and cardiac region.

Antero-external angle of the basal antennal joint spine-like produced.

Antero-external angle of the buccal frame produced.

Legs smooth, covered with a close tomentum, interspersed with long hairs. The palms of the chelipeds are slender in the ♀, swollen in the ♂.

Hyastenus pleione (Herbst) (textfig. 14)

Cancer pleione Herbst, 1803, Krabben, vol. 3, pt. 3, p. 52, pl. 58 fig. 5.

Near Koepang, Timor; November 18—20, 1929. — 1 ♂, without rostral horns, 1 ovigerous ♀.
Endeh, Flores; November 6—8, 1930. — 2 ♂♂.

There are always two pterygostomian spines and a large epibranchial spine; the number and distinctness of the other spines on the lateral margin, however, varies.

♂ from Koepang: on the left side four tubercles on equal distances from each other; the posterior smallest; on the right side 2 groups of two spines (second spine of first group smallest); the distance between the groups is the same as the distance between the last group and the epibranchial spine.

♀ from Koepang: of the six tubercles the anterior is largest and the second and third are very small.

♂ from Endeh: three tubercles on either side, the middle one smallest.

Other ♂ from Endeh: on both sides a distinct tubercle between first and second walking leg; three more tubercles on either side, the first being very indistinct on the right side; on the left side there is still a fifth tubercle, situated more on the dorsal surface.

Hyastenus sebae White (textfigs. 15, 16)

Hyastenus sebae White, 1847, Proc. Zool. Soc. London, p. 57.

Near Koepang, Timor; dredge, 6—10 m; December 4, 1929. — 1 ♂, cl. 9 mm.

The rostral horns are parallel in their proximal half; then slightly divergent, but broken off.

The anterior angle of the supra-ocular eave is not produced; the tubercles on the cephalothorax are very indistinct (number and place as in *H. oryx*). No epibranchial or intestinal spines; only small tubercles.

Alcock (1895) states that the palm of the cheliped is broadened and somewhat inflated; the Snellius specimen, however, has a slender palm.

Hyastenus subinermis Zehntner (textfigs. 17, 18)

Hyastenus subinermis Zehntner, 1894, Rev. suisse de Zool., vol. 2, p. 136, pl. 7 figs. 2, 2a.

Near Koepang, Timor; shore and reef; December 3, 1929. — 2 ♂♂.
Ternate; pier, divinghood, ± 4 m; April 1, 1930. — 2 ♀♀ (1 ovigerous), 4 ♂♂.
Amboina; pier, 0—2 m; May 6, 1930. — 3 ♂♂, 1 ovigerous ♀.

The cephalothorax is not always absolutely smooth. The largest ♂ (cl. 14 mm) and the ♀ from Amboina are provided with some tubercles on the upper surface of the cephalothorax; there are two small gastric tubercles; the small branchial tubercle described by de Man (1902) is present too; and anterior to this tubercle there are two indistinct tubercles on either branchial region. In the 2 ♂♂ from Timor the tubercles on the cephalothorax are hardly visible. The ♀♀ from Ternate have the same tubercles developed as the ♀ from Amboina, but the branchial ones are indistinct. In the 4 ♂♂ only the epibranchial, intestinal and pterygostomian tubercles are developed; in one of them a hepatic tubercle is present.

In all our specimens an intestinal tubercle and strong epibranchial spines are present.

Apex of the first pleopod of the ♂ rather broad, as represented in textfigs. 17, 18.

Hyastenus ternatensis nov. spec. (Pl. IX figs. 1—3, textfig. 19)

Ternate; pier, divinghood, ± 4 m; April 1, 1930. — 1 ♂, total length 5 mm.

Of this adult ♂ the rostral horns are apparently broken off, thereby making it impossible to give their relative length; they are separated from each other by a wide sinus, and the longest one is slightly divergent.

The antero-external angle of the supra-ocular eave is produced, but rather bluntly, more in the form of an upturned tubercle than a spine; posterior angle rounded. Post-ocular tooth slender, widened near the base to form a broad tubercle.

Two distinct epibranchial spines are present; moreover the branchial region is armed with three tubercles, the posterior at the same level as the epibranchial spine. A broadened tubercle in the groove separating cardiac and branchial region.

Cardiac region the highest part of the cephalothorax and armed in the median line with a low tubercle; a somewhat larger intestinal one.

Gastric region with six tubercles in the form of a cross: a distinct tubercle just behind the orbit, a trace of a much smaller on the same level, but nearer the median line; a still more obscure tubercle in the median line, posterior to the described four, and a somewhat larger, still indistinct one more backwards.

A distinct tubercle behind the post-orbital tooth on the swollen hepatic region.

Basal antennal joint rather broad, with a distinct spine, pointing forward and for a large part visible in dorsal view, at the antero-external angle and somewhat broadened lower down. A small tubercle at the base, just above the swollen antero-external angle of the buccal frame.

Pterygostomian region with two tubercles and a third on the branchial region near the base of the chelipeds.

Fingers of the chelipeds widely gaping at the base, denticulated at the tips; palms rather broad, a tubercle in the middle of the upper margin; carpus with some slight tubercles; merus wing-like expanded at the articulation with the wrist, and a tubercle on the anterior margin near the inner expansion.

First pair of walking legs long and slender, longer than the other legs (the second right leg and the second and third leg of the left side are missing).

H. mininus Rathbun (1924a) has an epibranchial tubercle; in *trispinosus* Rathbun (1916) an intestinal spine is present; in *tuberculosus* Rathbun (1916) 2 large gastric tubercles are developed, and *ternatensis* differs from *orbis* Rathbun (1916) by the ornamentation of the carapax.

Doclea Leach

Doclea microchir Bleeker

Doclea microchir Bleeker, 1856, Acta Soc. scient. Indo-neêrlandiae, vol. 2, p. 11.

Padang; collection Leiden Museum. — 1 ♀, cl. without spine 26.5, cb. without spines 28 mm.

Both Miers (1880) and Balss (1931) conclude that *microchir* is not specifically distinct from *macracanthus* Bleeker. Bleeker states:

macracanthus: "Bord latéro-antérieur de la carapace armé de trois dents dont l'anterieure est obtuse et dont la troisième, située à une égale distance des yeux et de l'épine médiane du bord postérieur de la carapace, est beaucoup plus longue que la distance interoculaire et dirigée un peu en arrière."

microchir: "Bord latéro-antérieur de la carapace armé de 3 dents aigues et dont la troisième, située à une égale distance des yeux et de l'épine médiane du bord postérieur de la carapace, est beaucoup plus longue que les antérieures mais ne surpasse pas en longueur la largeur du front entre les yeux et est dirigée en dehors et un peu courbée en dessus."

Now the figure given by Balss agrees in these respects with *macracanthus* Bleeker, while our ♀ has the shorter, upcurved spines of *microchir.*

I cannot agree with Miers and Balss that these differences are only a question of growth (the ♀ examined by Balss is smaller than our ♀) and I therefore think it better to uphold *microchir* as a species; in future an examination of the ♂ pleopods may solve the question.

When compared with the figure given by Balss, our specimen, which is in a bad state of preservation (the legs are missing too), also shows slight differences in the form of the frontal region.

MAJINAE Balss

Cyclax Dana

Cyclax (Cyclomaja) suborbicularis (Stimpson)

Mithrax suborbicularis Stimpson, 1858, Proc. Ac. Nat. Sc. Philadelphia, 1857, p. 218.

Near Koepang, Timor; November 18—20, 1929. — 1 ovigerous ♀.
Koepang, Timor; November 30, 1929. — 1 ♀.

Schizophrys White

Schizophrys aspera (H. M.-Edw.)

Mithrax aspera H. Milne-Edwards, 1834, Hist. nat. Crust., vol. 1, p. 320.

Tidore; shore; September 24—29, 1929. — 1 ♀.
Near Koepang, Timor; November 18—20, December 3, 1929. — 18 ♂♂, 8 ♀♀ (3 ovigerous). In 1 ovigerous ♀ the rostral spines and the antenna of the right side are missing; they are probably broken off.
Kera, near Timor; November 22—23, 1929. — 1 ♂.
Koepang, Timor; November 30, December 5, 1929. — 3 ♀♀.
Tanah Djampea; divinghood, 2—3 m; February 21—23, 1930. — 1 young specimen.

Obi latoe; shore and reef; April 23—27, 1930. — 3 ♂♂, 5 ♀♀ (3 ovigerous) and 3 young specimens.
Amboina; May 6, September 11—17, October 15, 1930. — 4 ♂♂.
Endeh, Flores; November 5—8, 1930. — 1 ♀.

Schizophrys aspera var. **spinifrons** (A. M.-Edw.)

Mithrax spinifrons A. Milne-Edwards, 1867, Ann. Soc. Ent. France (4), vol. 7, p. 263.

Wotap, Tenimber Islands; shore and reef; October 20—23, 1929. — 1 ♂, 1 ♀.
Kera, near Timor; November 11—13, November 15—16, November 22—23, 1929. — 5 ♀♀, 1 ♂.
Koepang, Timor; November 18—20, December 3, December 5, 1929. — 3 ♂♂, 1 ♀.
Bone Tamboeng, Spermonde Archipelago; shore or reef; March 2, 1930. — 1 ♂.
Lembeh Strait; September 24—26, 1930. — 1 ♂, 2 ovigerous ♀♀.

In the ♂ from Wotap we find a small tubercle and no spine at the base of the rostral spines; one of the ovigerous ♀♀ from Lembeh Strait also has tubercles at the base of the rostral spines. There are no differences in the form and armature of the first pleopods of the ♂♂ in the Snellius material of this species and its variety.

Schizophroida Sakai

Schizophroida manazuruana Sakai

Schizophroida manazuruana Sakai, 1933, Sc. Rep. Tokyo Bunrika Daigaku, Section B, vol. 1, no. 12, p. 140.

Station 60*, 6° 58'. 0 N, 121° 52'. 5 E; dredge, 70—80 m; September 5, 1929. — 1 immature ♀, cl. 5 mm, cb. fully 3 mm, length rostral horns 1½ mm.

Carapace with two posterior spines and 5 spines forming a marginal curve, the first hepatic, the last well on the dorsal surface. The last three much shorter than the first.

Supra-ocular eave with an acute spine at the posterior angle; a broad post-ocular spine, and a small spine intercalated between the two.

Basal antennal joint with two spines on the anterior border.

Chelipeds slender, without spines; ambulatory legs hairy. The palm of the left cheliped, the second, third and fourth left leg and the fourth right leg are missing.

It is possible that Chilton's specimens from Coral Bay, Sunday Islands, and from Meyer Islands (Chilton, 1911a) belong to this species. According to Chilton they differ from *Sch. hilensis* Rathbun (1906) by the smoother carapace, "—in the central part the spines mentioned by her are either absent altogether or indicated only by slight tubercles; the two cardiac spines and the intestinal spine are thus indicated in some specimens, but there seems no indication whatever of the three gastric spines."

MITHRACINAE Balss

Micippa Leach

Micippa cristata (L.) (textfig. 20)

Cancer cristatus Linnaeus, 1767, Syst. Nat., ed. 12, vol. 1, pt. 2, p. 1046.

Kera, near Timor; November 15—16, 1929. — 1 ♂.
Near Koepang, Timor; December 4, December 8, 1929. — 2 ♂♂, 1 ♀ and 1 young specimen.
Koedingareng Lompo, Spermonde Archipelago; shore; February 3, 1930. — 3 ♂♂, 2 ♀♀.
Gonto Soea, Spermonde Archipelago; shore; March 1, 1930. — 1 ♂.
Haroekoe; shore and reef; May 3—7, 1930. — 1 ♂, 1 ♀.
Morotai; June 3—10, 1930. — 3 ♂♂, 1 ovigerous ♀.
Kaledoepa, Toekang Besi Islands; August 27, 1930. — 2 ♂♂.
Amboina; September 11—17, 1930. — 1 ♂.
Lembeh Strait; September 25, 1930. — 1 ♀.

From the 14 ♂♂ collected by the Snellius Expedition 7, varying in cephalothoraxlength from 43½—34 mm, have the palm of the cheliped roughened by tubercles (var. *granulipes* Zehntner, 1894). From the 7 ♀♀, varying in length from 58—20 mm, the palms appear smooth to the naked eye; when magnified the largest show some very small tubercles, other only lighter and darker points, the latter giving the palm a slightly pitted appearance, just like those of the smaller ♂♂, cl. 31½—27½ mm; the palms of the 2 smallest ♂♂ are absolutely smooth and shining. None of the ♀♀, however, have the rough, tuberculous palms, characteristic of the variety *granulipes* Zehntner. I think that our largest ♀♀ agree with those described by Nobili (1899, p. 252) as: "mentre altre esaminate alla lente presentano traccie di granuli analoghi a quelli dei maschi della var. *granulipes*, ma molto minori di numero, limitati alla porzione superiore e quasi cancellati."

From three to six spines on the outer margin of each rostral lobe; sometimes there is a different number on each margin; frequently some of the spines, and not always the proximal ones, are small, mere tubercles; often some of them are more or less close together; the ♀ from Lembeh Strait has the third spine bifid. The rostrum of the young specimen from Koepang (cl. 8 mm) has three small spines on the left, two on the right margin.

Micippa margaritifera Henderson

Micippa margaritifera Henderson, 1893, Trans. Linn. Soc. (2), vol. 5, Zool., p. 348, pl. 36 figs. 5—7.

Suvadiva atoll, Maldive Islands; lagoon, dredge, 80 m, probably less; May 4, 1929. — 1 ♀, cl. 6½, cb. 5 mm.

The small specimen has lost all its pereiopods, but the bottle contains besides 2 slender chelipeds 4 walking legs with the foliaceous meropodites, characteristic for this species.

According to Borradaile (1903) this species was dredged at the same locality in 43 fathoms.

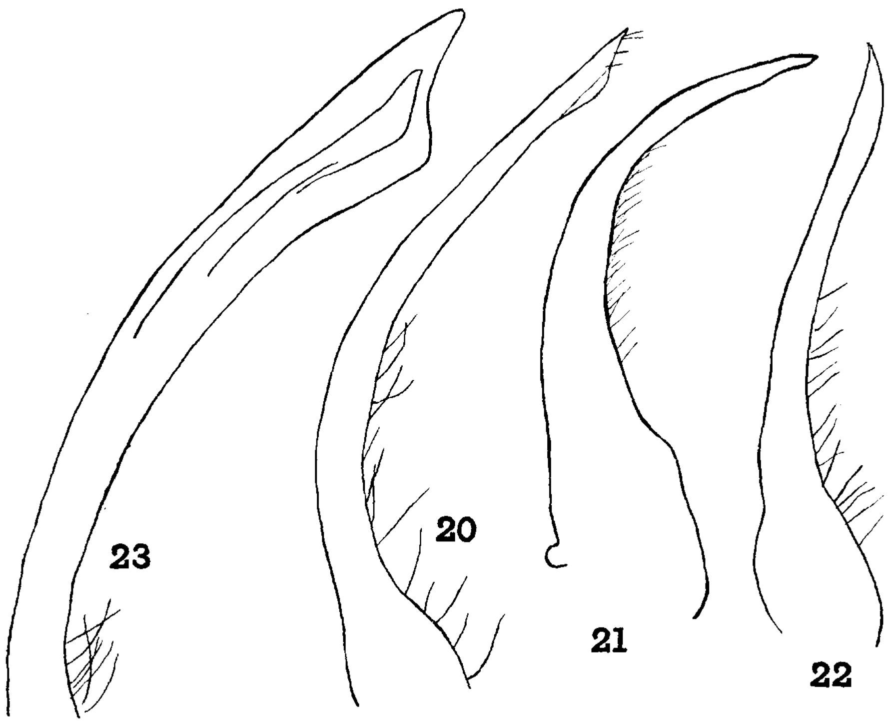


Fig. 20. *Micippa cristata* (L.), first pleopod of a ♂ from Koepang, cl. (post. m.-orb.) 14 mm, × 27¾. Fig. 21. *Micippa philyra* (Herbst), first pleopod of a ♂ from Amboina, cl. 11½ mm, × 27¾. Fig. 22. *Micippa platipes* Rüppell, first pleopod of a ♂ from Amboina, cl. 11½ mm, × 27¾. Fig. 23. *Micippa thalia* (Herbst), apex of first pleopod of a ♂ from Japan, cl. 28 mm, × 22½.

Micippa philyra (Herbst) (Pl. X figs. 1, 3, textfig. 21)

Cancer philyra Herbst, 1803, Krabben, vol. 3, pt. 3, p. 51, pl. 58 fig. 4.

Kera, near Timor; 0—1 m; November 11—13, 1929. — 1 ♂, cl. 8.5, cb. 7 mm.
Amboina; September 11—17, October 15, 1930. — 1 ♀, 1 ♂, ♀ cl. 19½, cb. 16 mm; ♂ cl. 11½, cb. 9½ mm.

In his description of *Cancer philyra* Herbst says: "Die Augen stehen auf kurzen, runden Stielen, und haben in den Höhlen Raum genug sich zu verbergen; ein wesentliches Unterscheidungszeichen vom vorigen;" and

Gerstaecker (1856) who has seen the typematerial states: "bei *M. philyra* sind sie [the orbits] nämlich allseitig geschlossen, so dass die kurzen Augenstiele ganz in denselben eingebettet liegen."

Therefore we have to consider as *M. philyra* (Herbst) the specimens with the following characters:

1. The floor of the orbit is closed; tubular, and the eyestalk is invisible on the ventral side.

2. Basal antennal joint with a group of tubercles on the anterior margin and a groove, outwards of these tubercles.

3. The first movable antennal joint is not much enlarged.

4. The rostrum is strongly deflexed, especially in the ♀, and provided with 4 rather broad lobes.

5. The palms of the adult ♂ are somewhat swollen; in young ♂ and in the ♀ slender.

6. First ♂ pleopod as represented in textfig. 21.

The specimen from Amboina bears 4 tubercles on the lateral margin; in the smaller ♂ from Kera the third is missing and in the ♀ the second is missing and the third little developed.

Micippa platipes Rüppell (Pl. X, fig. 2, 4, textfig. 22)

Micippa platipes Rüppell, 1830, Beschr. und Abb. 24 Arten kurzschw. Krabben, p. 8, pl. 1 fig. 4.

Paleleh, Celebes; shore; August 23, 1929. — 1 ♀, 1 ♂, cl. ♀ 5, ♂ 6 mm.
Batoe ata; shore; March 6, 1930. — 1 ovigerous ♀, cl. 14½, cb. 13 mm.
Pasih Ipah, near Soela Mangoli and Taliaboe; shore; March 19, 1930. — 1 ♂, cl. 4½, cb. 4 mm.
Beo, Karakelong, Talaud Island; shore or reef; June 14—21, 1930. — 1 ♂, cl. 10 mm, cb. 8 mm.
Amboina; September 11—17, 1930. — 8 ♂♂ (one with soft carapace), 5 ♀♀ (2 ovigerous); ♂♂ cl. 13, cb. 13 mm; cl. 13, cb. 12 mm; cl. 12½, cb. 11½; cl. 12, cb. 11 mm; cl. 11, cb. 10½ mm; cl. 11, cb. 10 mm; cl. 10½, cb. 10 mm; ovigerous ♀♀: cl. 11, cb. nearly 10 mm; cl. 10, cb. 9 mm; other ♀♀: cl. 13½, cb. 13 mm; cl. 9, cb. 7 mm; cl. 8½, cb. 7½ mm.

Most authors consider this species synonymous with the preceding. A comparison of the first pleopod of the ♂ of this species with that of the preceding, and of the following particulars with those given under *M. philyra* proves them to be distinct.

1. The floor of the orbit is often closed; sometimes there is a distinct hiatus between the infra-orbital and post-ocular spines; the latter is always far more hollowed than in *philyra;* the result being quite another form of orbit, never tubular; in ventral view a large part of the eyestalk is visible.

2. The basal antennal joint is absolutely smooth and without distinct groove.

3. The first movable antennal joint is more enlarged than in *M. philyra*.

4. The rostrum is less abruptly deflexed, especially in the ♀; the outer lobes are somewhat narrower, more spine-like.

5. Palm of the chelipeds of the adult ♂ more swollen; slender in the young ♂ and the ♀; without dark spots; the fingers widely gaping at the base.

6. First pleopod of the ♂ as represented in textfig. 22.

About 7 tubercles on the lateral margins; the first broad.

Two larger specimens in the collection of the Leiden Museum, named var. *platipes* by Kossmann, also show these characters.

As *Micippa philyra* (Herbst) and *platipes* Rüppell are often confused and cited under various names, I made an attempt to give in a list the synonymy of both species. Without an examination of the material however it is not always certain to which species the author refers; it is therefore probable that the following lists contain some errors.

Micippa philyra

Micippa philyra Leach, 1817, Zool. Misc., vol. 3, p. 16; the short description tells us nothing, but the figure given by Guérin Méneville, 1829—1844, Ic. du Règne An., vol. 2, Crust., pl. 8 bis fig. 1 represents a specimen belonging to *philyra*.

Micippa philyra Desmarest, 1825, Cons. gén. Crust., p. 149, pl. 22 fig. 2.

Micippa philyra H. Milne-Edwards, 1834, Hist. nat. Crust., vol. 1, p. 330.

Micippa philyra Gerstaecker, 1856, Arch. f. Naturg., Jahrg. 22, vol. 1, p. 106.

Micippa philyra A. Milne-Edwards, 1872, Nouv. Arch. Mus., Paris, vol. 8, p. 239, pl. 11 fig. 2.

Micippa philyra var. *mascarenica* Kossmann, 1877, Zool. Erg. Reise Mitt., p. 7, pl. 3 fig. 2.

Micippa superciliosa Haswell, 1880, Proc. Linn. Soc. N. S. Wales, vol. 4, p. 446, pl. 26 fig. 2 (and Catalogue, not seen).

Micippa philyra Richters, 1880, Dec. in Möbius Beitr. Meeresf. Maur., p. 143, figs. 6, 7 (according to Miers, not seen).

Micippa philyra var. *mascarenica* Lenz und Richters, 1881, Abh. Senck. Naturf. Ges., vol. 12, p. 421.

Micippa philyra Miers, 1884, Report on the Zool. Coll. made in the Indo-Pacific Ocean during the voyage of H. M. S. "Alert" 1881—1882, p. 198.

Paramicippa asperimanus Miers, 1884, Report on the Zool. Coll. made in the Indo-Pacific Ocean during the voyage of H. M. S. "Alert" 1881—1882, p. 525.

Micippa mascarenica Miers, 1885, Ann. Mag. Nat. Hist. (5), vol. 5, p. 7 and Challenger, p. 69 (name only).

Micippa mascarenica Walker, 1890, Journ. Linn. Soc., Zool., vol. 20, p. 109 (name only).

Micippa mascarenica Henderson, 1893, Trans. Linn. Soc. (2), vol. 5, Zool., p. 348.

Micippa philyra Alcock, pro parte, 1896, Journ. As Soc. Beng., vol. 64, pt. 2, p. 249.

Micippa mascarenica Calman, 1900, Trans. Linn. Soc. (2), vol. 8, Zool., p. 40.

Micippa philyra Borradaile, 1903, Fauna and Geogr. of the Mald. and Laccad. Arch., vol. 2, pt. 2, p. 689.

Micippa philyra Rathbun, 1903, Proc. U. St. Nat. Mus., vol. 26, p. 29, lit. (only Herbst and Alcock) and locality.
Micippa philyra Laurie, 1906, Rep. Pearl Oyster Fish., vol. 5, p. 384, probably belongs here.
Micippa philyra Rathbun, 1910, Kong. Dansk Vidensk. Selsk. Skrifter (7), vol. 5, p. 319, only Alcock as lit. and list of localities.
Micippa philyra Bouvier, 1915, Bull. Sc. France Belg. (7), vol. 6, p. 255.
Micippa philyra Balss, 1924, Arch. für Naturg., vol. 90, Abt. A, pt. 5, p. 36.
Micippa philyra Gravely, 1927, Bull. Madras Gov. Mus., n. s., vol. 1, p. 151, only in key.
Micippa philyra Balss, 1938, Göteb. Kungl. Vetensk.—och Vitterh. —Samhalles Handl. (5), ser. B, vol. 5, pt. 7, p. 24, only localities.

Micippa platipes Rüppell

Micippa platipes Rüppell, 1830, Beschr. und Abb. 24 Arten kurzschw. Krabben, p. 8, pl. 1 fig. 4.
Paramicippa platipes H. Milne-Edwards, 1834, Hist. nat. Crust., vol. 1, p. 333.
Micippa philyra and *M. bicarinata* Adams and White, 1848, Samarang Crust., p. 16, probably belong here, but only a short description.
Micippa hirtipes Dana, 1851, Am. Journ. Sc. and Arts (2), vol. 11, p. 268.
Micippa hirtipes Dana, 1852, U. St. Expl. Exp., Crust., p. 90, pl. 1 fig. 4.
Micippa platipes Heller, 1861, Sitz. Ber. Ak. Wiss. Wien, p. 299, pl. 1 fig. 2.
Micippa spatulifrons A. Milne-Edwards, 1872, Nouv. Arch. Mus., Paris, vol. 8, p. 240, pl. 11 fig. 3.
Micippa philyra var. *platipes* Kossmann, 1877, Reise Rot. M., p. 6, pl. 3 fig. 3.
Micippa spatulifrons Haswell, 1879, Proc. Linn. Soc. N. S. Wales, vol. 4, p. 445.
Micippa philyra var. *latifrons* Richters, 1880, Dec. in Möbius Beitr. Meeresf. Maur., p. 142, pl. 15 figs. 1—5 (according to Miers, not seen).
Micippa philyra Miers, 1885, Ann. Mag. Nat. Hist. (5), vol. 5, p. 6 and Challenger, p. 69.
Paramicippa platipes de Man, 1888, Arch. für Naturg., Jahrg. 53, vol. 1, p. 250.
Micippa philyra Henderson, 1893, Trans. Linn. Soc. (2), vol. 5, Zool., p. 348, only literature and localities.
Micippa philyra Ortmann, 1893, Zool. Jahrb., Syst., vol. 7, p. 59, only literature.
Micippa hirtipes Rathbun, 1893, Proc. U. St. Nat. Mus., vol. 16, p. 99 (extr. from an unpublished rep. of Stimpson).
Micippa philyra Ortmann, 1894, Denkschr. Jena, p. 43 (remarks that the specimens agree with var. *latifrons* Richters).
Micippa philyra Alcock, 1896, pro parte, Journ. As. Soc. Beng., vol. 64, pt. 2, p. 249.
Micippa philyra Lenz, 1905, Abh. Senck. Naturf. Gesell., vol. 27, p. 345 (these specimens also agree with *latifrons*).
Micippa philyra Nobili, 1906, Ann. Sc. Nat. (9), Zool., vol. 4, p. 178.
Micippa philyra Rathbun, 1906, Bull. U. St. Fish Comm., vol. 23, pt. 3, p. 882 (gives as syn. *hirtipes* Dana).
Micippa hirtipes Stimpson, 1907, Smith. Misc. Coll., vol. 49, p. 15, (remarks "eye-peduncles exposed").
Micippa philyra Balss, 1931, Denkschr. Ak. Wiss. Wien, Math. Nat. Klasse, vol. 102, p. 20 (as Balss cites Nobili the specimens probably belong to this species).
Micippa philyra Montgomery, 1931, J. Linn. Soc. London, vol. 37, p. 423 (remarks "the spines on the lateral borders are not conspicuously knobbed").

Micippa thalia (Herbst) (textfig. 23)

Cancer thalia Herbst, 1803, Krabben, vol. 3, pt. 3, p. 50, pl. 58 fig. 3.
Japan; coll. Leiden Museum. — 1 ♂.

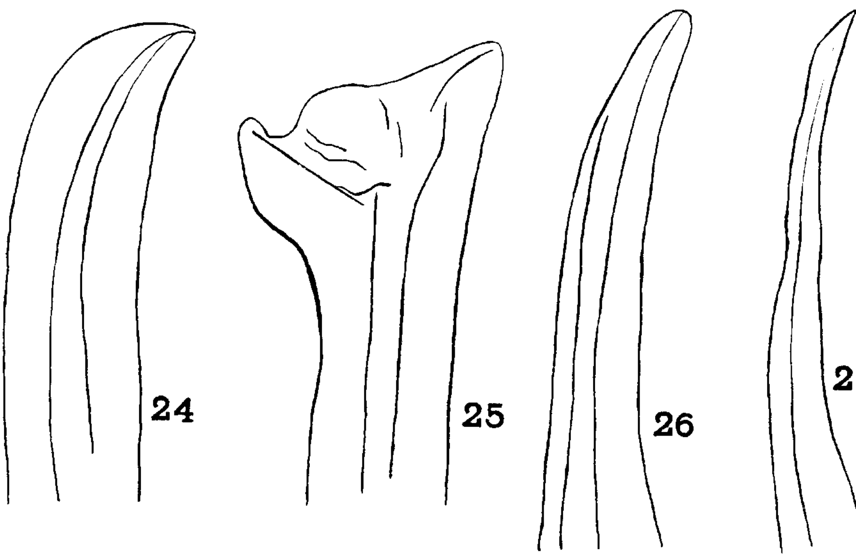
The first pleopod of this ♂, cl. 28 mm, is represented in textfig. 23.

MACROCOELOMINAE Balss

Tiarinia Dana

Tiarinia angusta Dana (textfig. 24)

Tiarinia angusta Dana, 1852, U. St. Expl. Exp., Crust., p. 113, pl. 3 fig. 7.
Sipankot, near Sibutu, Sulu Islands; shore; September 10—14, 1929. — 1 ♀.



24 25 26 27

Fig. 24. *Tiarinia angusta* Dana, apex of first pleopod of a ♂ from Sapoeka besar, cl. 20½ mm, × 75. Fig. 25. *Tiarinia cornigera* (Latr.), apex of first pleopod of a ♂ from Wotap, cl. 21 mm, × 75. Fig. 26. *Tiarinia gracilis* Dana, apex of first pleopod of ♂ from Amboina, cl. 21 mm, × 75. Fig. 27. *Tiarinia laevis* A. M.-Edw., first pleopod of ♂ from "Friedrich Wilhelm-Hafen, Neuguinea", × 45.

Kafal, Misool group; shore and reef; October 3, October 5, 1929. — 2 ♂♂, 1 ovigerous ♀.
Sissie, Misool group; shore and reef; October 6, 1929. — 2 ♀♀ (1 ovigerous), 1 ♂.
Wotap, Tenimber Islands; October 20—23, 1929. — 5 ♂♂, 2 ovigerous ♀♀.
Kera, near Timor; November 11—13, November 15—16, November 22—23, 1929. — 6 ♀♀ (2 ovigerous) 2 ♂♂.
Near Koepang, Timor; November 18—20, 1929. —6 ♂♂, 4 ♀♀ (2 ovigerous).
Koepang, Timor; November 30, December 5, 1929. — 24 ♀♀ (16 ovigerous), 19 ♂♂.

Sapoeka besar, Postiljon Islands; shore and reef; December 21—23, 1929. — 5 ♂♂, 1 ovigerous ♀.
Tanah Djampea; divinghood, 2—3 m; February 21—22, 1930. — 1 ♂, 1 ♀.
Gonto Soea, Spermonde Archipelago; shore; March 1, 1930. — 1 ♂.
Sarappo, Spermonde Archipelago; shore; March 1, 1930. — 1 ♂, 1 ovigerous ♀.
Obi latoe; shore and reef; April 23—27, 1930. — 18 ♀♀ (7 ovigerous), 11 ♂♂, 1 young specimen.
Kaoe Bay, Halmahera; shore or reef; May 28, 1930. — 1 ♀.
Morotai; June 3—10, 1930. — 1 ovigerous ♀.
Beo, Karakelong, Talaud Islands; 6—10 m; June 14—21, 1930. — 2 ♀♀ (1 ovigerous), 1 ♂.
Lembeh Strait; September 25, 1930. — 2 ♀♀, 2 ♂♂.

The number of spines on the rostral margins varies from 2—4, and is often different on both sides. Often one or more of them are very small. I tried to give in a list number and size of these spines of every specimen brought in by the Snellius Expedition.

Tiarinia angusta

		teeth on the outer margins of rostral spines
Wotap	4 ♂♂	3
	♂	3, anterior small
	♀	3
	♀	3, near the middle one a small fourth tooth
	♀	3, the anterior on the right side is a very small tubercle
	♀	3, near the second left one, a small fourth tooth
Kera	2 ♀♀	4
	♀	4, the posterior left one very small
	2 ♀♀	3
	♀	3, the posterior left one very small
	♂	3, on the left, 4 on the right side
	♂	3, on the left side, posterior small, 2 tubercles on the right side
Sipankot	♀	3, the posterior smallest
Kafal	♀	3
	♂	3, the posterior smallest
	♂	2
Sissie	2 ♀♀	4
	♂	4
Koepang	9 ♀♀	4, in one the anterior are very small, in another the posterior
	♀	4, on the right side the anterior, on the left the posterior very small
	♀	4, on the left side the fourth is only a small tubercle
	♀	4, the anterior on both sides small
	10 ♀♀	3
	♀	3, on the left side, 4 on the right
	♀	3, on the left side, 4 on the right, the 2nd and 4th (the anterior) small
	♀	3, the anterior on both sides small, the posterior with a small spine at the base
	11 ♂♂	4, in one the posterior on the left side small
	2 ♂♂	3, on the left, on the right side

11 ♂♂	3
♂	3, on the left side the anterior, on the right side the posterior small
young specimen, ♀ ?	2, on the right side a very small posterior third tubercle.

Tiarinia cornigera (Latr.) (Pl. XI fig. 1, textfig. 25)

Pisa cornigera Latreille, 1825, Encycl. Méth., vol. 10, p. 141.

Mamoedjoe; shore or reef; August 4—5, 1929. — 1 ovigerous ♀.
Maratoea; reef; August 14—18, 1929. — 6 ♀♀ (4 ovigerous), 4 ♂♂.
Kafal, Misool group; shore or reef; October 3, October 5, 1929. — 1 ♀.
Wotap, Tenimber Islands; shore and reef; October 20—23, 1929. — 3 ♂♂, 3 ♀♀ (1 ovigerous).
Kera, near Timor; November 11—13, November 15—16, November 22—23, 1929. — 7 ♂♂, 14 ♀♀ (7 ovigerous).
Near Koepang, Timor; November 18—20, December 3, 1929. — 5 ♂♂, 2 ovigerous ♀♀.
Koepang, Timor; November 30, 1929. — 1 ovigerous ♀.
Sapoeka besar, Postiljon Islands; shore or reef; December 21—23, 1929. — 1 ovigerous ♀.
Obi latoe; shore and reef; April 23—27, 1930. — 2 ♀♀ and 1 specimen with Sacculinid.
Morotai; June 3—10, 1930. — 2 ♂♂, 2 ovigerous ♀♀.
Amboina; September 10—17, October 15, 1930. — 8 ♂♂, 7 ♀♀ (2 ovigerous).
Boo Islands; October 5, 1930. — 1 ♀, 1 ♂.
Endeh, Flores; November 5—8, 1930. — 2 ♂♂.

Tiarinia gracilis Dana (Pl. XI, fig. 2, textfig. 26)

Tiarinia gracilis Dana, 1852, U. St. Expl. Exp., Crust., p. 111, pl. 3 fig. 6.

Mamoedjoe; shore and reef; August 4—5, 1929. — 1 ♂, 1 ♀.
Maratoea; reef; August 14—18, 1929. — 2 ♂♂, 5 ♀♀ (3 ovigerous).
Sibutu, Sulu Islands; shore, between stones; September 15, 1929. — 1 ♂.
Tidore; shore; September 24—29, 1929. — 1 ovigerous ♀.
Kafal, Misool group; shore or reef; October 3, October 5, 1929. — 1 ovigerous ♀.
Sissie, Misool group; shore or reef; October 6, 1929. — 1 ovigerous ♀.
Dobo, Aroe Islands; shore; October 10, 1929. — 2 ♂♂.
Near Manoembai, Aroe Islands; shore; October 11—14, 1929. — 2 ovigerous ♀♀, 1 ♂.
Kera, near Timor; November 11—13, November 15—16, November 22—23, 1929. — 5 ♂♂, 5 ovigerous ♀♀.
Kambang, near Timor; shore or reef; November 26, November 28, 1929. — 1 ovigerous ♀, without legs.
Pelokan, Postiljon Islands; shore and reef; December 20, 1929. — 1 ♂, 2 ♀♀.
Aloang, Paternoster Islands; shore or reef; February 8, 1930. — 1 ovigerous ♀.
Batoe Ata; shore; March 6, 1930. — 3 ♂♂, 2 ovigerous ♀♀.
Pasih Ipah, near Soela Mangoli and Taliaboe; shore; March 19, 1930. — 5 ♂♂, 3 ovigerous ♀♀.
Ternate; shore; April 1—2, 1930. — 1 ovigerous ♀.
Haroekoe; shore and reef; May 3—7, 1930. — 6 ♂♂, 7 ♀♀ (5 ovigerous).
Merampi, Nenoesa Islands; shore; May 20, 1930. — 1 ♂, 1 young ♀.
Karaton, Nenoesa Islands; shore; May 20, 1930. — 1 ♂.
Morotai; June 3—10, 1930. — 1 ♂, 1 ovigerous ♀.
Flores; August 18—19, 1930. — 1 ovigerous ♀.
Beo, Talaud Islands; shore or reef; June 14—21, 1930. — 1 specimen with Sacculinid.

Amboina; September 11—17, October 15, October 17, 1930. — 16 ♂♂, 18 ♀♀ (10 ovigerous).
Ternate; September 29, 1930. — 1 ♀.
Kisar; November 2, 1930. — 1 ♀.
Endeh, Flores; November 5—8, 1930. — 2 ♂♂.
Locality unknown. — 1 ovigerous ♀.

Balss (1931) agrees with de Man (1902) that *cornigera* Latreille and *gracilis* Dana are not specifically distinct. De Man states that his material was not large enough to solve this question and Balss upholds *gracilis* as subspecies.

The material collected by the Snellius Expedition contains 176 specimens (74 ♂♂, 100 ♀♀ and 2 specimens with a Sacculinid) and these specimens belong to two different species. It proved easiest to separate the ♂♂ first, as the first pleopods are very different: the apex of the pleopod is slender in *gracilis*, very broad in *cornigera*. From the 74 ♂♂, 29 belong to *cornigera*, 45 to *gracilis*. There are, however, other differences that enable us to separate the ♀♀ as well.

1. The carapace of *cornigera* is much more convex than the carapace of *gracilis*.

2. The tubercles in the median line of the carapace are better developed in *cornigera* than in *gracilis;* those on the posterior margin, however, are better developed in *gracilis*.

3. The legs of the specimens brought to *gracilis* are smooth or have indistinct tubercles; *cornigera* has these tubercles much better developed.

Through the kindness of Prof. Schellenberg I was able to examine 6 ♂♂ and 8 ♀♀ named *cornigera* var. *gracilis* by Balss in 1931 and from these 14 specimens 3 ♂♂ and 2 ♀♀ belong to *gracilis*, 3 ♂♂ and 4 ♀♀ to *cornigera*.

Of the remaining 2 ♀♀ from "Neu Guinea" I am not certain, but I think it probable that they belong to *Tiarinia tiarata* (Adams and White).

It is impossible that the differences cited here are depending on size. I have measured every specimen brought in by the Snellius Expedition and put them down in two lists. A comparison of these lists tells us that to both species belong specimens of various size, and that specimens corresponding in size may belong to different species.

Miyake (1938) distinguishes two species of *Tiarinia: T. cornigera* (Latr.) and *depressa* Stimpson [1]). According to his description his *depressa* is the form with less convex carapace and the stronger tubercles on the posterior margin and thereby agrees with our *gracilis* Dana. I am inclined to make

[1]) I am highly indebted to Colonel W. van den Poel who kindly translated this part of Miyake's paper and thereby enabled me to make the following conclusions.

depressa Miyake a synonym of *Tiarinia gracilis* Dana; at the same time stating the possibility that *depressa* Stimpson (1858) is still another species with more spine-like epibranchial tubercles and less tubercles on the carapace.

In the following lists cl. stands for carapace length (including rostrum) in mm; cb. stands for breadth of carapace (including epibranchial spines) in mm; br. r. stands for breadth of rostrum at the base in mm; r. stands for rostrum.

Tiarinia cornigera

		cl.	cb.	br.r.	
Mamoedjoe	♀	12½	8	1½	
Maratoea	♀	24	10	fully 3	
	♀	22½	14½	3	
	♀	21½	14½	3	
	♀	17	11½	3	
	♀	16½	11	2½	
	♀	13	8½	2	
	♂	21	13½	3	
	♂	15½	nearly 9½	2	
	♂	14	9	fully 1½	
	♂	12½	7½	not yet 2	
Kafal	♀	16	10½	2	
Wotap	♀	16½	10½	nearly 2	
	♀	15½	10	2½	
	♀	14	9½	2	
	♂	21	15	fully 2½	
	♂	16	10½	2	
	♂	15	11	2	
Kera	♀	21	14	2½	
	♀	18½	13½	fully 2	(r. broken)
	♀	18½	13	2	
	♀	18½	12½	2	
	♀	18½	12½	2	
	♀	18	12½	2	
	♀	17½	12	2	
	2 ♀♀	17½	11½	2	
	♀	17	11	nearly 2	
	♀	16	11½	2	
	♀	15½	11	1½	(r. broken)
	♀	13	9	1½	
	♂	24	16½	3	
	♂	22	15	2½	
	♂	21	15	2½	
	♂	16½	11½	2	
	♂	15½	10½	2	
	♂	11½	broken	1½	
	♂	10½	6	1½	
Near Koepang	♀	23	15	2½	
	♀	16½	11	2	
	♀	14½	10	1½	

		cl.	cb.	br.r.
Near Koepang	♂	25½	17	2½
	♂	25	16½	3
	♂	24½	17	2½
	♂	21½	15	2½
	♂	21	14	2
Sapoeka besar	♀	19½	13	2
			(right epibr. t. broken)	
Obi latoe	♀	16	10½	2
	♀	14	9	1½
Morotai	♀	16½	11	2
	♀	15½	10	1½
	♂	16½	11	2
	♂	16	10	2
Amboina	♀	16	11½	2 (r. broken)
	♀	16	11	nearly 2
	♀	15	10½	1½
	♀	15	9½	1½
	♂	19½	13½	2½
	♂	19	13½	2
	♂	18	12	2½
	♂	14	[1])	fully 1½
	♂	rostrum broken off, cb. 13		
Boo Islands	♀	15½	10	2
	♂	21	15	2½
Batoe Merah	♀	18	12½	2
	♀	17½	12	nearly 2
	♀	14	9	1½
	♂	22½	16½	2½
	♂	22	16	3
	♂	19	13	2
Endeh	♂	29½	21½	3
	♂	27	18½	3

Tiarinia gracilis

		cl.	cb.	br.r.
Mamoedjoe	♀	11	6½	1½
	♂	17	10½	2
Maratoea	♀	18	12	2½
	♀	17½	13	2
	♀	17½	12	nearly 2
	♀	15½	10½	2
	♀	r. broken	11	
	♂	15½	9	2
	♂	14½	9	2
Sibutu	♂	18	12	3
Tidore	♀	25	17	3
Kafal	♀	15½	10	2
Sissie	♀	18½	12	2½

[1]) Swollen with Bopyridae.

		cl.	ch.	br.r.	
Dobo	♂	19½	13½	3	
	♂	16	10½	2½	
Manoembai	♀	23	16½	3	
	♀	23	16½	3	
	♂	14	9	2	(r. broken)
Kera	♀	23	15½	3	
	♀	22½	15½	3	
	♀	17	11½	2	
	♀	14	9	2	
	♂	18½	12	2	
	♂	18	12½	2	
	♂	13	8½	1½	
	♂	11	6½	1½	
	♂	r. broken off	6	1½	
Kambang	♀	17	11½	2	
Haroekoe	♀	26	18	3	
	♀	25	17½	3	
	♀	24½	17	nearly 3	
	♀	nearly 23	15	2½	
	♀	21	13	2	
	♀	15	9½	1½	
	♀	r. broken off	16		
	♂	20	13	2	
	♂	19½	12½	2	
	♂	16	fully 10	2	
	♂	15	9	1½	
	♂	14	9	1½	
	♂	14	8½	1½	
Merampi	♂	24½	17	3	
Karaton	♂	27½	18½	3	
Morotai	♀	19	12	2	
	♂	14	9	2	
Flores	♀	17½	11	2	
Amboina	♀	24½	17	2½	
	♀	22½	16½	2½	
	♀	22½	15	2	
	♀	20½	14½	nearly 2	
	♀	20½	13½	2	
	2 ♀ ♀	20	13	2	
	♀	19	12½	2	
	♀	18	12	2	
	♀	17	11½	nearly 2	
	♂	26½	18	3	
	♂	22	14½	2½	
	♂	21	14½	2½	
	♂	20	14½	2½	
	♂	20	14	fully 2	
	♂	20	13½	2	
	♂	19	12½	2½	
	♂	19	13	2	
	♂	19	13	2½	
	♂	18	11	2	

		cl.	cb.	br.r.
	♂	17½	12	2
	♂	12	8	1½
	♂	r. broken	5½	
Ternate	♀	18	12	2
Batoe Merah	♀	21½	15	2
Roemah Tiga	♀	21½	14½	2
	♀	18	12½	2
	♂	21½	13½	2½
	♂	18	12	2
	♂	16	10½	2
Kisar	♀	22	14½	2
Endeh	♂	19½	12½	2½
	♂	18	12 fully	2
loc. unknown	♀	26	17½	2

Tiarinia laevis A. M.-Edw. (textfig. 27)

Tiarinia laevis A. Milne-Edwards, 1873, Journ. Mus. Godeffroy, vol. 1, pt. 4, p. 78.

Balss (1931) states as his opinion that *T. laevis* A. M.-Edw. possibly is a young *T. cornigera gracilis*. After an examination of the first pleopod from a ♂ from "Friedrich Wilhelm—Hafen, Neuguinea"[1]) I am of the same opinion.

Tiarinia macrospinosa nov. spec. (Pl. X, fig. 5)

Koepang, Timor; November 30, 1929. — 1 ovigerous ♀, cl., including rostral spines, 42 mm, cb. 26 mm.

Rostral spines parallel, and in the closest contact to near the tips, which are slightly divergent; with stiff, hooked hairs on the entire upper surface of the spines.

The eyes are enclosed in tubular orbits, formed by a prominent supraocular eave, the anterior angle of this eave is produced into a strong spine, stronger than in any other species of the genus, a cupped post-ocular spine and a process of the basal antennal joint, all three in closest contact.

Surface of the carapace with low tubercles and on each tubercle a bunch of the same hooked hairs as on the rostral spines. Shorter stiff hairs all over the carapace.

The epibranchial tubercle is slightly larger than the others, but not at all spine-like; there is a broad, but low intestinal tubercle and the whole posterior margin is swollen, but without tubercles or spines.

Chelipeds and walking legs are rather stout, covered with the same two kinds of hairs as the carapace. The first pair of ambulatory legs is lon-

[1]) Kindly lent by the authorities of the Museum in Berlin.

gest, about as long as the carapace with half the rostral spines; the chelipeds are of about the same length as the carapace; the merus with three small tubercles on its upper margin; fingers toothed and slightly gaping at the base.

The specimen differs from the other species I have seen by the strong ocular spine and the absence of spines or tubercles on the posterior margin.

PARTHENOPIDAE Alcock

PARTHENOPINAE Miers

Parthenope Weber

Parthenope (Parthenope) valida de Haan

Parthenope (Lambrus) valida de Haan, 1839, Fauna japonica, Crust., p. 90, pl. 21 fig. 1, pl. 22 fig. 1.

Kafal, Misool group; shore or reef; October 3, October 5, 1929. — 1 ♂, cl. 7 mm.
Near Koepang, Timor; small dredge, 10—15 m; December 2, 1929. — 3 ♂♂, cl. 7½, 7 and 5 mm.
Near Koepang, Timor; dredge, 6—15 m; December 4, 1929. — 1 ♂, cl. 9 mm.
Koepang, Timor; shore and reef; December 5, 1929. — 2 ♂♂, cl. 9 and 6½ mm.
Obi latoe; shore and reef; April 23—27, 1930. — 1 ♂, 1 ♀ and 1 specimen with Sacculinid, cl. 7½, 6 and 6 mm.

In the specimens from Kafal, Koepang (5 Dec. 1929), and Obi latoe the upper margin of the orbit is provided with three tubercles. The rostrum in these specimens is broadened near the base and forms a small preorbital tubercle.

Parthenope (Rhinolambrus) pelagicus (Rüppell)

Lambrus pelagicus Rüppell, 1830, Beschr. und Abb. 24 Arten kurzschw. Krabben, p. 15, pl. 4 fig. 1.

Mamoedjoe, Celebes; shore or reef; August 4—5, 1929. — 1 young specimen in a bad state of preservation.
Kera, near Timor; 0—1 m; November 11—13, 1929. — 1 ♂.
Koepang, Timor; 6—15 m; December 4, 1929. — 1 ♀.
Morotai; June 3—10, 1930. — 6 ♂♂, 4 ♀♀.
Kaledoepa, Toekang Besi Islands; August 27, 1930. — 2 ♀♀.

Parthenope (Aulacolambrus) curvispinus (Miers)

Lambrus curvispinus Miers, 1879, Ann. Mag. Nat. Hist. (5), vol. 4, p. 24.

Near Koepang, Timor; small dredge, 10—15 m; December 2, 1929. — 1 ♂.

Parthenope (Aulacolambrus) hoplonotus (Adams and White)

Lambrus hoplonotus Adams and White, 1850, Samarang, Crustacea, p. 35, pl. 7 fig. 3.

Near Koepang, Timor; dredge; December 2, December 4, 1929. — 9 ♂♂, 4 ♀♀.

Daldorfia Rathbun

Daldorfia horrida (L.)

Cancer horridus Linnaeus, 1767, Syst. Nat., ed. 12, vol. 1, pt. 2, p. 1047.

Wotap, Tenimber Islands; October 20—23, 1929. — 1 ♀.
Kera, near Timor; November 11—13, November 15—16, 1929. — 2 ♀♀.
Near Koepang, Timor; November 18—20, 1929. — 1 ♂, 1 ♀.
Koepang, Timor; reef; November 29, 1929. — 3 ♀♀.
Obi latoe; shore and reef; April 23—27, 1930. — 2 ♂♂.

Daldorfia semicircularis (Flipse)

Parthenope semicircularis Flipse, 1930, Brach. Siboga Exp., Mon 39c², p. 40.

Kera, near Timor; November 11—13, 1929. — 2 ♂♂.

Zalasius Rathbun

Zalasius dromiaeformis (de Haan)

Trichia dromiaeformis de Haan, 1841, Fauna japonica, Crust., p. 109, pl. 29 fig. 4.

Kafal, Misool group; shore or reef; October 3, October 5, 1929. — 1 ♂, cl. 23, cb. 30 mm.

In de Haan's ♂ type specimen, a dried one, the first abdominal segment and the last right leg are missing. The larger part of the last left leg is missing too, but the basipodite is present and bears a spine-like tubercle. De Haan's ♀ is a spirit specimen in a far better condition; the basipodites of the last legs bear a granular tubercle and the first abdominal segment is provided with the "two well developed granular lobes protruding backwards" as described and figured by McNeill and Ward (1930). In our specimen the tubercle on the basipodites of the last legs is present; the last abdominal segment is granular, but without tubercles.

Up to the present this apparently rather rare species was known from Japan, Timor and Australia.

EUMEDONINAE Miers

Harrovia Adams and White

Harrovia purpurea Gordon

Harrovia purpurea Gordon, 1934, Rés. sc. Voyage Indes Or. Néerl. de LL. AA. RR. le Prince et la Princesse Léopold de Belgique, vol. 3, fasc. 15, p. 67.

Obi latoe; shore or reef; April 23—27, 1930. — 1 ♀, cl. 5.5 mm, cb. (including the short conical spine) 7.5 mm.

The description given by Gordon of the type specimen, a ♂, agrees in nearly every respect with our ♀. The only point of difference is a question of colour-pattern. Gordon remarks: "The antero-lateral and frontal margins are granular and whitish; the rest of the carapace is of a dark purplish colour broken by four irregular transverse bands of a much paler purple crossing the middle line; the paler colour is repeated round the postero-lateral and posterior margins." But her figure shows us lighter and darker areas.

In our ♀ the antero-lateral and frontal margins are granular and whitish (as described by Gordon). The anterior half of the carapace is dark purple with two transverse bands of the same whitish colour; the posterior half is of a lighter purple with an indistinct band of a darker colour.

LITERATURE

For the older literature I refer to

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The papers marked with an * were not available to me.

EXPLANATION OF THE PLATES

PLATE VII

Fig. 1. *Cryptodromia de Manii* Alcock, from Amboina, dorsal view, × 10.
Fig. 2. *Cryptodromia trituberculata* nov. spec., from Obi latoe, dorsal view, × 12.
Fig. 3. Same specimen, ventral view, × 12.
Fig. 4. *Dynomene praedator* A.M.-Edw., from Amboina, dorsal view, × 8.
Fig. 5. *Anacinetops stimpsoni* Miers, from Kera, dorsal view, × 8.
Fig. 6. Same specimen, ventral view, × 8.

PLATE VIII

Fig. 1. *Achaeus anauchen* nov. spec., from Station 60*, dorsal view, × 24.
Fig. 2. Same specimen, ventral view, × 24.
Fig. 3. *Pseudomicippe tenuipes* A.M.-Edw., from Koepang, dorsal view, × 4.
Fig. 4. Same specimen, ventral view, × 6.
Fig. 5. *Calappa lophos* (Herbst), from Koepang, dorsal view, × 6.

PLATE IX

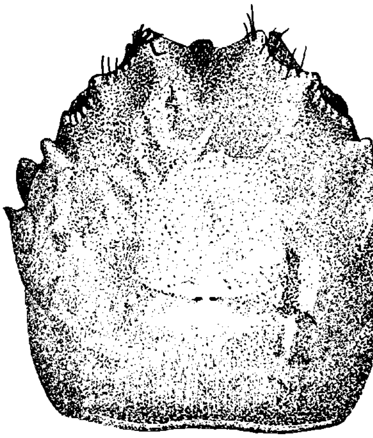
Fig. 1. *Hyastenus ternatensis* nov. spec., ♂ from Ternate, dorsal view, × 10.
Fig. 2. Same specimen, ventral view, × 16.
Fig. 3. Same specimen, carpus and merus of right cheliped, × 16.
Fig. 4. *Hyastenus bispinosus* nov. spec., ♀ from Lembeh Strait, dorsal view, × 8.
Fig. 5. Same specimen, ventral view, × 14.
Fig. 6. *Hyastenus minutus* nov. spec., ♂ from Ternate, dorsal view, × 14.
Fig. 7. Same specimen, ventral view, × 20.

PLATE X

Fig. 1. *Micippa philyra* (Herbst), ♂ from Amboina, ventral view, × 6.
Fig. 2. *Micippa platipes* Rüppell, ♂ from Amboina, ventral view, × 6.
Fig. 3. *Micippa philyra* (Herbst), cheliped of same ♂, × 8.
Fig. 4. *Micippa platipes* Rüppell, cheliped of same ♂, × 8.
Fig. 5. *Tiarinia macrospinosa* nov. spec., × from Koepang, dorsal view, × 2.

PLATE XI

Fig. 1. *Tiarinia cornigera* (Latr.), ♂ from Wotap, dorsal view, × 4.
Fig. 2. *Tiarinia gracilis* Dana, ♂ from Amboina, dorsal view, × 4.



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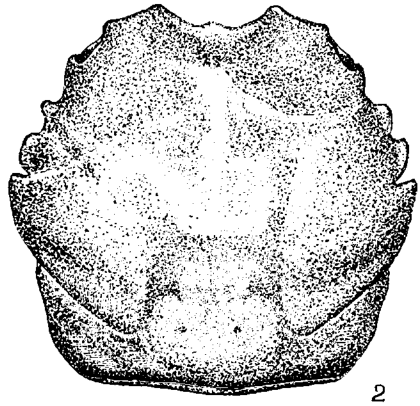

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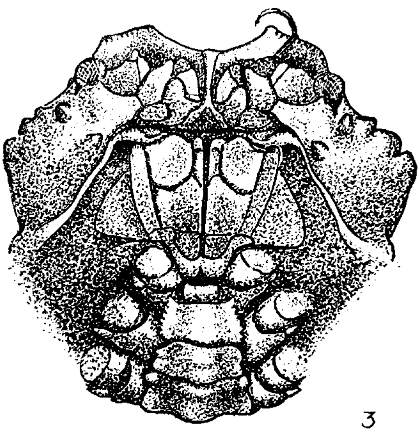

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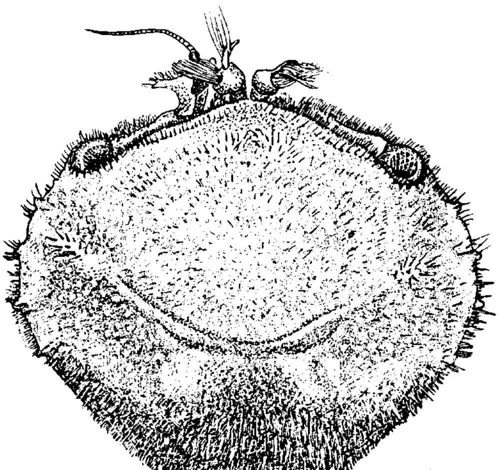

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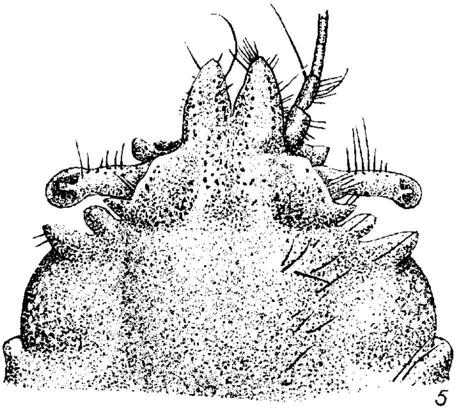

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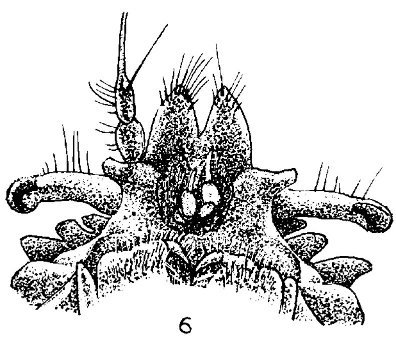

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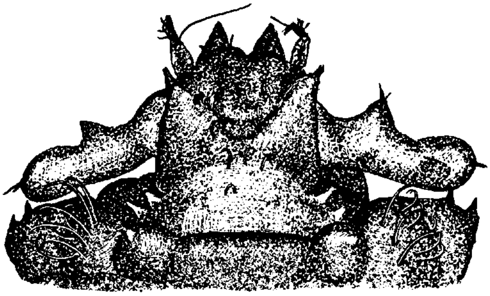

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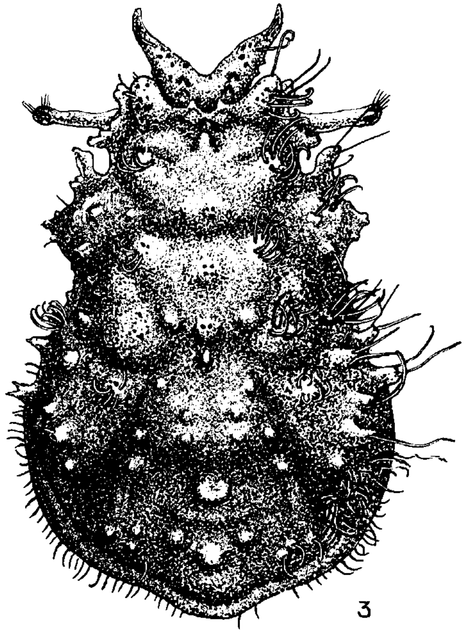

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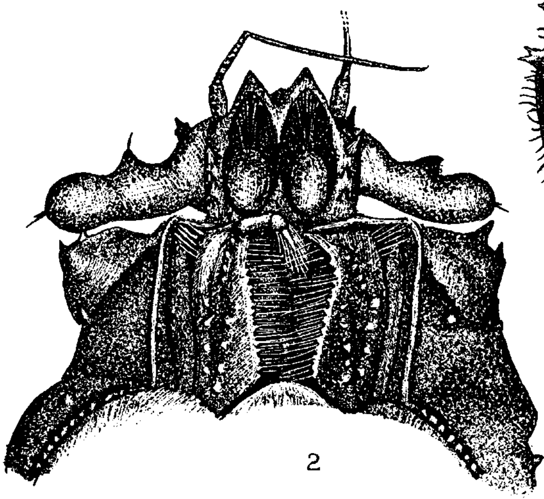

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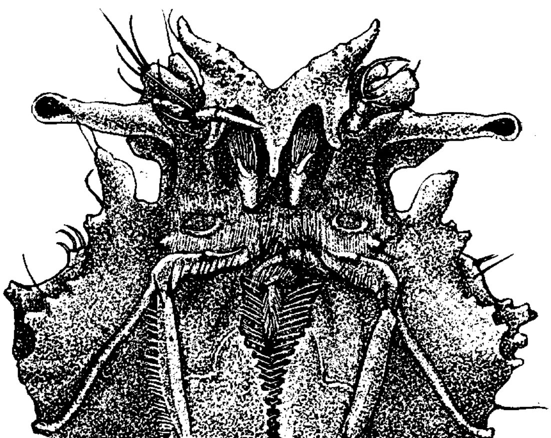

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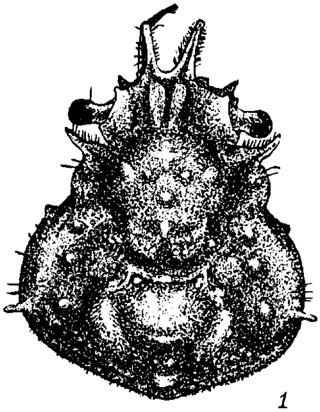

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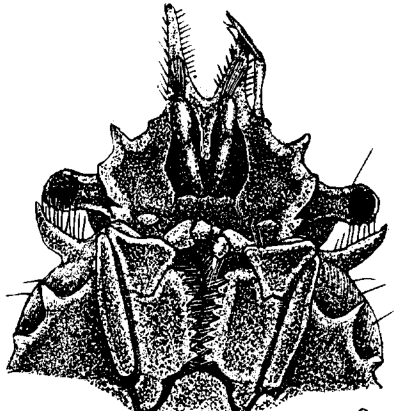

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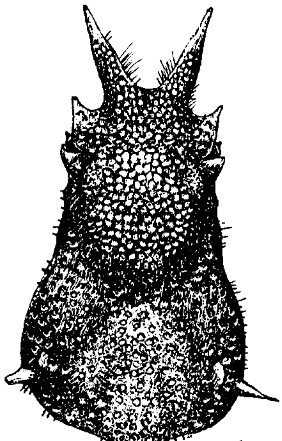

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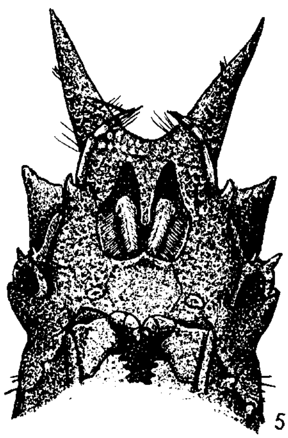

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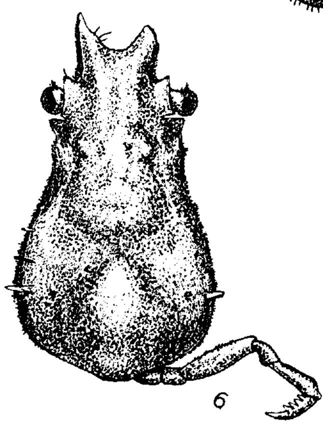

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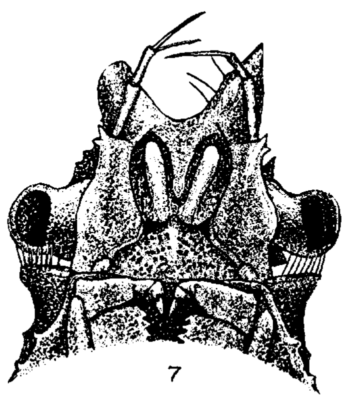

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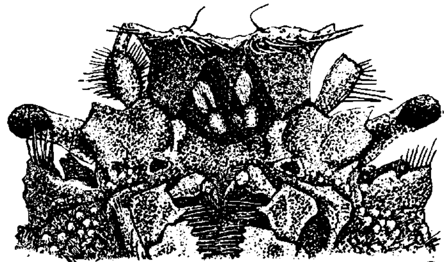

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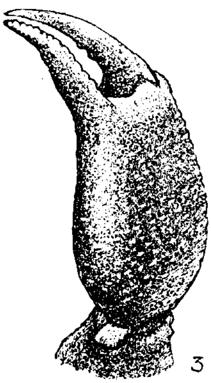

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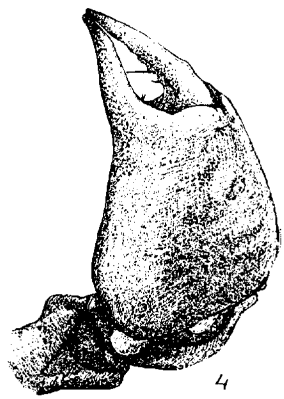

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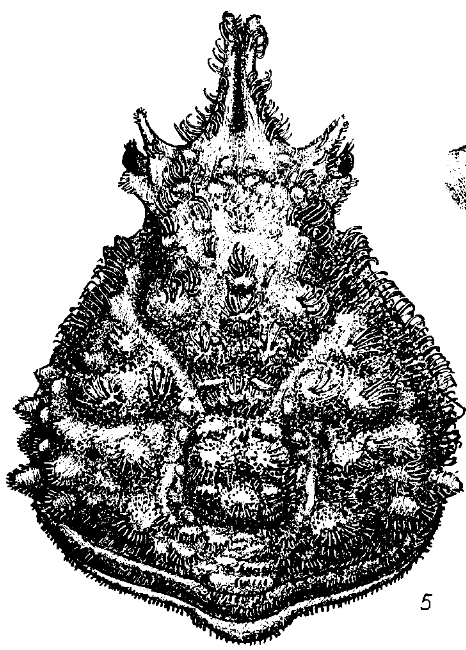

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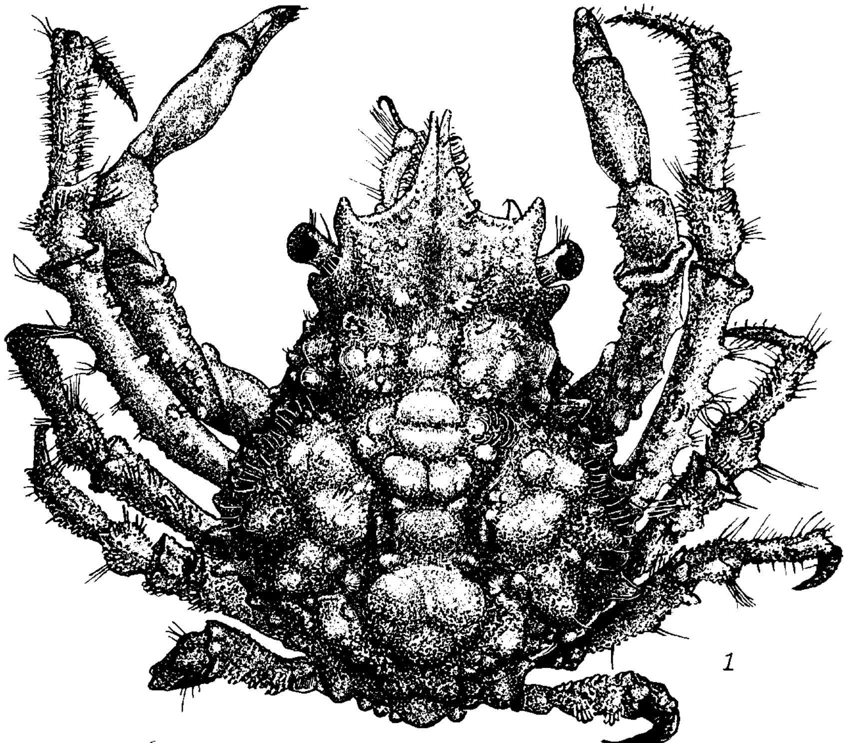

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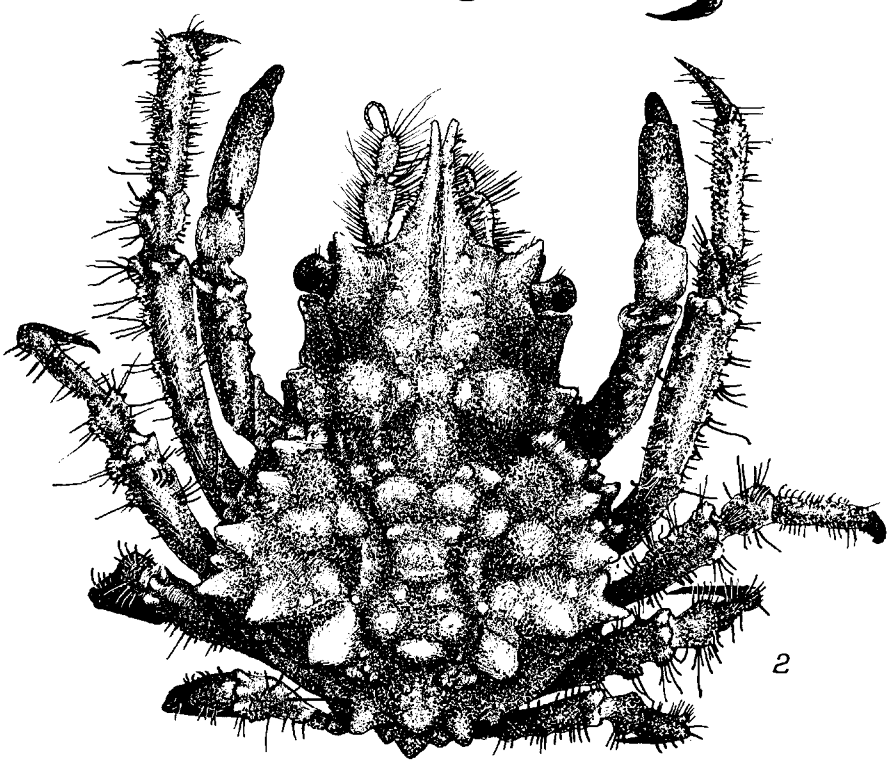

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