ANOMURA

(Excluding Paguridea)

BY

ISABELLA GORDON (London)

Distribué le 30 juin 1935. Vol. III, fasc. 17.

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INTRODUCTION

The collection includes very few Anomura, apart from the Paguridae. The number of specimens is very small, and the two species of the genus *Galathea* are each represented by a single specimen of small size. The following notes and figures were prepared during my study of the Brachyura but it was not considered advisable to include them in that report.

Family **GALATHEIDAE** Dana.

Genus GALATHEA Fabricius.

? **Galathea affinis** Ortmann.

(Fig. 1, 3 *a*.)

Ortmann, 1892, Zool. Jahrb., Jena, 2, Syst., VI, p. 252, pl. XI, fig. 9.

Material. Banda Neira, 24.II.1929, 1 ovigerous ♀ (*l*. of cephalothorax to apex of rostrum = 3.3 mm.).

Description : Rostrum as long as broad, armed with four teeth laterally, dorsal surface smooth and non setose. Five spines on lateral border of carapace;

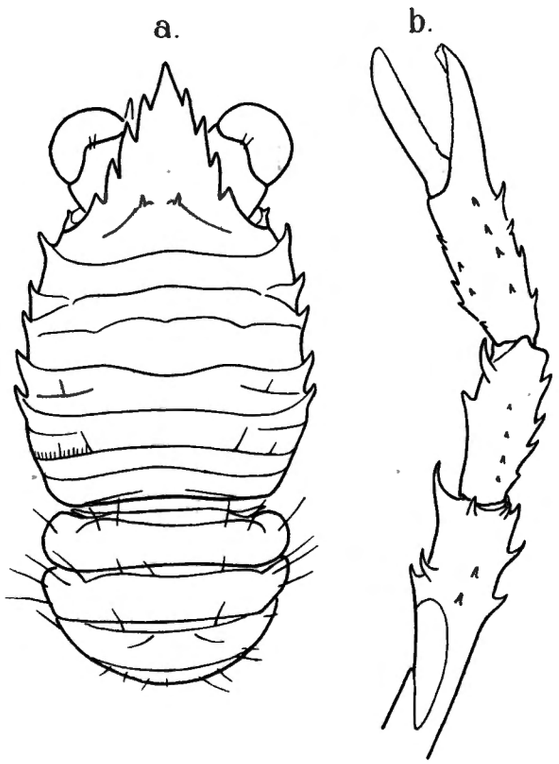


Fig. 1. — ?*Galathea affinis* Ortmann.
a. in dorsal aspect. — *b*. Cheliped, the fine setae omitted. ×18.

setose ridges as represented in fig. 1*a*. No transverse ridge on the abdominal segments (cf. *Galathea* aff. *consobrina*, fig. 2). Antennular spine extends almost to the tip of the anterior lateral rostral tooth. There is no spine at the

outer orbital angle although there is a minute spine in front of and ventral to it.

Cheliped as represented in fig. 1*b*; almost twice as long as cephalothorax including rostrum. Carpus, palm and dactylus subequal in length, fingers when closed separated, except at tips, by a very narrow gap.

Only one walking leg remains and that has become detached from the body; there is a single median spine on the dorsal surface of merus, none on carpus; there are four spines on ventral margin of dactylus which terminates in a single claw.

External maxilliped as represented in fig. 3*c*. but most of the setae on distal segments omitted; one spine on inner border of merus.

Remarks : I have been unable to compare this specimen with Ortmann's types for, on communicating with the authorities of the Strasbourg Museum I received the following reply from Dr. A. Burr (12.XII.1933) :« A mon grand regret je ne peux pas vous envoyer les échantillons de *Galathea affinis* que vous avez demandés, parce qu'ils ne se trouvent plus dans notre collection de crustacés ».

Galathea aff. **consobrina** De Man.

(Fig. 2, 3 *a, b.*)

De Man, 1902, Abh. Senckenb. Ges., Frankfurt a. M., XXV, p. 720, pl. XXIII, fig. 41.
Material. Sorong Doom, 2.III.1929, 1 ♀ (*l.* of cephalothorax including rostrum = 4.5 mm.).

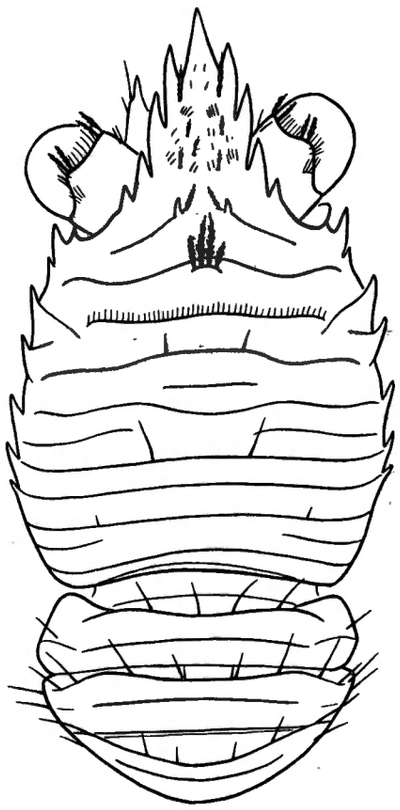
Description : Rostrum slightly depressed, armed on each side with one small and three large teeth; on the dorsal surface there are 6-7 rather conspicuous feathered setae and numerous finer ones (fig. 2).

Outer orbital angle rounded and unarmed. Seven spines, varying in size, on each lateral margin of carapace. Number and arrangement of the transverse striae as represented in fig. 2; each is provided with the usual fringe of fine setae. A pair of spinules on gastric region immediately behind rostrum and, median to each a plumose seta. Behind the first complete transverse ridge, on the median line, a small scale bearing four similar setae of larger size. Two pairs of plumose setae on each eye, at distal end of stalk in addition to the finer setae (fig. 2). The few long setae present on dorsal surface of carapace and abdomen are simple.

The spine on basal segment of antennule is shown on the left side in fig. 2; it terminates midway between the two anterior rostral teeth.

Cheliped rather more than twice as long as carapace. In addition to the usual spines, merus carpus and chela bear fine setae varying in length; these have been omitted in fig. 3*a*. Carpus equal to dactylus but a little shorter than palm.

Fingers when closed leave a narrow gap in distal half, beyond the blunt conical lobes. Scales are present on merus and carpus, and to a lesser degree on chela.



FIL. 2. — *Galathea* aff. *consobrina* DE MAN × 18.

External maxilliped as represented in fig. 3*b*. in which most of the setae, especially those on the distal segments, have been omitted. Two prominent spines on distal half of inner border of merus, which is subequal to ischium.

Merus of walking legs with 7-8 spinules and a few feathered setae; about 5 short transverse striae on posterior surface. Three inconspicuous spinules on dorsal margin of carpus; a conical tooth on ventral margin of dactylus proximal to terminal claw.

REMARKS : This specimen is closely allied to *G. consobrina* de Man from which it differs in the following respects. (1) The dorsal surface of the rostrum is setose and the lateral teeth are more deeply incised. (2) The outer orbital angle is rounded, not spinose. (3) The transverse striae on the posterior half of the carapace are more numerous. (4) The chelipeds are rather longer in

proportion to the carapace. In *G. consobrina* the feathered setae on rostrum and eye stalks are absent and there are eight setae on the mid gastric region.

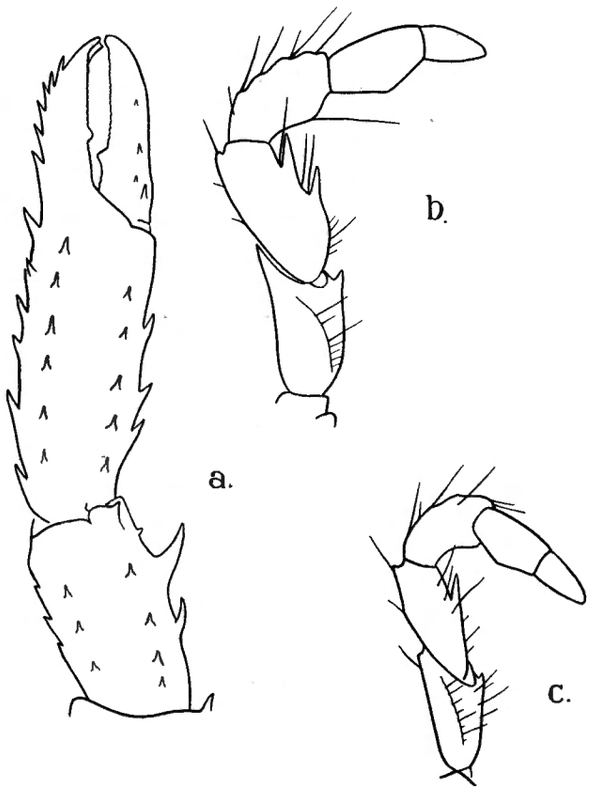


FIG. 3. — *Galathea* aff. *consobrina* DE MAN.

a. Distal segments of cheliped. ×18. — *b*. Endopodite of external maxilliped. ×36.

? *Galathea affinis* ORTMANN.

c. Endopodite of external maxilliped. ×36.

Galathea elegans ADAMS & WHITE.

MIERS, 1884, *Crustacea* in Report Zoological Collections H. M. S. « Alert », 1881-1882, London, p. 278.

BALSS, 1913, Abh. Ak. Wiss., Berlin, II, 9, p. 4.

Material. Sorong Doom, 2.III.1929, 1 small ♀.

Remarks. This is most probably a young specimen of *G. elegans* Adams and White.

Family **PORCELLANIDAE** Henderson.

Genus PETROLISTHES Stimpson.

Petrolisthes hastatus Stimpson.

Ortmann, 1892, Zool. Jahrb., Jena, 2, Syst. VI, p. 260.
Lanchester, 1900, Ann. Mag. Nat. Hist., London (7), VI, p. 260.
Stimpson, 1907, Smithsonian Misc. Collect., Washington, XLIX, p. 184; pl. XXII, fig. 4.
Material. Sabong, 12.XII.1928. 1 ovigerous ♀.

Petrolisthes scabriculus (Dana).

Porcellana scabricula Dana, 1852, *Crustacea* U. S. Exploring Expedn., 1834-1842, vol. I, p. 424; 1855, Atlas, pl. XXXVI, fig. 3.
Petrolisthes scabriculus Ortmann, 1897, Zool. Jahrb., Jena, 2, Syst. X, pp. 287, 289, *ubi. bibl.*
Material. Sorong Doom, 2.III.1929, 1 small ovigerous ♀ (*l.* of carapace = 4.2 mm.).

Remarks : This specimen is near to *P. militaris* Heller described in the « Alert » collection as *P. annulipes* Miers but differs from it in several respects. The transverse striae on the carapace are fewer in number and less conspicuous — perhaps due to the smaller size of the specimen. The lateral lobes of the front are spinulose but the arrangement of the 3-4 lateral spinules behind the 2 epigastric spines is similar to that found in *P. annulipes.* The chief difference, however, lies in the cheliped (1); the transverse ridges on the upper surface of carpus and chela being replaced by numerous small scales. Those on the chela external to the longitudinal crest are often more like sharply conical granules or spinules. The outer border of the chela is, moreover, heavily fringed with long feathered setae. Carapace and cheliped are covered dorsally with a fine sparse short felt.

In the spinulation of the front and the setose fringe to the chela this specimen resembles *P. scabriculus* (Dana) but the sides of the carapace differ somewhat from Dana's figure in as much as there is a marked constriction or sinus immediately in front of the first epibranchial spine. There are 4-6 spines on the meri of the walking legs.

Several authors [e. g. Ortmann, 1897 (2), p. 289; Henderson (3), 1893, p. 427] have pointed out the close similarity between *P. militaris* and *P. scabriculus* and suggested that they are possibly identical. This may well be so. The carapace of the specimen from Sarong is very similar to that found in the types of *P. annulipes* (= *militaris*) except for the spinulation of the front.

(1) The left cheliped is missing.
(2) *Zool. Jahrb.*, Jena, 2, Syst., X.
(3) *Trans. Linn. Soc.*, London (2), V, pt. 10.

Even the differences in the cheliped may not be of specific importance for Borradaile [1898 (1), pp. 464-467] found that specimens of *P. lamarcki* (Leach) sometimes had a fringe on the outer margin of the chela.

Genus PACHYCHELES STIMPSON.

Pachycheles pisum (H. M. EDW.)

Pachycheles pisum ORTMANN, 1897, Zool. Jahrb., Syst., X, pp. 293, 295.
Pachycheles pulchellus (Haswell) MIERS, 1884, *Crustacea* in Report Zoological Collections H. M. S. « Alert », 1881-1882, p. 273, pl. XXX, fig. A.
Material. Eiland Enoe, 24.III.1929, 1 ♂, also 1 ♂ received from Dr. H. Boschma.
? New Guinea, 1 ♂.

Genus PORCELLANA LAMARCK.

Porcellana suluensis DANA.

(Fig. 4.)

DANA, 1852, *Crustacea* U. S. Exploring Expedn., 1834-1842, vol. I, p. 414; 1855, Atlas, pl. XXVI, fig. 4.
RATHBUN, 1924, Ark. Zool., Stockholm, 16, No. 23, p. 30, pl. I, figs. 15 and 16.
Material. Eiland Enoe, 24.III.1929, 2 ♀.

REMARKS : The specimens agree well with the description given by Rathbun who re-examined Dana's type specimen. The differences are very slight and

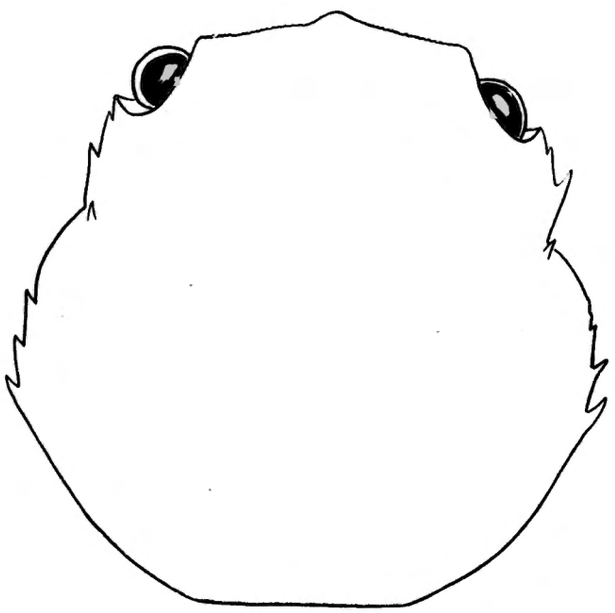


FIG. 4. — *Porcellana suluensis* DANA.
Ouline of carapace. ×20.

(1) *Proc. Zool. Soc.*, London.

represent individual variations for the most part. For example, the « row of separated spinules » just above the margin is present on the proximal part of the palm of the larger chela in only one specimen. There is an additional small spinule behind the outer orbital angle on one or on both sides of the carapace (fig. 4). In both specimens the meri of the walking legs are striated on the upper portion of the inner, as well as of the outer, surface.

Dana's figure is not very accurate as regards the spinulation on the lateral borders of the carapace and Rathbun's figure is too small to show much detail. I therefore give an outline of the carapace the length of which scarely exceeds the greatest width, spinules included.

Genus POLYONYX STIMPSON.

Polyonyx biunguiculatus (DANA).

(Fig. 5 *b*, 5 *d*.)

Porcellana biunguiculatus DANA, *Crustacea*, U. S. Exploring Expedn., 1834-1842, 1852, vol. I, p. 411; 1855, Atlas, pl. XXVI, fig. 1.

nec *Polyonyx biunguiculatus* (Dana) LAURIE, 1926, Trans. Linn. Soc., London, p. 146.

Material. Eiland Enoe, 24.III.1929, 1 ♂, 1 ovigerous ♀.

REMARKS : These specimens differ from those referred to *P. obesulus* (White) chiefly as regards the front of the carapace and the dactyli of the walking legs (cf. fig. 5*a*. and *b*.; *c*. and *d*.). They differ from Laurie's specimens of *P. biunguiculatus* in having neither a definite anterior lobe on the merus nor a crest on the palm of the cheliped. In these respects Laurie's material resembles *P. acutifrons* De Man [1896 (1), p. 384 and 1898 (2), pl. 32, fig. 49] which includes *P. biunguiculatus* Miers, 1884 (3), pp. 273 and 599.

Until Dana's type specimen is re-examined the exact form of the chelipeds must remain unknown, but as the front and dactyli agree so closely with Dana's figs. 1*c*. and 1*d*. the specimens are provisionally referred to his species. The chelipeds in the male (*l*. of carapace 4 mm.) are more unequal than in the female. In both sexes the lobe on the immobile finger of the larger chela is wider and more distally placed than in Dana's fig. 1*b*.; there is a tuft of fine soft hairs at the base of the movable finger, mostly on the inner surface, and only a slight trace of such hairs on the inner proximal part of the immovable one. In *P. obesulus* both fingers are tufted to the same extent.

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(1) *Zool. Jahrb.*, Jena, 2, Syst., IX.

(2) *Ibidem*, X.

(3) *Crustacea* in Report Zoological Collections H. M. S. « Alert », 1881-1882, London.

Polyonyx obesulus (WHITE).

(Fig. 5 *a*, 5 *c*.)

MIERS, 1884, *Crustacea* in Report Zoological Collections H. M. S. « Alert », 1881-1882, London, p. 272, pl. XXIX, fig. D.

DE MAN, 1902, Abh. Senckenb. Ges., Frankfurt a. M., p. 704, pl. XXIII, fig. 39.

SOUTHWELL, 1909, Rep. Gov. Baroda on Mar. Zool. Okhamandal, p. 116, Anomura Plate, fig. 5.

Material. ? New Guinea, 1 ♂, 1 ovigerous ♀.

Eiland Enoe, 24.III.1929, 1 incomplete ♀ probably belongs to this species.

Eiland Enoe, 24.III.1929, 1 ♀, 1 ♂ and 1 damaged ♂.

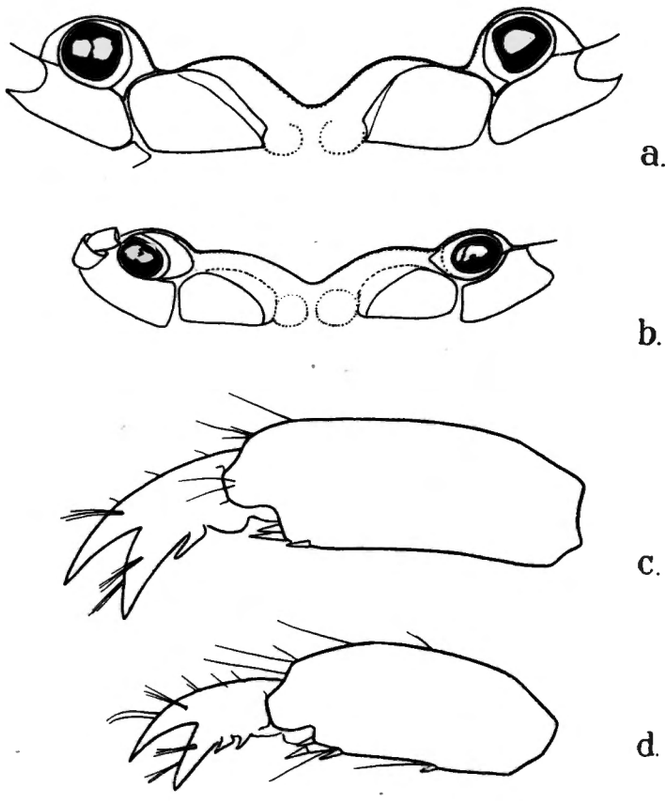

FIG. 5. — *Polyonyx obesulus* ADAMS and WHITE, ×24.

a. Front of carapace. — *c*. Dactylus and propodus of walking leg.

Polyonyx biunguiculatus (DANA), ×24.

b. Front of carapace. — *d*. Dactylus and propodus of walking leg.

Family **HIPPIDAE** Stimpson.

Genus **REMIPES** Latreille.

Remipes testudinarius Latr.

Remipes testudinarius Miers, 1878, J. Linn. Soc., London, Zool., XIV, p. 316.
Material. Sangsit (Bali), 26.I.1929, 3 ♂, 1 ♀.

Remipes testudinarius var. **denticulatifrons** Miers.

Remipes testudinarius var. *denticulatifrons* Balss, 1914, Abh. bayer Ak. Wiss., München (2), 10, p. 92, fig. 50.
Hippa denticulatifrons Rathbun, 1910, Proc. U. S. Nat. Mus., Washington, 38, p. 595.
Hippa denticulatifrons Boone, 1932, Zoologica, New York, 14, p. 58, fig. 19.
Material. Sangsit (Bali), 26.I.1929, 1 ♀.