

Fig. 2. Optical longitudinal section through tentacular ring and adjacent parts. *a*, wall of pharynx; *b*, thinned margin of same, reflected to enclose *c*, circular sinus, which is continued into *g*, canal of tentacle; *d*, striated retractor muscle of tentacle; *e*, perivisceral membrane, reflected over base of tentacle; *f*, operculum.

Fig. 3. A fully-developed but asexual zooid. *a*, cavity of pharynx; *b*, gizzard; *c*, sphincters of gizzard and stomach; *d*, stomach; *e*, intestine; *f*, termination of intestine (*i. e.* anus); *g*, termination of muscular tube attached round anus; *h*, tufts of setæ crowning tentacles; *i*, funiculus; *k*, operculum.

XXXIX.—Diagnoses of the new Species of Galatheidea collected during the 'Challenger' Expedition. By J. R. HENDERSON, M.B., F.L.S.

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THE present paper contains brief notices of the new species of Galatheidea obtained during the cruise of H.M.S. 'Challenger.' As some time has elapsed since the return of the expedition in 1876, a number of the species then new to science have been retaken and described elsewhere. This is especially the case as regards the group treated of, and four deep-water genera well represented in the collection, viz. *Galacantha*, *Elasmonotus*, *Diptychus*, and *Ptychogaster*, come under this category. I am indebted to the courtesy of M. Alphonse Milne-Edwards for the opportunity of examining his types from the 'Blake' and the recent French expeditions.

GALATHEA, Fabr.

Galathea pusilla, n. sp.

Rostrum triangular, nearly twice the length of the ocular peduncles, with a prominent tooth on either side of the base, and a minute one towards the apex (the latter is occasionally absent). Carapace smooth and glabrous, the striæ not numerous, the lateral borders each with seven or eight spines; gastric region with two small spines on either side of the median line. Chelipedes long and slender, the meral, carpal, and propodal joints each with three rows of spinules; fingers parallel and finely toothed. Ambulatory limbs slender and compressed, with a few spinules especially on the meral joints.

Length of body (in a ♂) 10 millim.; length of chelipedes 11 millim.

Loc. Station 163 [off the New South Wales coast], 120 fathoms.

Galathea inconspicua, n. sp.

Rostrum narrow, not twice the length of the ocular peduncles, slightly excavated above towards the base; lateral borders with four teeth, which diminish in size as they pass forwards, the central point very long and acute. Carapace glabrous, the striæ fairly numerous and slightly raised; gastric region swollen, armed with six small spines, lateral border eight-spined. Chelipedes and ambulatory limbs wanting in the only specimen.

Length of body (in a ♂) 8 millim.; breadth of carapace 3 millim.

Loc. Station 194 [off Banda Is.], 360 fathoms.

MUNIDA, Leach.

Munida spinosa, n. sp.

Rostrum twice the length of the supraocular spines, the latter nearly twice the length of the ocular peduncles. Carapace considerably narrowed in front, the lateral margins with seven large spines; gastric region with from six to ten spines in front, a few spinules on the hepatic and branchial areas. Chelipedes robust, slightly pubescent, the propodal, carpal, and meral joints with several rows of large spines. Carpi and meri of the ambulatory limbs with their anterior borders spiny. The second abdominal segment with a row of from six to ten large spines.

Length of body (of adult ♂) 56 millim.; length of chelipedes 76 millim.

Loc. Station 145 [off Prince Edward Island], 310 fathoms; Station 320 [off the mouth of the Rio de la Plata], 600 fathoms.

Munida Normani, n. sp.

Rostrum half as long again as the supraocular spines, the latter about equal in length to the ocular peduncles. Carapace with two spines on the posterior border, a transverse row of spines on the cardiac area, and a row of spines on either branchial region near the borders of the cardiac area, also two spines on the gastric area; lateral borders of the carapace with about six spines. Chelipedes cylindrical, covered with slightly imbricated scales, the inner surface of the joints (especially of the meri) furnished with spines, the digits long,

narrow, and slightly upturned. Meral joints of the ambulatory limbs fringed anteriorly by a row of spines and long hairs. The second, third, and fourth abdominal segments with four spines each (the two central of which are largest), the fourth having in addition a single median spine placed behind the others.

Length of body (of adult ♂) 39 millim.; length of chelipedes 57 millim.

Loc. Station 173 [south of the Fiji Is.], 300 fathoms.

Munida squamosa, n. sp.

A species allied to *M. Normani*, but differing from it in the following respects:—The rostrum slender, slightly exceeding the ocular peduncles, the supraocular spines nearly the length of the rostrum. Carapace with a mesial spine on the cardiac region, and one on either side of this near the line of junction of the branchial and cardiac areas (situated in the former area). The chelipedes long, slender, and cylindrical, clothed with imbricated ciliated scales. The ambulatory limbs also covered with scales, the tarsal joints contorted.

Length of body (of adult ♂) 52 millim.; length of chelipedes 81 millim.

Loc. Station 219 [north of the Admiralty Is.], 150 fathoms.

Munida granulata, n. sp.

The surface of this species is everywhere covered by granulations, which in some parts show a tendency to run into minute spinules or scales; it is also slightly pubescent. Rostrum short, in length equalling the ocular peduncles, but more than double the length of the supraocular spines. The eyes remarkably compressed. Carapace with a row of small spines on the posterior border, the cardiac area with three spines arranged mesially; gastric region with a central spine and two placed anteriorly, a few small spines on the posterior branchial region. Chelipedes long, slender, and cylindrical, almost naked, the digits long and curved. The ambulatory limbs also long and slender, with the tarsi contorted. The second and third abdominal segments with a double row of spines, the fourth with a single row and raised median protuberance behind.

Length of body (of adult ♂) 33 millim.; length of chelipedes 64 millim.

Loc. Station 173 [south of the Fiji Is.], 300 fathoms.

Munida scabra, n. sp.

Allied to *M. granulata*, but differing from it in the following

respects:—The granulations on the chelipedes and ambulatory limbs are in *M. scabra* superseded by small scales, those on the carapace by minute spinules. The rostrum in this species is comparatively shorter, and the supraocular spines separated from one another by a wider interval than in *M. granulata*. The arrangement of spines is similar to that in the last (with the exception that there is only a single one in the centre of the posterior border of the carapace), but they are everywhere more strongly developed. Finally, the marking of the last two abdominal segments is very different in the two species: in *M. granulata* it consists of small ciliated scales, whereas in *M. scabra* these are represented by raised concentric lines passing across the segment.

Length of body (of adult ♂) 39 millim.; length of chelipedes 63 millim.

Loc. Station 192 [off the Ki Is.], 129 fathoms.

Munida proxima, n. sp.

This comes nearest to *M. scabra*, but is, however, a smaller species. The rostrum is shorter, the spinules on the carapace are more strongly developed, there is no central spine on the gastric region, and that on the centre of the posterior border is wanting. The chelipedes are longer and narrower, but clothed also with minute scales; the digits are long and straight.

Length of body (of adult ♀) 26 millim.; length of chelipedes 44 millim.

Loc. Station 219 [north of the Admiralty Is.], 150 fathoms.

Munida vitiensis, n. sp.

Rostrum nearly twice the length of the supraocular spines, the latter equalling the ocular peduncles. Carapace furnished in front with a row of from ten to twelve spines (the two immediately behind the supraocular spines being larger than the others), the branchial regions with three small spines; lateral margins with about seven spines. Chelipedes short and robust, furnished with hairs and spines, the latter in three rows. Ambulatory limbs short, the meral, carpal, and propodal joints spiny (the propodi with the spines on the inferior border). The second abdominal segment with numerous small spines.

Length of body (of ♀ with ova) 31 millim.; length of chelipedes 28 millim.

Loc. Station 173 [south of the Fiji Is.], 300 fathoms.

Munida militaris, n. sp.

Allied to *M. miles*, A. Milne-Edwards. It is, however, a

smaller species; the carapace is shorter and narrows posteriorly, the gastric region is flatter, and the lateral borders are furnished with about seven spines. The gastric spinules are arranged as in *M. miles*. The chelipedes are short and robust, the principal joints with spines arranged in three rows; the fingers are in contact throughout. The second abdominal segment is alone armed with spines.

Length of body (of a ♂) 33 millim.; length of chelipedes 28 millim.

Loc. Station 173 [south of the Fiji Is.], 300 fathoms; Station 192 [off the Ki Is.], 129 fathoms; Amboyna, 100 fathoms. Station 200 [off the Philippines], 255 fathoms.

Munida inornata, n. sp.

Allied to *M. miles* and *M. constricta*, A. M.-E. Rostrum more than twice the length of the ocular peduncles, the supraocular spines very short (about half the length of the ocular peduncles) and placed close together. Carapace unarmed, with the exception of very minute spines on the lateral borders and a row on the anterior gastric region (of which the two behind the supraocular spines are largest). Chelipedes in the male long, narrow, and slender, very sparingly armed with spines, but clothed with imbricated scales. Second abdominal segment with two very minute spines hardly visible to the naked eye.

Length of body (of a ♂) 26 millim.; length of chelipedes 39 millim.

Loc. Station 219 [off the Admiralty Is.], 150 fathoms.

Munida sancti-pauli, n. sp.

A shallow-water species closely approaching *M. miles*, A. M.-E. The carapace is, however, proportionately broader, the transverse striæ are not so strongly marked, and the spines on the lateral borders are more prominent. Only the second abdominal segment is furnished with spines.

Length of body (of a ♀ with ova) 28 millim., length of chelipedes 29 millim.

Loc. Off St. Paul's Rocks, 10-60 fathoms.

Munida Haswelli, n. sp.

Rostrum twice the length of the ocular peduncles, the supraocular spines slightly exceeding the latter. Carapace with the striæ numerous, tuberculate, and the hairs densely set; gastric region with two spines situated behind the supraoculars, and several spinules on the hepatic and branchial areas. Chelipedes slender, the digits long and in contact

throughout. The second abdominal segment with from four to eight spines.

Length of body (of an adult ♂) 31 millim., the chelipedes wanting in this the largest specimen.

Loc. Station 163 [off the New South Wales coast], 120 fathoms.

Munida gracilis, n. sp.

A small species resembling the northern *M. tenuimana*, G. O. Sars. The spiny armature of the carapace is similar to that of the latter, with the exception that there are no spines on the posterior border. The rostrum is very long and slender, more than twice the length of the supraocular spines, and these latter exceed the ocular peduncles. The chelipedes are of greater length and tenuity than in *M. tenuimana*, the propodi and digiti being unusually long. The second and third abdominal segments are alone furnished with spines, and these are more numerous on the second.

Length of body (of a ♀) 24 millim.; length of chelipedes 36 millim.

Loc. Station 166 [off New Zealand], 275 fathoms.

Munida curvirostris, n. sp.

Rostrum more than twice the length of the supraocular spines, considerably upturned; the supraocular spines as long as the ocular peduncles, also upturned, but less so than the rostrum. Eyes very large, with the corneæ dilated. Carapace short and broad, the striæ not numerous; gastric region with a row of spines in front, the spines on the lateral borders very prominent. Chelipedes robust, with several large spines. Tarsi of ambulatory limbs long. The second abdominal segment with a row of spines.

Length of body (of a ♀) 27 millim.; length of chelipedes 21 millim.

Loc. Station 210 [off the Philippines], 375 fathoms.

Munida spinifrons, n. sp.

Rostrum slender, about three times the length of the ocular peduncles, the anterior half slightly upturned, and furnished with a series of well-marked spines on either side; the supraocular spines not equalling the ocular peduncles. Carapace sparingly clothed with iridescent hairs, gastric area with a few spines in front, a single small spine on each branchial area. Chelipedes and ambulatory limbs long and slender. The second abdominal segment with two small spines.

Length of body (of ♀ with ova) 19 millim.; length of chelipedes 22 millim.

Loc. Station 113 A [Fernando Noronha], 7-25 fathoms.

Munida tuberculata, n. sp.

Rostrum about twice the length of the ocular peduncles, carinated dorsally, and with a slight tendency to serration near the apex; the supraocular spines short and flattened. Carapace with the striæ well marked and tuberculate, the gastric region with a row of small compound tubercles in front. Chelipedes and ambulatory limbs furnished with tubercles, which show a tendency to become spinulose. The second abdominal segment armed with a few spines.

Length of body (of a ♂) 10 millim.; length of chelipedes 12 millim.

Loc. Station 172 [south of the Fiji Is.], 240 fathoms; Station 173, near the last, 315 fathoms.

Munida spinicordata, n. sp.

Rostrum slightly exceeding the ocular peduncles, the supraocular spines nearly as long as the rostrum, separated by a wide interval. Eyes large and flattened. Carapace with two small spines on the gastric region and a prominent mesial one on the cardiac region, those on the lateral borders very minute, except the first, which is well marked. Chelipedes very slender, with a row of spines on the inner border. Ambulatory limbs long and slender. The second, third, and fourth abdominal segments with spines.

Length of body (of a ♂) 14 millim.; length of chelipedes 20 millim.

Loc. Station 174 [off the Fiji Is.], 210 fathoms.

EUMUNIDA, S. I. Smith.

Eumunida, Proc. U. S. Nat. Mus. 1883, vol. vi. no. 1, p. 44.

Eumunida Smithii, n. sp.

A small species allied to *E. picta*, Smith. The rostrum and first pair of supraocular spines deflexed. Lateral borders of carapace armed with five or six small spines; gastric region with three minute spinules situated between the second supraocular and the first marginal spine; of these the first is smallest, whereas in *E. picta* it is large and prominent. Chelipedes wanting in the only specimen.

Length of body 15 millim.

Loc. Station 192 [off the Ki Is.], 129 fathoms.

MUNIDOPSIS, Whiteaves.

Munidopsis, Amer. Journ. Sci. 3rd series, vol. vii. p. 212 (1874).

Galathodes, A. Milne-Edwards, Bull. Mus. Comp. Zool. Harv. Coll. vol. viii. no. 1, p. 53 (1880).

Munidopsis brevimana, n. sp.

Rostrum spinulous, slightly upturned towards the tip. Carapace glabrous, with small transverse raised lines; gastric region swollen, armed with two prominent spines, the lateral borders with four or five spines. Eye-stalks movable, prolonged into a delicate spine both above and below the colourless corneæ. Chelipedes shorter than the first pair of ambulatory limbs, the digits broad and excavated. Ambulatory limbs having the meral and carpal joints with a row of spines superiorly, the propodi nearly twice the length of the tarsi. The second, third, and fourth abdominal segments with a slight transverse bicarination.

It is allied to *M.* (*Galathodes*) *Renoldsi*, A. M.-E.

Length of body (of a ♀ with ova) 60 millim.; length of chelipedes 32 millim.

Loc. Station 218 [off the Admiralty Is.], 1070 fathoms.

Munidopsis subsquamosa, n. sp.

Rostrum spinulous and nearly straight, slightly compressed laterally. Carapace sparingly pubescent, covered posteriorly with raised imbricated lines (giving a scale-like appearance); in front showing a tendency to become tubercular or spinose; gastric region circumscribed, armed with several spines, the hepatic and anterior branchial regions deeply excavated. Lateral borders of carapace with two prominent upturned spines in front, and several smaller behind these. Eye-stalks slightly movable, prolonged into a spine in front of the cornea. Chelipedes robust, the various joints tuberculate, the merus and carpus slightly spiny. Ambulatory limbs robust, the first pair slightly exceeding the chelipedes, with the meral, carpal, and propodal joints sparingly tuberculate and spiny. Abdominal segments tuberculate, the second, third, and fourth slightly bicarinate transversely.

Length of body (of a ♂) 67 millim.; length of chelipedes 46 millim.

Loc. Station 237 [off the Japanese coast], 1875 fathoms.

Munidopsis Milleri, n. sp.

Rostrum short and spinulous, slightly upturned. Carapace

with a few raised transverse lines posteriorly, almost smooth in front; gastric region circumscribed, armed with two small spines (occasionally four); the cardiac region circumscribed and with several spinules on the anterior border. Lateral borders of carapace four-spined, the posterior border raised, and armed with from five to eight spines. Chelipedes with the propodal joints flattened and a single large blunt tooth on each digit. Ambulatory limbs long and slender. The second and third abdominal segments transversely bicarinate, the fourth slightly carinate.

Length of body (of a ♀ with ova) 33 millim.; length of chelipedes 39 millim.

Loc. Station 207 [off the Philippines], 700 fathoms.

Munidopsis trifida, n. sp.

Rostrum armed with two lateral teeth, the central point long and upturned. Carapace glabrous, with slight transverse rugosities; two prominent spines on the gastric region and four on the lateral borders. The eye-stalks not prolonged into spines. Chelipedes slender, with three rows of spines on the meral joints and a single row on the inner surface of the propodi. Ambulatory limbs long, the meral and carpal joints with a row of spines on the upper border. Abdominal segments smooth, the second and third slightly grooved transversely.

It is allied to *M. (Galathodes) latifrons*, A. M.-E., and *M. (Galathodes) tridens*, A. M.-E.

Length of body (of a ♀) 40 millim.; length of chelipedes 47 millim.

Loc. Station 310 [Straits of Magellan], 400 fathoms.

Munidopsis pilosa, n. sp.

Rostrum long and spinulous. The body and limbs covered everywhere with short densely-set hairs. Eyes rudimentary, the corneæ very minute, each ocular peduncle prolonged into a long spine which runs parallel with but does not equal the rostrum. Chelipedes very short, not twice the length of the external maxillipedes. Ambulatory limbs robust, the meral joints strongly spined above and below.

Length of body (of a ♂) 24 millim.; length of chelipedes 10 millim.

Loc. Station 196 [off Gilolo Is.], 825 fathoms.

ELASMONOTUS, A. Milne-Edwards.

Elasmonotus, A. Milne-Edwards, l. c. p. 60.

Elasmonotus latifrons, n. sp.

Rostrum broadly triangular, simple and flattened. Carapace covered everywhere with rounded tubercles, the regions well marked. Eyes minute, the corneae rudimentary, ocular peduncles fused with the side of the rostrum. Chelipedes robust, granulated. Ambulatory limbs short and robust, granulated; upper borders of meral, carpal, and propodal joints with a row of blunt spines. Second, third, and fourth abdominal segments transversely bicarinate.

Length of body (of a ♂) 34 millim.; length of chelipedes 23 millim.

Loc. Station 218 [off the Admiralty Islands], 1070 fathoms.

Elasmonotus marginatus, n. sp.

Allied to the last; the rostrum, however, is narrower and turned up and the tubercles on the carapace larger. The lateral borders of the carapace are characteristically raised and project upwards and outwards. The chelipedes and ambulatory limbs are clothed with hairs and spines both on the upper and lower margins, the spines being most prominent on the carpal and meral joints. The second, third, and fourth abdominal segments are strongly carinate transversely.

Length of body (of a ♀ with ova) 50 millim.; length of chelipedes 32 millim.

Loc. Station 168 [off New Zealand], 1100 fathoms.

Elasmonotus Miersii, n. sp.

Rostrum short, with the sides parallel at first, then abruptly tapering to the apex. Surface of body and limbs everywhere minutely granulated. Gastric region of carapace well mapped out, with two prominent blunt spines in front. Chelipedes with several rounded tubercles on the inner border of the meral joints. Ambulatory limbs with a row of tubercles on both the upper and lower borders of the meral joints. Abdominal carinae almost obsolete.

Length of body (of a ♂) 15 millim.; length of chelipedes 17 millim.

Loc. Station 173 [off the Fiji Islands], 300 fathoms.

Elasmonotus asper, n. sp.

In this species the carapace is remarkably flattened and covered everywhere with rough tubercles, the intervals between

these being finely granulated. The rostrum is flattened and spiniform, with the apex bidentate, the upper point turned up and blunt, the lower broad and flattened. Chelipedes and ambulatory limbs tuberculate, the tarsi short and curved, without teeth on the lower border. Second and third abdominal segments tuberculate, and each with a prominent dorsal projection.

Length of body (of a ♀ with ova) 28 millim.; length of chelipedes 27 millim.

Loc. Station 107 [off the coast of Brazil], 1500 fathoms; station 311 [Straits of Magellan], 245 fathoms.

GALATHOPSIS, n. subgen.

The characters of this proposed new subgenus are somewhat intermediate between those of *Munidopsis* and *Elasmonotus*. The rostrum is triangular, flattened, and simple, resembling that of *Diptychus*. The carapace is swollen and without spines or ridges, the orbito-antennal border short and nearly horizontal. The eye-stalks are freely movable and without spines, the corneæ being pigmentless. The limbs are short and robust. It is distinguished from *Munidopsis* by the form of the rostrum and by the absence of spines on the surface of the carapace; while it differs from *Elasmonotus* chiefly in the form of the carapace, which in the latter genus is usually depressed.

Galathopsis lævigata, n. sp.

Rostrum long and acute. Carapace glabrous, sparingly clothed with fine hairs; the orbito-antennal border with a prominent spine behind the eye, also two on the lateral border near its junction with the former. Chelipedes robust, clothed with delicate hairs and almost obsolete polished tubercles; the digits spoon-shaped. Ambulatory limbs robust and hairy, with polished scales; the meral joints prolonged into a spine at the upper and outer border, the tarsi strongly toothed. Internal antennæ very short, the basal joint stout and spiny. Merus of the external maxillipedes short and broad, with two well-marked spines on the inner border. Abdominal segments smooth, the second, third, and fourth faintly carinate.

Length of body (of a ♀ with ova) 33 millim.; length of chelipedes 18 millim.

Loc. Station 219 [off the Admiralty Islands], 150 fathoms.

Galathopsis debilis, n. sp.

Allied to the last, but the carapace is minutely punctate

and the orbito-antennal and lateral borders are without spines; the rostrum also is shorter. The chelipedes and ambulatory limbs are hairy and minutely granulated. The abdominal carinæ are more strongly marked than in *G. lævigata*.

Length of body (of a ♂) 18 millim.; length of chelipedes 11 millim.

Loc. Station 173 [off the Fiji Islands], 300 fathoms; station 210 [off the Philippines], 375 fathoms.

GALACANTHA, A. Milne-Edwards.

Galacantha, A. Milne-Edwards, *l. c.* p. 52.

Galacantha bellis, n. sp.

Allied to *G. rostrata*, A. M.-E.*; the granulations of that species are, however, superseded by small spiniform tubercles; the central gastric spine is broader and flatter, the lateral spines are narrower and separated by a wider interval, while the spines on the under surface of the base of the rostrum are smaller, and the latter is more elevated.

Length of body (of a ♀ with ova) 65 millim.; length of chelipedes 38 millim.

Loc. Station 300 [off Juan Fernandez], 1375 fathoms.

PTYCHOGASTER, A. Milne-Edwards.

Ptychogaster, A. Milne-Edwards, *l. c.* p. 63.

Ptychogaster Milne-Edwardsi, n. sp. †

Rostrum more than twice the length of the ocular peduncles, spiniform and upturned. Carapace covered with spines arranged in longitudinal rows. Chelipedes and ambulatory limbs very long and slender, covered with rows of spines; the digits of the chelæ smooth and their apposed edges furnished with short hairs and a few minute teeth. All the abdominal segments thickly beset with small spines.

Length of body (of a ♂) 55 millim.; length of chelipedes 118 millim.

Loc. Station 310 [Straits of Magellan], 400 fathoms.

Ptychogaster lævis, n. sp.

Rostrum slightly exceeding the ocular peduncles, almost straight. Carapace glabrous, unarmed, with the exception of a few small spines on the gastric region, the lateral borders

* S. I. Smith, *Bull. Mus. Comp. Zool.* vol. x. no. 1, pl. ix.

† Narrative of the Voyage of the 'Challenger,' vol. i. pt. 2, p. 900, fig. 330.

with about five delicate spines. Chelipedes very slender, furnished with rows of spinules, the ambulatory limbs with spatulate tarsi. Abdominal segments smooth and glabrous.

Length of body (of a ♀ with ova) 15 millim.; length of chelipedes 32 millim.

Loc. Station 192 [off the Kai Islands], 129 fathoms.

DIPTYCHUS, A. Milne-Edwards.

Diptychus, A. Milne-Edwards, *l. c.* p. 61.

Diptychus insignis, n. sp.

Rostrum long, slightly upturned, with two or three minute lateral teeth towards the apex. Eyes minute. Carapace with a row of small spines in front, extending across the gastric and hepatic regions, the remainder of its surface smooth and glabrous: the lateral border furnished nearly as far as its posterior termination with small spines, of which the first and those corresponding to the ends of the gastro-hepatic row are largest. Chelipedes robust, the meral and carpal joints strongly tuberculate and armed with several prominent spines. Ambulatory limbs with the tarsi short and strongly toothed, the inferior margin of the propodal joints produced distally and furnished with spines.

Length of body (of a ♂) 32 millim.; length of chelipedes 44 millim.

Loc. Station 145 [off Prince Edward Island], 310 fathoms.

Diptychus spinimarginatus, n. sp.

Rostrum almost straight, long and narrow, the borders with two or three minute teeth towards the apex. Eyes minute. Carapace narrowed anteriorly, sparingly clothed with delicate hairs, especially towards the sides, the posterior half of the lateral borders armed with five large spines and a few smaller in front of these. Chelipedes long, slender, and cylindrical, the carpal and propodal joints smooth and about equal in length. Ambulatory limbs with the upper border of the meral joints spiny, the first pair very slender.

It is allied to *D. armatus*, A. M.-E., but in the latter the carapace is armed laterally with seven or eight spines, and the ambulatory limbs are smooth.

Length of body (of a ♀ with ova) 21 millim.; length of chelipedes 29 millim.

Loc. Station 170 [off the Kermadec Islands], 520 fathoms; station 214 [off the Philippines], 500 fathoms.

Diptychus parvulus, n. sp.

Rostrum about three times the length of the ocular peduncles, entire, the upper surface slightly hollowed out. Carapace smooth and glabrous, the lateral borders minutely dentate. Chelipedes with the meral and carpal joints short and armed with small teeth, the hand longer and more dilated than either of the former joints. Ambulatory limbs with the meral joints slightly dentate, the propodi furnished distally with a series of spines on the lower border.

Length of body (of a ♂) 12 millim.; length of chelipedes 17 millim.

Loc. Station 310 [Straits of Magellan], 400 fathoms.

Diptychus politus, n. sp.

Rostrum narrow, only slightly exceeding the ocular peduncles; apex subobtuse. Carapace narrow and glabrous, without spines or hairs. Chelipedes smooth, the propodal joint slightly broader and longer than the carpal, the digits with two rounded tubercles on the inner border, both fingers clothed at their extremities with delicate hairs. Ambulatory limbs slender, the tarsal and propodal joints with a few spines, otherwise smooth.

Length of body (of a ♂) 15 millim.; length of chelipedes 24 millim.

Loc. Station 171 [north of the Kermadec Islands], 600 fathoms.

Diptychus australis, n. sp.

Allied to the last, but differs in the following respects:—The gastric region of the carapace is swollen and bears two very minute denticles. The chelipedes are proportionately longer and more slender, especially the carpal joints; the inner surface of the meral and ischial joints with several rows of very minute tubercles. The propodi of the ambulatory limbs long. The squama of the external antennæ equals the peduncle in length, whereas in *D. politus* it is very small.

Length of body (of an adult ♀) 21 millim.; length of chelipedes 39 millim.

Loc. Station 164 [off Port Jackson], 410 fathoms; station 170 [north of the Kermadec Islands], 520 fathoms; station 171 [north of the Kermadec Islands], 600 fathoms; station 194 [off Banda Island], 360 fathoms.

Diptychus gracilimanus, n. sp.

Allied to *D. politus* and *D. australis*, but differs from both

in the greatly elongated and slender chelipedes; the eyes also are smaller than in either of these species. The carapace, chelipedes, and ambulatory limbs are everywhere smooth and glabrous.

Length of body (of a ♀ with ova) 20 millim.; length of chelipedes 50 millim.

Loc. Station 164 [off Port Jackson], 410 fathoms.

Diptychus tridentatus, n. sp.

Rostrum hollowed out superiorly, the apex tridentate. Lateral borders of the carapace armed with small spines; a few minute denticles on the subhepatic region. The terminal joint of the peduncle of the external antenna prolonged into a spine. Chelipedes and ambulatory limbs wanting in the only specimen.

Length of body (of a ♀ with ova) 12 millim.

Loc. Probably from the East-Indian archipelago. It is labelled "Amboyna, 15 fms.," but, judging from the known vertical distribution of the genus, this is evidently a mistake.

XI.—Notes on Australian Lepidoptera, with Descriptions of new Species. By RUDOLPH ROSENSTOCK, B.A.

[Plate XI.]

[Concluded from p. 385.]

Notodontidæ.

NADIASA, Walk.

(169.) *Nadisa parvigutta*, Walk.

Nadisa parvigutta, Walk. l. c. v. p. 1015.

DISCOPHLEBIA, Feld.

(195.) *Discophlebia catocalina*, Feld.

Discophlebia catocalina, Feld. Novara Het. pl. xcvi. fig. 8.

(419.) *Discophlebia Lucasii* ♀, n. sp. (Pl. XI. fig. 4.)

Head cinereous grey, with a transverse black line in front of the antennæ; thorax greyish, anterior third tawny brown, bordered by chocolate-brown in front and by a brownish-