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40

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AT HARVARD COLLEGE  
Vol. LII. No. 16.

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DECAPOD CRUSTACEANS COLLECTED IN  
DUTCH EAST INDIA AND ELSEWHERE BY  
MR. THOMAS BARBOUR IN 1906-1907.

By MARY J. RATHBUN.

With Six Plates.

CAMBRIDGE, MASS., U. S. A.:  
PRINTED FOR THE MUSEUM.  
SEPTEMBER, 1910.



REPORTS ON THE SCIENTIFIC RESULTS OF THE EXPEDITION TO THE EASTERN TROPICAL PACIFIC, IN CHARGE OF ALEXANDER AGASSIZ, BY THE U. S. FISH COMMISSION STEAMER "ALBATROSS," FROM OCTOBER, 1904, TO MARCH, 1905, LIEUTENANT COMMANDER L. M. GARRETT, U. S. N., COMMANDING, PUBLISHED OR IN PREPARATION:—

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| <p>A. AGASSIZ. V.<sup>5</sup> General Report on the Expedition.</p> <p>A. AGASSIZ. I.<sup>1</sup> Three Letters to Geo. M. Bowers, U. S. Fish Com.</p> <p>A. AGASSIZ and H. L. CLARK. The Echini.</p> <p>H. B. BIGELOW. XVI.<sup>16</sup> The Medusae.</p> <p>H. B. BIGELOW. The Siphonophores.</p> <p>R. P. BIGELOW. The Stomatopoda.</p> <p>O. CARLGRÉN. The Actinarians.</p> <p>S. F. CLARKE. VIII.<sup>8</sup> The Hydroids.</p> <p>W. R. COE. The Nemertean.</p> <p>L. J. COLE. XIX.<sup>19</sup> The Pycnogonida.</p> <p>W. H. DALL. XIV.<sup>14</sup> The Mollusks.</p> <p>C. R. EASTMAN. VII.<sup>7</sup> The Sharks' Teeth.</p> <p>W. G. FARLOW. The Algae.</p> <p>S. GARMAN. XII.<sup>12</sup> The Reptiles.</p> <p>H. J. HANSEN. The Cirripeds.</p> <p>H. J. HANSEN. The Schizopods.</p> <p>S. HENSHAW. The Insects.</p> <p>W. E. HOYLE. The Cephalopods.</p> <p>W. C. KENDALL and L. RADCLIFFE. The Fishes.</p> <p>C. A. KOFOID. III.<sup>3</sup> IX.<sup>9</sup> XX.<sup>20</sup> The Protozoa.</p> <p>P. KRUMBACH. The Sagittae.</p> | <p>R. VON LENDENFELD. XXI.<sup>21</sup> The Silices as Sponges.</p> <p>H. LUDWIG. The Holothurians.</p> <p>H. LUDWIG. The Starfishes.</p> <p>H. LUDWIG. The Ophiurans.</p> <p>G. W. MÜLLER. The Ostracods.</p> <p>JOHN MURRAY and G. V. LEE. XVII.<sup>17</sup> The Bottom Specimens.</p> <p>MARY J. RATHBUN. X.<sup>10</sup> The Crustacea Decapoda.</p> <p>HARRIET RICHARDSON. II.<sup>2</sup> The Isopods.</p> <p>W. E. RITTER. IV.<sup>4</sup> The Tunicates.</p> <p>ALICE ROBERTSON. The Bryozoa.</p> <p>B. L. ROBINSON. The Plants.</p> <p>G. O. SARS. The Copepods.</p> <p>F. E. SCHULZE. XI.<sup>11</sup> The Xenophyphoras.</p> <p>H. R. SIMROTH. The Pteropods and Heteropods.</p> <p>E. C. STARKS. XIII.<sup>13</sup> Atelaxia.</p> <p>TH. STUDER. The Alcyonaria.</p> <p>JH. THIELE. XV.<sup>15</sup> Bathyscladium.</p> <p>T. W. VAUGHAN. VI.<sup>6</sup> The Corals.</p> <p>R. WOLTERECK. XVIII.<sup>18</sup> The Amphipods.</p> <p>W. McM. WOODWORTH. The Annelids.</p> |
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- <sup>1</sup> Bull. M. C. Z., Vol. XLVI., No. 4, April, 1905, 22 pp.
- <sup>2</sup> Bull. M. C. Z., Vol. XLVI., No. 6, July, 1905, 4 pp., 1 pl.
- <sup>3</sup> Bull. M. C. Z., Vol. XLVI., No. 9, September, 1905, 5 pp., 1 pl.
- <sup>4</sup> Bull. M. C. Z., Vol. XLVI., No. 13, January, 1906, 22 pp., 3 pls.
- <sup>5</sup> Mem. M. C. Z., Vol. XXXIII., January, 1906, 90 pp., 96 pls.
- <sup>6</sup> Bull. M. C. Z., Vol. L., No. 3, August, 1906, 14 pp., 10 pls.
- <sup>7</sup> Bull. M. C. Z., Vol. L., No. 4, November, 1906, 26 pp., 4 pls.
- <sup>8</sup> Mem. M. C. Z., Vol. XXXV., No. 1, February, 1907, 20 pp., 15 pls.
- <sup>9</sup> Bull. M. C. Z., Vol. L., No. 6, February, 1907, 48 pp., 18 pls.
- <sup>10</sup> Mem. M. C. Z., Vol. XXXV., No. 2, August, 1907, 56 pp., 9 pls.
- <sup>11</sup> Bull. M. C. Z., Vol. LI., No. 6, November, 1907, 22 pp., 1 pl.
- <sup>12</sup> Bull. M. C. Z., Vol. LII., No. 1, June, 1908, 14 pp., 1 pl.
- <sup>13</sup> Bull. M. C. Z., Vol. LII., No. 2, July, 1908, 8 pp., 5 pls.
- <sup>14</sup> Bull. M. C. Z., Vol. XLIII., No. 6, October, 1908, 285 pp., 22 pls.
- <sup>15</sup> Bull. M. C. Z., Vol. LII., No. 5, October, 1908, 11 pp., 2 pls.
- <sup>16</sup> Mem. M. C. Z., Vol. XXXVII., February, 1909, 243 pp., 48 pls.
- <sup>17</sup> Mem. M. C. Z., Vol. XXXVIII., No. 1, June, 1909, 172 pp., 5 pls., 3 maps.
- <sup>18</sup> Mem. M. C. Z., Vol. LII., No. 9, June, 1909, 26 pp., 8 pls.
- <sup>19</sup> Bull. M. C. Z., Vol. LII., No. 11, August, 1909, 10 pp., 3 pls.
- <sup>20</sup> Bull. M. C. Z., Vol. LII., No. 13, September, 1909, 48 pp., 4 pls.
- <sup>21</sup> Mem. M. C. Z., Vol. XLI., August, September, 1910, 323 pp., 56 pls.

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No. 16.—*Decapod Crustaceans collected in Dutch East India and elsewhere by Mr. Thomas Barbour in 1906-1907.* By MARY J. RATHBUN.

All the species noted were collected in the Dutch East Indian islands except three of the Potamonidae and one Bithynis from the fresh waters of northern India and the rare *Thaumastocheles zaleucus* from deep water off Japan, which was acquired through Mr. Alan Owston. Other species little known in collections are *Utica nausithoe* and *Macrophthalmus definitus*. Despite the extensive explorations by the Dutch in Java, Mr. Barbour's collection yields an undescribed species of potamonid from Buitenzorg which represents a new type of the subgenus Parathelphusa.

CALAPPIDAE.

*Matuta lunaris* (FORSKÅL).

*Matuta victor* Alcock, Journ. Asiat. Soc. Bengal, 1896, 65, p. 160.

Celebes: Makassar; 1 ♂.

INACHIDAE.

*Paramicippa platipes* (RÜPPELL).

*Paramicippa platipes* de Man, Arch. f. Naturg., 1887, 53, pt. 1, p. 227.

Moluccas: Amboyna; 1 small ♂.

OCYPODIDAE.

*Ocypode ceratophthalma* (PALLAS).

*Ocypoda ceratophthalma* Alcock, op. cit., 1900, 69, p. 345.

Moluccas: Galela, Halmaheira Island; 7 juv.

Lombok: Ampenan; 4 juv. In the largest specimen the stridulating ridge is undeveloped.

*Uca annulipes* (MILNE EDWARDS).

*Gelasimus annulipes* Alcock, op. cit., 1900, 69, p. 353, not *Gelasimus perplexus* Milne Edwards.

Celebes: Makassar, from mangrove swamp; 34 ♂ 4 ♀.



***Uca perplexa* (MILNE EDWARDS).**

Plate 1, figs. 1-2.

- *Gelasimus perplexus* Milne Edwards, Ann. Sci. Nat. Zoöl., 1852 (3), **18**, p. 150 [114], pl. 4, figs. 18, 18a.

Moluccas: Wahaai, Ceram Island, in mangrove swamp; 2 ♂.

Celebes: Makassar; one claw.

Compared with specimens from New Caledonia, determined by A. Milne Edwards.

***Uca gaimardi* (MILNE EDWARDS).**

- Gelasimus gaimardi* Milne Edwards, Ann. Sci. Nat. Zoöl., 1852 (3), **18**, p. 150 [114], pl. 4, figs. 17, 17a (*gaimardii*).

Moluccas: Gane, Halmahera Island, on land; 1 ♂ 1 ♀.

Moluccas: Amboyna; 1 ♀ very young; some doubt as to determination.

***Uca tetragonon* (HERBST).**

*Gelasimus tetragonum* Alcock, *op. cit.*, 1900, **69**, p. 357.

Moluccas: Wahaai, Ceram Island, from mangrove swamp; 1 ♂.

***Uca marionis* (DESMAREST).**

*Gelasimus marionis* Alcock, *op. cit.*, 1900, **69**, p. 359.

Celebes: Makassar; 5 ♂ 2 ♀.

Moluccas: Wahaai, Ceram Island, mangrove swamp; 6 ♂.

***Uca coarctata* (MILNE EDWARDS).**

- Gelasimus coarctatus* Milne Edwards, Ann. Sci. Nat. Zoöl., 1852 (3), **18**, p. 146 [110], pl. 3, fig. 6.

Celebes: Makassar, mangrove swamp; 2 ♂ 1 ♀.

***Uca dussumieri* (MILNE EDWARDS).**

*Gelasimus dussumieri* Alcock, *op. cit.*, 1900, **69**, p. 361.

Celebes: Makassar, mangrove swamp; 1 ♂.

***Uca urvillei* (MILNE EDWARDS).**

*Gelasimus urvillei* Alcock, *op. cit.*, 1900, **69**, p. 362.

Moluccas: Wahaai, Ceram Island, in mangrove swamp; 1 ♀.

***Macrophthalmus latreillei* (MILNE EDWARDS).**

- Macrophthalmus latreillei* Laurie, Ceylon Pearl Oyster report, Brachyura, 1906, p. 427, pl. 2, fig. 3, text fig. 12.

Celebes: Makassar; 1 ♂.

**Macrophthalmus pacificus** DANA.

Plate 1, fig. 3.

*Macrophthalmus pacificus* de Man, Notes Leyden Mus., 1890, 12, p. 79, pl. 4, fig. 10.

Moluccas: Amboyna; 2♂ 2♀ 1 juv. The "two minutely granulated, pubescent, longitudinal lines," described by de Man as running parallel with each other not far from the postero-lateral margins, are scarcely distinguishable in these specimens. The central part of the carapace is smooth (non-granulate). The arcuate edge of the front has a tendency to bilobe.

**Macrophthalmus definitus** ADAMS AND WHITE.

Plate 2, fig. 1.

*Macrophthalmus definitus* Ortmann, Zool. Jahrb. Syst., 1897, 10, p. 342.

Celebes: Makassar; 1♀. Compared with specimens from the Philippines in the Museum of the Academy of Natural Sciences of Philadelphia,<sup>1</sup> and determined by Dr. Ortmann (*loc. cit.*).

The general aspect is much the same as in *M. japonicus*,<sup>2</sup> but the following differences are observed: The carapace is decidedly narrower in *definitus*, its length  $\frac{3}{4}$  of its greatest width (in *japonicus*, length about  $\frac{2}{3}$  greatest width); a granulated line several granules in width and concave forward, on each epigastric lobe; the smooth areas of the dorsal surface are well defined, that on the gastric region has somewhat the form of a clover leaf, those on the hepatic region and at the antero-internal angle of the branchial region are subtriangular; that on the cardiac and intestinal regions is mushroom-shaped; the front between the eyes is less constricted or hourglass-shaped.

The cheliped of the male is considerably larger in *M. definitus*, specimens of a size compared. The lower surface of the arm is devoid of the thick mat of long hair that exists in *M. japonicus*; the outer surface of the palm is rolled over inward at its proximal end more strongly; upper edge of the palm blunt and coarsely granulate, with no line of single granules (in *japonicus* there are two rather well-defined lines of granules, those of the inner line larger and sharper than those of the outer; also on the inner surface a little below the upper edge, an incomplete line of granules coarser than the others on the inner surface); the greater part of the inner surface of the palm as well as the inner surface of the fingers is covered with long hair. In both species there is a squarish, truncate tooth near the base of the dactyl, but it is very much smaller in *M. definitus*; the low, oblique tooth on the immovable finger is situated near its middle in *definitus*, but is not far from the proximal end in *japonicus*, so that the teeth of the opposing fingers strike each other in *japonicus*, but are widely separated in *definitus*. Chelipeds of female similar in the two species. Legs narrower in *definitus*, merus joints

<sup>1</sup> Through the kindness of Mr. Witmer Stone.

<sup>2</sup> De Haan, Fauna Japon., 1835, p. 54, pl. 7, fig. 1 (♀), pl. 15, fig. 2 (♂).

of second and third pairs narrowing more at the distal end; distal spine smaller, slenderer; legs of second and third pairs more pubescent and hairy. In *definitus* the third abdominal segment of the male, and the second and third of the female, are crossed by a transverse ridge, lacking in *japonicus*; each of the segments in the male, except the second and seventh, is longer in proportion to its width than in *japonicus*.

*Dimensions*. — ♂, Philippines: length 23.2 mm., greatest width (posteriorly) 30 mm., width at antero-lateral angles 27.8 mm.

♀, Makassar: length 19.6 mm., greatest width (posteriorly) 25 mm., width at antero-lateral angles 22.2 mm.

### GRAPSIDAE.

#### *Grapsus grapsus tenuicrustatus* (HERBST).

*Grapsus grapsus tenuicrustatus* Rathbun, Bull. Bur. Fisheries for 1903, 1906, part 3, p. 838.

Dutch New Guinea: Sorong; 1 mature ♀ with a large Rhizocephalid filling the abdomen.

Moluccas: eastern part of harbor of Tifou, Bourou Island, 1 ♀.

#### *Metopograpsus latifrons* (WHITE).

*Metopograpsus latifrons* Milne Edwards, Ann. Sci. Nat. Zool., 1853 (3), 20, p. 166 [132].

Dutch New Guinea: Sorong; 1 ♂ 1 ♀ ovigerous.

#### *Utica nausithoe* DE MAN.

Plate 2, figs. 2-3.

*Utica nausithoe* de Man, Zool. Jahrb. Syst., 1895, 9, p. 113, pl. 28, figs. 24-24c (Atjeh).

Bali: Boeleleng; 1 ♂. Length 25.2 mm.; width 27 mm. The posterior foot is considerably shorter than the others, not reaching beyond the middle of the propodus of the preceding pair.

#### *Metasesarma rousseauxi* MILNE EDWARDS.

*Metasesarma rousseauxii* Alcock, *op. cit.*, 1900, 69, p. 427.

Moluccas: Patani, Halmahera Island; 1 ♂ 4 ♀.

Dutch New Guinea: Saonek, Waigiu Island; 1 ♂ juv.

Dutch New Guinea: Manokwari, beach; 2 ♂.

#### *Metasesarma aubryi* A. MILNE EDWARDS.

*Sesarma* (*Metasesarma*) *aubryi* de Man, Zool. Jahrb. Syst., 1895, 9, p. 130; 1898, 10, pl. 29, fig. 27.

Moluccas: Patani, Halmahera Island; 2 ♂.

Dutch New Guinea: Sorong; 1 ♀.

Dutch New Guinea: Manokwari, beach; 1 ♂ 1 ♀.

**Sesarma (Sesarma) noduliferum** DE MAN.

*Sesarma (Geosesarma) nodulifera* de Man, in Weber, Zool. Ergeb. Niederl. Ost-Indien, 1892, 2, p. 342, pl. 20, fig. 16.

Java: Buitenzorg; 2 ♂.

**Sesarma (Sesarma) sylvicola** DE MAN.

*Sesarma (Sesarma) sylvicola* de Man, in Weber, Zool. Ergeb. Niederl. Ost-Indien, 1892, 2, p. 345, pl. 20, fig. 18.

Java: from stream on Mt. Papangdaiang, Garoet; 1 ♀.

**Sesarma (Sesarma) gracilipes** MILNE EDWARDS.

Plate 3, figs. 1-2.

*Sesarma (Sesarma) gracilipes* de Man, Abh. Senckenb. naturf. Ges., 1902, 25, heft 3, 1902, p. 507, pl. 19, fig. 7.

Dutch New Guinea: Manokwari; 1 ♂. Carapace 17 mm. long, 17.8 mm. wide. The lateral teeth are unmistakable; they are obtuse angled and scarcely project sideways one beyond the other, but are elevated each above the preceding; they are further accented by a dark spot on the otherwise light-colored margin. The dactyli of the legs taper very little up to the horny tips; the posterior margin is nearly straight.

**Sesarma (Chiromantes) bidens** (DE HAAN).

*Sesarma bidens* Alcock, *op. cit.*, 1900, 69, p. 415.

Moluccas: Gane, Halmahera Island; 1 ♂.

**Sesarma (Parasesarma) plicatum** (LATREILLE).

*Sesarma quadratum* Alcock, *op. cit.*, 1900, 69, p. 413.

Celebes: Makassar, mangrove swamp; 1 ♂.

**Sesarma (Parasesarma) leptosoma** HILGENDORF, VAR.

Plate 4, fig. 1.

*Sesarma leptosoma* de Man, Zool. Jahrb. Syst., 1889, 4, p. 436, pl. 10, fig. 11.

Dutch New Guinea: Pom, Jobi Island; 1 adult ♀. This specimen differs from de Man's description and figure in having even more slender legs. In the third pair of ambulatories, the propodus measures 7.8 mm. on its anterior margin, and 1.6 mm. in its greatest width; dactylus 3.2 mm. long.

Zanzibar (Hilgendorf); Bagamoyo (Pfeffer); Fiji Islands (de Man, Ortmann).



**Plagusia immaculata** LAMARCK.*Plagusia immaculata* de Man, Arch. f. Naturg., 1887, 53, Bd. 1, p. 871.

Dutch New Guinea: Sorong; 1 juv.

**XANTHIDAE.****Carpilius convexus** (FORSKÅL).*Carpilius convexus* Alcock, op. cit., 1898, 67, p. 80.

Moluccas: Amboyna; 1 juv.

**Atergatis ocyroe** (HERBST).*Atergatis floridus* Alcock, op. cit., 1898, 67, p. 98.

Moluccas: Amboyna; 1 ♂.

**Leptodius exaratus** (MILNE EDWARDS), var.*Xantho* (*Leptodius*) *exaratus* Alcock, op. cit., 1898, 67, p. 118.

Moluccas: Amboyna; 2 ♀, 1 ovigerous, 5.2 × 7.9 mm. These are not typical *exaratus*, but approach Stimpson's var. *f. acutidens*.<sup>1</sup> The carapace is well areolated and coarsely granulated, the lateral teeth thickened, especially at the tips, but not so prominent as in var. *acutidens*.

**Eriphia scabricula** DANA.*Eriphia scabricula* Alcock, op. cit., 1898, 67, p. 216.

Moluccas: Amboyna; 1 ♀, with rhizocephalid parasite.

**POTAMONIDAE.****Potamon** (*Potamon*) **granulatus** (DE MAN).

Plate 4, fig. 2.

*Potamon* (*Potamon*) *granulatus* Rathbun, Nouv. Arch. Mus. Hist. Nat., 1904 (4), 6, p. 274.

Java: Tjibureum, at 5200 feet elevation; 1 ♂, dried.

Length 38.2 mm., width 50 mm., width between the outer angles of the orbit 31.7 mm., width across lower edge of front 12.5 mm. This is the largest specimen yet taken. By comparison with the figures by de Man,<sup>2</sup> it is seen to be more swollen laterally at the branchial regions, and relatively narrower across front and orbits; the lobes of the front are slightly more oblique (sloping outward and backward); the longitudinally oblique furrow on the branchial region is less distinct and more curved; the rugosities of the carapace are quite as strong

<sup>1</sup> Smithsonian Misc. Coll., 1907, 49, p. 55, pl. 6, fig. 7.<sup>2</sup> In Max Weber, Zool. Ergeb. Niederl. Ost-Indien, 1892, 2, pl. 16, fig. 5-5d.

but not so extended (toward the middle of the back); the teeth of the prehensile edges of the fingers stronger, the enlarged teeth being more distinctly different in size from the intermediate teeth.

**Potamon (Potamonautes) cunicularis (WESTWOOD).**

**Plate 4, fig. 3.**

*Potamon (Potamonautes) cunicularis* Rathbun, *op. cit.*, 1904 (4), 6, pl. 15, fig. 10; 1905 (4), 7, p. 184.

India: Teesta Valley, at junction of Teesta and Rungeet rivers, border of Bhutan; 1 ♂ juv., 16 mm. long by 20.4 mm. wide. This specimen is considerably narrower than the adult male and also shows other differences which may be due to age. The epigastric lobes (forming the median portion of the postfrontal crest) are a little more oblique; the middle part of the upper border of the orbit is horizontal; the furrow of the ischiognath is deep.

If the identification be correct (no specimens are at hand for comparison), the range of this Indian species is extended; it has not heretofore been recorded from north of lat. 19° 23' N.<sup>1</sup>

**Potamon (Parathelphusa) spiniger (WOOD-MASON).**

*Potamon (Parathelphusa) spiniger* Rathbun, *op. cit.*, 1904 (4), 6, pl. 17, fig. 1; 1905 (4), 7, p. 231.

India: Jungle pond 20 miles southeast of Lucknow; 1 ♂ 2 ♀.

**Potamon (Parathelphusa) tridentatus (MILNE EDWARDS).**

*Potamon (Parathelphusa) tridentatus* Rathbun, *op. cit.*, 1905 (4), 7, p. 234, pl. 13, (Potamonidae 11), fig. 2.

Java: River Tjiliwong, in Botanical Gardens, Buitenzorg, 850 feet altitude; 1 ♂ 5 ♀.

The male measures 29 mm. long, 36.8 mm. wide, 22 mm. between the outer angles of the orbits, 10.2 mm. across lower edge of front. The greatest width is behind the tips of the posterior of the lateral teeth. Occurs with *P. convexus*, but distinguished at sight by its flatter carapace and larger teeth on the lateral margins; comparing the largest males of both species, the abdomen is seen to be much smaller in *convexus*; the sixth segment is about as long as its proximal width in *tridentatus*, but distinctly longer than wide in *convexus*.

<sup>1</sup> This paper was in press before the publication of Alcock's work on the Potamonidae of India, and at the time of proof correction his memoir is not at hand for comparison.

**Potamon (Parathelphusa) convexus (DE MAN).**

*Potamon (Parathelphusa) convexus* Rathbun, *op. cit.*, 1905 (4), 7, p. 237, pl. 13 (Potamonidae 11), fig. 8, text fig. 56.

Java: River Tjiliwong, in Botanical Gardens, Buitenzorg, 850 feet altitude; 23 ♂ 14 ♀. A fine series showing growth variations.

**Potamon (Parathelphusa) dayanus (WOOD-MASON).**

*Potamon (Parathelphusa) dayanus* Rathbun, *op. cit.*, 1905 (4), 7, p. 259, pl. 14 (Potamonidae 12), fig. 7.

India: Mandalay, Upper Burma, in small pond near Theebaw's palace; 1 ♀, 31.2 mm. long, 43.3 mm. wide. Comparing this with a female previously described from Rangoon (*loc. cit.*), the carapace is seen to be smoother (the grooves being partially obliterated). On the right side there are five teeth instead of four, an extra and very short tooth being inserted at the base of the first tooth.

**Potamon (Parathelphusa) barbouri, sp. nov.**

Plate 5, figs. 1-2.

Java: Buitenzorg; 1 ♂ juv., having on the right side the cheliped and first and fourth legs, and on the left side the first and a part of the third and fourth legs.

Carapace depressed, subquadrate, its length  $\frac{3}{4}$  of its width; surface punctate, the punctae connecting by reticulating impressed lines; short faint granulated oblique lines near lateral margins. Cervical suture rather deep, interrupted on either side. Narrow part of mesogastric region defined only at anterior end, from which a deep groove is continued forward, separating the oblique, slightly curved, rugose epigastric lobes. Considerably behind and outside the latter arise the protogastric ridges, which are well defined, acute, crenulated, slightly convex and slightly oblique, stopping far short of the lateral margin and opposite the middle of the second tooth.

Margin of front and orbits crenulate; lower edge of front about  $\frac{1}{3}$  as wide as carapace, faintly bilobed by a very broad shallow sinus; sides of front very oblique, upper margin of orbit inclined slightly backward and outward. Antero-lateral teeth five (including the orbital tooth), similar, spiniform, the first one directed forward, the others obliquely outward; the second is a little longer than the others on its outer margin, which is sinuous.

Lower margin of orbit granulate, in ventral view sloping obliquely backward and outward; a stout spine at inner angle. Merus of outer maxilliped very wide and in a plane almost at right angles to that of the ischium; the latter is without a furrow. Cheliped  $1\frac{1}{2}$  times as long as carapace; surface of merus and carpus crossed by fine granulated lines, palm sparingly granulated, granules most visible on upper surface; a sharp subdistal spine on upper margin of merus, and a very strong curved spine at inner angle of carpus; chela weak (in the young male); the greatest length of the dactylus equals the middle length of the palm, and the

height of the palm is a little greater than its superior length; fingers irregularly dentate and narrowly gaping for their basal half. Fourth leg a trifle longer than first and  $1\frac{1}{2}$  times as long as carapace; merus joints with a blunt subdistal angle, that of third leg widening in the middle portion; propodus of last leg  $\frac{3}{4}$  as long as dactylus, measured on outer margin.

Abdomen of male subtriangular, with the margin from the third to the sixth segment concave; first segment widest, second next, third next; first segment crossed by a sharp, laminar, transverse crest; suture between second and third and between fifth and sixth straight, and suture between third and fourth and between fourth and fifth concave forward, so that segment 3 is wider in its outer part than in the middle, and segment 5 is wider in the middle than at the sides; segment 7 subtriangular, sides concave, end rounded.

*Dimensions.* — ♂, length 13.5 mm., greatest width (at fourth tooth) 16.4 mm., width between outer angles of orbit 14 mm., width of front on anterior edge 5.6 mm.

Type 7242 Coll. Museum of Comparative Zoölogy.

*P. barbouri* is the only *Parathelphusa* known with exactly five similar teeth and no additional spinules. All the species with numerous (more than four) spines and spinules are restricted to the continents of Africa and Asia.

## PORTUNIDAE.

### *Portunus sanguinolentus* (HERBST).

*Neptunus sanguinolentus* Alcock, *op. cit.*, 1899, 68, p. 32.

Celebes: Makassar; 1 ♀ juv.

### *Portunus pelagicus* (LINNÉ).

*Neptunus pelagicus* Alcock, *op. cit.*, 1899, 68, p. 34.

Celebes: Makassar; 2 ♂ juv.

### *Charybdis cruciata* (HERBST).

*Charybdis* (*Goniosoma*) *crucifera* Alcock, *op. cit.*, 1899, 68, p. 51.

Celebes: Makassar; 1 small ♂.

### *Thalamita crenata* LATREILLE.

*Thalamita crenata* Alcock, *op. cit.*, 1899, 68, p. 76.

Celebes: Makassar; 1 ♀.

Moluccas: Amboyna; 1 ♀.

### *Thalamita prymna* (HERBST).

*Thalamita prymna* Alcock, *op. cit.*, 1899, 68, p. 78.

Dutch New Guinea: Sorong; 1 ♂.



## COENOBITIDAE.

*Coenobita brevipennis* DANA.

*Coenobita clypeata* and var. *brevipennis* Dana, Crust. U. S. Expl. Exped., 1852, 1, p. 473; atlas, 1855, pl. 30, fig. 4a-b.

*Coenobita clypeatus* Latreille. Alcock, Cat. Indian Dec. Crust., 1905, pt. 2, fasc. 1, p. 142, pl. 15, figs. 1, 1a. Not *Cancer clypeatus* Herbst, 1791.

Moluccas: Tifou Bay, Bouron Island; 1 egg-bearing ♀, with carapace 25.8 mm. long.

*Coenobita rugosus* MILNE EDWARDS.

*Coenobita rugosus* Alcock, *op. cit.*, 1905, pt. 2, fasc. 1, p. 143, pl. 14, figs. 3, 3a.

Bali: Boeleleng; 91 specimens.

Moluccas: Wahaai, Ceram Island; 2 specimens.

Moluccas: Patani, Halmaheira Island; 2 specimens.

Dutch New Guinea: Djamma, at high-water mark; 4 specimens.

Dutch New Guinea: Jendee, Roon Island; 4 specimens.

Dutch New Guinea: Sorong; 4 specimens.

*Coenobita cavipes* STIMPSON.

*Coenobita cavipes* Alcock, *op. cit.*, 1905, pt. 2, fasc. 1, p. 146, pl. 14, fig. 1.

Moluccas: Patani, Halmaheira Island; 1 specimen without large claw.

Moluccas: Ternate; 1 specimen.

## PORCELLANIDAE.

*Petrolisthes dentatus* (MILNE EDWARDS).

*Porcellana dentata* de Man, Journ. Linn. Soc. London, Zool., 1888, 22, p. 216.

Moluccas: Amboyna; 1 ovigerous ♀, 5.4 mm. long.

## THAUMASTOCHELIDAE.

*Thaumastocheles zaleucus* (WILLEMOES-SUHM).

Plate 6, figs. 1-2.

*Astacus zaleucus* Willemoes-Suhm, Trans. Linn. Soc. London, 1875 (2), 1, p. 49, pl. 10, fig. 1, near Sombrero Island, W. I., 450 fathoms, 1 ♀ (not ♂) and chelae of a smaller specimen perhaps ♂.

*Thaumastocheles zaleucus* Wood-Mason, Proc. Asiat. Soc. Bengal, 1874, p. 181; 1875, p. 231.

*Thaumastocheles zaleuca* Spence Bate, Challenger Rept., 1888, 24, pt. 52, p. 47, pls. 6, 7, fig. 1.

*Thaumastocheles zaleucus* Doflein, Zool. Anz., 1906, 30, p. 521, text figs. 1-4, deep-sea bank at entrance of Sagami Bay, 1 ♂.

Sagami Bay, about 350 fathoms; Owston collection; 1 ♀. This specimen is larger than any yet recorded: Length 153.5 mm., of which the carapace measures 58.5 mm.; length of large chela 108 mm., of small chela 53.5 mm.

The anterior margin of the carapace outside of the rostrum is nearly transverse; this is not the case in Bate's figure, but is so in Willemoes-Suhm's figure of the same specimen. The larger palm is more swollen in relation to the size of the body; its anterior half has about 8 small spines above, 5 below, and a subdistal spine on the inner side. The fingers move horizontally, the teeth of the immovable finger slipping over those of the movable finger when closed; on the proximal half, the spines of the two fingers form an angle with each other, as shown in Doflein's figure.

### PALINURIDAE.

**Palinurus ornatus** (FABRICIUS?, MILNE EDWARDS).

*Senex ornatus* Ortmann, Zool. Jahrb. Syst., 1891, 6, p. 34.

Dutch New Guinea: Sorong; 2 young specimens. In the larger specimen, the carapace and abdomen measure 33 mm., antenna 56 mm. (tip broken off). There is a transverse whitish band near the posterior end of each of the first six segments of the abdomen; also a longitudinal light band along the side of the carapace; legs violet, longitudinally striped with whitish.

### PENEIDAE.

**Peneus semisulcatus** (DE HAAN).

*Peneus semisulcatus* Alcock Cat. Ind. Dec. Crust., 1906, pt. 3, fasc. 1, p. 10, pl. 1, fig. 2.

Celebes: Makassar; 1 ♀.

**Peneus indicus merguiensis** (DE MAN).

*Peneus indicus* var. *merguiensis* Alcock, *op. cit.*, 1906, pt. 3, fasc. 1, p. 13, pl. 2, fig. 4 (not pl. 19, fig. 1 of de Man).

Celebes: Makassar; 1.

### CRANGONIDAE (= *Alpheidae*).

**Crangon** (= *Alpheus*), sp.

Moluccas: Amboyna; 1 specimen without chelipeds.

### ATYIDAE.

**Atya moluccensis** DE HAAN.

*Atya moluccensis* de Man, in Weber, Zool. Ergeb. Reise Niederl. Ost-indien, 1892, 2, p. 357, pl. 21, fig. 20.

Java: Buitenzorg; 5 specimens.

Bali: Boeleleng, small pond near landing place; 2 small specimens.

***Caridina wyckii gracilipes* DE MAN.**

*Caridina wyckii* var. *gracilipes* de Man, *op. cit.*, 1892, 2, p. 387, pl. 24, figs. 29-29e.

Lombok: Ampenan, fresh water; 4 specimens.

Celebes: Makassar, fresh water; 27 specimens.

**PALAEMONIDAE.**

***Palaemon concinnus* DANA.**

*Leander concinnus* de Man, *op. cit.*, 1892, 2, p. 506.

Bali: Boeleleng, small pond near landing place (fresh water); 1 specimen.

Lombok: Ampenan, fresh water; 1 specimen.

***Bithynis (Eupalaemon) sundaicus* (HELLER).**

*Palaemon (Eupalaemon) sundaicus* de Man, *op. cit.*, 1892, 2, p. 437, pl. 36, fig. 35.

Celebes: Makassar; 2 ♀ (only one claw of second pair). The rostrum is turned distinctly upward at the end and reaches beyond the antennal scale. Rostral formula in each  $\frac{11 \text{ (2 on carapace)}}{4}$ . In specimen 64 mm. long, the fingers and palm of second cheliped are equal and a little shorter than the merus.

***Bithynis (Eupalaemon) elegans* (DE MAN).**

*Palaemon (Eupalaemon) elegans* de Man, *op. cit.*, 1892, 2, p. 440, pl. 26, fig. 36.

Java: Buitenzorg, fresh water; 18 specimens, mostly without claws; only 6 claws of second pair present.

***Bithynis (Eupalaemon) lar* (FABRICIUS).**

*Palaemon (Eupalaemon) lar* de Man, *op. cit.*, 1892, 2, p. 445.

Bali: Boeleleng, small pond near landing place; 1 ♂ 1 ♀ ovigerous, both lacking claws of second pair.

***Bithynis (Parapalaemon) hendersoni* (DE MAN).**

Plate 5, fig. 3.

*Palaemon (Parapalaemon?) hendersoni* de Man, *Ann. Mag. Nat. Hist.*, 1906 (7), 17, p. 405, Darjeeling, Bengal, 2500 feet altitude.

Burma: Gokteik Gorge, border of the southern Shan States, between 3000 and 4000 feet altitude; 5 ♂ 4 ♀. Eleven legs of the second pair are present but mostly detached.

The length of the rostrum varies, reaching from the middle of the penultimate segment to the middle of the last segment of the antennular stalk; the number of teeth ranges from 7 to 10 above (2 or 3 on carapace), usually 7 or 8, and from 2 to 3 below, usually 2; 3 specimens have the formula  $\frac{7(2)}{2}$  (the number in parenthesis being those on the carapace); 4 specimens  $\frac{8(2)}{2}$ , 1 specimen  $\frac{8(3)}{2}$ , 1 specimen  $\frac{10(2)}{3}$ . De Man gives  $\frac{7 \text{ or } 6(3)}{1-2}$ ; his specimens are nearly twice as large as those at hand.

In the largest specimen, a ♀ 37 mm. long, the right second claw, which I take to be the larger of the pair (the left one is absent), measures, merus 4.2 mm., carpus 3.8 mm., palm 5.7 mm., fingers 5.2 mm. In most of the chelae of the second pair, the palm is a little longer than the fingers; in the few cases where the fingers are a little longer than the palm, the cheliped may be the smaller of the two, as in the one measured by de Man.

***Bithynis (Macrobrachium) pilimanus* (DE MAN).**

*Palaemon (Macrobrachium) pilimanus* de Man, in Weber, Zool. Ergeb. Reise Niederl. Ost-Indien, 1892, 2, p. 471, pls. 27 and 28, fig. 44.

Java: Buitenzorg, fresh water; 11 specimens mostly small; only 3 claws of the second pair present.



EXPLANATION OF THE PLATES.

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PLATE 1.

- Fig. 1. *Uca perplexa* ♂. Wahaai. Dorsal.  $\times 2$ .  
Fig. 2. *Uca perplexa* ♂. Wahaai. Ventral.  $\times 2$ .  
Fig. 3. *Macrophthalmus pacificus* ♂. Dorsal.  $\times 2$ .

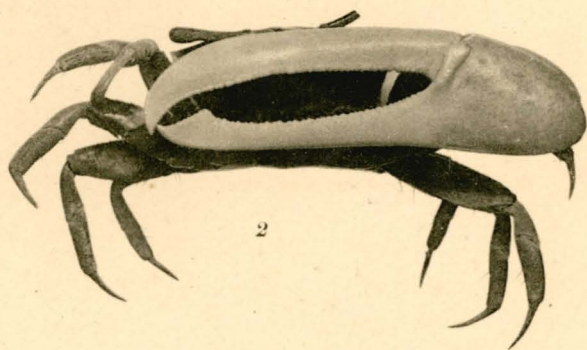
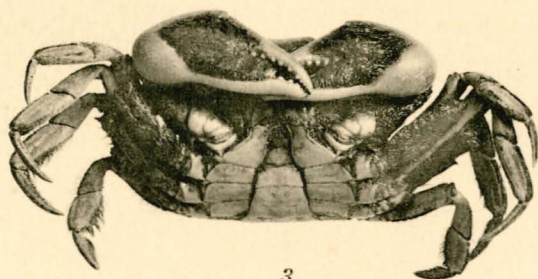


PLATE 2.

Fig. 1. *Macrophthalmus definitus* ♀. Dorsal. Nat. size.

Fig. 2. *Utica nausithoe* ♂. Dorsal. Nat. size.

Fig. 3. *Utica nausithoe* ♂. Ventral. Nat. size.



3



2



1



PLATE 3.

- Fig. 1. *Sesarma* (*Sesarma*) *gracilipes* ♂. Dorsal. × 2.  
Fig. 2. *Sesarma* (*Sesarma*) *gracilipes* ♂. Ventral. × 2.

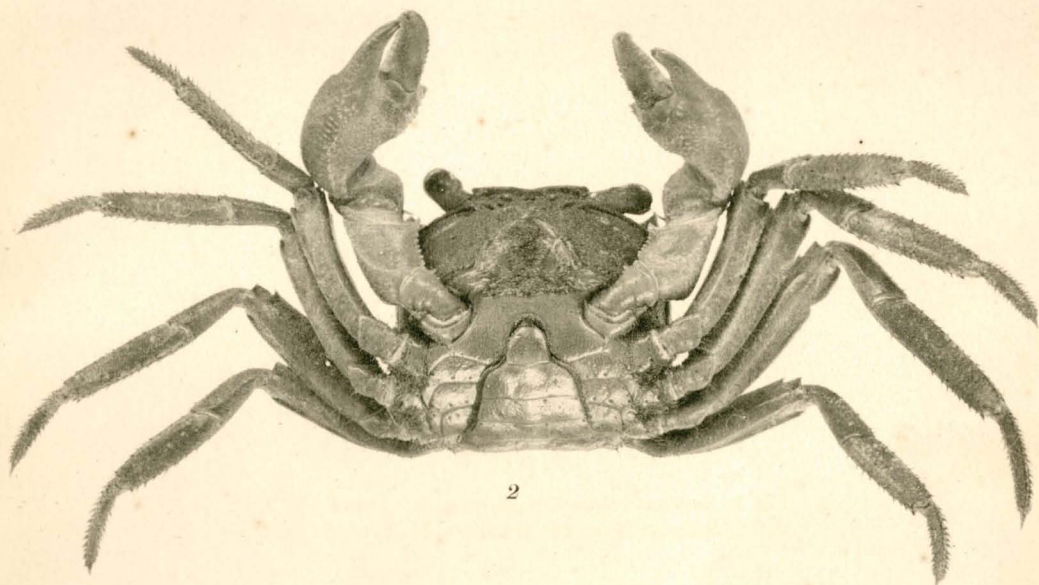
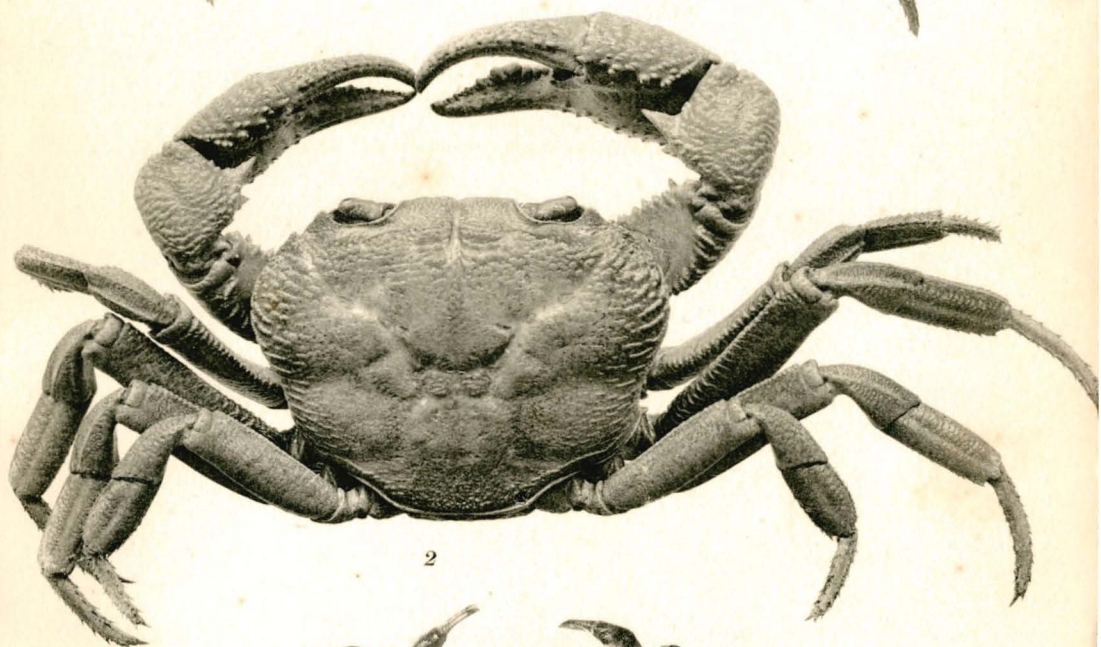


PLATE 4.

- Fig. 1. *Sesarma* (*Parasesarma*) *leptosoma* ♀. Dorsal.  $\times 2$ .  
Fig. 2. *Potamon* (*Potamon*) *granulatus* ♂. Dorsal. Nat. size.  
Fig. 3. *Potamon* (*Potamonautes*) *cunicularis* ♂. Dorsal.  $\times 2$ .



3



2



1



PLATE 5.

- Fig. 1. Potamon (Parathelphusa) barbouri ♂. Dorsal.  $\times 2$ .  
Fig. 2. Potamon (Parathelphusa) barbouri ♂. Ventral.  $\times 2$ .  
Fig. 3. Bithynis (Parapalaemon) hendersoni ♀. Right side.  $\times 2$ .

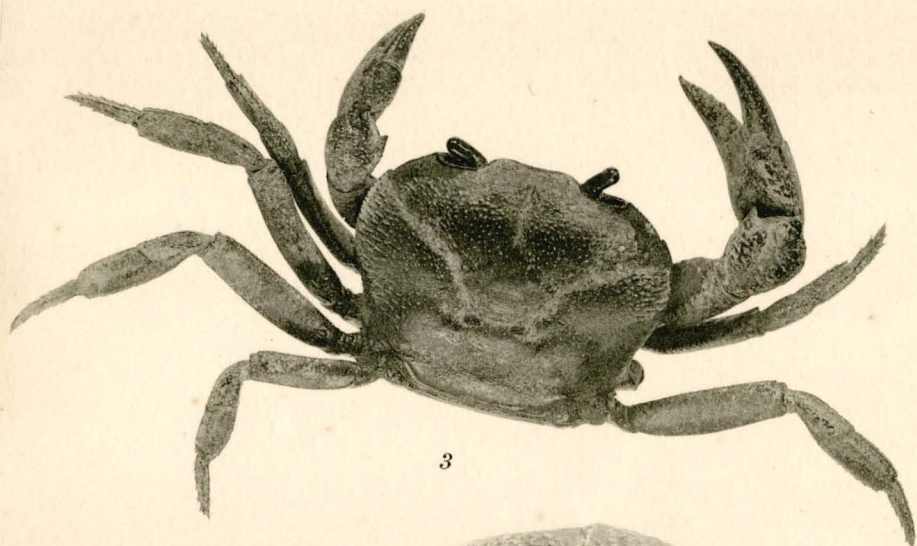
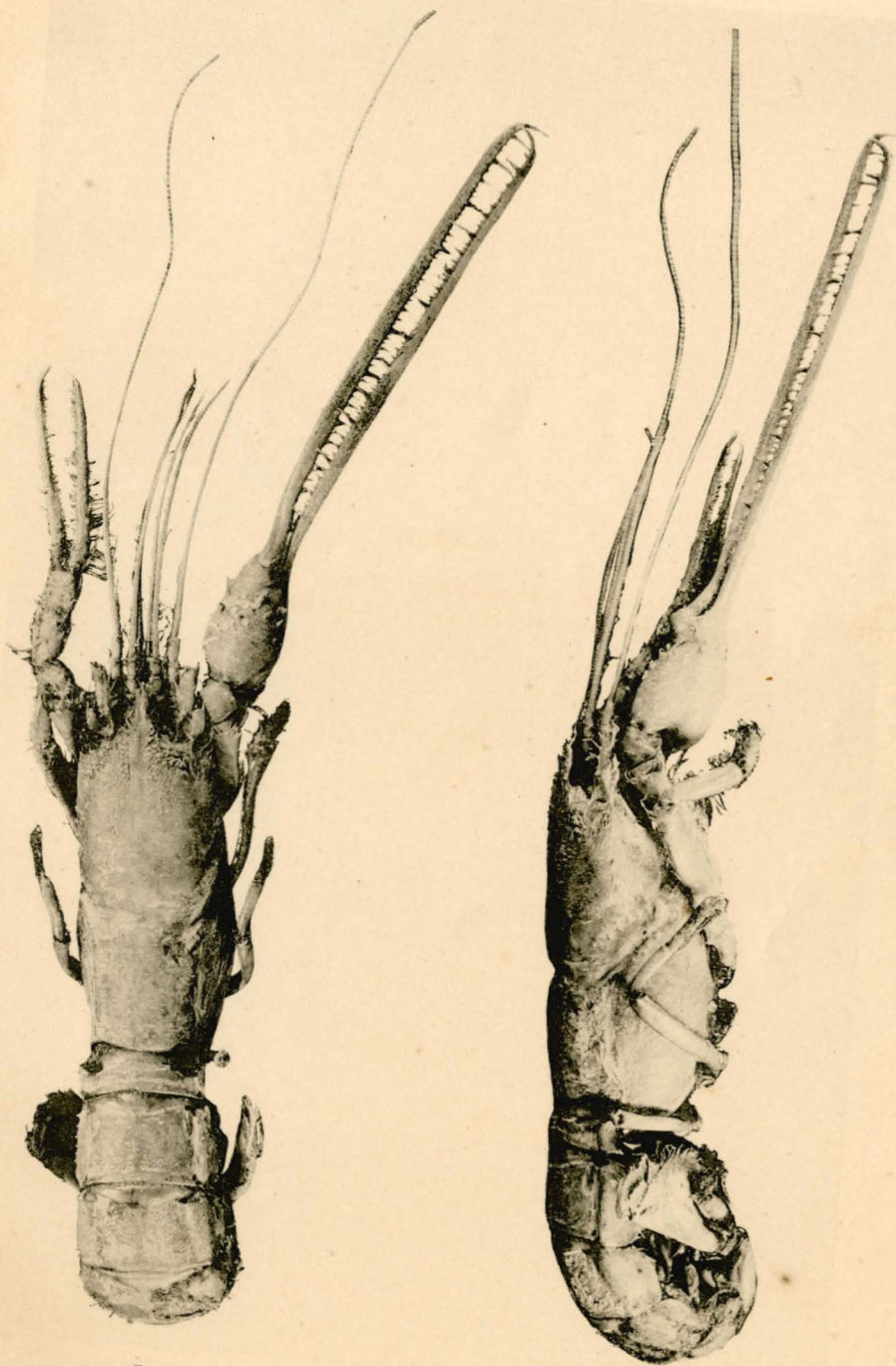


PLATE 6.

Fig. 1. *Thaumastocheles zaleucus* ♀. Dorsal. Nat. size.

Fig. 2. *Thaumastocheles zaleucus* ♀. Right side. Nat. size.



1

2



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S. GARMAN. The Plagiostomes.

Reports on the Results of Dredging Operations in 1877, 1878, 1879, and 1880, in charge of ALEX-  
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H. LUDWIG. The Genus *Pentacrinus*.

A. MILNE EDWARDS and E. L. BOUVIER. The Crustacea of the "Blake."

A. E. VERRILL. The Alcyonaria of the "Blake."

Reports on the Results of the Expedition of 1891 of the U. S. Fish Commission Steamer  
"Albatross," Lieutenant Commander Z. L. TANNER, U. S. N., Commanding, in charge of  
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" The Panamic Deep-Sea Fauna.

H. B. BIGELOW. The Siphonophores.

K. BRANDT. The Sagittæ.

" The Thalassicolæ.

O. CARLGREN. The Actinarians.

W. R. COE. The Nemerteans.

REINHARD DOHRN. The Eyes of Deep-  
Sea Crustacea.

H. J. HANSEN. The Cirripeds.

The Schizopods.

HAROLD HEATH. Solenogaster.

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E. L. MARK. Branchioceranthus.

JOHN MURRAY. The Bottom Specimens.

P. SCHIEMENZ. The Pteropods and Hete-  
ropods.

THEO. STUDER. The Alcyonarians.

— The Salpidæ and Doliolidae.

H. B. WARD. The Sipunculids.

W. McM. WOODWORTH. The Annelids.

Reports on the Scientific Results of the Expedition to the Tropical Pacific, in charge of  
ALEXANDER AGASSIZ, on the U. S. Fish Commission Steamer "Albatross," from August,  
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H. L. CLARK. The Holothurians.

— The Volcanic Rocks.

— The Coralliferous Limestones.

J. M. FLINT. The Foraminifera and Rad-  
olaria.

S. HENSHAW. The Insects.

W. C. KENDALL and E. L. GOLDSBOR-  
OUGH. The Fishes.

R. LENDENFELD. The Siliceous Sponges.

H. LUDWIG. The Starfishes and Ophi-  
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Report on the Results of the Expedition of 1891 of the U. S. Fish Commission Steamer "Albatross," Lieut. Commander Z. L. Tanner, U. S. N., Commanding, in charge of Alexander Agassiz.

Reports on the Scientific Results of the Expedition to the Tropical Pacific, in charge of Alexander Agassiz, on the U. S. Fish Commission Steamer "Albatross," from August, 1899, to March, 1900, Commander Jefferson F. Moser, U. S. N., Commanding.

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Contributions from the Zoölogical Laboratory, Professor E. L. Mark, Director.  
Contributions from the Geological Laboratory.

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