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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.

XVII.

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, LIEUT. COMMANDER L. M. GARRETT, U. S. N., COMMANDING.

XXVIII.

ISOPODA.

BY HARRIET RICHARDSON SEARLE.

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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, Lieut. Commander L. M. Garrett, U. S. N., Commanding.

XXVIII.

Isopoda.

By Harriet Richardson Searle.

The small number of isopods collected by the Albatross expeditions of 1899–1900, and 1904–1905 renders separate reports unnecessary. The peculiar form, *Colypurus agassizi*, was described in a preliminary paper (Bull. M. C. Z., July, 1905, **46**, p. 103–106).

CIROLANIDAE.

Cirolana latistylis Dana.

Cirolana latistylis Dana, U. S. expl. exp., 1853, **14**, Crust., **2**, p. 772.

Locality.— Two specimens from Funafuti, Ellice Islands.

Dana's type specimen was from the Straits of Balabac, north of Borneo. Whitelegge and Borradaile have recorded this species from Funafuti. Stebbing also had a specimen from Minikoi.

Alcirona maldivensis Stebbing.

Alcirona maldivensis Stebbing, Fauna & geography Maldive & Laccadive Archipelagoes, 1904, **2**, pt. 3, p. 708–709.

Locality. — Funafuti, Ellice Islands. Two specimens, a male and female.

Stebbing's specimen was from Hulule, Maldive Islands.

The drawings of the abdomen and frontal lamina are of one of the specimens from Funafuti.

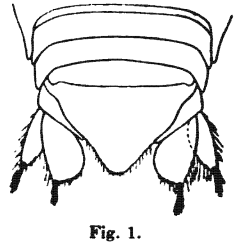


Fig. 1.

Fig. 2.

Fig. 1–2.— *Alcirona maldivensis.* 1. Abdomen. 26. × 2. Frontal lamina.

AEGIDAE.

ROCINELA ARIES Schioedte and Meinert.

Rocinela aries Schioedte & Meinert, Naturh. tidsskr., 1879–80, ser. 3, **12**, p. 401–403, pl. 13, fig. 7–8.

Locality.— Panama Harbor. One small specimen, probably immature.

RICINELA ANGUSTATA Richardson.

Rocinela laticauda Richardson (not Hansen), Proc. Amer. philos. soc., 1898, **37**, p. 14–15, figs. 5–6.

Rocinela angustata Richardson, Proc. U. S. N. M., 1904, **27**, p. 33; Bull. 54, U. S. N. M., 1905, p. 206–207.

Locality.— Lat. 5° 47′ S., long. 81° 24′ W. (Station 4,653).
Depth.— 536 fathoms. One specimen.

CYMOTHOIDAE.

ANILOCRA MERIDIONALIS, sp. nov.

Body of female about three times longer than wide, 9½ mm. wide: 28 mm. long. Color dark brown with terminal abdominal segment and uropoda light brown or yellow.

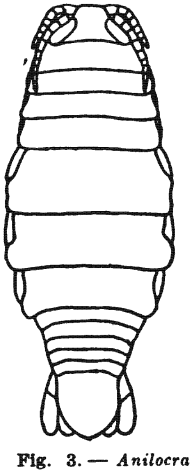


Fig. 3. — *Anilocra meridionalis.* 8. ×

Head a little wider at the base than long, 5 mm.: 4 mm., triangular in shape, with the apex produced in a process which arches over the antennae and is truncate at the extremity. Eyes small, round, composite, situated in the postlateral angles of the head and separated by a distance of 1½ mm. Head not at all immersed in the first thoracic segment. The first pair of antennae are composed of eight articles and extend to the middle of the first thoracic segment. The second pair of antennae are composed of eleven articles and extend to the posterior margin of the second thoracic segment. The fifth article is the longest, and is the last peduncular article, although the articles of flagellum and peduncle are not clearly marked. The first and fourth segments of the thorax are a little longer than

the second and third, which are about the same length. The first segment is 2½ mm. long, the second and third each 2 mm. and the fourth 3 mm. The fifth segment is longest, being 4 mm.; the sixth is 3½ mm. and the seventh is 2½ mm. The epimera are small, narrow plates, extending almost the entire length of the second thoracic segment, about two thirds the length of the third segment and half the length of the fourth, fifth, and sixth segments. In the seventh segment the epimera extend two thirds the length of the segment.

The first five segments of the abdomen are subequal in length, but gradually decrease in width to the terminal segment, which is linguiform in shape. The last segment is longer than wide, being 5 mm. long.: about 3½ mm. wide. The branches of the uropoda are subequal in width and length and extend to the extremity of the terminal abdominal segment. They are oar-like in shape.

Locality.— Only one specimen, a female, was taken between the Galapagos Islands and Manga Reva at Station 4722, in lat. 9° 31′ N., long. 106° 30′ 5″ W. at a depth of 1,923 fathoms on a rocky bottom.

Type.— Cat. No. 46,440, U. S. N. M.

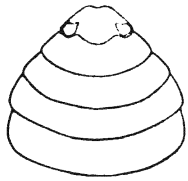
This species differs from all the others of the genus in the longer second antennae, which extend to the posterior margin of the second thoracic segment.

A number of immature forms of Cymothoidae come from Stations 4,640, 4,657, 4,596, 4,730 and Butaritari, Gilbert Group Lagoon. Surface.

Nerocila excisa, sp. nov.

Body oblong-ovate.

Head broader posteriorly than anteriorly, with the front slightly excavate in the middle. Eyes irregular in shape and placed in the postlateral angles. First pair of antennae, composed of seven



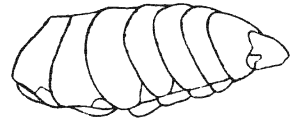


Fig. 4.— *Nerocila excisa.* Head and first three thoracic segments. 8. ×
Fig. 5.— *Nerocila excisa.* Lateral view of thorax. 8. ×

articles, extend to the anterolateral angles of the first thoracic segment. Second pair of antennae, composed of seven articles, are equal in

length to the first pair. The posterior margin of the head is trilobate, the median lobe being the largest.

The first four thoracic segments are about equal in length, but increase gradually in width. The epimera of the second, third, and fourth segments extend the entire length of the lateral margin. The fifth, sixth, and seventh segments are much longer than the four anterior segments, each being about one and a half times longer than any of those preceding. Their postlateral angles are widely rounded and not produced. The epimera of these segments extend nearly the entire length of the lateral margin and are in the form of narrow, elongated lobes, attached anteriorly and free posteriorly.

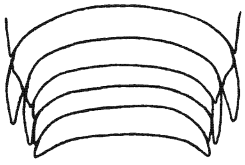


Fig. 6. — *Nerocila excisa.* First five segments of abdomen. 8. ×

The first five segments of the abdomen are about equal in length. All are furnished with distinct epimera, those of the first two segments being produced in long narrow lamellae reaching the length of two segments beyond the one to which they are attached. The epimera of the last three segments are small and almost inconspicuous on the last two. They decrease gradually in size.

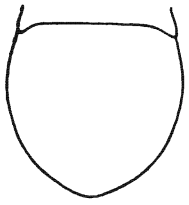


Fig. 7. — *Nerocila excisa.* Terminal segment of abdomen. 8. ×

All the legs are prehensile in character and none are furnished with a carina on the basis.

The terminal segment of the abdomen is linguate. In the only specimen the posterior portion is almost torn off. The uropoda are also lost.

Locality.— One specimen. Station 13. It was found in the stomach of Coryphaena sp., Sept. 5, 1899, in lat. 9° 57′ N., long. 137° 47′ W.

Type.— Cat. No. 46,435, U. S. N. M.

IDOTHEIDAE.

Pentidotea resecata (Stimpson).

Idotea resecata Stimpson, Bost. journ. nat. hist., 1857, **6**, p. 504, pl. 22, fig. 7. *Pentidotea resecata* Richardson, Bull. 54 U. S. N. M., 1905, p. 369–370.

Locality.— Lat. 33° 40′ N., long. 119° 35′ W. Station 4,571. Four specimens from surface.

ONISCIDAE.

PHILOSCIA AUSTRALIS, sp. nov.

Body ovate, a little more than twice as long as wide 4½ mm.: 10 mm. (not including uropoda).

Head two and a half times wider than long, 1 mm.: 2½ mm. Front not margined, without median or lateral lobes. Eyes rather large, composite and situated in the lateral angles of the head. First pair of antennae minute, inconspicuous. Second pair of antennae with the first article of the peduncle short; second and third articles subequal, and each about twice as long as the first article; fourth and fifth articles subequal and each twice as long as the third. The flagellum is composed of three articles, decreasing successively in length. The second pair of antennae are longer than half the body and extend to the posterior margin of the fifth thoracic segment.

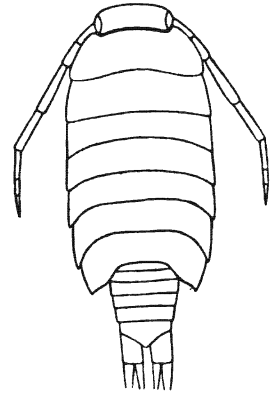


Fig. 8.— *Philoscia australis.* 16. ×

The first three segments of the thorax are each a little longer than any of the last four, which are about equal in length. The lateral margins of the segments are straight and the epimera are not separated from the dorsal portion. The postlateral angles of the seventh segment are somewhat truncate.

The abdomen is very abruptly narrower than the thorax, being just half as wide, 2 mm. while the last thoracic segment is only 4 mm. in width. The first two segments are partly covered at the sides by the seventh thoracic segment. The first five segments are about equal in length. The sixth or terminal segment is triangular with apex rounded.

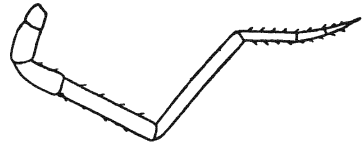


Fig. 9.— *Philoscia australis.* Second antenna. 26. ×

The uropoda are long. The peduncle is twice as long as the terminal abdominal segment (measured on the exterior margin). The inner branch is twice as long as the peduncle (measured from the

inner side). The outer branch is longer than the inner branch being two and a half times as long as the peduncle (measured from the inner side).

All the legs are ambulatory. In color the specimens, six in number, are dark brown with patches of yellow, the lighter colored patches

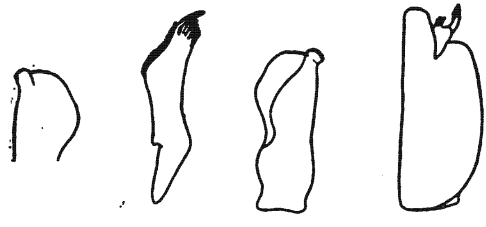


Fig. 10. *Philoscia australis*. a. Maxilliped. b. Second maxilla. c. Outer lobe of first maxilla. d. Extremity of second maxilla. 41. ×

uniting in the middle to form a longitudinal stripe, and with larger patches on the sides of the segments and on the postlateral corner of the epimera.

Locality.— Nuka Hiva, Sept. 15, 1899.

This species is probably close to *Philoscia truncata* Dollfus, which also has the postlateral angles of the seventh thoracic segment truncate.

Porcellio laevis Latreille.

Porcellio laevis Latreille, Hist. nat. crust. et insectes, 1804, **7**, p. 46; Richardson, Bull. 54 U. S. N. M., 1905, p. 614–616.

Localities.— Easter Island, under rocks, forty-nine specimens; Tahiti, two specimens.

Porcellio scaber Latreille. var. marmorata.

Porcellio scaber Latreille, Hist. crust. et insectes, 1804, **7**, p. 45; Richardson, Bull. 54, U. S. N. M., 1905, p. 621–624.

Locality.— Easter Island. One specimen.

Porcellionides pruinosus (Brandt).

Porcellio pruinosus Brandt, Bull. Soc. imp. nat. Moscow, 1833, **6**, p. 19.
Metoponorthus pruinosus Richardson, Bull. 54, U. S. N. M., 1905, p. 627–629.
Porcellionides pruinosus Stebbing, Records Indian mus., 1911, **6**, p. 189.

Locality.— Tahiti, five specimens; Fakarava, Paumotus, one specimen.

ARMADILLIDIDAE.

ARMADILLIDIUM VULGARE (Latreille).

Armadillo vulgare Latreille, Hist. nat. crust. et insectes, 1804, **7**, p. 48; Richardson, Bull. 54, U. S. N. M., 1905, p. 666–668.

Locality.— Easter Island, under rocks. Thirty-one specimens.

CUBARIS MURINA Brandt.

Cubaris murina Brandt, Bull. Soc. imp. nat. Moscow, 1833, **6**, p. 28.
Cubaris murinus Richardson, Bull. 54, U. S. N. M., 1905, p. 645–647.

Localities.— Tahiti, one specimen; Nuka Hiva, in dry places under stones, thirty-nine specimens.

SPHERILLO TESTUDINALIS Budde-Lund.[1]

Armadillo testudinalis Budde-Lund, Crust. Isop. Terrestria, 1885, p. 29.
Spherillo testudinalis Budde-Lund, Voeltzkow's Reise in Ostafrica, 1903–1905, 1908, **2**, p. 269–270, pl. 12, fig. 17–29.

Body ovate, convex, smooth, contractile into a ball.

Head about four times wider than long, with the frontal margin straight. Eyes large, composite, composed of eighteen ocelli and placed close to the lateral margins of the head. Prosepistoma plain. First pair of antennae rudimentary, composed of three minute articles. Second pair of antennae with the first article short; the second article is about three times longer than the first; the third article is about as long as the second; the fourth is about equal in length to the third; the fifth is one and a half times longer than the fourth. The flagellum is composed of two articles, the second being three times longer than the first. The antennae are geniculate at the articulation of the second and third articles. The inner lobe of the first maxillae is furnished with two plumose processes.

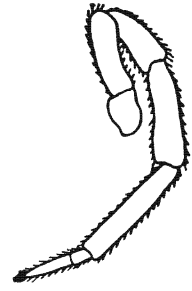


Fig. 11. — *Spherillo testudinalis.* Second antenna. 41. ×

The first segment of the thorax is the longest and is about twice as long as the head. Coxopodites present and visible on the dorsal side

[1] Budde-Lund places this genus in a subfamily, Spherilloninae, of the Oniscidae.

of the segment in the form of a small cleft on the posterior margin a short distance from the lateral margin. On the underside the coxopodite is separated only posteriorly in the form of a tooth. The six following segments of the thorax are subequal in length. The coxopodites of the second segment are small, but quite prominent on the underside, and are in the form of a sharp tooth. The coxopodites of the third and fourth segments are small and are represented on the upper part of the underside of the segments by a thickened ridge. In the last three segments the coxopodites are large and prominent and are in the form of thickened processes on the underside.

Fig. 12.

Fig. 13.

Fig. 12.— *Spherillo testudinalis.* First and second thoracic segments. (Lateral view). 16. ×

Fig. 13.— *Spherillo testudinalis.* Head and first three thoracic segments. (Ventral view). 16. ×

The first five segments of the abdomen are about equal in length. The lateral parts of the first two are covered by the last thoracic segment. The lateral parts of the third, fourth, and fifth segments are expanded and the third segment has distinct coxopodites on the underside similar to those of the preceding thoracic segments. The terminal abdominal segment is tetragonal, wider at the base than at the apex, which is truncate, and contracted in the middle. The uropoda are short, not reaching beyond the extremity of the last abdominal segment. The basal article is large, wide, truncate at the apex, and occupies all the space between the last segment of the abdomen and the lateral parts of the preceding segment. The outer branch is small, conical, and placed on the dorsal side of the basal article in a groove which extends to the middle of the dorsal side. The inner branch is small and narrow and does not quite reach the extremity of the last abdominal segment on the underside.

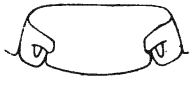


Fig. 14.

Fig. 15.

Fig. 14.— *Spherillo testudinalis.* Terminal segment of abdomen with uropoda. (Dorsal view). 41. ×

Fig. 15.— *Spherillo testudinalis.* Terminal segment of abdomen with uropoda. (Ventral view). 41. ×

In color it is dark brown with patches of light brown at the sides of the body in which are wavy lines of dark brown. A dark band extends along the median line. Patches of light brown extend also along the lateral parts of the segments.

Locality.— Fakarava, Paumotus, Tahiti, and Tipaevii Valley.

About forty specimens.

Specimens of *Cubaris Armadillidium pacifica* Borradaile were sent to me from the Museum of Zoölogy, Cambridge, England for comparison with my specimens and they were found to be specifically the same. I have redescribed the species, because in the original description of *C. pacifica* (Proc. Zoöl. soc., London, 1900, p. 796, pl. 51) the uropods were not correctly interpreted.

LIGYDIDAE.

Ligyda exotica (Roux).

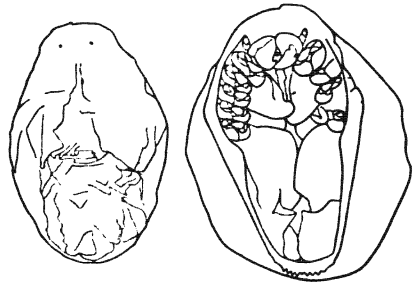
Ligia exotica Roux, Crust. Médit., 1828, p. 3, pl. 13, fig. 9.
Ligyda exotica Richardson, Bull. 54, U. S. N. M., 1905, p. 676–677.

Locality.— Mohican Reef. Rangiroa Island. Five imperfect specimens.

DAJIDAE.

Zonophryxus similis, sp. nov.

Body of female longer than wide, ovate, 29 mm. wide: 45 mm. long. Dorsal surface convex, swollen, and with numerous wrinkles in the integument. The three divisions of the body are not marked. The body is narrowest in the cephalic region, where the front is rounded. Two small pits or depressions mark the eyes, one on either side of the median line. The posterior part of the body is rounded. On the ventral side the oral area is large and is bounded at the sides by a border, the lateral edges of which have four or five shallow incisions which indicate the thoracic segments. This border surrounds the cephalic region extending forward as a wide margin. On either side of this border below the oral area, the inflated portions of the body extend.



a. b.

Fig. 16.— *Zonophryxus similis.* a. Dorsal view. b. Ventral view. 8. ×

The antennae are widely separated and seem to be composed of three articles. The antennulae are concealed by the maxillipeds. The tips of the mandibles project between the maxillipeds.

The five pairs of legs are crowded closely together, within the oral area. There are five pairs of incubatory plates. The first and fifth pairs are the largest and overlap the other three pairs, so as to partly or entirely conceal them. By carefully lifting these the others are easily seen lying beneath. The pleopoda consist of a single pair of large plates situated on the ventral side of the body just below the last pair of incubatory plates. There are no uropoda.

On the posterior margin of the border which surrounds the pleopoda at the terminal part of the body are eleven teeth, one in the median line, and five on either side. These teeth indicate the coalesced abdominal segments.

Locality.— Only one specimen, a female was collected at Station 4,621 in latitude 6° 36′ N., long. 81° 44′ W. at a depth of 581 fathoms.

The host is unknown.

Type.— Cat. No. 46,432, U. S. N. M.

Only three other species of this genus have been described, *Zonophryxus retrodens* Richardson, *Z. trilobus* Richardson, and *Z. grimaldii* Koehler. The present species is very close to *Z. trilobus* but differs in the narrower cephalic region, which is more triangular in appearance in both a dorsal view and a ventral view, in the presence of eye pits, in the invisibility of the cephalic border in a dorsal view, in the contour of the body, and in the greater number of teeth on the posterior border.

COLYPURIDAE.

COLYPURUS AGASSIZI Richardson.

Colypurus agassizi Richardson, Bull. M. C. Z., 1905, **46**, p. 105–106.

Body gradually increasing in width backward from the first to the fourth free thoracic segment. The head is 2 mm. wide, the first free thoracic segment is 3 mm. in width, and the fourth free segment measures 4 mm. The length of the body is 5 mm.

The head is produced in the middle anteriorly in a rounded lobe. The sides of the head are also expanded in rounded lobes. Four knob-like bodies are situated in a transverse series on the dorsal surface of the head, the two central ones being largest; the lateral knobs are placed one on each lateral lobe. The antennae are rudimentary, inconspicu-

ous, composed of only a few articles, and not visible in a dorsal view. The tips of the mandibles project from the apex of the oral cone.

The first segment of the thorax is coalesced with the head and bears the first pair of legs. The following five segments are more or less subequal in length, but increase gradually in width to the fourth free segment. The last thoracic segment is longer than any of the preceding segments and is posteriorly rounded. Each thoracic segment bears a pair of prehensile legs, there being seven pairs altogether[1].

The abdomen is inserted beneath the last thoracic segment, is conically tapered, unsegmented, and devoid of appendages.

Locality.— One specimen. Station 4621. Lat. 6° 36′ N. long. 81° 44′ W. off Mariato Point.

Type.— Cat. No. 46,433, U. S. N. M.

[1] In the specimen the third leg on the right side is broken off about the middle

LIST OF REFERENCES.

BONNIER, JULES.

Contribution à l'étude des Epicarides. Les Bopyridæ. Travaux station zool. Wimereux, 1900, **8**, p. 1–398, pl. 1–41.

BORRADAILE, L. A.

On some crustaceans from the South Pacific. Pt. 5. Arthrostracans and barnacles. Proc. Zoöl. soc. London, 1900, p. 795–797, pl. 51.

Note. Proc. Zoöl. soc. London, 1901, p. 325.

CHILTON, CHARLES.

The Crustacea of the Kermadec Islands. Trans. New Zealand inst., 1910, **43**, p. 545–573.

DANA, JAMES D.

Crustacea. U. S. expl. exp., 1853, **14**, Crust. **2**.

HANSEN, H. J.

Cirolanidae et familiae nonnullae propinquae Musei Hauniensis. Vidensk. sselsk. Skriv., nat. math., 1890, Afd., 5, pt. 3.

MIERS, E. J.

Catalogue of the stalk- and sessile-eyed Crustacea of New Zealand. 1876.

Crustacea. Report zoöl. coll. Alert, 1884, p. 299–311.

NOBILI, GIUSEPPE.

Ricerche sui Crostacei della Polinesia. Decapodi, Stomatopodi, Anisopodi e Isopodi. Mem. R. accad. sci. Torino, 1907, ser. 2, **57**, p. 351–430.

SCHIOEDTE, J. C. and MEINERT, FR.

Symbolae ad Monographiam Cymothoarum, Crustaceorum Isopodum Familiae. 2 Anilocridae. Naturh. tidsskr., 1881–83, ser. 3, **13**, p. 1–167, pl. 1–10.

STEBBING, T. R. R.

On Crustacea brought by Dr. Willey from the South Seas. Willey's Zoöl. results, 1902, pt. 5, p. 605–679, pls. 64–74.

Report on the Isopoda collected by Professor Herdman at Ceylon in 1902. Ceylon pearl oyster report, 1905, pt. 4, 23, p. 1–64, pl. 1–12.

Marine crustaceans. 12 Isopoda with description of a new genus. Fauna & geography Maldive & Laccadive Archipelagoes, 1904, **2**, pt. 3, p. 699–721, pl. 49–53.

WHITELEGGE, THOMAS.

The Crustacea of Funafuti. Mem. Austral. mus., 1897, **3**, pt. 2.