

TRANSACTIONS

OF THE

ROYAL SOCIETY

OF

EDINBURGH.

VOL. XXXV.

EDINBURGH:

PUBLISHED BY ROBERT GRANT & SON, 107 PRINCES STREET,
AND WILLIAMS & NORGATE, 14 HENRIETTA STREET, COVENT GARDEN, LONDON.

MDCCCXC.

XIV.—On Ostracoda collected by H. B. Brady, Esq., LL.D., F.R.S., in the South Sea Islands. By GEORGE STEWARDSON BRADY, M.D., LL.D., F.R.S. (Plates I.—IV.)

(Read 3rd December 1888.)

Excepting the few species noticed in the Report on the Ostracoda of the "Challenger" Expedition, scarcely anything, so far as I know, has been published respecting the Ostracoda of the South Sea Islands. Prof. G. M. THOMSON has indeed published in the *Transactions of the New Zealand Institute* (1878), a paper on Crustacea, which includes a few marine and fresh-water Ostracoda of New Zealand; and the Rev. R. L. KING, in the *Proceedings of the Royal Society of Van Diemen's Land* (1855), described numerous species of Entomostraca, amongst which were several fresh-water, but no marine, Ostracoda. Dr BAIRD also published a species of *Cypridina* from New Zealand. I have myself contributed to the *Proceedings of the Zoological Society of London* (1886) a paper on Entomostraca collected in South Australia, chiefly by Professor RALPH TATE of Adelaide, including a considerable number of fresh-water Ostracoda; and in a French publication (*Les Fonds de la Mer*), edited by the MARQUIS DE FOLIN, there are likewise, by myself, descriptions of a few species taken at Nouméa, New Caledonia. There are also, in a paper of mine published in the *Transactions of the Zoological Society* (1865), notes of a few Australian marine species. This, I think, represents the sum of our present knowledge respecting the Ostracoda of these regions.

The collection to be noticed in this memoir was taken entirely from material obtained either between tide-marks, or from very small depths of water—not as a rule exceeding 6 fathoms. The material so obtained was, however, not collected with any view to the Ostracoda, and having been preserved in a dry condition, it has been impossible to obtain details of internal structure, as might have been done with spirit preparations. Besides the fact of a large proportion of the species being new to science, the collection presents the following points of interest:—*First*, some species, notably *Bairdia amygdaloides* and *Bairdia foveolata*, were found in considerable numbers, in fine condition and in various stages of growth, so that I have been able better to define and emphasise their characters, and so to place those species on a more stable foundation. It would have been interesting, had space permitted, to have given a series of drawings representing stages of growth and other variations in those species, but the more important points will be found briefly noticed in the text. *Secondly*, it would seem, from their abundance in some of these gatherings, that various Cypridinidæ occur in the living condition in great numbers between tide-marks. I am not aware that in the Northern Hemisphere any member of this family has ever been taken* except by the dredge, or in the tow-net over deep water. Professor G. M. THOMSON, however, mentions a species (*Philomedes agilis*) as

* Except once in Herm, by the Rev. Dr NORMAN.

occurring in rock-pools in New Zealand. The genus *Sarsiella* (a Cypridinid) is strongly represented in tidal pools, as is also a new genus *Pleoschisma*, which is closely allied to *Cypridina*. On the whole, it would appear that an investigation of the littoral zone of these islands would acquaint us with forms of the highest interest belonging to this particular group. The collection contains no gatherings from fresh water, but there occur several shells which apparently belong to fresh-water genera. These, as they are found only singly, I have not described. But it is interesting to note that there is one undoubted example of *Cypris obliqua*, Brady, a well-known British species, and another which perhaps may belong to *Cypris ophthalmica*, Jurine (*compressa*, Baird). One specimen belongs apparently to the genus *Limnocythere*. This, as it presents sufficiently distinct characters, I have described and figured. Besides these there are a few specimens belonging probably to *Cypris* or *Candona*. All of them are probably interlopers, washed down from fresh water. I have not thought it necessary to insert a complete bibliography of the species, but have given references in all cases where they occur in the "Challenger" Report.

Section I. PODOCOPA.

Fam. CYPRIDIDÆ.

Genus *Phlyctenophora*, G. S. Brady.

Phlyctenophora viridis, n. sp. (Pl. I. figs. 1, 2).

Shell, seen from the side, elongated, subtriangular, highest just in front of the middle, height equal to half the length; dorsal margin obtusely angulated at its highest point, thence sloping almost in a straight line towards the front and with a gentle curve to the posterior extremity, which is placed altogether below the middle of the valve; ventral margin almost straight; anterior extremity broadly and evenly rounded, posterior narrow and rounded. Seen from above, the shell is ovate, widest in the middle, not quite thrice as long as broad, the sides rather boldly curved; extremities subacute, the posterior somewhat the more compressed of the two. Valves thin, pellucid, smooth and polished, greenish, variously mottled with patches of a darker hue, and showing faint longitudinal striations after the manner of *Cypris exsculpta*. Length .80 mm.

The verticillate sac ("glandula mucosa"), antennæ, and feet agree generally with those of the type *Phlyctenophora zealandica*, described in the Report of the "Challenger" Expedition. The caudal rami are slender and destitute of marginal setæ, the apices bearing a single small seta and two long curved claws which, on the concavity close to the apex, have two or three lateral cilia. This pretty species appears to be one of the commonest and most characteristic littoral species of Samoa and Fiji, occurring plentifully in almost all the gatherings from those groups, as well as in dredgings from the Port of Nouméa. The best preserved and most highly coloured specimens are those from tidal pools; dredged specimens are usually only empty shells.

Phlyctenophora (?) *reniformis*, n. sp. (Pl. I. figs. 9, 10).

Shell, seen from the side, subreniform, greatest height situated in the middle and equal to half the length. The anterior extremity is broad and well rounded, the posterior rather narrower; dorsal margin well arched, sloping gently to the front and with a steep curve backwards; ventral margin very slightly sinuated. Seen from above, the outline is compressed, ovate, widest in the middle, about three times as long as broad; anterior extremity acutely, posterior subacutely pointed. Shell smooth, almost colourless, slightly mottled. Length 75 mm.

A few empty shells of this species occurred in shore-sand at Loma-Loma, in material from Suva mud-flats, and from the reef at Lufi-Lufi; but the specimens have probably lost their original colour, and the generic reference is doubtful.

Genus *Pontocypris*, G. O. Sars.

Pontocypris attenuata, G. S. Brady (Plate I. figs. 3, 4).

Pontocypris attenuata, Brady, *Ann. and Mag. Nat. Hist.*, ser. 4, vol. ii. p. 179, pl. iv. figs. 11-14.

? *Pontocypris nitida*, Brady, *Linn. Soc. Jour.* (Zoology), vol. xix. p. 303, pl. xxxix. figs. 4-6.

The specimens from which this species was originally described differ from those here figured both in shape and size, being considerably smaller, not so high in proportion to their length, and having no posterior spine. The full-grown South Sea specimens have a height more than equal to half the length, and are armed at the postero-ventral angle with a single short but stout spine. The surface is very faintly punctate, and is densely clothed with fine hairs. The types were taken at Mauritius, and the collections described in the present memoir contain young specimens of exactly the same character. The species occurred in dredgings from the port of Nouméa and in shore gatherings from the reef at Apia, Upolu. The length of the adult is 1.075 mm.

A Ceylon species, described by me in the *Journal of the Linnean Society* as *Pontocypris nitida*, may perhaps belong to *P. attenuata*, and is probably the very young form of that species.

Pontocypris gracilis, n. sp. (Pl. I. figs. 5, 6).

Shell, seen from the side, siliquose, much elongated, greatest height in the middle and equal to less than one-third of the length, depressed and rounded in front; posterior extremity much tapered and subacute, scarcely rounded. Dorsal margin arched, sloping with a gentle curve to the front and much more steeply behind; ventral margin almost straight. Seen from above, elongated, ovate, about four times as long as broad, widest near the middle, extremities acute. Surface of the valves quite smooth, bearing a few very small, distant papillæ. Length 1.07 mm.

Habitat.—Between tide-marks, Levuka and Rambé Island.

Pontocypris sicula, n. sp. (Pl. I. figs. 7, 8).

Shell, seen from the side, slender, awl-shaped; greatest height equal to about one-third of the length, and situated near the middle. Anterior extremity depressed, rounded and narrowed; posterior excessively depressed, produced and tapered to an acute point on the level of the ventral border; dorsal margin arched, highest near the middle, forming a gentle curve in front, but sloping steeply and in a right line quite to the posterior extremity; ventral margin straight. Seen from above, the outline is lanceolate, four times as long as broad, broadest in front of the middle, acutely pointed behind, subacutely in front. Surface of the valves smooth, covered with closely-set, minute, impressed puncta. Length 9 mm.

Habitat.—Sava-Sava Bay, 4 fathoms.

Fam. BAIRDIDÆ.

Genus *Macrocypris*, G. S. Brady.*Macrocypris decora*, G. S. Brady.

Macrocypris decora, Brady, "Ostracoda of Challenger Expedition," p. 44, pl. i. fig. 3 *a-d* and pl. vi. fig. 8 *a-b*.

Found in shore-sand, Porcheron's Beach and near Artillery Point, Nouméa; dredged in the port of Nouméa, 3-6 fathoms; and between tide-marks, Vuna Point, Taviuni.

Genus *Bairdia*, M'Coy.*Bairdia simplex*, G. S. Brady.

Bairdia simplex, Brady, "Ostracoda of Challenger Expedition," p. 51, pl. vii. fig. 1 *a-d*.

Habitat.—Vuna Point, Taviuni, Fiji, between tide-marks. The types were taken by the "Challenger" off Heard Island.

Bairdia amygdaloides, G. S. Brady.

Bairdia amygdaloides, Brady, "Ostracoda of Challenger Expedition," p. 54, pl. ix. fig. 5 *a-f*, pl. x. fig. 2 *a-c*.

Habitat.—Port of Nouméa, 3-6 fathoms; Suva, reef; Levuka, between tide-marks; Mango Island, fringing reef; Rambé Island, between tide marks; amongst shore-sand, Loma-Loma; Vuna Point, Taviuni, between tide-marks.

A very fine series of this species occurred in several of the gatherings above mentioned. In the living condition the shell is beautifully blotched with chocolate-brown, and is usually smooth or nearly so—never more than very moderately punctate, sometimes also bearing a few scattered silky hairs. The posterior extremity never has any well-developed beak, but ends acutely, sometimes in a single small spine. The marginal

serratures are very variable, but the anterior extremity is often minutely serrated, and the posterior portion of the ventral margin generally has a series of somewhat larger teeth. Seen dorsally, the outline presents considerable variation, being sometimes wide in the middle and very boldly and evenly curved; in other cases the greatest width is in front of the middle, and the posterior portion is tapered. I have not been able to make out the meaning of these differences. In such specimens as I have dissected the rounded, tumid shells were, contrary to my anticipation, males. The more tapered form, with anterior tumidity, may perhaps be the female, but of this I am not sure. The figures given in the "Challenger" Report represent tolerably well the centrally tumid form only.

Bairdia tenera, G. S. Brady (Pl. I. figs. 11, 12).

Bairdia tenera, Brady, "Entomostraca collected in Ceylon," *Jour. of Linn. Soc. (Zoology)*, vol. xix. p. 304, pl. xxxix. figs. 13-15.

Shell, seen from the side, subreniform, highest in the middle, height somewhat less than two-thirds of the length; anterior extremity wide, obscurely angulated at its junction with the dorsal margin, and obliquely rounded below; posterior extremity somewhat produced in the middle, but scarcely beaked, obliquely rounded off below; dorsal margin nearly flat for the greater part of its course, and sloping abruptly towards both extremities; ventral distinctly sinuated in the middle, and minutely dentated towards the posterior extremity. Seen from above, compressed, ovate, widest in the middle, not quite thrice as long as broad; extremities obtusely pointed. Surface of the shell smooth, beset with numerous very fine but rigid short hairs, and marked with closely-set impressed puncta. Length .85 mm.

Habitat.—Pools on reef, Lufi-Lufi; and Apia, Upolu.*

Bairdia Crosskeiana, G. S. Brady.

Bairdia Crosskeiana, Brady, "Ostracoda of Challenger Expedition," p. 58, pl. ix. fig. 3 a-c.

Habitat.—Mud-flats, Suva; pools on reef, Lufi-Lufi; and Apia, Upolu.

Bairdia foveolata, G. S. Brady.

Bairdia foveolata, Brady, "Ostracoda of Challenger Expedition," p. 55, pl. viii. fig. 1 a-f, and fig. 2 a-f.

Habitat.—Nouméa, shore-sand, and dredged in 2-6 fathoms; mud-flats, Suva; Sava-Sava Bay, 4 fathoms; Lufi-Lufi, Samoa, pools on reef; Apia, Upolu, tidal pools; Mango Island, Fiji, fringing reef; Vuna Point, Taviuni, between tide-marks.

This species is largely represented in many localities. Like *B. amygdaloides*, it is in the living condition beautifully marked with blotches of a chocolate-brown colour, and is

* The single specimen from which the species was first described was unfortunately lost by the draughtsman who made the drawings, but these Samoan shells seem to agree almost exactly with the description, and I have but little hesitation in referring them to the same species.

always covered with closely-set impressed punctations. These are even more strongly developed in very young than in older shells, where they tend to become obliterated by calcareous deposit. The beak is generally distinct, but never very largely developed. The anterior margin, and the posterior margin below the beak, are beset with short, blunt teeth, which are usually irregular, as if broken away in places. The specimens figured in the "Challenger" Report are probably rightly referred to this species, but being all dredged in deep water, were old and worn shells deficient in surface ornament. Some specimens of *B. foveolata* approach very closely *B. Milne-Edwardsii*, and I am not sure that further research may not show that both forms belong to the same species.

Bairdia Milne-Edwardsii, G. S. Brady.

Bairdia Milne-Edwardsii, Brady, "Ostracoda of Challenger Expedition," p. 56, pl. x. fig. 4 *a-g*.

Habitat.—Nouméa, 2-4 fathoms; Levuka, between tide-marks, Loma-Loma, shore-sand; reef and shore-pools, Apia, Upolu; Suva, pools inside reef.

Bairdia ventricosa, n. sp. (Pl. IV. figs. 17, 18).

Shell, seen from the side, oblong, subrhomboidal, nearly equal in height throughout, height equal to half the length. Anterior extremity rounded and very finely serrated below the middle, posterior sloping very steeply and in an almost straight line below the middle, then abruptly rounded off to the ventral margin, edge serrated; dorsal margin straight, ventral also straight and parallel with the dorsal. Seen from above, oblong, subovate, with moderately arcuate sides and produced mucronate extremities, posterior extremity more compressed than the anterior; greatest width in the middle and equal to half the length. Shell-surface marked throughout with closely-set, small, circular impressions. Length .75 mm.

Found in shore-sand from low-water, near Artillery Point, Nouméa.

Bairdia hirsuta (?) G. S. Brady.

Bairdia hirsuta, Brady, "Ostracoda of Challenger Expedition," p. 50, pl. viii. fig. 3 *a-d*.

Habitat.—Port of Nouméa, 3-4 fathoms.

Bairdia Woodwardiana, G. S. Brady.

Bairdia Woodwardiana, Brady, "Ostracoda of Challenger Expedition," p. 57, pl. xi. fig. 1 *a-c*.

Habitat.—Vuna Point, Taviuni, between tide-marks.

Two empty shells of this very curious species were found. They agree very closely with those figured in the "Challenger" Report, but are even more attenuated behind, and one of them is decidedly more obtuse in front on the dorsal view.

Bairdia truncata, n. sp. (Pl. II. figs. 1, 2).

Shell, seen from the side, oblong, irregularly angular, height equal to half the length.

Anterior extremity narrow, scarcely rounded, bearing three or more small blunt, forward-pointing spines; posterior obliquely truncated, narrow, lying altogether below the middle line, the obliquity looking downwards, divided into about six strong, sharp teeth; dorsal margin straight in the middle, sloping abruptly and almost in a right line at each extremity; ventral margin straight. Seen from above the outline is very irregular, oblong-ovate, twice as long as broad, widest in the middle, extremities wide, truncated, and spinous. Shell-surface marked everywhere with rather large, irregular, subangular impressed puncta; abruptly depressed within the anterior margin and over the posterior extremity. Length 56 mm.

Habitat.—One perfect specimen of this curious species was found in a gathering from pools on the inner reef at Apia, Upolu; another single valve in shore-sand from Porcheron's Beach, Nouméa.

The uneven outline of the shell, as seen dorsally, seems to indicate a distortion or malformation; but, apart from this, the characters are so peculiar that there can be no doubt as to its specific distinctness.

Bairdia nodulifera, n. sp. (Pl. I, figs. 13-16).

Shell, seen from the side, subreniform, highest in the middle, height equal to more than half the length. Anterior extremity obliquely rounded and minutely serrated below the middle, posterior produced below the middle into an obtusely angular beak, above which it slopes forwards with a distinct sinuation, the curve encroached upon by two slight rounded projections and minutely serrated below the middle; dorsal margin boldly arched, ventral slightly sinuated in the middle. Seen from above, compressed, ovate, widest in the middle, more than twice as long as broad; lateral margins evenly and moderately convex, twice or thrice emarginate near the extremities; extremities obtuse, subtruncate. Surface of the valves smooth, marked with closely set, small, circular impressions; within the anterior border are three or four large, but not very prominent, rounded tubercles, and the posterior margins have a somewhat similar armature. These tubercles are not at all conspicuous when seen laterally, but the marginal irregularities produced by them, when seen dorsally or ventrally, are very characteristic. Right valve smaller and more angular than the left. Length 8 mm.

Habitat.—Levuka, between tide-marks. One specimen only seen.

Bairdia tuberculata, G. S. Brady.

Bairdia tuberculata, Brady, "Ostracoda of Challenger Expedition," p. 60, pl. x. fig. 3 a-d.

Habitat.—Port of Nouméa, 3-6 fathoms.

Bairdia expansa, G. S. Brady.

Bairdia expansa, Brady, "Ostracoda of Challenger Expedition," p. 58, pl. xi. fig. 2 a-e.

Habitat.—Lufi-Lufi, reef and shore-pools; Apia, Upolu, reef and shore-pools Nouméa, between Ile Porc-Épic and shore, 2-6 fathoms.

Genus *Anchistrocheles*, Brady and Norman.*

Shell reniform, much compressed; anterior extremity very oblique, ventral margin deeply sinuated. Antennules six-jointed,† the last five joints nearly equal and very short, their united length only equalling about one-third of the first joint, hairless except the first and fifth joints, each of which bears a single seta of moderate length; the only fully setiferous joint is the last, which bears an apical brush of about ten long setæ; antennæ five-jointed, bearing at the apex two rather long setæ and a still longer curved claw, which consider-



Anchistrocheles furcata.

- 1, Antennule; 2, Antenna; 3, Mandible; 4, Maxilla; 5, Branchial plate of maxilla; 6, Foot of first pair (*a*) rudimentary second maxilla; 7, Foot of second pair; 8, Caudal ramus; 9, Copulative organ of male (*v.d.*), vas deferens (all much magnified).

ably exceeds in length the entire limb, and is bent rectangularly at the apex, so as to form a minute hook. Mandible slender, toothed at the apex; first joint of the palp bearing a small trisetose branchial appendage, but otherwise almost destitute of setæ, except at the apex. First pair of maxillæ provided with a branchial plate of moderate size; second pair (?) rudimentary, in the form of a setiferous, one-jointed appendage attached to the

* *Trans. Royal Dublin Soc.*, vol. iv. Series II. p. 110.

† These anatomical details being taken from dried specimens, were not easily made out, and the number of joints here given differs from that of the Royal Dublin Society Memoir. I think the present enumeration is correct.

basal joint of the first foot. Two pairs of feet, both of them clawed and adapted for walking, the claw of the first pair hooked (as in the antennæ). Caudal rami extremely small, bearing three apical setæ, two of them long and one very minute. Copulative organs of the male large and complex.

Anchistrocheles fumata, n. sp. (Pl. III. figs. 13-14).

Shell thin and fragile; seen from the side, reniform, greatest height equal to about half the length and situated in the middle; anterior extremity only slightly rounded, wide, obliquely subtruncate, the obliquity looking downwards and forwards; posterior narrowed, somewhat produced in the middle, and rounded; dorsal margin very gently and evenly arched, ventral deeply incurved in the middle. Seen from above the outline is elongated, ovate, about four times as long as broad, with nearly parallel sides; anterior extremity acute, posterior rounded. Shell smooth, transparent, smoky yellow with darker clouded patches. Length 75 mm.

This very interesting species was found only in one gathering from shore-pools at Lufi-Lufi, Samoa. It forms a connecting link between the typical Cyprididæ and Cytheridæ, the antennules having the long setose lash of a true Cyprid, while the antennæ possess only a few rudimentary hairs in place of the usual fascicle of setæ; the abortive character of the second maxilla shows an approach to the Cytheridæ, while the presence of only two pairs of feet—the second of which, however, has the character belonging to that structure in the Cytheridæ—indicates another approximation to the Cyprididæ. The British species, *A. acerosa* is known from the shell only, and, until the discovery of this Samoan species, was provisionally placed in the genus *Cythere*.

Fam. CYTHERIDÆ.

Genus *Cythere*, Muller.

Cythere demissa, G. S. Brady.

Cythere demissa, Brady, "Ostracoda of Challenger Expedition," p. 66, pl. xii. fig. 7 a-j.

The specimens here referred to agree closely with those figured in the "Challenger" Report. The species seems to be common and widely distributed, but varies a good deal, especially in the number and development of the teeth on the posterior extremity.

Habitat.—Nouméa, in shore-sand, and dredged in 2-6 fathoms; Levuka, between tide-marks; Sava-Sava Bay, Vanua Levu, 4 fathoms; Mango Island, fringing reef; Rambé Island, between tide-marks; Lufi-Lufi, Upolu, shore-pools and reef between tide-marks.

Cythere crenata, n. sp. (Pl. II. figs. 35-36).

Cythere crispata, Brady, "Ostracoda of Challenger Expedition," p. 72, pl. xiv. fig. 8 a-d.

Shell, seen from the side, oblong, subreniform, highest near the front, height equal to at least half the length. Anterior extremity broad and well rounded, posterior narrowed,

truncated, rounded off below, but forming an obtuse angle at its junction with the dorsal margin. Dorsal margin prominent over the anterior hinge, thence sloping with a slight outward curve to the posterior extremity, in front of which it is slightly emarginate; ventral margin gently sinuated in the middle. Seen from above, ovate, more than twice as long as broad, circumference irregularly crenated or emarginate, sides subparallel, extremities obtusely rounded, but not at all truncated, the posterior considerably the wider of the two. Surface marked with undulated ridges very variable in their development (but towards the posterior extremity disposed more or less transversely), and enclosing between them fossæ of irregular shape and size. Length .5 mm.

Habitat.—Nouméa, shore-sand, also dredged in 2-6 fathoms; Suva reef, Levuka, between tide-marks, Sava-Sava-Bay, Vanua Levu, 4 fathoms; Rambé Island, between tide marks; Apia, Upolu, reef and shore-pools; Mango Island, on fringing reef.

The specimens referred in the "Challenger" Report to *Cythere crispata* are undoubtedly identical with those here described, and bear certainly a very close resemblance to the European species *Cythere crispata*, but after examining minutely the large series of specimens found in these gatherings from Fiji and New Caledonia, I no longer think that they are properly referable to that species. The outline of the northern form is more flexuous, the ribs generally fewer and more prominent and enclosing larger hollows, and viewed dorsally the posterior extremity is distinctly truncated. Individual specimens, however, vary very greatly, and it is by no means easy to assign distinct limits to the three species *crispata*, *crenata* and *canaliculata*.

Cythere ochracea, n. sp. (Pl. II. figs. 8, 9).

Shell, seen from the side, elongated, subsigmoid, greatest height in the middle, and equal to less than half the length. Anterior extremity evenly rounded, posterior rounded off below, and obscurely angulated above at its dorsal termination; dorsal margin gently and evenly arcuate, ventral incurved for the greater part of its length, slightly convex behind. Seen from above, the outline is elongated, hastate, widest near the posterior extremity, width and height equal; from the widest point the sides approximate with a gentle curve to the front, which is attenuated and acute, while behind they converge suddenly with a slight sinuation, terminating in a subacute, slightly produced angle. Surface rather coarsely pitted, the hollows running together so as to form flexuous grooves, which run mostly in an oblique direction, except on the anterior portion of the valve, where they are more or less distinctly concentric. In young adults the pitting is the most conspicuous feature, but in older specimens this gives place largely to the grooved sculpture. Colour yellowish-brown. Length .5 mm.

Habitat.—Nouméa; in shore-sand from Porcheron's Beach, and Artillery Point.

Cythere inflata, n. sp. (Pl. II. figs. 3-5).

Shell, seen from the side, oblong, slightly flexed, greatest height situated near the front, and equal to half the length. Anterior extremity rounded, produced slightly below

the level of the ventral margin, posterior obliquely truncated, the obliquity looking downwards, slightly convex and angulated both above and below; dorsal margin highest in front, flattened in the middle, then sloping very gently to the posterior extremity, just in front of which it shows a short sinuation; ventral margin slightly sinuated. Seen from above, the outline is wedge-shaped, the greatest width equal to half the length and situated near the posterior extremity, which is flattened, almost truncated, but widely rounded at the angles; from the widest point the sides converge almost in a straight line forwards, showing a slight constriction just in front of the middle, and meeting rather abruptly at the extremity. Shell-surface marked throughout with rather coarse impressed puncta, and raised at the posterior extremity, so as to form a transverse ridge or crest, which, in the dorsal view, is seen as a prominent angle. Only in some specimens, however, is this ridge seen; the figured specimen does not show it in the dorsal view. Length .65 mm.

Habitat.—Suva, mud-flats between tide-marks; Levuka and Vuna Point, Taviuni, between tide-marks; Sava-Sava Bay, 4 fathoms; Rambé Island, between tide-marks; Loma-Loma, shore-sand; Lufi-Lufi, Upolu, shore-sand.

Cythere ovalis, G. S. Brady (Plate II. fig. 12).

Cythere ovalis, Brady, "Ostracoda of Challenger Expedition," p. 66, pl. xiv. fig. 4 a-d.

Habitat.—Mango Island, 2-3 fathoms.

Cythere caudata, n. sp. (Pl. II. figs. 10, 11).

Shell, seen from the side, oblong, subquadrate, more than twice as long as high. Anterior extremity evenly rounded, posterior produced, forming a wedge-shaped projection, the apex of which is rounded off and situated below the middle line of the valve; dorsal and ventral margins nearly straight and parallel, the ventral very slightly sinuated. Seen from above, oblong, subovate, three times as long as broad, sides parallel for the greater part of their course, gradually converging from the anterior third to the subacute extremity, dipping abruptly behind and terminating in a strong central mucro. Shell surface marked with closely-set, small, oblong depressions, the long diameters of which coincide with the long axis of the shell. Length .46 mm.

Habitat.—Sava-Sava Bay, Vanua Levu, 4 fathoms.

Cythere Scotti, n. sp. (Pl. III. figs. 3, 4).

Shell, seen from the side, subquadrate, higher in front than behind; height equal to rather more than half the length. Anterior extremity wide and boldly rounded, and bearing a variable number of small fringing spines; posterior imperfectly rounded, its lower half slightly produced and bearing about six blunt marginal teeth; dorsal margin prominent over the anterior hinge, thence sloping gently backwards with a slight sinuation, and rounded at its junction with the posterior extremity, ventral almost perfectly

straight. Seen from above, very broadly ovate, greatest width behind the middle, and equal to two-thirds of the length, lateral margins boldly curved and forming a continuous sweep with the wide anterior extremity; from the widest part of the shell the sides converge abruptly backwards, and terminate in a wide, truncated, central prominence; margins everywhere jagged or crenated. Shell-surface marked with a raised reticulated pattern, enclosing irregular polygonal excavations. Length 1 mm.

Habitat.—Banc de l'Aiguille, Nouméa, 2–4 fathoms. A very fine and well-marked species, which I have pleasure in naming after Mr T. SCOTT of the Scottish Fishery Board—a most able and industrious investigator of the Entomostraca and other Invertebrata.

Cythere cuneolus, n. sp. (Pl. II. figs. 6, 7).

Shell, seen from the side, oblong, quadrangular, highest in front, height equal to fully half the length. Anterior extremity well rounded, posterior narrow, obscurely angulated above, rounded off below, irregularly fimbriated or dentated; dorsal margin sloping with a slight convexity backwards, ventral sinuated near the front and gently up-curved towards the posterior extremity. Seen from above, the outline is hastate, with irregular margins; widest near the posterior extremity; width and height equal; from the widest point the sides converge with an abrupt slant, broken by a conspicuous intervening prominence, to the posterior extremity, which is wide and truncated; towards the front, which is also wide, but rounded, the sides converge more gradually, but in an undulated line. Shell-surface covered with closely-set fossæ, and showing also one or two very vaguely-marked flexuous ribs. Length 45 mm.

Habitat.—Banc de l'Aiguille, Nouméa, 2–3 fathoms; Mango Island, on fringing reef; and from shore-sand at Loma-Loma. This may perhaps prove to be only the young form of some other species, the few specimens seen varying considerably in character,—but I am not acquainted with any to which it can properly be referred.

Cythere torticollis, n. sp. (Pl. III. figs. 1, 2).

Shell, seen from the side, oblong, somewhat higher in front than behind, height scarcely equal to half the length. Anterior extremity obliquely rounded, and slightly crenated below the middle, posterior produced in the middle, its lower half divided into five or six short and broad teeth; dorsal margin prominent over the anterior hinge, thence sloping gently in a sinuous line backwards; ventral margin slightly sinuous throughout. Seen from above, the outline is very irregular, twice as long as broad, widest near the posterior extremity; lateral margins deeply indented at several points, converging suddenly and in a very zig-zag line to the posterior extremity, which forms a triangular, centrally-emarginate prominence; the anterior extremity is wider, rounded, and emarginate in the middle. Surface of the valves very rugose, a wide rib just within and parallel to the anterior margin, an abrupt and irregular transverse ridge near the posterior extremity, and irregularly disposed ridges with numerous large fossæ on the central portion. Length 5·8 mm.

Habitat.—Nouméa, in shore-sand from near Artillery Point; also dredged in 2-6 fathoms.

Cythere Packardii, G. S. Brady (Pl. II. fig. 19).

Cythere Packardii, Brady, "Ostracoda of Challenger Expedition," p. 88, pl. xix. fig. 2 *a-d*.

The types of this species were found sparingly in a "Challenger" dredging from off Booby Island.

There are two distinct forms of shell, probably belonging respectively to the two sexes. One of these is well figured in the "Challenger" Report. This I believe to be the female; the other is figured in this paper. It differs from the "Challenger" form in being less tumid, and in having a much more pronounced production of the shell at the postero-ventral angle. The surface is marked with very prominent longitudinal ribs, which in the female are indicated only faintly, or not at all. The male is smaller, and has the hinge-tubercle much more strongly marked than in the opposite sex.

Habitat.—Nouméa, in shore-sand from Porcheron's Beach and Artillery Point, also dredged in 2-6 fathoms; Suva, mud-flats between tide-marks; Levuka and Vuna Point, Taviuni, between tide-marks; Sava-Sava Bay, 4 fathoms; Rambé Island, between tide-marks; Loma-Loma, in shore-sand; Lufi-Lufi and Apia, Upolu, in shore-pools.

Cythere deltoides, n. sp. (Pl. II. figs. 17, 18).

Shell, seen from the side, oblong, quadrangular, highest in front, height equal rather more than half the length. Anterior extremity wide and moderately rounded, posterior much narrower, sharply produced below the middle into an angulated and irregularly dentated promontory, above which it slopes steeply backwards; the middle of the slope broken by a sharp angular projection; dorsal margin gibbous in front, thence sloping backwards in a sinuous curve, and terminating in a sharp angle; ventral margin straight or more or less irregularly sinuated. Seen from above, the outline is irregular—doubly triangular—a large anterior triangle whose base forms the widest part, and a much smaller posterior triangle applied by its base to the larger; anterior extremity rectangularly truncated; the lateral margins diverging strongly and very irregularly to the base of the larger triangle, where they suddenly dip inwards at a right angle, running with a wide, much dentated sweep to the posterior extremity, which is narrower than the anterior and emarginate in the middle. Surface of the shell marked with numerous subcircular pittings, hinge-tubercle conspicuous, a more or less distinct ridge running obliquely across the valve from near the middle of the anterior margin to the posterior dorsal angle, the anterior portion of the valve ending precipitously in a transverse ridge at the posterior fourth. Length .66 mm.

Habitat.—Port of Nouméa, in shore-sand and near Artillery Point, and dredged in 2-6 fathoms; Lufi-Lufi, Upolu, reef and shore-pools; Apia, Upolu, reef and shore-pools.

Cythere prava, Baird.

Cythere prava, Brady, "Ostracoda of Challenger Expedition," p. 92, pl. xxii. fig. 4 a-f.

Habitat.—Suva, inside reef; Levuka, between tide-marks; Sava-Sava Bay, 4 fathoms; Vuna Point, Taviuni, between tide-marks; Mango Island, fringing reef; Rambé Island, between tide-marks; Loma-Loma, in shore-sand; Apia, Upolu, reef and shore-pools.

This is the species noted in the "Challenger" Report as being found in dredgings from the Admiralty Islands. It appears to be a common form among the South Sea Islands, but differs a good deal from the European type.

Cythere rectangularis, G. S. Brady.

Cythere rectangularis, Brady, *Les Fonds de la Mer*, vol. i. p. 153, pl. xviii. figs. 13, 14; *Linnean Soc. Journal* (Zoology), vol. xix. p. 310, pl. xl. figs. 7-9.

Habitat.—Nouméa, Porcheron's Beach; Levuka, between tide-marks; Vuna Point, Taviuni, between tide-marks; Rambé Island, between tide-marks; Loma-Loma, in shore-sand.

The specific name *rectangularis* is given in the "Challenger" Report as a synonym of *Audei*. This is a mistake, the shell figured as *C. audei* being quite distinct. The South Sea specimens here noticed seem to be certainly identical with those found in Ceylon, but they present a rather remarkable character, which is not visible in the Ceylon specimens,—the presence on the ventral margin, near the posterior extremity, of two very faint squamous dentations. This, however, though usual, is not visible on all shells.

Cythere Goujoni, G. S. Brady.

"*Cythere Goujoni*, Brady, "Ostracoda of Challenger Expedition," p. 96, pl. xxv. fig. 7 a-g.

A widely distributed, and on that account, perhaps, a variable species. It has already been recorded from Ceylon, Hong Kong, China, Port Jackson, and Booby Island.

Habitat.—Port of Nouméa, 3-6 fathoms.

Cythere infundibulata, n. sp. (Pl. II. figs. 15, 16).

Shell, seen from the side, oblong, subquadrangular, nearly equal in height throughout, height equal to half the length. Anterior extremity well rounded, divided into numerous short, blunt teeth; posterior produced and angulated a little below the middle, thence sloping with a very slight inward curve upwards and downwards; ventral margin almost straight, slightly encroached upon in the middle by the central protuberance of the shell, rounded off in front, angulated behind; dorsal margin parallel with the ventral, sinuous, joining the posterior margin at an obtuse angle; elevated over the anterior hinge. Seen from above, the shell has somewhat the shape of a funnel with a large triangular prominence in the middle of the wide end; greatest width near the hinder extremity, and equal to about two-thirds of the length; from this point the lateral margins approximate with a convex curve until near the front, which is formed by a wide obtusely-rounded, sub-truncate process; backwardly the sides converge almost at a right angle towards the

median line, then sloping sharply backwards and forming a wide acutely-pointed process. Shell-surface covered with irregularly shaped, rather large pits, central portion very tumid towards the ventral margin. Length .77 mm.

Two or three specimens only were found between tide-marks at Vuna Point, Taviuni, Fiji.

Cythere labiata, n. sp. (Pl. II. figs. 20, 21).

Shell, seen from the side, oblong, subquadrangular, highest in front, height equal to more than half the length. Anterior extremity well rounded, crenated; posterior only moderately rounded, obscurely angulated above, rounded off below, bordered with strong teeth, which are longest below the middle; dorsal margin forming an angular elevation in front, thence sloping gently in a broken, tuberculated line backwards; ventral straight, rounded off at each extremity, divided into closely-packed, rounded teeth. Seen from above, oblong, twice as long as broad, scarcely at all tapered at the extremities, which are wide and truncated; edges everywhere much broken and toothed. The surface of the valves is tuberculated indistinctly for the most part, but on the posterior half shows an imperfectly linear arrangement of some of the tubercles; the central area is moderately convex, and is separated from the surrounding dentated margin by a shallow furrow, extending round the shell, except on the dorsal margin; the hinge-tubercle very large. Length .7 mm.

Habitat.—Levuka, Fiji, between tide-marks. One specimen only.

Cythere ichthyoderma, n. sp. (Pl. II. figs. 22, 23).

Shell oblong, subquadrangular, highest over the anterior hinge, height equal to half the length. Anterior extremity well rounded, posterior subtruncate, only slightly rounded, much narrower than the anterior; dorsal margin forming a hump over the anterior hinge, thence sloping gently and almost in a straight line backwards; ventral straight. Seen from above, compressed, subovate, nearly thrice as long as broad, with very wide, equal, truncated extremities; for the greater part the sides are nearly parallel, but at a short distance from each extremity they slightly converge. The surface of the valves is smooth, forming a convex area, encircled on all sides, but more especially in front and behind, by a wide, thickened lip. In well-marked specimens the central area shows, running obliquely across it in a longitudinal direction, two narrow squamous or tuberculated ridges, but one or both of these may be very faintly marked or even altogether wanting. The margins are dentated or spinulose at almost all points, except at the anterior part of the dorsum, just behind the hinge-tubercle; on the anterior and posterior margins the teeth are generally short and blunt, and point directly forwards and backwards; while on the dorsal and ventral margins they are squamous in character, and have their points directed backwards. Length .77 mm.

Habitat.—Port of Nouméa, 3–6 fathoms; Suva, mud-flats and inside reef; Sava-Sava Bay, Vanua Levu, 4 fathoms; Vuna Point, Taviuni, between tide-marks; Rambé Island, between tide-marks; Lufi-Lufi, Upolu, reef and shore-pools.

The figures here given show a shell with the spinous armature pretty well developed, but in some the squamous, pointed character of the central and dorsal spines is much more apparent.

Cythere quadriserialis, n. sp. (Pl. II. figs. 27, 28).

Shell, seen from the side, oblong, subquadrate, much higher in front than behind, height equal to more than half the length. Anterior extremity broad and boldly rounded, posterior much narrower, subtruncate or only moderately rounded, dorsal margin sloping steeply backwards, ventral almost straight. Seen from above, the outline forms a very irregular oblong, more than twice as long as broad, and widest behind the middle; very slightly narrowed towards the extremities, which are wide and truncated, the anterior deeply emarginate, margins extremely spinous and irregular. The surface of the valves shows a central convex area, encircled, except on the dorsum, by a wide, thickened flange or lip, which is everywhere bordered by short, closely-set, blunt teeth; the anterior margin terminates above in a strongly-developed spine or group of spines, and behind this, on the dorsal margin, are three widely-detached groups of very large and strong spines, each group consisting of about three coalescent spines; the central area of the valve is marked by two oblique ridges, composed of semi-detached bosses or tubercles, the upper rib being divided into two portions by a median gap. Length .85 mm.

Habitat.—Nouméa, in shore-sand, and dredged in 3–6 fathoms.

A very distinct and remarkable species, no two specimens of which are exactly alike. The specimen figured exhibits a strongly-developed dorsal armature, but the ridges of the central area are not so continuous or so well marked as in many.

Cythere militaris, G. S. Brady (Pl. II. figs. 24–26).

Cythereis militaris, G. S. Brady, On new or imperfectly known species of Marine Ostracoda (*Trans. Zool. Soc.*, vol. v. p. 385, pl. lxi. fig. 9, *a-d*).

Shell of the female, seen from the side, oblong, subquadrangular, highest in front, height equal to more than half the length. Anterior extremity wide and well rounded, posterior also rounded, but narrower; dorsal margin sloping in a right line from the front, ventral straight. The central portion of the valves is smooth, convex, and bears three longitudinal rows of strong, blunt spines; the middle row extends almost the whole length of the shell, but is interrupted in the middle; the upper and lower rows are much shorter, each about one-third of the length of the valve, and placed just within the mid-region of the dorsal and ventral margins. This central area is bordered in front and behind by a thick, encircling lip, and the entire circumference is fringed with strong spines, which on the anterior and ventral margins are usually short and squared, but on the posterior and dorsal margins, especially at the infero-posteal angle, are developed in fully grown shells into long, sharp, curved spines. Seen from above, the outline is oblong, widest behind the middle, with broad, truncated, and spinous extremities. The shell of

the male (?) is not so high as that of the female, and the posterior extremity is almost rectangularly truncate. Length (of both sexes) 1 mm.

Habitat.—Suva Bay, 12 fathoms. My cabinet contains a good series of this fine species, from a dredging in Princess Charlotte Harbour, West Australia. An examination of this series shows that the specimen figured in the *Transactions of the Zoological Society* (*loc. cit.*) is a young shell of the same species. I have, therefore, given here figures of the adult female form from the West Australian series.

Genus *Limnicythere*, G. S. Brady.

Limnicythere Fijiensis, n. sp. (Pl. II. figs. 33, 34).

Shell, seen from the side, reniform, slightly higher in front than behind, height equal to rather more than half the length. Anterior extremity wide and boldly rounded, posterior narrower, somewhat oblique (the obliquity looking downwards), and not very fully rounded; both extremities more or less crenated, the crenations sometimes extending even on to the dorsum; dorsal margin very slightly arched, ventral deeply incurved in the middle. Seen from above, the outline is irregularly wedge-shaped, more than twice as long as broad, the greatest width near the hinder end, anterior extremity blunt and emarginate in the middle, the sides gradually diverging to near the posterior extremity, then converging rather suddenly and in an irregular line to the wide and blunt extremity. Surface of the shell thickly covered with small oblong, impressed markings, and bearing a more or less distinct central tubercle with a surrounding depression; within the ventral border is a not very distinct curved ridge, and in some specimens there are irregular faint undulated ridges on the central portion of the valve. Length .5 mm.

Habitat.—Levuka, between tide-marks; Rambé Island and Vuna Point, Taviuni, between tide-marks; Mango Island, pools on the fringing reef; Loma-Loma, in shore-sand.

I have had no opportunity of examining the soft parts of this species, all the specimens being merely empty shells; but from the general characters of the shell, I entertain little doubt that it belongs to the genus *Limnicythere*.

Genus *Cytheridea*, Bosquet.

Cytheridea spinulosa, G. S. Brady.

Cytheridea spinulosa, Brady, "Ostracoda of Challenger Expedition," p. 112, pl. xxxiii. fig. 6 a-d.

This species, originally described from specimens taken at Mauritius, seems to be widely distributed in the Southern Hemisphere. Amongst the "Challenger" dredgings, it was found at Amboyna and in a deep dredging from the South Pacific. Amongst the gatherings here described, it occurs as follows:—At Nouméa, in shore-sand, from Porcheron's Beach and Artillery Point, and in dredgings from 2 to 6 fathoms; mud-flats at Suva; at Sava-Sava Bay, Vanua Levu, 4 fathoms; and at Rambé Island, between tide-marks.

Cytheridea flavescens, n. sp. (Pl. II. figs. 29–32).

Shell of the female, seen from the side, subreniform, greatest height in the middle and equal to half the length, wide and evenly rounded in front, obliquely rounded behind, the obliquity looking upwards; dorsal margin gently arched, ventral slightly sinuated in front of the middle. Seen from above, ovate, well rounded behind and subacutely pointed in front, more than twice as long as broad. Shell-surface smooth, yellowish, with darker clouded patches, bearing numerous distant, circular papillæ, and marked on the anterior, posterior, and ventral margins with short radiating hair-like lines. The shell of the male is more elongated, lower, and has the postero-ventral angle more pronounced.

Length of the male, .8 mm.; of the female, .75 mm.

Habitat.—Port of Nouméa, 2–6 fathoms; Levuka, between tide-marks; Sava-Sava Bay, Vanua Levu, 4 fathoms.

Cytheridea consobrina, n. sp. (Pl. III. figs. 5, 6).

Shell of the male, seen from the side, oblong, subovate, rather higher in front than behind, height equal to half the length. Extremities rounded, the posterior somewhat flattened, and bearing at its lower end a single strong, backward-pointing spine; dorsal margin slightly arcuate, sloping gently downwards from near the front; ventral margin almost straight. Seen from above, the outline is ovate, about twice and a half as long as broad, and with subparallel sides; obtusely pointed in front, rounded off behind. Shell-surface marked with closely-set subcircular excavations. Length 1 mm. The shells of the two sexes are alike in size, but that of the female is higher in proportion, and its posterior half is very tumid.

This species is in shape and general appearance of both sexes not unlike the common *Cytheridea torosa* of Europe, but differs very decidedly in the character of its surface markings, the fossæ being much larger; the shell also is more elongated, and in the female much more tumid behind. It was found plentifully in shore-sand from near low-water mark at Nouméa.

Genus *Loxococoncha*, G. O. Sars.*Loxococoncha gracilis*, n. sp. (Pl. IV. figs. 24–36).

Shell of the male, seen from the side, oblong-ovate, height equal to rather more than half the length. Anterior extremity well rounded, posterior obliquely truncated above the middle, rounded off below; dorsal margin straight, ventral sinuated in front. Seen from above, compressed, ovate, more than twice as long as broad, widest in the middle, tapered gradually to the acute anterior extremity, abruptly towards the posterior, which is strongly mucronate. The shell of the female is shorter, and has a strongly-arched dorsum. Surface marked with closely-set rounded pits and a few distant circular papillæ. Length of the male, .65 mm.; of the female, .55 mm.

Habitat.—Nouméa, in shore-sand, and dredged in 2–6 fathoms; Suva, mud-flats and

pools inside reef; Levuka, between tide-marks; Sava-Sava Bay, Vanua Levu, 4 fathoms; Vuna Point, Taviuni, between tide-marks; Mango Island, fringing reefs; Rambé Island, between tide-marks; Loma-Loma, in shore-sand; Lufi-Lufi; Upolu, reef and shore-pools.

This is perhaps the most abundant of the species met with in these gatherings, occurring more or less plentifully in almost all.

Loxococoncha avellana, G. S. Brady.

Loxococoncha avellana, Brady, "Ostracoda of Challenger Expedition," p. 117, pl. xxviii. fig. 1 *a-f*.

Habitat.—Port of Nouméa, 3–6 fathoms.

Loxococoncha honoluluensis, G. S. Brady.

Loxococoncha honoluluensis, Brady, "Ostracoda of Challenger Expedition," p. 117, pl. xxviii. fig. 6 *a-f*.

Habitat.—Nouméa, in shore-sand, and dredged in 2–6 fathoms; Suva, mud-flats and pools inside reef; Apia and Lufi-Lufi, Upolu, reef and shore-pools.

Loxococoncha australis, G. S. Brady.

Loxococoncha australis, Brady, "Ostracoda of Challenger Expedition," p. 119, pl. xxviii. fig. 5 *a-f* and pl. xxix. fig. 3 *a-d*.

Habitat.—Nouméa, in shore-sand, and dredged in 2–6 fathoms.

Loxococoncha pumicosa, G. S. Brady.

Loxococoncha pumicosa, Brady, "Ostracoda of Challenger Expedition," p. 118, pl. xxviii. fig. 2 *a-d*.

Habitat.—Nouméa, in shore-sand, and dredged in 2–6 fathoms; Suva, inside reef; Vuna Point, Taviuni, between tide-marks; Apia and Lufi-Lufi, Upolu, reef and shore-pools.

Loxococoncha alata, G. S. Brady.

Loxococoncha alata, Brady, *Ann. and Mag. Nat. Hist.*, ser. 4, vol. ii. (1868) p. 223, pl. xiv. figs. 8–13 (not *Loxococoncha alata* of the "Challenger" Report, which is *Loxococoncha gibbera*, Brady).

Habitat.—Nouméa, in shore-sand near Artillery Point; Sava-Sava Bay, Vanua Levu, 4 fathoms.

Loxococoncha anomala, G. S. Brady.

Loxococoncha anomala, Brady, "Ostracoda of Challenger Expedition," p. 123, pl. xxvii. fig. 5 *a-d*.

Habitat.—Port of Nouméa, 3–6 fathoms; Levuka, between tide-marks.

Loxococoncha dorso-tuberculata, G. S. Brady.

Normania dorso-tuberculata, Brady, *Trans. Zool. Soc.*, vol. v. p. 383, pl. lxi. figs. 14 *a-g*.

Habitat.—Suva, mud-flats; Levuka, between tide-marks; Vuna Point, Taviuni, between tide-marks; Mango Island, fringing reef; Loma-Loma, in shore-sand.

Loxoconcha gibbera, G. S. Brady (Pl. IV. figs. 27, 28).

Loxoconcha gibbera, Brady, *Linn. Soc. Journal*, "Zoology," vol. xix. p. 312, pl. xl. figs. 19-21.

Habitat.—Mango Island, fringing reef.

The figures given with the original description of this species are so inaccurate that I have drawn it afresh for this memoir. The illustrations now given may be taken as good representations of the type.

Genus *Xestoleberis*, G. O. Sars.

Xestoleberis curta, G. S. Brady.

Xestoleberis curta, Brady, "Ostracoda of Challenger Expedition," p. 126, pl. xxxi. fig. 6 *a-d*.

Habitat.—Nouméa, in shell-sand, and dredged in 2-6 fathoms; Mango Island, fringing reef; Lufi-Lufi, Upolu, reef and shore-pools.

Xestoleberis variegata, G. S. Brady.

Xestoleberis variegata, Brady, "Ostracoda of Challenger Expedition," p. 129, pl. xxxi. fig. 8 *a-g*.

Habitat.—Nouméa, dredged in 2-6 fathoms; Suva, mud-flats; Levuka, between tide-marks; Sava-Sava Bay, Vanua Levu, 4 fathoms; Vuna Point, Taviuni, between tide-marks; Rambé Island, between tide-marks; Loma-Loma, in shore-sand; Apia and Lufi-Lufi, Upolu, reef and shore-pools, and in shore-sand.

Shells which I refer to this species are very abundant in almost all these gatherings.

Xestoleberis granulosa, G. S. Brady.

Xestoleberis granulosa, Brady, "Ostracoda of Challenger Expedition," p. 125, pl. xxx. fig. 5 *a-d*.

Habitat.—Port of Nouméa, 3-6 fathoms.

Xestoleberis tumefacta,* G. S. Brady (Pl. III. figs. 7, 8).

Xestoleberis tumefacta, Brady, "Ostracoda of Challenger Expedition," p. 128, pl. xxxi. fig. 4 *a-d*.

Habitat.—Nouméa, 2-4 fathoms.

Xestoleberis gracilis, n. sp. (Pl. III. figs. 9, 10).

Shell, seen from the side, elongated, greatest height in the middle and equal to less than half the length. Anterior extremity much depressed, narrow and almost angular, posterior rounded; dorsal margin sloping with a gentle curve in front, evenly arched behind, ventral margin almost straight. Seen from above, the shell is ovate, widest behind the middle, width equal to fully half the length, tapered from the middle and acutely pointed in front, widely rounded behind. Shell quite smooth. Length 42 mm.

Habitat.—Lufi-Lufi, Upolu, reef and shore-pools.

Genus *Cytherura*, G. O. Sars.

Cytherura marcida, n. sp. (Pl. III. figs. 24, 25).

Shell of the male (?), seen from the side, rhomboidal, height the same throughout, and

* The figures here given are taken from a specimen of extreme tumidity, but which seems to possess no characters sufficient to separate it from the ordinary form.

equal to half the length. Anterior extremity rounded and somewhat oblique, posterior having a broad median beak, above which it slopes steeply and with a slight convexity to the dorsum; below it is obliquely truncated, the obliquity looking downwards, and rounded off at the ventral angle; dorsal margin straight in front, but elevated behind, and forming an angular hump; ventral sinuated in the middle. Seen from above irregularly lozenge-shaped, compressed, widest near the middle, more than twice as long as broad; anterior extremity broad, only slightly rounded; posterior very wide, truncated, and having a blunt median emarginate process; sides converging gradually and with a somewhat sinuous outline to the front, and deeply excavated towards the posterior extremity. Shell-surface very rugged, with irregular but not very prominent flexuous longitudinal ribs, which are connected transversely at intervals so as to form a rough reticulation; the anterior hinge-tubercle is large, polished, and conspicuous. There are two distinct forms of this shell, probably sexual. The second form differs from that described above, in having a much more regular surface with less rugged sculpture, a more even outline, and no angular hump on the dorsum. This I take to be the female. Length .6 mm.

Habitat.—Suva, reef; Levuka, between tide-marks; Loma-Loma, in shore-sand; Apia, Upolu, reef and shore-pools.

Cytherura entomon, n. sp. (Pl. III. figs. 26, 27, 27a).

Shell, seen from the side, subrhomboidal, height equal to rather more than half the length. Anterior extremity very oblique, slightly rounded, the obliquity looking upwards; posterior broadly beaked above the middle, the apex of the beak emarginated, below this the extremity slopes sharply away backwards, forming a continuous line with the ventral margin; dorsal margin rugged, broken by numerous small blunt projections; ventral convex. Seen from above, the outline is jagged and very irregular, more or less ovate, obtusely pointed in front, more produced and acute behind, width equal to about one half the length; behind the middle there is on each side a conspicuous club-like process directed transversely outwards. Shell-surface marked with indistinct oblong impressions, their long diameters directed transversely; towards the posterior extremity there is in some specimens a transverse series of about 5 or 6 backwardly-directed spines. Length .5 mm.

Habitat.—Port of Nouméa, 3–6 fathoms; Sava-Sava Bay, Vanua Levu, 4 fathoms.

The description applies to the largest and most rugged specimens; but others occur in which the surface is not nearly so rough, the lateral outline more regular, the strong, transverse processes being absent, and the posterior extremity produced in a linear fashion. A shell of this kind is represented at fig. 27a.

Cytherura scutellata, n. sp. (Pl. III. figs. 30, 31).

Shell, seen from the side, subrhomboidal, highest in the middle, height equal to more than half the length. Anterior extremity rounded, placed entirely below the middle line;

posterior produced in the middle into a large, wide, and truncated beak; dorsal margin boldly arched, sloping steeply behind and more gradually in front; ventral almost straight, rounded off at each end. Seen from above, the outline is elongated, subhexagonal, with straight, parallel sides, which converge abruptly towards the extremities; anterior extremity obtuse, subtruncate, posterior produced, tapering and pointed at the apex. Surface of the valves deeply excavated into a few (about twelve) polygonal, saucer-like cavities, each with an elevated nodule in its centre. Length .43 mm.

Habitat.—Levuka, between tide-marks. I have this species also from Princess Charlotte Harbour in West Australia.

This resembles so closely the well-known European species *Cytherura cellulosa*, (Norman), that I at first thought the two to be identical. But *C. cellulosa* is more angular in outline, has no distinct beak, and the surface excavations are much smaller and more numerous than in *C. scutellata*.

Genus *Cytheropteron*, G. O. Sars.

Cytheropteron coccoides, n. sp. (Pl. III. figs. 20, 21).

Shell, seen from the side, elongated, subtrapezoidal, nearly thrice as long as high; height behind and in front equal. Extremities equal, depressed, produced and subangular below the middle, the anterior angle somewhat rounded; dorsal margin almost straight in the middle, sloping with a steep curve at each end; ventral slightly sinuated in front, convex behind. Seen from above, oval, not quite twice as long as broad, widest in the middle; lateral margins evenly and boldly arcuate, extremities equal and almost rounded. Surface smooth, a slightly produced flange running round the valves, except on the dorsal margin. Length .46 mm.

Habitat.—Mango Island, fringing reef.

A very near ally of this species is a European one, *C. humile*, Brady and Norman, but *C. coccoides* is more depressed fore and aft, is more tumid, more pointed in front when seen dorsally, and has a distinctly papillose surface.

Cytheropteron rude, n. sp. (Pl. III. figs. 15–17).

Shell, seen from the side, subrhomboidal, highest in front, height equal to more than half the length. Anterior extremity very wide, obliquely rounded, the obliquity looking upwards; posterior tapered, produced in the middle to a subacute angle; dorsal margin high in front, sloping with a bold but irregular curve to the posterior extremity, ventral margin irregularly sinuous, angulated behind. Seen from above, the outline is hexagonal, widest in the middle, the width equal to nearly two-thirds of the length, lateral margins for the middle third of their course straight and parallel, converging with a steep slope to the acute anterior extremity, dipping at a right angle behind the middle, then sloping sharply to the posterior extremity, which is acutely mucronate. End view very irregular, wide at the base, which is produced laterally into rounded prominences, and is thrice emarginate in the middle; lateral margins very deeply sinuated, apex wide and emar-

ginate in the middle. Surface rugged, irregularly undulated and pitted; a longitudinal alæform process just within the ventral margin, but not strongly developed. Length .43 mm.

Habitat.—Sava-Sava Bay, Vanua Levu, 4 fathoms.

Cytheropteron longicaudatum, n. sp. (Pl. III. figs. 18, 19).

Shell, seen from the side, oblong, nearly equal in height throughout, height equal to about half the length. Anterior extremity obliquely rounded, the obliquity looking upwards; posterior produced into an acutely-tapering median triangular beak of great length; dorsal margin convex before and behind, with a very deep median sinus; ventral convex and rather sinuous, terminating in an abrupt angle behind. Seen from above, the outline is hastate, widest near the middle, width equal to two-thirds of the length; from the widest point the sides converge with a bold convexity forwards, forming a lancet-shaped front; posterior extremity forming a wide, tapering and very acute triangular process. Surface of the valves deeply furrowed across the middle, bearing also a more or less distinct central tubercle in front of the groove, and several obscurely radiating ribs with small fossæ in the interspaces. Length .57 mm.

Habitat.—Suva, mud-flats; Levuka, between tide-marks; Sava-Sava Bay, Vanua Levu, 4 fathoms; Rambé Island, between tide-marks; Loma-Loma, in shore-sand.

Cytheropteron guttatum, n. sp. (Pl. IV. figs. 29, 30).

Shell, seen from the side, subovate, highest in front of the middle, height equal to about two-thirds of the length. Anterior extremity wide and rounded, posterior subtruncated, slightly produced below the middle; dorsal margin well arched, obscurely angular over the anterior hinge; ventral straight, slightly sinuated in front and behind; lateral ala moderately prominent, and rounded off at each extremity. Seen from above, the outline is lozenge-shaped, widest behind the middle, width equal to two-thirds of the length; anterior extremity very obtuse, rounded; sides sloping with a bold convexity backwards, and near the posterior extremity dipping suddenly in a hollow curve to the extremity, which is wide and truncate, but narrower than the anterior. Surface smooth, marked throughout with closely-set circular, impressed puncta; hinge-tubercle polished and conspicuous. Length .5 mm.

Habitat.—Nouméa, dredged in 2-6 fathoms.

Cytheropteron (?) *trilobites*, n. sp. (Pl. III. figs. 22, 23).

Shell, seen from the side, oblong, quadrangular, highest in front, height equal to about half the length. Anterior extremity wide, obliquely subtruncated, only moderately rounded; posterior produced above the middle into a triangular beak, excavated below the middle; dorsal margin sloping rather steeply from the front, and showing two deep angular sinuations, one in front of and the other behind the middle; ventral nearly

straight, ending abruptly behind in a rectangular process. Seen from above, the outline is much like that of a trilobite, very wide and rounded in front, and narrowing a little towards the posterior extremity, which is wide and truncated, with a median triangular beak; width equal to more than two-thirds of the length. There is a slight median prominence on the anterior margin, and a more or less distinct constriction of the lateral margins in front of the middle, each side ending behind in an acutely-produced angle. The surface of the shell is very irregularly rugose and nodulated. End view quadrilateral, base very wide and prominent in the middle, apex wide and obliquely truncated, sides moderately convex, width greater than the height. Length .5 mm.

Habitat.—Banc de l'Aiguille, New Caledonia, dredged in 2–3 fathoms.

Genus *Cytherideis*, Jones.

Cytherideis baculoides, n. sp. (Pl. III. figs. 11, 12).

Shell, seen from the side, elongated, oblong, equal in height throughout, height equal to not much more than one-fourth of the length. Anterior extremity suddenly depressed, rounded off, almost angulated below; posterior evenly rounded; dorsal and ventral margins parallel and perfectly straight. Seen from above, compressed, fusiform, more than four times as long as broad, acuminate in front, rounded off behind. Shell pellucid, smooth, with a few minute, scattered, dot-like hairs. Length .75 mm.

Habitat.—Levuka, between tide-marks; Sava-Sava Bay, Vanua Levu, 4 fathoms.

Fam. PARADOXOSTOMATIDÆ.

Genus *Paradoxostoma*, Fischer.

Paradoxostoma ovatum, n. sp. (Pl. III. figs. 32, 33).

Shell, seen from the side, ovate, highest behind the middle, height equal to half the length. Anterior extremity narrow, evenly rounded; posterior obscurely angulated in the middle; the dorsal margin is boldly arched, and forms a continuous curve to the angulation of the posterior extremity, sloping steeply behind and very gently in front; ventral margin very slightly sinuated in front, boldly convex behind, and continuous with the posterior extremity. Seen from above, compressed, fusiform, widest in the middle, more than three times as long as broad, extremities equal and acuminate. Surface smooth, colour greenish, with a dark mottled band in the middle. Length .5 mm.

Habitat.—Between tide-marks, Vuna Point, Taviumi; and Levuka, north of the town.

Paradoxostoma Novæ-Caledoniæ, n. sp. (Pl. IV. fig. 19).

Shell, seen from the side, elongated, subovate, highest rather behind the middle, height equal to rather less than half the length. Anterior extremity narrow, evenly rounded; posterior scarcely rounded, subangular; dorsal margin rather boldly arched, highest behind the middle, thence sloping with a steep curve backwards and much more

gradually to the front; ventral margin sinuated in the middle, up-curved at each extremity. Seen from above, compressed, ovate, widest in the middle, sides arcuate and tapering evenly to the extremities, which are pointed and nearly equal; not quite four times as long as broad. Shell smooth and pellucid, marked with opaque patches. Length .55 mm.

Habitat.—Port of Nouméa, 3–4 fathoms.

Paradoxostoma retusum, n. sp. (Pl. IV. fig. 20).

Shell, seen from the side, oblong, flexuous, highest behind the middle, height equal to nearly half the length. Anterior extremity narrow, evenly rounded; posterior produced above the middle into a rounded beak, from which it slopes downwards and forwards with a full curve; dorsal margin boldly arched, sinuated in front of the posterior extremity; ventral rather deeply sinuated in the middle, behind which it forms a compressed and very convex marginal flange. Seen from above, compressed, widest in the middle, quite four times as long as broad; lateral margins evenly curved, anterior extremity obtuse, posterior acute. Shell pellucid, smooth, marked with opaque patches. Length .52 mm.

Habitat.—Apia, Upolu, pools on inner reef.

Section II. MYODOCOPA.

Fam. CYPRIDINIDÆ.

Genus *Philomedes*, Lilljeborg.

Philomedes vellicata, n. sp. (Pl. IV. figs. 9, 10).

Shell, seen from the side, oblong, subovate, greatest height in the middle, and equal to half the length. Anterior extremity narrow, forming a rounded beak, beneath which is a rather shallow notch; posterior obliquely truncate, the obliquity looking upwards; dorsal margin moderately and evenly arched, rounded off in front, obscurely angular behind; ventral evenly convex, rounded at both ends. Seen from above, the outline is ovate, much compressed, about three times as long as broad, with subparallel, slightly arcuate sides, which are slightly constricted behind the middle; obtuse in front, truncate behind, with a stout median prominence. Surface of the valves smooth, very finely punctated with linear dots, and marked behind the middle with a curved transverse furrow, which extends from the dorsal margin to below the middle of the valve. Length 1.1 mm.

Habitat.—Suva, pools on reef; Levuka, between tide-marks.

Genus *Pleoschisma*,* nov. gen.

Shell very dense, surface pitted, smooth or tuberculated; seen from the side subcircular, with a slight depression in place of a notch.

Pleoschisma robusta, n. sp. (Pl. IV. figs. 13, 14).

Shell, seen from the side, nearly circular, highest in the middle, height equal to more

* πλήος, full; σχισμή, a cleft.

than three-fourths of the length; anterior extremity rounded and slightly sinuated (scarcely notched) below the middle; posterior margin narrow and rectangularly truncate; dorsal margin boldly arched, its hinder half scarcely at all curved; ventral very strongly arcuate. Seen from above, ovate, with wide obtuse extremities; greatest width in the middle, and equal to less than half the length. Surface marked with closely-set circular punctations, and in old shells covered with a dense reddish-brown incrustation. Length .9 mm.

A shell presenting much the same general characters as the above, but smaller and more angular in outline and with a more distinct notch, occurred in the same gathering. This may perhaps be the male of *P. robusta*. I have had no opportunity of examining in detail the soft parts of the animal, all my specimens being dried shells and containing little or no remains of the internal structures; but the fragments which I have seen agree in general character with *Cypridina*.

Habitat.—Vuna Point, Taviuni, low-tide pools.

Pleoschisma moroides, n. sp. (Plate I. figs. 23, 24).

Shell, seen from the side, subcircular, height equal to three-fourths of the length. Anterior extremity wide, feebly rounded, almost flat, notch obsolete; posterior narrower, rounded, slightly sinuated above and below; dorsal and ventral margins moderately convex. Seen from above, broadly ovate, nearly equal in width throughout; extremities broad and rounded, the anterior rather the narrower of the two; lateral margins moderately arcuate, width equal to four-sevenths of the length. Surface of the shell minutely punctated, and in old specimens raised into circular bosses; colour dark brown. Length 1.2 mm.

Habitat.—Port of Nouméa, dredged in 3–6 fathoms; Suva, inside reef; Levuka, between tide-marks; Vuna Point, Taviuni, between tide-marks; Mango Island, fringing reef.

This curious species occurs not uncommonly in several of the localities above mentioned, but I have been unable to obtain more than very fragmentary specimens of the soft parts, which, so far as can be ascertained, closely resemble those of *Cypridina*.

Pleoschisma reticulata, n. sp. (Pl. IV. figs. 11, 12).

Shell, seen from the side, subcircular, greatest height situated in the middle and equal to three-fourths of the length. Anterior extremity broadly rounded, slightly sinuated below the beak, which is short and obtuse; posterior margin narrower, rounded, obscurely angular at its junction with the dorsum, but rounded off below; dorsal and ventral margins boldly convex. Seen from above, broadly ovate, widest in the middle, width equal to three-fifths of the length; extremities obtuse, rounded, rather more tapered in front than behind; shell-surface smooth, marked with a delicate reticulated pattern. Length .57 mm.

Only one specimen seen, and the locality in which it occurred was, unfortunately, not noted.

Genus *Asterope*, Philippi.

Asterope cylindrica, n. sp. (Pl. IV. figs. 7, 8).

Shell, seen from the side, oblong, oval, of equal height throughout, height equal to two-fifths of the length. Extremities equal and well rounded, the anterior only slightly sinuated below the beak; dorsal and ventral margins quite straight. Seen from above, the outline is elongated, ovate, three times as long as broad; extremities nearly equal, very obtusely pointed. Surface of the valves quite smooth. Length 1.3 mm.

Habitat.—Suva, inside reef.

Asterope australis, n. sp. (Pl. IV. figs. 1, 2).

Shell, seen from the side, broadly ovate, rather higher behind than in front, height equal to about three-fifths of the length; extremities rounded; notch of moderate depth, beak subacute; dorsal and ventral margins moderately and equally convex. Seen from above, ovate, pointed in front, moderately rounded behind, widest in the middle; width equal to two-fifths of the length. Surface smooth. Length 2.1 mm.

Habitat.—Nouméa, dredged, 2–4 fathoms; Suva, inside reef; Mango Island, fringing reef; Apia, Upolu, reef and shore-pools.

Genus *Streptoleberis*, nov. gen.

Shell, seen from the side, elongated, flexuous; beak much produced forwards, the notch being on the ventral aspect of the shell; posterior extremity narrower, produced into a pointed terminal beak. Animal unknown.

Streptoleberis crenulata, n. sp. (Pl. IV. figs. 3, 4).

Shell, seen from the side, irregularly lozenge-shaped, height equal to half the length, greatest in the middle. Anterior extremity produced in the middle line into a rounded beak, which is crenated at the apex; posterior narrowed, also produced in the median line into a sharp triangular beak; dorsal margin very slightly arcuate in the middle, sloping with a steep curve to the front, angulated behind, and thence sloping very abruptly to the terminal beak; ventral margin slightly convex, having a wide but shallow and angular notch in front, up-curved behind to the posterior extremity. Seen from above, ovate, widest near the front, width equal to about two-fifths of the length, tapering rather abruptly to the front, which is sharply pointed; posterior extremity rather broadly rounded; sides sinuous. Surface of the shell covered with small, circular impressions, and marked in a somewhat reticulated fashion with irregularly flexuous elevated ridges. Length 1.05 mm.

Habitat.—Nouméa, dredged in 2–4 fathoms.

Only one example of this species was found in the Nouméa dredging, but the genus was already familiar to me from specimens dredged in the North Atlantic, but not yet described. The very much produced extremities and the twisted form of the shell are quite characteristic.

Genus *Sarsiella*, Norman.

(British Association Report, 1868, p. 292.)

Sarsiella sculpta, n. sp. (Pl. I. figs. 17–20).

Shell, seen from the side, subcircular, height and length nearly equal. Anterior extremity flattened, truncate, having a wide triangular prominence above, and a similar but less pronounced process below; posterior extremity rounded and bordered with a more or less regular series of small nodular prominences; dorsal margin arched, sinuated at its junction with the posterior border; ventral convex, generally somewhat crenulated. Seen from above, the outline is subcuneiform, wide and truncated behind, with a prominent median beak, obtusely pointed in front, the sides parallel behind the middle, but converging gradually towards the front. Surface of the valves undulated, marked with closely-set small excavations, and having two stout flexuous ribs running in a longitudinal direction from near the triangular prominences of the anterior margin. These ribs are in some cases lost near the centre of the valve, and sometimes stretch over nearly its whole length, and there are often numerous smaller ridges running in a radial direction from the circumference of the shell inwards. Length 1.4 mm.

Habitat.—Nouméa, dredged in 2–4 fathoms; Levuka, between tide-marks; Vuna Point, Taviuni, between tide-marks.

This appears to be a not uncommon species of a group which, judging from the evidence of these gatherings, is much more strongly represented in the Southern than in the Northern Hemisphere. Almost nothing was seen of the soft parts of the animal. The very variable sculpturing of the shell—no two specimens being exactly alike in this respect—seems to depend partly on age and partly, perhaps, on sex. The figure 18, having been drawn from a gaping shell, gives an incorrect idea of its width. The description above given applies to specimens of the type figured in Pl. I. figs. 17, 18; but in a dredging from off Cap Bon Louis, New Caledonia, there occurred two specimens, differing very considerably from the types, but which from their general aspect and the close similarity of sculpture, appear to be, if not the same species, at any rate so closely related that I cannot find any satisfactory distinctive characters. One of these specimens is figured in Pl. I. figs. 19, 20.

Sarsiella simplex, n. sp. (Pl. IV. figs. 15, 16).

Shell, seen from the side, almost circular, with a large median beak-like process behind; length and height (exclusive of the beak) equal; beak subtriangular, truncated at the apex. Seen from above, the outline is lozenge-shaped, widest in the middle, twice as

long as broad; anterior extremity obtusely rounded; posterior tapered and subacute; lateral margin very boldly convex. Surface of the shell perfectly smooth. Length 1·05 mm.

Habitat.—Port of Nouméa, 2–6 fathoms.

Sarsiella rudis, n. sp. (Pl. IV. figs. 5, 6).

Shell, seen from the side, subcircular, with a prominent median beak; height and length (exclusive of the beak) about equal. Anterior margin rounded, rather flat above the middle, posterior flattened and sloping steeply above the beak, sinuated below; dorsal margin flattened, almost straight; ventral boldly convex. Seen from above, the outline is hexagonal, with parallel, straight sides converging abruptly and equally to the extremities, which are rather wide and obtuse; width equal to two-thirds of the length. Surface of the shell devoid of regular sculpture, but vaguely ridged and undulated. Length ·84 mm.

Habitat.—Rambé Island, between tide-marks; Suva, shallow water inside reef.

Sarsiella foveata, n. sp. (Pl. I. figs. 21, 22).

Shell, seen from the side, almost circular, with a prominent beak; height equal to about six-sevenths of the length (exclusive of the beak). Anterior extremity rounded, slightly prominent about the middle, posterior also rounded; beak large, equal to one-fourth of the height of the shell, truncated at the apex; dorsal and ventral margins boldly convex, dorsal sloping with a gentle curve towards the hinder end, ventral curve much more abrupt and almost angulated behind. Seen from above, the outline is elongated, subhexagonal, widest behind the middle, width equal to half the length; anterior extremity broad and rounded, emarginate in the middle; posterior sharply pointed; the sides converge gradually from their widest point towards the front; backwards the convergence is much more abrupt and sinuous; the whole circumference is much jagged. End view subquadrangular, constricted in the middle. Shell-surface marked throughout with large and sharply-cut, deep, angular excavations; valves protuberant behind the middle, and forming towards the ventral margin an angular prominence. Length 1·3 mm.

Habitat.—Banc de l'Aiguille, Nouméa, 2–3 fathoms. One specimen only seen.

Section III. PLATYCOPA.

Fam. CYTHERELLIDÆ.

Genus *Cytherella*, Jones.

Cytherella semitalis, G. S. Brady.

Cytherella semitalis, Brady, "Ostracoda of Challenger Expedition," p. 175, pl. xliv. fig. 2 a–e.

Habitat.—Port of Nouméa, 3–6 fathoms; Suva-Suva Bay, Vanua Levu, 4 fathoms.

Cytherella (?) *tumida*, n. sp. (Pl. IV. figs. 21–23).

Shell, seen from the side, somewhat oblique, subelliptical, rather lower in front than behind, height equal to more than half the length; left valve much larger than the right, and overlapping greatly on the dorsal margin. Extremities rounded, the anterior somewhat the wider; dorsal and ventral margins only slightly convex, parallel. Seen from above, broadly ovate, widest behind the middle, width equal to about two-thirds of the length, obtusely pointed in front, broadly rounded behind, lateral margins boldly convex. Shell-surface quite smooth. Length .48 mm.

Habitat.—One specimen only of this species was found in a gathering from reef-pools at Lufi-Lufi, Samoa. This specimen was destroyed in an unsuccessful attempt to find the contained animal. The generic reference must be considered only provisional, one important difference between this and the typical *Cytherellæ* being the larger size of the left valve; whereas the valve of the *right* side is the larger in *Cytherella*.

Cytherella cuneolus? G. S. Brady.

Cytherella cuneolus? Brady, *Les Fonds de la Mer*, vol. i. p. 192, pl. xix. figs. 18, 19.

A shell, which probably belongs to this species, was found amongst shore-sand from Porcheron's Beach, Nouméa. The specimen is, however, malformed, and the two valves differ considerably one from the other in shape and sculpture, so that I cannot assign it with certainty to this or any species.

The following is a descriptive list of the gatherings in which the specimens have been found. The particulars in each case have been inserted from notes supplied to me by my brother, Dr H. B. BRADY, F.R.S., to whom I am indebted for the material. In assigning localities to the different species, I have not thought it necessary in all cases to specify these localities with absolute accuracy, as, for instance, in the case of the several gatherings in or near the Port of Nouméa, where the depth and physical conditions do not present any great variety. The multiplication of references to such localities could scarcely serve any useful end.

NEW CALEDONIA.

1. *Nouméa*.—Porcheron's Beach, near the salt-flats; brackish mud from pools about the mangrove trees, near or above high-water mark.
2. *Nouméa*.—Shore-sand near low water, head of bay, close to the road leading to Artillery Point; reddish-brown muddy sand with stones, mollusc shells, fragments of Echini, Orbitolites, and Alveolinæ.
3. *Port of Nouméa*.—3–4 fathoms; muddy sand, full of small Orbitolites and Alveolinæ.
4. *Port of Nouméa*.—South side, off Artillery Barracks, 5–6 fathoms; soft muddy sand, with mollusc-shells, whole and broken, and some coral.
5. *Near Nouméa*.—Between Ile Porc-Épic and shore; weedy bottom, depth 2 fathoms.

6. *Near Nouméa*.—Off Cap Bon Louis, 4 fathoms ; weedy bottom.
 7. *Near Nouméa*.—Banc de l'Aiguille, 2-3 fathoms ; weedy bottom, coral sand, with a few Orbitolites.

FIJI.

8. *Suva*.—Mud-flats between tide-marks ; fine muddy sand, with remains of Mollusca, Echini, and Polyzoa.
 9. *Suva*.—Inside reef, pools and shallows ; weedy bottom ; coral sand.
 10. *Suva Bay*.—12 fathoms ; anchor-mud.
 11. *Sava-Sava Bay, Vanua Lenu*.—4 fathoms ; anchor-mud.
 12. *Levuka, Ovalau*.—Beach north of the town ; sand from between tide-marks and from shore-pools ; coral sand, with Polytrema, Orbitolites, fragments of Mollusca, Echini, &c.
 13. *Vuna Point, Taviumi*.—Low-water pools and shore-sand ; black volcanic sand, laden with organic fragments, Orbitolites, Polytrema, Diatomaceæ, &c.
 14. *Mango Island*.—From the boat-track on fringing reef, very shallow, about 1 foot at low tide ; coral sand.
 15. *Rambé Island*.—Shore-sand and low-water pools ; rough sand, with Orbitolites, Polytrema, &c.
 16. *Loma-Loma, Vanua Mbalavu*.—Sand from between tide-marks ; fine sand, with coral and sponge fragments and decaying vegetable matter.

SAMOA.

17. *Apia, Upolu*.—Pools on inner barrier reef and shallows between reef and shore ; dead coral, with Mollusca, nullipores, &c.
 18. *Lufi-Lufi, Upolu*.—Coral sand from reef and from pools and shallows—3 or 4 feet deep—between reef and shore.
 19. *Lufi-Lufi, Upolu*.—Shore-sand from coast ; chiefly volcanic sand, with shell fragments, much worn.

The following is a complete list of the species. The numerals refer to the places in which the species occurred, and correspond to those prefixed to the localities in the foregoing list :—

LIST OF SPECIES.

PODOCOPA.

CYPRIDIDÆ.

- Phlyctenophora viridis*, n. sp., 3, 11, 12, 13, 14, 15, 16, 17, 18, 19.
 „ *reniformis*, n. sp., 8, 14, 16, 18, 19.
Pontocypris attenuata, G. S. Brady, 3, 5, 6, 17.
 „ *gracilis*, n. sp., 12, 15.
 „ *sicula*, n. sp., 11.
Anchistrocheles fumata, n. sp., 18.

BAIRDIIDÆ.

- Macrocypris decora*, G. S. Brady, 1, 2, 3, 4, 13.
Bairdia simplex, G. S. Brady, 8, 13.
 „ *tenera*, G. S. Brady, 17, 18.
 „ *amygdaloides*, G. S. Brady, 3, 5, 6, 9, 12, 13, 14, 15, 16.
 „ *Crosskeiana*, G. S. Brady, 8, 17, 18.
 „ *Woodwardiana*, G. S. Brady, 13.
 „ *foveolata*, G. S. Brady, 1, 2, 3, 4, 5, 6, 7, 8, 11, 13, 14, 17, 18.
 „ *Milne-Edwardsii*, G. S. Brady, 5, 7, 9, 12, 13, 16, 17.
Bairdia nodulifera, n. sp., 12.
 „ *truncata*, n. sp., 1, 17.
 „ *ventricosa*, n. sp., 2.
 „ *tuberculata*, G. S. Brady, 3.
 „ *expansa*, G. S. Brady, 5, 7, 8, 17, 18.
 „ *hirsuta*, G. S. Brady, 3.

CYTHERIDÆ.

- Cythere demissa*, G. S. Brady, 1, 3, 4, 5, 6, 7, 11, 12, 14, 15, 17.
 „ *crenata*, n. sp., 1, 2, 3, 4, 6, 7, 9, 11, 12, 14, 15, 17.
 „ *ochracea*, n. sp., 1, 2, 7.
 „ *inflata*, n. sp., 8, 11, 12, 13, 15, 16, 19.
 „ *cuneolus*, n. sp., 7, 14, 16.
 „ *ovalis*, G. S. Brady, 14.
 „ *caudata*, n. sp., 11.
 „ *Scotti*, n. sp., 5, 7.
 „ *torticollis*, n. sp., 2, 3, 5, 6, 7.
 „ *Packardi*, G. S. Brady, 1, 2, 3, 5, 6, 7, 8, 11, 12, 13, 15, 16, 17, 18.
 „ *deltoides*, n. sp., 2, 3, 4, 7, 17, 18, 19.
 „ *infundibulata*, n. sp., 13.
 „ *prava*, Baird, 9, 11, 12, 13, 14, 15, 16, 17.
 „ *rectangularis*, G. S. Brady, 1, 12, 13, 15, 16.
 „ *Goujoni*, G. S. Brady, 3, 4.
 „ *labiata*, n. sp., 12.
 „ *ichthyoderma*, n. sp., 4, 8, 9, 11, 13, 15, 18.
 „ *militaris*, G. S. Brady, 10.
 „ *quadriserialis*, n. sp., 2, 3, 4.
Limnocythere Fijiensis, n. sp., 12, 13, 14, 15, 16.
Cytheridea flavescens, n. sp., 3, 4, 11, 12.
 „ *consobrina*, n. sp., 2.
 „ *spinulosa*, G. S. Brady, 1, 2, 3, 4, 10, 11, 15.
Loxococoncha gracilis, n. sp., 1, 2, 3, 8, 9, 11, 12, 13, 14, 15, 16, 18, 19.
 „ *avellana*, G. S. Brady, 3.
 „ *Homolubiensis*, G. S. Brady, 1, 2, 3, 4, 5, 6, 7, 8, 9, 17, 18.
 „ *australis*, G. S. Brady, 4, 6.
 „ *gumicosa*, G. S. Brady, 1, 2, 3, 5, 6, 7, 9, 13, 17, 18, 19.
 „ *alata*, G. S. Brady, 11.
 „ *anomala*, G. S. Brady, 3, 12.
 „ *dorso-tuberculata*, G. S. Brady, 8, 12, 13, 14, 15, 16.
 „ *gibbera*, G. S. Brady, 14.
Xestoleberis curta, G. S. Brady, 1, 2, 5, 6, 7, 14, 18.
 „ *variegata*, G. S. Brady, 3, 4, 5, 6, 7, 8, 11, 12, 13, 15, 16, 17, 18, 19.
 „ *gracilis*, n. sp., 18.

- Xestoleberis granulosa*, G. S. Brady, 3.
 „ *tumefacta*, G. S. Brady, 7.
Cytherura longicaudata, n. sp., 11, 12, 13, 16.
 „ *naevicula*, n. sp., 12, 16, 17, 18.
 „ *eulomon*, n. sp., 3, 11.
 „ *scutellata*, n. sp., 12.
Cytheropteron coccoides, n. sp., 14.
 „ *rude*, n. sp., 11.
 „ *longicaudatum*, 8, 11, 15, 16.
 „ *guttatum*, n. sp., 3, 4.
 „ *trilobites*, n. sp., 7.
Cytherideis baculoides, n. sp., 11, 12.

PARADOXOSTOMATIDÆ.

- Paradoxostoma ovatum*, n. sp., 12, 13.
 „ *Novæ Caledoniæ*, n. sp., 3.
 „ *retusum*, n. sp., 17.

MYODOCOPA.

CYPRIDINIDÆ.

- Philomedes vellicata*, n. sp., 9, 12.
Asterope australis, n. sp., 6, 7, 9, 13, 14, 17.
 „ *cylindrica*, n. sp., 9.
Streptoleberis crenulata, n. gen. and sp., 6, 7.
Pleoschisma robusta, n. gen. and sp., 13.
 „ *reticulata*, n. gen. and sp. (?).
 „ *moroides*, n. gen. and sp., 3, 6, 9, 12, 13, 14.
Sarsiella simplex, n. sp., 3, 6.
 „ *foveata*, n. sp., 7.
 „ *rudis*, n. sp., 9, 15.
 „ *sculpta*, n. sp., 5, 6, 12, 13.

PLATYCOPA.

CYTHERELLIDÆ.

- Cytherella semitalis*, G. S. Brady, 4, 10, 11.
 „ *cuneolus*? G. S. Brady, 1 (?).
 „ *tumida*, n. sp., 18.

EXPLANATION OF PLATES.

PLATE I.

- Phlyctenophora viridis*.
 Fig. 1. Shell seen from left side } × 50.
 „ 2. „ „ above }
Pontocypris attenuata.
 „ 3. Shell seen from left side } × 50.
 „ 4. „ „ above }

- Pontocypris gracilis.*
- Fig. 5. Shell seen from left side }
 " 6. " " above } × 50.
- Pontocypris sicula.*
- " 7. Shell seen from left side }
 " 8. " " above } × 40.
- Phlyctenophora reniformis.*
- " 9. Shell seen from left side }
 " 10. " " above } × 60.
- Bairdia tenera.*
- " 11. Shell seen from left side }
 " 12. " " above } × 40.
- Bairdia nodulifera.*
- " 13. Shell seen from left side }
 " 14. " " above } × 40.
 " 15. " " behind }
 " 16. Posterior extremities of valves seen obliquely.
- Sarsiella sculpta.*
- " 17. Shell seen from right side }
 " 18. " " above } × 40.
 " 19. " " right side }
 " 20. " " below }
- Sarsiella foveata.*
- " 21. Shell seen from left side }
 " 22. " " below } × 40.
- Pleoschisma moroides.*
- " 23. Shell seen from right side }
 " 24. " " above } × 40.

PLATE II.

- Bairdia truncata.*
- Fig. 1. Shell seen from left side }
 " 2. " " above } × 65.
- Cythere inflata.*
- " 3. Shell seen from left side }
 " 4. " " above } × 60.
 " 5. " " " }
- Cythere emeculus.*
- " 6. Shell seen from left side }
 " 7. " " above } × 80.
- Cythere ochracea.*
- " 8. Shell seen from left side }
 " 9. " " above } × 80.
- Cythere caudata.*
- " 10. Shell seen from left side }
 " 11. " " above } × 80.
- Cythere ovalis.*
- " 12. Shell seen from left side × 50.

- Cythere nodulosa.*
- Fig. 13. Shell seen from left side }
 " 14. " " above } × 80.
- Cythere infundibulata.*
- " 15. Shell seen from left side }
 " 16. " " above } × 50.
- Cythere deltoides.*
- " 17. Shell seen from left side }
 " 18. " " above } × 60.
- Cythere Packardii.*
- " 19. Shell seen from left side × 60.
- Cythere labiata.*
- " 20. Shell seen from left side }
 " 21. " " above } × 50.
- Cythere ichthyoderma.*
- " 22. Shell seen from left side }
 " 23. " " above } × 50.
- Cythere militaris.*
- " 24. Shell seen from left side }
 " 25. " " above } × 40.
 " 26. " " below }
- Cythere quadriserialis.*
- " 27. Shell seen from left side }
 " 28. " " above } × 50.
- Cytheridea flavescens.*
- " 29. Shell (female) seen from left side }
 " 30. " " " above } × 60.
 " 31. " (male) " left side }
 " 32. " " " above }
- Limnocythere Fijiana.*
- " 33. Shell seen from left side }
 " 34. " " above } × 60.
- Cythere crenata.*
- " 35. Shell seen from left side }
 " 36. " " above } × 60.

PLATE III.

- Cythere torticollis.*
- Fig. 1. Shell seen from left side }
 " 2. " " below } × 50.
- Cythere Scotti.*
- " 3. Shell seen from left side }
 " 4. " " above } × 40.
- Cytheridea consobrina.*
- " 5. Shell (male) seen from left side }
 " 6. " " " above } × 40.
- Xestoleberis tumefacta.*
- " 7. Shell seen from left side }
 " 8. " " below } × 80.

- Xestoleberis gracilis.*
- Fig. 9. Shell seen from left side } × 80.
 " 10. " " above } × 80.
- Cytherideis baculoides.*
- " 11. Shell seen from left side } × 50.
 " 12. " " above } × 50.
- Anchistrocheles fumata.*
- " 13. Shell seen from left side } × 50.
 " 14. " " above } × 50.
- Cytheropteron rude.*
- " 15. Shell seen from left side } × 80.
 " 16. " " above } × 80.
 " 17. " " front } × 80.
- Cytheropteron longicaudatum.*
- " 18. Shell seen from left side } × 60
 " 19. " " above } × 60
- Cytheropteron coccoides.*
- " 20. Shell seen from left side } × 80.
 " 21. " " above } × 80.
- Cytheropteron trilobites.*
- " 22. Shell seen from left side } × 80.
 " 23. " " below } × 80.
- Cytherura marcida.*
- " 24. Shell seen from left side } × 60.
 " 25. " " above } × 60.
- Cytherura entomon.*
- " 26. Shell seen from left side } × 80.
 " 27. " " above } × 80.
 " 27a. Another form seen from above } × 80.
- Cytherura curvicostata.*
- " 28. Shell seen from left side } × 80.
 " 29. " " above } × 80.
- Cytherura scutellata.*
- " 30. Shell seen from left side } × 80.
 " 31. " " above } × 80.
- Paradoxostoma oratum.*
- " 32. Shell seen from left side } × 70.
 " 33. " " above } × 70.

PLATE IV.

- Asterope australis.*
- Fig. 1. Shell seen from left side } × 22.
 " 2. " " below } × 22.
- Streptoleberis crenulata.*
- " 3. Shell seen from right side } × 40.
 " 4. " " above } × 40.
- Sarsiella rulis.*
- " 5. Shell seen from right side } × 40.
 " 6. " " above } × 40.

- Asterope cylindrica.*
- Fig. 7. Shell seen from right side }
 " 8. " " above } × 40.
- Philomedes cellicata.*
- " 9. Shell seen from right side }
 " 10. " " above } × 40.
- Pleoschisma reticulata.*
- " 11. Shell seen from left side }
 " 12. " " above } × 80.
- Pleoschisma robusta.*
- " 13. Shell seen from left side }
 " 14. " " above } × 50.
- Sarsicella simplex.*
- " 15. Shell seen from left side }
 " 16. " " above } × 40.
- Bairlia ventricosa.*
- " 17. Shell seen from left side }
 " 18. " " above } × 60.
- Paraloxostoma Novae Caledoniae.*
- " 19. Shell seen from left side × 80.
- Paraloxostoma retusum.*
- " 20. Shell seen from left side × 80.
- Cytherella tumida.*
- " 21. Shell seen from right side }
 " 22. " " above } × 80.
 " 23. " " front }
- Loxoconcha gracilis.*
- " 24. Shell (male) seen from left side }
 " 25. " " " above } × 60.
 " 26. " (female) " left side }
- Loxoconcha gibbera.*
- " 27. Shell seen from left side }
 " 28. " " above } × 60.
- Cytheropteron guttatum.*
- " 29. Shell seen from left side }
 " 30. " " above } × 60.







G. S. Brady, del.



G. S. Brady, del.