Dr. J. Stilwell
with the author's kind regards

AUSTRALASIAN ANTARCTIC EXPEDITION

1911-14.

UNDER THE LEADERSHIP OF SIR DOUGLAS MAWSON, D.Sc., B.E.

SCIENTIFIC REPORTS.

SERIES C.—ZOOLOGY AND BOTANY.

VOL. V. PART 7.

OSTRACODA

BY

FREDERICK CHAPMAN, A.L.S., F.R.M.S.
NATIONAL MUSEUM, MELBOURNE.

WITH TWO PLATES.

PRICE: FOUR SHILLINGS AND SEVENPENCE.
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CONTENTS.

TWO PLATES.

OSTRACODA.

FROM SOUNDINGS OBTAINED DURING THE CRUISES OF THE S.Y. "AURORA."

(PLATES XXI AND XXII.)

By FREDK. CHAPMAN, A.L.S., F.R.M.S. (National Museum, Melbourne).

INTRODUCTORY NOTE.

OUT of a total of 118 samples of soundings and dredgings submitted for detailed examination of the Foraminifera, only 27 contained Ostracoda, whilst nearly all contained Foraminifera.

The type of deposit which most frequently yielded Ostracoda is the terrigenous muds and sands, heading the list with 15 samples varying in depth from 125 to 1,320 fathoms. Globigerina Ooze comes a close second, in having 11 samples, varying in depth from 706 to 2,610 fathoms. Lastly, Diatomaceous Ooze yielded a single Ostracod (*Cythere dasyderma*) at 1,900 fathoms.

SOUNDINGS IN WHICH OSTRACODA WERE FOUND.

The following are the soundings containing Ostracoda :—

ANTARCTIC SUMMER CRUISE, S.Y. "AURORA," 1911–12.

No. 11.—1st Feb., 1912. Lat. 64° 49′ S., long. 115° 57′ E. 930 fathoms. Mud, sand and small pebbles, with Foraminifera, Echinoid spines, and Radiolaria.

Krithe tumida G. S. Brady.

No. 20.—9th Feb., 1912. Lat. 64° 34′ S., long. 96° 58½′ E. 110 fathoms. Grey sandy and spicular mud with small stones.

Cythere dictyon G. S. Brady.

Cytheropteron abyssorum G. S. Brady.

No. 25.—13th Feb., 1912. Lat. 65° 5¼′ S., long. 94° 25′ E. 500 fathoms. Grey mud.

Cythere wyville-thomsoni G. S. Brady.

No. 28.—14th Feb., 1912. Lat. 66° 18′ S., long. 94° 15′ E. 160 fathoms. Mud and stones.

Argillœcia affinis Chapman.
Cythere cristatella G. S. Brady.
„ *foveolata* G. S. Brady.
„ *patagoniensis* G. S. Brady.
„ *polytrema* G. S. Brady.
„ *subrufa* G. S. Brady.
Krithe producta G. S. Brady.
„ *tumida* G. S. Brady.
Xestoleberis davidiana Chapman.
Cytherura obliqua G. S. Brady.

No. 29.—14th Feb., 1912. Lat. 66° 13′ S., long. 94° 15′ E. 125 fathoms. Shelly mud and stones.

Aglaia pusilla G. S. Brady.
Argillœcia badia G. S. Brady.
Macrocypris decora G. S. Brady sp.
Bairdia amygdaloides G. S. Brady.
„ *foveolata* G. S. Brady.
Cythere normani G. S. Brady.
„ *wyville-thomsoni* G. S. Brady.
Xestoleberis davidiana Chapman.
Cytheropteron abyssorum G. S. Brady.
„ *assimile* G. S. Brady.
„ *umbonatum* Williamson sp., var. *acanthoptera* Marsson var.
Pseudocythere caudata G. O. Sars.
Sclerochilus contortus Norman sp.

No. 30.—15th Feb., 1912. Lat. 66° 21′ S., long. 94° 50′ E. 182 fathoms. Grey, sandy mud with some stones and Polyzoa.

Argillœcia gracilior Chapman.
Cythere dictyon G. S. Brady.
„ *subrufa* G. S. Brady.
Cytheropteron armatum Chapm. sp., var. *spinosa* var. nov.
„ *assimile* G. S. Brady.
„ *coccoides* G. S. Brady.
Pseudocythere caudata G. O. Sars.

Sclerochilus lineatus sp. nov.

Paradoxostoma ensiforme G. S. Brady.

Polycope orbicularis G. O. Sars.

No. 31.—15th Feb., 1912. Lat. 66° 19′ S., long. 95° 57′ E. 220 fathoms. Pale greenish mud with Polyzoa.

Argillœcia badia G. S. Brady.

Bythocypris reniformis G. S. Brady.

Bairdia amygdaloides G. S. Brady.

Cythere cristatella G. S. Brady.

„ *foveolata* G. S. Brady.

„ *obtusalata* G. S. Brady.

„ *subrufa* G. S. Brady.

„ *wyville-thomsoni* G. S. Brady.

Xestoleberis davidiana Chapm.

Cytherura costellata G. S. Brady.

„ *lilljeborgi* G. S. Brady.

Cytheropteron assimile G. S. Brady.

Pseudocythere caudata G. O. Sars.

Sclerochilus contortus Norman sp.

Subantarctic Cruises, "Aurora," 1912 (First Cruise).

No. I.—26th May, 1912. Lat. 44° 12′ S., long. 140° 19′ E. 2,590 fathoms. Globigerina Ooze.

Krithe cf. *producta* G. S. Brady.

Additional sample. 3rd Sept., 1912. 142 miles S.W. of St. Frances Island, South Australia. 706 fathoms. Globigerina Ooze.

Bairdia abyssicola G. S. Brady.

„ *amygdaloides* G. S. Brady.

„ *foveolata* G. S. Brady.

Cythere davisi Chapm.

„ *dictyon* G. S. Brady.

„ *scabrocuneata* G. S. Brady.

Krithe eggeri Ch.

„ *producta* G.S.B.

Xestoleberis davidiana Ch.

Cytheropteron antarcticum Ch.

SUBANTARCTIC CRUISE, "AURORA," 1912 (SECOND CRUISE).

No. 11.—13th Nov., 1912. Lat. 44° 20½′ S., long. 147° 33′ E. 1,475 fathoms. Globigerina Ooze.

Bairdia abyssicola G. S. Brady.
Cythere dasyderma G. S. Brady.
,, *obtusalata* G. S. Brady.
Krithe angusta Brady and Norman.

No. 12.—14th Nov., 1912. Lat. 45° 26′ S., long. 147° 26′ E. 2,083 fathoms. Globigerina Ooze.

Cythere dasyderma G. S. Brady.
Krithe tumida G. S. Brady.

No. 13.—14th Nov., 1912. Lat. 46° 2′ S., long. 147° 30′ E. 1,940 fathoms. Globigerina Ooze.

Cythere subrufa G. S. Brady.
,, *wyville-thomsoni* G. S. Brady.
Krithe tumida G. S. Brady.

No. 40.—1st Dec., 1912. Lat. 49° 23½′ S., long. 159° 47′ E. 2,610 fathoms. Globigerina Ooze with some terrigenous sand.

Krithe producta G. S. Brady.

No. 42.—5th Dec., 1912. Lat. 48° 19½′ S., long. 149° 19′ E. 1,076 fathoms. Globigerina Ooze.

Krithe producta G. S. Brady.
Cytheropteron abyssorum G. S. Brady.

No. 56.—11th Dec., 1912. Lat. 42° 53′ S., long. 148° 25¼′ E. 675 fathoms. Brown terrigenous sand with a few Sponge-spicules.

Phlyctenophora zealandica G. S. Brady.
Argillœcia gracilior Chapman.
Krithe producta G. S. Brady.
,, *tumida* G. S. Brady.

No. 58.—11th Dec., 1912. Lat. 42° 38½′ S., long. 148° 37′ E. 1,180 fathoms. Pale green mud with Sponge-spicules.

Pontocypris attenuata G. S. Brady.
Argillœcia affinis Chapman.
Macrocypris decora G. S. Brady sp.
Bairdia amygdaloides G. S. Brady.
Cythere dasyderma G. S. Brady.

Cythere dictyon G. S. Brady.
,, *foveolata* G. S. Brady.
,, *kerguelenensis* G. S. Brady.
,, *setosa* Baird.
,, *wyville-thomsoni* G. S. Brady.
Krithe producta G. S. Brady.
Xestoleberis davidiana Chapman.
,, *nana* G. S. Brady.
Cytherura costellata G. S. Brady.
Bythocythere mawsoni sp. nov.
Xiphichilus arcuatus G. S. Brady.
Cytherella punctata G. S. Brady.

No. 59.—12th Dec., 1912. Lat. 42° 38½′ S., long. 148° 41½′ E. 1,320 fathoms. Green terrigenous mud with Sponge-spicules and Foraminifera; much decomposing matter present.

Pontocypris attenuata G. S. Brady.
,, (?) *faba* Reuss.
Argillœcia eburnea G. S. Brady.
,, *gracilior* Chapman.
Macrocypris decora G. S. Brady sp.
,, *similis* G. S. Brady.
Bairdia abyssicola G. S. Brady.
,, *acanthigera* G. S. Brady.
,, *amygdaloides* G. S. Brady.
Cythere acupunctata G. S. Brady.
,, *canaliculata* Reuss sp.
,, *cristatella* G. S. Brady.
,, *dasyderma* G. S. Brady.
,, *dictyon* G. S. Brady.
,, *foveolata* G. S. Brady.
,, *obtusalata* G. S. Brady.
,, *quadriaculeata* G. S. Brady.
,, *sabulosa* G. S. Brady.
,, *scintillulata* G. S. Brady.
Krithe producta G. S. Brady.
,, *tumida* G. S. Brady.

Loxoconcha elegantula sp. nov.
Xestoleberis margaritea G. S. Brady.
,, *nana* G. S. Brady.
,, *polita* G. S. Brady.
,, *setigera* G. S. Brady.
,, *variegata* G. S. Brady.
Cytherura costellata G. S. Brady.
,, *cryptifera* G. S. Brady.
,, *lilljeborgi* G. S. Brady.
,, *rudis* G. S. Brady.
Cytheropteron abyssorum G. S. Brady.
,, *antarcticum* Chapman.
,, *assimile* G. S. Brady.
,, *wellingtoniense* G. S. Brady.
Bythocythere ilex sp. nov.
Pseudocythere caudata G. O. Sars.
Xiphichilus complanatus G. S. Brady.
,, *gracilis* Chapman sp.
Cytherella irregularis G. S. Brady var. *debilis* var. nov.

No. 60.—12th Dec., 1912. Lat. 42° 44′ S., long. 148° 41′ E. 1,300 fathoms. Green terrigenous mud with Sponge-spicules and Foraminifera; much decomposing matter present.

Phlyctenophora zealandica G. S. Brady.
Aglaia pusilla G. S. Brady.
Pontocypris attenuata G. S. Brady.
,, *davidiana* Chapman.
,, (?) *faba* Reuss.
,, *simplex* G. S. Brady.
,, *trigonella* G. O. Sars.
Argillœcia gracilior Chapman.
Macrocypris decora G. S. Brady sp.
Bairdia abyssicola G. S. Brady.
Bairdia cf. *acanthigera* G. S. Brady.
Cythere acupunctata G. S. Brady.
,, *canaliculata* Reuss sp.
,, *crispata* G. S. Brady.

Cythere dasyderma G. S. Brady.
,, *foveolata* G. S. Brady.
, *kerguelenensis* G. S. Brady.
,, *lactea* G. S. Brady.
,, *normani* G. S. Brady.
,, *pyriformis* G. S. Brady.
,, *rastromarginata* G. S. Brady.
,, *scalaris* G. S. Brady.
,, *scintillulata* G. S. Brady.
,, *wyville-thomsoni* G. S. Brady.
Krithe producta G. S. Brady.
,, *tumida* G. S. Brady.
Loxoconcha australis G. S. Brady.
Xestoleberis davidiana Chapman.
,, *nana* G. S. Brady.
,, *polita* G. S. Brady.
Cytherura cf. *clausi* G. S. Brady.
,, *costellata* G. S. Brady.
,, *cryptifera* G. S. Brady.
Cytheropteron abyssorum G. S. Brady.
,, *antarcticum* Chapman.
,, *assimile* G. S. Brady.
Sclerochilus contortus Norman sp.
Xiphichilus gracilis Chapman sp.
Polycope angulata G. S. Brady.
,, *trigonalis* sp. nov.
Cytherella punctata G. S. Brady.

ANTARCTIC SUMMER CRUISE, "AURORA," 1912-13.

No. 67.—29th Dec., 1912. Lat. 47° 28½′ S., long. 145° 32′ E. 1,670 fathoms, Globigerina Ooze.

Cythere dasyderma G. S. Brady.
,, *dictyon* G. S. Brady.
,, *subrufa* G. S. Brady.

No. 74.—5th Jan., 1913. Lat. 58° 12′ S., long. 146° 47′ E. 1,900 fathoms, Diatomaceous and spicular Ooze.

Cythere dasyderma G. S. Brady.

ANTARCTIC SUMMER CRUISE, "AURORA," 1913–14.

No. 92.—22nd Nov., 1913. Lat. 49° 9′ S., long. 148° 1′ E. 2,400 fathoms. Globigerina Ooze.

Cythere dasyderma G. S. Brady.
,, *subrufa* G. S. Brady.

No. 110.—21st Dec., 1913. Lat. 66° 32′ S., long. 141° 39′ E. 157 fathoms. Green terrigenous mud with Sponge-spicules and Foraminifera.

Bairdia amygdaloides G. S. Brady.
Cythere cristatella G. S. Brady.

No. 111.—1st Jan., 1914. Lat. 65° 43′ S., long. 140° 19′ E. 205 fathoms. Sandy mud with Sponge-spicules and Diatoms.

Cythere kerguelenensis G. S. Brady.
,, *polytrema* G. S. Brady.

No. 127.—14th Jan., 1914. Lat. 63° 13½′ S., long. 101° 42′ E. 870 fathoms. Green mud with Diatomaceæ.

Krithe producta G. S. Brady.

No. 139.—27th Jan., 1914. Lat. 65° 53′ S., long. 95° 18′ E. 328 fathoms. Green mud with Sponge-spicules and decomposing animal matter.

Aglaia pusilla G. S. Brady.
Macrocypris decora G. S. Brady sp.
(?) *Bythocypris compressa* G. S. Brady.
Cythere dictyon G. S. Brady.
,, *foveolata* G. S. Brady.
,, *quadriaculeata* G. S. Brady.
Krithe producta G. S. Brady.
Loxoconcha australis G. S. Brady.
Xestoleberis davidiana Chapman.
Cytherura lilljeborgi G. S. Brady.
,, *rudis* G. S. Brady.
Cytheropteron abyssorum G. S. Brady.
,, *assimile* G. S. Brady.
,, *fimbriatum* Chapman.
Sclerochilus contortus Norman sp.
Xiphichilus arcuatus G. S. Brady.
Polycope cingulata G. S. Brady.

No. 149.—18th Feb., 1914. Lat. 44° 10′ S., long. 117° 20′ E. 2,600 fathoms. Globigerina Ooze.

Cythere militaris G. S. Brady sp.

No. 150.—24th Feb., 1914. Lat. 35° 56′ S., long. 134° 14′ E. 1,800 fathoms. Globigerina Ooze.

Cythere dictyon G. S. Brady.

,, *scabrocuneata* G. S. Brady.

Krithe producta G. S. Brady.

,, *tumida* G. S. Brady.

GEOGRAPHICAL AREAS WHERE SAMPLES WERE OBTAINED.

Samples from Antarctic Summer Cruise, "Aurora," 1911–12.

Nos. 11, 20, 25, 28, 29, 30, and 31 were all taken in the Southern Ocean near the Ice Barrier (Ross Sea, &c.).

Subantarctic Cruise, "Aurora," 1912.

No. I (26th May, 1912) came from the south-west of Tasmania.

The additional sample (3rd September, 1912) came from 142 miles south-west of St. Frances Island, South Australia (The Great Bight).

Subantarctic Cruise, "Aurora," 1912 (Second Cruise) and Antarctic Summer Cruise, 1912–13.

Nos. 11, 12, 13, 40, 42, 56, 58, 59, 60, 67, and 74 were dredged from an area between the south-east of Tasmania and Macquarie Island.

Antarctic Summer Cruises, "Aurora," 1913–14.

Nos. 92, 110, 111, 127, and 139 were taken near Macquarie Island, along the Ice Barrier in the terrigenous mud area.

Nos. 149 and 150 were taken south of the Great Bight and off South Australia.

ANALYSES OF GENERA AND SPECIES.

Genera Represented.

The total number of species and varieties herein described or recorded is 81. These are distributed among the following genera:—*Phlyctenophora*, 1; *Aglaia*, 1; *Pontocypris*, 5; *Argillœcia*, 4; *Macrocypris*, 2; *Bythocypris*, 2; *Bairdia*, 4; *Cythere*, 24; *Krithe*, 4; *Loxoconcha*, 2; *Xestoleberis*, 5; *Cytherura*, 6; *Cytheropteron*, 8; *Bythocythere*, 2; *Pseudocythere*, 1; *Sclerochilus*, 2; *Xiphichilus*, 3; *Polycope*, 3; *Cytherella*, 2.

New Species and Varieties.

Loxoconcha elegantula sp. nov.

Cytheropteron armatum Chapman, var. *spinosa* var. nov.

Bythocythere ilex sp. nov.

„ *mawsoni* sp. nov.

Sclerochilus lineatus sp. nov.

Polycope trigonalis sp. nov.

Cytherella irregularis G. S. Brady, var. *debilis* var. nov.

List of Abyssal Species of Ostracoda found in Depths exceeding 500 fathoms.

Phlyctenophora zealandica G. S. Brady.

Aglaia pusilla G. S. Brady.

Pontocypris attenuata G. S. Brady.

„ *davidiana* Chapman.

„ (*?*) *faba* Reuss.

„ *simplex* G. S. Brady.

„ *trigonella* G. O. Sars.

Argillœcia affinis Chapman.

„ *eburnea* G. S. Brady.

„ *gracilior* Chapman.

Macrocypris decora G. S. Brady sp.

„ *similis* G. S. Brady.

Bairdia abyssicola G. S. Brady.

„ *acanthigera* G. S. Brady.

„ *amygdaloides* G. S. Brady.

„ *foveolata* G. S. Brady.

Cythere acupunctata G. S. Brady.

Cythere canaliculata Reuss sp.
,, *crispata* G. S. Brady.
,, *cristatella* G. S. Brady.
,, *dasyderma* G. S. Brady.
,, *davisi* Chapman.
,, *dictyon* G. S. Brady.
,, *foveolata* G. S. Brady.
,, *kerguelenensis* G. S. Brady.
,, *lactea* G. S. Brady.
,, *militaris* G. S. Brady sp.
,, *normani* G. S. Brady.
,, *obtusalata* G. S. Brady.
,, *quadriaculeata* G. S. Brady.
,, *rastromarginata* G. S. Brady.
,, *sabulosa* G. S. Brady.
,, *scabrocuneata* G. S. Brady.
,, *scalaris* G. S. Brady.
,, *scintillulata* G. S. Brady.
,, *setosa* Baird.
,, *subrufa* G. S. Brady.
,, *wyville-thomsoni* G. S. Brady.
Krithe augusta Brady and Norman.
,, *eggeri* Chapman.
,, *producta* G. S. Brady.
,, *tumida* G. S. Brady.
Loxoconcha australis G. S. Brady.
,, *elegantula* sp. nov.
Xestoleberis davidiana Chapman.
,, *nana* G. S. Brady.
,, *polita* G. S. Brady.
,, *setigera* G. S. Brady.
,, *variegata* G. S. Brady.
Cytherura cf. *clausi* G. S. Brady.
,, *costellata* G. S. Brady.
,, *cryptifera* G. S. Brady.

Cytherura lilljeborgi G. S. Brady.
,, *rudis* G. S. Brady.
Cytheropteron abyssorum G. S. Brady.
,, *antarcticum* Chapman.
,, *assimile* G. S. Brady.
,, *wellingtoniense* G. S. Brady.
Bythocythere ilex sp. nov.
,, *mawsoni* sp. nov.
Pseudocythere caudata G. O. Sars.
Sclerochilus contortus Norman sp.
Xiphichilus arcuatus G. S. Brady.
,, *complanatus* G. S. Brady.
,, *gracilis* Chapman sp.
Polycope cingulata G. S. Brady.
,, *trigonalis* sp. nov.
Cytherella irregularis G. S. Brady, var. *debilis* var. nov.
,, *punctata* G. S. Brady.

LIST OF SPECIES FROM DEPTHS EXCEEDING 1,500 FATHOMS.

Cythere dasyderma G. S. Brady.
,, *dictyon* G. S. Brady.
,, *militaris* G. S. Brady sp.
,, *scabrocuneata* G. S. Brady.
,, *subrufa* G. S. Brady.
,, *wyville-thomsoni* G. S. Brady.
Krithe producta G. S. Brady.
,, *tumida* G. S. Brady.

SYSTEMATIC DESCRIPTION.

Super-Order OSTRACODA.

Section PODOCOPA.

Family CYPRIDÆ.

Genus Phlyctenophora *G. S. Brady.*

Phlyctenophora Zealandica *G. S. Brady.*

Phlyctenophora zealandica G. S. Brady, 1880, Rep. Chall. Zool. vol. I, pt. III, p. 33, pl. III, figs. 1*a-m*.

Observations.—It is curious to find a single valve of this species in so great a depth as 1,300 fathoms. It has hitherto been taken either in the tow-net or in shallow water. The present example shows the characteristic blotches in the colouring of the valve.

Previously recorded from Wellington Harbour, New Zealand; Sydney Harbour; and Humboldt Bay, Papua.

Occurrence.—No. 56 (11th December, 1912), 675 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

Genus Aglaia *G. S. Brady.*

(?) Aglaia pusilla *G. S. Brady.* Plate XXI, figs. 1, 1*a*.

(?)*Aglaia pusilla* G. S. Brady, 1880, Rep. Chall. Zool. vol. I, pt. III, p. 34, pl. XXX, figs. 6*a-d*.

Observations.—This neat little species is represented by several separate valves in the present series, some of which vary in being more elongate.

The species was formerly known from the dredging off East Moncœur Island, Bass Strait, 38-40 fathoms.

Occurrence.—No. 29 (14th February, 1912), 125 fathoms. No. 60 (12th December, 1912), 1,300 fathoms. No. 139 (27th January, 1914), 328 fathoms (figured species) slender variety.

Genus Pontocypris *G. O. Sars.*

Pontocypris attenuata *G. S. Brady.*

Pontocypris attenuata G. S. Brady, 1868, Ann. Mag. Nat. Hist., ser. 4, Vol. II, p. 179, pl. IV, figs. 11–14. Idem, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 38, pl. XV, figs. 2*a-d*. Idem, 1890, Trans. Roy. Soc. Edin., vol. XXXV, pt. II, No. 14, p. 49, pl. I, figs. 3, 4. Chapman, 1902, Journ. Linn. Soc. Zool., vol. XXVII, p. 419. Idem, 1915, Scientific Results, "Endeavour," vol. III, pt. I, p. 34, pl. II, fig. 1.

Observations.—The present occurrences are remarkable for their great depths, all previous records being from shallow water, with the exception of Funafuti (200 fathoms), and East of Tasmania (700 fathoms). Those now recorded are of typical form,

and were obtained during the Subantarctic Cruise between the south-east of Tasmania and Macquarie Island. Several valves show a blunt spine at the postero-ventral angle as in Brady's figured example from the South Seas.

Occurrence.—No. 58 (11th December, 1912), 1,180 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

PONTOCYPRIS DAVIDIANA *Chapman.*

Pontocypris davidiana Chapman, 1910, Journ. Linn. Soc. Lond., Zool., vol. XXX, p. 427, pl. LVI, figs. 17*a*, *b*.

Observations.—This distinct species has only been observed previously at one locality, at Funafuti, Sta. 13, 1,050 fathoms. The present example is a typical right valve.

Occurrence.—No. 60 (12th December, 1912), 1,300 fathoms.

PONTOCYPRIS (?) FABA *Reuss sp.*

Bairdia faba Reuss, 1855, Zeitschr. d. deutsch. geol. Gesellsch., p. 278, pl. X, fig. 2.

Pontocypris faba Reuss sp., G. S. Brady, 1878, Trans. Zool. Soc. Lond., p. 382, pl. LXIII, figs. 6*a-e*.

Pontocypris (?) faba Reuss sp., G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 37, pl. I, figs. 4*a-d*.

Pontocypris faba Reuss sp., Egger, 1901, Abhandl. d. k. bayer. Akad. Wiss., Cl. II. vol. XVIII, pt. II, p. 420, pl. IV, figs. 44, 45.

Pontocypris (?) faba Reuss sp., Chapman, 1910, Journ. Linn. Soc. Lond. Zool., vol. XXX, p. 427. Idem, 1916, Shackleton Antarctic Exped., Geol., vol. II, p. 71, pl. VI, figs. 45*a*, *b*.

Observations.—This is another of the species hitherto found only in shallow water, with the exception of an occurrence at Funafuti in 1,050 fathoms. The present examples are from dredgings round Tasmania. It was formerly recorded from the Ross Sea by the writer, from 110 fathoms.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

PONTOCYPRIS SIMPLEX *G. S. Brady.* Plate XXI, figs. 2, 2*a*.

Pontocypris simplex G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 37, pl. I, figs. 5*a-d*.

Observations.—*P. simplex* appears to have occurred only once before, off Ascension Island, in 7 fathoms. It is here noted from the great depth of 1,300 fathoms, west of Tasmania.

One right valve.

Occurrence.—No. 60 (12th December, 1912), 1,300 fathoms.

PONTOCYPRIS TRIGONELLA *G. O. Sars.*

Pontocypris trigonella G. O. Sars, 1865, Oversigt af Norges Marine Ostracoder, p. 16. G. S. Brady, 1868, Trans. Linn. Soc. Lond., vol. XXVI, p. 387, pl. XXV, figs. 31–34; pl. XXVII, fig. 3. Brady, Crosskey, and Robertson, 1874, Mon. Post-tert. Entom. Scotland, &c. (Pal. Soc. Mon.), p. 137, pl. XVI, figs. 26–28. G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 36, pl. XV, figs. 4*a-d*. Brady and Norman, 1889, Sci. Trans. Roy. Dubl. Soc., ser. II, vol. IV, No. 2, p. 109, pl. XXII, figs. 18–25, pl. XXIII, fig. 6. Egger, 1901, Abhandl. d. k. bayer. Akad. Wiss., Cl. II, vol. XXI, pt. II, p. 422, pl. I, figs. 16, 17. Chapman, 1910, Journ. Linn. Soc. Lond. Zool., vol. XXX, p. 426. Idem, 1915, Sci. Results "Endeavour," vol. III, pt. I, p. 35.

Observations.—This species seems to be more at home in the North Atlantic. The Funafuti occurrence, at a depth of 1,485 fathoms, a record for this is usually moderately shallow water species. The present occurrence however, nearly approaches it in this respect. Only a single left valve was found.

Occurrence.—No. 60 (12th December, 1912), 1,300 fathoms.

Genus ARGILLŒCIA *G. O. Sars.*

ARGILLŒCIA AFFINIS *Chapman.* Plate XXI, figs. 3, 3*a*.

Argillœcia affinis Chapman, 1902, Journ. Linn. Soc. Lond. Zool., vol. XXVIII, p. 419, pl. XXXVII, figs. 1*a-c*. Idem, 1910, ibid., vol. XXX, p. 428.

Observations.—At Funafuti this species was found in depths varying from 1,050 to 2,715 fathoms. It differs from *A. eburnea* G. S. Brady in the more distinct parallelism of the upper and lower margins of the valves.

Occurrence.—No. 28 (14th February, 1912), 160 fathoms. No. 58 (11th December, 1912), 1,180 fathoms.

ARGILLŒCIA BADIA *G. S. Brady.*

Argillœcia badia G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 40, pl. VI, figs. 3*a-d*. Egger, 1901, Abhandl. d. k. bayer. Ak. Wiss., vol. XXI, pt. II, p. 422, pl. IV, figs. 6, 7. Chapman, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 28, pl. VI, fig. 1.

Observations.—This is a moderately deep to shallow water species, and seems to be confined to the Australian sector, having previously occurred off Queensland, W. Australia, and New South Wales. The writer obtained fossil specimens from the Janjukian of the Mallee Bores, which shows it to have been a denizen of Australian Seas in Miocene times. A single right valve was found.

Occurrence.—No. 31 (15th February, 1912), 200 fathoms.

ARGILLŒCIA EBURNEA *G. S. Brady.*

Argillœcia eburnea G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 40, pl. IV, figs. 1–15. Egger, 1901, Abhandl. d. k. bayer. Ak. Wiss., vol. XXI, pt. II, p. 422, pl. IV, figs. 49–51. Chapman, 1910, Journ. Linn. Soc. Lond. Zool., vol. XXX, p. 428.

Observations.—This is an abundant species in the sample mentioned below. Amongst other localities it has already occurred in dredgings from Kerguelen Island, 20 to 120 fathoms and off the coast of South America in 1,900 fathoms (G. S. Brady). The Funafuti specimens were found in depths varying from 1,050 to 1,417 fathoms.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms.

ARGILLŒCIA GRACILIOR *Chapman.*

Argillœcia gracilior Chapman, 1910, Journ. Linn. Soc. Lond. Zool., vol. XXX, p. 428, pl. LVI, figs. 18*a*, *b*. Idem, 1915, Scientific Results "Endeavour," vol. III, pt. I, p. 36.

Observations.—Since the occurrence of this species at Funafuti (1,050 and 1,215 fathoms) it has been found in a dredging east of Tasmania, at 777 fathoms. The samples below are from the neighbourhood of the Ice Barrier, Ross Sea, and between Tasmania and Macquarie Island.

Occurrence.—No. 30 (25th February, 1912), 182 fathoms. No. 56 (11th December, 1912), 675 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

Genus MACROCYPRIS *G. S. Brady.*

MACROCYPRIS DECORA *G. S. Brady sp.*

Cytherideis decora G. S. Brady, 1865, Trans. Zool. Soc. Lond., vol. V, p. 366, pl. LVII, figs. 13*a-c*.

Macrocypris decora G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 44, pl. I, figs. 3*a-d*; pl. VI, figs. 8*a*, *b*. Idem, 1890, Trans. Roy. Soc. Edin., vol. XXXV, pt. II, No. 14, p. 492. Chapman, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 29, pl. VI, fig. 2. Idem, 1915, Scientific Results "Endeavour," vol. III, pt. I, p. 37.

Observations.—The present depth records are much greater than usual, the deepest sounding for this species hitherto noted being 777 fathoms, east of Tasmania.

Occurrence.—No. 29 (14th February, 1912), 125 fathoms. No. 58 (11th December, 1912), 1,180 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms. No. 139 (27th January, 1914), 328 fathoms.

MACROCYPRIS SIMILIS *G. S. Brady.* Plate XXI, fig. 4.

Macrocypris similis G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 42 pl. II, figs. 2*a-d*.

Observations.—It is with much interest that we meet with this rare species amongst the present soundings. It previously occurred off Pernambuco, Brazil, in 675 fathoms; off the coast of Patagonia, 160 fathoms; and off Ascension Island in 420 fathoms.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms, east of Tasmania; one example.

Genus BYTHOCYPRIS *G. S. Brady.*

BYTHOCYPRIS BOSQUETIANA *G. S. Brady sp.*

Bairdia bosquetiana G. S. Brady, 1865, Trans. Zool. Soc. Lond., vol. V, p. 364, pl. LVII, figs. 5*a-c.*

Bythocypris reniformis G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 46, pl. V, figs. 1*a-l.*

Bythocypris bosquetiana G. S. Brady sp., Brady and Norman, 1889, Trans. Roy. Dubl. Soc., ser. 2, vol. IV, No. II, p. 120, pl. XIV, figs. 34, 35.

Observations.—A single left valve of this widely distributed species occurs in a sounding close to the Ice Barrier.

Occurrence.—No. 31 (15th February, 1912), 220 fathoms.

(*?*) BYTHOCYPRIS COMPRESSA *G. S. Brady.*

(*?*) *Bythocypris compressa* G. S. Brady, 1880, Rep. Chall. Zool. vol. I, pt. III, p. 46, pl. XXXV, figs. 5*a-d.*

Observations.—The shape of the carapace recalls *B. sollasi*[1], but is not so high in the middle, nor so attenuate posteriorly. It is nearest the above species, which was obtained in shallow water off Tongatabu, South Pacific. Two valves (right and left).

Occurrence.—No. 139 (27th January, 1914), 328 fathoms.

Family BAIRDIIDÆ.

Genus BAIRDIA *McCoy.*

BAIRDIA ABYSSICOLA *G. S. Brady,* Plate XXI, fig. 6.

Bairdia abyssicola G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 52, pl. VII, figs. 4*a-c.*

Several well-developed valves of the above species occur. There is also an immature form which exactly resembles the adult, and therefore does not appear to support Dr. G. S. Brady's suggestion that *B. abyssicola* may be only the fully developed stage of *B. minima*[2]. Previously recorded in the North Pacific in 2,050 fathoms.

Occurrence.—Additional sample (3rd September, 1912), 706 fathoms. No. 11 (13th November, 1912), 1,475 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

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[1]Chapman, Journ. Linn. Soc. Lond. Zool., vol. XXX, 1910, p. 428, pl. LVI, figs. 19*a-c*

[2]See Rep. Chall. Zool., vol. I, pt. III, 1880 p. 53.

Bairdia acanthigera *G. S. Brady.*

Bairdia acanthigera G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 61, pl. IX, figs. 4*a-c.*

Observations.—The present is an entirely new area for this species. The specimens are typical but rare. All separate valves.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

Bairdia amygdaloides *G. S. Brady.* Plate XXI, fig. 5.

Bairdia amygdaloides G. S. Brady, 1865, Trans. Zool. Soc. Lond., vol. V, p. 364, pl LVII, figs. 6*a-c.*

Bairdia de wattrei, Id. 1868, Les Fonds de la Mer, p. 199, pl. XXVII, figs. 17, 18.

Bairdia amygdaloides G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 54, pl. IX, figs. 5*a-f*; pl. X, figs. 2*a-c.* Chapman, 1910, Proc. R. Soc. Vict., vol. XXII (N.S), pt. II, p. 307. Idem, 1914, ibid, p. 31, pl. VI, fig. 6. Idem, 1915, Scientific Results "Endeavour," vol. III. pt. I, p. 38.

Observations.—This austral form is widely distributed in the Southern hemisphere and is found fossil as far back as the Miocene. The present recorded depth of 1,320 fathoms is the deepest known for this species. The specimen from that sounding is small and thin-shelled, but otherwise typical.

Occurrence.—No. 31 (15th February, 1912), 220 fathoms. No. 58 (11th December, 1912), 1,180 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 110 (21st December, 1913), 157 fathoms.

Bairdia foveolata *G. S. Brady.*

Bairdia foveolata G. S. Brady, 1867, Les Fonds de la Mer, vol. I, p. 56, pl. VII, figs. 4–6. Idem, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 55, pl. VIII, figs 1*a-f*, 2*a-f.* Idem, 1890, Trans. R. Soc. Edin., vol. XXXV, p. 493. Chapman, 1902, Journ. Linn. Soc. Lond. Zool., vol. XXVIII, p. 423. Idem, 1910, ibid, vol. XXX, p. 429.

Observations.—The present examples show considerable variation in outline, but are all probably referable to the above species. One of them shows a dentated antero-ventral margin. The puncta are often large and surrounded by a whitened area. An abundant species in Southern seas; also found in the Atlantic, off Cape Verde.

Occurrence.—No. 29 (14th February, 1912), 125 fathoms. Additional sample (3rd September, 1912), 706 fathoms.

Family CYTHERIDÆ.

Genus CYTHERE *Müller.*

CYTHERE ACUPUNCTATA *G. S Brady.*

Cythere acupunctata G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 68, pl. XI, XIV, figs. 1*a*, *b*. Chapman, 1902, Journ. Linn. Soc. Lond. Zool., vol. XXVIII, p. 424.

Observations.—The localities for this species are very widely separated, viz., Inland Sea, Japan (15 fathoms); Funafuti, Pacific (beach sand and 50-60 fathoms); and the present occurrence, south-west of Tasmania (1,300 and 1,320 fathoms). The example from No. 59 is very typical; those of No. 60 are almost reticulate in surface ornament.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

CYTHERE CANALICULATA *Reuss sp.*

Cypridina canaliculata Reuss, 1850, in Haidinger's Abhandl., vol. III, p. 76, pl. IX, fig. 12.

Cythere canaliculata Reuss sp., Egger, 1858, Ostrak. der Miocän-schicht., vol. V, p. 33, pl. V, figs. 10, 11. G. S. Brady, 1865, Trans. Zool. Soc. Lond., vol. V, p. 373, pl. LIX, figs. 4*a*, *f*. Idem, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 73, pl. XIV, figs. 7 *a-d*. Egger, 1901, Abhandl. d. k. bayer. a.k. Wiss., vol. XXI, pt. II p. 432, pl. IV, figs. 15, 16. Chapman, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 32, pl. VI, fig. 8. Idem, 1915, Scientific Results " Endeavour," vol. III, pt. I, p. 39.

Observations.—In the living condition this species appears to be restricted to Australian seas. As a fossil it occurs from Oligocene times onward in Europe, and in the Miocene of the Mallee, Victoria.

The present specimens, from the south-west coast of Tasmania are all typical valves. The depths now recorded are exceptional, as the deepest hitherto was 777 fathoms.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

CYTHERE CRISPATA *G. S. Brady.*

Cythere crispata G. S. Brady, 1868, Ann. Mag. Nat. Hist., ser. 4, vol. II, p. 221, pl. XIV, figs. 14, 15. Brady, Crosskey and Robertson, 1877, Post-Tert. Entom. (Pal. Soc. Mon.), p. 146, pl. XII, figs. 52, 53; pl. XIII, figs. 12, 13. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 72, pl. XIV, figs. 8 *a-d*. Chapman, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I. p. 33, pl. VI, fig. 9. Idem, 1915, Sci. Results " Endeavour," p. 40.

Observations.—A single left valve was found at the great depth of 1,300 fathoms, south-west of Tasmania. It has lately occurred in the Miocene of Victoria.

Occurrence.—No. 60 (12th December, 1912), 1,300 fathoms.

CYTHERE CRISTATELLA *G. S. Brady*, Plate XXI, figs. 7, 7*a*.

Cythere cristatella, G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p, 90, pl. XIX, figs. 6*a-d*.

Observations.—*C. cristatella* was formerly recorded from Booby Island, Torres Strait.

It is possible that the valve figured in Rep. Chall. Zool., vol. I, pt. III, pl. XV, figs. 7*e-h*, and doubtfully referred to *Cythere audei*, may belong to *C. cristatella*, as several examples closely resembling it, but showing affinities with the latter species, occur in the present series.

Occurrence.—No. 28 (14th February, 1912), 160 fathoms. No. 31 (15th February, 1912), 220 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 110 (21st December, 1913), 157 fathoms.

CYTHERE DASYDERMA *G. S. Brady.*

Cythere dasyderma G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 105, pl. XVII, figs. 4*a-f*; pl. XVIII, figs. 4*a-f*. Chapman, 1910, Journ. Linn. Soc. Lond. Zool., vol. XXX, p. 432. Idem, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 34, pl. VI. fig. 10.

Observations.—This truly deep-sea ostracod has, curiously enough, been found fossil in Miocene beds in the Mallee bores in Victoria. Those occurring here are quite typical.

Occurrence.—No. 11 (13th November, 1912), 1,475 fathoms. No. 12 (14th November, 1912), 2,083 fathoms. No. 58 (11th December, 1912), 1,180 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms. No. 67 (29th December, 1912), 1,670 fathoms. No. 74 (5th January, 1913), 1,900 fathoms. No. 92 (22nd November, 1913), 2,400 fathoms.

CYTHERE DAVISI *Chapman.*

Cythere davisi Chapman, 1916, Brit. Ant. Exped., 1907-9, Geol., vol. II, p. 72, pl. VI, figs. 46*a-c*.

Observations.—This species belongs to the *C. wyville-thomsoni* group, and is distinguished by the rounded posterior extremity, the thicker carapace and feeble surface reticulation.

It was dredged by the " Nimrod " in 121 and 225 fathoms.

Occurrence.—Additional sample (3rd September, 1912), 706 fathoms.

CYTHERE DICTYON *G. S. Brady.*

Cythere dictyon G. S. Brady, 1880, Rep. Chall. Zool., vol. I. pt. III, p. 99, pl. XXIV, figs. 1*a-y*. Egger, 1901, Abhandl. d. k. bayer. Ak. Wiss., vol. XXI. pt. II, p. 442, pl. VI, figs. 41-43. Chapman, 1910, Journ. Linn. Soc. Lond. Zool., vol. XXX, p. 433. Idem, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 34, pl. VII, figs. 12, 13. Idem, 1915, Scientific Results, "Endeavour," vol. III, pt. I, p. 41.

Observations.—This usually deep-water form has also lately been found as a Miocene and Lower Pliocene fossil in the Mallee, where it occurs in the marls in great abundance.

Occurrence.—No. 20 (9th February, 1912), 110 fathoms. No. 30 (15th February, 1912), 182 fathoms. Additional sample (3rd September, 1912), 706 fathoms. No. 58 11th December, 1912), 1,180 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 67 (29th December, 1912), 1,670 fathoms. No. 139 (27th January, 1914), 328 fathoms. No. 150 (24th February, 1914), 1,800 fathoms.

CYTHERE FOVEOLATA *G. S. Brady.*

Cythere foveolata G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 75, pl. XIII, figs. 5*a-h*. Chapman, 1915, Sci. Results "Endeavour," vol. I, pt. III, p. 41. Idem, 1916, Foram. and Ostrac. Elev. Dep. Ross Sea. Brit. Ant. Exped., Geol., vol. II, pp. 38, 49, pl. IV, fig. 2.

Observations.—This species is already established as a southern form. It is fairly common in the present series, from the Ice-barrier to Tasmania.

Occurrence.—No. 28 (14th February, 1912), 160 fathoms. No. 31 (15th February, 1912), 220 fathoms. No. 58 (11th December, 1912), 1,180 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms. No. 139 (27th January, 1914), 328 fathoms.

CYTHERE KERGUELENENSIS *G. S. Brady.*

Cythere kerguelenensis G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 78, pl. IV, figs. 16-18, pl. XX, figs 1*a-f*.

Observations.—This species is fairly abundant, but small, in the present series. It is a southern form, ranging from the Ice-barrier to the Sydney Coast.

Occurrence.—No. 58 (11th December, 1912), 1,180 fathoms. No. 60 (12th December, 1912), 1,300 fathoms. No. 111 (1st January, 1914), 205 fathoms.

CYTHERE LACTEA *G. S. Brady.*

Cythere lactea G. S. Brady, 1865, Trans. Zool. Soc. Lond., vol. V, p. 377, pl. LX, figs. 3*a-c*. Idem, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 91, pl. XXII, figs. 1*a-d*. Chapman, 1902, Journ. Linn. Soc. Lond. Zool., vol. XXVIII, p. 426. Idem, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 36, pl. VII, fig. 15.

Observations.—This species dates from the Miocene, it having occurred in the Mallee borings in Victoria. It is a widely distributed form.

Occurrence.—No. 60 (12th December, 1912), 1,300 fathoms. One valve.

CYTHERE MILITARIS *G. S. Brady* sp. Plate XXI, fig. 8.

Cythereis militaris G. S. Brady, 1866, Trans. Zool. Soc. Lond., vol. V, p. 385, pl. LXI, figs. 9*a-d*.

Cythere clavigera Idem, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 109, pl. XXIII, figs. 7*a-d*.

Cythere militaris G. S. Brady, 1890, Trans. R. Soc. Edin., vol. XXXV, pt. II No. 14, p. 504, pl. II, figs. 24–26. Chapman, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 37, pl. VII, fig. 18.

Observations.—The single valve occurring here is remarkably like that figured by the writer from the Miocene-Pliocene of the Mallee Bores. *C. militaris* is only found in the Southern hemisphere and has hitherto been noted from shallow water. The fossil occurrence is in strata which indicate deeper water subjected to current action.

Occurrence.—No. 149 (18th February, 1914), 2,600 fathoms.

CYTHERE NORMANI *G. S. Brady.*

Cythere normani G. S. Brady, 1866, Trans. Zool. Soc. Lond., vol. V, p. 379, pl. LXI, figs. 5*a-d*. Idem, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 101, pl. XVII, figs. 3*a-d*; pl. XXVI, figs. 4*a, b*. Chapman, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 37, pl. VII, fig. 19. Idem, 1916, Foram. Ostrac. Elev. Dep. Ross Sea. Brit. Ant. Exped., Geol., vol. II, pp. 50, 73, pl. VI, fig. 2.

Observations.—This species was not uncommon in previous soundings in the Antarctic. It dates from Miocene times in Victoria, and was also recorded by Dr. G. S. Brady from late Tertiary deposits in the Murray Flats of South Australia.

Occurrence.—No. 29 (14th February, 1912), 125 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

CYTHERE OBTUSALATA *G. S. Brady.*

Cythere obtusalata G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 91, pl. XII, figs. 1*a-c*. Chapman, 1902, Journ. Linn. Soc. Lond. Zool., vol. XXVIII, p. 424. Idem, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 38, pl. VII, fig. 20.

Observations.—The present record extends the range of the species to the Antarctic Ice-barrier. It was previously known from Kerguelen Island and the Tasmanian area, as well as from West Africa, the Mauritius and the Admiralty Islands. Fossil examples were found in the Mallee Bores in Victoria, in Miocene beds.

Occurrence.—No. 31 (15th February, 1912), 220 fathoms. No. 11 (13th November, 1912), 1,475 fathoms. No. 59 (12th December, 1912), 1,320 fathoms.

Cythere patagoniensis *G. S. Brady.*

Cythere patagoniensis G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 93, pl. XXIII, figs. 3*a-d*.

Observations.—Previously found in 175 fathoms off the coast of Patagonia.

Occurrence.—No. 28 (14th February, 1912), 160 fathoms.

Cythere polytrema *G. S. Brady.*

Cythere polytrema G. S. Brady, 1878, Trans. Zool. Soc. Lond., vol. X, p. 393, pl. LXVI, figs. 1*a-d*. Idem, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 87, pl. XXI, figs. 5*a-h*. Chapman, 1916, Rep. on Foram. and Ostrac. Elev. Dep. Ross Sea. Brit. Ant. Exped., Geol., vol. II, p. 50, pl. VI, fig. 3.

Observations.—This species was originally described from fossil examples obtained from the Lower Pliocene Antwerp Crag. It has since occurred living off Prince Edward's Island, Southern Ocean, and in Pleistocene deposits, Ross Sea. Two typical valves.

Occurrence.—No. 28 (14th February, 1912), 160 fathoms. No. 111 (1st January, 1914), 205 fathoms.

Cythere quadriaculeata *G. S. Brady.*

Cythere quadriaculeata G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 86, pl. XXII, figs. 2*a-d*; pl. XXV, figs. 4*a-d*. Chapman, 1910, Journ. Linn. Soc. Lond. Zool., vol. XXX, p. 432. Idem, 1915, Sci. Res. "Endeavour," vol. III, pt. I, p. 43. Idem, 1916, Brit. Ant. Exped., Geol., vol. II, p. 73, pl. VI, fig. 47.

Observations.—This species, which is represented by only one valve in the present soundings off the West coast of Tasmania, was formerly recorded from the Inland Seas, Japan and off Honolulu (G. S. Brady), and from Funafuti and the East coast of Tasmania (F. Chapman).

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms. No. 139 (27th January, 1914), 328 fathoms.

Cythere rastromarginata *G. S. Brady.*

Cythere rastromarginata G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 83, pl. XVI, figs. 1*a-d*, figs. 2*a-d*. Egger, 1901, Abhandl. d. k. bayer. Ak. Wiss., vol. XXI, pt. II, p. 442, pl. VI, figs. 5–9. Chapman, 1904, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 40, pl. VII, fig. 24.

Observations.—This species has been lately recorded from fossil deposits in the Mallee, Victoria, of Miocene or Pliocene age. The living examples are widely scattered in the Australian area and the Pacific. In the present sample the specimens

from the West coast of Tasmania represented both figured examples of the Challenger report and confirm the opinion there expressed, of the occurrence of sexual differences of form.[1]

Occurrence.—No. 60 (12th December, 1912), 1,300 fathoms.

CYTHERE SABULOSA *G. S. Brady.*

Cythere sabulosa G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 80, pl. XIX, figs. 1*a-h*.

Observations.—*C. sabulosa* was previously recorded from Booby Island, Torres Strait, 6–8 fathoms. The single valve found west of Tasmania is in every way comparable in outline and surface ornament, though the latter does not show any spinous elevations, as in some "Challenger" examples.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms.

CYTHERE SCABROCUNEATA *G. S. Brady.*

Cythere scabrocuneata G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 103, pl. XVII, figs. 5*a-f*; pl. XXIII, figs. 2*a-c*. Egger, 1901, Abhandl. d. k. bayer. Ak. Wiss., vol. XXI, pt. II, p. 441, pl. VIII, figs. 1-3. Chapman, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 40, pl. VIII, fig. 25. Idem, 1915, Sci. Res. "Endeavour," vol. III, pt. I, p. 43.

Observations.—The present record of depth of habitat is in excess of previous occurrences, though nearly approached by the "Endeavour" specimens from a depth of 1,122 fathoms, East of Tasmania. The species is almost confined to the Australian region and has lived on from Miocene times, as it is known from the Janjukian of the Victorian Mallee.

Occurrence.—Additional sample (3rd September, 1912), 706 fathoms. No. 150 (24th February, 1914), 1,800 fathoms.

CYTHERE SCALARIS *G. S. Brady.*

Cythere scalaris G. S. Brady, 1880, Rep. Chall. Zool., vol. II, pt. III, p. 87, pl. XXI, figs. 8*a-c*.

Observations.—This species was hitherto only known from Torres Strait and Magellan Straits. The valve occurring here, in a sample from West of Tasmania is quite typical.

Occurrence.—No. 60 (12th December, 1912), 1,300 fathoms.

CYTHERE SCINTILLULATA *G. S. Brady.*

Cythere scintillulata G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 62, pl. XIV, figs. 3*a-d*. Chapman, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 41, pl. VIII, figs. 26.

[1] Op. cit., 1880, p. 83.

Observations.—This species also occurred in the Magellan Straits, in 55 fathoms. It has since been found fossil in Miocene to Ploicene strata in the Mallee of Victoria. The specimens here found at the great depth of 1,300 fathoms are smaller in size than usual.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

CYTHERE SETOSA *Baird.* Plate XXI, fig. 9.

Cythere setosa Baird, 1850, Proc. Zool. Soc. Lond., pt. XVIII, p. 255; Annulosa, pl. XVIII, figs. 28–30. G. S. Brady, 1866, Trans. Zool. Soc. Lond., vol. V, p. 372, pl. LVIII, figs. 12*a-c*, 13*a-d*, 15*a-e*.

Observations.—It is interesting to meet with this northern and levantine species in the present sounding, East of Tasmania. The form resembles *C. kerguelenensis* Brady but is of thinner build, more tumid in form and with a finer pitted surface ornament.

Occurrence.—No. 58 (11th December, 1912), 1,180 fathoms.

CYTHERE SUBRUFA *G. S. Brady.*

Cythere subrufa G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 81, pl. XX, figs. 3*a-f*.

Observations.—This species is fairly common in the samples mentioned below. Previously recorded from Balfour Bay, Kerguelen Island, and off Prince Edward's Island; it is thus confined to the Southern Ocean. Some examples closely approach *C. wyville-thomsoni* by the elevation of the ventral ridge and the tapering of the posterior extremity.

Occurrence.—No. 28 (14th February, 1912), 160 fathoms. No. 13 (14th November, 1912), 1,940 fathoms. No. 30 (15th February, 1912), 182 fathoms. No. 31 (15th February, 1912), 220 fathoms. No. 67 (29th December, 1912), 1,670 fathoms. No. 92 (22nd November, 1913), 2,400 fathoms.

CYTHERE WYVILLE–THOMSONI *G. S. Brady.*

Cythere wyville-thomsoni G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 82, pl. XX, figs. 4*a-f*. Egger, 1901, Abhandl. d. k. bayer. Ak. Wiss., vol. XXI, pt. II, p. 444, pl. VI, figs. 13, 14. Chapman, 1902, Journ. Linn. Soc. Lond. Zool., vol. XXVIII, p. 425. Idem, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 41, pl. VIII, fig. 28.

Observations.—This species has occurred at Torres Strait, at Heard and Kerguelen Islands in the Southern Ocean, and on the West Coast of Africa. It occurs fossil (Miocene) in the Mallee Bores of Victoria, and these ancient representatives are in every way typical of the species.

Occurrence.—No. 25 (13th February, 1912), 500 fathoms. No. 29 (14th February, 1912), 125 fathoms. No. 31 (15th February, 1912), 220 fathoms. No. 13 (14th November, 1912), 1,940 fathoms. No. 58 (11th December, 1912), 1,180 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

Genus KRITHE, *Brady, Crosskey and Robertson.*

KRITHE ANGUSTA *Brady and Norman.* Plate XXI, figs. 10, 10*a*.

Krithe angusta, Brady and Norman, 1889, Sci. Trans. R. Dubl. Soc., ser. 2, vol. IV, No. II, p. 181, pl. XVII, figs. 10–13.

Krithe prælonga Egger, 1901, Abhandl. d. k. bayer. Ak. Wiss., vol. XXI, pt. II, p. 450, pl. IV, figs. 11, 12.

Krithe angusta Brady and Norman, Chapman, 1910, Journ. Linn. Soc. Lond. Zool., vol. XXX, p. 434.

Observations.—The single right valve found in this sample is regularly narrow and smooth, with a gently incurving ventral margin. Since its original discovery in Norwegian Seas, *K. angusta* has been found at Funafuti at depths ranging between 1,050 and 2,715 fathoms, and Egger found it off Mauritius at 411 metres.

Occurrence.—No. 11 (13th November, 1912), 1,475 fathoms.

KRITHE EGGERI *Chapman.*

Krithe eggeri Chapman, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. 1, p. 42, pl. VIII, figs. 29*a*, *b*.

Observations.—This form was described from fossil specimens of Lower Pliocene age from the Mallee Bores in Victoria.

It has a narrow carapace seen from the side, and a conspicuously flanged anterior border.

Occurrence.—Additional sample (3rd September, 1912), 706 fathoms.

KRITHE PRODUCTA *G. S. Brady.*

Krithe producta G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 114, pl. XXVII, figs. 1*a-j*. Brady and Norman, 1889, Sci. Trans. R. Dubl. Soc., ser. 2, vol. IV, No. II, p. 180, pl. XVII, figs. 5–7. Egger, 1901, Abhandl. d. k. bayer. Ak. Wiss., vol. XXI, pt. II, p. 451, pl. IV, figs. 17, 18. Chapman, 1902, Journ. Linn. Soc. Lond. Zool., vol. XXVIII, p. 427. Idem, 1910, ibid, vol. XXX, p. 434. Idem, 1915, Sci. Res. "Endeavour," vol. III, pt. I, p. 54.

Observations.—This deep-water form is well represented from many localities in this series of soundings. It does not appear to have been previously found so close to the ice-barrier as in samples 127 and 139.

Occurrence.—(*?*) No. I (26th May, 1912), 2,590 fathoms. Additional sample (3rd September, 1912), 706 fathoms. No. 40 (1st December, 1912), 2,610 fathoms. No. 42 (5th December, 1912), 1,076 fathoms. No. 56 (11th December, 1912), 675

fathoms. No. 58 (11th December, 1912), 1,180 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms. No. 127 (14th January, 1914), 870 fathoms. No. 139 (27th January, 1914), 328 fathoms. No. 150 (24th February, 1914), 1,800 fathoms.

KRITHE TUMIDA *G. S. Brady.*

Krithe tumida G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 115, pl. XXVII, figs. 4*a-d*. Egger, 1901, Abhandl. d. k. bayer. Ak. Wiss., vol. XXI, pt. II, p. 451, pl. IV, figs. 19–21. Chapman, 1902, Journ. Linn. Soc. Lond. Zool., vol. XXVIII. p. 427. Idem, 1910, ibid, vol. XXX, p. 434.

Observations.—The records of this species are few and of wide distribution. "Challenger" specimens came from the South Atlantic; Egger's "Gazelle" specimens from the West coast of Australia; the "Penguin" specimens from Funafuti, South Pacific.

Occurrence.—No. 11 (1st February, 1912), 930 fathoms. No. 28 (14th February, 1912), 160 fathoms. No. 12 (14th November, 1912), 2,083 fathoms. No. 13 (14th November, 1912), 1,940 fathoms. No. 56 (11th December, 1912), 675 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms. No. 150 (24th February, 1914), 1,800 fathoms.

Genus LOXOCONCHA *G. O. Sars.*

LOXOCONCHA AUSTRALIS *G. S. Brady.*

Loxoconcha australis G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 119, pl. XXVIII, figs. 5*a-f*; pl. XXIX, figs. 3*a-d*. Idem, 1890, Trans. R. Soc. Edin., vol. XXXV, pt. II, No. 14, p. 507. Chapman, 1902, Journ. Linn. Soc. Lond. Zool., vol. XXVIII, p. 427. Idem, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 42, pl. VIII, fig. 30.

Observations.—L. australis is rare in the present series. It occurs in the South Pacific; round the Australian coast; and in fossil (Miocene) deposits in Victoria.

Occurrence.—No. 60 (12th December, 1912), 1,300 fathoms. No. 139 (27th January, 1914), 328 fathoms.

LOXOCONCHA ELEGANTULA *sp. nov.* Plate XXI, figs. 1, 1*a*, *b*.

Description.—Carapace tumid, roundly ovate. Seen from the side, highest anteriorly, slightly narrowing posteriorly. Anterior border depressed, rather wide, thin, and marked by marginal concentric lines; posterior margin flanged and thin, the depressed area extending to a less degree along the ventral and dorsal margins. Surface of valve strongly convex, ornamented with small but distinct excavations arranged more or less concentrically around a slight sub-median dorsal depression and becoming parallel with the ventral margin.

Dimensions.—Length, ·44 mm; height, ·27 mm; width of carapace, ·28 mm.

Observations.—This species belongs to the "peachstone" group of *Loxoconcha*, but differs from the majority described from the Southern Ocean in having a broad anterior, narrowed behind in lateral view. It reminds one of the Cretaceous form "*Cytheropteron sherborni*"[1], especially in the disposition of the surface ornament. A related form is *Loxoconcha modesta* G. S. Brady[2], obtained from shallow water at Smyrna.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms.

Genus Xestoleberis *G. O. Sars.*

Xestoleberis davidiana *Chapman.* Plate XXII, figs. 2, 2*a*.

Xestoleberis sp. nov. aff. *setigera* G. S. Brady, Chapman, 1912, Sci. Res. "Endeavour," vol. I, pt. III, p. 311.

Xestoleberis davidiana Chapman, 1915, Sci. Res. "Endeavour," vol. III, pt. I, p. 45. Idem, 1916, Brit. Ant. Exped., 1907-9, vol. II, pp. 51, 73, pl. VI, figs. 5*a-c*, 6.

Observations.—This species has occurred in soundings in the Ross Sea near the Ice-barrier and also in elevated deposits (Pleistocene) on the slopes of Mount Erebus. It was lately found in "Endeavour" dredgings South of Tasmania at 1,122 fathoms. The present soundings containing this species are from the South polar region and from the west of Tasmania.

Occurrence.—No. 28 (14th February, 1912), 160 fathoms. No. 29 (14th February, 1912), 125 fathoms. No. 31 (15th February, 1912), 220 fathoms. Additional sample (3rd September, 1912), 706 fathoms. No. 58 (11th December, 1912), 1,180 fathoms. No. 60 (12th December, 1912), 1,300 fathoms. No. 139 (27th January, 1914), 328 fathoms.

Xestoleberis nana *G. S. Brady.*

Xestoleberis nana G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 126, pl. XXXI, figs. 5*a-c*. Chapman, 1902, Journ. Linn. Soc. Lond. Zool., vol. XXVIII, p. 430. Idem, 1915, Sci. Res. "Endeavour," vol. III, pt. I, p. 46.

Observations.—Several typical valves were found here. It has been recorded from the South Pacific (Tongatabu and Funafuti); from South of Cape Wills, South Australia, and the East of Tasmania. The present examples came from the West of Tasmania.

Occurrence.—No. 58 (11th December, 1912), 1,180 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

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[1] Jones and Hinde, Mon. Pal. Soc., vol. XLIII 1890. Cretaceous Ostracoda, p. 42, pl. I, figs. 33, 34; pl. IV. figs. 20, 21.

[2] Trans. Zool. Soc. Lond., vol. V, 1866 (*Normania modesta*), p. 383, pl. LXI, figs. 13*a*, *b*.

Xestoleberis polita *G. S. Brady.*

Xestoleberis polita G. S. Brady, 1876, Les Fondes de la Mer, vol. I, p. 202, pl. XXVII, figs. 15, 16. Idem, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 127, pl. XXXI, figs. 7*a-c*.

Observations.—*X. polita* has a limited distribution, hitherto being confined to two localities off South America (Falkland Islands and Straits of Magellan). The present specimens, from the west of Tasmania, are fairly typical.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

Xestoleberis setigera *G. S. Brady.*

Xestoleberis setigera G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 125, pl. XXXI, figs. 2*a-d*, figs. 3*a-c*. Chapman, 1902, Journ. Linn. Soc. Lond. Zool., vol. XXVIII, p. 428.

Observations.—Localities for this species have been hitherto confined to the colder parts of the Southern Ocean (Kerguelen, Heard and Prince Edward's Islands), excepting in the case of dredgings at Funafuti, which yielded this species at 12–60 fathoms, and also from the lagoon and beach sands at the same locality.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms.

Xestoleberis variegata *G. S. Brady.*

Xestoleberis variegata G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 129, pl. XXXI, figs. 8*a-g*. Idem, 1890, Trans. R. Soc. Edin., vol. XXXV, p. 508. Chapman, 1902, Journ. Linn. Soc. Lond. Zool., vol. XXVIII, p. 429. Idem, 1910, ibid, vol. XXX, p. 435. Idem, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 43, pl. VIII, fig. 33. Idem, 1915, Sci. Res. "Endeavour," vol. III, pt. I, p. 46.

Observations.—As another widely distributed form, this species has occurred off Cape Verde, off Tongatabu, at Funafuti; from New Caledonia, in the Fiji and Samoan Islands, and off South Australia. The present occurrence is west of Tasmania.

As a fossil its history dates back to the Miocene (Victoria), where these ancient specimens differ in no way from the living examples.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms.

Genus Cytherura *G. O. Sars.*

Cytherura *cf.* clausi *G. S. Brady.* Plate XXII, figs. 3, 3*a*.

Cytherura clausi G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 134, pl. XXXII, figs. 8*a-d*.

Observations.—The present specimen is a left valve, partially broken away at the posterior extremity. In its general outline and surface ornament it resembles a

modification of *C. clausi*, in which the posterior elevation is greater and the antero-median area of the valve is more ruggedly pronounced in the depression and swollen prominences. The type species was recorded from Simon's Bay, South Africa.

Occurrence.—No. 60 (12th December, 1912), 1,300 fathoms.

CYTHERURA COSTELLATA *G. S. Brady.*

Cytherura costellata G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 134, pl. XXXII, figs. 7*a-d*. Chapman, 1916, Brit. Ant. Exped. 1907–9, Geol., vol. II, p. 51, pl. VI, fig. 7.

Observations.—The former occurrences of this species were in shallow water soundings; Balfour Bay, Kerguelen Island, and in elevated deposits (Pleistocene) on the slopes of Mount Erebus. It is here found opposite Kaiser Wilhelm II Land and west of Tasmania.

Occurrence.—No. 31 (15th February, 1912), 220 fathoms. No. 58 (11th December, 1912), 1,180 fathoms. No. 59 (12th December, 1912), 1,320 fathoms.

CYTHERURA CRYPTIFERA *G. S. Brady.*

Cytherura cryptifera G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 134, pl. XXXII, figs. 4*a-c*. Chapman, 1915, Sci. Res. "Endeavour," vol. III, pt. I, p. 46.

Observations.—First found in Bass Strait, this species has since been discovered in dredgings made by the "Endeavour," east of Tasmania, in 777 fathoms. The present examples, from west of Tasmania, are separated valves and typical in every respect.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

CYTHERURA LILLJEBORGI *G. S. Brady.*

Cytherura lilljeborgi G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 132, pl. XXXII, figs, 6*a-d*.

Observations.—It is interesting to note this second appearance of a rare species, known only hitherto from Balfour Bay, Kerguelen Island (20–50 fathoms). The present localities are—opposite Kaiser Wilhelm II Land (220 fathoms); opposite Adelie Land (328 fathoms); and west of Tasmania (1,320 fathoms).

Occurrence.—No. 31 (15th February, 1912), 220 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 139 (27th January, 1914), 328 fathoms.

CYTHERURA OBLIQUA *G. S. Brady.*

Cytherura obliqua G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III. p. 131, pl. XXXII, figs. 1*a-d*. Chapman, 1916, Brit. Ant. Exped. 1907–9, Geol., vol. II, p. 73, pl. VI, fig. 50.

Observations.—The present examples came from opposite Kaiser Wilhelm II Land. The type specimens were dredged in Balfour Bay, Kerguelen Island (G. S. Brady), and others came from the Ross Sea, in 153 fathoms (F. Chapman).

Occurrence.—No. 28 (14th February, 1912), 160 fathoms.

CYTHERURA RUDIS *G. S. Brady.*

Cytherura rudis G. S. Brady, 1868, Ann. Mag. Nat. Hist., ser. 4, vol. II, p. 34, pl. V, figs. 15–17.

Cytherura (?) rudis G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 132, pl. XXXII, figs. 3*a-d.*

Cytherura rudis Brady and Norman, 1889, Trans. R. Dubl. Soc., ser. 2, vol. IV, p. 204, pl. XVIII, figs. 10–12; pl. XIX, fig. 21. Chapman, 1916, Brit. Ant. Exped., 1907–9, Geol., vol. II, p. 74, pl. VI, fig. 51.

Observations.—This species has a wide distribution and also occurs in Pleistocene deposits in the United States and in Scotland. It was met with in the Ross Sea in 225 fathoms. The present localities are—west of Tasmania and off Adelie Land.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms. No. 139 (27th January, 1914), 328 fathoms.

Genus CYTHEROPTERON *G. O. Sars.*

CYTHEROPTERON ABYSSORUM *G. S. Brady.*

Cytheropteron abyssorum G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt III, p. 138, pl. XXXIV, figs. 3*a-d.* Chapman, 1910, Journ. Linn. Soc. Lond. Zool., vol. XXX, p. 437. Idem, 1915, Sci. Res. "Endeavour," vol. III, pt. I, p. 47.

Observations.—This species has been found in deep sea soundings south-west of Tasmania ("Challenger") and at Funafuti ("Penguin"). Also found east of Tasmania in 777 and 1,122 fathoms ("Endeavour").

In the present samples *C. abyssorum* occurs in grey muds from the neighbourhood of the Ice-barrier and also west of Tasmania.

Occurrence—N. 20 (9th February, 1912), 110 fathoms. No. 29 (14th February, 1912), 125 fathoms. No. 42 (5th December, 1912), 1,076 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms. No. 139 (27th January, 1914), 328 fathoms.

CYTHEROPTERON ANTARCTICUM *Chapman.*

Cytheropteron antarcticum Chapman, 1916, Brit. Ant. Exped. 1907–9, Geol., vol. II, p. 38, pl. IV, figs. 4*a, b.*

Observations.—This species was originally described from fossil specimens in the upthrust muds of the Drygalski Glacier, south-east of Mount Larsen. The present occurrences are from a locality 142 miles south-west of St. Frances Island, South

Australia (The Great Bight), and from west of Tasmania. A related form is the recently described Lower Pliocene fossil, *C. præantarcticum* from the Mallee Bores in Victoria[1]; this has a heavier carapace with broader and less sharply pointed alar process.

Occurrence.—Additional Sample (3rd September, 1912), 706 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

CYTHEROPTERON ARMATUM *Chapman sp., var.* SPINOSA *nov.* Plate XXII, figs. 4, 4*a*.

Description.—In general characters this variety agrees with the type form from Funafut[2] with the exception that in the present example the anterior extremity is narrower, whilst the raised area between the pittings is finely spinose.

Observations.—Both the type form and the variety are related to *Cytheropteron pedatum* Marsson sp.[3] from the Chalk of England, Ireland and Rügen, and which Dr. Egger has already recorded[4] off Australia at 357 metres.

Occurrence.—No. 30 (15th February, 1912), 182 fathoms.

CYTHEROPTERON ASSIMILE *G. S. Brady.*

Cytheropteron assimile G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 138, pl. XXXIV, figs. 3*a-d.* Chapman, 1902, Journ. Linn. Soc. Lond. Zool., vol. XXVIII, p. 431.

Observations.—This species is nearly related to *C. abyssorum.* A variety has been described from Funafuti dredgings in which the alar beak is produced into a sharp spine.

The habitat of the above species is practically confined to the Southern Ocean.

Occurrence.—No. 29 (14th February, 1912), 125 fathoms. No. 30 (15th February, 1912), 182 fathoms. No. 31 (15th February, 1912), 220 fathoms. No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms. No. 139 (27th January, 1914), 328 fathoms.

CYTHEROPTERON COCCOIDES *G. S. Brady.*

Cytheropteron coccoides G. S. Brady, 1890, Trans. R. Soc. Edin., vol. XXXV, p. 510, pl. III, figs. 20, 21. Chapman, 1915, Sci. Res. "Endeavour," vol. III, pt. I, p 47.

Observations.—Previously found in sand from the fringing reef of Mango Island, Fiji, and East of Tasmania (777 fathoms). The present specimen, a complete carapace, was taken near the Ice-barrier.

Occurrence.—No. 30 (15th February, 1912), 182 fathoms.

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[1]Chapman, Proc. Roy. Soc. Vict., vol. XXVII (N.S.), pt. I, 1914, p. 47, pl. IX, figs. 39*a, b.*

[2]Journ. Linn. Soc. Lond. Zool., vol. XXX, 1910 p. 432, pl. XXXVII, figs. 6*a, b.*

[3]*Cythere pedata* Marsson. Mittheil. Naturw. Ver. Neu-Pommern und Rügen. Jahrg. XII (1880), p. 46, pl. III, figs. 16*a–c. Cytheropteron pedatum* Marsson sp., Jones and Hinde, Pal. Soc. Mon., vol. XLIII, 1890, p. 38, pl. IV, figs. 33–35.

[4]Abhandl. d. k. bayer. Akad. Wiss., vol. XXI, pt. II, 1901, p. 462, pl. VII, figs. 10–12.

CYTHEROPTERON FIMBRIATUM *Chapman.*

Cytheropteron fimbriatum Chapman, 1915, Sci. Res. "Endeavour," vol. III, pt. I, p. 48, pl. III, figs. 3*a*, *b*.

Observations.—The single right valve found in the present soundings off Kaiser Wilhelm II Land, essentially agrees with the form described from the east of Tasmania at 777 fathoms. The valve is slightly higher than in the figured type and the extreme margin of the alar process is bordered with a series of small depressions.

Occurrence.—No. 139 (27th January, 1914), 328 fathoms.

CYTHEROPTERON UMBONATUM *Williamson sp., var.* ACANTHOPTERA *Marsson var.*
Plate XXII, figs. 5, 5*a*.

Cythere acanthoptera Marsson, 1880, Mitth. naturw. Neu-Vorpommern und Rügen, p. 45, pl. III, figs. 14*a-c*.

Cytheropteron umbonatum Williamson sp., var. *acanthoptera* Marsson var. Jones and Hinde, 1890, Pal. Soc. Mon., vol. XLIII p. 41, pl. I, figs. 11–13; pl. IV, figs. 22–29. Chapman, 1898, Ann. Mag. Nat. Hist., ser. 7, vol. XI, p. 342. Idem, 1900, Proc. Geol. Assoc., vol. XVI, p. 268.

Cytheropteron acanthopteron Marsson sp., Egger, 1901, Abhandl. d. k. bayer. Ak. Wiss., vol. XXI, pt. II, p. 460, pl. IV, figs. 46–48.

Observations.—It is extremely interesting to again record this Cretaceous variety as a living form. Dr. Egger's discovery of it in recent soundings was made in "Gazelle" dredgings, off Australia in 357 metres.

The present example has a well-developed boss on the dorsal area, above the dorso-median sulcus. The surface of the valve is spinose, as in the fossil examples.

Occurrence.—No. 29 (14th February, 1912), 125 fathoms. Off Kaiser Wilhelm II Land.

CYTHEROPTERON WELLINGTONIENSE *G. S. Brady.* Plate XXII, figs. 6, 6*a*.

Cytheropteron wellingtoniense G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 136, pl. XXXIV, figs. 4*a-d*. Chapman, 1910, Journ. Linn. Soc. Lond. Zool., vol. XXX, p. 436.

Observations.—As in the specimens from Funafuti (1,050 fathoms), the present example has a more evenly rounded anterior margin.

Previously found in Wellington Harbour, New Zealand. Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms.

Genus BYTHOCYTHERE *G. O. Sars.*

BYTHOCYTHERE ILEX *sp. nov.* Plate XXII, fig. 7, 7*a*.

Description.—Carapace elongately ovate, compressed at the extremities. Seen from the side, highest in the middle; anteriorly broad and depressed, posteriorly

attenuate. Dorsal border straight and long. Surface sloping rapidly from the region of the high alar process of the ventral; towards the antero-dorsal region. A short, spinous process in the central dorsal area. The ventral process is very pronounced. Both processes beset with numerous prickles, whilst there are a few scattered along the anterior border. General surface smooth and undulate, with two curved parallel sulci in front of the median area.

Dimensions.—Length, ·846 mm.; height, ·48 mm.; width of carapace, ·65 mm.

Observations.—This species is nearly related to *B. tuberculata*[1] from Funafuti, but is anteriorly higher and does not show the dorsal tubercle of that species.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms.

BYTHOCYTHERE MAWSONI *sp. nov.* Plate XXII, figs. 8, 8*a*.

Description.—Carapace elongate, subovate, depressed. Seen from the side, broad anteriorly, narrowing posteriorly and ending acuminately. Dorsal border gently curved, ventral border longer and straight. Anterior margin depressed, behind which is a rounded ridge and sulcus, from which rises the median convexity of the valve, steeply towards the postero-ventral area. General surface covered with a minute, regularly polygonal pitting with raised borders to the pits.

Dimensions.—Length, ·46 mm.; height, ·23 mm.; width of carapace, ·27 mm.

Observations.—This species links certain forms of *Bythocypris* with *Cytherura*. The oblique posterior extremity shows its greater affinity with the latter genus. In general shape it is like *B. retiolata* Chapman[2] from Funafuti, but differs in having an evenly sloping ventral crest and less attenuated posterior.

Occurrence.—No. 58 (11th December, 1912), 1,180 fathoms. Off Kaiser Wilhelm II Land.

Genus PSEUDOCYTHERE *G. O. Sars.*

PSEUDOCYTHERE CAUDATA *G. O. Sars.*

Pseudocythere caudata Sars, 1865, Oversigt Norges marine Ostrac., p. 88. G. S. Brady, 1868, Mon. Rec. Ostracoda, Trans. Linn. Soc. Lond., vol. XXVI, p. 453, pl. XXXIV, figs. 49–52; pl. XLI, fig. 6. Brady, Crosskey and Robertson, 1875, Mon. Pal. Soc., vol. XXVIII, p. 210, pl. II, fig. 9. G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 144, pl. I, fig. 6*a-d*. Brady and Norman, 1889, Sci. Trans. R. Dubl. Soc., ser. 2, vol. IV, p. 225. Egger, 1901, Abhandl. d. k. bayer. Ak. Wiss., vol. XXI, pt. II, p. 463, pl. VIII, figs. 33, 34. Chapman, 1910, Proc. Linn. Soc. Lond. Zool., vol. XXX, p. 438. Idem, 1915, Sci. Res. "Endeavour," vol. III, pt. I, p. 50.

[1] Chapman, Journ. Linn. Soc. Lond. Zool., vol. XXX, 1910, p. 437, pl. lvii, figs. 27*a*, *b*.
[2] Tom. supra cit., p. 437, pl. lvii, figs. 26*a*, *b*.

Observations.—This widely distributed species is common and typical in the present collections—ranging from the polar seas to the Tasmanian area.

Occurrence.—No. 29 (14th February, 1912), 125 fathoms. No. 30 (15th February, 1912), 182 fathoms. No. 31 (15th February, 1912), 220 fathoms. No. 59 (12th December, 1912), 1,320 fathoms.

Genus Sclerochilus *G. O. Sars.*

Sclerochilus contortus *Norman sp.*

Cythere contorta Norman, 1862, Ann. Mag. Nat. Hist., vol. IX, p. 48, pl. II, fig. 15. Trans. Tyneside Nat. F.C., vol. V, p. 150, pl. III, fig. 15.

Sclerochilus contortus Norman sp., Sars, 1865, Oversigt Norges marine Ostrac., p. 90. Brady, 1868, Trans. Linn. Soc. Lond., vol. XXVI, p. 455, pl. XXXIV, figs. 5–10, pl. XLI, fig. 7. Brady, Crosskey and Robertson, 1874, Mon. Pal. Soc., vol. XXVIII, p. 212, pl. X, figs. 33–35. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 147, pl. XXXV, figs, 8*a*, *b*. Brady and Norman, 1889, Trans. R. Dubl. Soc., ser. 2, vol. 4, p. 225.

Observations.—This species is widely scattered, its habitat embracing the North Sea, Bay of Biscay, Mediterranean and the Southern Ocean. The "Challenger" examples came from Kerguelen Island, Heard Island, and Wellington Harbour, New Zealand.

Occurrence.—No. 29 (14th February, 1912), 125 fathoms. No. 31 (15th February, 1912), 220 fathoms. No. 60 (12th December, 1912), 1,300 fathoms. No. 139 (27th January, 1914), 328 fathoms.

Sclerochilus lineatus *sp. nov.* Plate XXII, figs. 9, 9*a*, *b*.

Description.—Carapace, long-ovate; attenuate at extremities. Seen from side, dorsal border straight in median area, obliquely truncated to anterior and concavely rounded to posterior; ventral border concave in anterior third, gently convex in lower half; anterior extremity bluntly rounded, posterior subacuminately rounded; margins depressed anteriorly and on the post-ventral edges. Surface steeply arched dorsally and gently sloping to the ventral border. Surface of valve relieved with fine and widely spaced lineation.

Dimensions.—Length, ·856 mm.; height, ·327 mm.; width of carapace, ·3 mm.

Occurrence.—No. 30 (15th February, 1912), 182 fathoms.

Genus Xiphichilus *Brady.*

Xiphichilus arcuatus *G. S. Brady.*

(*?*) *Xiphichilus arcuatus* G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 148, pl. XXXV, figs. 2*a-d*.

Observations.—This species has hitherto been recorded from a single "Challenger" station, in the South Pacific. It occurs here both from the Tasmanian Seas and off Kaiser Wilhelm II Land.

Occurrence.—No. 58 (11th December, 1912), 1,180 fathoms. No. 139 (27th January, 1914), 328 fathoms.

Xiphichilus complanatus *G. S. Brady.*

Xiphichilus complanatus G. S. Brady, 1880, Rep. Chall. Zool., vol, I, pt. III, p. 148, pl. XXXV, figs. 4*a-d.*

Xiphochilus (misprint for *Xiphichilus*) *complanatus* Brady, Egger, 1901, Abhandl. d. k. bayer. Ak. Wiss., vol. XXI, pt. II, p. 464, pl. IV, figs. 36, 37.

Observations.—The "Challenger" specimens came from Kerguelen Island at 130 fathoms. Egger's "Gazelle" specimens were obtained off the north-west coast of Australia at 357 metres.

Occurrence.—No. 30 (15th February, 1912), 182 fathoms. No. 59 (12th December, 1912), 1,320 fathoms.

Xiphichilus gracilis *Chapman sp.*

Macrocypris gracilis Chapman, 1915, Sci. Res. "Endeavour," vol. III, pt. I, p. 37, pl. II, figs. 2*a-c.*

Observations.—In the original reference this species was referred to the genus *Macrocypris*. The narrow anterior and truncated ventral border near the posterior extremity, however, seems to point to its affinity with *Xiphichilus*.

Like the original examples, those of the present series were found in the Tasmanian area.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

Section MYODOCOPA.

Family POLYCOPIDÆ.

Genus POLYCOPE *G. O. Sars.*

POLYCOPE CINGULATA *G. S. Brady.*

Polycope cingulata G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 170, pl. XXXV, figs. 7*a-d*.

Observations.—The locality whence the type specimen came is lost. It is, therefore, doubly interesting to record the present examples from East of Tasmania, and off Kaiser Wilhelm II Land, Antarctic. The specimen from the latter locality has the thickened flange very conspicuously sulcated on the inside.

Occurrence.—No. 60 (12th December, 1912), 1,300 fathoms. No. 139 (27th January, 1914), 328 fathoms.

POLYCOPE ORBICULARIS *G. O. Sars.*

Polycope orbicularis G. O. Sars, 1865, Oversigt af Norges marine Ostracoder, p. 122. G. S. Brady, 1868, Mon. Rec. Brit. Ostrac., Trans. Linn. Soc. Lond., vol. XXVI, p. 471, pl. XXXV, figs. 53–57. Brady, Crosskey and Robertson, Mon. Pal. Soc., vol. XXVIII, p. 219, pl. XII, figs. 22, 23. Brady, 1880, Rep. Cha. Zool., vol. I, pt. III, p. 169. Egger, 1901, Abhandl. d. k. bayer. Ak. Wiss., vol. XXI, pt. II, p. 467, pl. IV, figs. 30, 31, 40 41.

Observations.—Previously recorded from Vigo Bay, Cape of Good Hope and Kerguelen Island ("Challenger"); from north-west Australia ("Gazelle"). The present locality is off Kaiser Wilhelm II Land.

Occurrence.—No. 30 (15th February, 1912), 182 fathoms.

POLYCOPE TRIGONALIS *sp. nov.* Plate XXII, figs. 10, 10*a*.

Description.—Carapace depressed. Valves seen laterally, semi-circular; dorsal margin straight, ventral strongly convex, equal in height and length. Surface marked by fine concentric lines and closely set pittings.

Dimensions.—Length, ·5 mm.; height, ·44 mm.; width of carapace, ·3 mm.

Observations.—Somewhat like (?) P. *favus* Brady[1] in outline, but more depressed and with fine lineations and pittings.

Occurrence.—No. 60 (12th December, 1912), 1,300 fathoms.

[1] Rep. Chall. Zool., vol. 1, part III, 1880, p. 170, pl. XXXVI, figs. 4*a*, *b*.

Family CYTHERELLIDÆ.

Genus CYTHERELLA *Rupert Jones.*

Cytherella irregularis *G. S. Brady, var.*; debilis *var. nov.* Plate XXII, figs. 11, 11*a*.

Ref. to type.—*Cytherella irregularis* G. S. Brady, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 178, pl. XLIII, figs. 3*a-c*.

Observations.—Three valves of what appear to be a weakly-sculptured variety of the above species occur in the Tasmanian area. The central raised portion of the valve is not so conspicuously pinched up nor is the pitting so marked, as in *C. irregularis*. The type species occurred off Bermudas.

Occurrence.—No. 59 (12th December, 1912), 1,320 fathoms.

Cytherella punctata *G. S. Brady.*

Cytherella punctata G. S. Brady, 1866, Trans. Zool. Soc. Lond., vol. V, p. 362, pl. LVII, figs. 2*a, b*. Idem, 1880, Rep. Chall. Zool., vol. I, pt. III, p. 174, pl. XXXVI, figs. 6*a, b*; pl. XLIV, figs. 4*a-g*. Egger, 1901, Abhandl. d. k. bayer. Ak. Wiss., vol. XXI, pt. II, p. 469, pl. IV, figs. 34, 35. Chapman, 1914, Proc. R. Soc. Vict., vol. XXVII (N.S.), pt. I, p. 51, pl. IX, fig. 47.

Observations.—The present occurrences are from the Tasmanian area. Its range extends from the Ki Islands to the Southern Ocean, and is known also from the Straits of Magellan. It occurs as a fossil in the Miocene or Lower Pliocene of the Mallee Bores in Victoria.

Occurrence.—No. 58 (11th December, 1912), 1,180 fathoms. No. 60 (12th December, 1912), 1,300 fathoms.

EXPLANATION OF PLATES.

PLATE XXI.

Fig. 1.—(?) *Aglaia pusilla* G. S. Brady. Right valve. 1*a*, edge view. No. 139, 328 fathoms.

„ 2.—*Pontocypris simplex* G. S. Brady. Right valve. 2*a*, edge view. No. 60, 1,300 fathoms.

„ 3.—*Argillœcia affinis* Chapman. Right valve. 3*a*, edge view. No. 58, 1,180 fathoms.

„ 4.—*Macrocypris similis* G. S. Brady. Right valve. No. 59, 1,320 fathoms.

„ 5.—*Bairdia amygdaloides* G. S. Brady. Left valve. No. 31, 220 fathoms.

„ 6.—*Bairdia abyssicola* G. S. Brady. Left valve. No. 11, 1,475 fathoms.

„ 7.—*Cythere cristatella* G. S. Brady. Right valve. 7*a*, edge view. No. 31, 220 fathoms.

„ 8.—*Cythere militaris* G. S. Brady sp. Right valve. No. 449, 2,600 fathoms.

„ 9.—*Cythere setosa* Baird. Right valve. No. 58, 1,180 fathoms.

„ 10.—*Krithe angusta* Brady and Norman. Right valve. 10*a*, edge view. No. 11, 1,475 fathoms.

N.B.—All figures on this plate magnified 52 diameters.

PLATE XXII.

Fig. 1.—*Loxoconcha elegantula*, sp. nov. Left valve. 1*a*, edge view; 1*b*, end view. No. 59, 1,320 fathoms.

„ 2.—*Xestoleberis davidiana* Chapman. Left valve. 2*a*, edge view. No. 58, 1,180 fathoms.

„ 3.—*Cytherura* cf. *clausi* G. S. Brady. Left valve. 3*a*, edge view. No. 60, 1,300 fathoms.

„ 4.—*Cytheropteron armatum* Chapman sp., var. *spinosa*, var. nov. Right valve. 4*a*, edge view. No. 30, 182 fathoms.

„ 5.—*Cytheropteron umbonatum* Williamson sp. var. *acanthoptera* Marsson var. Right valve. 5*a*, edge view. No. 29, 125 fathoms.

„ 6.—*Cytheropteron wellingtoniense* G. S. Brady. Left valve. 6*a*, edge view. No. 59, 1,320 fathoms.

,, 7.—*Bythocythere ilex* sp. nov. Right valve. 7*a*, edge view. No. 59, 1,320 fathoms.

,, 8.—*Bythocythere mawsoni* sp. nov. Left valve. 8*a*, edge view. No. 58, 1,180 fathoms.

,, 9.—*Sclerochilus lineatus* sp. nov. Right valve. 9*a*, edge view. 9*b*, end view. No. 30, 182 fathoms.

,, 10.—*Polycope trigonalis* sp. nov. Left valve. 10*a*, edge view. No. 60, 1,300 fathoms.

,, 11.—*Cytherella irregularis* G. S. Brady, var *debilis* var. nov. Right valve. 11*a*, edge view. No. 59, 1,320 fathoms.

N.B.—All figures on this plate magnified 52 diameters, excepting figs. 11 and 11a, which are magnified 26 diameters.

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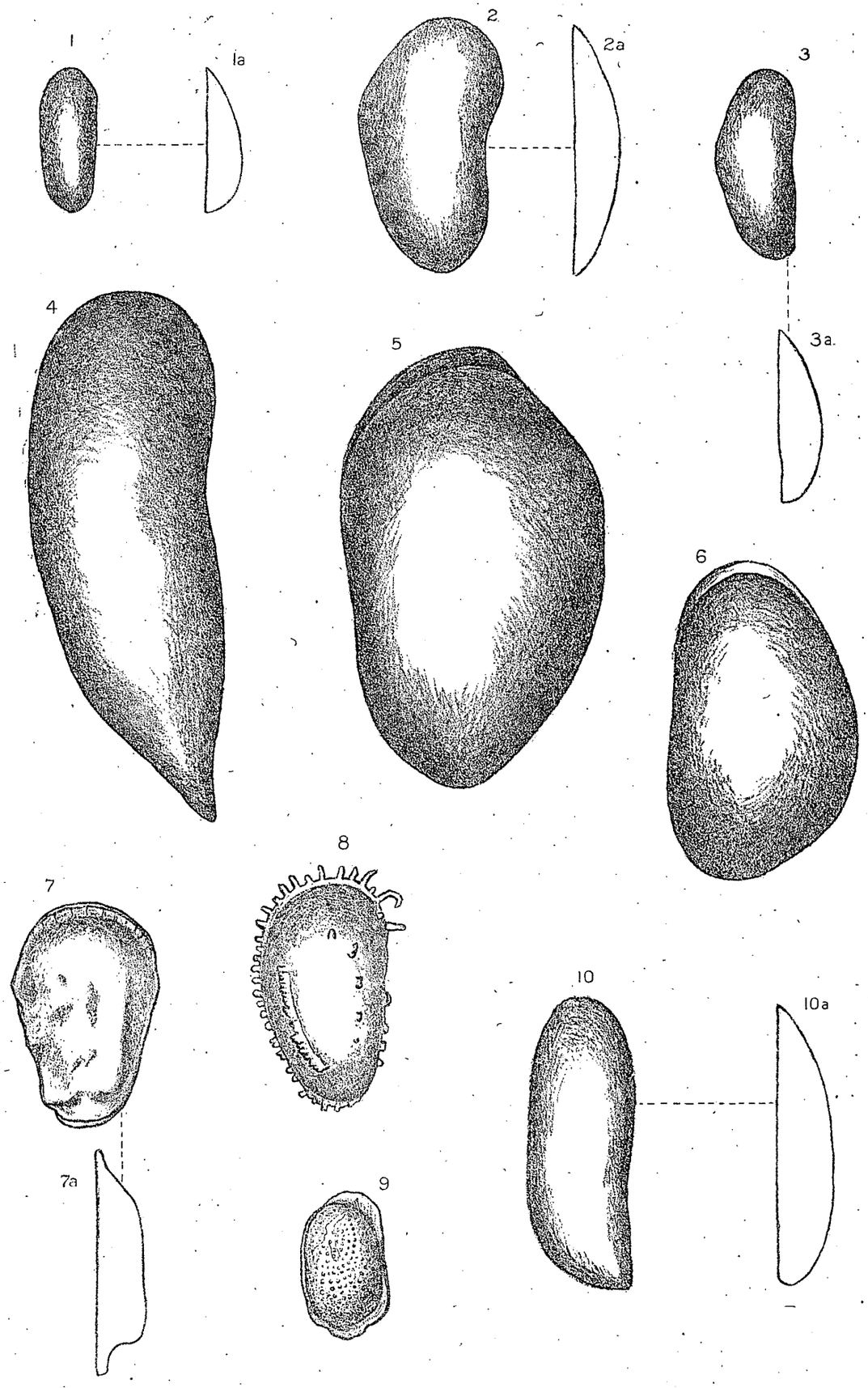
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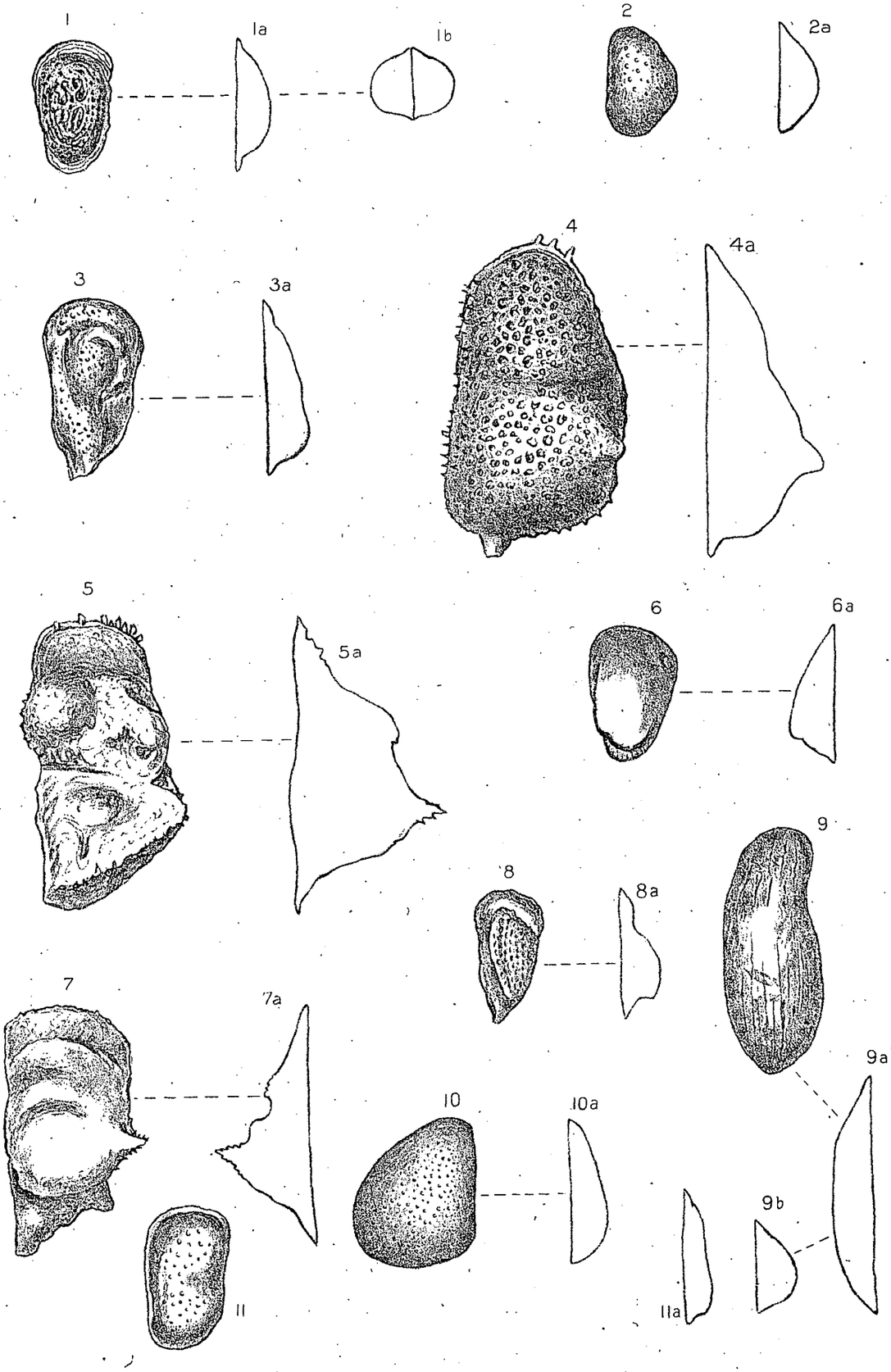
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