A Stereo-Atlas of Ostracod Shells

edited by R. H. Bate, J. W. Neale, Lesley M. Sheppard
and David J. Siveter

Volume 6, Part 1; 29th June 1979

Published by The British Micropalaeontological Society
in association with Robertson Research International Ltd., Llandudno, Wales

Instructions to Authors

Contributions illustrated by scanning electron micrographs of Ostracoda in stereo-pairs are invited. Full instructions may be obtained on request from any one of the Editors or Editorial Board. Format should follow the style set by the majority of papers in this issue. Descriptive matter apart from illustrations should be cut to a minimum; preferably each plate should be accompanied by one page of text only. Blanks to aid in mounting figures for plates may be obtained from the Editors. Completed papers should be sent to Ms. L.M. Sheppard, Department of Palaeontology, British Museum (Natural History), Cromwell Road, London SW7 5BD.

Acknowledgments

This Volume of the *Stereo-Atlas* has been aided by generous financial support from Robertson Research International Limited.

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The front cover shows a female (external & internal views) of **Cativella bensoni** Neale

595.337.14 (116.312) (427.4:162.000.54) : 551.351 + 552.52

ON *SCHULERIDEA HAMMI* (TRIEBEL)

by John W. Neale
(University of Hull, England)

Schuleridea hammi (Triebel 1938)

1938 *Cytheridea (Haplocytheridea) hammi* n. sp. E. Triebel, *Senckenbergiana,* **20**, 484 - 5, pl. 3, figs. 42 - 47.
1956 *Schuleridea hammi* (Triebel); G. Deroo, *Institut Français du Pétrole,* **11**, 1512 (not figured).
1963 *Schuleridea hammi* (Triebel); P. Kaye, *Revue de Micropaléontologie,* **6** (1), 31 - 2, pl. 2, figs. 5 - 8.

Holotype: Senckenberg Museum, Frankfurt am Main, No. **X/ε 122a**, ♂ LV.

Type locality: Kastendamm near Hannover.

Age: Aptian.

Figured specimens: University of Hull coll. nos. **HU.19.C.15.3** (♀ LV: Pl. **6**, 2, fig. 1), **HU.19.C.15.1** (♂ LV: Pl. **6**, 2, fig. 2), **HU.19.C.15.5** (♂ RV: Pl. **6**, 4, fig. 1), **HU.19.C.15.3** (♀ LV: Pl. **6**,4, fig. 2). All specimens from Upper B Beds, Coastal Section, Speeton Clay, Speeton, E. Yorks, England; lat. 54°10′N, long. 0°14′40″W. Upper Barremian.

Explanation of Plate 6, 2

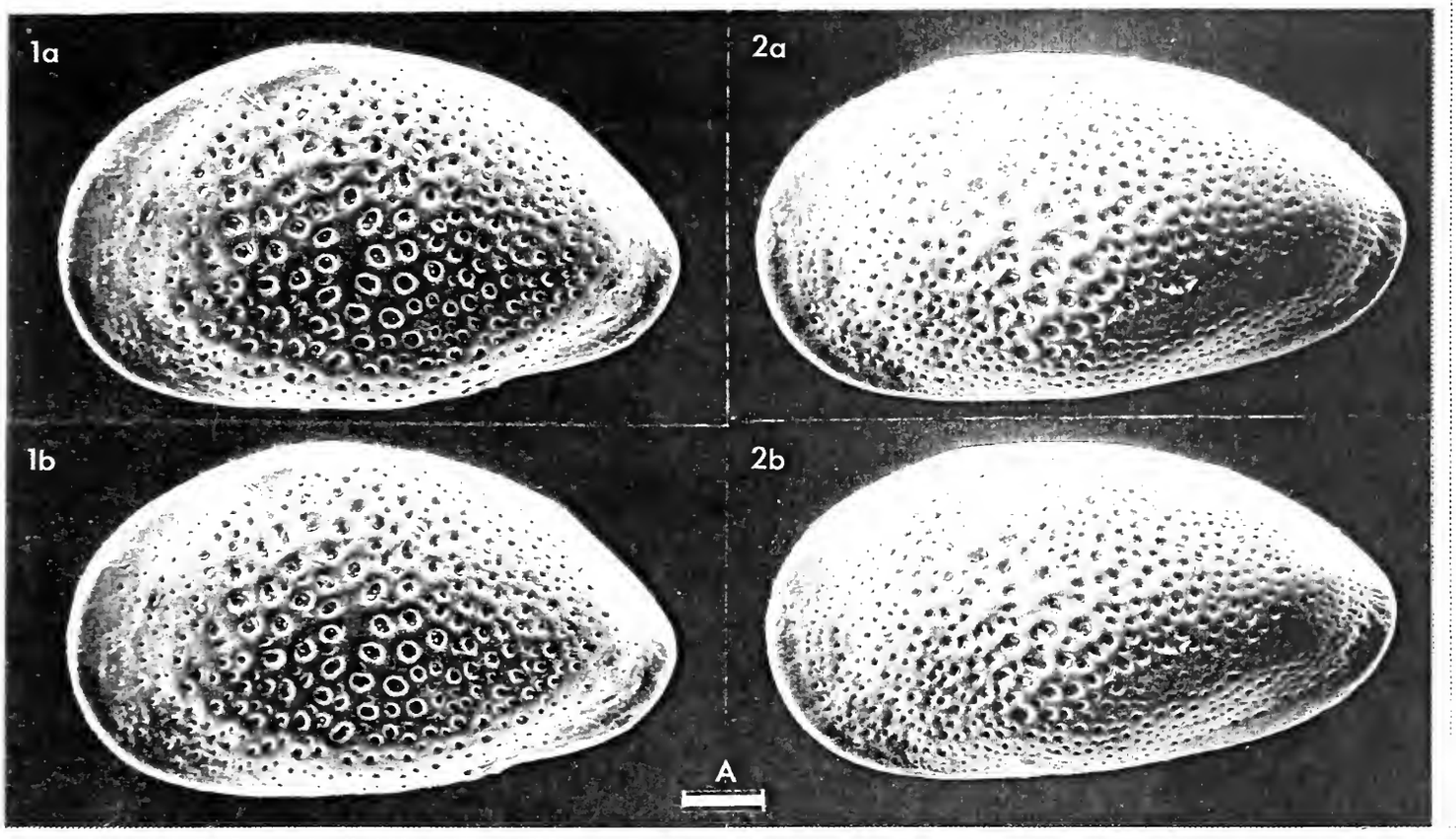
Fig. 1, ♀ LV, ext. lat. (**HU.19.C.15.3**, 796 μm long); fig. 2, ♂ LV, ext. lat. (**HU.19.C.15.1**, 880 μm long).
Scale A (100 μm; x 107), figs. 1, 2.

Remarks: In side view valves taper markedly posteriorly and are strongly pitted. Eye tubercle weak and hinge structure relatively weak compared with other species of *Schuleridea*

Distribution: This species is characteristic of the Upper Barremian of Britain and N. Germany. In Germany it ranges up into the Lower Aptian and has been recorded from beds placed in the lowest Aptian at Speeton in the North of England; so far it has not been noted in the Aptian of S. England. Recently, E. Kemper (1975 *Ber. Naturhist. Ges.* **119**, 54 - 55 *et al.*) has recorded it from the higher Aptian *nutfieldensis* and *melchioris* zones in boreholes west of Peine in the centre of the basin north and east of Hannover. In Denmark, O. B. Christensen (1973 *Geol. Surv. Denmark III Series* **40**, 115) has noted it in the Upper Barremian of the Nøvling No. 1 well in Central Jutland.

Explanation of Plate 6, 4

Fig. 1, ♂ RV, ext. lat. (**HU.19.C.15.5**, 840 μm long); fig. 2, ♀ LV, int. lat. (**HU.19.C.15.3**, 796 μm long).
Scale A (100 μm; x 109), fig. 1; scale B (100 μm; x 116), fig. 2.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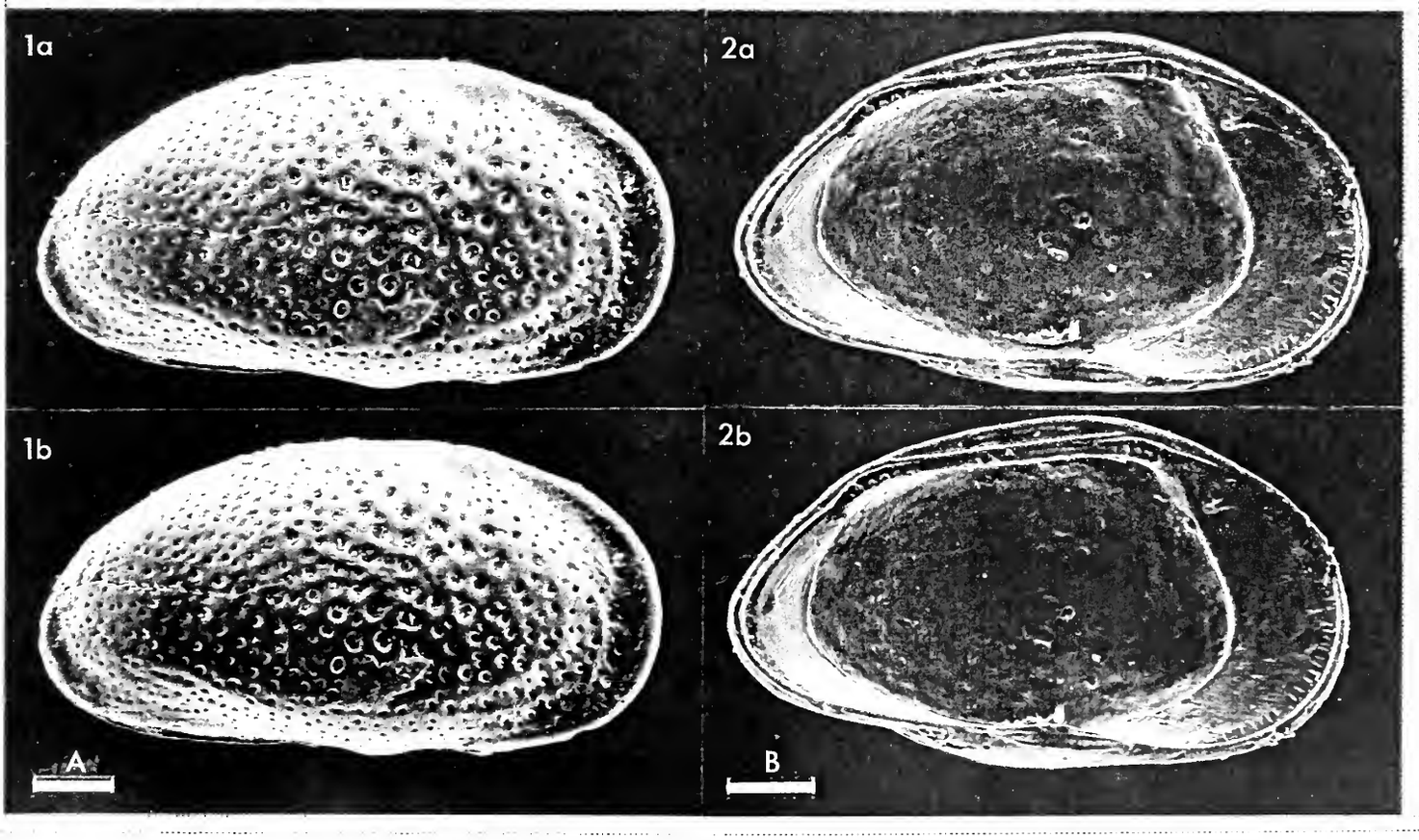
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Stereo-Atlas of Ostracod Shells 6 (2) 5 – 12 (1979)
595.337.14 (119.9) (269.5:164.027.76 + 269.7:163.166.78 + 269.7:163.160.78 + 269.7:163.167.79) : 551.35 (26.03:24.08.67 - 448)

ON *CATIVELLA BENSONI* NEALE

by John W. Neale
(University of Hull, England)

Cativella bensoni Neale 1967

1880 *Cythere polytrema* Brady; G. S. Brady, *Rept. Sci. Res. Voyage H. M. S. Challenger, 1873 - 76. Zoology* **1**, pt. 3, 87, pl. 21, fig. 5 a - h.

1916 *Cythere polytrema* Brady; F. Chapman, *in: Brit. Antarct. Exped. 1907 - 9, Rept. Sci. Inv. Geology* **2**, 50, pl. 6, fig. 3.

1964 *Cativella* sp., R. H. Benson, *Univ. Kans, Paleont. Contr. Arthropoda* no. **6**, 32 - 3, text-fig. 23.

1967 *Cativella bensoni* sp. nov., J. W. Neale, *Brit. Antarct. Surv. Sci. Repts.* No. **58**, 30 - 2, pl. 3 a, b, d, f, f′, f″; pl. 4 f, g, h, h′; text-fig. 10.

non 1878 *Cythere polytrema* sp. nov., G. S. Brady, *Trans. zool. Soc. Lond.*, **10**, 393, pl. 66, fig. 1 a - d.

Holotype: **HU.13.R.12.1**, ♀ car.
[paratypes: **HU.13.R.12.2 - 20** and Brit. Mus. (Nat. Hist.) coll. no. **1966.7.13.1** (16 specimens)].

Type locality: Halley Bay, Coats Land, Antarctica (approx. lat. 75°30′S, long. 26°40′W) from pale grey, silty sand at 113 fathoms.

Figured specimens: University of Hull coll. nos. **HU.13.R.12.1** (♀ car.: Pl. **6**, 6, fig. 1; Pl. **6**, 12, fig. 2), **HU.215.R.2a** (♀ RV: Pl. **6**, 6, fig. 2), **HU.215.R.6a** (♂ LV: Pl. **6**, 8, fig. 1; ♂ RV: Pl. **6**, 8, fig. 2), **HU.215.R.1a** (♀ RV: Pl. **6**, 10, fig. 1; Pl. **6**, 12, fig. 1; ♀ LV: Pl. **6**, 10, fig. 2; Pl. **6**, 12, fig. 3). **HU.13.R.12.1** from 113 fathoms, Halley Bay, Coats Land, Antarctica (approx. lat. 75°30′S, long. 26°40′W). All other figured material from 67 metres through a hole in the Ross Ice Shelf at White Island (lat. 78°4′S, long. 167°25′E).

Explanation of Plate 6, 6

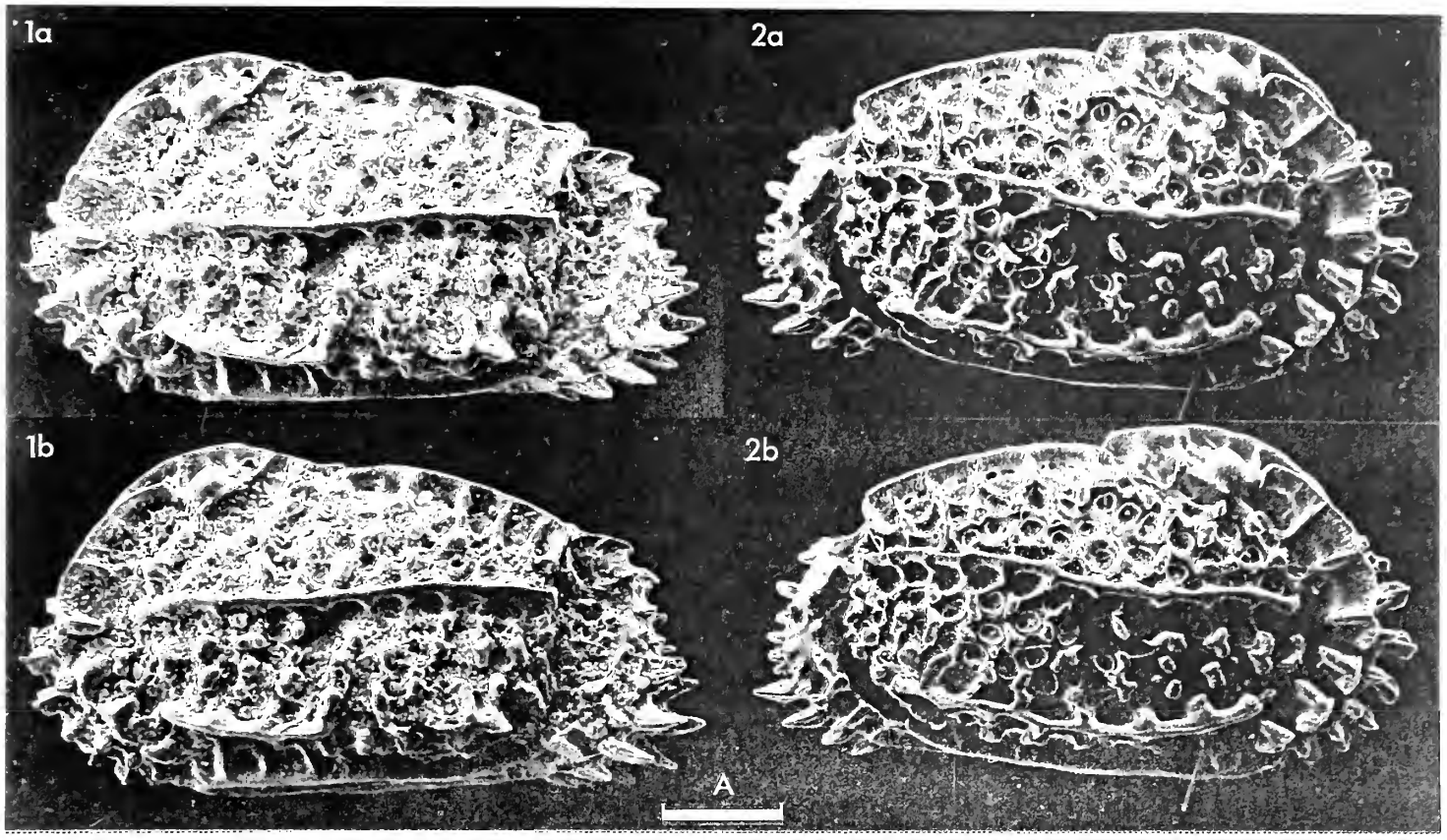
Fig. 1, ♀ car., ext. lt. lat. (holotype, **HU.13.R.12.1**, 1117 μm long); fig. 2, ♀ RV, ext. lat. (**HU.215.R.2a**, 1148 μm long). Scale A (200 μm; x 84), figs. 1, 2.

Diagnosis: Adults with heavy reticulate ornamentation in which small tubercles develop at the junction of ridges. A main row of some seven squarish spines occurs antero-ventrally and about 10 prominent spines lie sub-parallel to the length posteriorly, of which the postero-ventral are the longest. Copulatory appendage distinctive with hemipenes triangular and showing sigmoidal curvature. Brush organ well developed. Antenna with well developed elliptical club-shaped sensor and two-jointed exopodite.

Remarks: Material kindly sent me by Dr. Ensor of the University of Canterbury, New Zealand enables the soft parts to be figured for the first time. This was collected from 67 metres through a hole in the Ross Ice Shelf at White Island (78°4′S, 167°25′E), the bottom being steeply sloping and a mixture of basaltic fine gravel and cobbles heavily encrusted with hydroids and bryozoa. Benson (1964) obtained a single RV in a core from 448 metres in the same general area. Chapman (1916) also recorded this species (as *C. polytrema*) in this area from raised deposits on the slopes of Mt. Erebus. The type material of *C. bensoni* comes from Halley Bay on the other side of Antarctica. Brady (1880) found a few valves at Prince Edward Island, mostly juveniles, but one, corresponding in size to the penultimate instar, shows adult type ornamentation. At present there are no grounds for excluding this from the present species. Juveniles are lightly calcified and ornamented and are fully described in Neale (1967). If one excludes Benson's single RV, all the material came from depths between 67 and 206 metres and the species may be regarded as essentially neritic.

Explanation of Plate 6, 8

Fig. 1, ♂ LV, ext. lat. (**HU.215.R.6a**, 1108 μm long); fig. 2, ♂ RV, ext. lat. (**HU.215.R.6a**, 1100 μm long). Scale A (200 μm; x 86), figs. 1, 2.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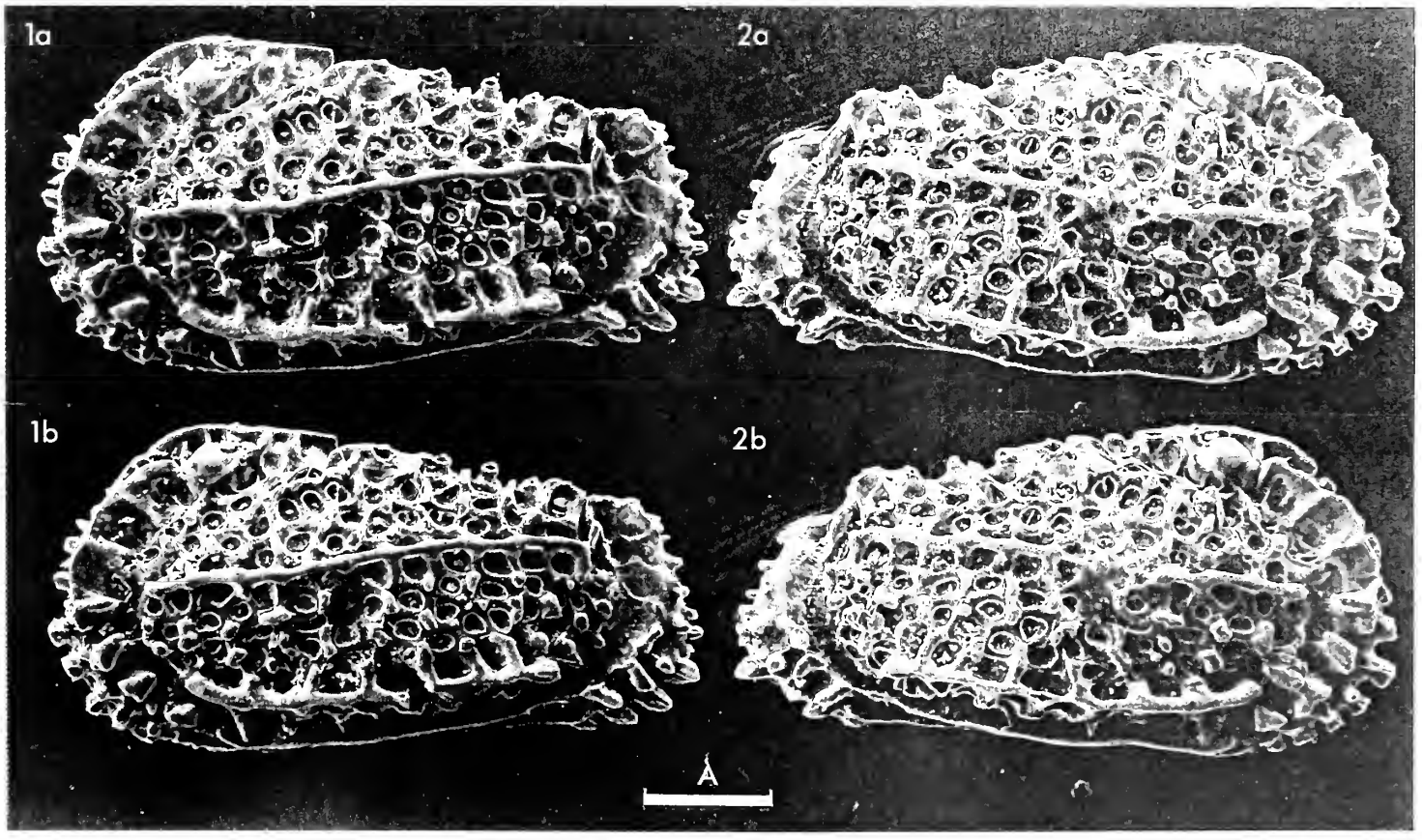
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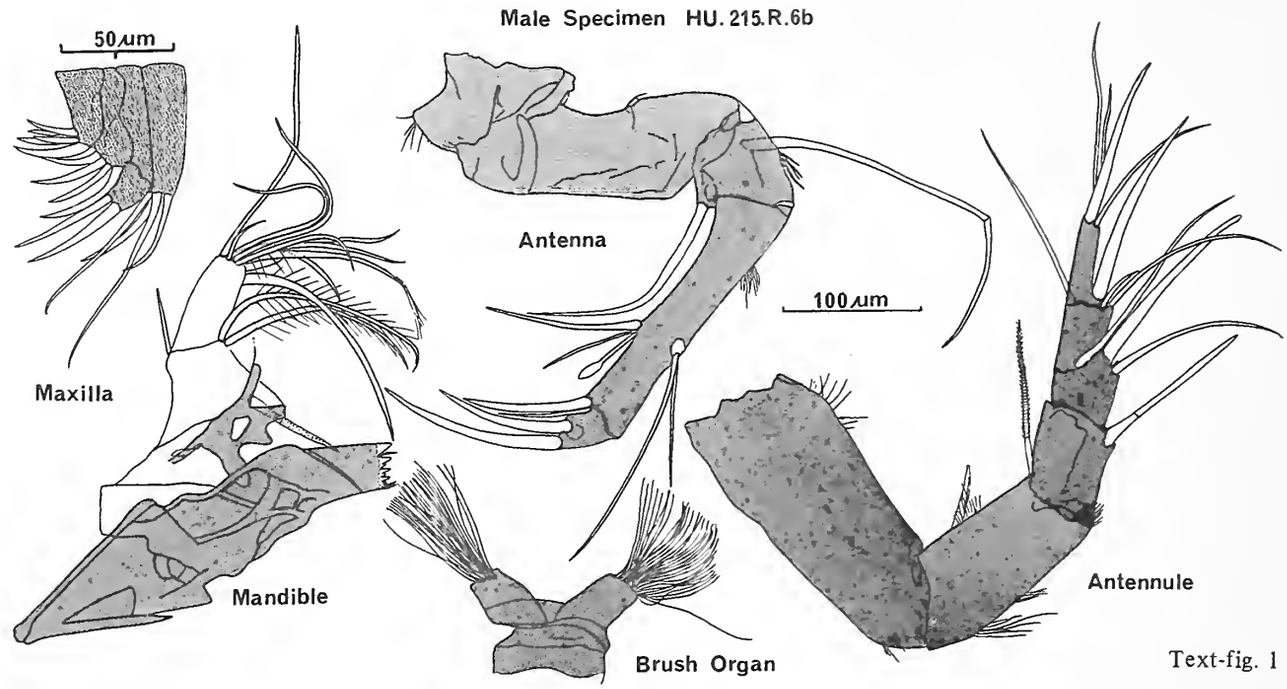
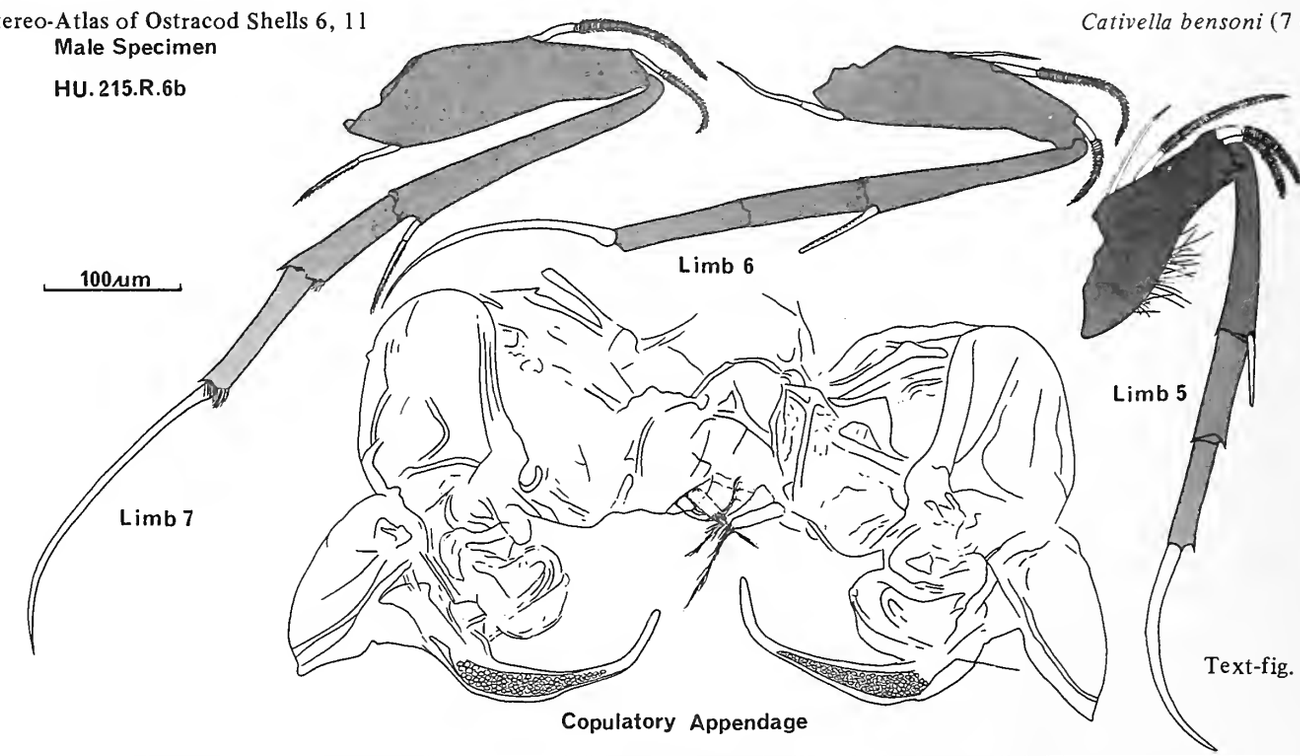


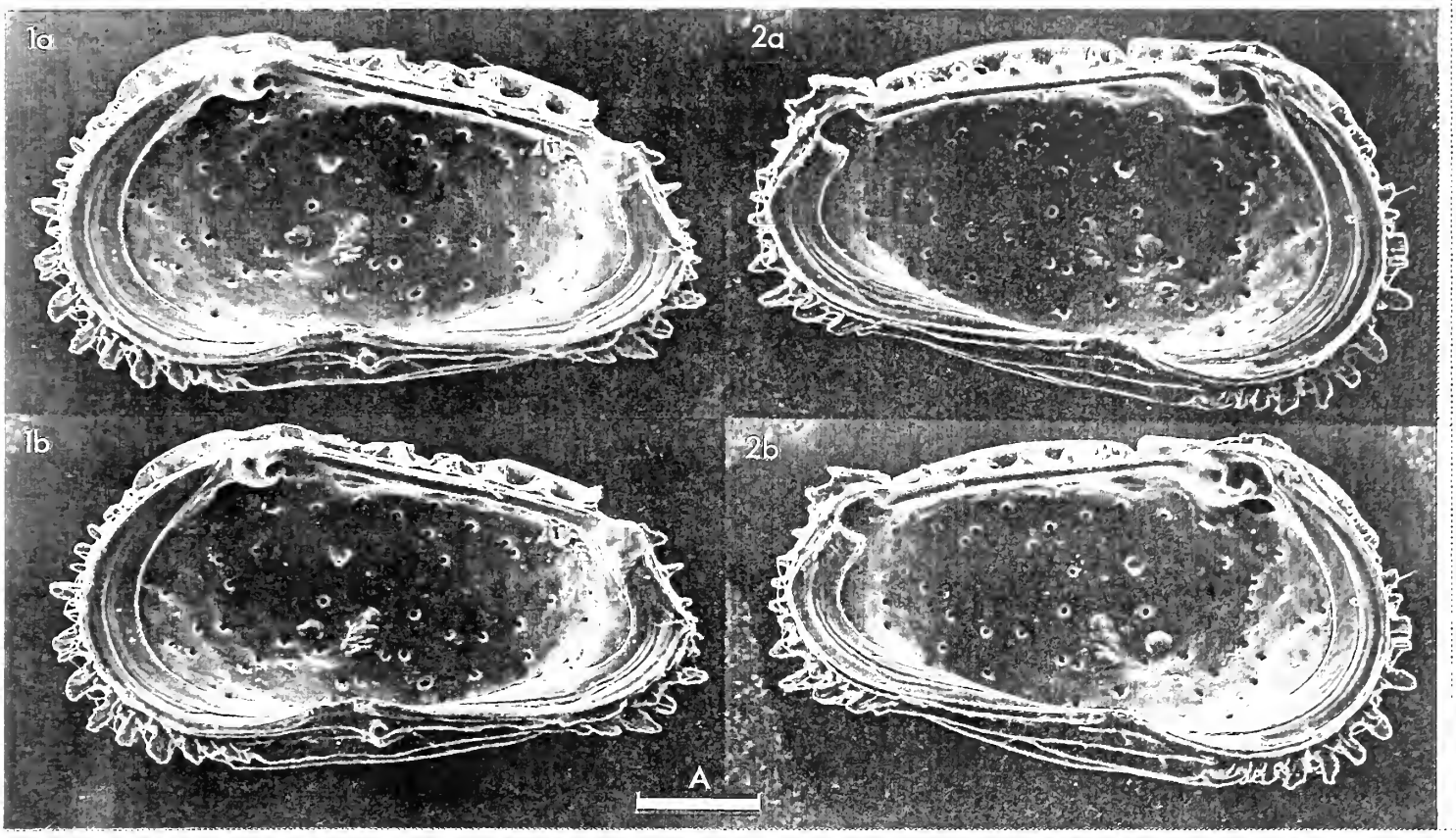
Explanation of Plate 6, 10

Fig. 1, ♀ RV, int. lat. (**HU.215.R.1a**, 1144 µm long); fig. 2, ♀ LV, int. lat. (**HU.215.R.1a**, 1112 µm long).
Scale A (200 µm; x 82), figs, 1, 2.



Explanation of Plate 6, 12

Fig. 1, ♀ RV, int. obl. ant. tooth and ocular sinus (**HU.215.R.1a**, 1112 µm long); fig. 2, ♀ car., ext. dors. (holotype, **HU.13.R. 12.1**, 1117 µm long); fig. 3, ♀ LV, int. obl. ant. tooth and ocular sinus (**HU.215.R.1a**, 1144 µm long).
Scale A (40 µm; x 270), figs. 1, 3; scale B (200 µm; x 82), fig. 2.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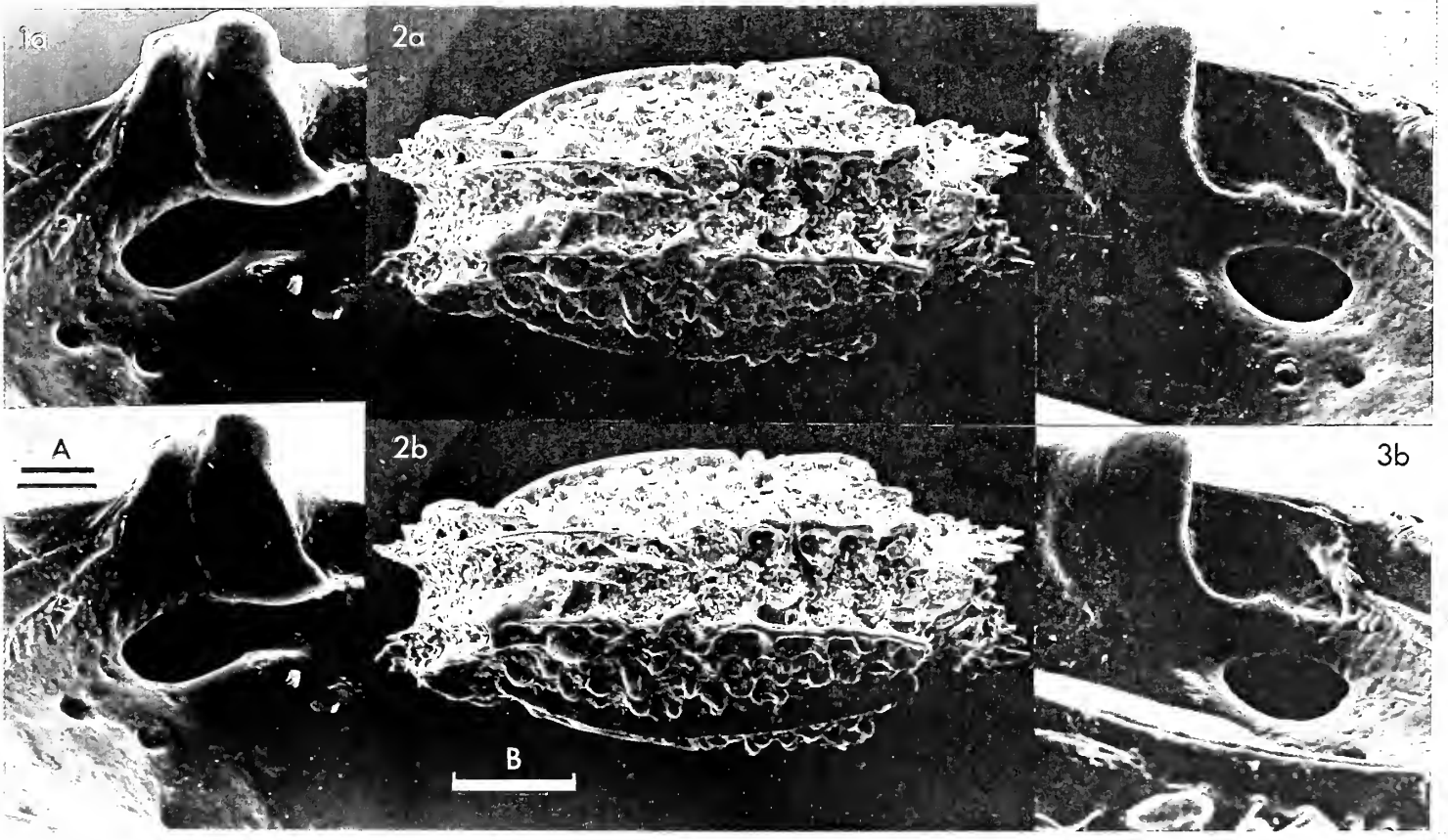
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Stereo-Atlas of Ostracod Shells 6 (3) 13–20 (1979)
595.337.14 (119.9) (261.2:162.014.050) : 551.353 (26.03:24.08.3680 - 3697)

ON *PELECOCYTHERE SYLVESTERBRADLEYI* ATHERSUCH gen. et sp. nov.

by John Athersuch
(B.P. Research Centre, Sunbury-on-Thames, England)

Genus *PELECOCYTHERE* gen. nov.
Type species: *Pelecocythere sylvesterbradleyi* sp. nov.

Derivation of name: *Pelex, pelekos,* Greek; a helmet + *Cythere.* Gender, feminine.

Diagnosis: Carapace with carinate alae and flattened ventral surface. Alae perforated by large pore canals which terminate in sieve-pores dorsally and ventrally. Hinge antimerodont.

Pelecocythere sylvesterbradleyi sp. nov.

Holotype: Brit. Mus. (Nat. Hist.) no. **1978.463**, ♂ car. + appendages.
[Paratypes: **1978.460 - 462, 464.**]

Type locality: *Discovery* station 9756, haul 14, in the abyssal NE Atlantic off SW Ireland: lat. 50°04.0′ - 50°04.3′N, long. 13°55.6′ - 13°53.2′W; depth 3680 - 3697m; date 15.4.1978; Recent.

Explanation of Plate 6, 14

Fig. 1, ♂ LV, ext. lat. (paratype, **1978.460**, 1670 μm long); fig. 2, ♀ RV, ext. lat. (paratype, **1978.461**, 1700 μm long); fig. 3, ♀ RV, dors. sieve-pore (paratype, **1978.462**).
Scale A (500 μm; x 34), figs. 1, 2; scale B (5 μm; x 2150), fig. 3.

Derivation of name: In honour of the late Professor P. C. Sylvester-Bradley.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. **1978.460** (♂; LV: Pl. **6**, 14, fig. 1; appendages: Text-figs. 1, 2), **1978.461** (♀; RV: Pl. **6**, 14, fig. 2; Pl. **6**, 16, fig. 3; LV: Pl. **6**, 18, figs. 2, 3; Pl. **6**, 20, figs. 1, 3, 5), **1978.462** (♀ car.: Pl. **6**, 14, fig. 3; Pl. **6**, 16, fig. 1), **1978.463** (holotype, ♂ car.: Pl. **6**, 16, fig. 2), **1978.464** (♂ RV: Pl. **6**, 18, fig. 1; Pl. **6**, 20, figs. 2, 4). All specimens from the type locality, *Discovery* station 9756, haul 14; collected with an epibenthic sledge (see Aldred *et al.*, 1976, *Deep-Sea Research* **23**: 167 - 174) 15.4.78 during R. R. S. *'Discovery'* cruise 92

Diagnosis: As for genus.

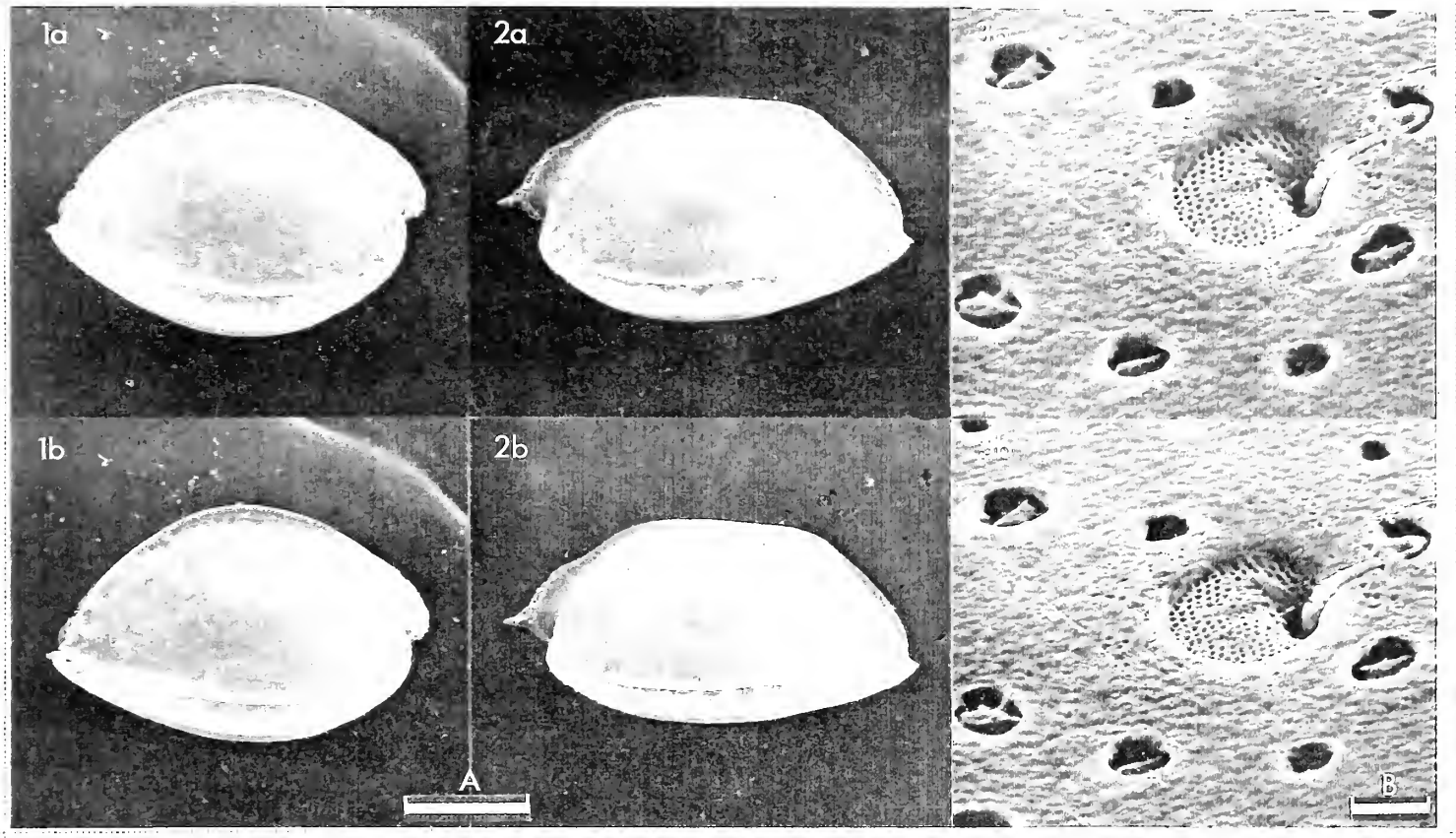
Distribution: Known only from the type locality.

Remarks: The four adductor muscle scars are subdivided; the upper three into two, the lower one into three. Large pores, similar to those perforating the alae are present dorsally in the left valve (see Pl. **6**, 18, fig. 2, herein). A narrow accomodation groove is present in the left valve, while the right valve bears a long spine posteriorly.

Cytheropteron fenestratum Brady (see Brady, 1880, *Rep. scient. Results Voy. Challenger* (Zoology) **1** (3): 139, pl. 24, figs. 6a - d; Puri & Hulings, 1976, *Bull. Br. Mus. nat. Hist.* (Zool.) **29** (5): 306, pl. 24, figs. 1 - 6) which, externally, bears a superficial resemblance to the present species, differs from it in having a pentadont hinge, five elongate adductor muscle scars and in lacking the large alar pore canals characteristic of *Pelecocythere.*

Explanation of Plate 6, 16

Fig. 1, ♀ car. dors. (paratype, **1978.462**, 1610 μm long); fig. 2, ♂ car. vent. (holotype, **1978.463**, 1690 μm long); fig. 3, ♀ RV, details of ala (paratype, **1978.461**).
Scale A (500 μm; x 34), figs. 1, 2; scale B (50 μm; x 270), fig. 3.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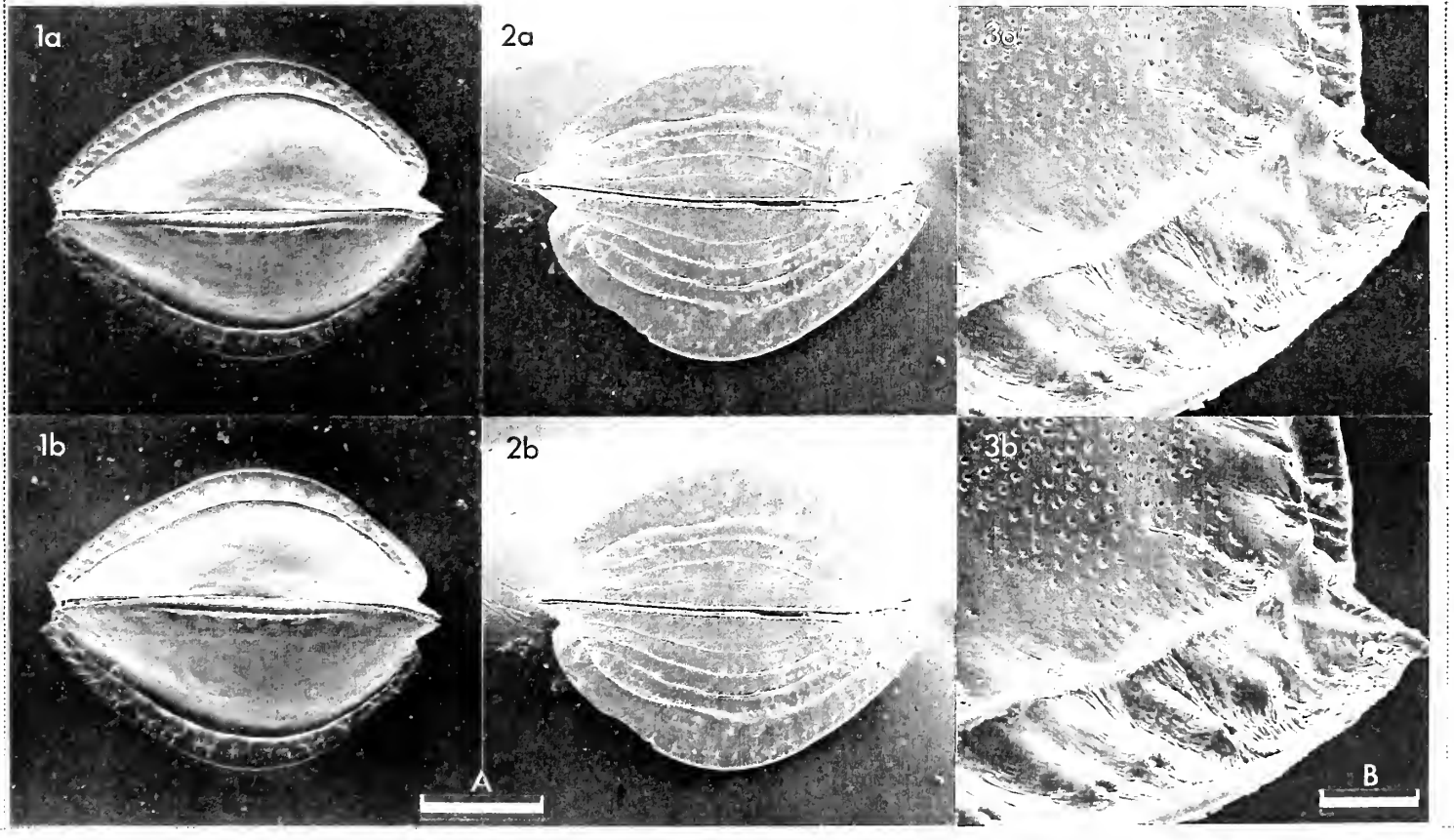
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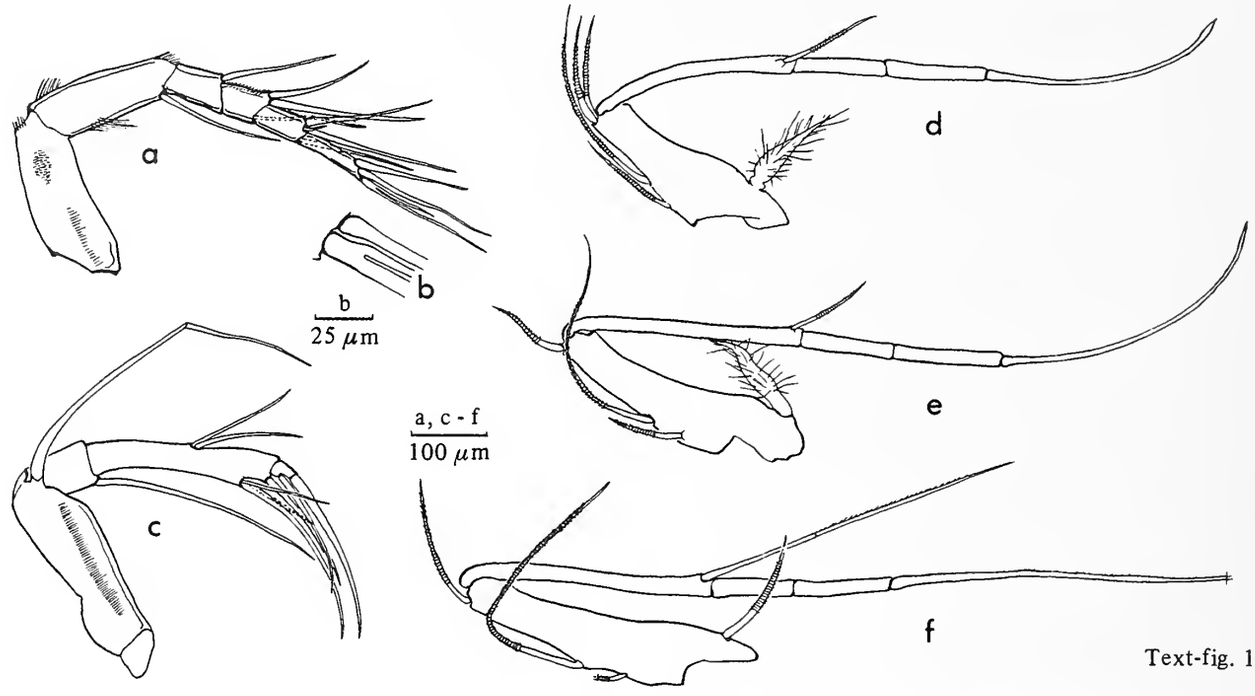
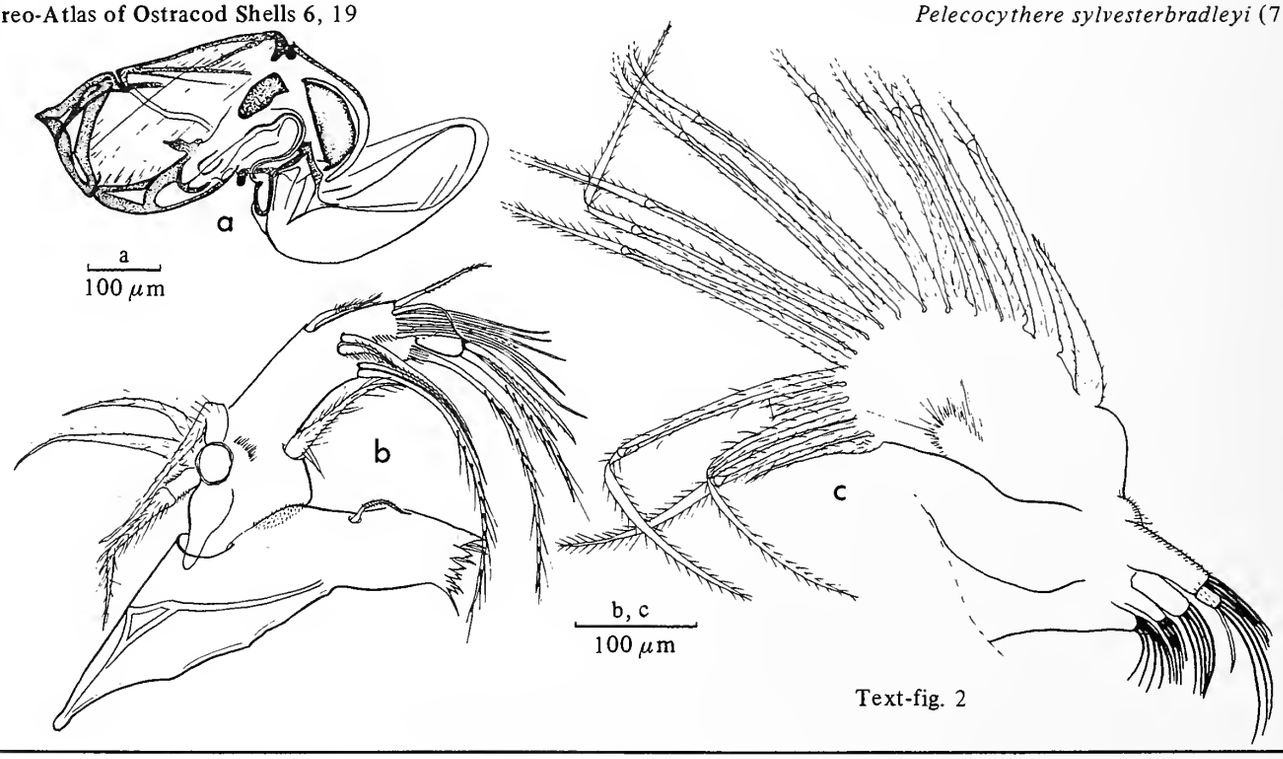


Text-fig. 1

Explanation of Plate 6, 18

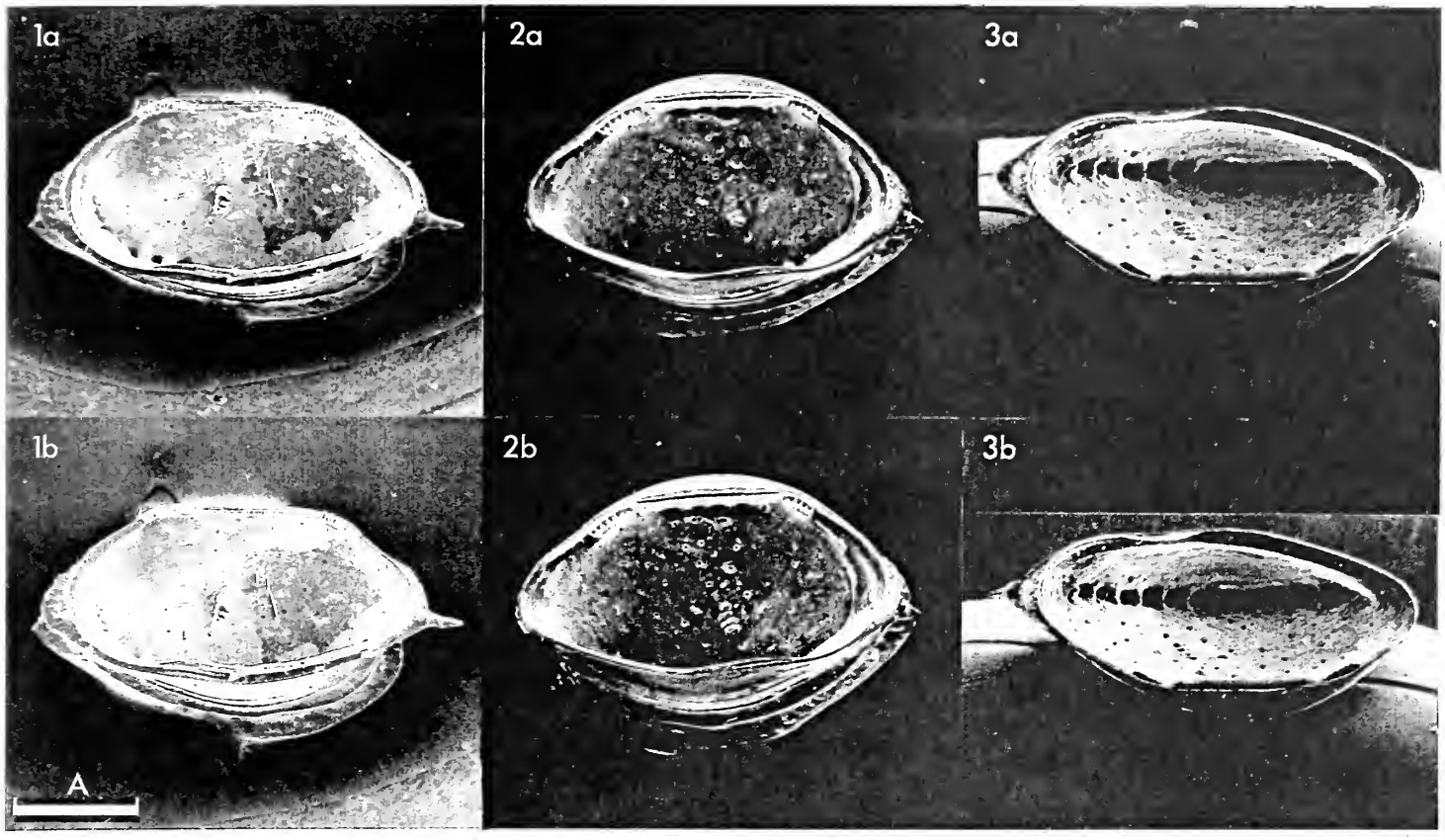
Fig. 1, ♂ RV, int. lat. (paratype, **1978.464**, 1720 µm long); fig. 2, ♀ LV, int. lat. (paratype, **1978.461**, 1640 µm long); fig. 3, ♀ LV, int., oblique dorsal view showing alar pore canals (paratype, **1978.461**).
Scale A (500 µm; x 34), figs. 1 - 3.



Text-fig. 2

Explanation of Plate 6, 20

Fig. 1, ♀ LV, int. musc. sc. (paratype, **1978.461**); figs. 2, 4, ♂ RV, terminal hinge elements (paratype, **1978.464**); figs. 3, 5, ♀ LV, terminal hinge elements (paratype, **1978.461**).
Scale A (50 µm; x 290), fig. 1; scale B (100 µm; x 170), figs. 2 - 5.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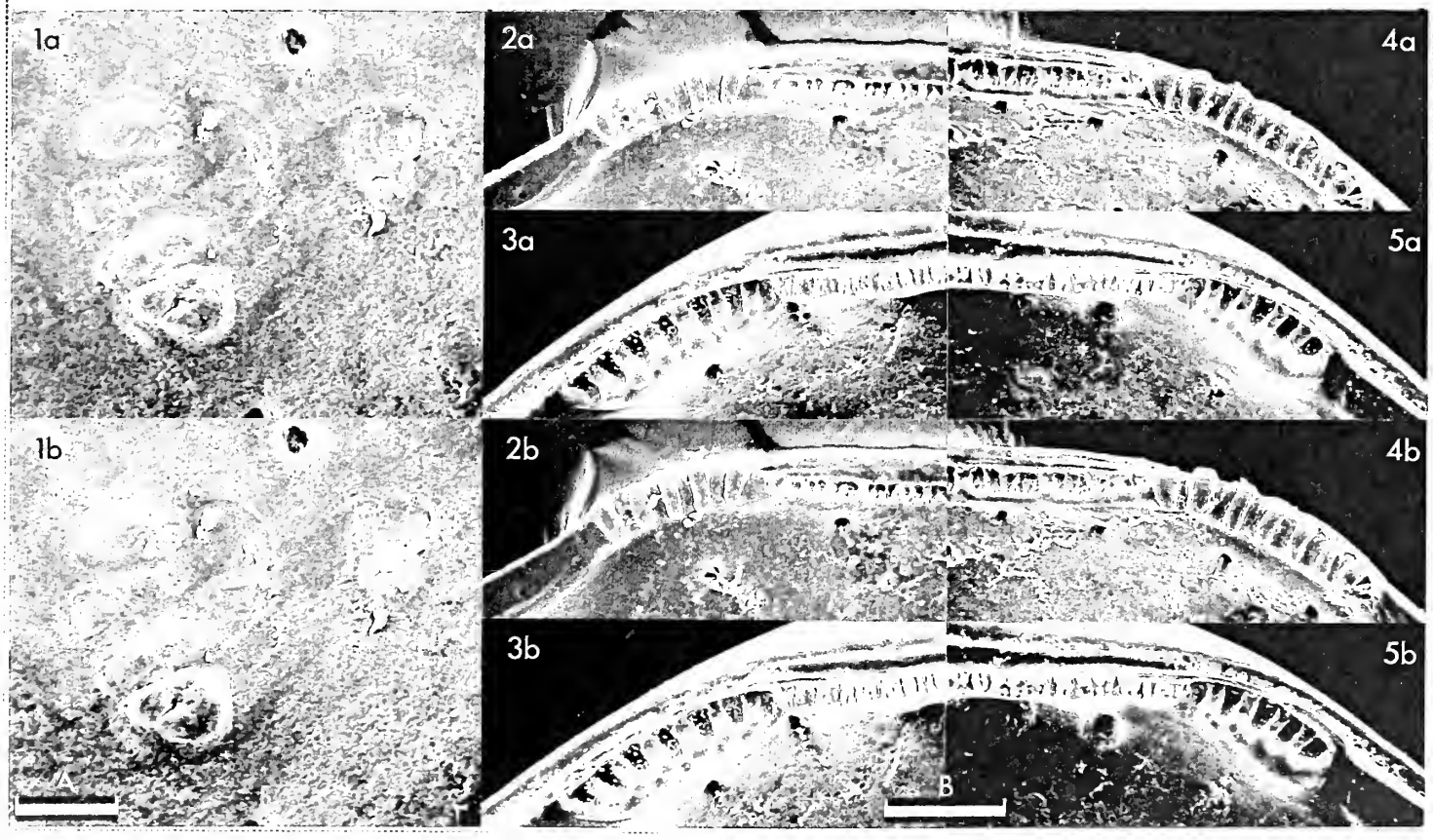
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Stereo-Atlas of Ostracod Shells 6 (4) 21–26 (1979)

595.337.11 (119.9) (261.7:162.019.017) : 551.353 (26.03 : 24.08.3053 – 3155)

ON *ZABYTHOCYPRIS REDUNCA* ATHERSUCH & GOODAY sp. nov.

by John Athersuch & Andrew Gooday
(BP Research Centre, Sunbury and Institute of Oceanographic Sciences, Wormley)

Zabythocypris redunca sp. nov.

Holotype: Brit. Mus. (Nat. Hist.) no. **1978.456**; ♀ car. and appendages.
[Paratypes: 4 specimens; B. M. (N. H.) nos. **1978.457 - 459, 466.**]

Type locality: *Discovery* station 8528, haul 1, in the abyssal NE Atlantic off Mauritania; lat. 17°38.3′ - 17°38.7′N, long. 18°34.9′ - 18°35.8′W; depth 3150 - 3155m; date 2.7.1974; Recent.

Derivation of name: *reduncus, -a, -um,* Latin: hooked, curved back.

Figured specimens: Brit. Mus. (Nat. Hist.) no. **1978.456** (♀ car.: Pl. **6**, 22, fig. 1), **1978.457** (♀ LV: Pl. **6**, 22, fig. 2), **1978.458** (♂ LV: Pl. **6**, 22, fig. 3), **1978.459** (♀ car.; LV: Pl. **6**, 24, figs. 1, 3; RV: Pl. **6**, 24, fig. 2). All specimens collected with an epibenthic sledge (see Aldred *et al.*, 1976, *Deep-Sea Research* **23**: 167 - 174) in the abyssal NE Atlantic during R. R. S. *Discovery* cruise 63 (June - July, 1974).

Explanation of Plate 6, 22

Fig. 1, ♀ car., ext. rt. lat. (holotype, **1978.456**, 1560 μm long); fig. 2, ♀ LV, ext. lat. (paratype, **1978.457**, 1560 μm long); fig. 3, ♂ LV, ext. lat. (paratype, **1978.458**, 1710 μm long).
Scale A (500 μm; x 37), figs. 1 - 3.

Figured specimens (contd.): **1978.456, 466** are from the type locality. **1978.457, 459** are from *Discovery* station 8521, haul 1; lat. 20°46.9′ -20°47.6′N, long. 18°53.4′ - 18°53.5′W; depth 3053 - 3058m. **1978.458** is from station 8532, haul 1; lat. 13°47.8′ - 13°48.0′N, long. 18°14.0′ - 18°14.8′W; depth 3113 - 3119m.

Diagnosis: A species of *Zabythocypris* with an acutely-tapering dorsal spine; angle between spine and postero-dorsal margin ⩽90°. Vibratory plate of fifth limb with three naked, proximally-segregated setae; furca of male with two subterminal setae; copulatory appendages distinctive.

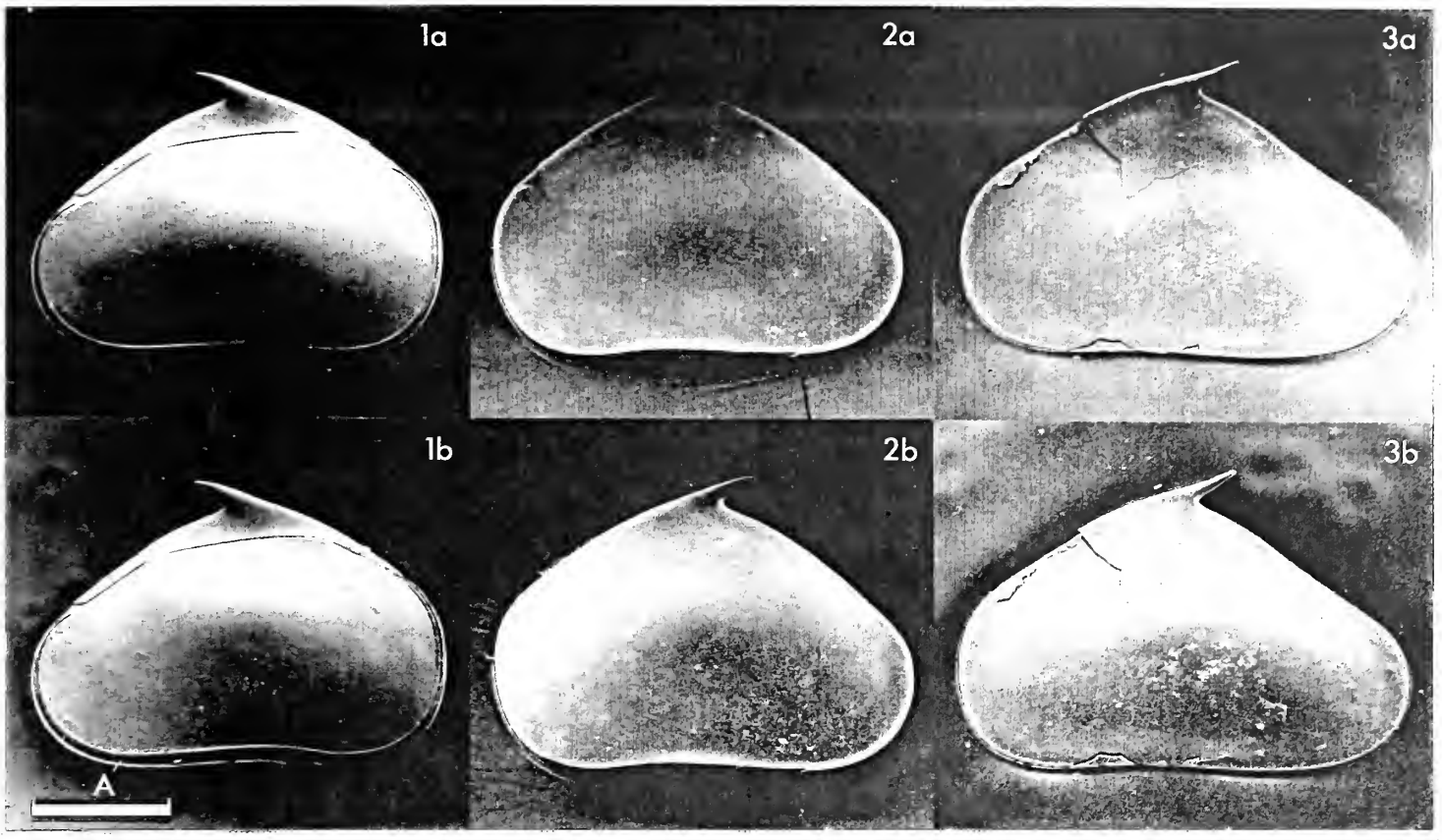
Remarks: Maddocks (1969, *Bull. U.S. natn. Mus.* **295** : 102 - 110) introduced the genus *Zabythocypris* with ? *Bythocypris heterodoxa* Chapman (1910, *J. Linn. Soc.* **30** : 429, pl. 56, fig. 20a, b) as the type species. Also included in the genus were *Bairdia exaltata* Brady, 1880, *Zabythocypris ancipita* Maddocks, 1969 and *Z. helicina* Maddocks, 1969. All of these species show a close affinity to *Bythocypris* in the general shell structure and, where known, details of the appendages, but only those specimens regarded by Maddocks as *Z. heterodoxa* bear a dorsal spine on the left valve. We regard this character alone as diagnostic of the genus *Zabythocypris*. The other three species, therefore, should be excluded from *Zabythocypris* and be placed either in *Bythocypris* or in another, new, genus.

Maddocks (1969) illustrated two specimens (a male from Peru, fig. 56C, and a female from Mozambique, fig. 56B) both exhibiting the characteristic dorsal spine, and referred them to *Z. heterodoxa* (Chapman). She regarded these specimens as belonging to different sub-species, and the holotype illustrated by Chapman, 1910 as a juvenile. Both differ in size and shape from Chapman's specimen and from each other. We believe, particularly in view of their great geographic separation, that Maddocks' specimens differ enough from each other and from the holotype of *Z. heterodoxa* to be regarded as separate species.

Distribution: Known only from foraminiferal ooze at *Discovery* stations 8521, 8528 and 8532 on the continental rise off NW Africa at depths of 3053 - 3155m.

Explanation of Plate 6, 24

Fig. 1, ♀ LV, int. lat. (paratype, **1978.459**, 1585 μm long); fig. 2, ♀ RV, int. lat. (**1978. 459**, 1585 μm long); fig. 3, ♀ LV, musc. sc. (**1978.459**). Scale A (500 μm; x 37), figs. 1, 2; scale B (50 μm; x 295), fig. 3.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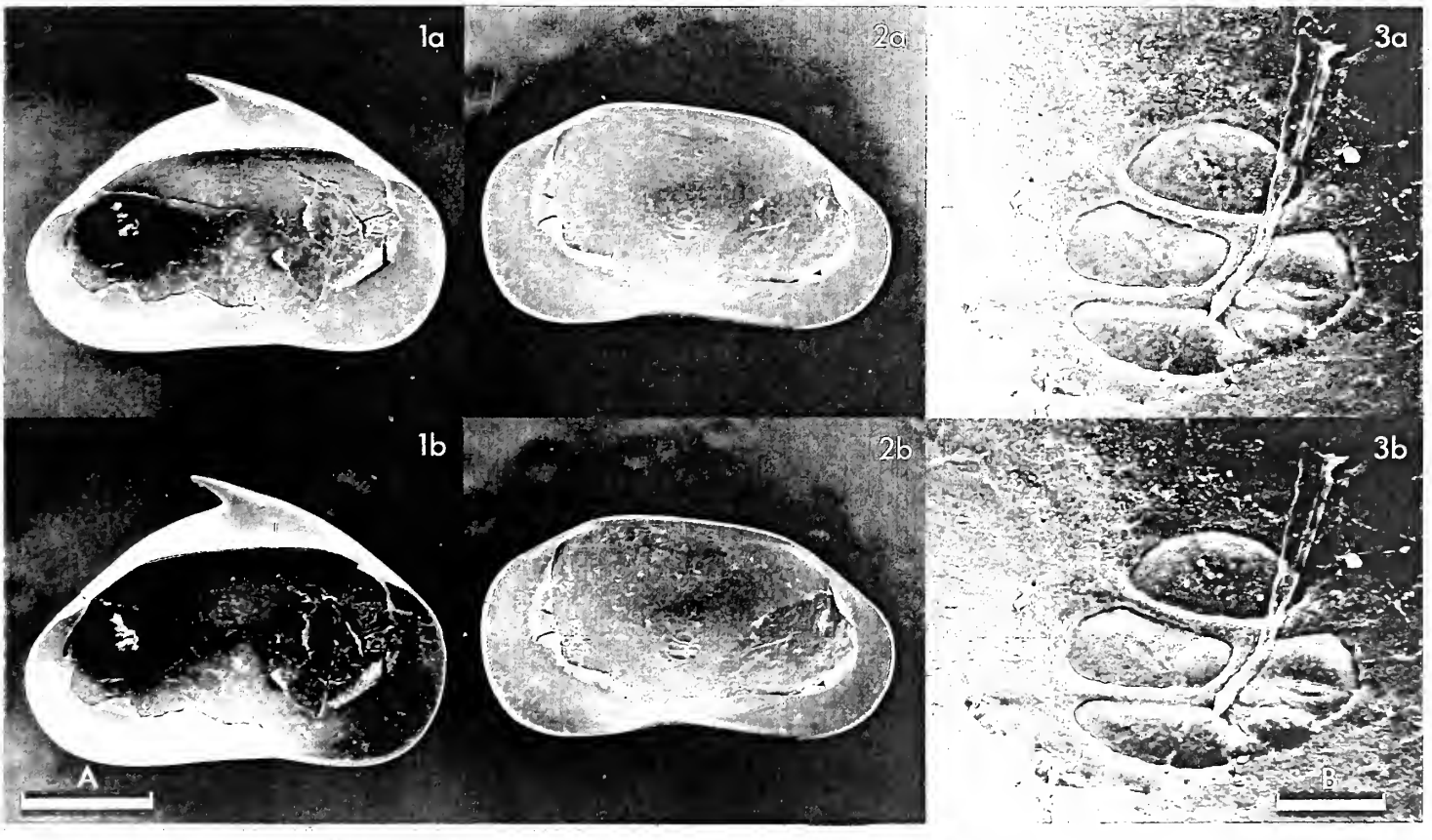
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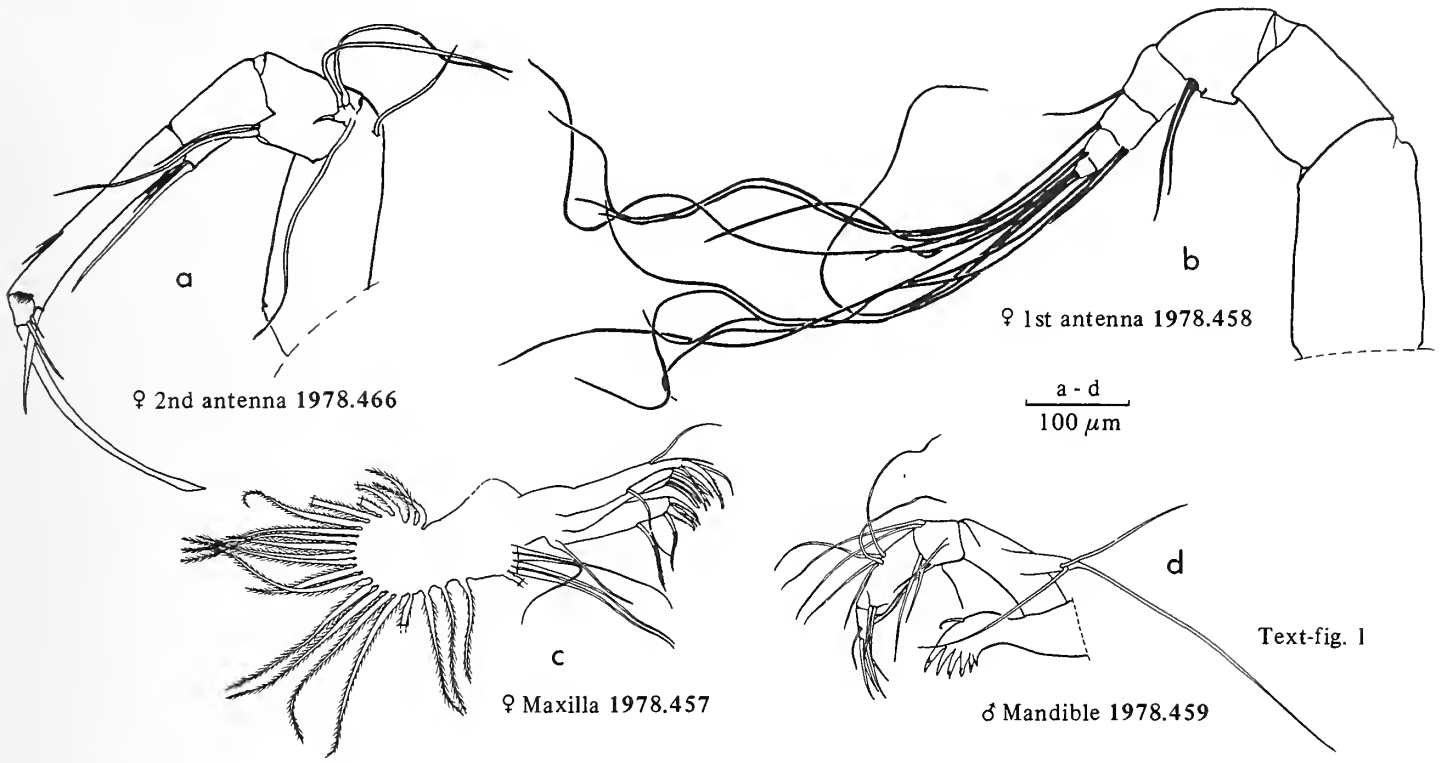
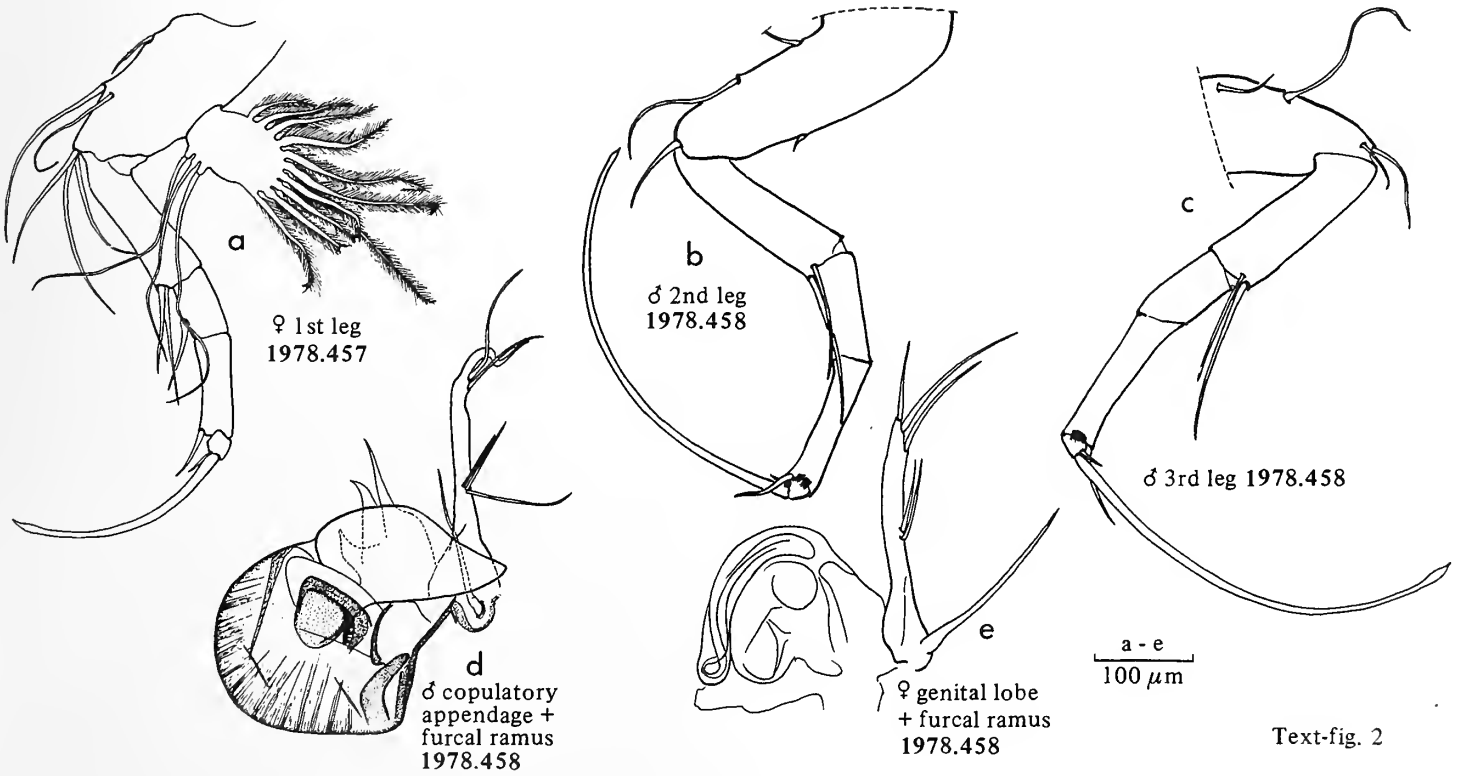


Text-fig. 1



Text-fig. 2

Stereo-Atlas of Ostracod Shells 6 (5) 27 - 30 (1979)
595.337.14 (119.9) (267.35:161.024.54) : 551.351

ON *PAIJENBORCHELLINA ALATA* GURNEY sp. nov.

by Ann R. Gurney
(British Museum [Natural History], London)

Paijenborchellina alata sp. nov.

Holotype: Brit. Mus. (Nat. Hist.) **1979.133**, ♀ car.
[Paratypes: Brit. Mus. (Nat. Hist.) **1979.134 - 144**].

Type locality: Abu Dhabi lagoon (central terrace), Persian Gulf; approx. lat. 24°32'N, long. 54°27'E.

Derivation of name: Referring to alate process.

Figured specimens: Brit. Mus. (Nat. Hist.) nos. **1979.133** (holotype, ♀ car.: Pl. **6**, 28, fig. 1; Pl. **6**, 30, fig. 1), **1979.134** (♂ car.: Pl. **6**, 30, fig. 3), **1979.135** (♂ car.: Pl. **6**, 30, fig. 7), **1979.136** (♀ car.: Pl. **6**, 30, fig. 6), **1979.137** (♀ car.: Pl. **6**, 30, fig. 2), **1979.138** (-1 instar, LV: Pl. **6**, 30, fig. 5), **1979.140** (♀ car., RV: Pl. **6**, 28, fig. 2; LV: Pl. **6**, 28, fig. 3, Pl. **6**, 30, fig. 4). **1979.134 - 138, 140** are from Abu Dhabi lagoon (back lagoon terrace), Persian Gulf. All specimens described here were collected by Dr. G. Evans, Imperial College of Science, London.

Explanation of Plate 6, 28

Fig. 1, ♀ car., ext. lt. lat. (holotype, **1979.133**, 680 μm long); fig. 2, ♀ car.: RV, int. lat. (paratype, **1979.140**, 697 μm long); fig. 3, ♀ car.: LV, int. lat. (paratype, **1979.140**, 697 μm long).
Scale A (250 μm; x 88), fig. 1; scale B (250 μm; x 86), figs. 2, 3.

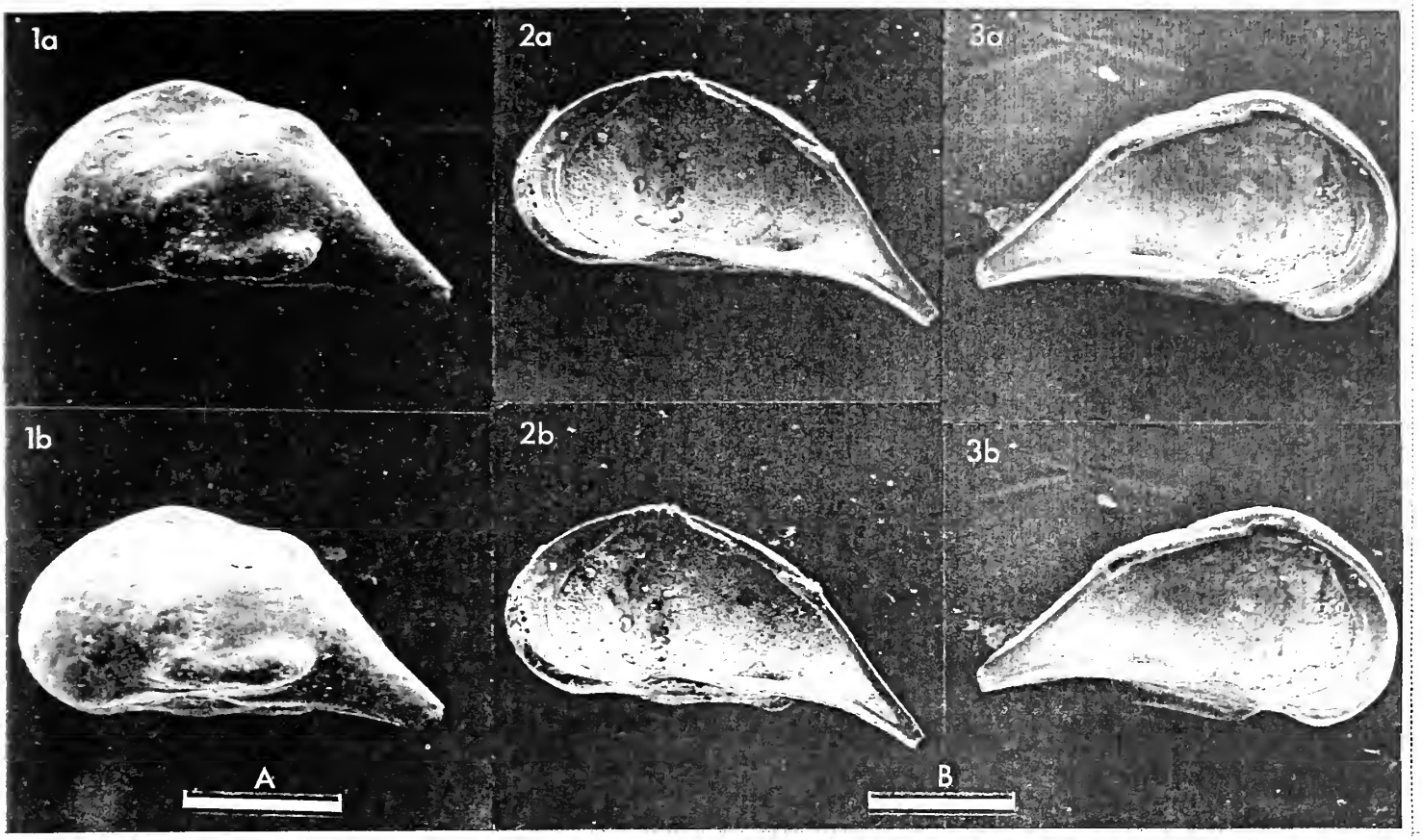
Diagnosis: Species of *Paijenborchellina* possessing short, stout, alae; posterior part of alae more strongly developed than anterior part. Carapace surface almost smooth with weak reticulations and pitting antero-ventrally, postero-dorsally. Dorsal margin upraised and thickened.

Remarks: *P. alata* sp. nov. is the only Recent, smooth, alate *Paijenborchellina* recorded and cannot be confused with any previously described species. The males are more elongate, with less distinct alae than the females; the alae are also unequally developed in both dimorphs with the left valve ala tending to be more strongly developed. Hinge antimeridont, not truly characteristic of the Cytheruridae (where the hinge is peratodont) into which family this genus is normally placed. The adductor muscle scars are situated within a shallow depression that is reflected on the outside of the shell by a muscle scar node that is tuberculate in some individuals. Twelve long, straight, marginal pore canals are present around the anterior margin. Caudal process in -1 instar of variable length. The muscle scars are shown clearly in this species: the lower adductor muscle scar is unusually offset to the rear with respect to the other three. The crescent shaped frontal muscle scar is particularly large.

Distribution: *P. alata* is restricted to the calm waters of the Abu Dhabi lagoon where it occurs on fine terrace sediments. This is reflected in the morphological appearance: smooth shell and ventrolateral alae. It is presently only recorded from the Abu Dhabi lagoon although it is almost certainly to be found in similar lagoonal environments along the Trucial coast; it is not found outside on the near shore shelf sediments where it is replaced by a recticulate species of *Paijenborchellina* (see Gurney, *Stereo-Atlas of Ostracod Shells* 1979 **6** Pt. 2, in press).

Explanation of Plate 6, 30

Fig. 1, ♀ car., ext. rt. lat. (holotype, **1979.133**, 680 μm long); fig. 2, ♀ car., ext. dors. (paratype, **1979.137**, 688 μm long); fig. 3, ♂ car., ext. rt. lat. (paratype, **1979.134**, 671 μm long); fig. 4, ♀ LV, int. lat. musc. sc. (paratype, **1979.140**, 697 μm long): fig. 5, -1, instar LV, ext. lat. (paratype, **1979.138**, 552 μm long); fig. 6, ♀ car., ext. vent. (paratype, **1979.136**, 714 μm long); fig. 7 ♂ car., ext. lt. lat. (paratype **1979.135**, 671 μm long).
Scale A (200 μm; x 60), figs. 1, 2, 3, 7; scale B (250 μm; x 480), fig. 4; scale C (130 μm; x 70), fig. 5; scale D (200 μm; x 50), fig. 6.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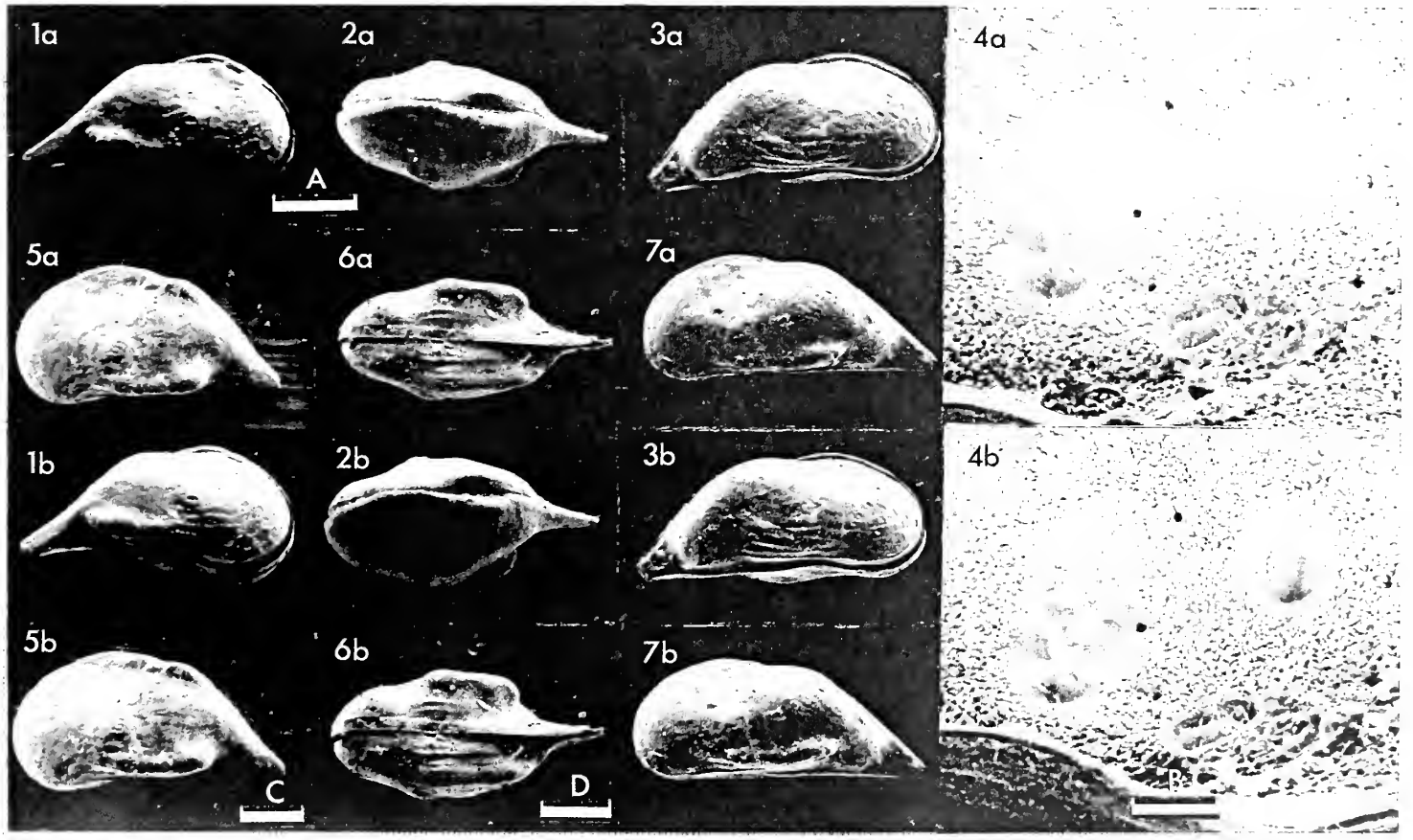
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Stereo-Atlas of Ostracod Shells 6 (6) 31–34 (1979)
595.337.14 (116.233) (47:161.048.54) : 551.351 + 552.52

ON *GALLIAECYTHERIDEA ELEGANS* (SHARAPOVA)

by Nicholas Fuller & Alan Lord
(University College, London)

Galliaecytheridea elegans (Sharapova, 1937)

1937 *Eucythere elegans* sp. nov. E. G. Sharapova, *Trudy NGRI, A106,* 82, pl. II, fig. 19.
1955 *Palaeocytheridea elegans* (Sharapova, 1937); P. S. Lyubimova, *Trudy VNIGRI,* new series, 84, 48, pl. III, figs. 1a - b.

Holotype: No. **4 - 20**, VNIGRI (All-Union Petroleum Research Geological Prospecting Institute) collection, Leningrad.

Type locality: Middle reaches of River Emba, Emba Oil Field, U.S.S.R.. 'Neocomian' of Sharapova (1937), Lower Cretaceous?

Figured specimens: Brit. Mus. (Nat. Hist.) **OS 11391** (LV: Pl. 6, 32, fig. 1), **OS 11392** (LV: Pl. 6, 32, fig. 2; Pl. 6, 34, fig. 4), **OS 11393** (RV: Pl. 6, 32, fig. 3), **OS 11394** (RV: Pl. 6, 34, figs. 1, 3 & 5), **OS 11395** (juv. RV: Pl. 6, 34, fig. 2). All specimens are from Bed 8 (*Subplanites pseudoscythicus* Zone, Lower Volgian) at Gorodische, 25km north of Ul'yanovsk, River Volga, U.S.S.R.. Bed number of Mesezhnikov, M. S. *et al.* (1977, fig. 1).

Explanation of Plate 6, 32

Fig. 1, LV, ext. lat. (**OS 11391,** 856 μm long); fig. 2, LV, int. lat. (**OS 11392**, 812 μm long); fig. 3, RV, ext. lat. (**OS 11393**, 781 μm long).
Scale A (200 μm; x 58), fig. 1; scale B (200 μm; x 63), figs. 2, 3.

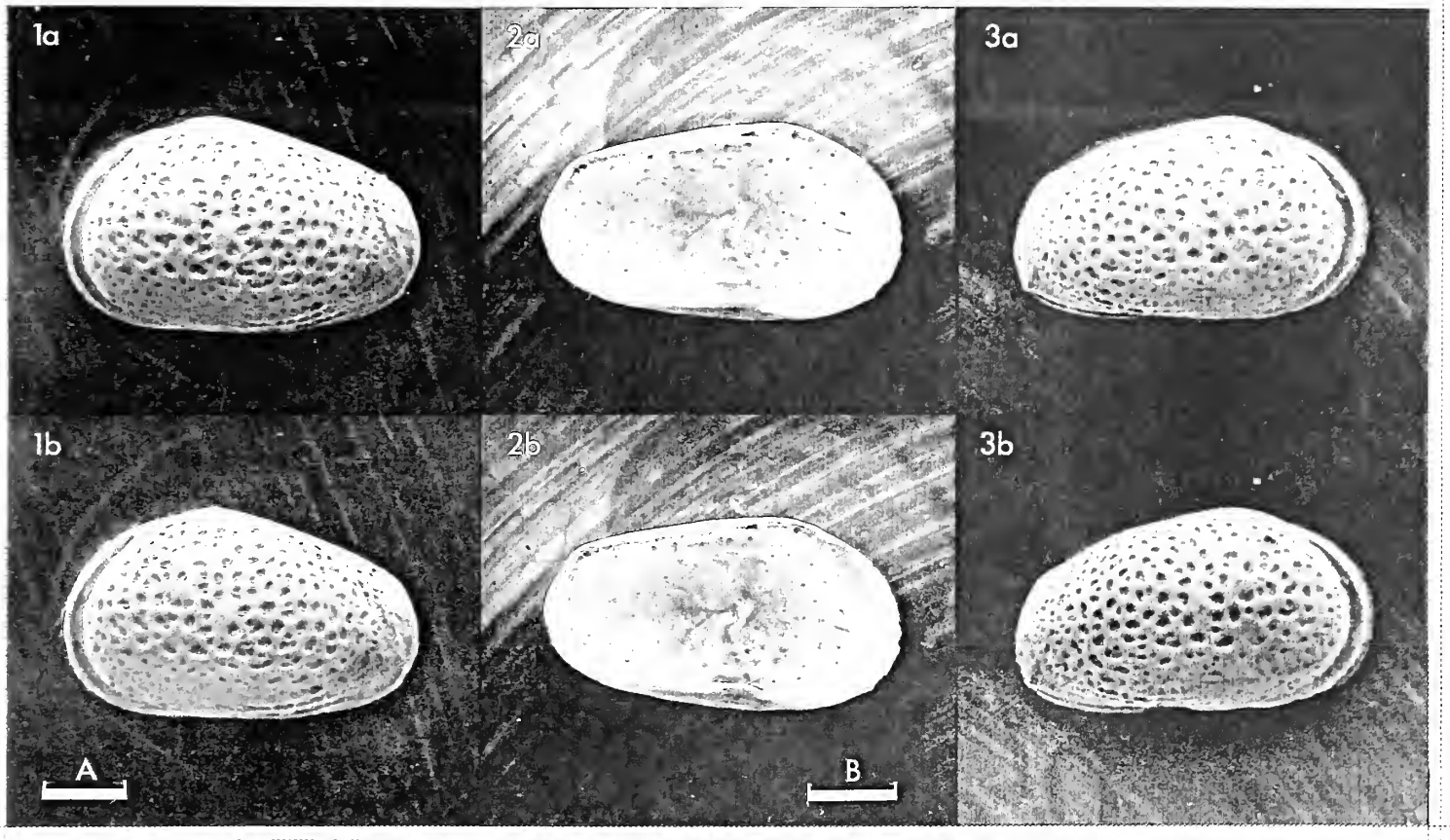
Diagnosis: Outline rounded subrectangular, with well-marked cardinal angles and a prominent anterior marginal rim. Surface covered with shallow pits which become less dense and decrease in size towards margins. One spine postero-ventrally, most strongly developed in right valves. Anterior marginal pore canals 8 - 9 simple, short and straight; posterior canals not observed.

Remarks: Distinguished from *G. volgaensis* (Lyubimova) (*Stereo-Atlas of Ostracod Shells,* 1979, **6** (9)) by being generally more inflated and lacking anterior spines. *G. miranda* (Lyubimova) (*Stereo-Atlas of Ostracod Shells,* 1979, **6** (8)) also resembles *G. elegans* but is more acuminate posteriorly and possesses anterior marginal spines.

Distribution: Middle Volga area; present material from lower part *pseudoscythicus* Zone, Lower Volgian at Gorodische. Original record from 'Neocomian' of the Emba Oil Field, also Lake Inder (*panderi* Zone, Lower Volgian of Sharapova, 1937).

Explanation of Plate 6, 34

Fig. 1, RV, int. lat. (**OS 11394**, 750 μm long); fig. 2, juv. RV, ext. lat. (**OS 11395**, 719 μm long); fig. 3, RV, int. lat. musc. sc. (**OS 11394**); fig. 4, LV, int. lat. hinge (**OS 11392**); fig. 5, RV, int. lat. hinge (**OS 11394**).
Scale A (200 μm; x 66), fig. 1; scale B (200 μm; x 70), fig. 2; scale C (50 μm; x 250), fig. 3; scale D (100 μm; x 110), fig. 4; scale E (100 μm; x 120), fig. 5.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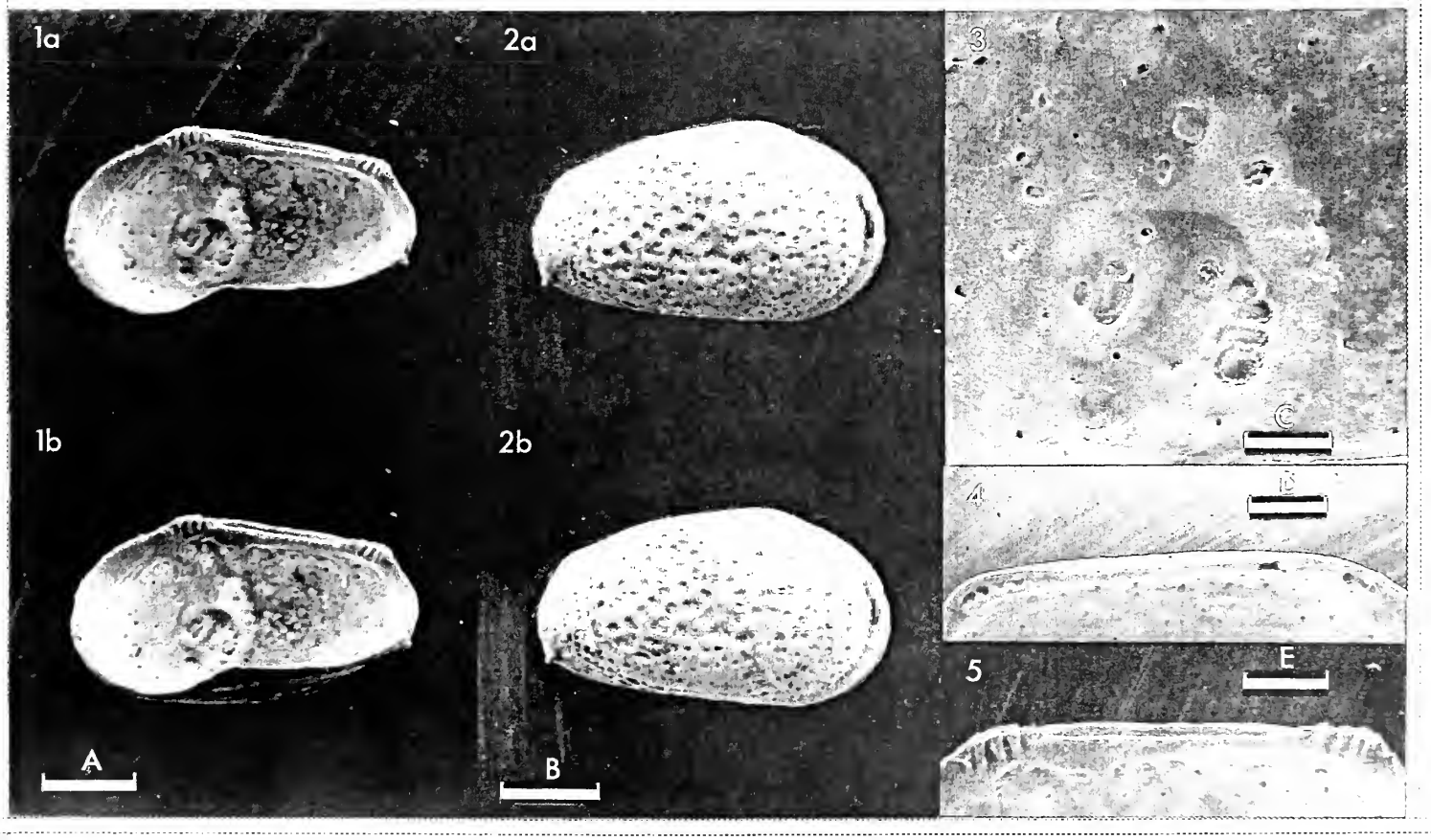
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Stereo-Atlas of Ostracod Shells 6 (7) 35–42 (1979)
595.337.14 (116.233) (47:161.048.54) : 551.351 + 552.52

ON *GALLIAECYTHERIDEA GORODISCHENSIS* FULLER & LORD sp. nov.

by Nicholas Fuller & Alan Lord
(University College, London)

Galliaecytheridea gorodischensis sp. nov.

1939 *Eucythere grossopunctata* (Chapman); E. G. Sharapova, *Trudy NGRI, A126,* 17, pl. 1, fig. 12.
1955 *Palaeocytheridea grossopunctata* (Chapman); P. S. Lyubimova, *Trudy VNIGRI,* new series, *84,* 47, pl. II, figs. 5a - c.
non 1904 *Cythere corrosa* Jones & Sherborn var. *grossepunctata* Chapman, *Proc. R. Soc. Victoria 16,* 185, pl. 23, figs, 5 - 5b.

Holotype: Brit. Mus. (Nat. Hist.) **OS 11404** ♂ RV.
[Paratypes: Brit. Mus. (Nat. Hist.) **OS 11402, OS 11403, OS 11405 - OS 11410.**]

Type locality: Gorodische, near Ul'yanovsk, U.S.S.R.. *Dorsoplanites panderi* Zone, Middle Volgian, Upper Jurassic.

Explanation of Plate 6, 36

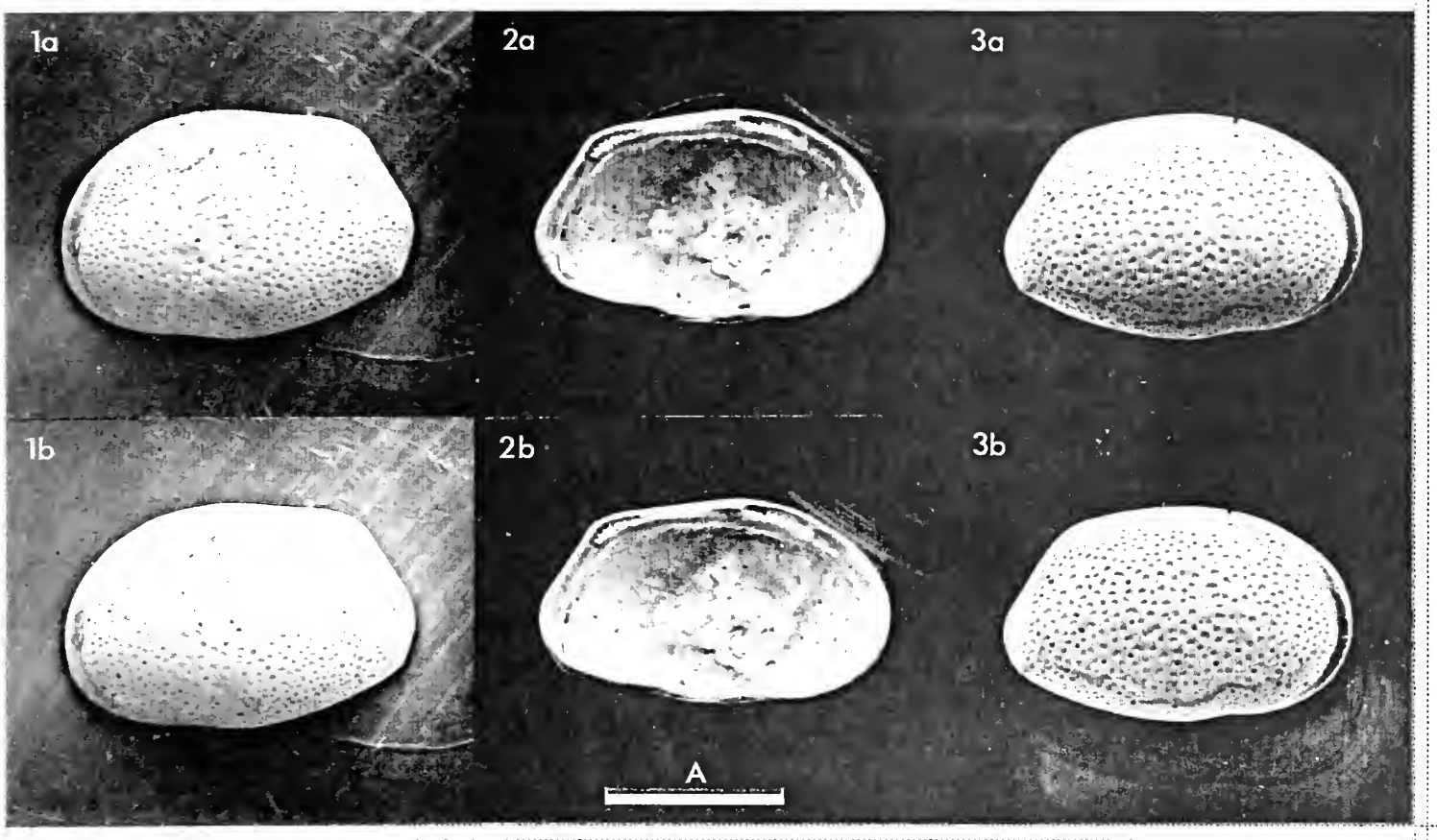
Fig. 1, ♂ LV, ext. lat. (paratype, **OS 11402**, 969 μm long); fig. 2, ♂ LV, int. lat. (paratype, **OS 11403**, 969 μm long); fig. 3, ♂ RV, ext. lat. (holotype, **OS 11404**, 969, μm long).
Scale A (500 μm; x 50) figs. 1 - 3.

Figured specimens: Brit. Mus. (Nat. Hist.) **OS 11402** (♂ LV: Pl. 6, 36, fig. 1), **OS 11403** (♂ LV: Pl. 6, 36, fig. 2; Pl. 6, 40, figs. 2, 5), **OS 11404** (holotype, ♂ RV: Pl. 6, 36, fig. 3), **OS 11405** (♂ RV: Pl. 6, 38, fig. 1; Pl. 6, 40, figs. 3, 4), **OS 11406** (♀ RV: Pl. 6, 38, fig. 2), **OS 11407** (♀ RV: Pl. 6, 38, fig. 3; Pl. 6, 42, figs. 2, 4), **OS 11408** (♀ LV: Pl. 6, 40, fig. 1), **OS 11409** (juv. RV: Pl. 6, 42, fig. 1), **OS 11410** (♀ LV: Pl. 6, 42, fig. 3). **OS 11402 - OS 11405** are from Bed 9 (*Dorsoplanites panderi* Zone, Middle Volgian); **OS 11406, OS 11409, OS 11410** are from Bed 8 (*Subplanites pseudoscythicus* Zone, Lower Volgian) and **OS 11407** and **OS 11408** are from Bed 5 (*Subplanites klimovi* Zone, Lower Volgian) at Gorodische, 25 km north of Ul'yanovsk, River Volga, U.S.S.R.. Bed numbers of Mesezhnikov, M. S., Dain, L. G., Kuznetsova, K. I. and Yakovleva, S. P., *International Colloquium on Upper Jurassic stratigraphy and the Jurassic/Cretaceous boundary in the Boreal Realm - Jurassic/Cretaceous boundary beds in the Middle Volga area (A Prospectus to Geological Excursions*), All-Union Petroleum Research Geological Prospecting Institute, (VNIGRI), Leningrad, 1977, fig. 1.

Diagnosis: Rounded subrectangular, with inflated valves and prominent anterior marginal rims. Coarsely punctate surface ornament. Postero-ventral spine may be present, especially in right valves. Anterior pore canals 5 - 6, simple and straight; posterior canals not observed. Sexual dimorphism strongly developed.

Explanation of Plate 6, 38

Fig. 1, ♂ RV, int. lat. (paratype, **OS 11405**, 969 μm long); fig. 2, ♀ RV, ext. lat. (paratype, **OS 11406**, 1125 μm long); fig. 3, ♀ RV, int. lat. (paratype, **OS 11407**, 981 μm long).
Scale A (500 μm; x 50), fig. 1; scale B (500 μm; x 44), fig. 2; scale C (500 μm; x 52), fig. 3.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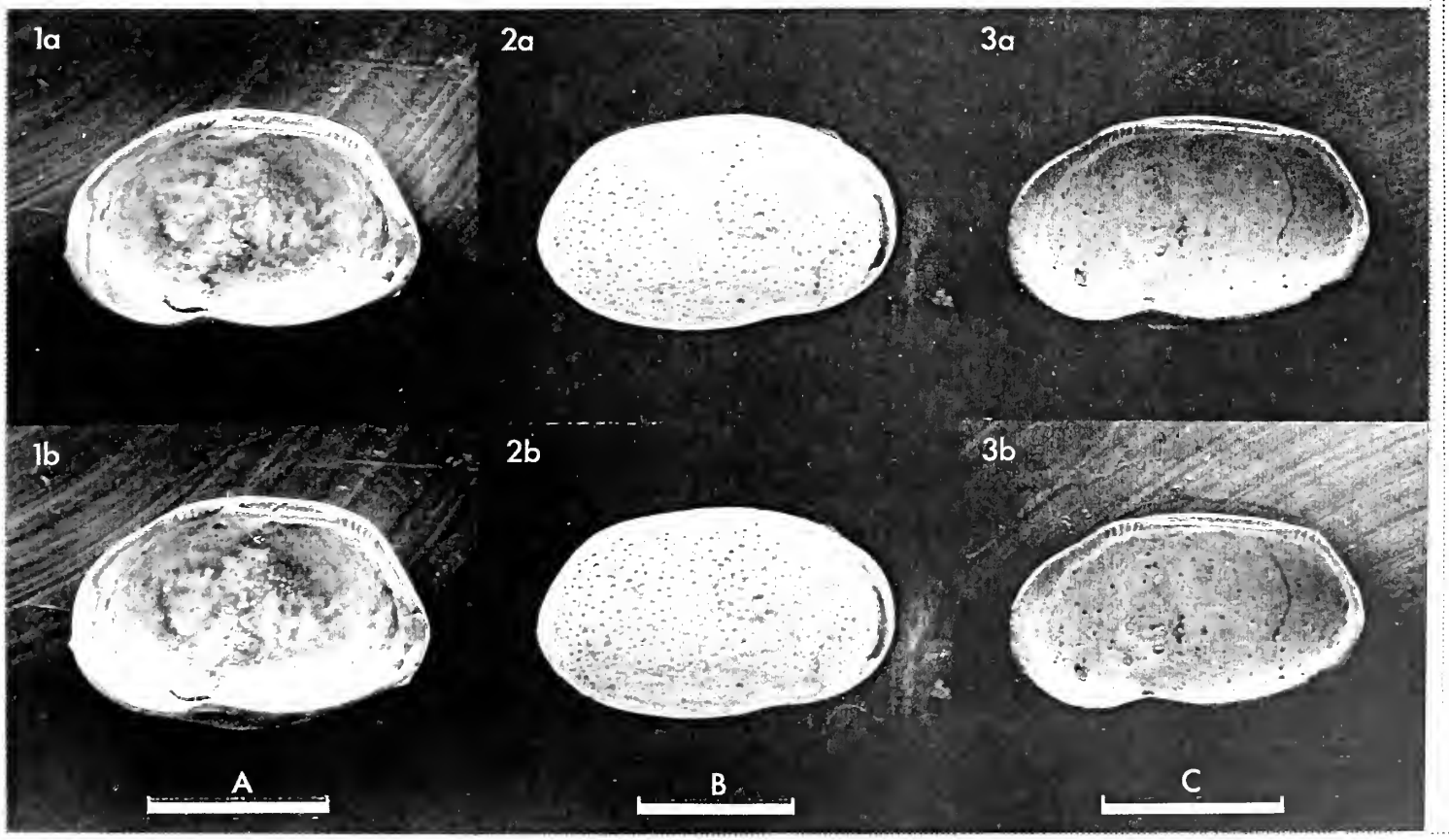
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Remarks: Sharapova (1939) identified her material with *Cythere corrosa* var. *grossepunctata* described by Chapman (1904) from the Bajocian of Western Australia. Subsequently, Lyubimova (1955) followed this specific identification for specimens from Gorodische on the River Volga, placing them in *Palaeocytheridea* Mandelstam. The present material differs from the drawings given by Lyubimova only in its possession of a finer, more widespread surface punctation. The Russian material is certainly not conspecific with Chapman's Australian form, and thus the name *Galliaecytheridea gorodischensis* is proposed. Permyakova (*in* D. M. Pjatkova and M. N. Permyakova, *Jurassic Foraminifera and Ostracoda of the Ukraine,* Kiev, 1978, p. 153. In Russian) has placed this species in *Procytheridea* Peterson [as *P. grossopunctata* (Sharapova 1939)], but inspection of the holotype of the type-species of *Procytheridea* (P. F. Sherrington and A. Lord, *Stereo-Atlas of Ostracod Shells* 2: 39, p. 48, fig. 1, 1975) demonstrates that the two are not congeneric.

Explanation of Plate 6, 40

Fig. 1, ♀ LV, ext. lat. (paratype, **OS 11408**, 937 μm long); fig. 2, ♂ LV, int. lat. hinge (paratype, **OS 11403**, fig. 3); ♂ RV, int. lat. hinge (paratype, **OS 11405**); fig. 4, ♂ RV, int. lat. muscle-scars (paratype, **OS 11405**); fig. 5, ♂ LV, int. lat. muscle-scars (paratype, **OS 11403**).
Scale A (500 μm; x 53), fig. 1; scale B (100 μm; x 108), figs. 2, 3; scale C (50 μm; x 280), fig. 4; scale D (50 μm; x 240), fig. 5.

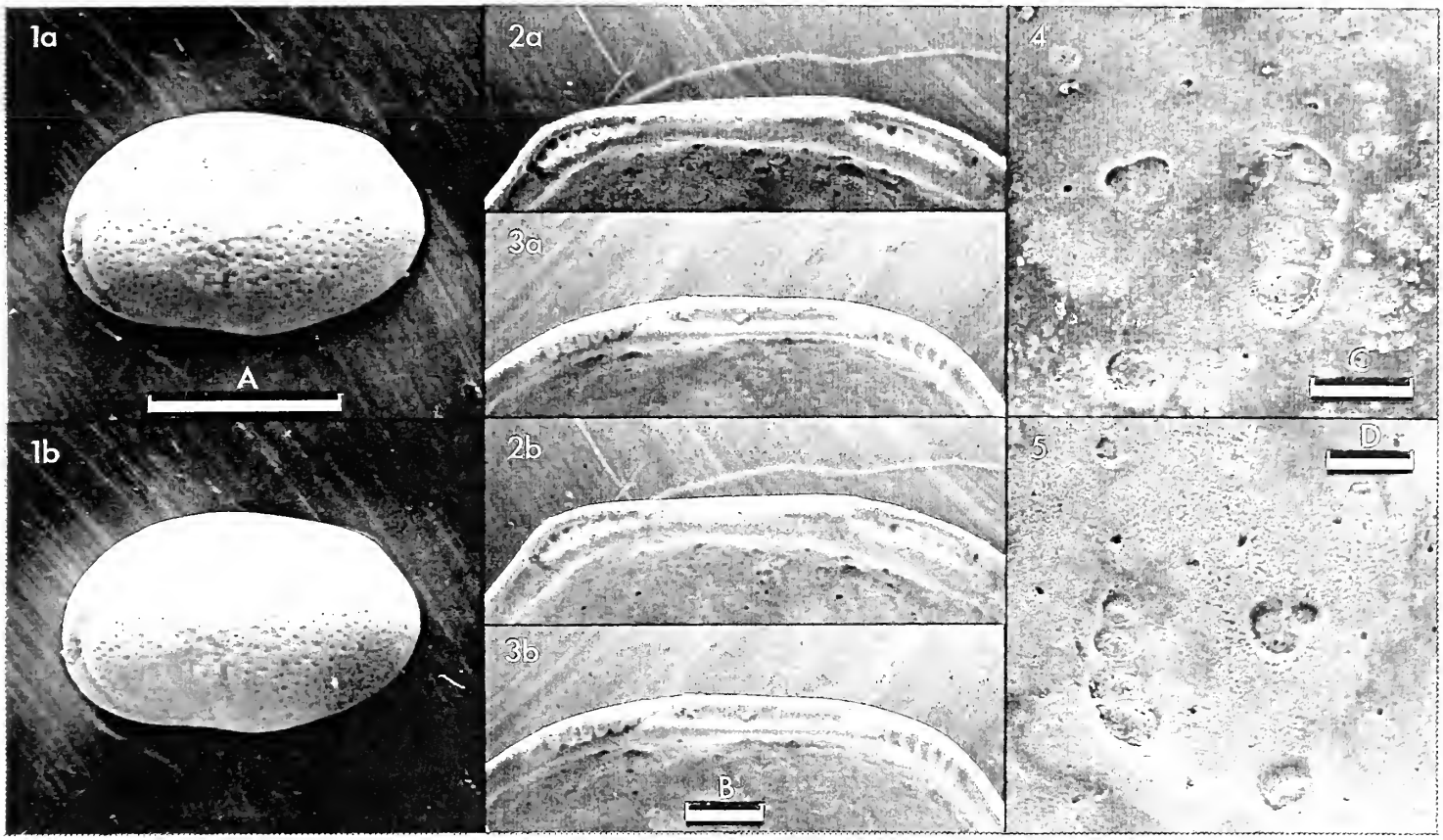
Remarks: (contd.) *Cythere corrosa* var. *grossepunctata* and *C. drupacea* var. *fortior* are both forms described by Chapman which B. Kellett and E. D. Gill (*Aust. J. Sci.* **18**, p. 126. 1956) have subsequently regarded as dimorphs of the same species. They placed the species in *Procytheridea,* but the assignment is difficult to verify in the absence of internal characters. Chapman's illustrations depict an ostracod which differs in outline and ornament from the present material.

G. gorodischensis is found in association with *G. miranda* (Lyubimova), *G. ramosa* (Lyubimova), *G. elegans* (Sharapova), *G. mandelstami* (Lyubimova), *Mandelstamia ventrocornuta* (Sharapova), *Oligocythereis kostytschevkaensis* (Lyubimova), *Protocythere prolongata* (Sharapova) and *Cytherelloidea* aff. *C. weberi* Steghaus.

Distribution: Lower and Middle Volgian at Gorodische. A similar form occurs in the Middle Volgian of Kashpir (immediately south of Syzran on the River Volga and 200 km south of Gorodische) but has more anterior marginal pore canals. Known from the Volga region and the Ukraine.

Explanation of Plate 6, 42

Fig. 1, juv. RV, ext. lat. (paratype, **OS 11409**, 531 μm long); fig. 2, ♀ RV, int. lat. hinge (paratype, **OS 11407**); fig. 3, ♀ LV, int. lat. muscle-scars (paratype, **OS 11410**); fig. 4, ♀ RV, int. lat. muscle-scars (paratype, **OS 11407**).
Scale A (100 μm; x 120), fig. 1; scale B (100 μm; x 177), fig. 2; scale C (50 μm; x 300), fig. 3; scale D (50 μm; x 350), fig. 4.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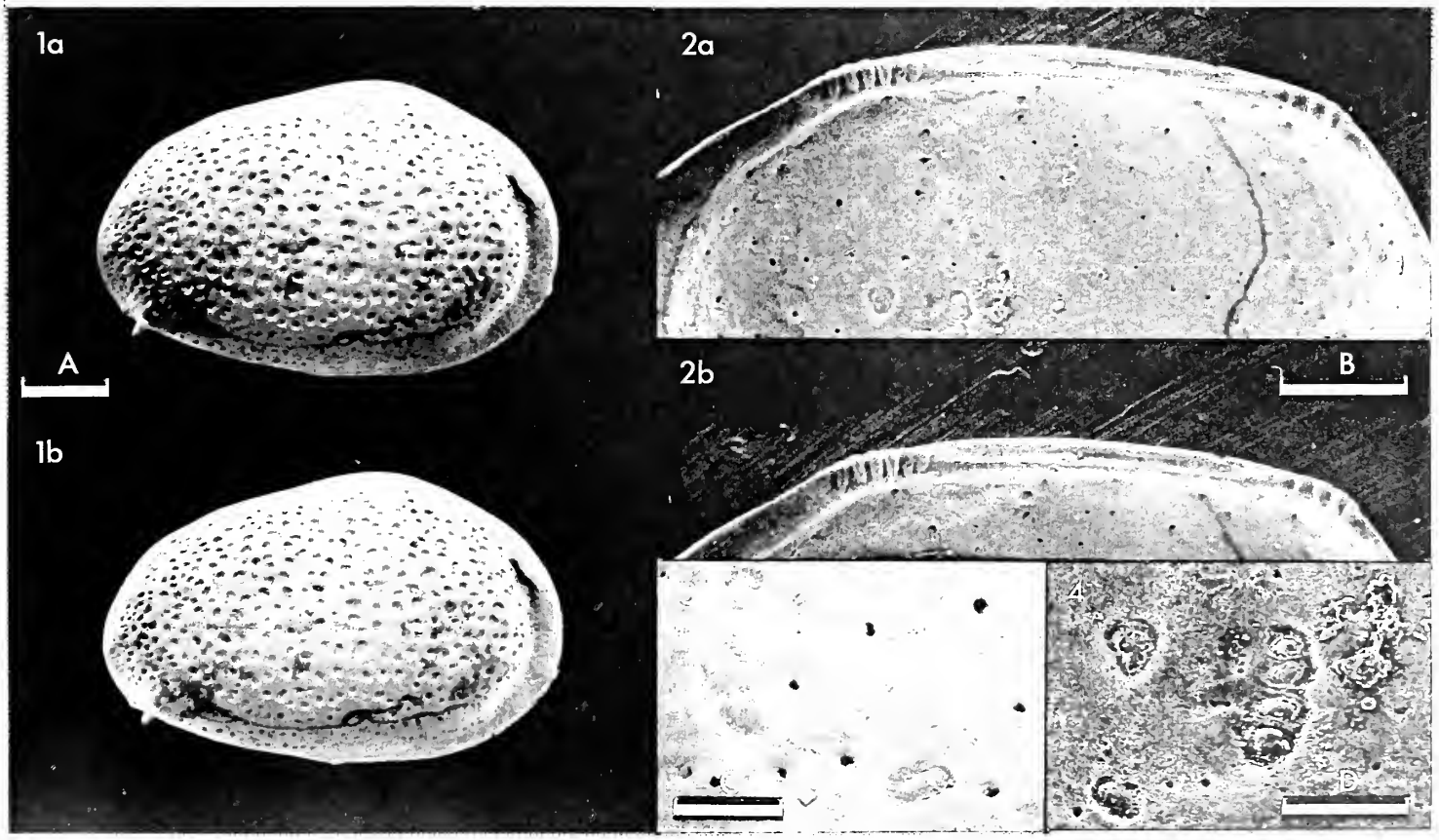
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Stereo-Atlas of Ostracod Shells 6 (8) 43–46 **(1979)**
595.337.14 (116.233) (47:161.048.54) : 551.351 + 552.52

ON *GALLIAECYTHERIDEA MIRANDA* (LYUBIMOVA)

by Nicholas Fuller & Alan Lord
(University College, London)

Galliaecytheridea miranda (Lyubimova, 1955)

1955 *Palaeocytheridea miranda* sp. nov. P. S. Lyubimova, *Trudy VNIGRI,* new series, *84,* 46, pl. IV, figs. 6a - b.

Holotype: No. **226 - 30**, VNIGRI (All-Union Petroleum Research Geological Prospecting Institute) collection, Leningrad.

Type locality: Gorodische, Ul'yanovskaya region, U.S.S.R.. *'Perisphinctes bleicheri* Zone', lower Volgian (*sensu* Lyubimova) Upper Jurassic.

Figured specimens: Brit. Mus. (Nat. Hist.) **OS 11379** (♂ LV: Pl. **6**, 44, fig. 1), **OS 11380** (♂ LV: Pl. **6**, 44, fig. 2), **OS 11381** (♂ RV: Pl. **6**, 44, fig. 3), **OS 11382** (♂ RV: Pl. **6**, 46, fig. 1), **OS 11383** (♀ RV: Pl. **6**, 46, fig. 2), **OS 11384** (juv. RV: Pl. **6**, 46, fig. 3), **OS 11379 - OS 11382** are from Bed 8 (*Subplanites pseudoscythicus* Zone, Lower Volgian) and others from Bed 4 (*Aulacostephanus autissiodorensis* Zone, Upper Kimmeridgian) at Gorodische, 25km north of Ul'yanovsk, River Volga, U.S.S.R.. Bed numbers of Mesezhnikov, M.S. *et al.* (1977, fig. 1).

Explanation of Plate 6, 44

Fig. 1, ♂ LV, ext. lat. (**OS 11379**, 812 μm long); fig. 2, ♂ LV, int. lat. (**OS 11380**, 812 μm long); fig. 3, ♂ RV, ext. lat. (**OS 11381**, 856 μm long).
Scale A (200 μm; x 61), figs. 1, 2; scale B (200 μm; x 58), fig. 3.

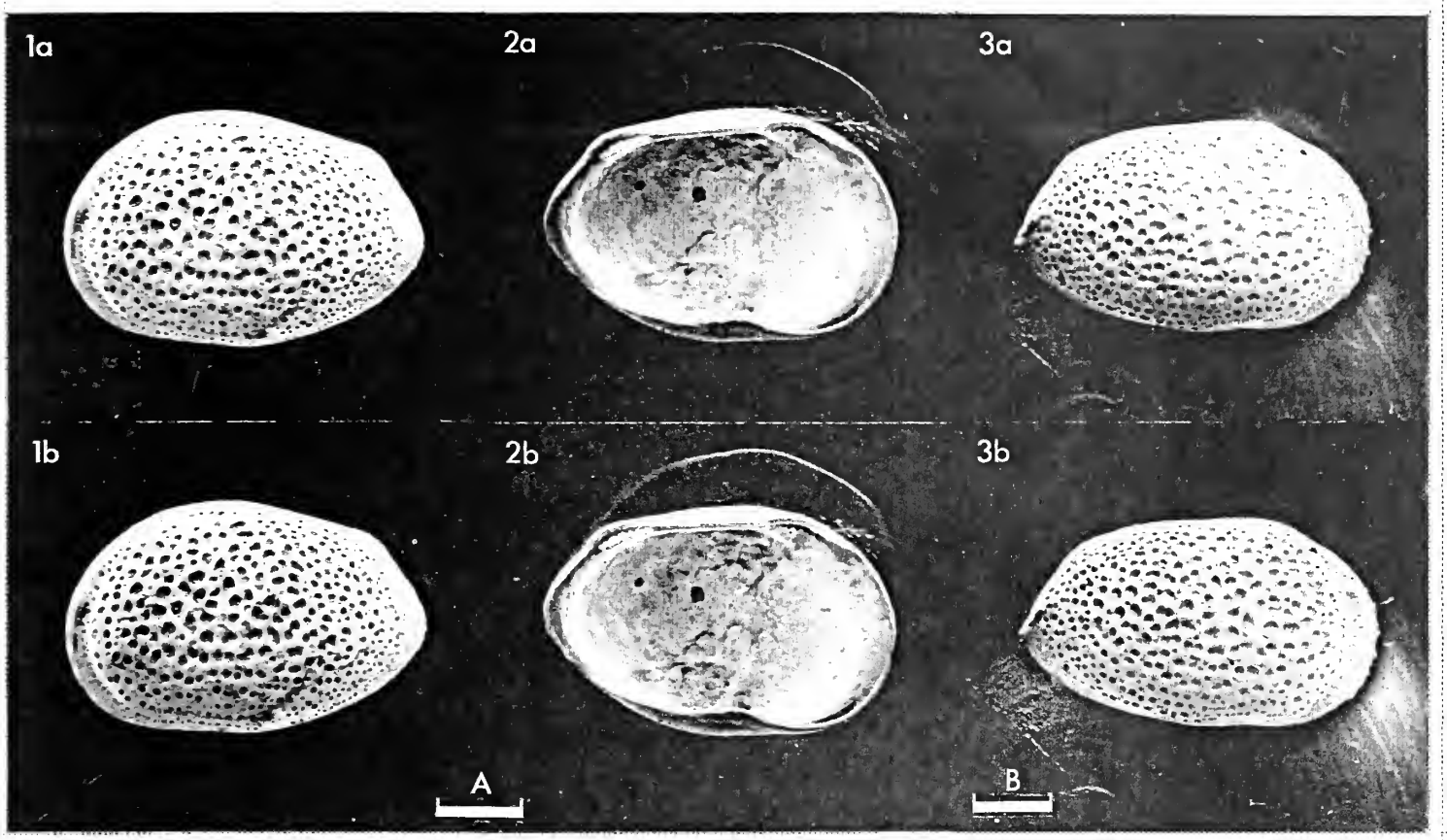
Diagnosis: Outline elongate-oval, with a well developed anterior marginal rim. Posterior triangular. Cardinal angles marked. Right valves commonly show two posterior spines and one postero-ventral spine. Anterior pore canals total 10 and are simple, short and straight; posterior canals not observed. Sexual dimorphism well developed.

Remarks: Similar to *G. gorodischensis* Fuller and Lord in original illustrations of Lyubimova, but differs in fact in outline and in density and development of ornament. Also shows some similarity to *G. spinosa* Kilenyi, 1969 from the Kimmeridgian type-section in England (*Palaeontology* **12**, 112 - 160), which is relatively longer with an acuminate posterior margin.

Distribution: This species is at present known only from Gorodische and Kashpir in the Volga Basin, with a range of Upper Kimmeridgian to Middle Volgian.

Explanation of Plate 6, 46

Fig. 1, ♂ RV, int. lat. (**OS 11382**, 875 μm long); fig. 2, ♀ RV, ext. lat. (**OS 11383**, 1000 μm long); fig. 3, juv. RV, ext. lat. (**OS 11384**, 750 μm long).
Scale A (200 μm; x 56), fig. 1; scale B (200 μm; x 51), fig. 2; scale C (200 μm; x 66), fig. 3.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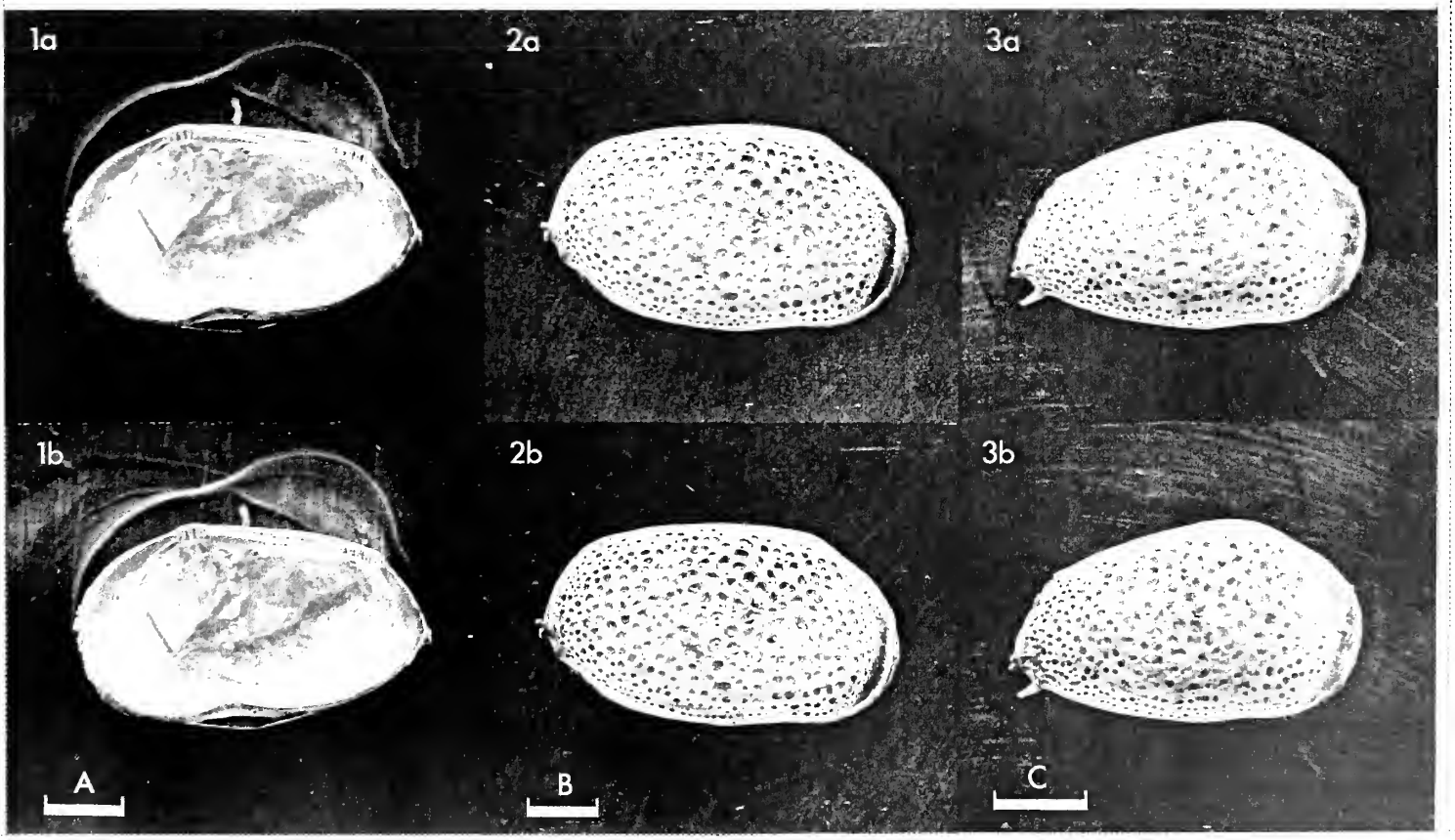
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595.337.14 (116.233) (47:161.048.54) : 551.351 + 552.52

ON *GALLIAECYTHERIDEA VOLGAENSIS* (LYUBIMOVA)

by Nicholas Fuller & Alan Lord
(University College, London)

Galliaecytheridea volgaensis (Lyubimova, 1955)

1955 *Palaeocytheridea volgaensis* sp. nov. P. S. Lyubimova, *Trudy VNIGRI,* new series, *84,* 41, pl. III, figs. 4a - b.

Holotype: No. **117 - 4** VNIGRI (All-Union Petroleum Research Geological Prospecting Institute) collection, Leningrad.

Type locality: Samarskaya Luka, Repevka, U.S.S.R.. Upper Kimmeridgian (*sensu* Lyubimova, 1955), Upper Jurassic.

Figured specimens: Brit. Mus. (Nat. Hist.) **OS 11385** (♂ LV: Pl. **6**, 48, fig. 1), **OS 11386** (♂ LV: Pl. **6**, 48, fig. 2), **OS 11387** (♂ RV: Pl. **6**, 48, fig. 3), **OS 11388** (♂ RV: Pl. **6**, 50, fig. 1), **OS 11389** (♀ LV: Pl. **6**, 50, fig. 2), **OS 11390** (♀ RV: Pl. **6**, 50, fig. 3), All specimens are from Bed 3 (*Aulacostephanus autissiodorensis* Zone, Upper Kimmeridgian) at Gorodische, 25km north of Ul'yanovsk, River Volga, U.S.S.R.. Bed number of Mesezhnikov, M.S. *et al.* (1977, fig. 1).

Explanation of Plate 6, 48

Fig. 1, ♂ LV, ext. lat. (**OS 11385**, 687 μm long); fig. 2, ♂ LV, int. lat. (**OS 11386**, 750 μm long); fig. 3, ♂ RV, ext. lat. (**OS 11387**, 750, μm long).
Scale A (200 μm; x 71), fig. 1; scale B (200 μm; x 67), figs. 2, 3.

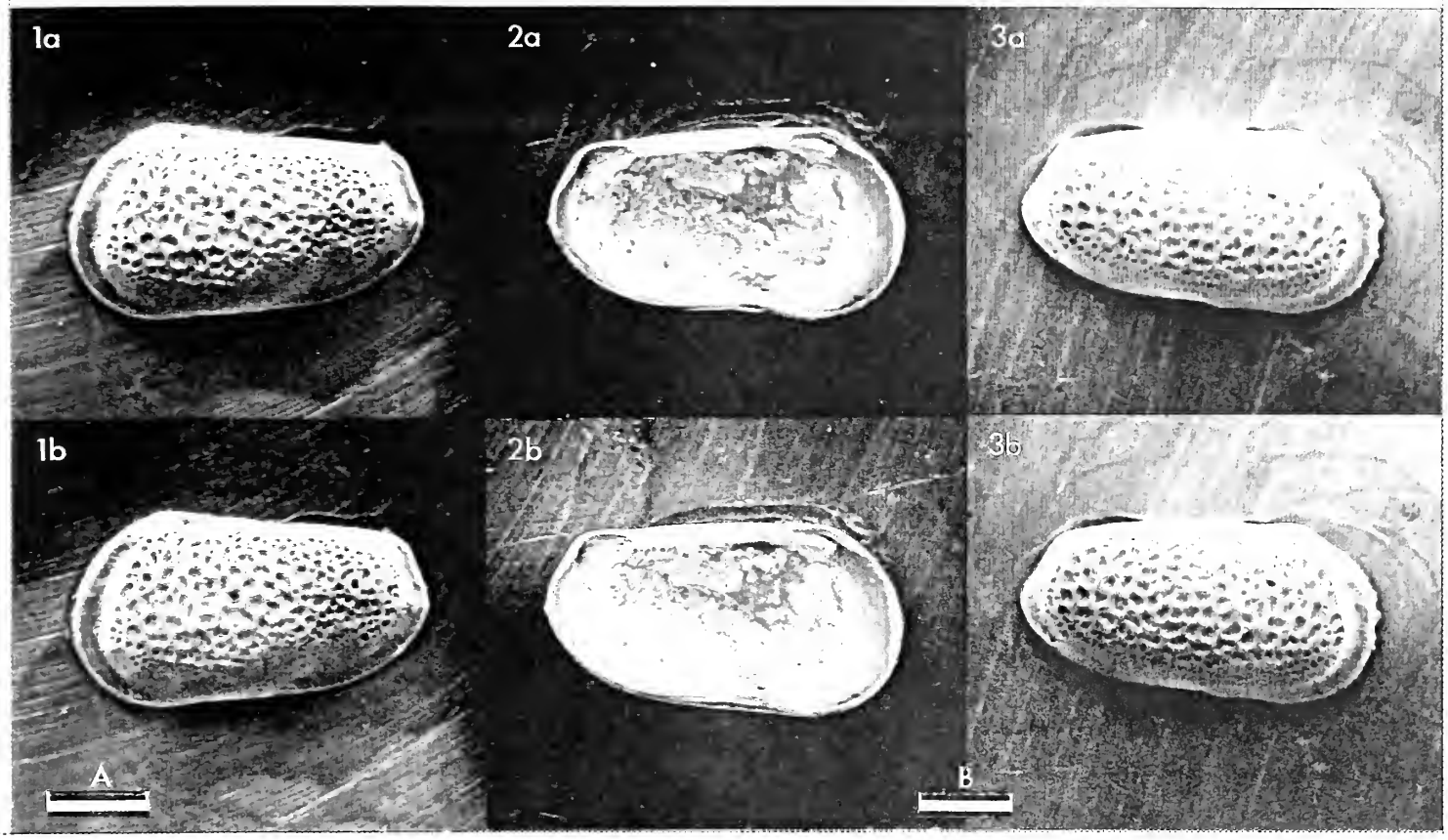
Diagnosis: Elongate subrectangular, parallel-sided in dorsal view with well developed anterior marginal rims. Strong surface ornament of large subrounded cells which decrease in size near the margins. Postero-ventral spines occur, most strongly developed on right valves. Normal pores prominent on surface. Marginal pore canals simple, straight with 8 - 10 anteriorly and 3 posteriorly. Sexual dimorphism strongly developed.

Remarks: Occurs in Upper Kimmeridgian associated with *G. monstrata* (Lyubimova), *G. miranda* (Lyubimova), *G. mandelstami* (Lyubimova), *Mandelstamia ventrocornuta* (Sharapova), *Oligocythereis kostytschevkaensis* (Lyubimova) and *Protocythere prolongata* (Sharapova). Permyakova (*in* Pjatkova, D. M. & Permyakova, M. N., *Jurassic Foraminifera and Ostracoda of the Ukraine,* Kiev, 1978, p. 136. In Russian.) has assigned this species to *Pariscus* Oertli.

Distribution: This species is at present known only from Gorodische (Upper Kimmeridgian) in the Volga Basin and from the Ukraine. Lyubimova (1955) gives a range of Lower Oxfordian to Lower Volgian for this species.

Explanation of Plate 6, 50

Fig. 1, ♂ RV, int. lat. (**OS 11388**, 750 μm long); fig. 2, ♀ LV, ext. lat. (**OS 11389**, 625 μm long); fig. 3, ♀ RV, ext. lat. (**OS 11390**, 637 μm long).
Scale A (200 μm; x 70), fig. 1; scale B (200 μm; x 80), fig. 2; scale C (200 μm; x 78), fig. 3.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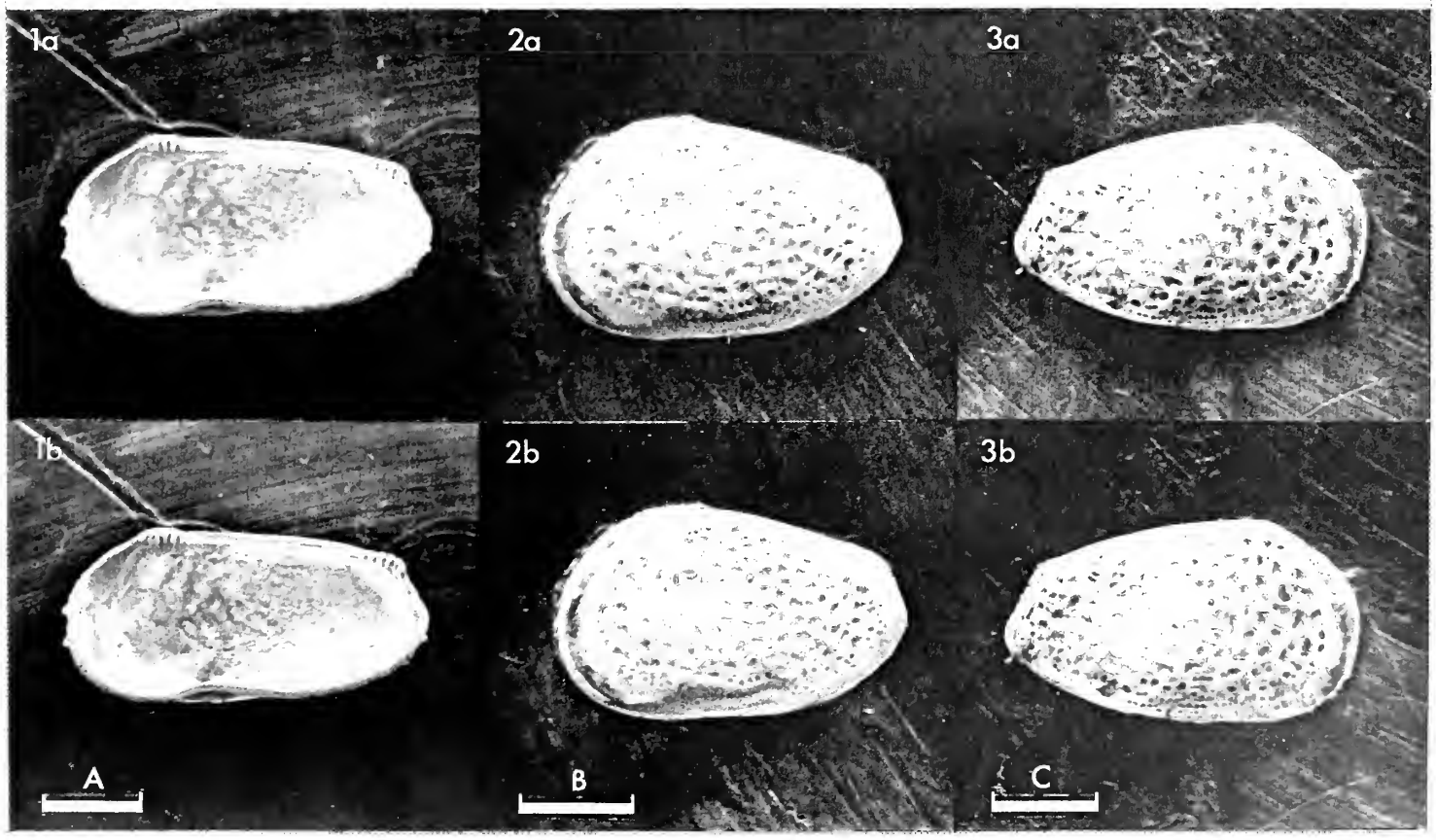
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Stereo-Atlas of Ostracod Shells 6 (10) 51–54 (1979)
595.337.14 (116.233) (47:161:048.54 + 161.048.53) : 551.351 + 552.52

ON *MANDELSTAMIA VENTROCORNUTA* (SHARAPOVA)

by Nicholas Fuller & Alan Lord
(University College, London)

Mandelstamia ventrocornuta (Sharapova, 1939)

1939 *Cytherissa ventrocornuta* sp. nov. E. G. Sharapova, *Trudy NGRI, A 126,* 12, pl. I, fig. 4.

1955 *Mandelstamia ventrocornuta* (Sharapova, 1939); P. S. Lyubimova, *Trudy VNIGRI,* new series, *84,* 63, pl. VI, figs. 9a - c.

Holotype: No. **51 - 4**, VNIGRI (All-Union Petroleum Research Geological Prospecting Institute) collection, Leningrad.

Type locality: Two sites given in original description; Lyubimova (*op. cit.*, p. 63) gives Obshchiy Syrt, Ozinkovskii district, U.S.S.R.. Lower Volgian (*sensu* Lyubimova), Upper Jurassic.

Figured specimens: Brit. Mus. (Nat. Hist.) **OS 11396** (LV: Pl. **6**, 52, figs. 1, 2), **OS 11397** (RV: Pl. **6**, 52, fig. 3), **OS 11398** (RV: Pl. **6**, 54, fig. 1), **OS 11399** (LV: Pl. **6**, 54, fig. 2), **OS 11400** (car.: Pl. **6**, 54, figs. 3, 4), **OS 11401** (juv. LV: Pl. **6**, 54, fig. 5). **OS 11397, OS 11399** from Bed 3 (*Aulacostephanus autissiodorensis* Zone, Upper Kimmeridgian). **OS 11396, OS 11398** and **OS 11401** from Bed 11 (*Dorsoplanites panderi* Zone, Middle Volgian) at Gorodische, 25km north of Ul'yanovsk, River Volga; **OS 11400** from Bed 7 (*panderi* Zone, Middle Volgian) at Kashpir, immediately south of Syzran, on the River Volga and 200km south of Gorodische, U.S.S.R.. Bed numbers of Mesezhnikov, M. S. *et al.* (1977, figs. 1 and 2).

Explanation of Plate 6, 52

Fig. 1, LV, ext. lat. (**OS 11396**, 687 μm long); fig. 2, LV, int. lat. (**OS 11396**, 687 μm long); fig. 3, RV, ext. lat. (**OS 11397**, 656 μm long).
Scale A (200 μm; x 71), figs. 1, 2; scale B (200 μm; x 75), fig. 3.

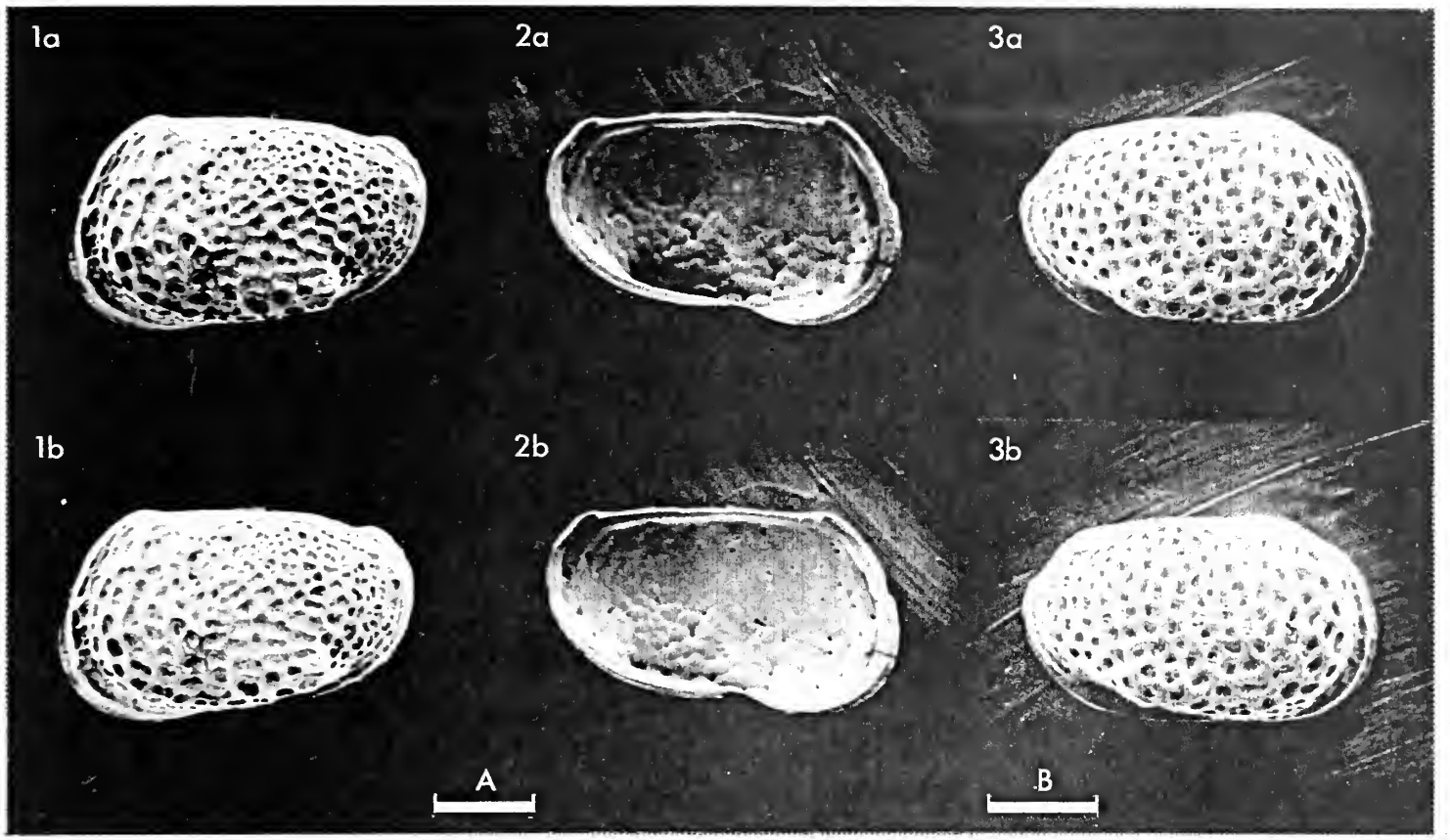
Diagnosis: A species of *Mandelstamia* with characteristic features of genus, but inner margin and line of concrescence do not coincide anteriorly and a narrow vestibule is present. Surface ornamented with an open reticulate network; postero-ventral protruberance present. Marginal pore canals simple and straight, 10 anteriorly and 7 posteriorly. Sexual dimorphism not recognised.

Remarks: *Mandelstamia abdita* Lyubimova, 1955 has a similar ornamental pattern, but differs in shape and in the possession of a strong mid- to postero-ventral spine. *M. facilis* Lyubimova, 1955 lacks any postero-ventral features, although it does have a reticulate ornament. In our material a single carapace of *M. facilis* occurred and this closely resembled Lyubimova's illustrations (*op. cit.*, pl. VII, figs. 2a, b), but both specimen and illustrations could well be female although no obvious male counterpart was recognised. Inner margin and line of concrescence usually coincide in *Mandelstamia,* but in *M. ventrocornuta* and in *M. sexti* Neale, 1961 from the Speeton Clay (Lower Cretaceous) of England a narrow anterior vestibule is present.

Distribution: The type material was from the *Virgatites virgatus* and *D. panderi* Zones (Middle Volgian) and Lyubimova (1955) records the species from Oxfordian to mid-Volgian. At Gorodische the species ranges from Kimmeridgian (*Aulacostephanus eudoxus* Zone) to Middle Volgian (*panderi* Zone). Known from the Volga area and the Ukraine.

Explanation of Plate 6, 54

Fig. 1, RV, int. lat. (**OS 11398**, 750 μm long); fig. 2, LV, int. lat. musc. sc. (**OS 11399**); fig. 3, car., vent. (**OS 11400**, 719 μm long); fig. 4, car., dors. (**OS 11400**, 719 μm long); fig. 5, juv. LV, ext. lat. (**OS 11401**, 419 μm long).
Scale A (200 μm; x 67), fig. 1; scale B (25 μm; x 500), fig. 2; scale C (200 μm; x 71), figs. 3, 4; scale D (100 μm; x 120), fig. 5.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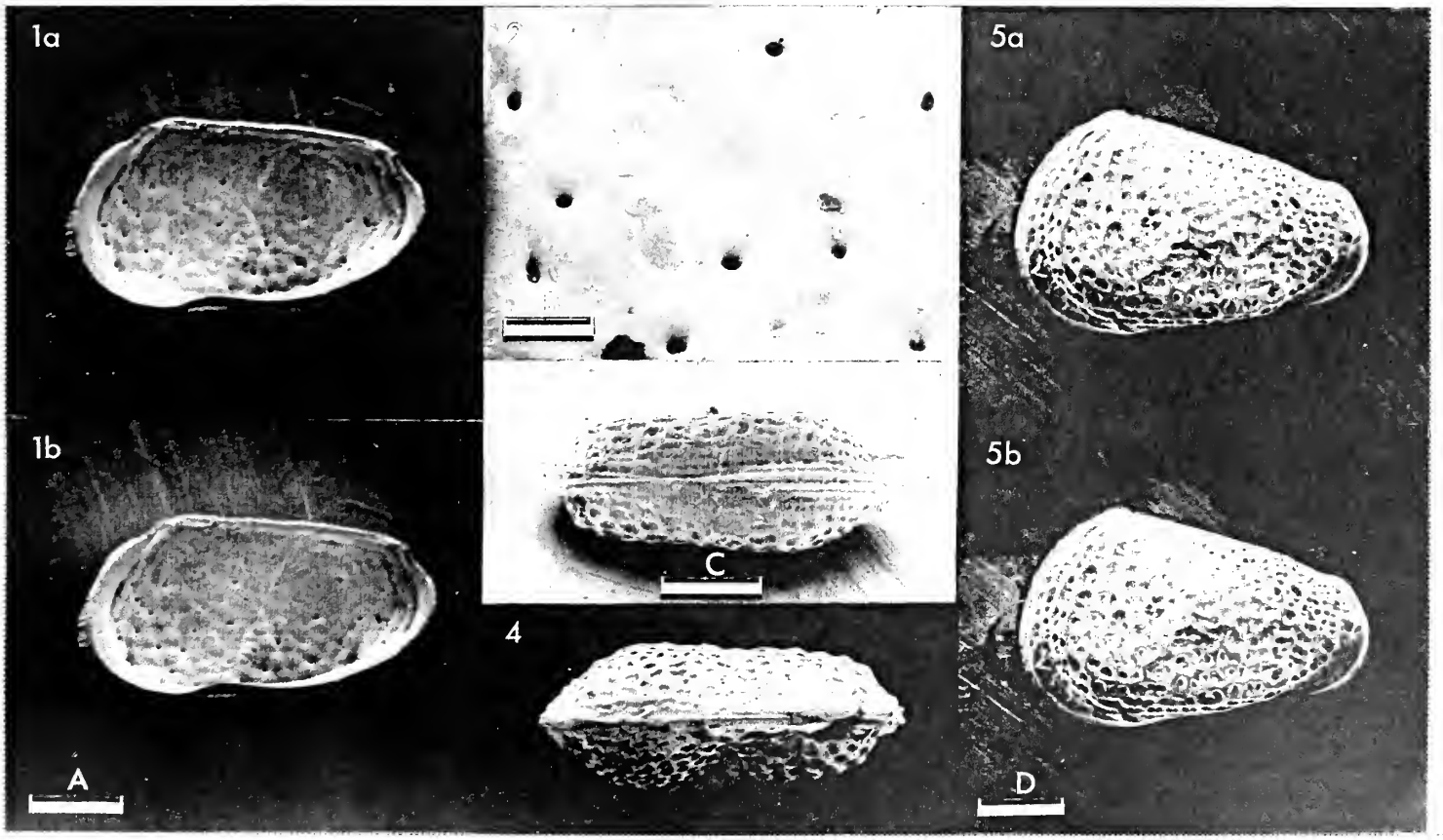
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Stereo-Atlas of Ostracod Shells 6 (11) 55–62 (1979)
595.337.14 (116.233) (47:161.048.54) : 551.351 + 552.52

ON *OLIGOCYTHEREIS KOSTYTSCHEVKAENSIS* (LYUBIMOVA)

by Nicholas Fuller & Alan Lord
(University College, London)

Oligocythereis kostytschevkaensis (Lyubimova, 1955)

1955 *Orthonotacythere kostytschevkaensis* sp. nov. P. S. Lyubimova, *Trudy VNIGRI,* new series, *84,* 91 - 92, pl. X, figs. 6a - b.

Holotype: No. **117 - 10**, VNIGRI (All-Union Petroleum Research Geological Prospecting Institute) collection, Leningrad.

Type locality: Samarskaya Luka, Kostychi, U.S.S.R.. Upper Kimmeridgian (*sensu* Lyubimova, 1955), Upper Jurassic.

Explanation of Plate 6, 56

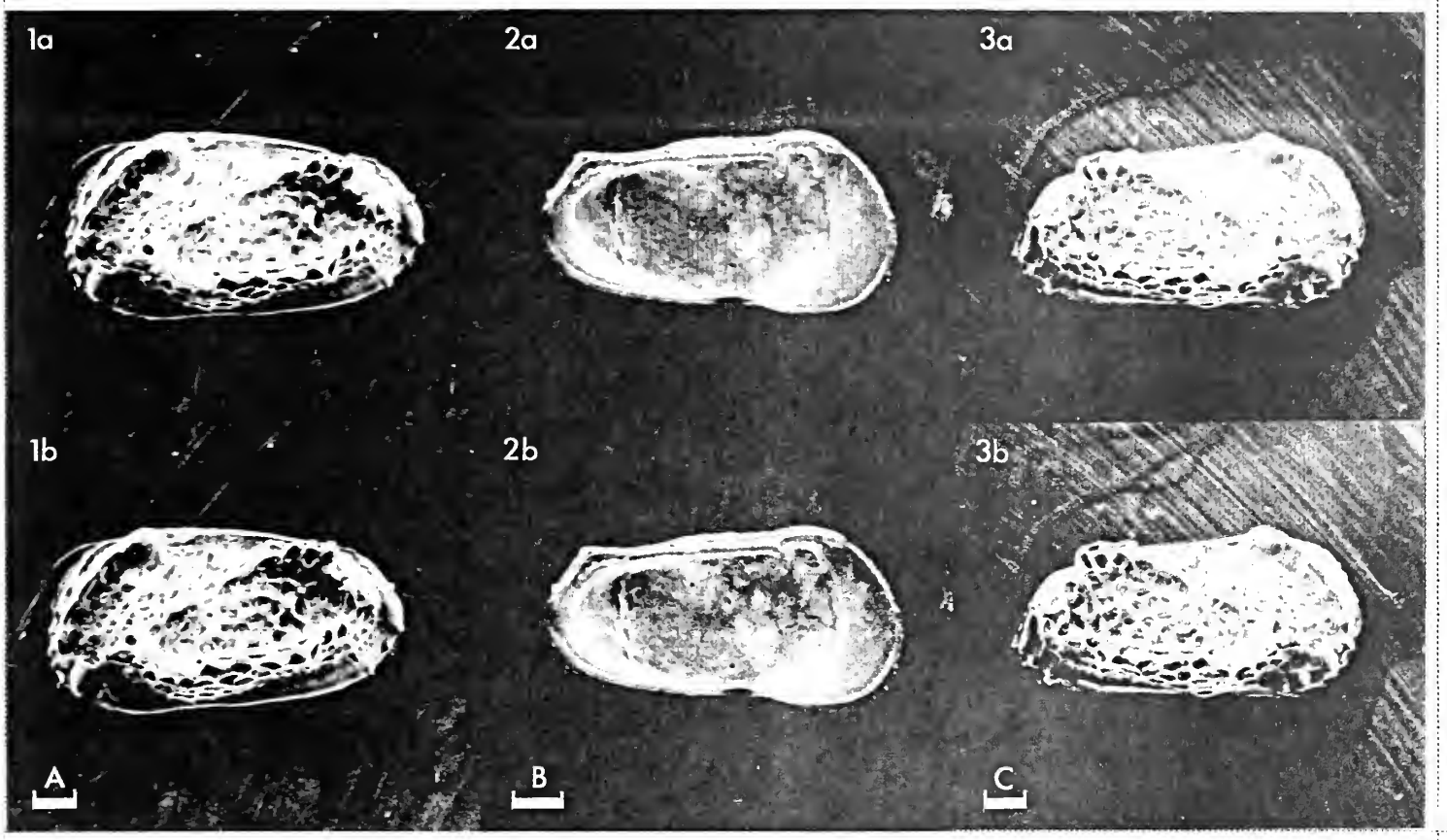
Fig. 1, ♂ LV, ext. lat. (**OS 11411**, 750 μm long); fig. 2, ♂ LV, int. lat. (**OS 11412**, 687 μm long); fig. 3, ♂ RV, ext. lat. (**OS 11413**, 750 μm long).
Scale A (100 μm; x 67), fig. 1; scale B (100 μm; x 75), fig. 2; scale C (100 μm; x 65), fig. 3.

Figured specimens: Brit. Mus. (Nat. Hist.) **OS 11411** (♂ LV: Pl. **6**, 56, fig. 1), **OS 11412** (♂ LV: Pl. **6**, 56, fig. 2; Pl. **6**, 62, fig. 2) **OS 11413** (♂ RV: Pl. **6**, 56, fig. 3), **OS 11414** (♂ RV: Pl. **6**, 58, fig. 1), **OS 11415** (♀ LV: Pl. **6**, 58, fig. 2), **OS 11416** (♀ LV: Pl. **6**, 58, fig. 3), **OS 11417** (♀ RV: Pl. **6**, 60, figs. 1, 2), **OS 11418** (♂ RV: Pl. **6**, 60, fig. 3; Pl. **6**, 62, fig. 3), **OS 11419** (♀ RV: Pl. **6**, fig. 4; Pl. **6**, 62, fig. 1), **OS 11420** (juv. RV: Pl. **6**, 60, fig. 5). **OS 11411**, **OS 11413**, **OS 11415**, **OS 11416**, **OS 11417** and **OS 11419** are from Bed 3 (*Aulacostephanus autissiodorensis* Zone, Upper Kimmeridgian), **OS 11412**, **OS 11418** and **OS 11420** are from Bed 4 (*autissiodorensis* Zone) and **OS 11414** is from Bed 8 (*Subplanites pseudoscythicus* Zone, Lower Volgian) at Gorodische, 25km north of Ul'yanovsk, River Volga, U.S.S.R.. Bed numbers of Mesezhnikov, M. S. *et al.* (1977. fig. 1).

Diagnosis: Subrectangular, tapering, greatest height anteriorly; prominent cardinal angles. Large eye tubercle. Posterior marginal rim bears 4 - 6 spine bases. Surface relief strong and accompanied by an ornament of oval to subtriangular pits. Anterior pore canals 10 - 12 in number, simple, slightly sinuous, grouped in pairs; posterior canals 4 - 5 in number simple, straight. Sexually dimorphic.

Explanation of Plate 6, 58

Fig. 1, ♂ RV, int. lat. (**OS 11414**, 700 μm long); fig. 2, ♀ LV, ext. lat. (**OS 11415**, 656 μm long); fig. 3, ♀ LV, int. lat. (**OS 11416**, 656 μm long).
Scale A (100 μm; x 71), fig. 1; scale B (100 μm; x 75), figs. 2, 3.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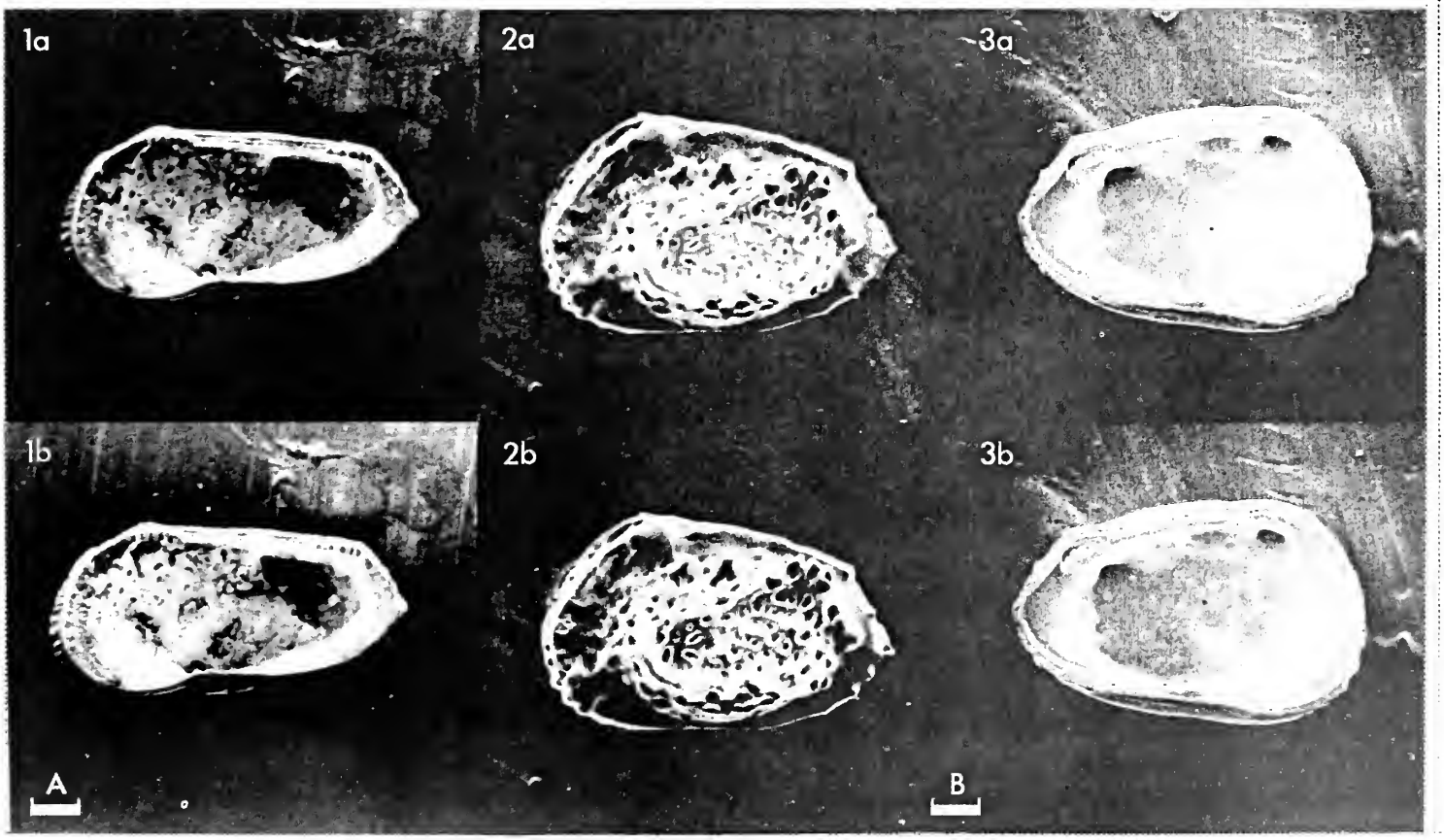
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Remarks: A distinctive species which we consider to belong to *Oligocythereis* Sylvester-Bradley. However, Permyakova (*in* D. M. Pjatkova and M. N. Permyakova, *Jurassic Foraminifera and Ostracoda of the Ukraine*, Kiev, 1978, p. 148. In Russian) has recently placed this species in *Infacythere* Gründel. In Pl. 6, 60, fig. 5 a juvenile specimen (**OS 11420**) is illustrated which is similar to *O. kostytschevkaensis* but intermediate instar stages were not observed.

The preservation of this and other species from the Volgian of the type-area (*Stereo-Atlas of Ostracod Shells* 1979, **6** (6) – (10) is excellent, as are foraminifera and calcareous nannofossils from the same samples. The structural stability of the Russian platform has helped to minimise diagenetic effects, resulting in an exceptional state of preservation (W. J. Arkell, *Jurassic Geology of the World*, Edinburgh, 1956, pp. 491 - 92).

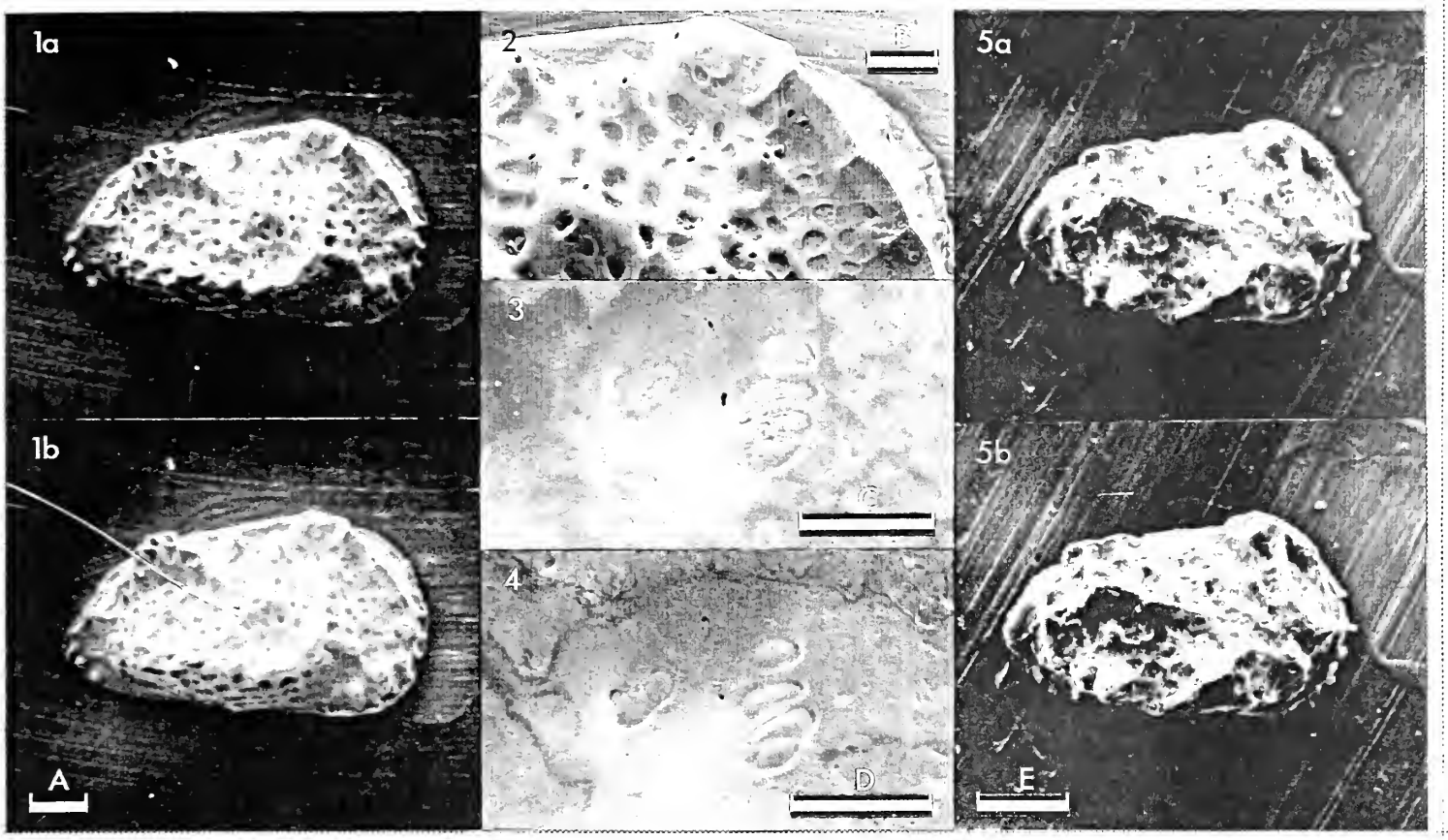
Distribution: Upper Kimmeridgian, Lower and Middle Volgian of Gorodische; Volga area and the Ukraine.

Explanation of Plate 6, 60

Fig. 1, ♀ RV, ext. lat. (**OS 11417**, 625 μm long); fig. 2, ♀ RV, ext. antero-dorsal area (**OS 11417**); fig. 3, ♂ RV, int. lat. muscle-scars (**OS 11418**); fig. 4, ♀ RV, int. lat. muscle-scars (**OS 11419**); fig. 5, juv. RV, ext. lat. (**OS 11420**, 375 μm long).
Scale A (100 μm; x 80), fig. 1; scale B (50 μm; x 200), fig. 2; scale C (50 μm; x 383), fig. 3; scale D (50 μm; x 396), fig. 4; scale E (100 μm; x 130), fig. 5.

Explanation of Plate 6, 62

Fig. 1, ♀ RV, int. lat. (**OS 11419**, 625 μm long); fig. 2, ♂ LV, int. lat. hinge (**OS 11412**); fig. 3, ♂ RV, int. lat. hinge (**OS 11418**).
Scale A (100 μm; x 150), fig. 1; scale B (100 μm; x 130), fig. 2; scale C (100 μm; x 122), fig. 3.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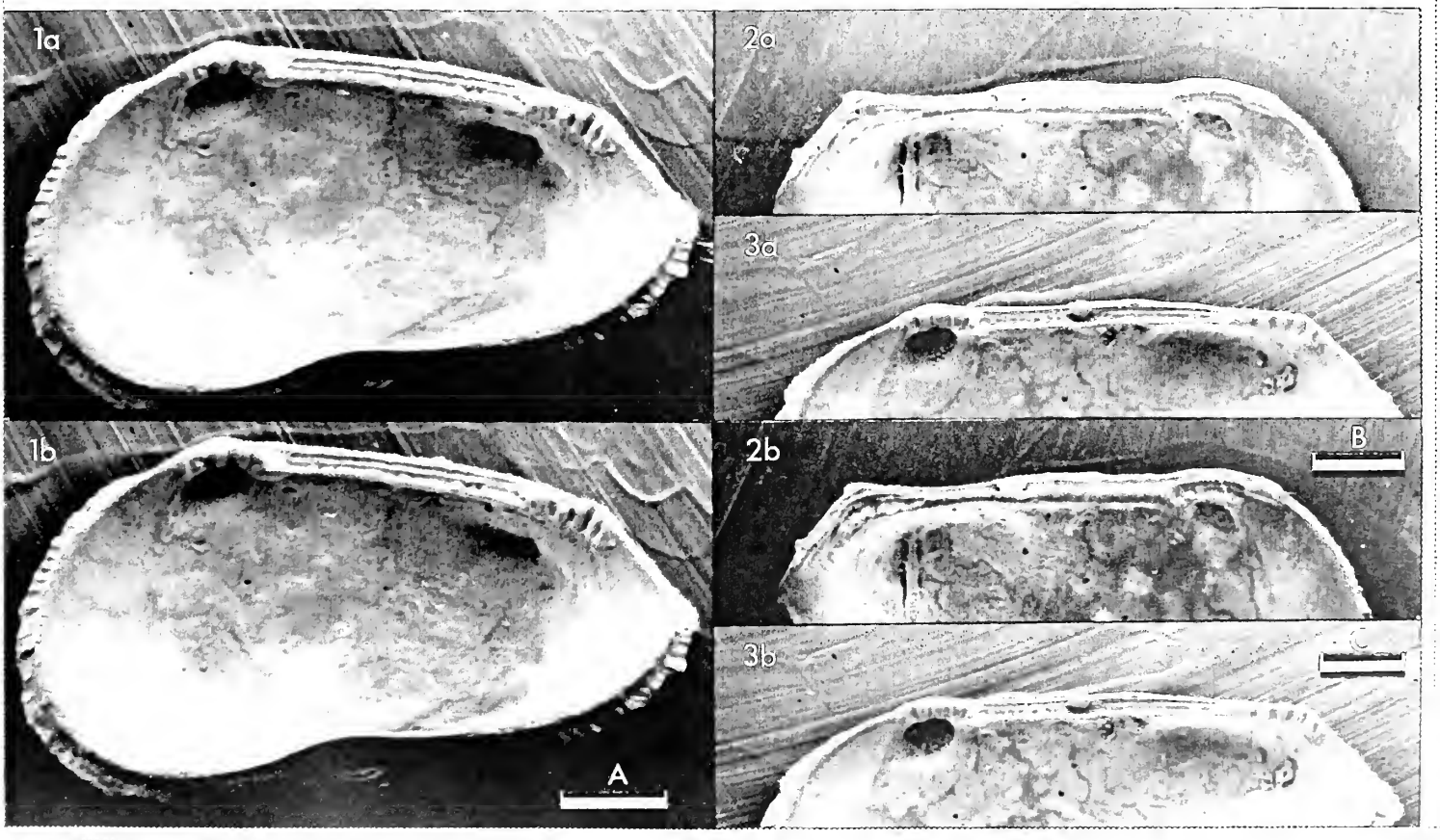
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Stereo-Atlas of Ostracod Shells 6 (12) 63–66 (1979)
595.336.13 (113.313) (486:161.018.57) : 551.35 + 552.55

ON *CAPRABOLBINA CAPRA* SCHALLREUTER

by Roger E. L. Schallreuter
(University of Hamburg, German Federal Republic)

Genus *CAPRABOLBINA* Schallreuter, 1972

Type-species (by original designation): *Caprabolbina capra* Schallreuter, 1972

Diagnosis: A genus of the subfamily Gryphiswaldensiinae. Unisulcate, S2 deep, long and sigmoidal; preadductorial node low, more or less elliptical, sited behind a weak (-obsolete) S1; greatest lobal inflation occurs in postadductorial area posteroventrally of S2, crest of posterior lobe projects above the hinge line and higher than that of the other lobes. Velum entire, narrow and flange-like anteriorly and ventrally, posteriorly appears as a rounded brim; female velar flange expanded anterocentrally to centroventrally, forming a faintly convex dolon paralleled by a narrow, upturned, rim-like peripheral torus; dolon and the marginal surface form a distinct antrum. Marginal sculpture consists of a ridge. Except for S2, the antrum and parts of dorsum, shell surface is reticulate; some tubercles occur, especially on posterior part and ventral surface of velum.

Remarks: The deep, long, sigmoidal main sulcus (S2) differentiates this genus from *Gryphiswaldensia* Schallreuter (*Ber. geol. Ges. DDR* **10** (4), 481, 1965) and *Dogoriella* Kanygin (*Ostrakody ordovika gornoj sistemy Čerskogo*, **41**, 1967) As shown in *Ctenobolbina maclearni* Copeland (*Pap. geol. Surv. Can.* 72 - 43, 10, 1973), the two ventral spines of the type-species are not, as formerly presumed (Schallreuter, *Wiss. Z. Univ. Greifswald* (Math. -naturwiss. R.) **21**, 206, 1972), a diagnostic feature of the genus.

Distribution: Upper Ordovician. Baltoscandia and Quebec, Canada.

Explanation of Plate 6, 64

Figs. 1 - 4, posteriorly incomplete ♀ RV (**GPIH 2184**, 707 μm long): fig. 1, ext. anterovent. obl.; fig. 2, ext. ant.; fig. 3, ext. vent.; fig. 4, ext. lat.

Scale A (250 μm; x 98), fig. 1; scale B (250 μm; x 85), fig. 2; scale C (250 μm; x 93, figs. 3, 4.

Caprabolbina capra Schallreuter, 1972

1972 *Caprabolbina capra* sp. nov. R. Schallreuter, *Wiss. Z. Univ. Greifswald* (Math. - naturwiss. R.) **21**, 206, fig. 3.
1975 *Caprabolbina capra* Schallreuter; R. Schallreuter, *Neues Jb. Geol. Paläont. Abh.* **150** (3), 289.

Holotype: Geologisch-Paläontologisches Institut, University of Hamburg (GPIH), no. **2183**, tecnomorphic RV (larva).

Type locality: Norderstrand Visby, Isle of Gotland (Baltic Sea); lat. 57°40'N, long. 18°18.5'E. Öjlemyrflint erratic boulder (no. G2), Upper Ordovician.

Figured specimens: Geologisch-Paläontologisches Institut, University of Hamburg, nos. **2184** (posteriorly incomplete ♀ RV: Pl. **6**, 64, figs. 1 - 4) and **2185** (♂ LV: Pl. **6**, 66, figs. 1 - 4). Both from the Isle of Gotland (Baltic Sea), Öjlemyrflint erratic boulders nos. G6 (**2184**; Lickershamn; lat. 57°49.5' N, long. 18°30.5'E) and G9 (**2185**; Gnisvärd: lat. 57°30'N, long. 18°7'E), Upper Ordovician; coll. by Horst Kaufmann, 1975.

Diagnosis: Species of *Caprabolbina* whose adults are *c.* 0.85mm long. S2 rather broad. Ventral lateral surface has a single spine on either side of S2. Reticulation relatively coarse.

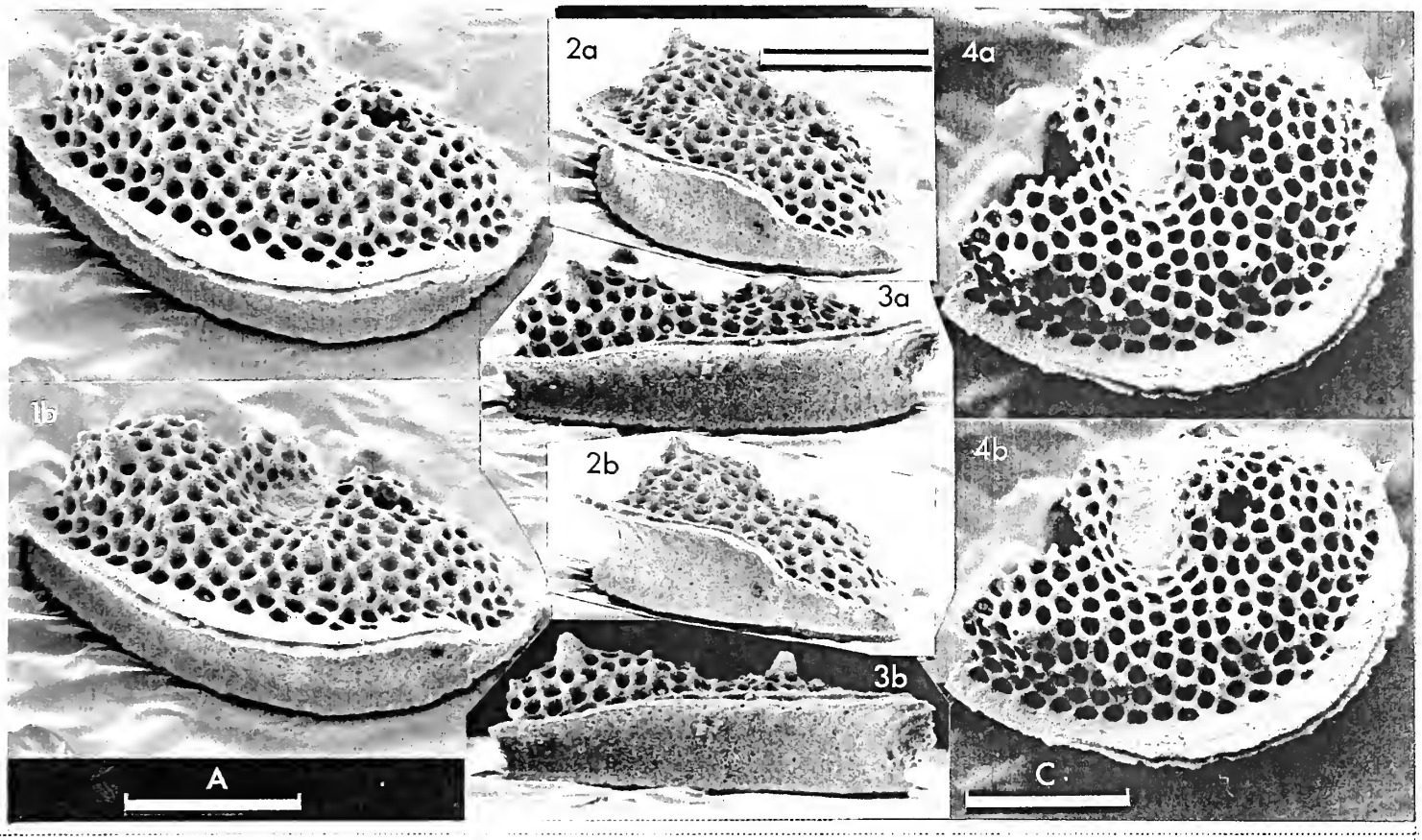
Remarks: *Caprabolbina capra* is characterized by its two ventral spines. In *Caprabolbina maclearni* S2 is smaller and the reticulation finer than in *C. capra.*

Distribution: Öjlemyrflint erratic boulders of the Isle of Gotland (Baltic Sea), Upper Ordovician.

Explanation of Plate 6, 66

Figs. 1 - 4, ♂ LV (**GPIH 2185**, 854 μm long): fig. 1, ext. lat.; fig. 2, ext. ant. obl.; fig. 3, ext. vent.; fig. 4, ext. dors. obl.

Scale A (250 μm; x 97), fig. 1; scale B (250 μm; x 65), fig. 2; scale C (250 μm; x 82), fig. 3; scale D (250 μm; x 84), fig. 4.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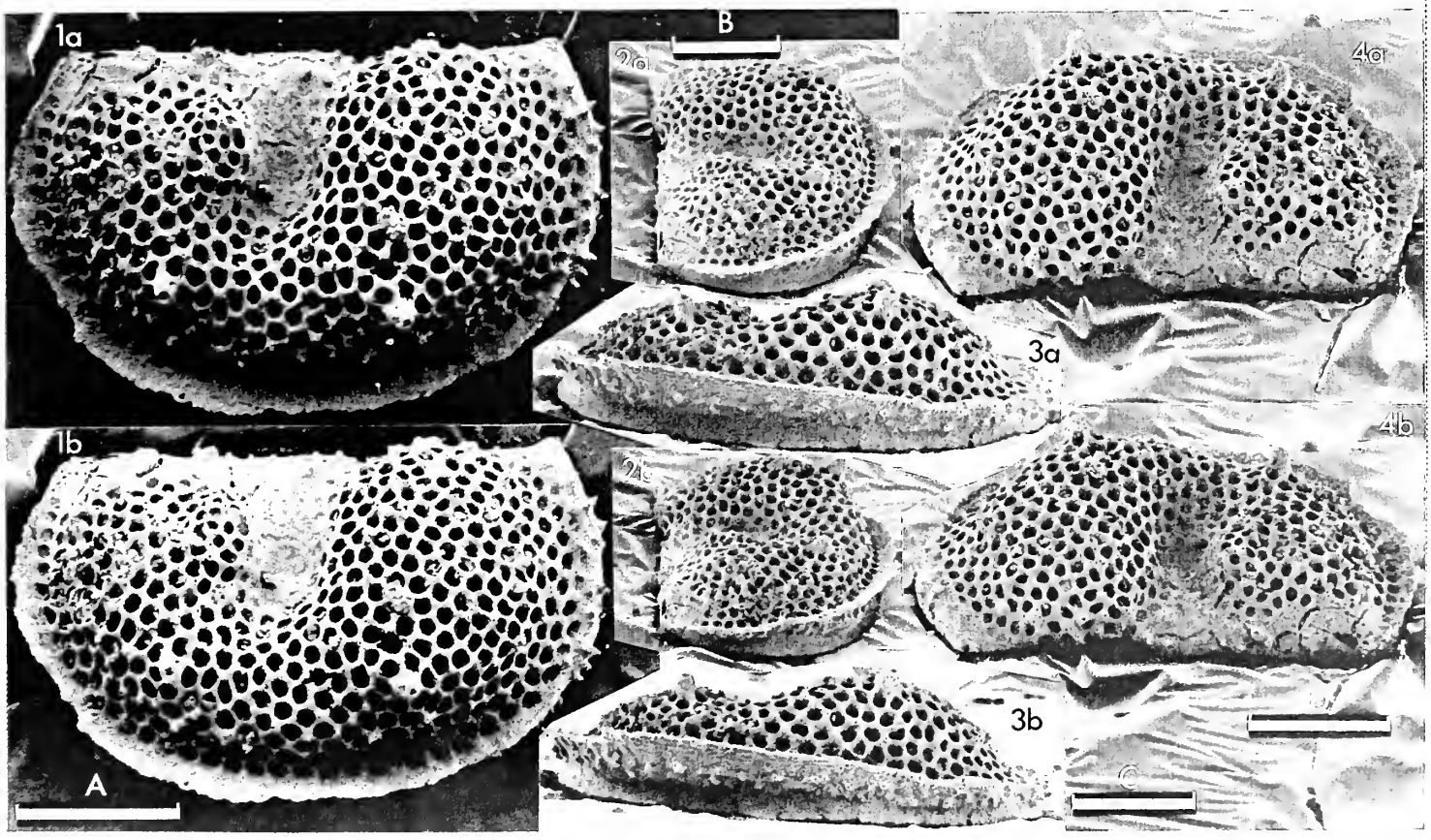
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595.336.13 (113.313) (486:161.018.57) : 551.35 + 552.55

ON *PLATYBOLBINA (RETICULOBOLBINA) SPONGIOSORETICULATA* SCHALLREUTER

by Roger E. L. Schallreuter
(University of Hamburg, German Federal Republic)

Platybolbina (Reticulobolbina) spongiosoreticulata Schallreuter, 1972

1972 *Platybolbina (Reticuloboblina) spongiosoreticulata* sp. nov. R. Schallreuter, *Wiss. Z. Univ. Greifswald* (Math.-naturwiss. R.) **21**, 205, 206, fig. 1.
1972 *Platybolbina (Reticulobolbina) spongiosoreticulates* sp. nov. R. Schallreuter, *Ibid.*, **21**, 205 (*lapsus calami*).
1975 *Platybolbina (Reticulobolbina) spongiosoreticulata* Schallreuter; R. Schallreuter, *Palaeontographica* (A) **149**, (4/6), 147.

Holotype: Geologisch-Paläontologisches Institut, University of Hamburg (GPIH), no. **2186**, a tecnomorphic RV (larva).

Type locality: Norderstrand Visby, Isle of Gotland (Baltic Sea); lat. 57°40′N, long. 18°18.5′E. Öjlemyrflint erratic boulder (no. G2), Upper Ordovician.

Explanation of Plate 6, 68

Figs. 1 - 3, ♀ RV (**GPIH 2187**, 1,003 μm long): fig. 1, ext. ant. obl.; fig. 2, ext. vent. obl.; fig. 3, ext. lat. Fig. 4, ♂ RV with velum broken away, ext. vent. (**GPIH 2188**, 982 μm long).
Scale A (250 μm; x 75), figs. 1 - 4.

Figured specimens: Geologisch-Paläontologisches Institut, University of Hamburg, nos. **2187** (♀ RV: Pl. **6**, 68, figs. 1 - 3), **2188** (♂ RV with velum broken away: Pl. **6**, 68, fig. 4; Pl. **6**, 70, fig. 3), **2189** (anterodorsally incomplete tecnomorphic RV: Pl. **6**, 70, fig. 1) and **2190** (tecnomorphic LV: Pl. **6**, 70, fig. 2).

All the figured specimens are from the Isle of Gotland (Baltic Sea), beach opposite the Isle of Lilla Karlsö; lat, 57°18′N, long. 18°8′E; Öjlemyrflint erratic boulder (no. G30, coll. by the author, 1976), Upper Ordovician.

Diagnosis: Adults *c.* 1.00 - 1.06mm long. Lateral surface quite strongly convex. Adductorial muscle scar field is central, smooth, not depressed. Velar flange entire, and in tecnomorphs is narrower. Dolon broad, strongly convex, occupies the antero- and centroventral regions. Lateral surface of shell has dense, 'sponge-like' reticulation, which is absent from the muscle scar field and is reduced near the cardinal areas.

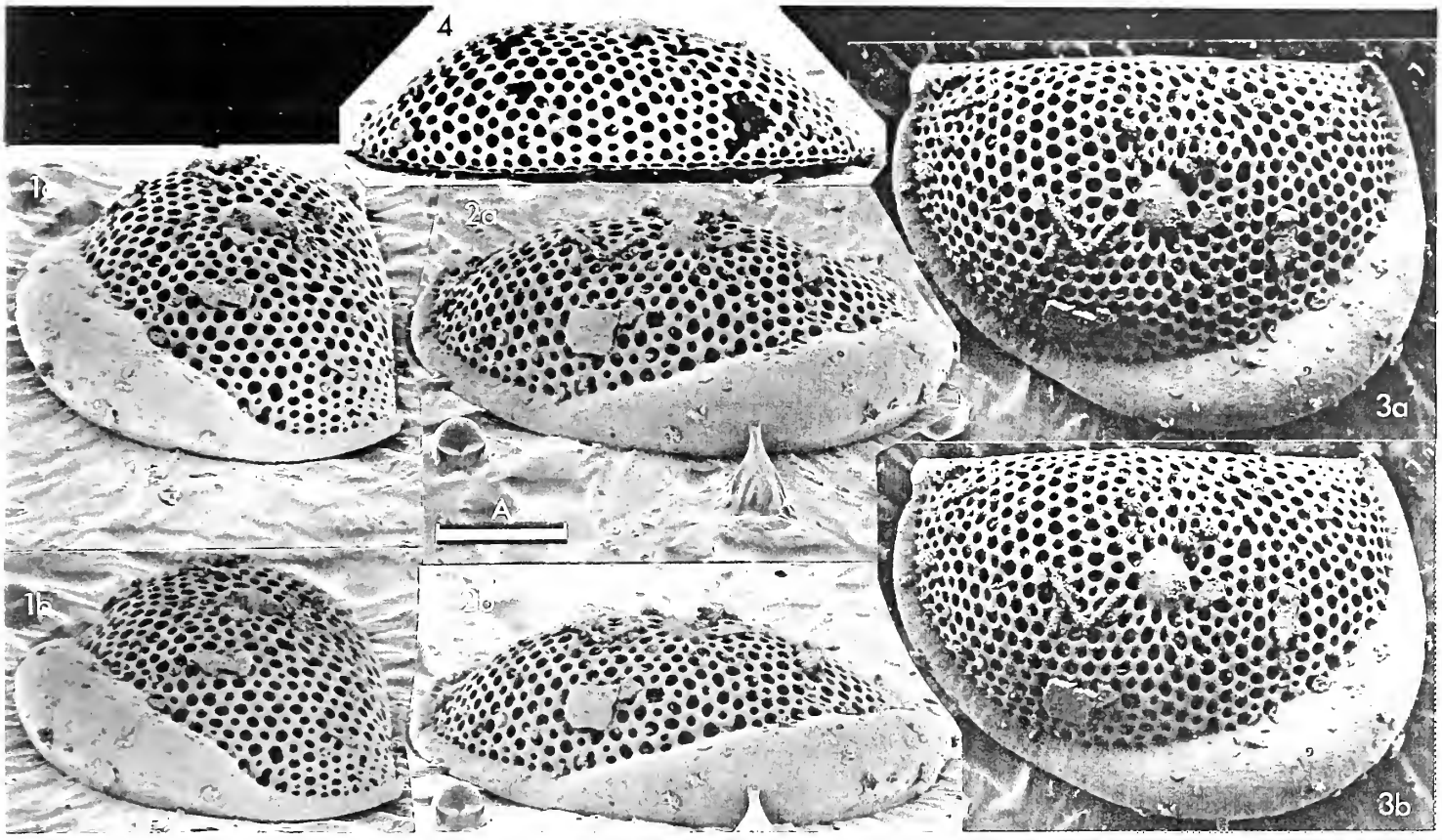
Remarks: This species was hitherto recorded from only one juvenile valve. The largest known tecnomorphic valve with a velum **(GPIH 2191)** is 1.06mm long, its domicilium being 870 μm long. The domicilium of the figured female right valve is 823 μm long, that of the figured ♂ RV 900 μm long. It seems reasonable to suggest, therefore, that the males are possibly larger than the females.

The specimens illustrated in Pl. **6**, 70, figs. 1 - 3 show that the reticulation is finer outside than inside the valves.

Distribution: Öjlemyrflint erratic boulders of the Isle of Gotland (Baltic Sea), Upper Ordovician.

Explanation of Plate 6, 70

Fig. 1, tecnomorphic RV (anterodorsally incomplete), ext. lat. (**GPIH 2189**, 902 μm long); fig. 2, tecnomorphic LV, int. lat. (**GPIH 2190**, 744 μm long); fig. 3, ♂ RV (velum broken away), ext. lat. (**GPIH 2188**).
Scale A (250 μm; x 77), fig. 1; scale B (250 μm; x 94), fig. 2; scale C (250 μm; x 71), fig. 3.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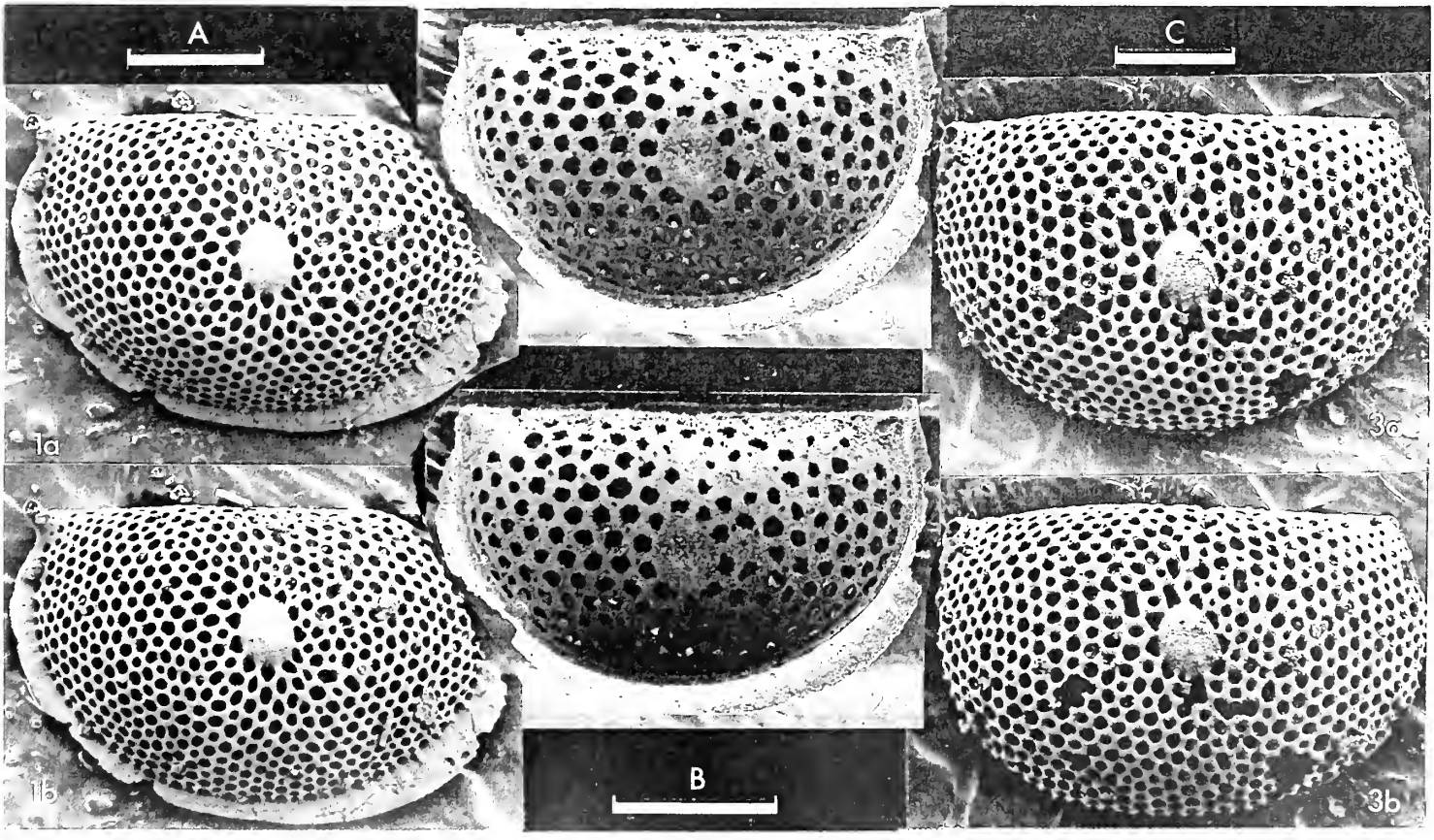
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