

On *Paradoxostoma ? pyriforme* Brady, Crosskey & Robertson; a foraminifer described as an ostracod

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ABSTRACT—The type-specimen of *Paradoxostoma ? pyriforme* Brady, Crosskey & Robertson, 1874 has recently been discovered in the Hancock Museum, Newcastle-upon-Tyne. It is not an ostracod, but a specimen of the foraminifer, *Fissurina lucida* (Williamson, 1848).

In 1874, Brady, Crosskey & Robertson published their classic “*Monograph of the post-Tertiary Entomostraca . . .*”. In it they described 132 species of Ostracoda, mainly from Scotland, 21 of which were new. One of these new species, *Paradoxostoma ? pyriforme*, from the Bridlington Crag of east Yorkshire, was described (p. 214, 5) as follows:

“Carapace, as seen from the side, broadly pear-shaped, narrowed at the anterior and broadly rounded at the posterior extremity; superior and inferior margins nearly alike, gently sinuated in front and boldly convex at and behind the middle; greatest height equal to more than two thirds of the length and situated near the middle; seen from above the outline is subovate, suddenly tapered and acuminate behind, more gently tapering and subacuminate in front, greatest width a little behind the middle and equal to about one half the length; end view broadly oval. Shell smooth and polished, milk-white, tipped with a small pellucid areola at each extremity.

Length, 1/60th of an inch.

Three or four examples of this very distinct species were found in the Bridlington deposit, but too late to be figured in our lithographic plates. It has the general aspect of a *Paradoxostoma*, but we have failed to find the mandibular aperture characteristic of that species; neither are the lucid spots visible. Moreover, there is an indistinct appearance of overlapping of the left valve on the dorsal surface, so that we cannot but consider the position here assigned to it somewhat doubtful. In lateral outline it is extremely like *P. abbreviatum* (which species we have by some oversight omitted to include in our plates), but when viewed from above is much more tumid”.

With a resurgence of interest in recent years in the Ostracoda of the British Pleistocene, it is unfortunate that not all the type and figured material relating to

Brady, Crosskey & Robertson, 1874 appears to survive. Some does exist in the Hancock Museum, Newcastle-upon-Tyne, however, and during a thorough search there for species of *Paradoxostoma*, undertaken by our colleague, Dr. D. J. Horne (City of London Polytechnic), as part of his major revision of the genus in British waters, probably the sole extant specimen of *P. ? pyriforme* was discovered and our attention was drawn to the curious nature of its true identity. The slide is labelled “*Paradoxostoma pyriforme* B, C & R (*sic*). Bridlington, glacial”; the fauna of the Bridlington Crag of east Yorkshire is considered today to be Hoxnian interglacial in age (Neale & Howe, 1975). The slide is now catalogued with the Hancock Museum no. 1.39.21. What is of novel interest is that even a casual examination of the specimen shows that it is not an ostracod at all but a foraminifer! We assign it to *Fissurina lucida* (Williamson) (= *Entosolenia marginata* (Montagu) var. *lucida* Williamson, 1848). In our experience this is the first instance of a foraminifer being mistaken for, and formally described as, an ostracod.

Side by side with Brady, Crosskey & Robertson’s illustration of their new “ostracod” in lateral (side), dorsal (edge) and posterior (apertural) views (reproduced in our Pl. 1, figs. 2-4), we refigure what we consider to be the very same specimen (Pl. 1, figs. 1, 5-8). Pl. 1, figs. 1, 5 are side views taken in clove-oil under transmitted light; in ordinary light and under cross-nichols, respectively. Pl. 1, figs. 6-8 are respectively, side, edge and apertural views, taken without coating with an Environmental Chamber attachment on an ISI 60A Scanning Electron Microscope. The produced apertural end of the test, with terminal fissurine slit lined with pores has been mistaken for the broad anterior marginal area with marginal pore canals of an ostracod; the small posterior marginal area is merely a basal mucro (pedunculate base *auct.*). A close examination of the light photographs reveals an entosolen (entosolenian tube *auct.*). In edge view (compare Pl. 1,

figs. 3 and 7) the differing opaque/non opaque (densely/finely perforate) areas coupled with the elongate aperture (anteriorly) give a superficial impression of two adjoining valves, but the reality is not the marked hingeline shown in the original woodcut. There is a complete lack of inner margin along the “venter”, no wonder Brady, Crosskey & Robertson could not . . .” find the mandibular aperture”, i.e. the gape, characteristic of the carapace of a *Paradoxostoma* when seen in ventral aspect. Moreover, there are no possible indications of muscle-scars, which one would surely see quite easily in that genus. The species was tentatively referred to *Paradoxostoma*, no doubt, because the shape is not unlike *P. abbreviatum* Sars amongst others and the shell surface was smooth. Nowhere was its affinities to the Ostracoda called into question, however, by the original authors.

What can be said in defence of this extraordinary lapse? It is clear from the text (1874, p. 215 and herein) that Brady, Crosskey & Robertson included the species as an afterthought and they could have been pressed for time to finish the manuscript. How else can one excuse such an error, particularly as G. S. Brady's brother, H. B. Brady, was such an authority on foraminifera, and the senior author cannot have been totally unversed in the Foraminifera himself?

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Explanation of Plate 1

All figures are $\times 100$.

From the Bridlington Crag (Pleistocene), east Yorkshire.

Figs. 1-8. *Paraxostoma ? pyriforme* Brady, Crosskey & Robertson, 1874 = *Fissurina lucida* (Williamson, 1848). Cat. no. 1.39.21, Hancock Museum, Newcastle-upon-Tyne: Fig. 1, side view in transmitted light; figs. 2-4, reproduction of original woodcuts, side, edge and apertural views; fig. 5, side view in cross-polarised light; figs. 6-8, side, edge and apertural views, scanning electron micrographs.

