LABRUSCASPHAERIDIUM

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Labruscasphaeridium gen. nov.

Type species. *Labruscasphaeridium intertextum* sp. nov.

Etymology. From labrusca, Latin; a wild vine, with reference to the resemblance of the processes to the growth habit of vines.

Diagnosis. As for the species.

Remarks. The interconnected, loop-like processes and moderately large size distinguish this genus from other previously described taxa.

Distribution. Lower Ungoolya Group, Officer Basin and Pertatataka Formation, Amadeus Basin, Supersequence 3, Centralian Superbasin, Ediacaran.

Labruscasphaeridium intertextum sp. nov. (Figs 10L, 44A, 185A-C, 186A-F, 187, 188)

Etymology. From intertextus, Latin, interwoven, referring to the interlinking of the processes.

Diagnosis. Acritarch with an overall spherical to polygonal outline, consisting of a central body bearing long, widely-spaced, flexible processes that loop back towards the vesicle surface and frequently are connected to the vesicle at both ends to form very large, irregular trabeculae. Processes have broadly conical bases.

Dimensions. Insufficient specimens are available for adequate statistical analysis, but measured parameters are given here as a guide. Holotype: Maximum diameter of vesicle, 98 µm; length of processes, 30 µm. Other specimens: Maximum diameter of vesicle, 92 (103.3) 128 µm; standard deviation, 12.76. Process bases are variable, but may be up to 20 µm wide and up to 15 µm high. The tendril part of the process may be up to 40 µm long, and joined processes form loops extending up to 40 µm beyond the vesicle margin. Process width from 1-3 µm.

Remarks. The vesicle is of medium size, subspherical to polygonal, with an irregular equatorial margin that results from the broad, conical process bases (Figs 187-188). Processes are open to the vesicle cavity. The lateral margins of the cones are commonly concave, but are occasionally convex, and taper to an apex about 1 µm wide. A long, thin, whip-like process extends from the tip of each cone, and is sinuous. Some processes can be traced through several different planes of focus without revealing a termination (Figs 185B-C; 187-188). They are apparently continuous with an adjacent process, and form a large loop-like structure that is here interpreted as a trabecula. These loops may extend up to 40 µm beyond the vesicle margin, and the combined processes may be up to 80 µm long. The ratio of process length to vesicle diameter and looping of the processes are features that distinguish this taxon from others with hollow processes (Fig. 44A). Some processes have free distal ends, but the ends of such processes are usually broken (Figs 185C, 186C). Only the conical process bases remain in some badly corroded specimens (Figs 185A, 186A-B,D-F).

The presence of trabeculae gives the species a resemblance to some chorate dinoflagellate cysts, although other dinocyst features, such as the presence of paratabulation or a cingulum, have not been observed. Acritarchs with a similar process morphology, described as 'an ectophragm of richly branched, terminally fused, hollow, septate processes' were illustrated from the early Neoproterozoic Wynniatt Formation of Canada (Butterfield & Rainbird, 1998), but have not yet been formally described. Processes in the Canadian material appear thinner than in *Labruscasphaeridium intertextum*, but insufficient details are available at present to allow detailed comparison.

Comparisons. Apart from the Wynniatt Formation material referred to above, no other Neoproterozoic acritarchs show the combination of a moderately large size, broad conical process bases, and long thin hollow processes that are open to the vesicle, but which are terminally fused.