TEM evidence for eukaryotic diversity in mid-Proterozoic oceans

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ABSTRACT

Biomarker molecular fossils in 2770 Ma shales suggest that the Eucar a diverged from other principal domains earl in Earth histor . Nonetheless, at present, the oldest fossils that can be assigned to an e tant eukar otic

MATERIALS AND METHODS

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Fig. 2 Eukar otic microfossils from the Roper Group, Australia. a–e: *Tappania plana*, a–c: light microscop , a: specimen ith heteromorphic processes (including a branched process-long arro) distributed as mmetricall about the vesicle and budding (short arro), b: specimen ith possible e c stment structure (arro), c: specimen ith as mmetricall distributed processes ith closed, slightl e panded terminations, d: SEM sho ing structural continuit bet een vesicle all and process bases, e: TEM sho ing unila ered homogeneous electron-dense all ith variable thickness due to taphonomic processes; f–i: *Valeria lophostriata*, f: partiall enrolled half vesicle, likel resulting from medial split (light microscop), g: SEM sho ing ridges spaced 1 µm apart on the internal surface of the vesicle, h, i: TEM sho ing t o alls of compressed vesicle ith ridges (h) and unila ered homogeneous electron-dense all (i). Scale bar in a = 35 µm for a, 20 µm for b, 25 µm for c, 33.5 µm for d, 1.4 µm for e, 32 µm for f, 2.5 µm for g, 2 µm for h, 0.25 µm for i.

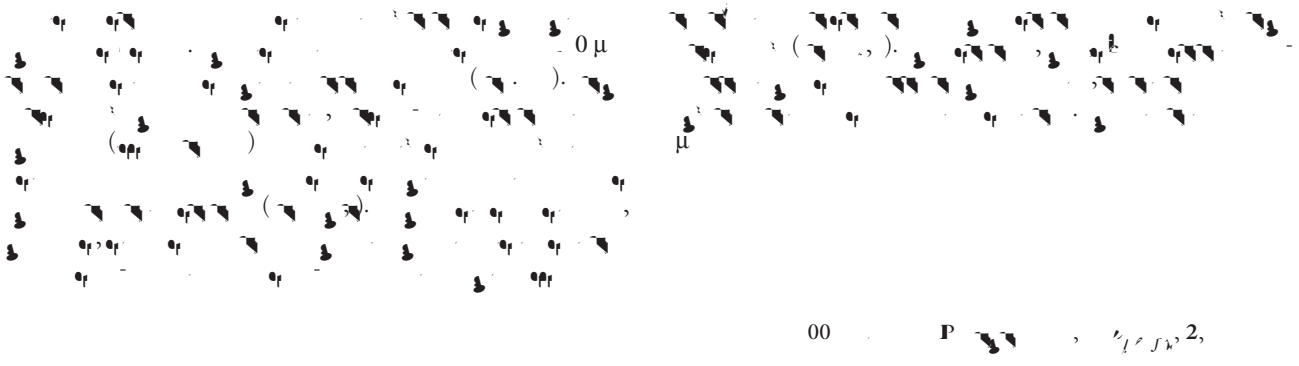

Fig. 4 Leiosphaerids from the Roper Group, Australia. a–d, m: *Leiosphaeridia jacutica*. a: specimen sho ing thick folds (light microscop), b: SEM sho ing a smooth