

Fig. S1. *Prorocentrum venetum* (strain AYR19-3E9), LM. **A–G.** Living cells. **H–X.** Formaldehyde fixed cells. **O–U.** Cells stained with solophenylflavine in epifluorescence and blue-light excitation. **V–X.** The same cell stained with DAPI in brightfield (**V**), with blue-light excitation (**W**) or with UV excitation (**X**), showing shape and position of the chloroplast and the posterior position of nucleus (in blue color). Scale bars: 5  $\mu\text{m}$ .

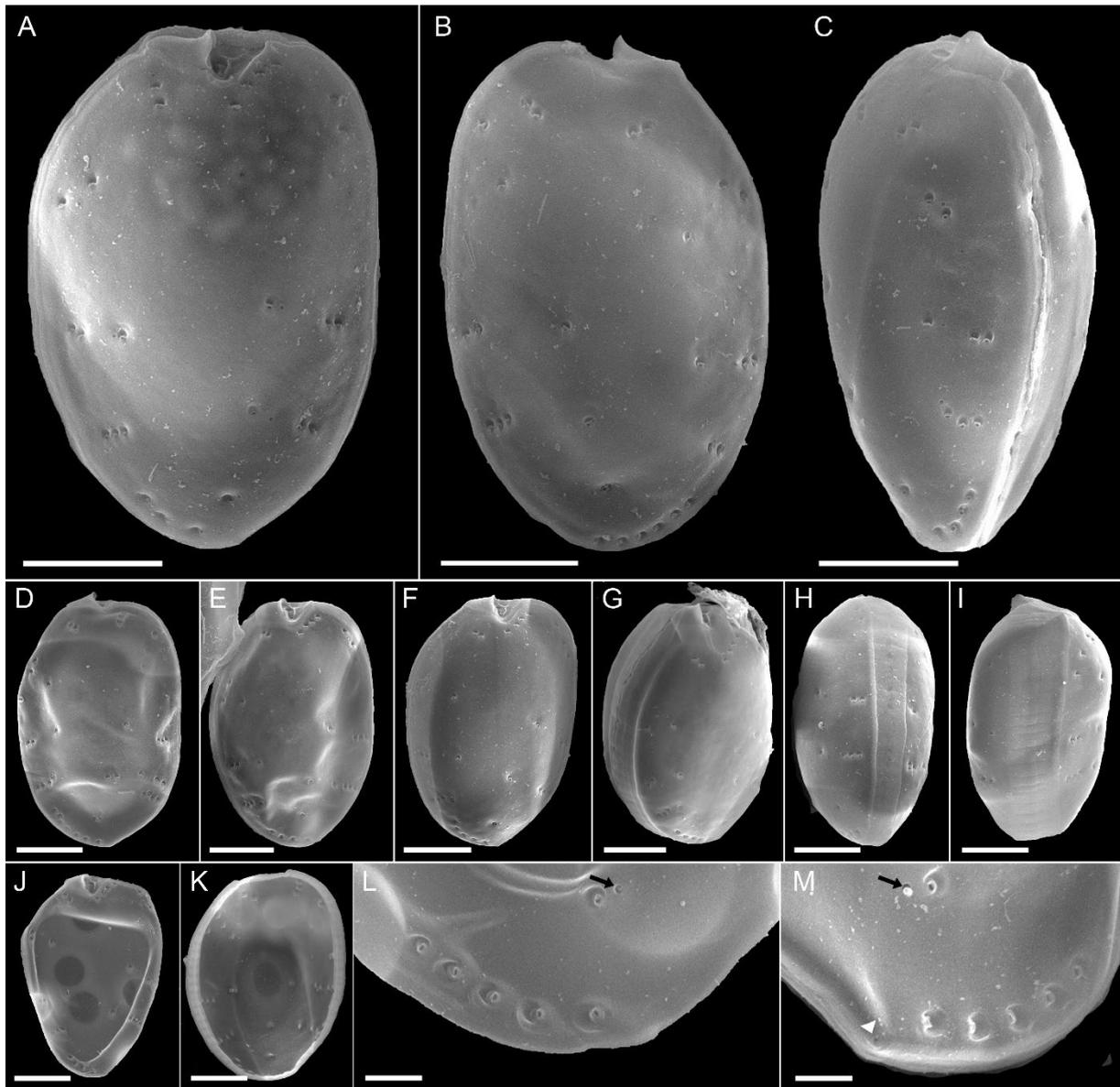


Fig. S2. *Prorocentrum venetum* (strain AYR19-3E9), SEM. **A, D–G, J.** Right lateral view. **B.** Left lateral view. **C.** Left dorsal view of a young cell with narrow intercalary band. **H–I.** Ventral view of an enlarged cell. **K.** Internal face of left plate. **L–M.** The three types of pores at the posterior end of cells: large pores, small pores (black arrows) and the mini-pore (white arrowhead). Scale bars: 5  $\mu\text{m}$  (**A–K**) or 1  $\mu\text{m}$  (**L–M**).

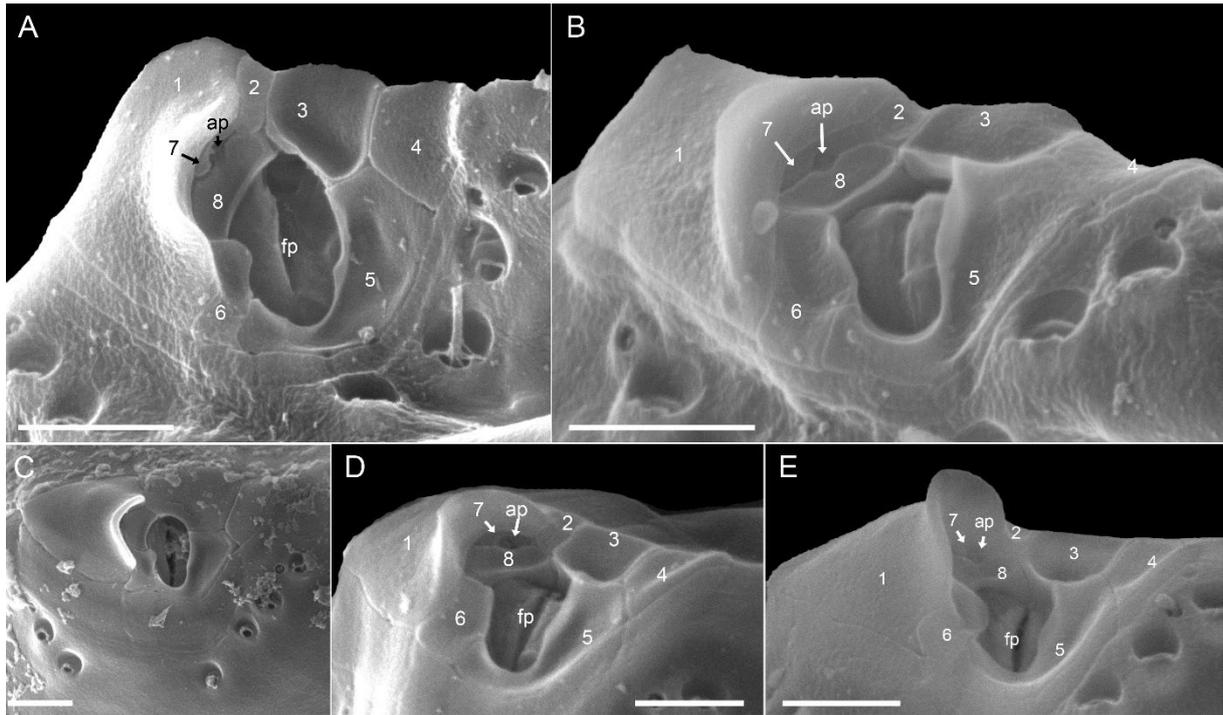


Fig. S3. *Prorocentrum venetum* (strain AYR19-3E9), SEM. A–E. Detail views of the apical periplagellar area, with platelet numbering, in right apical view (A–B, D–E) and in apical view (C). ap = accessory pore, fp = flagellar pore. Scale bars: 1 μm.