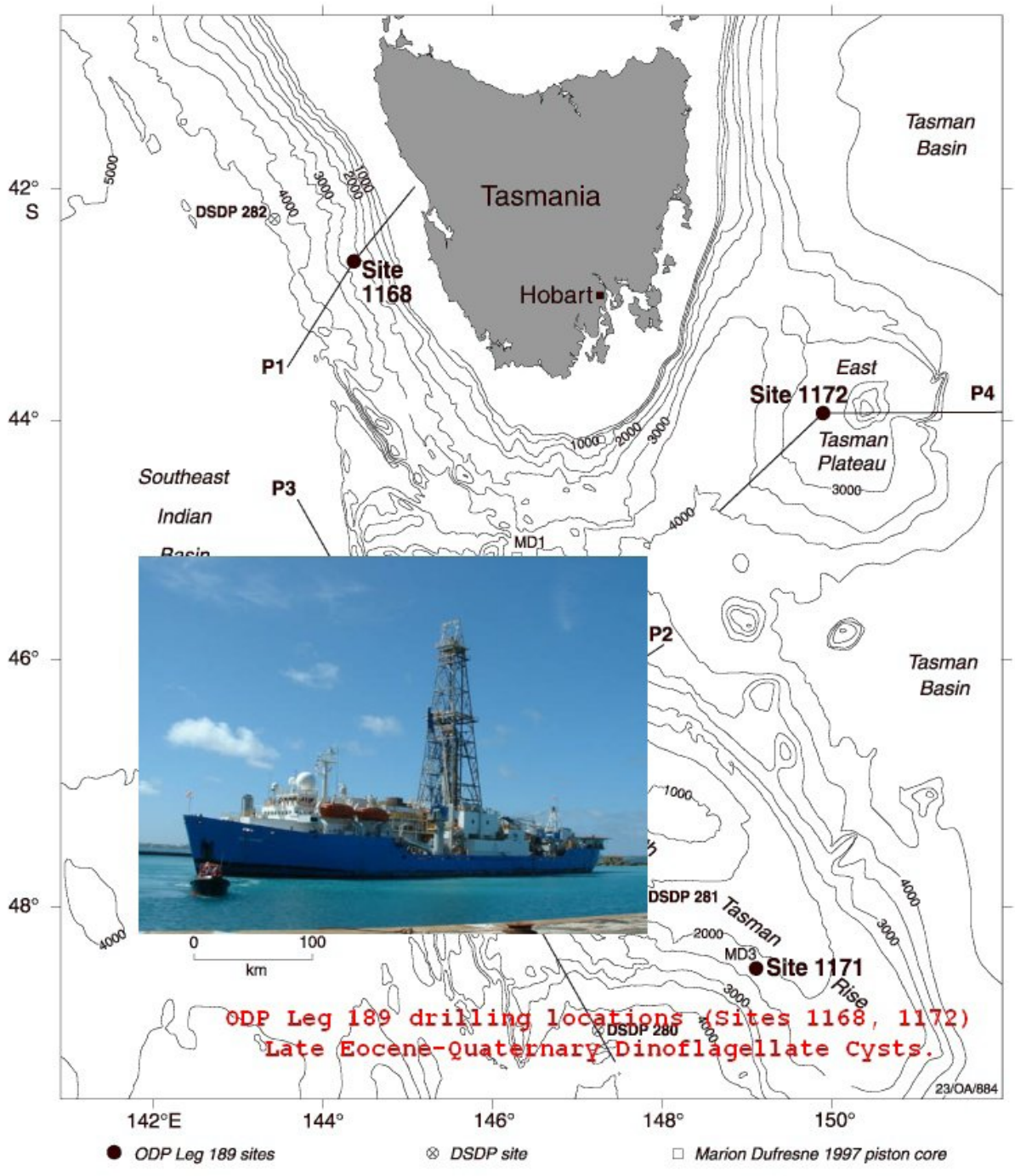

ODP Leg 189 drilling locations (Sites 1168, 1172)
Late Eocene-Quaternary Dinoflagellate Cysts.

Plate P1. Illustrations of taxa, sample, slide, and England Finder (EF) coordinates. Scale bar = ~20 µm unless stated otherwise. **1–3.** *Acanthaulax*? sp. (Sample 189-1168A-24X-7, 40–42 cm); 2, V39-0. **4–8.** *Apteodinium australiense* (Sample 189-1168A-38X-2, 60–62 cm); (4, 5) 1, R40-1; (6–8) 1, P55-0. **9, 10.** *Areoligera*? *semicirculata* (Sample 189-1168A-70X-3, 60–62 cm); 2, P32. **11, 12.** *Ataxiodinium choane* (Sample 189-1168A-10H-7, 60–62 cm); 1, S31-1/2. (Continued on next 12 pages.)

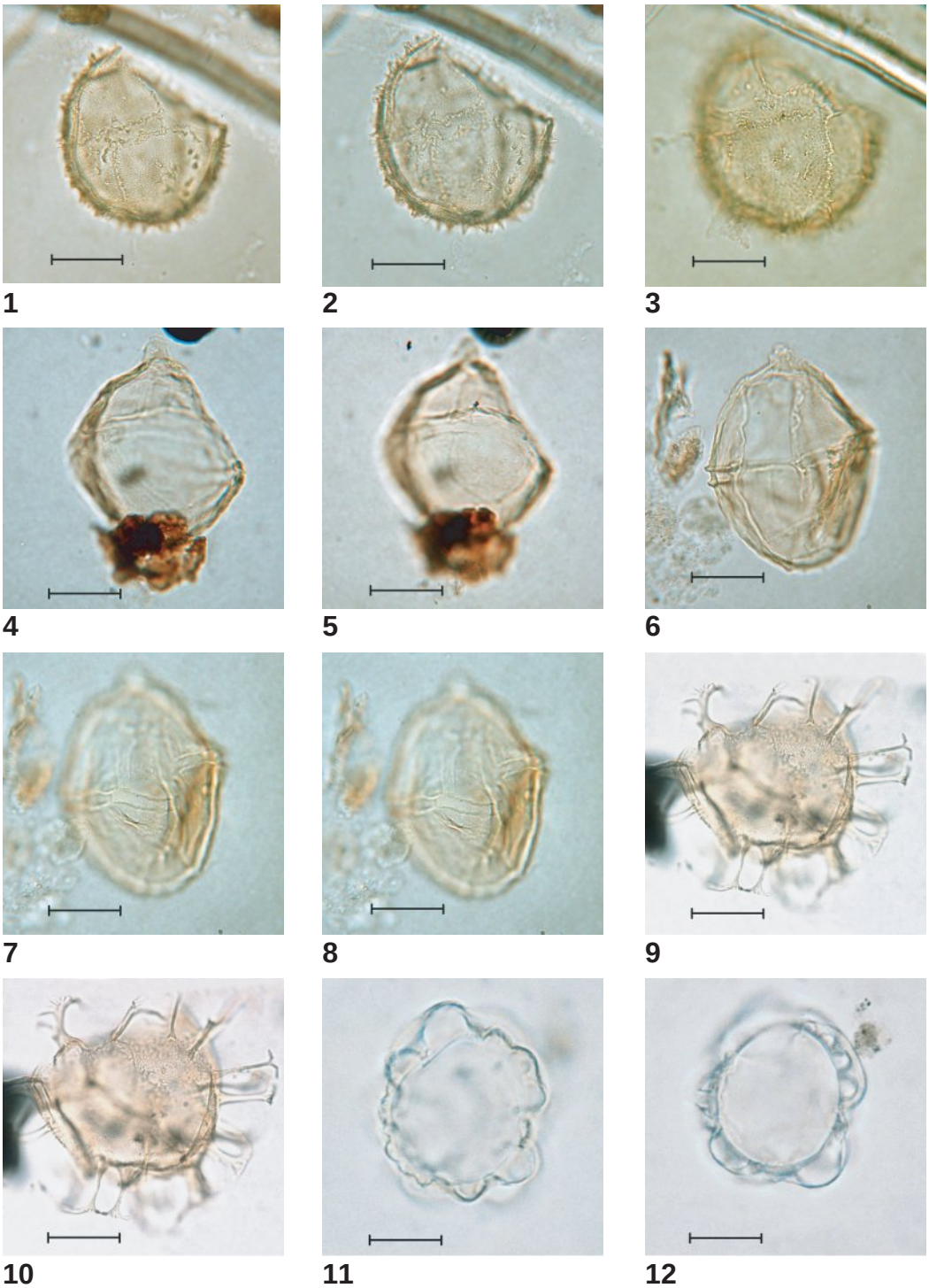

Plate P1 (continued). 13, 14. *Ataxiodinium choane* (Sample 189-1168A-8H-4, 60–62 cm); 2, V33-4. **15.** *Ataxiodinium confusum* (Sample 189-1168A-4H-3, 60–62 cm); 1, W26-2. **16, 17.** *Brigantedinium* spp. (Sample 189-1168A-03H-3, 60–62 cm); (16) 2, V30-3; (17) 2, U23-2. **18–20.** *Caligodinium pychnum* (Sample 189-1168A-38X-2, 60–62 cm); (18, 19) 1, S37-1; (20) 1, R36. **21, 22.** *Cannosphaeropsis* sp. A (Sample 189-1168A-70X-3, 60–62 cm); 1, E14-4. **23, 24.** *Cerebrocysta poulsenii* (Sample 189-1168A-20X-2, 60–62 cm); 1, O48-3 (scale bar = ~15 µm). (Continued on next page.)


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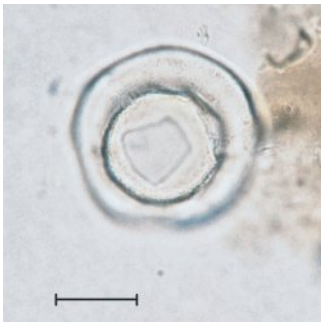
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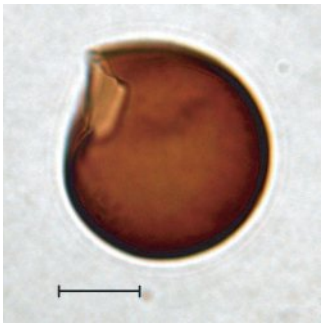
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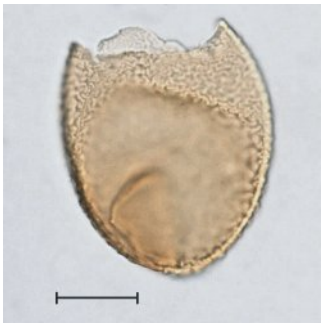
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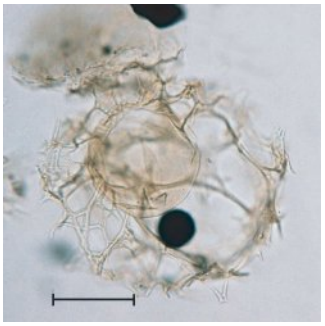
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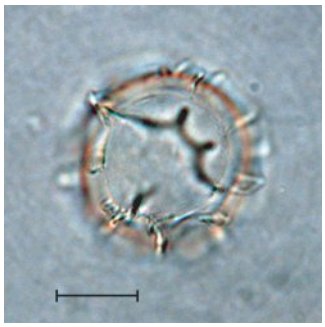
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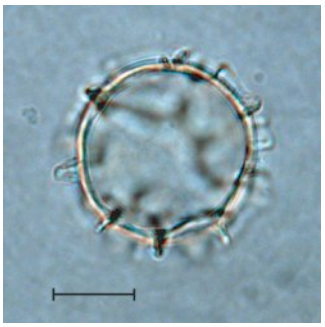
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Plate P1 (continued). 25–27. *Cerebrocysta poulsenii* (Sample 189-1168A-20X-2, 60–62 cm); 1, O48-3 (scale bar = ~15 µm). **28–31.** *Cerebrocysta* spp. (Sample 189-1168A-20X-2, 60–62 cm); 1, J49-4 (scale bar = ~15 µm). **32, 33.** *Cerebrocysta* sp. A (Sample 189-1168A-33X-3, 60–62 cm); 2, H35-4 (scale bar = ~30 µm). **34.** *Chiropteridium* spp. (Sample 189-1168A-50X-2, 60–62 cm); 1, S26-1. **35, 36.** *Cleistosphaeridium* spp. (Sample 189-1168A-64X-5, 60–62 cm); 1, J51-3. (Continued on next page.)


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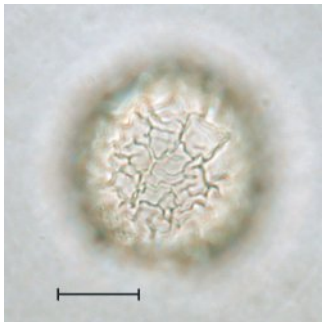
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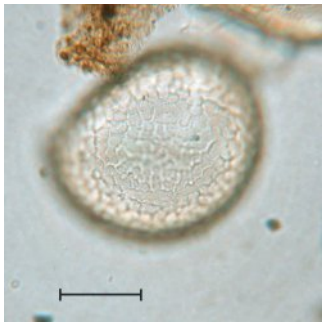
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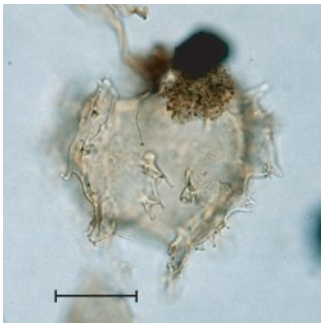
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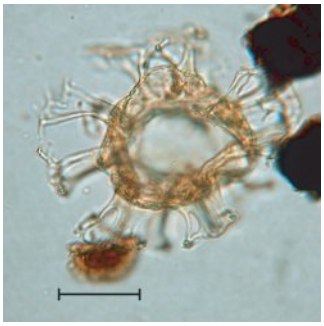
Plate P1 (continued). 37, 38. *Cooksonidium capricornum* (Sample 189-1168A-86X-5, 60–62 cm); 1, S49-4. **39.** *Deflandrea convexa* (Sample 189-1168A-83X-4, 60–62 cm); 2, L28-2. **40.** *Diphyes ficusoides* (Sample 189-1168A-84X-3, 60–62 cm); 2, D27. **41, 42.** *Distatodinium biffii* (Sample 189-1168A-54X-2, 60–62 cm); 2, M21-1 (scale bar = ~35 µm). **43–45.** *Ectosphaeropsis burdigalensis* (Sample 189-1168A-50X-2, 60–62 cm) (scale bar = 30 µm); (43) 1, N13-4; (44) 1, K30-3; (45) 1, L30-2. **46, 47.** *Edwardsiella sexispinosum* (Sample 189-1168A-38X-2, 60–62 cm); 1, U30-1. **48.** *Emmetrocysta urnaformis* (Sample 189-1168A-88X-1, 60–62 cm); 1, T27. (Continued on next page.)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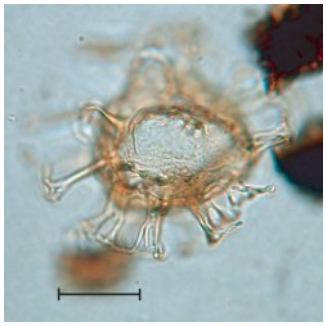
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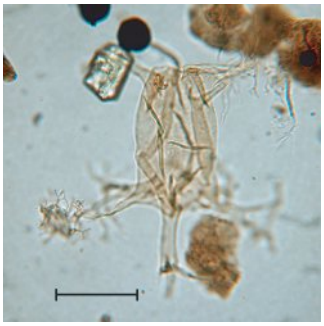
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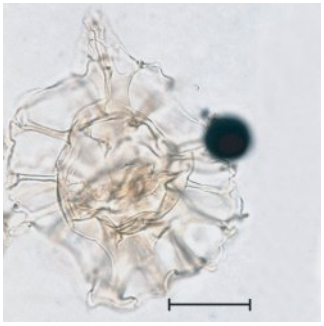
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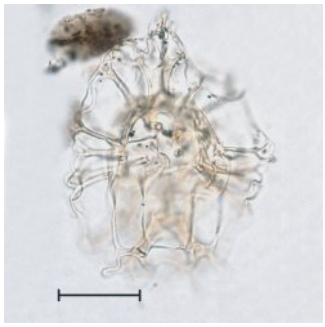
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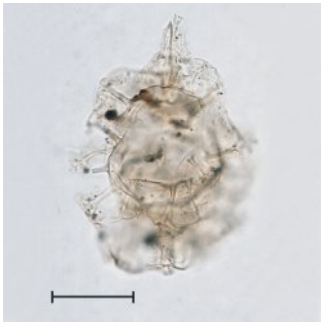
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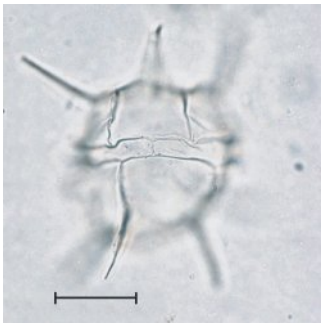
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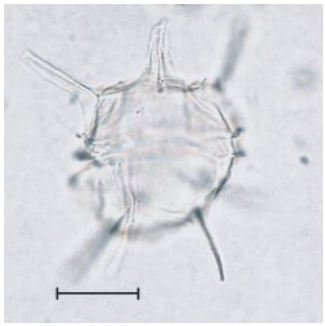
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Plate P1 (continued). 49. *Eurydinium* sp. (Sample 189-1168A-82X-1, 60–62 cm); 1, P28-1. **50, 51.** *Gelatia inflata* (Sample 189-1168A-64X-5, 60–62 cm); 1, P63-3 (scale bar = ~10 µm). **52–54.** *Glaphyrocysta intricata* (Sample 189-1168A-57X-7, 60–62 cm); 1, S22-4. **55–60.** *Mendicodinium*. sp. A Wrenn and Kokinos, 1986 (Sample 189-1168A-25X-4, 60–62 cm); (55–57) 1, R36-3; (58–60) 1, T51-4. (Continued on next page.)

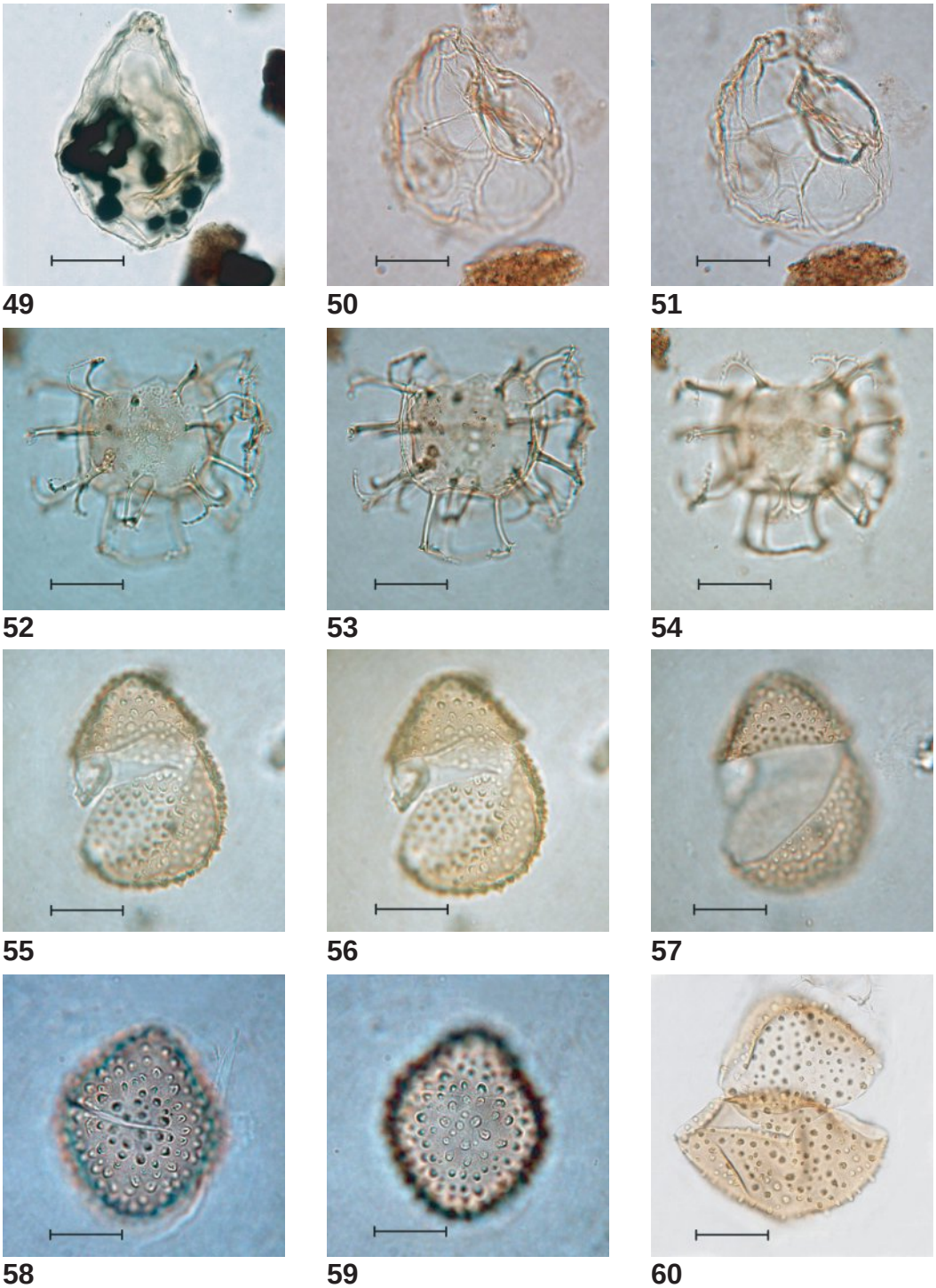

Plate P1 (continued). 61–63. *Hystrichokolpoma pusilla* (Sample 189-1168A-65X-3, 60–62 cm); 1, O57-4. **64, 65.** *Hystrichokolpoma rigaudiae* (Sample 189-1168A-42X-4, 60–62 cm); 2, G35. **66, 67.** *Hystrichokolpoma* sp. A (Samples 189-1168A-66X-1, 60–62 cm); 1, Q15-3. **68.** *Hystrichosphaeropsis obscura* (Sample 189-1168A-40X-6, 60–62 cm); 1, S19-4. **69, 70.** *Impagidinium aculeatum* (Sample 189-1168A-6H-3, 60–62 cm); 1, W26-2 (scale bar = ~10 µm). **71, 72.** *Impagidinium paradoxum* (Sample 189-1168A-3H-3, 60–62 cm); 2, V20-4 (scale bar = ~10 µm). (Continued on next page.)


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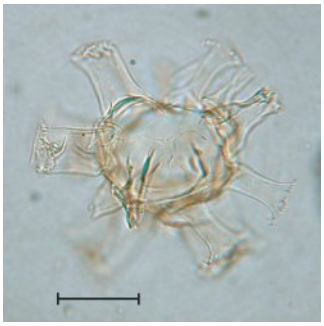
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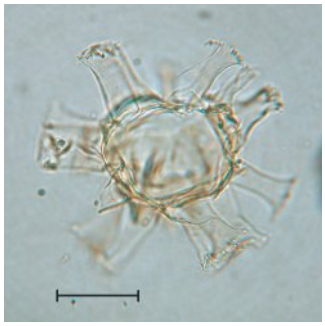
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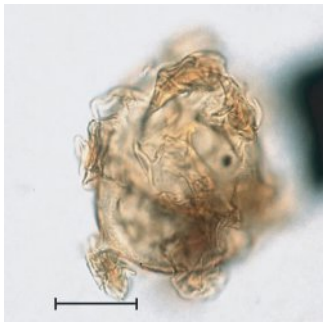
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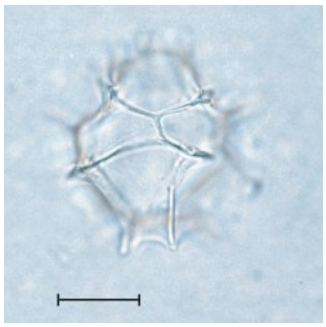
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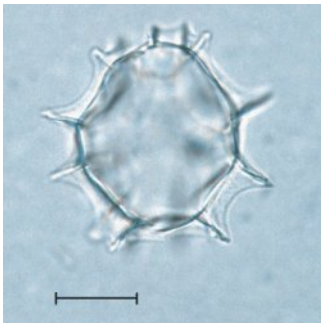
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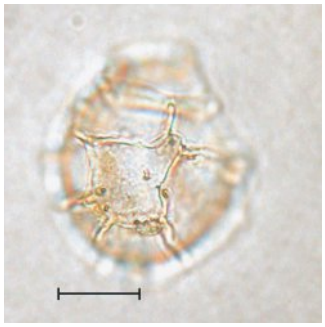
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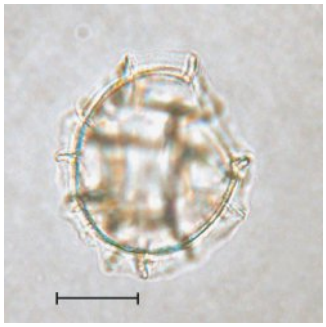
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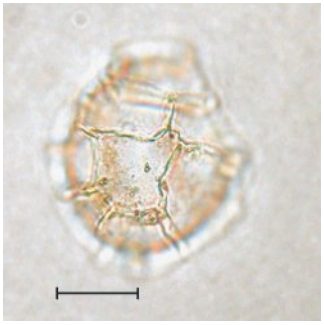
Plate P1 (continued). 73, 74. *Impagidinium paradoxum* (Sample 189-1168A-3H-3, 60–62 cm); 2, V20-4 (scale bar = ~10 µm). **75, 76.** *Impagidinium patulum* (Sample 189-1168A-20X-2, 60–62 cm); 1, F38-3. **77.** *Invertocysta tabulata* (Sample 189-1168A-10H-7, 60–62 cm); 1, R32. **78, 79.** *Labyrinthodinium truncatum* (Sample 189-1168A-23X-5, 60–62 cm); 2, S23-3 (scale bar = ~10 µm). **80.** *Melitasphaeridium choanophorum* (Sample 189-1168A-13X-1, 60–62 cm); 2, M26. **81–84.** *Membranilarnacia*? *picena* (Sample 189-1168A-65X-3, 60–62 cm); 1, R57-2. (Continued on next page.)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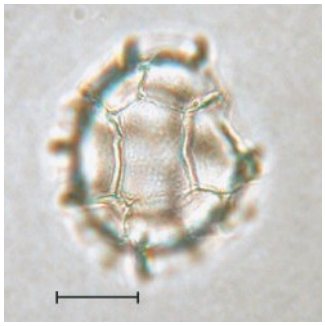
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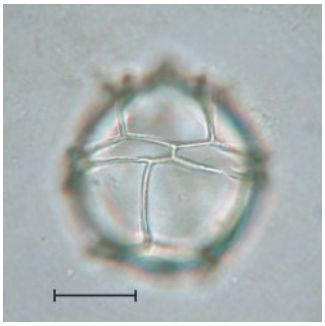
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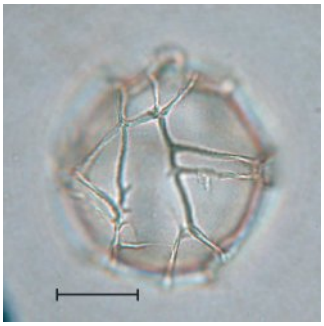
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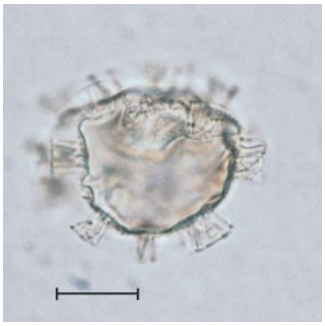
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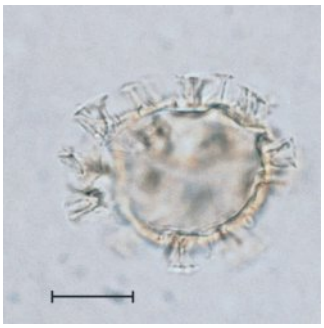
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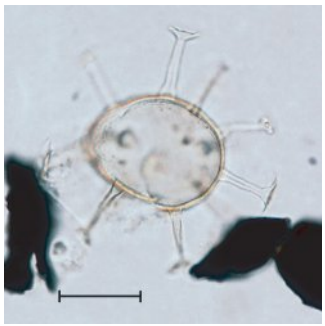
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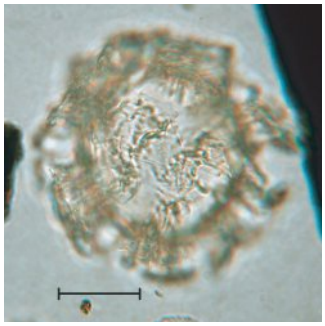
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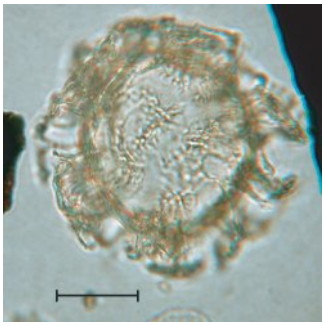
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Plate P1 (continued). 85–87. *Membranilarnacia*? *picena* (Sample 189-1168A-41X-3, 60–62 cm); 1, K35-3. **88–90.** *Membranilarnacia* sp. (Sample 189-1168A-84X-6, 60–62 cm); 1, U32-3 (scale bar = ~10 µm). **91–93.** *Nematosphaeropsis labyrinthus* (Sample 189-1168A-20X-2, 60–62 cm); 1, H47-4 (scale bar = ~10 µm). **94.** *Octodinium askiniae* (Sample 189-1168A-93X-6, 60–62 cm); 1, R25-2. **95, 96.** *Operculodinium piaseckii* (Sample 189-1168A-25X-4, 60–62 cm); 1, J40-3 (scale bar = ~15 µm). (Continued on next page.)


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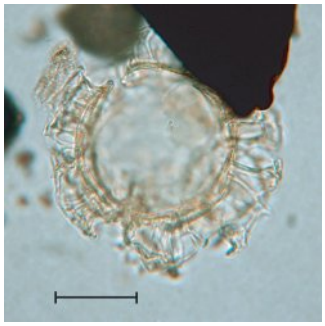
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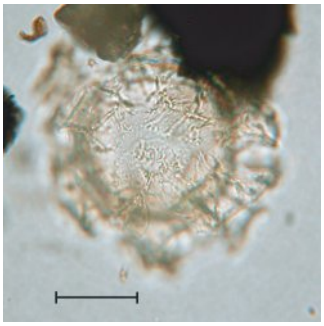
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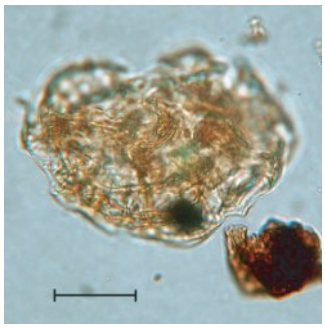
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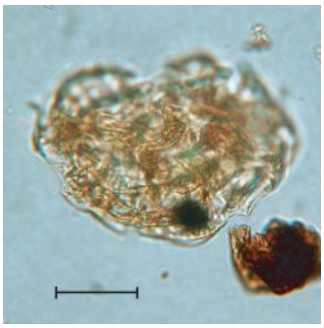
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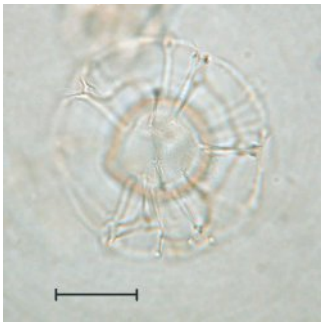
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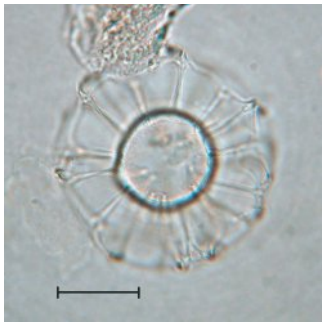
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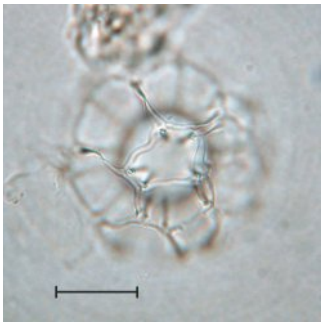
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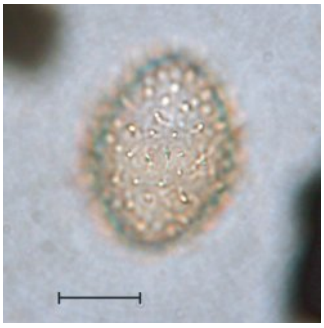
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Plate P1 (continued). 97–99. *Operculodinium janduchenei* (Sample 189-1168A-10H-7, 60–62 cm); 1, T22-4 (scale bar = ~15 µm). **100–102.** Cyst of *Pentapharsodinium dalei* and *Algidasphaeridium minutum cezare* (Sample 189-1168A-3H-3, 60–62 cm); 2, T20-1. **103–106.** *Pentadinium laticinctum* (Sample 189-1168A-33X-3, 60–62 cm); 1, T51-1 (scale bar = ~15 µm). **107, 108.** *Phthanoperidinium filigranum* (Sample 189-1168A-78X-7, 60–62 cm); 2, T30-2 (scale bar = ~10 µm). (Continued on next page.)


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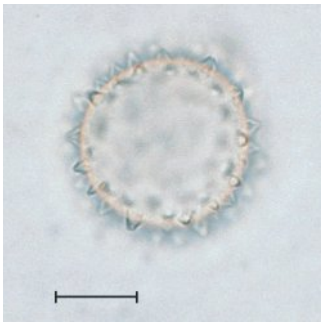
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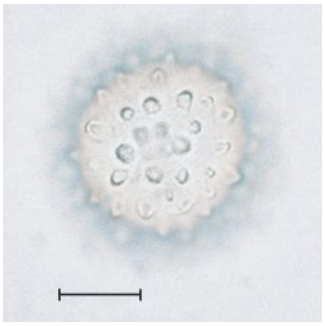
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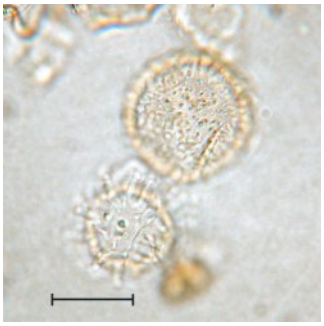
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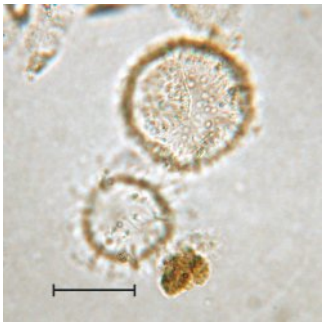
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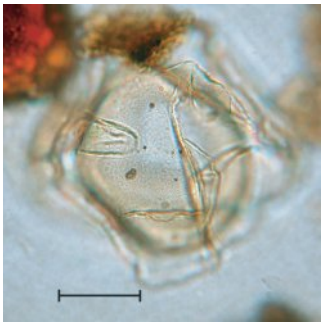
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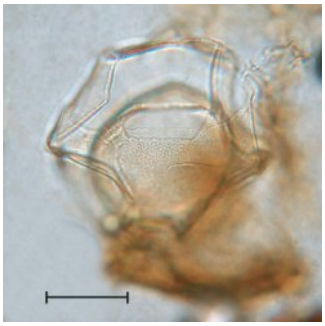
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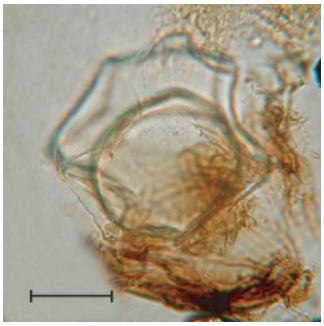
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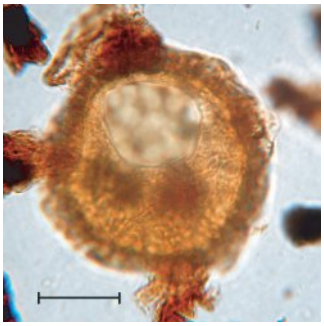
108

Plate P1 (continued). 109–111. *Samlandia chlamydophora* (Sample 189-1168A-79X-6, 60–62 cm); 1, J39. **112, 113.** *Schematophora speciosa* (Sample 189-1168A-94X-3, 60–62 cm); 1, T31-2 (scale bar = ~10 µm). **114, 115.** *Spiniferites* cf. *mirabilis* (Sample 189-1168A-3H-3, 60–62 cm); 2, U23-4. **116, 117.** *Stoveracysta* cf. *conerae* (Sample 189-1168A-38X-4, 60–62 cm); 1, Q27-1 (scale bar = ~15 µm). **118, 119.** *Stoveracysta ornata* (Sample 189-1168A-79X-6, 60–62 cm); 1, J35-4 (scale bar = ~15 µm). **120.** *Stoveracysta ornata* (Sample 189-1168A-79X-6, 60–62 cm); 1, Q32-3 (scale bar = ~15 µm). (Continued on next page.)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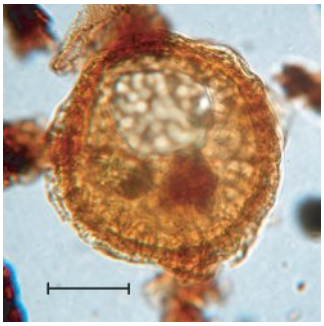
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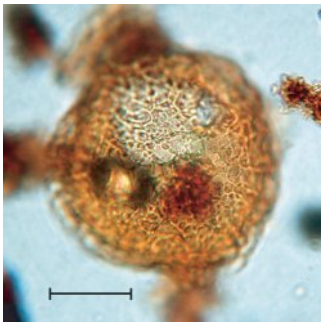
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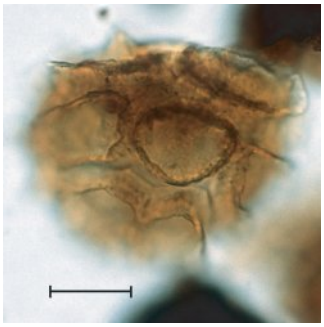
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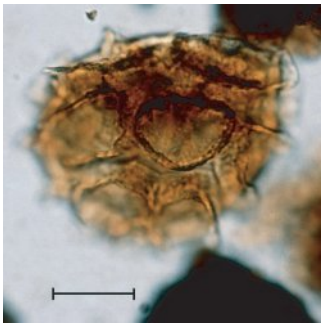
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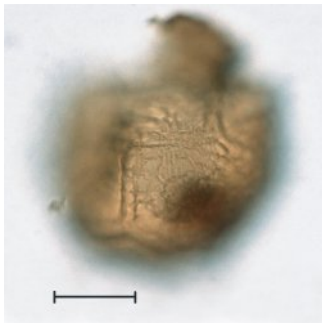
Plate P1 (continued). 121. *Stoveracysta ornata* (Sample 189-1168A-79X-6, 60–62 cm); 1, Q32-3 (scale bar = ~15 µm). **122, 123.** *Stoveracysta kakanuiensis* (Sample 189-1168A-79X-5, 60–62 cm); 1, M34-1 (scale bar = ~15 µm). **124.** *Stoveracysta ornata* (Sample 189-1168A-79X-5, 60–62 cm); 1, V22-3 (scale bar = ~15 µm). **125–127.** *Svalbardella* sp. (Sample 189-1168A-58X-3, 60–62 cm); (125) 2, H20-1; (126, 127) 1, V57-3. **128.** *Apteodinium australiense* (Sample 189-1168A-45X-3, 59–61 cm); scanning electron microscope (SEM). **129.** *Cleistosphaeridium* sp. and *Eocladopyxis* sp. (Sample 189-1168A-45X-3, 59–61 cm); SEM. **130.** *Cordosphaeridium minimum* (Sample 189-1168A-45X-3, 59–61 cm); SEM. **131.** *Dapsilidinium* sp. (Sample 189-1168A-45X-3, 59–61 cm); SEM. **132.** *Eocladopyxis* sp. (Sample 189-1168A-45X-3, 59–61 cm); SEM. (Continued on next page.)


121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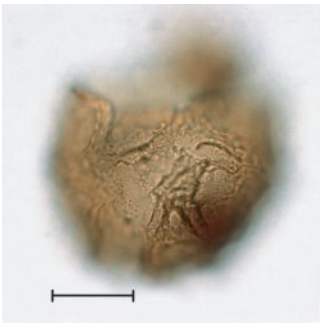
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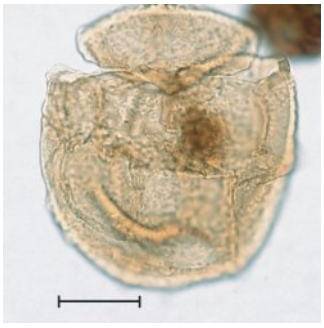
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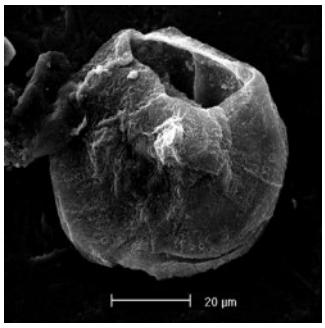

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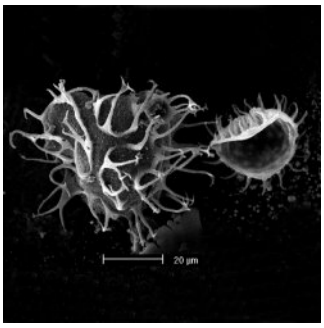

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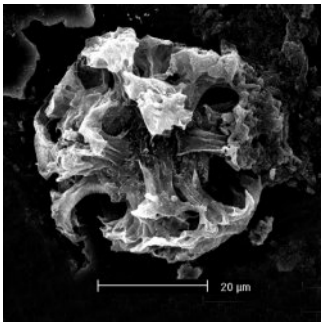

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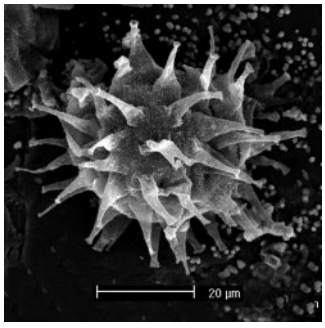

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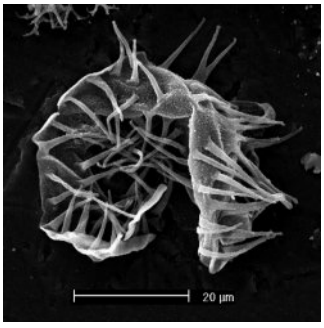
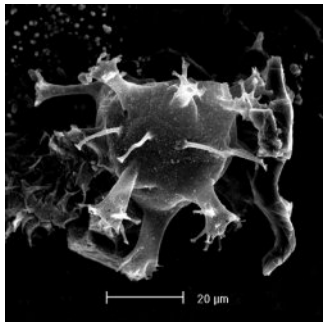


132

Plate P1 (continued). 133. *Hystrichokolpoma rigaudiae* (Sample 189-1168A-45X-3, 59–61 cm); SEM. **134.** *Impagidinium aculeatum* (Sample 189-1168A-45X-3, 59–61 cm); SEM. **135.** *Impagidinium paradoxum* (Sample 189-1168A-45X-3, 59–61 cm); SEM. **136.** *Nematosphaeropsis labyrinthea* (Sample 189-1168A-45X-3, 59–61 cm); SEM. **137.** *Operculodinium* sp., (Sample 189-1168A-45X-3, 59–61 cm); SEM. **138.** *Operculodinium centrocarpum* (Sample 189-1168A-45X-3, 59–61 cm); SEM. **139.** *Reticulatosphaera actinocoronata* (Sample 189-1168A-45X-3, 59–61 cm); SEM. **140, 142–144.** Skolochorate acritarchs; SEM; (140) Sample 189-1168A-45X-3, 59–61 cm; (142-144) Sample 189-1168A-42X-4, 60–62 cm. **141.** Skolochorate acritarchs and framboidal pyrite spheres (Sample 189-1168A-38X-2, 60–62 cm); SEM. (Continued on next page.)



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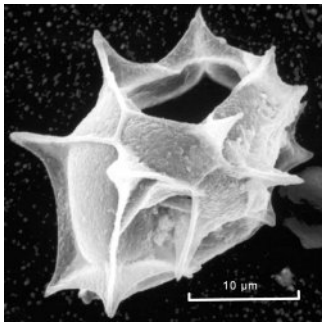

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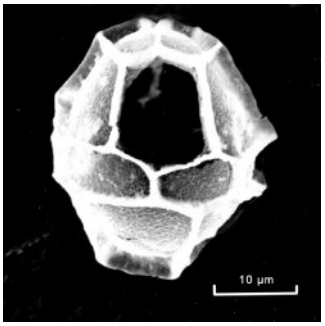

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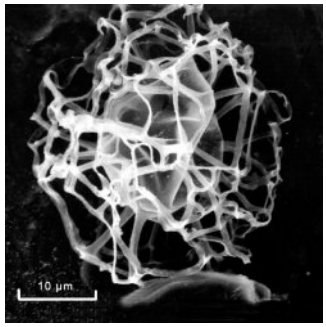

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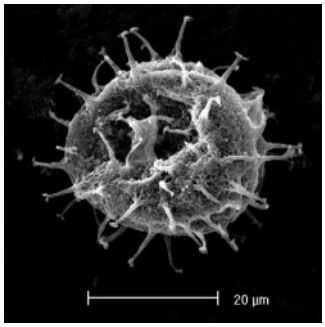

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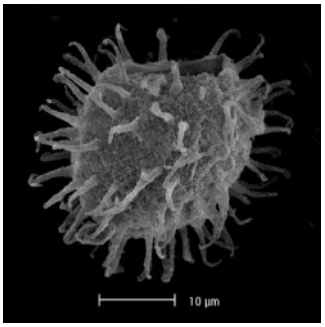

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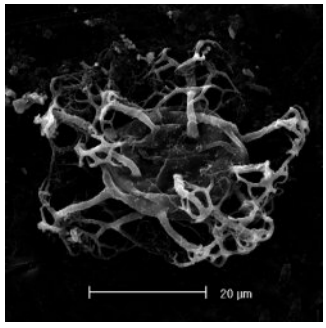

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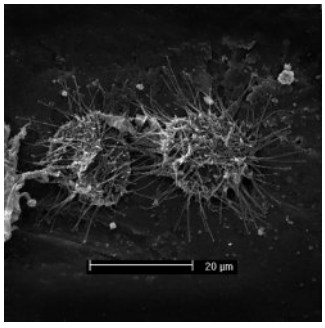

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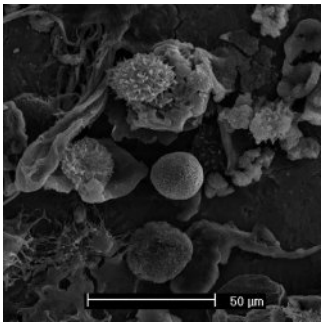

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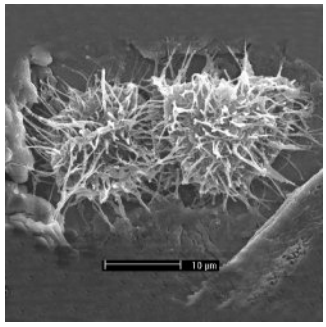

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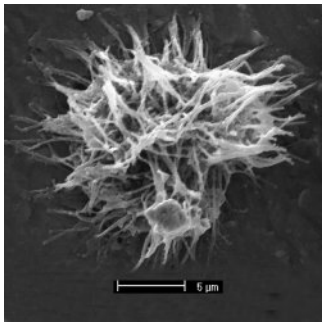

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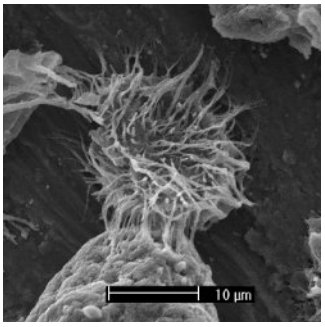

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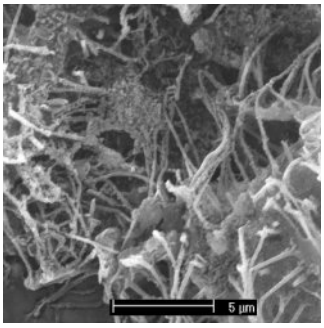
Plate P1 (continued). 145–151. Skolochorate acritarchs; SEM; (145) Sample 189-1168A-42X-4, 60–62 cm; (146–151) Sample 189-1168A-38X-2, 60–62 cm.



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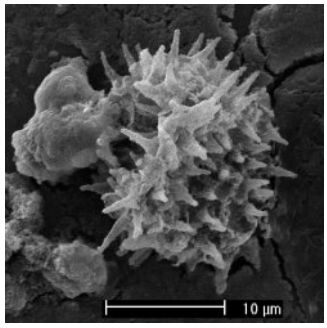

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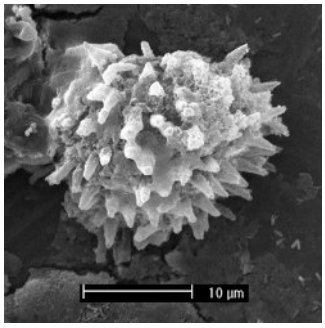

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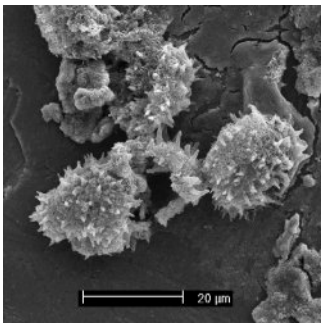

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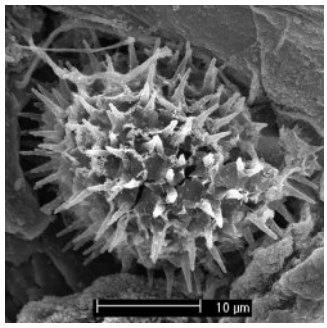

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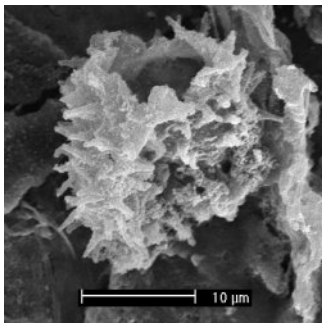

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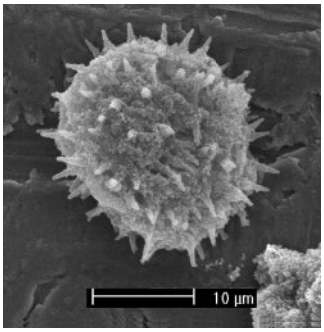

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Plate P1. Illustrations of taxa, sample, and slide number. Scale bar = ~20 µm unless stated otherwise. Scanning electron microscope (SEM) photographs have varying scale bars. **1.** *Adnatosphaeridium multispinosum* (Sample 189-1172D-15R-3, 40–42cm) (1). **2.** *Aiora fenestrata* (Sample 189-1172D-15R-3, 40–42cm) (1); scale bar = ~15 µm. **3, 4.** *Aireiana verrucosa* (Sample 189-1172A-39X-5, 55–57 cm) (1). **5–7.** *Alisocysta circumtabulata;* (5) Sample 189-1172A-46X-2, 85–87 cm (1). (6, 7) Sample 189-1172D-21R-4, 15–18 cm (1); scale bar = ~15 µm. **8, 9.** *Alisocysta margarita* (Sample 189-1172D-16R-2, 40–42 cm) (1); scale bar = ~15 µm. **10, 11.** *Alisocysta reticulata* group (Sample 189-1172D-20R-1, 40–42 cm) (1); scale bar = ~15 µm. **12.** *Alisocysta reticulata* group (*Cassidium fragile*) (Sample 189-1172D-20R-5, 40–43 cm) (1); scale bar = ~10 µm. (Continued on next 17 pages.)

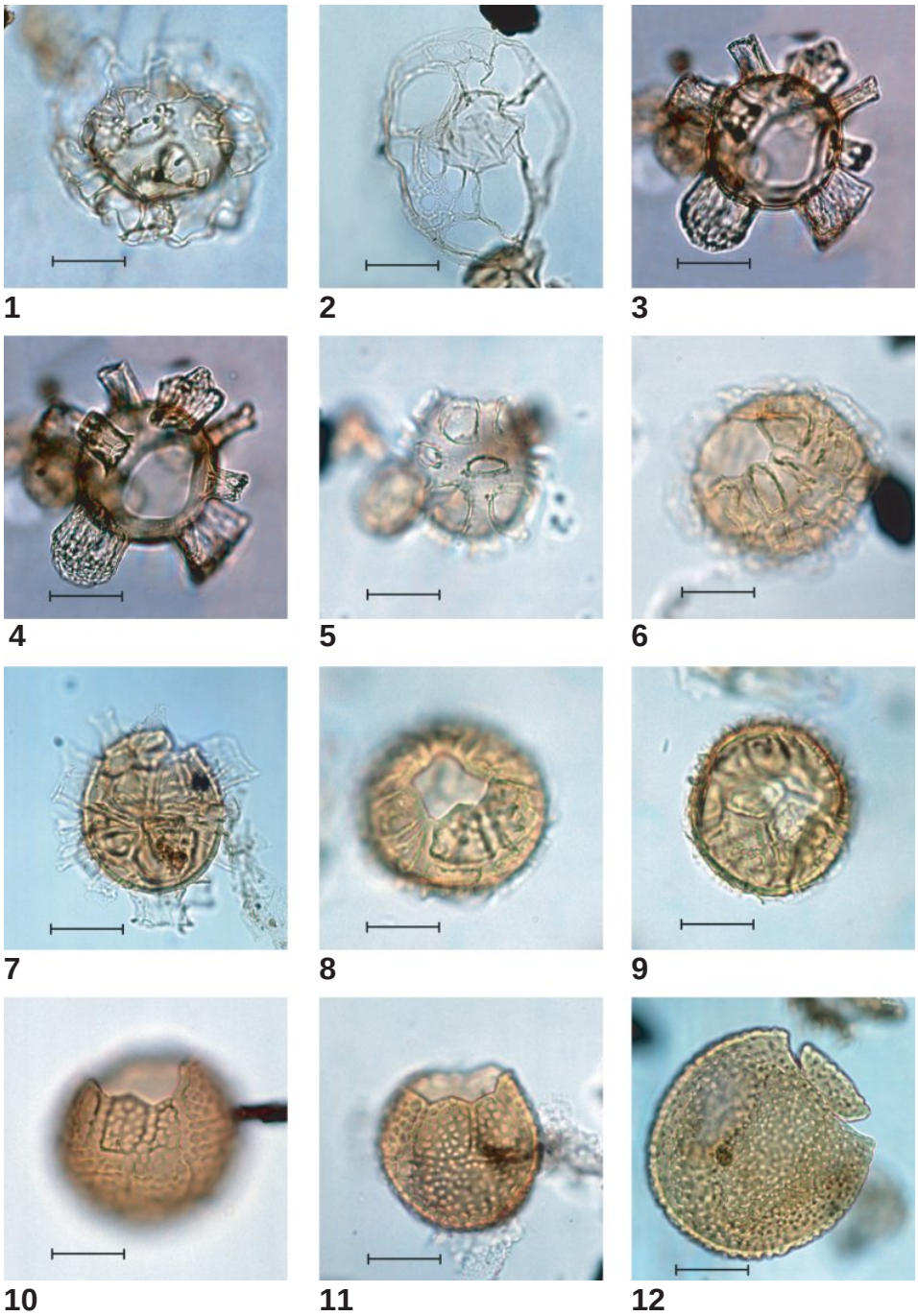


Plate P1 (continued). 13. *Alterbidinium acutulum* (Sample 189-1172D-24R-5, 130–133 cm) (1); scale bar = ~15 µm. **14.** *Alterbidinium distinctum* (Sample 189-1172A-39X-4, 85–87 cm) (2). **15–17.** *Arachnodinium antarcticum* (Sample 189-1172A-48-3, 85–87 cm) (1). **18, 19.** *Batiacasphaera cassicula* (Sample 189-1172D-10R-1, 40–42 cm) (1). **20–22.** *Brigantedinium*? sp. (Sample 189-1172A-39X-3, 128–130 cm) (2); scale bar = ~15 µm. Note periphragm delineating long slender antapical horns. **23.** *Brigantedinium* spp. (Sample 189-1172A-6H-4, 85–87 cm) (2); scale bar = ~15 µm. Specimen from the Quaternary; compare with *Brigantedinium*? sp. **24.** *Cerebrocysta bartonensis* (Sample 189-1172A-49X-4, 85–87 cm) (1); scale bar = ~15 µm. (Continued on next page.)

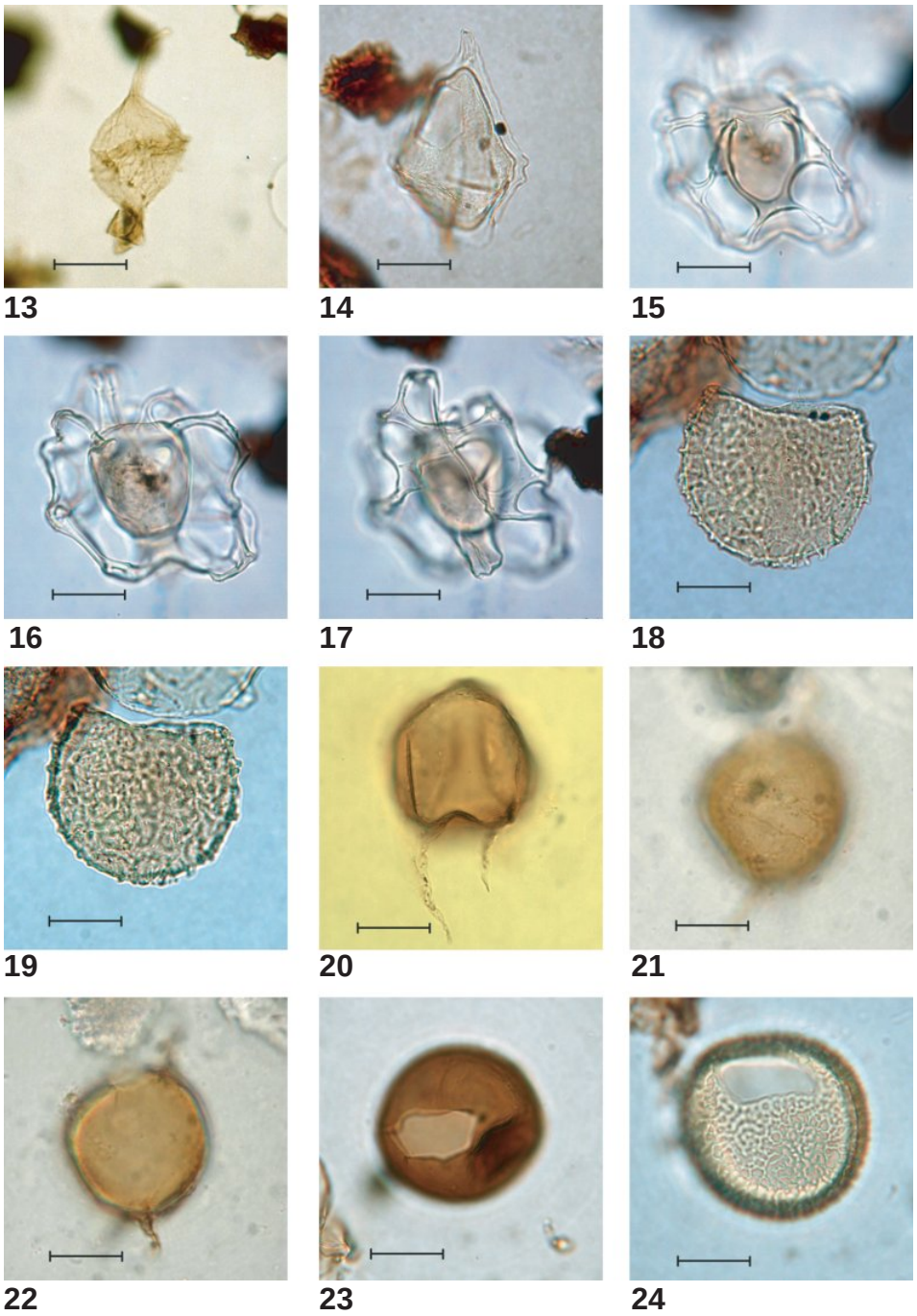


Plate P1 (continued). 25–28. *Cerodinium* sp. A; (25–27) Sample 189-1172D-24R-5, 67–69 cm (2); note elongated endocyst and short antapical horns; (28) Sample 189-1172D-24R-5, 130–133 cm (1); this specimen is somewhat comparable to *Cerodinium diebelii,* but lacks the longer antapical horns typical for that species. **29.** *Cerodinium dartmooria* (Sample 189-1172D-19R-3, 40–42) cm (1). **30, 31.** *Cerodinium speciosum*; (30) Sample 189-1172D-20R-7, 40–42 cm (1); (31) Sample 189-1172D-21R-3, 40–42 cm (1). **32, 33.** *Cerodinium striatum* (Sample 189-1172D-24R-5, 36–38 cm) (1). **34, 35.** *Charlesdowniea edwardsii* group (Sample 189-1172D-11R-5, 40–42 cm) (1). **36.** *Cleistosphaeridium diversispinosum* (Sample 189-1172D-14R-1, 40–42 cm) (2). (Continued on next page.)

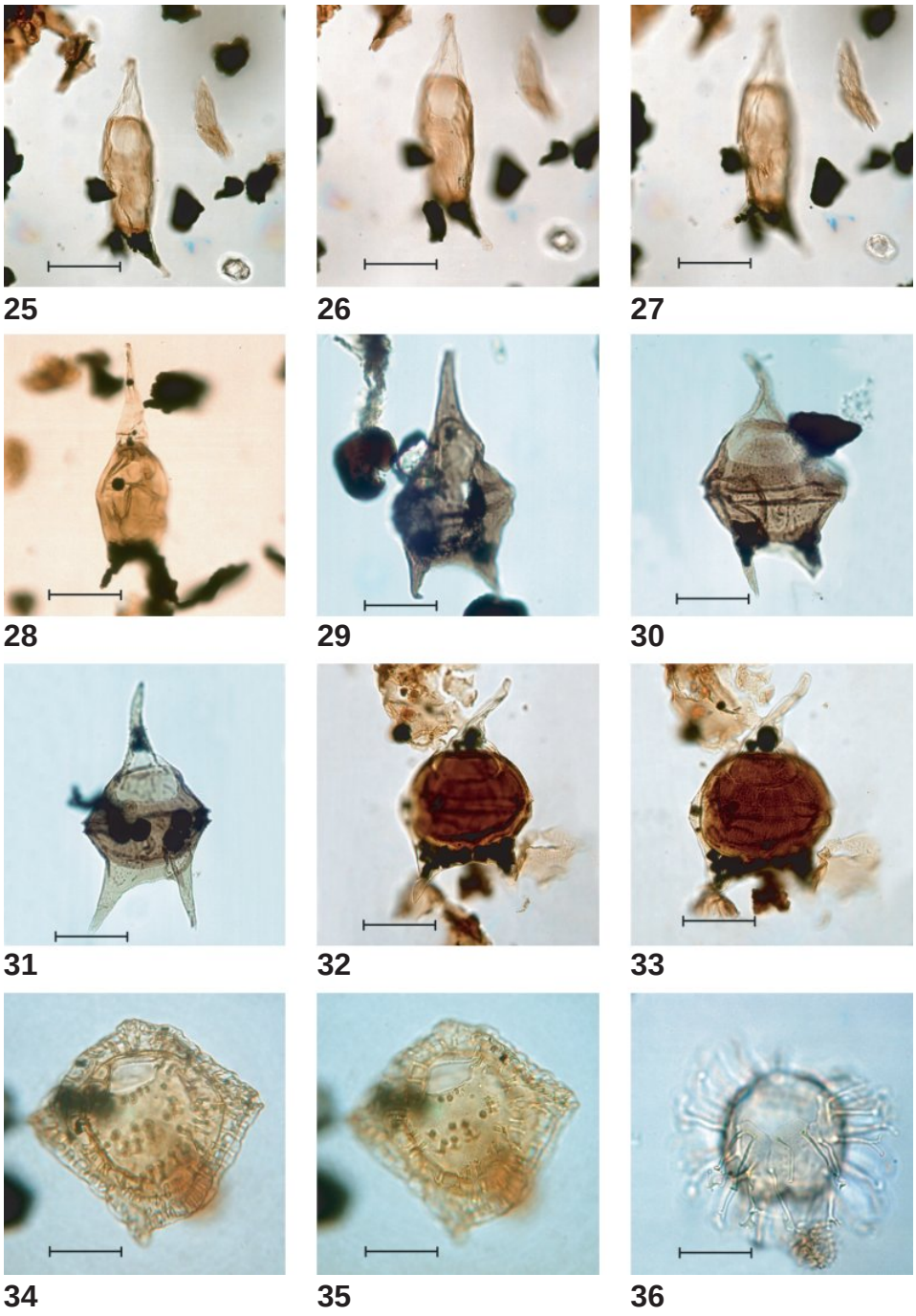


Plate P1 (continued). 37–39. *Cleistosphaeridium placacanthum* (Sample 189-1172D-8R-6, 40–42 cm) (2). **40–42.** *Cordosphaeridium fibrospinosum* group (Sample 189-1172D-5R-1, 40–42 cm) (1). **43.** *Corrudinium* sp. Goodman and Ford, 1983 (Sample 189-1172A-39X-5, 85–87 cm) (1). **44–47.** *Cribroperidinium* sp. A; (44, 45) Sample 189-1172A-46X-2, 85–87 cm (1); (46, 47) Sample 189-1172D-12R-1, 40–42 cm (1). **48.** *Cribroperidinium* sp. A (Sample 189-1172D-12R-1, 40–42 cm) (1). (Continued on next page.)

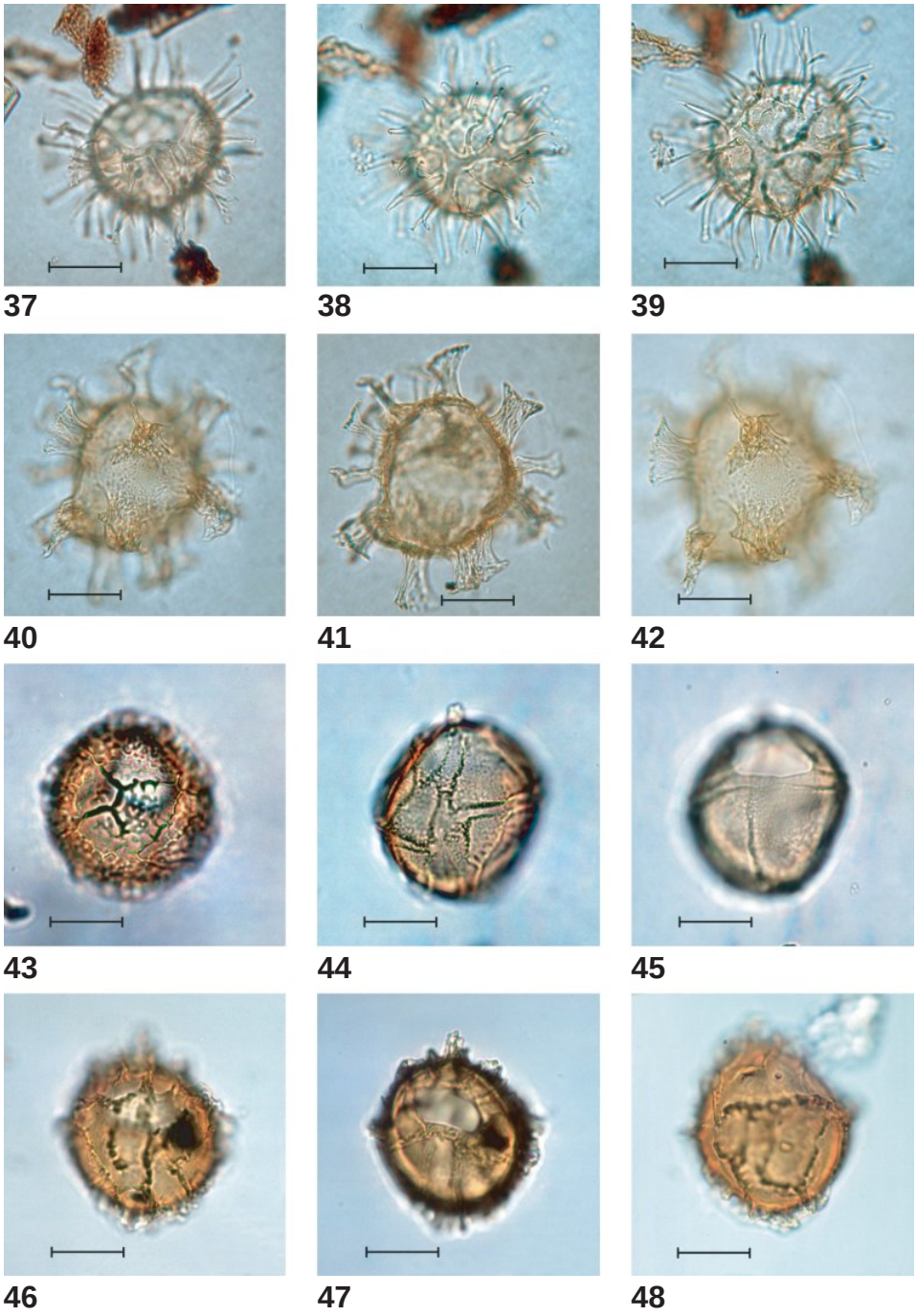


Plate P1 (continued). 49–52. *Deflandrea antarctica* group; (49) Sample 189-1172A-39X-6, 85–87 cm (1); (50) Sample 189-1172A-52X-5, 85–87 cm (1); (51, 52) Sample 189-1172D-3R-1, 40–42 cm (1). **53–59.** *Deflandrea convexa* group; (53) Sample 189-1172D-5R-1, 40–42 cm (1); (54, 55). Sample 189-1172D-5R-1, 40–42 cm (2); (56, 57) Sample 189-1172D-5R-1, 40–42 cm (1); (58, 59) Sample 189-1172D-8R-6, 40–42 cm (1). **60.** *Deflandrea phosphoritica* group (Sample 189-1172A-39X-4, 10–12 cm) (1). (Continued on next page.)

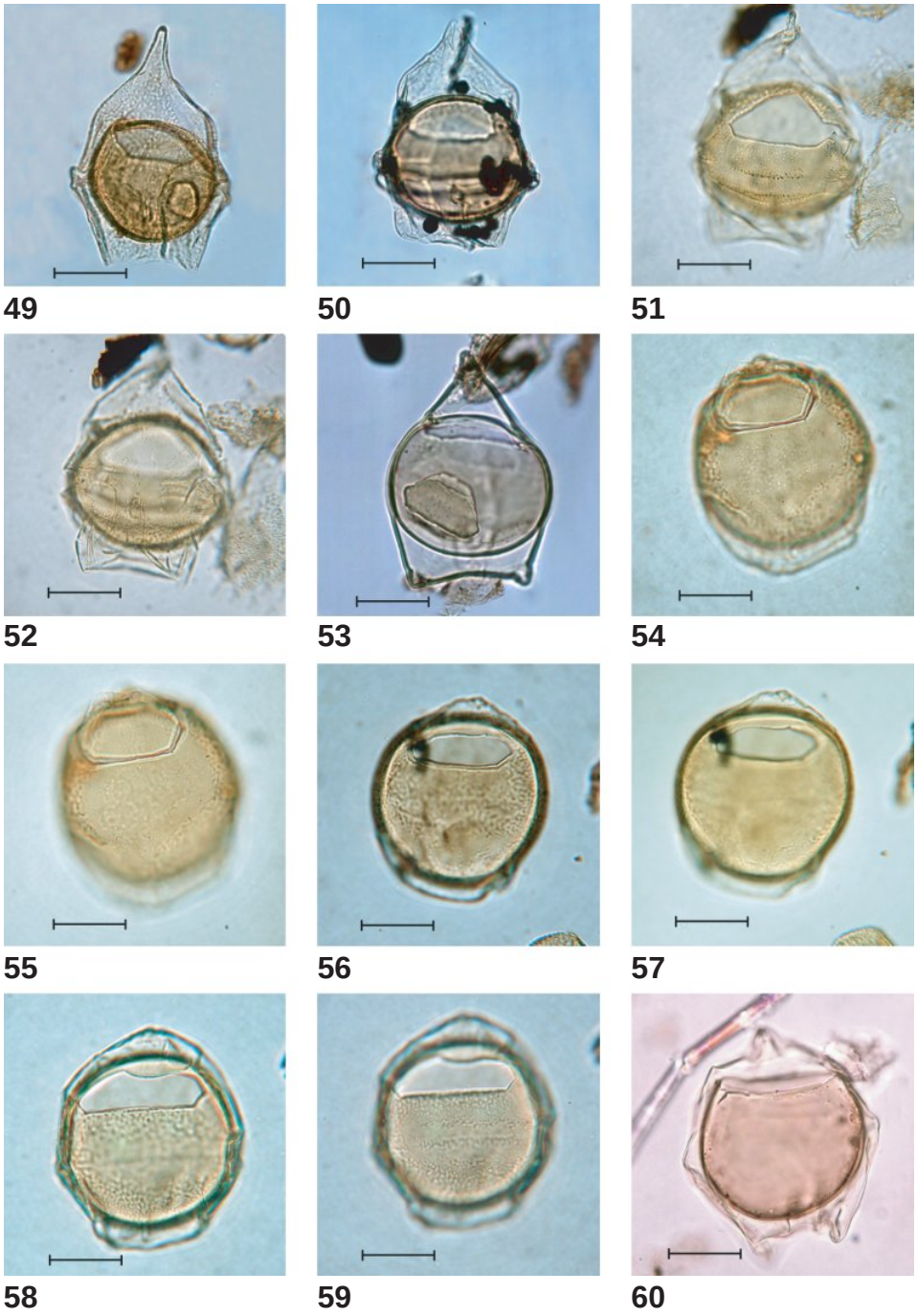


Plate P1 (continued). 61–63. *Deflandrea* sp. A; (61) Sample 189-1172A-39X-4, 74–76 cm (1); note triangular endophragm; (62) Sample 189-1172A-39X-4, 74–76 cm) (2); (63) Sample 189-1172A-39X-4, 74–76 cm) (1). **64, 65.** *Dinopterygium* sp. A (Sample 189-1172D-24R-5, 130–133 cm) (1). **66.** *Dracodinium waipawaense* (Sample 189-1172D-13R-2, 40–42 cm) (1). **67–69.** *Enneadocysta partridgei;* (67) Sample 189-1172A-39X-5, 105–107 cm (1); (68, 69) Short processes (*Areosphaeridium ebdonii*-style) (Sample 189-1172A-40X-2, 70–72 cm) (1); such variations are considered environmentally controlled. **70.** *Eocladopyxis peniculata* (Sample 189-1172A-48X-4, 108–110 cm (1). **71, 72.** *Glaphyrocysta* spp. (Core 189-1172D-22R). (Continued on next page.)

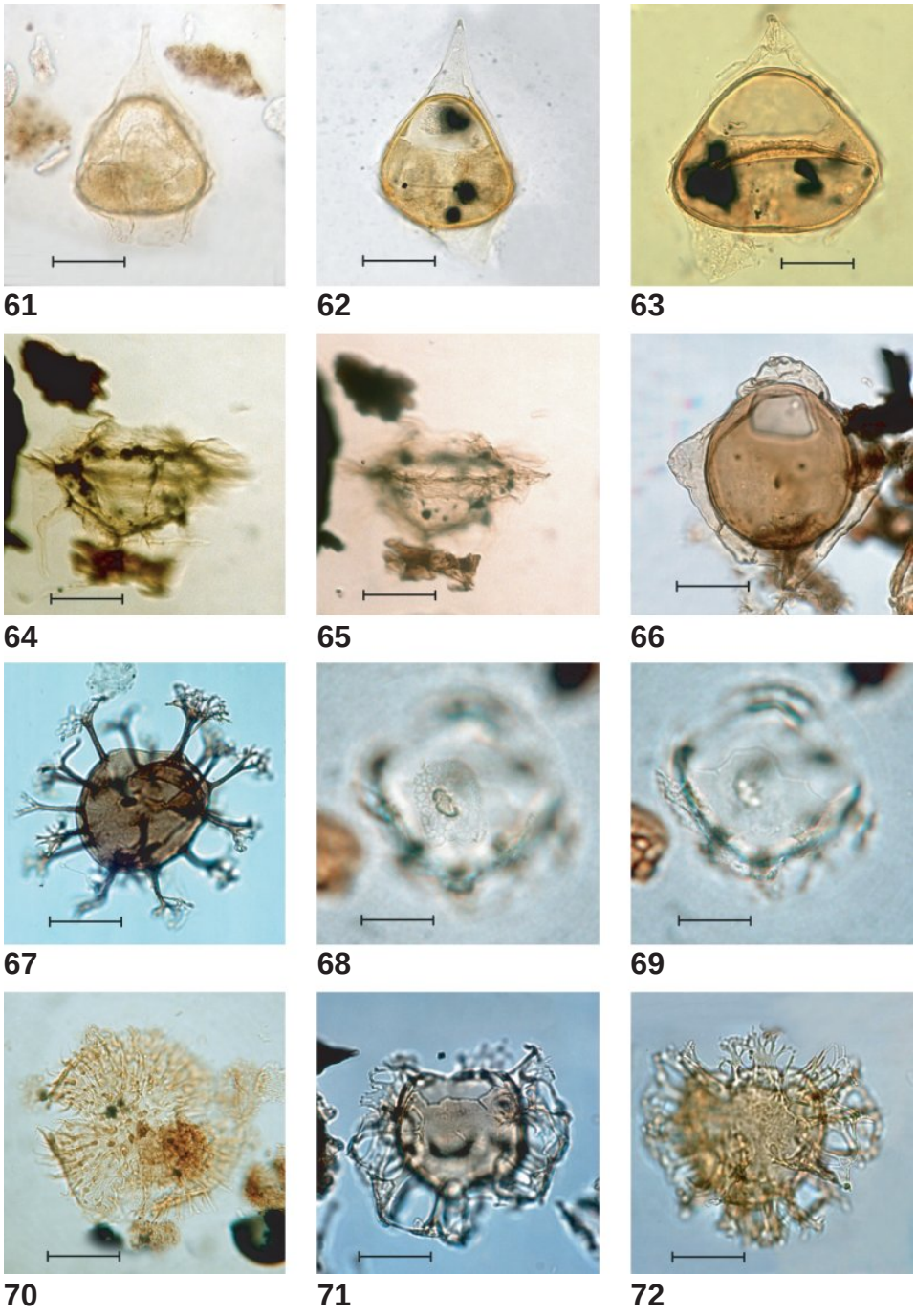


Plate P1 (continued). 73. *Glaphyrocysta* spp. (Core 189-1172D-22R). **74.** *Histiocysta* sp. (Sample 189-1172A-46X-2, 85–87 cm) (1). **75, 76.** *Homotryblium tenuispinosum* (Sample 189-1172A-40X-2, 70–72 cm) (1). **77.** *Hystrichokolpoma rigaudiae,* 189-1172D-11R-5, 40–42 cm (1). **78–83.** *Hystrichokolpoma truncatum* (78) Sample 189-1172A-54X-8, 85–87 cm) (1); scale bar = ~15 µm; (79, 80) Sample 189-1172D-11R-5, 40–42 cm (1); scale bar = ~15 µm; **81–83.** Sample 189-1172D-5R-1, 40–42 cm (1); scale bar = ~15 µm. **84.** *Hystrichosphaeridium truswelliae* (Sample 189-1172D-16R-2, 40–42 cm) (1).

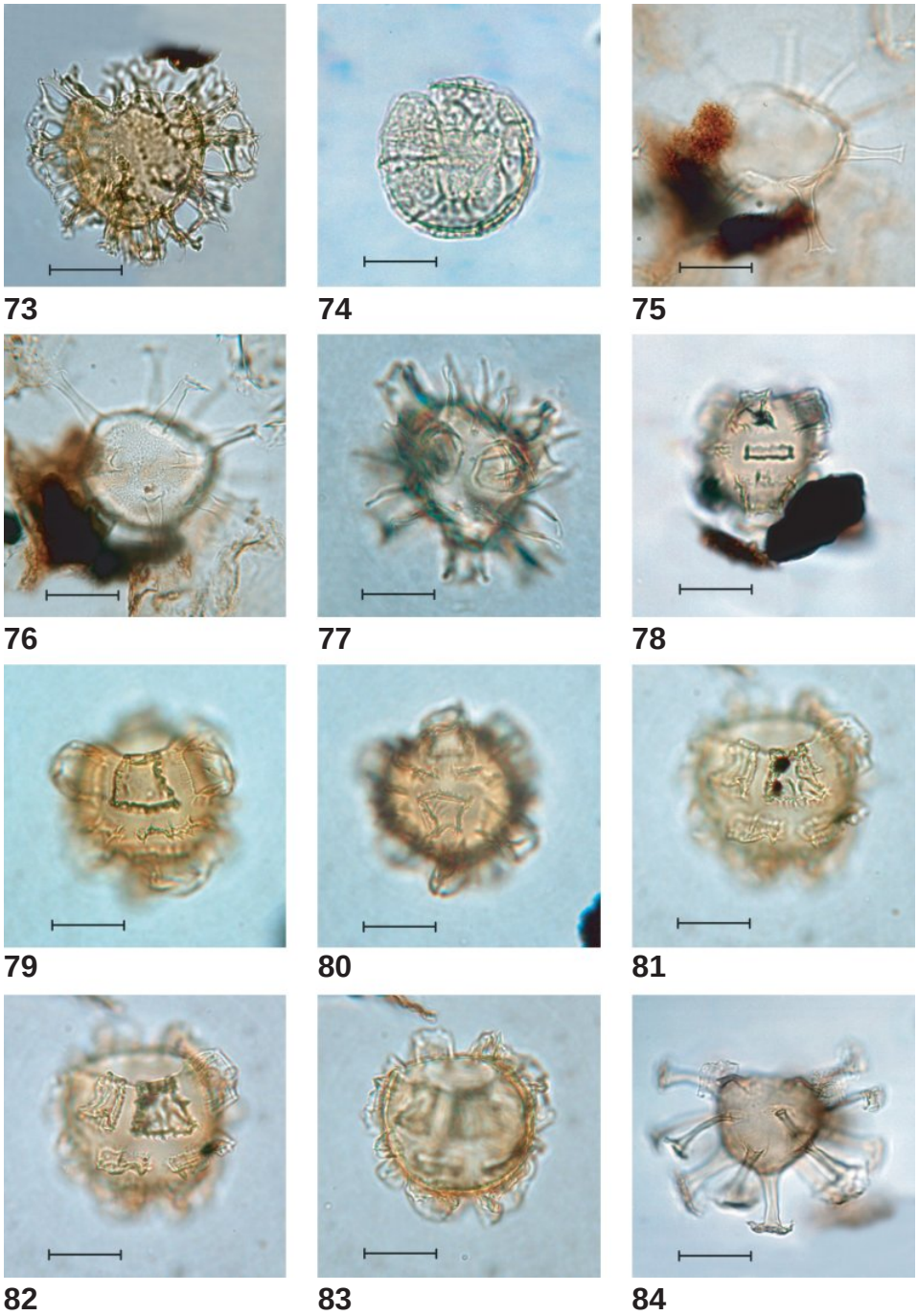


Plate P1 (continued). 85–87. *Hystrichosphaeridium truswelliae* (Sample 189-1172D-20R-5, 40–43 cm) (1). **88, 89.** *Hystrichosphaeridium tubiferum* (Sample 189-1172D-20-5, 40–43 cm) (1). **90, 91.** *Hystrichosphaeropsis* sp. (Sample 189-1172D-16R-2, 40–42 cm) (1). **92, 93.** *Impagidinium cassiculum* (Sample 189-1172D-14R-1, 40–42 cm) (1). **94, 95.** *Impagidinium dispertitum* (Sample 189-1172D-8R-6, 40–42 cm) (1). **96.** *Impagidinium maculatum* (Sample 189-1172D-14R-1, 40–42 cm) (1). (Continued on next page.)

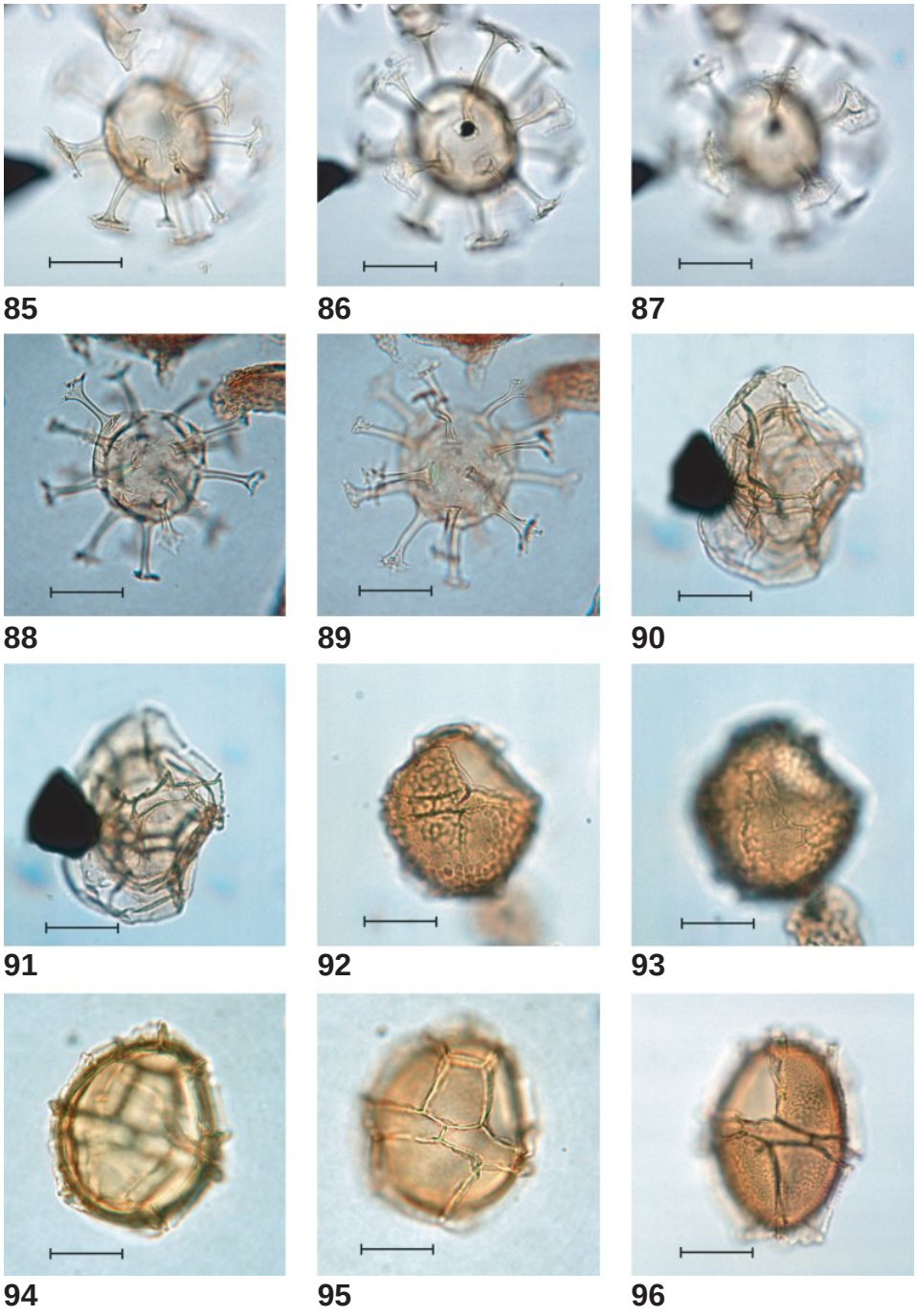


Plate P1 (continued). 97, 98. *Impagidinium victorianum* (Sample 189-1172A-39X-5, 105–107 cm) (1). **99.** *Lejeunecysta* sp. (Sample 189-1172A-39X-6, 55–57 cm) (1). **100–104.** *Manumiella druggii;* (100, 101) Sample 189-1172D-24R-5, 130–133 cm (1); (102–104) Sample 189-1172D-24R-5, 73–75 cm) (1). **105, 106.** *Membranophoridium perforatum;* (105) Sample 189-1172D-12R-3, 85–87 cm (1); (106) Sample 189-1172D-12R-7, 40–42 cm (1). **107, 108.** *Octodinium askiniae* (Sample 189-1172A-39X-6, 105–107 cm) (1). (Continued on next page.)

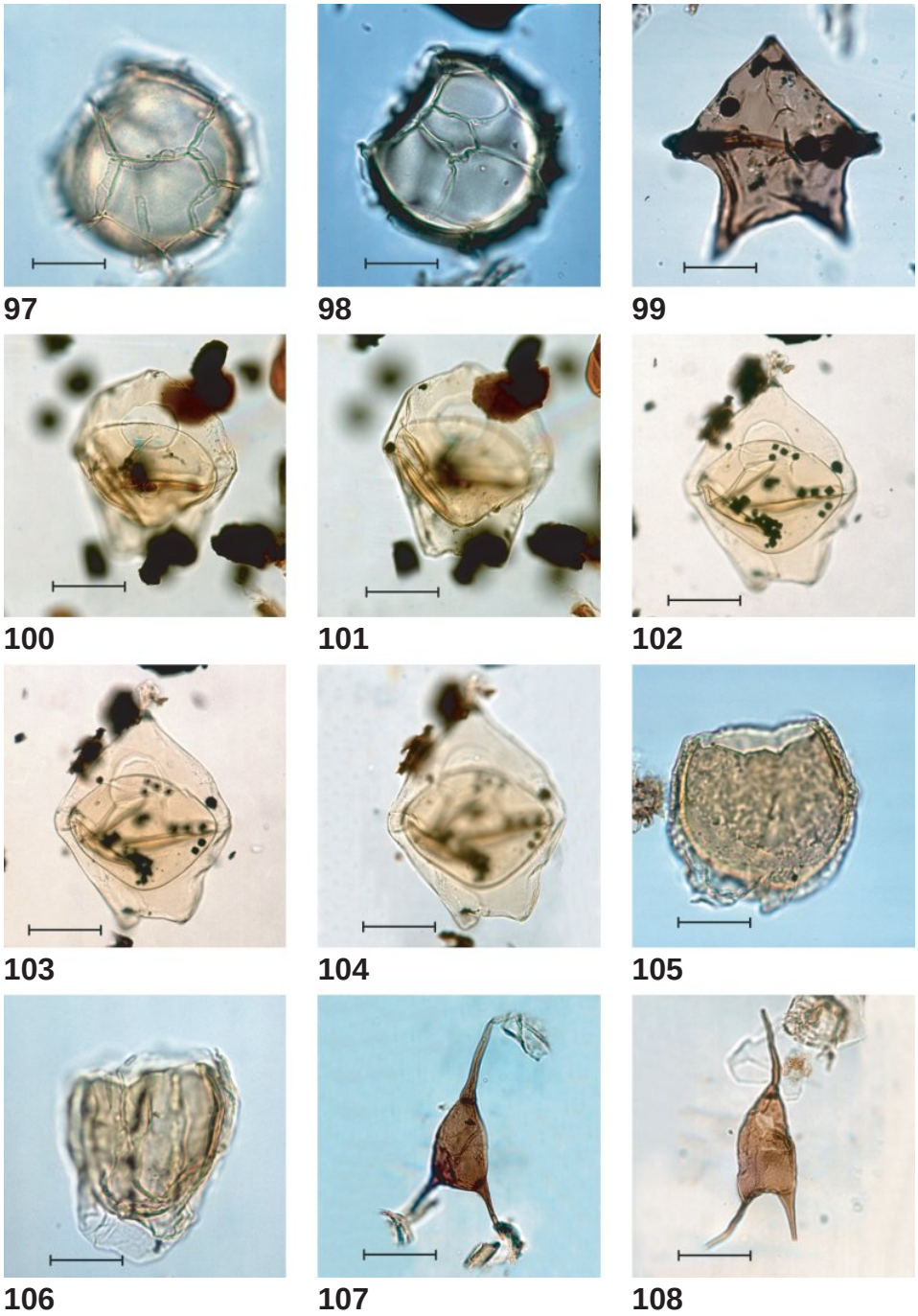


Plate P1 (continued). 109, 110. *Operculodinium?* sp. A (Sample 189-1172D-24R-5, 130–133 cm) (1); scale bar = ~15 µm; see also SEM imagery. **111, 112.** *Palaeocystodinium* sp. (Sample 189-1172D-24R-5, 30–32 cm (1); (111) scale bar = ~30 µm; (112) close to *Andalusiella*. **113–116.** *Palaeoperidinium pyrophorum* (Sample 189-1172D-24R-5, 36–38 cm) (1). **117.** *Paucisphaeridium* sp. (Sample 189-1172A-39X-4, 14–16 cm) (1); scale bar = ~10 µm. **118, 119.** *Schematophora obscura* (Sample 189-1172D-13R-6, 40–42 cm) (1). 120. *Schematophora speciosa* (Sample 189-1172A-39X-5, 55–57 cm) (1); scale bar = ~15 µm. **120.** *Schematophora speciosa* (Sample 189-1172A-39X-5, 55–57 cm) (1); scale bar = ~15 µm. (Continued on next page.)

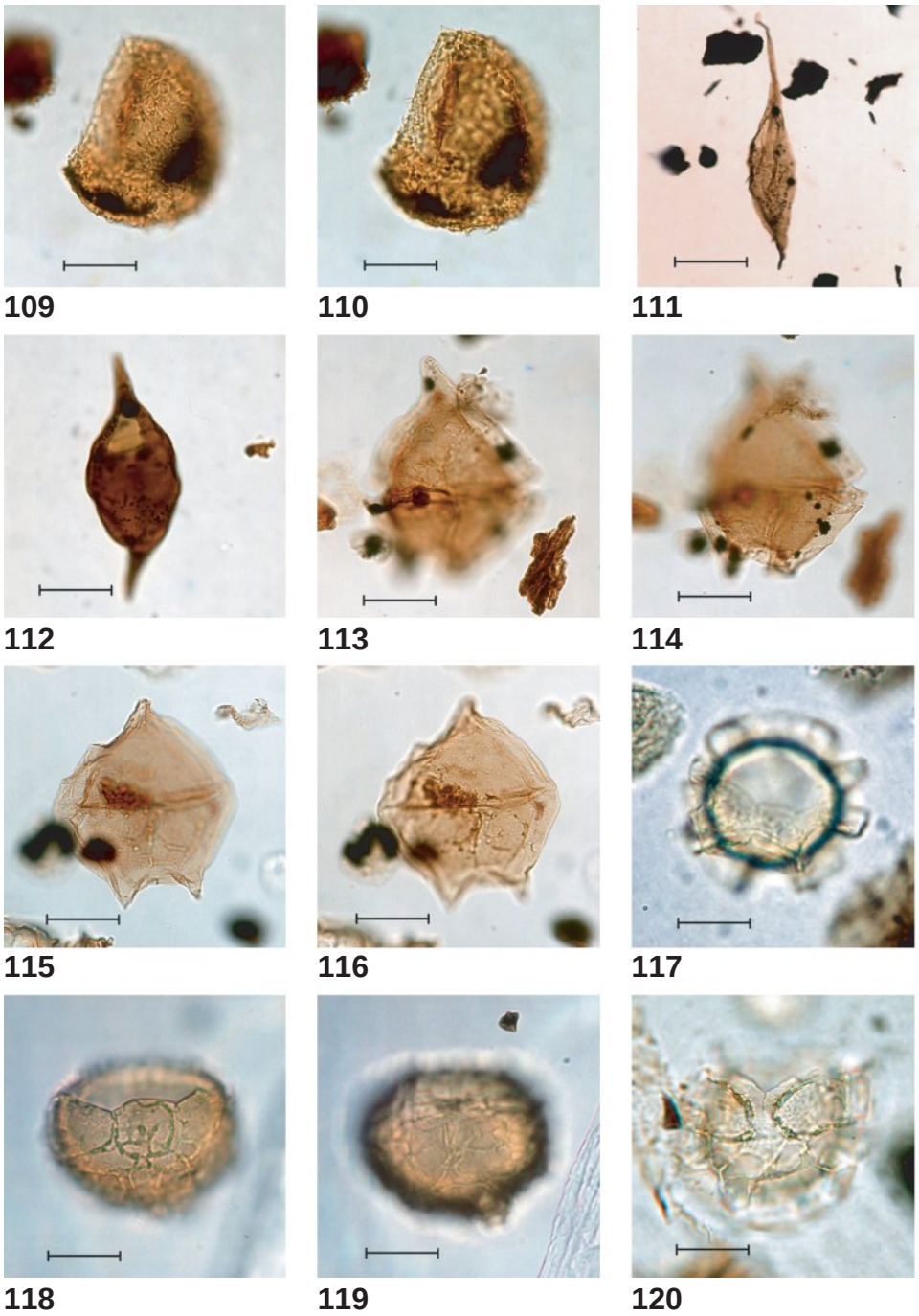


Plate P1 (continued). 121, 122. *Schematophora speciosa* (Sample 189-1172A-39X-5, 55–57 cm) (1); scale bar = ~15 µm. **123.** *Selenopemphix nephroides* (Sample 189-1172A-39X-5, 85–87 cm) (1). **124, 125.** *Senegalinium bicavatum* (Sample 189-1172D-24R-5, 30–32 cm) (1). **126–129.** *Senoniasphaera inornata* (126–128) Sample 189-1172D-24R-5, 12–14 cm (1); (129) Sample 189-1172D-24R-5, 36–38 cm (1). **130.** *Spinidinium luciae* (Sample 189-1172A-39X-5, 55–57 cm) (1). **131, 132.** *Spinidinium macmurdoense;* (131) Sample 189-1172A-39X-5, 105–107 cm (1); (132) Sample 189-1172A-39X-6, 105–107 cm (1). (Continued on next page).

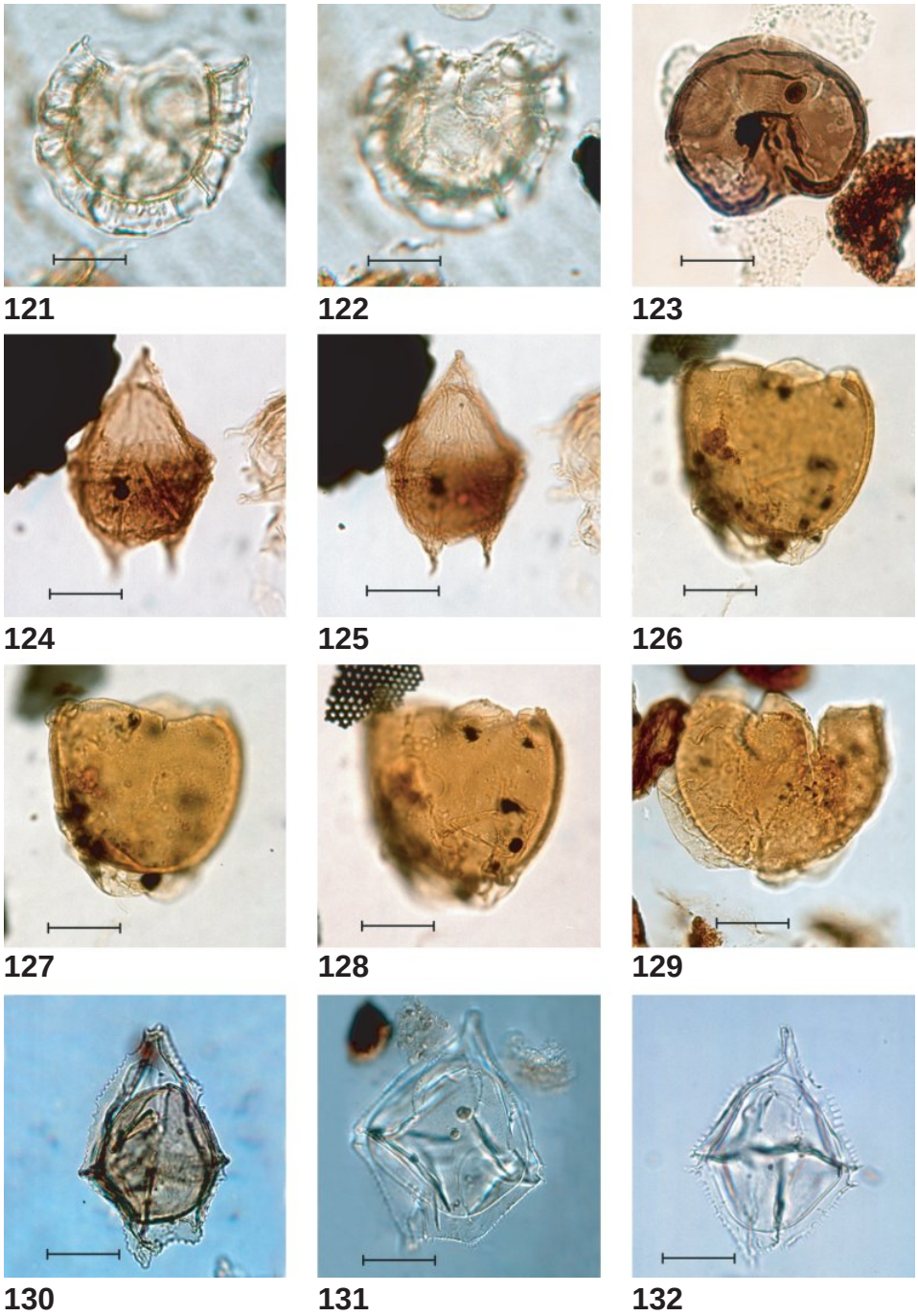


Plate P1 (continued). 133–135. *Spiniferites* sp. A (Sample 189-1172D-24R-5, 130–133 cm) (2). **136.** *Spiniferites* sp. B (Sample 189-1172A-47X-4, 85–87 cm) (1). **137, 138.** *Stoveracysta kakanuiensis* (1); (137) Sample 189-1172A-39X-3, 122–124 cm; (138) Sample 189-1172A-39X-3, 145–147 cm. **139–141.** *Trithyrodinium evittii* (Sample 189-1172D-24R-5, 12–14 cm) (1). **142.** *Turbiosphaera filosa* (Sample 189-1172A-39X-4, 10–12 cm) a (1). **143.** *Vozzhennikovia apertura* (Sample 189-1172A-39X-4, 85–87 cm) (1). **144.** *Alisocysta circumtabulata* (Sample 189-1172D-23R-1, 41–43 cm) (SEM). (Continued on next page.)

Plate P1 (continued). 145. *Alisocysta circumtabulata* (Sample 189-1172D-23R-1, 41–43 cm) (SEM). **146.** *Alisocysta reticulata* (Sample 189-1172D-23R-1, 41–43 cm) (SEM). **147.** *Alterbidinium* sp. (Sample 189-1172D-24R-5, 40–42 cm) (SEM). **148, 149.** *Cerebrocysta* spp. (148) Sample 189-1172D-3R-4, 40–42 cm (SEM); (149) Sample 189-1172A-39X-4, 40–42 cm (SEM). **150.** *Cerodinium dartmoorium* (Sample 189-1172D-23R-1, 41–43 cm. **151–153.** *Cerodinium* sp. A (Sample 189-1172D-29R-5, 40–42 cm) (SEM) (153: detail). **154.** *Cleistosphaeridium* spp. (Sample 189-1172D-12R-7, 40–42 cm) (SEM) **155.** *Corrudinium incompositum* (Sample 189-1172A-39X-3, 138–140 cm) (SEM). **156.** *Corrudinium* sp. Goodman and Ford, 1983 (Sample 189-1172A-39X-3, 138–140 cm) (SEM). (Continued on next page.)

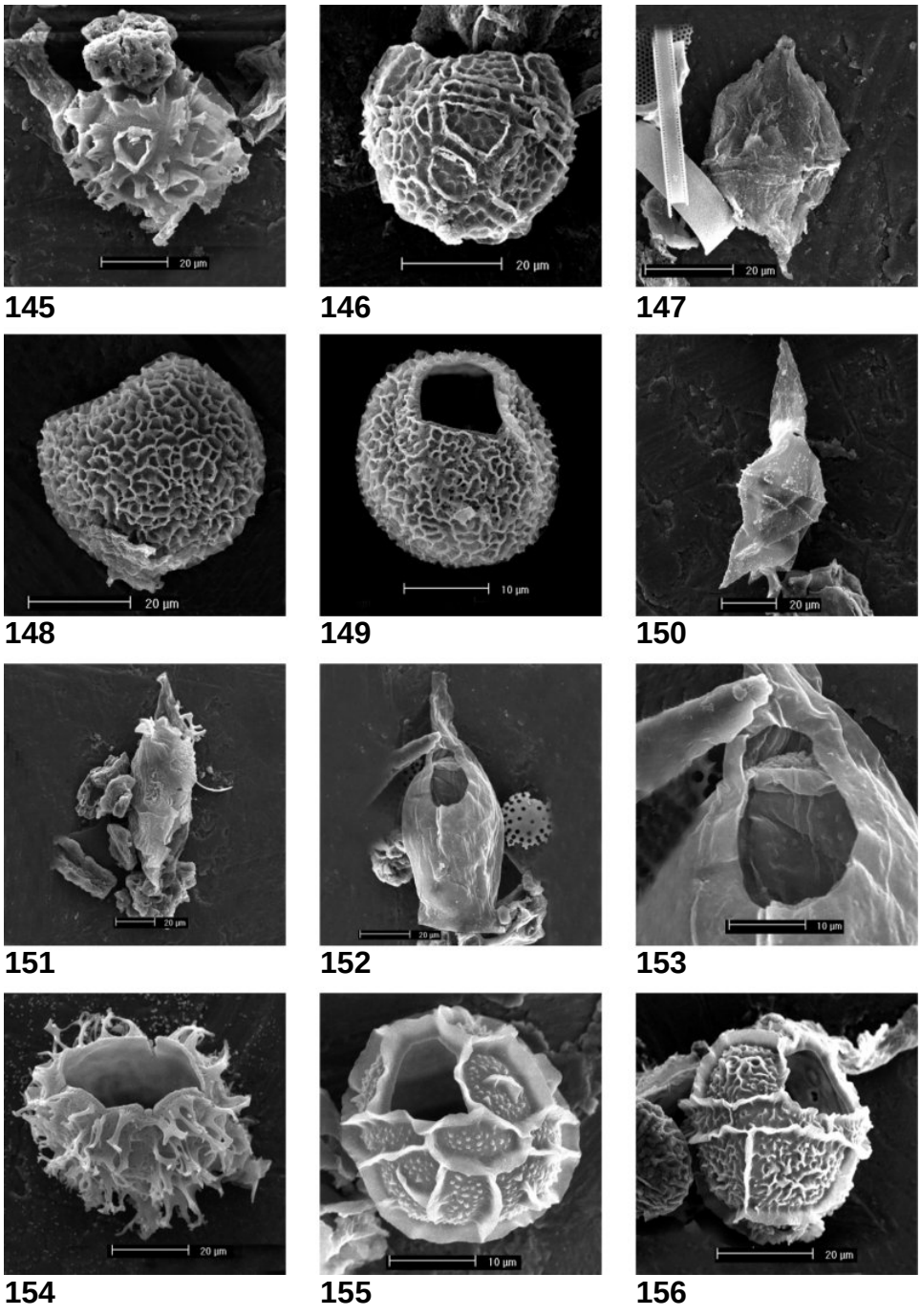


Plate P1 (continued). 157–160. *Deflandrea antarctica* (SEM); (157) Sample 189-1172D-12R-7, 40–42 cm; (158) Sample 189-1172D-3R-4, 40–42 cm; (159) Sample 189-1172A-39X-3, 48–50 cm; (160) Sample 189-1172A-39X-4, 147–149 cm. **161.** *Deflandrea convexa* (Sample 189-1172D-12R-7, 40–42 cm) (SEM). **162–164.** *Dinopterygium* sp. A (Sample 189-1172D-29R-5, 40–42 cm) (SEM) (162) lateral antapical view; (163) oblique apical view. **165–168.** *Dracodinium waipawaense* (Sample 189-1172D-12R-7, 40–42 cm) (SEM). (Continued on next page.)

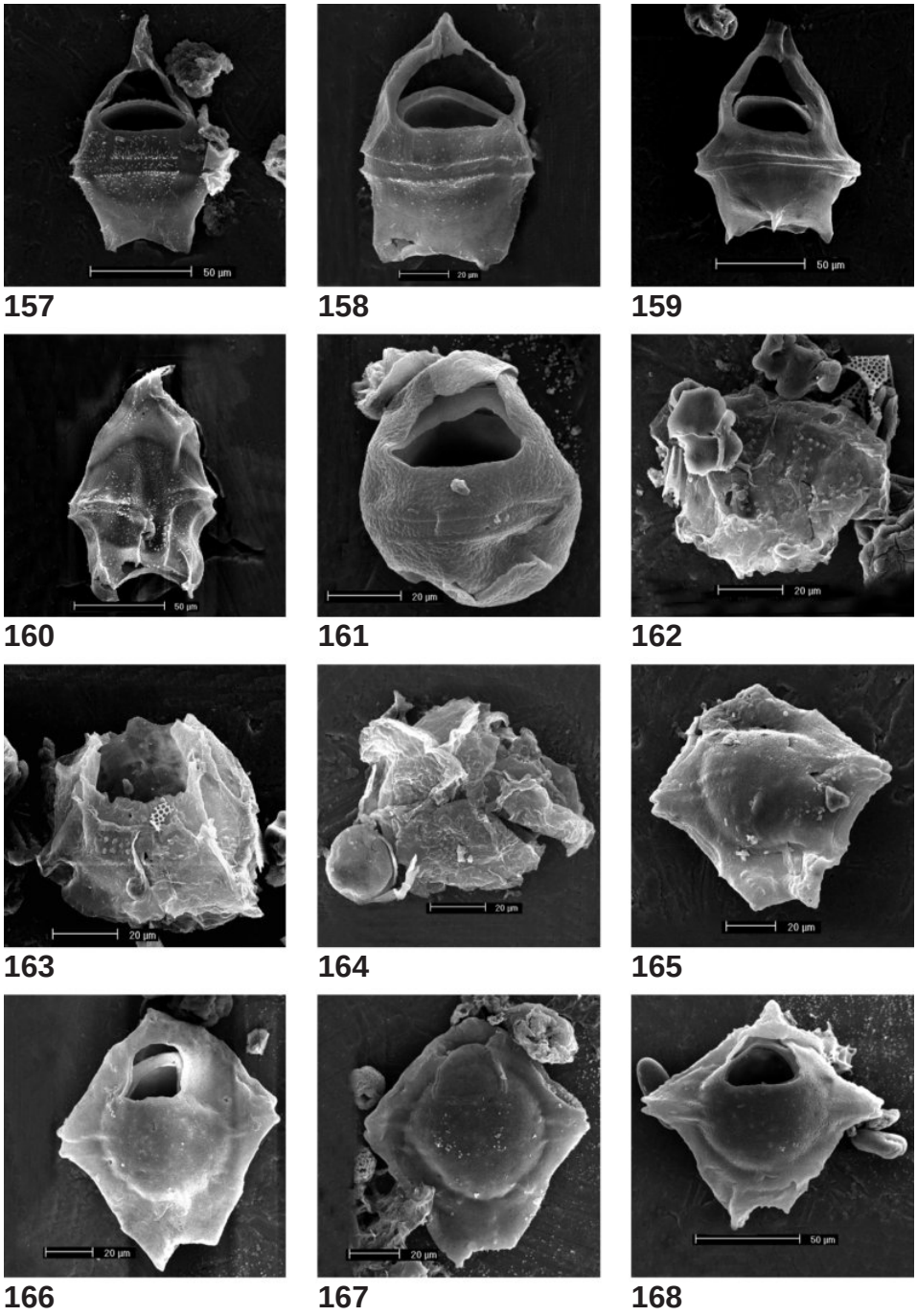
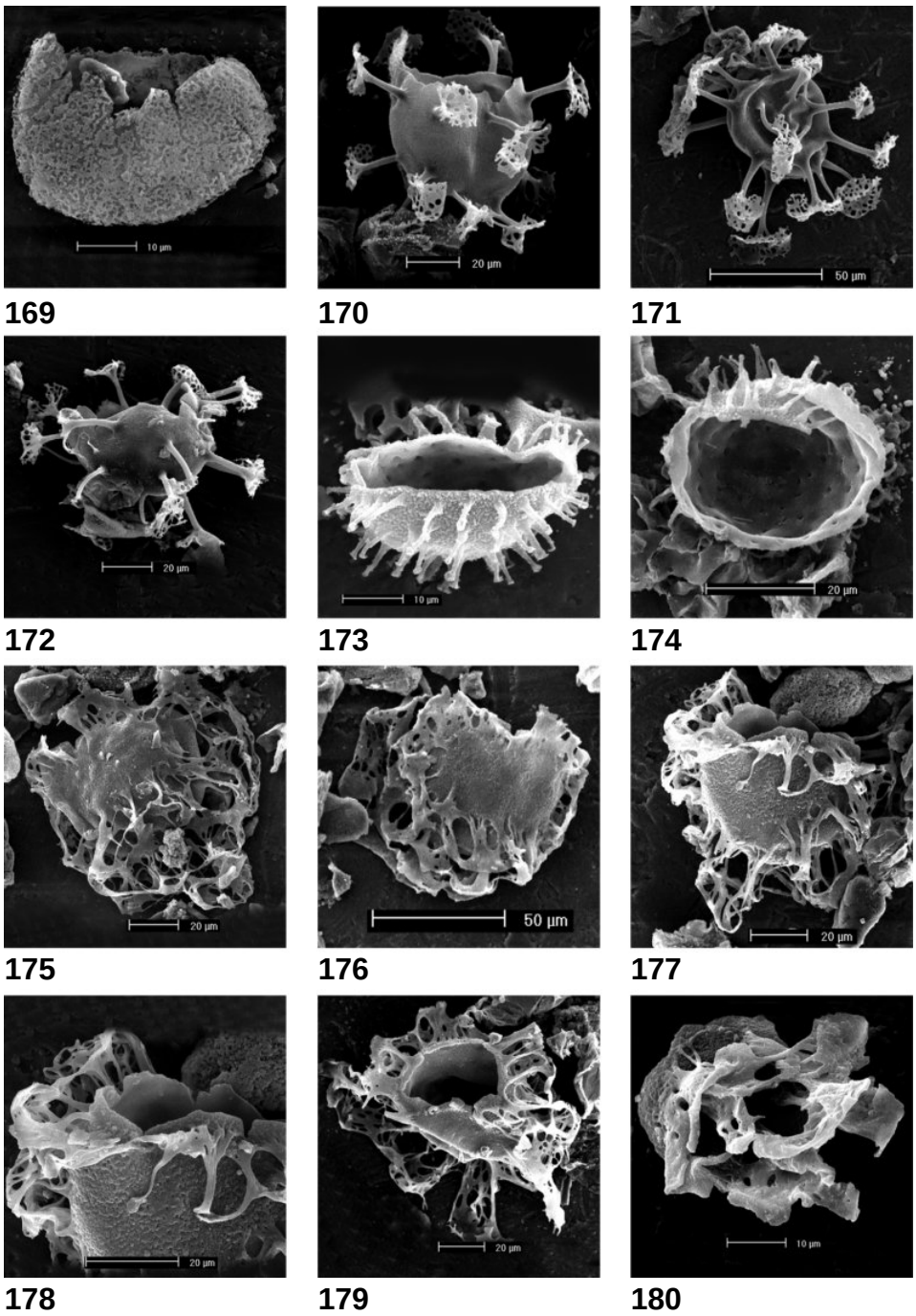


Plate P1 (continued). 169. *Eisenackia crassitabulata* (here part of *Alisocysta reticulata* group) (Sample 189-1172D-29R-5, 40–42 cm) (SEM). **170, 171.** *Enneadocysta* sp. A (Sample 189-1172D-3R-4, 40–42 cm) (SEM). **172.** *Enneadocysta partridgei* (Sample 189-1172A-39X-4, 147–149 cm) (SEM). **173, 174.** *Eocladopyxis* sp. (Sample 189-1172D-12R-7, 40–42 cm) (SEM); (174) note hollow processes, penetrating endophragm. **175–180.** *Glaphyrocysta* spp. (Sample 189-1172D-23R-1, 41–43 cm) (SEM); (178) detail archaeopyle margin; (180) operculum. (Continued on next page.)



169 **170** **171**

172 **173** **174**

175 **176** **177**

178 **179** **180**

Plate P1 (continued). 181. *Histiocysta* sp., (possibly *Microdinium*) (Sample 189-1172D-23R-1, 41–43 cm) (SEM). **182.** *Hystrichokolpoma spinosum* (Sample 189-1172D-12R-7, 40–42 cm) (SEM). **183–185.** *Hystrichosphaeridium truswelliae* (SEM); (183) Sample 189-1172D-3R-4, 40–42 cm (operculum); (184, 185) Sample 189-1172D-23R-1, 41–43 cm; (185: detail antapical processes). **186.** *Impagidinium cassiculum* (Sample 189-1172D-12R-7, 40–42 cm) (SEM). **187.** *Impagidinium dispertitum* (Sample 189-1172A-39X-4, 147–149 cm) (SEM). **188.** *Impagidinium* spp. (Sample 189-1172D-3R-4, 40–42 cm) (SEM). **189.** *Manumiella druggii* transition to *Manumiella rotundata* (Sample 189-1172D-29R-5, 40–42 cm) (SEM). **190–192.** *Operculodinum*? sp. A (Sample 189-1172D-24R-5, 40–42 cm) (SEM). (Continued on next page.)

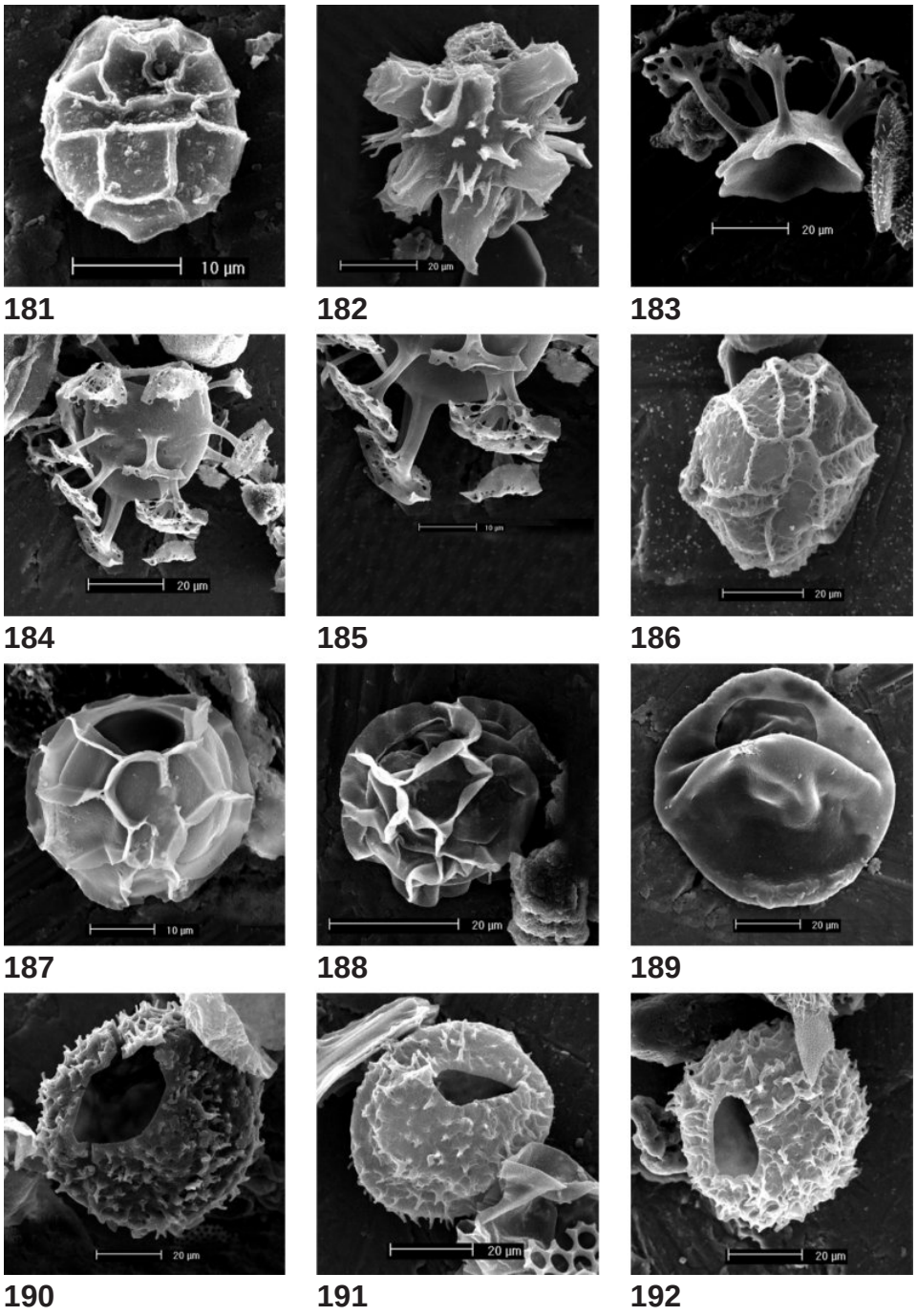


Plate P1 (continued). 193. *Operculodinum*? sp. A (Sample 189-1172D-24R-5, 40–42 cm) (SEM). **194–196.** *Operculodinium* spp. (SEM); (194) Sample 189-1172D-23R-1, 41–43 cm; (195, 196) Sample 189-1172A-39X-4, 147–149 cm. **197.** *Palaeocystodinium* spp. (Sample 189-1172D-23R-1, 41–43 cm) (SEM). **198–200.** *Paucisphaeridium* spp. (Sample 189-1172D-3R-4, 40–42 cm) (SEM). **201.** *Phthanoperidinium echinatum* (Sample 189-1172A-39X-3, 138–140 cm) (SEM). **202–204.** *Senegalinium dilwynense* (Sample 189-1172D-23R-1, 41–43 cm) (SEM); (202) ventral view; (203) dorsal view; (204) *Senegalinium dilwynense* (right) and *Diconodinium* sp., (left). (Continued on next page.)

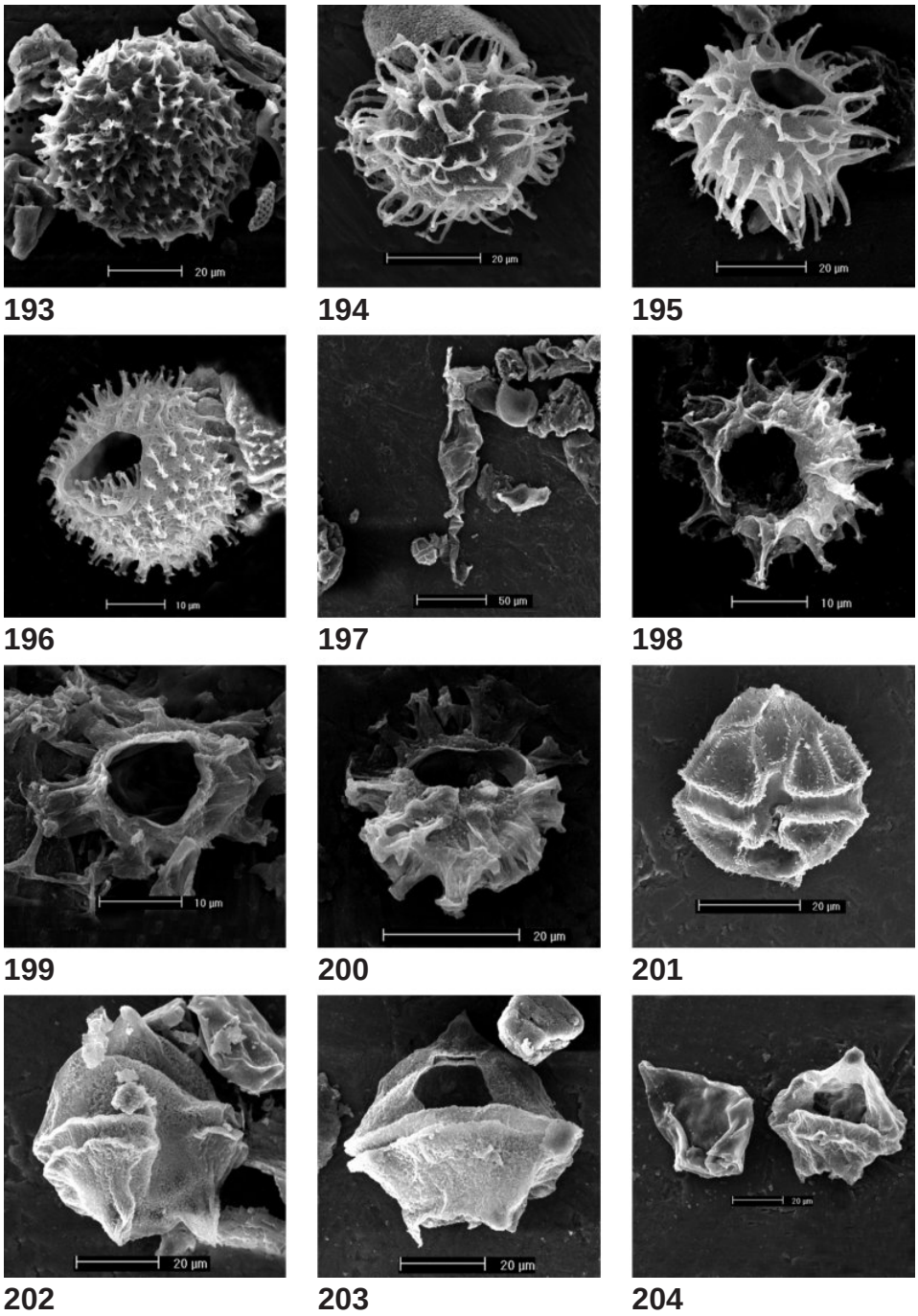


Plate P1 (continued). 205, 206. *Spinidinium* spp. (Sample 189-1172D-12R-7, 40–42 cm) (SEM). **207.** *Spinidinium luciae* (Sample 189-1172A-39X-6, 122–124 cm) (SEM). **208, 209.** *Spinidinium macmurdoense* (Sample 189-1172A-39X-6, 122–124 cm) (SEM). **210.** *Turbiosphaera filosa* (Sample 189-1172A-39X-3, 48–50 cm) (SEM). **211.** *Vozzhennikovia apertura* (Sample 189-1172D-3R-4, 40–42 cm) (SEM). **212.** *Vozzhennikovia*? spp. (Sample 189-1172A-39X-3, 138–140 cm) (SEM); note 3I archaeopyle. **213.** *Vozzhennikovia* spp. (Sample 189-1172A-39X-3, 138–140 cm) (SEM).

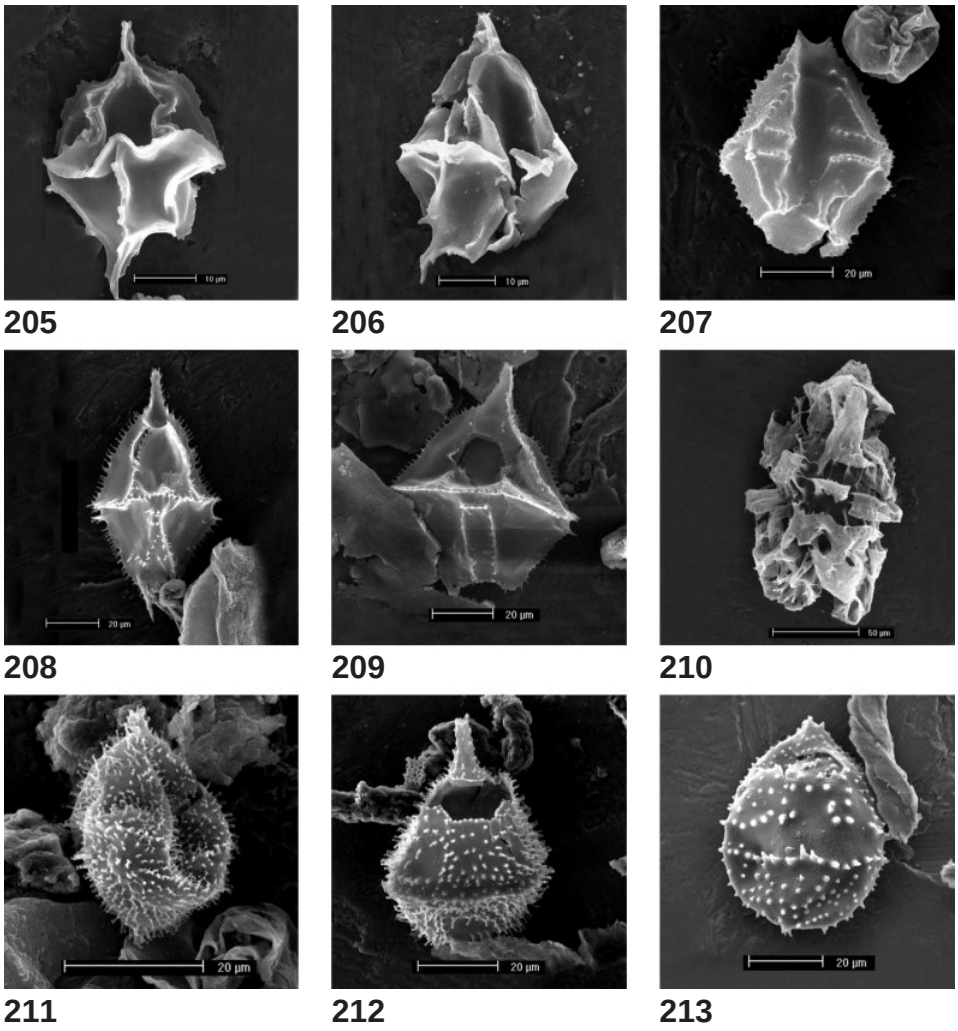


Plate P1. The modified Kofoid system (as outlined in Fensome et al., 1993b) is used in the labeling of individual plates for the gonyaulacaleans. The Kofoid system is used in the labeling of plates in the peridinialeans. The archeopyle location is denoted by diagonal lines. **1.** *Achilleodinium biformoides* (Eisenack 1954b) Eaton 1976. Ventral view. Holotype dimension: central body diameter = 50 µm. **2.** *Achomosphaera alcicornu* (Eisenack 1954b) Davey and Williams 1966a. Dorsal view. Holotype dimensions: overall diameter = 157 µm, central body diameter = 65 µm × 67 µm. **3.** *Achomosphaera andalousiensis* Jan du Chêne 1977. Dorsal view. Holotype dimensions: central body diameter = 35 µm × 40 µm, process length = 15 µm. **4.** *Adnatosphaeridium tutulosum* (Cookson and Eisenack 1960a) Morgan 1980. Holotype dimensions: overall diameter = 70 µm, central body diameter = 53 µm. **5.** *Alisocysta circumtabulata* (Drugg 1967) Stover and Evitt 1978. Ventral view. Range of type material: length = 37–47 µm, width = 36–47 µm. **6.** *Alisocysta margarita* (Harland 1979a) Harland 1979a. Ventral view. Holotype dimensions: length = 44 µm, width = 40 µm. **7.** *Alisocysta reticulata* Damassa 1979b. Ventral view. Average range of type material: length = 55 µm, width = 51 µm. **8.** *Alisogymnium euclaense* (Cookson and Eisenack 1970a) Lentin and Vozzhennikova 1990. Holotype dimensions: length = 34 µm, width = 22 µm. **9.** *Alterbidinium*? *distinctum* (Wilson 1967a) Lentin and Williams 1985. Dorsal view. Holotype dimensions: pericyst length = 118 µm, pericyst width = 61 µm, endocyst diameter 58 µm × 63 µm. **10.** *Amiculosphaera umbraculum* Harland 1979b. Dorsal view. Holotype dimensions: length = 80 µm, width = 86 µm. **11.** *Apectodinium augustum* (Harland 1979c) Lentin and Williams 1981. Dorsal view. Holotype dimensions: pericyst length (excluding horns) = 63.75 µm, pericyst width (excluding horns) = 66.25 µm. **12.** *Apteodinium deflandrei* (Clarke and Verdier 1967) Lucas-Clark 1987. Right lateral view. Holotype dimensions: overall length = 52 µm, overall width = 40 µm. (Continued on next page.)

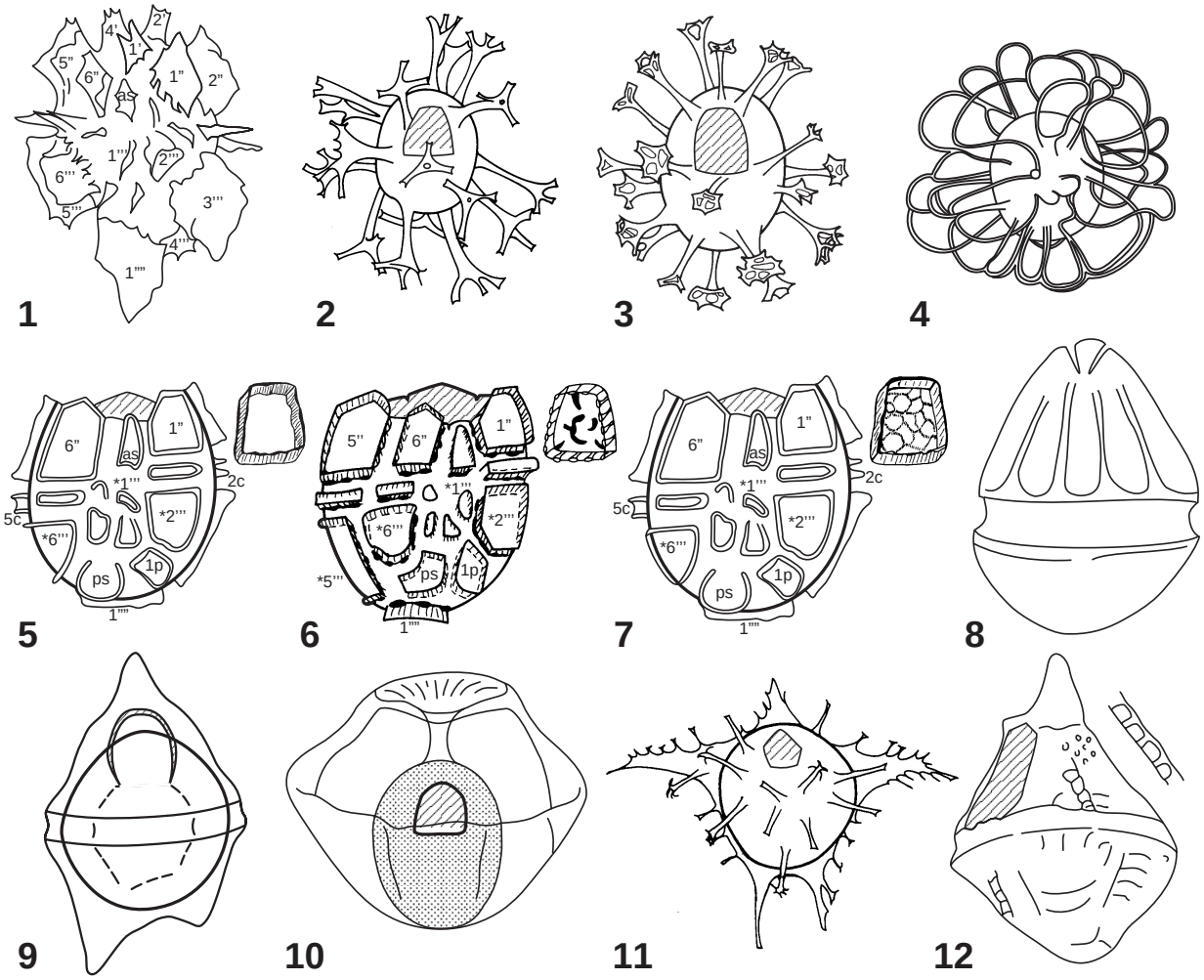


Plate P1 (continued). 13, 14. *Arachnodinium antarcticum* Wilson and Clowes 1982. Holotype dimensions: overall length (excluding operculum) = 105 µm, overall breadth = 96 µm, central body length (excluding operculum) = 58 µm, central body width = 48 µm, antapical process length = 22 µm; (13) lateral view; (14) apical view. **15.** *Areoligera gippingensis* Jolley 1992. Ventral view. Range of type material: overall length = 32–42 µm, overall width = 45–59 µm, process length = 15–33 µm. **16.** *Areosphaeridium diktyoplokum* (Klumpp 1953) Eaton 1971. Ventral view. Holotype dimensions: central body diameter = 48 µm. **17, 18.** *Areoligera semicirculata* (Morgenroth 1966b) Stover and Evitt 1978. Range of type material: central body length = 45–61 µm, central body width = 42–56 µm, central body height = 33–40 µm, process length = 5–33 µm; (17) ventral view; (18) antapical view. **19, 20.** *Ataxiodinium confusum* Versteegh and Zevenboom in Versteegh 1995. Holotype dimensions: overall diameter = 36 µm, endocyst diameter = 22 µm; (19) dorsal view; (20) lateral cross-section.

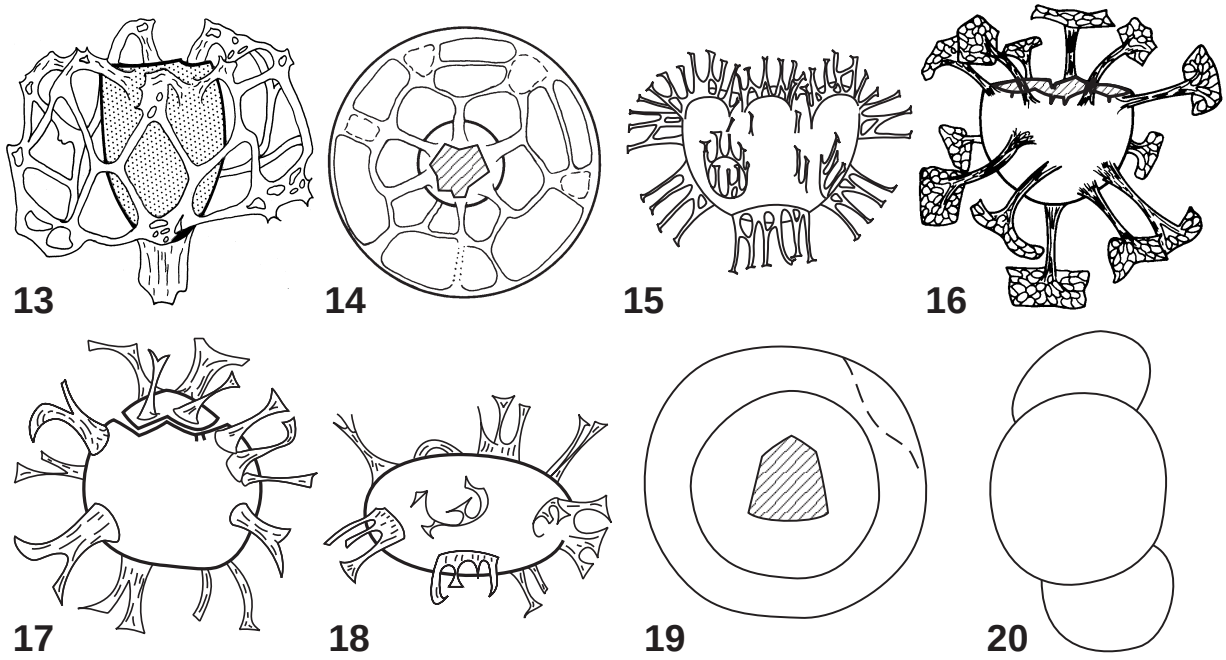


Plate P2. The modified Kofoid system (as outlined in Fensome et al., 1993b) is used in the labeling of individual plates for the gonyaulacaleans. The Kofoid system is used in the labeling of plates in the peridinialeans. The archeopyle location is denoted by diagonal lines. **1.** *Ataxiodinium choane* Reid 1974. Dorsal view. Holotype dimensions: overall diameter = 49 µm, endocyst diameter = 30 µm. **2.** *Barssidinium evangelineae* Lentin et al. 1994. Dorsal view. Holotype dimensions: cyst length = 99 µm, cyst width = 99 µm, process length up to 11 µm. **3.** *Biconidinium longissimum* Islam 1983c. Ventral view. Holotype dimensions: pericyst length = 140 µm, pericyst width = 51 µm, endocyst length = 57 µm, endocyst width = 49 µm. **4.** *Cannosphaeropsis passio* de Verteuil and Norris 1996a. Dorsal view. Holotype dimensions: overall length = 120 µm, overall width = 100 µm. **5, 6.** *Callaiosphaeridium asymmetricum* (Deflandre and Courteville 1939) Davey and Williams 1966b. Holotype dimensions: central body diameter = 40 µm, process length = 22–34 µm; (5) oblique apical view; (6) antapical view. **7.** *Cannosphaeropsis utinensis* O. Wetzel 1933b. Holotype dimensions: overall length = 116 µm, overall width = 88 µm, central body length = 44 µm, central body width = 36 µm. **8.** *Carpodinium obliquicostatum* Cookson and Hughes 1964. Ventral view. Holotype dimensions: length = 73 µm, width = 36 µm. **9, 10.** *Carpatella cornuta* Grigorovich 1969a. Holotype dimensions: length = 114 µm, width = 90 µm; (9) ventral view; (10) dorsal view. **11.** *Cassiculosphaeridia reticulata* Davey 1969a. Oblique ventral view. Holotype dimensions: diameter = 38 µm × 38 µm, crest height = 4–6 µm. **12.** *Cerebrocysta bartonensis* Bujak in Bujak et al. 1980. Dorsal view. Range of type material: overall diameter = 24 µm × 28 µm, crest height up to 2 µm. (Continued on next page.)

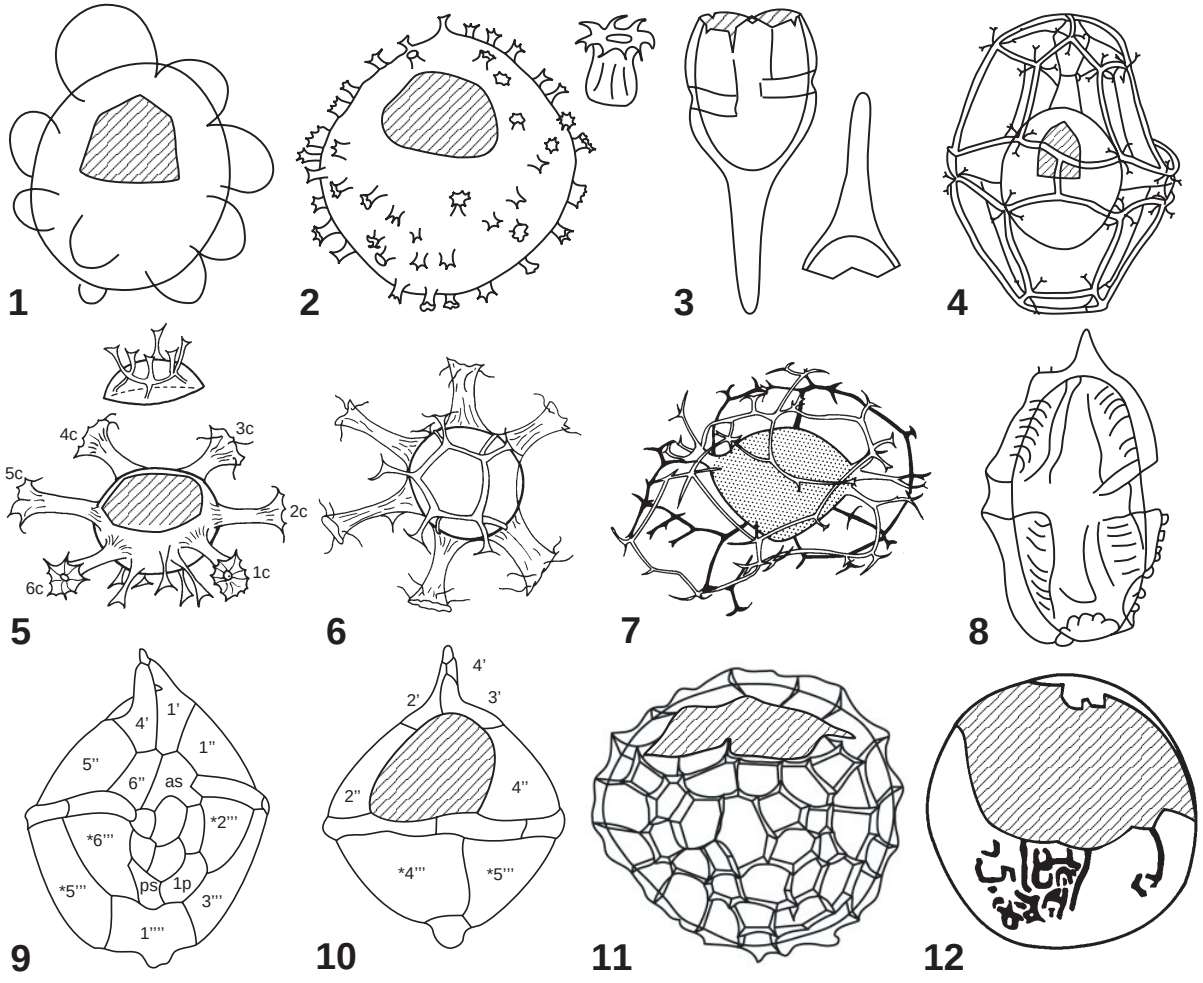


Plate P2 (continued). 13. *Cerebrocysta poulsenii* de Verteuil and Norris 1996a. Right lateral view. Holotype dimensions: length = 37 µm, width = 27 µm. **14.** *Cerodinium diebelii* (Alberti 1959b) Lentin and Williams 1987. Dorsal view. Holotype dimensions: pericyst length = 180 µm, pericyst width = 44 µm. **15.** *Cerodinium wardenense* (Williams and Downie 1966c) Lentin and Williams 1987. Dorsal view. Holotype dimensions: pericyst length = 57 µm, pericyst width = 46 µm, endocyst length = 36 µm, endocyst width = 43 µm. **16.** *Charlesdowniea crassiramosa* (Williams and Downie 1966b) Lentin and Vozzhennikova 1989. Dorsal view. Holotype dimensions: pericyst length = 125 µm, pericyst width = 122 µm, endocyst length = 80 µm, endocyst width = 71 µm. **17, 18.** *Charlesdowniea columna* (Michoux 1988) Lentin and Vozzhennikova 1990. Holotype dimensions: pericyst = 121 µm × 124 µm, archeopyle length = 21 µm, archeopyle width = 27 µm; (17) ventral view; (18) dorsal view. **19.** *Charlesdowniea edwardsii* (Wilson 1967c) Lentin and Vozzhennikova 1989. Dorsal view. Holotype dimensions: pericyst length = 96 µm, pericyst width = 107 µm, endocyst length = 50 µm, endocyst width = 58 µm, apical horn length = 16 µm, antiapical horn length = 19 µm, lateral horns length = 19 µm. **20.** *Chatangiella verrucosa* (Manum 1963) Lentin and Williams 1976. Dorsal view. Holotype dimensions: pericyst length = 134 µm, pericyst width = 83 µm.

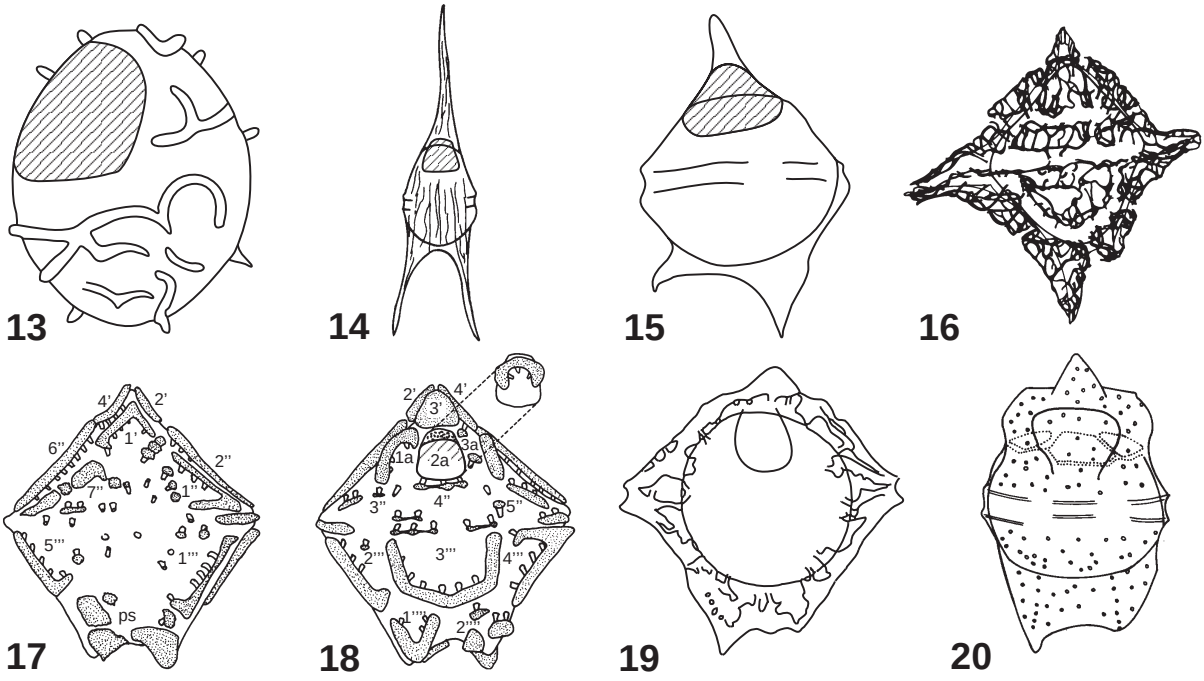


Plate P3. The modified Kofoid system (as outlined in Fensome et al., 1993b) is used in the labeling of individual plates for the gonyaulacaleans. The Kofoid system is used in the labeling of plates in the peridinialeans. The archeopyle location is denoted by diagonal lines. **1.** *Chichaouadinium vestitum* (Brideaux 1971) Bujak and Davies 1983. Dorsal view. Holotype dimensions: overall length = 71 µm, overall width = 51 µm. **2.** *Chiropteridium galea* (Maier 1959) Sarjeant 1983. Ventral view. Holotype dimensions: central body height = 55 µm, central body width = 76 µm, overall width = 100 µm. **3.** *Conosphaeridium striatoconum* (Deflandre and Cookson 1955) Cookson and Eisenack 1969. Oblique apical view. Range of type material: central body diameter = 52–57 µm, process length = 12–18 µm. **4.** *Cordosphaeridium cantharellus* (Brosius 1963) Gocht 1969. Dorsal view. Holotype dimensions: central body diameter = 54 µm. **5.** *Cordosphaeridium funiculatum* Morgenroth 1966a. Dorsal view. Holotype dimensions: central body diameter = 57 µm. **6.** *Corrudinium harlandii* Matsuoka 1983b. Ventral view. Holotype dimensions: length = 46 µm, width 42 µm, height of septum up to 4 µm. **7.** *Corrudinium incompositum* (Drugg 1970b) Stover and Evitt 1978. Ventral view. Holotype dimensions: length = 40 µm, width 40 µm. **8.** *Cyclapophysis monmouthensis* Benson 1976. Dorsal view. Holotype dimensions: overall width = 135 µm, central body length = 75 µm, central body width = 65 µm. **9–11.** *Cousteaudinium aubryae* de Verteuil and Norris 1996a. All apical view. Holotype dimensions: endocyst length = 49 µm, endocyst width = 38 µm, process length = 6–32 µm. **12.** *Cyclonephelium filoreticulatum* (Slimani 1994) Prince et al. 1999. Ventral view. Holotype dimensions: overall length = 80 µm, overall width = 100 µm, endocyst length = 58 µm, endocyst width = 60 µm. (Continued on next page).

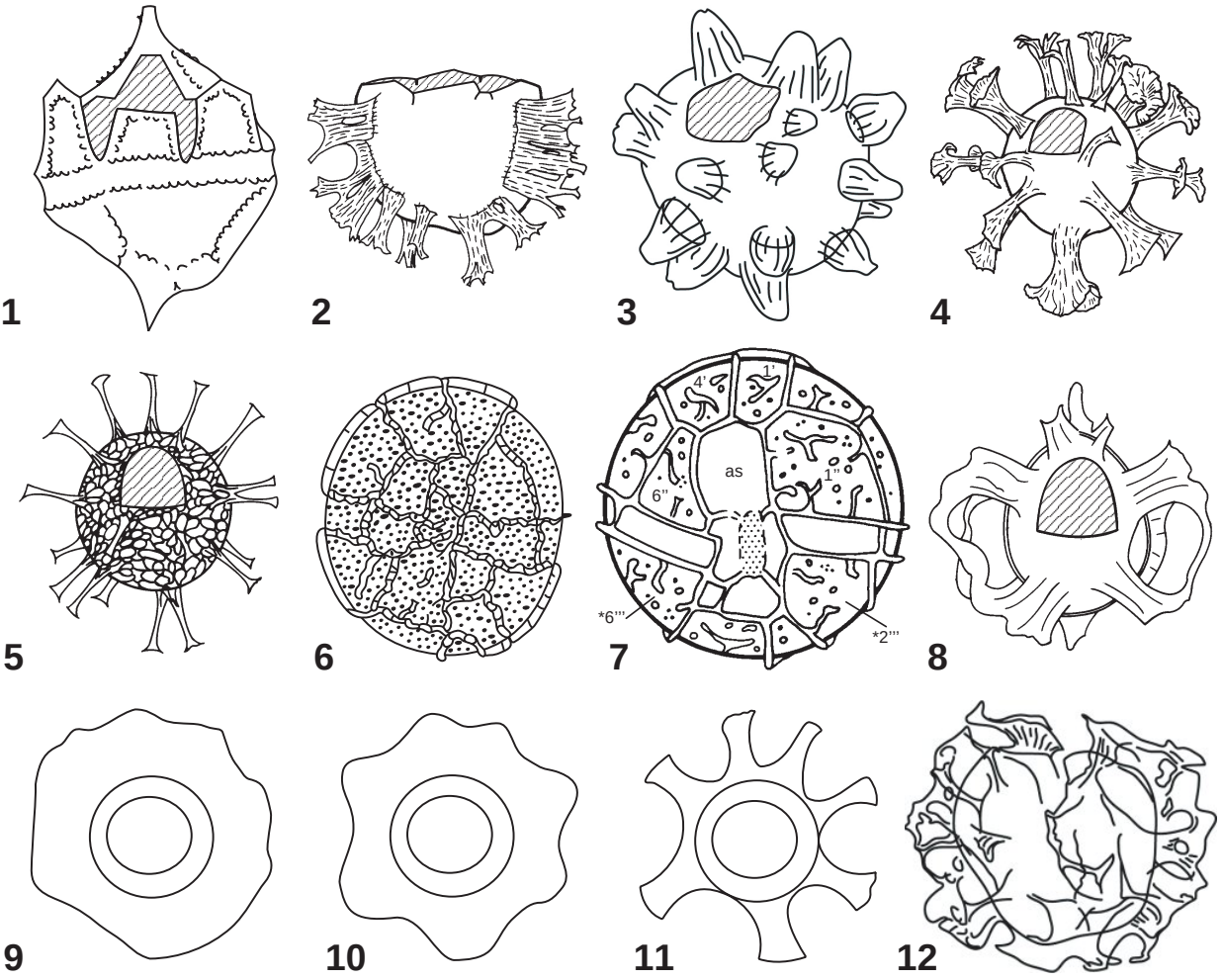


Plate P3 (continued). 13. *Cyclonephelium membraniphorum* Cookson and Eisenack 1962b. Ventral view. Holotype dimensions: overall length = 127 µm, overall breadth = 108 µm, membrane height = 6–22 µm. **14.** *Damassadinium californicum* (Drugg 1967) Fensome et al. 1993b. Ventral view. Range of type material: length = 61–103 µm, width = 44–66 µm. **15.** *Deflandrea antarctica* Wilson 1967a. Dorsal view. Holotype dimensions: pericyst length = 138 µm, pericyst width = 72 µm, endocyst diameter = 69 µm. **16.** *Deflandrea convexa* Wilson 1988. Dorsal view. Holotype dimensions: pericyst length = 93 µm, pericyst width = 76 µm, endocyst length = 76 µm, endocyst width = 76 µm. **17.** *Deflandrea cygniformis* Pöthe de Baldis 1966. Dorsal view. Holotype dimensions: overall length = 195.8 µm, overall width = 99 µm, epicyst length = 145 µm, hypocyst length = 50 µm, endocyst length = 85.8 µm, endocyst width = 102 µm (as stated by Pöthe de Baldis,1966, p. 221). **18.** *Deflandrea oebisfeldensis* Alberti 1959b. Dorsal view. Holotype dimensions: pericyst length = 150 µm, pericyst width = 88 µm. **19.** *Deflandrea phosphoritica* Eisenack 1938b. Dorsal view. Holotype dimensions: pericyst length = 116 µm. **20.** *Dinogymnium* sp. Lateral view. Dimension of holotype of type species, *Dinogymnium acuminatum*: length = 91 µm, width = 61 µm.

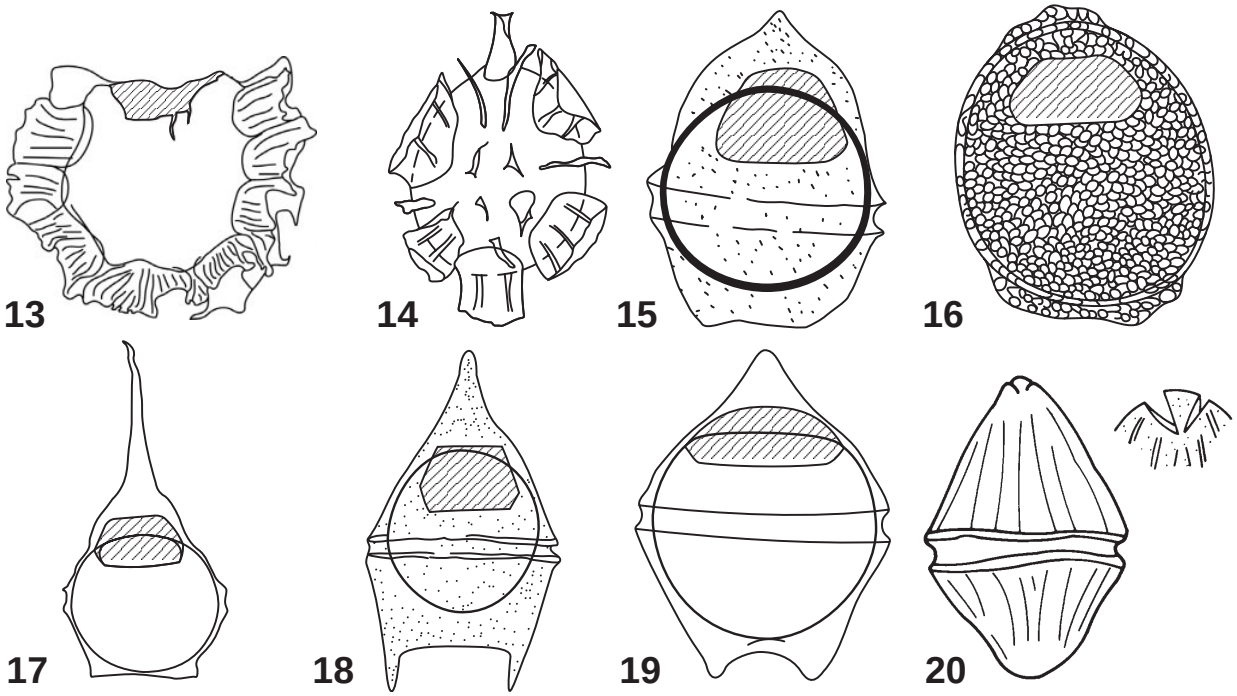


Plate P4. The modified Kofoid system (as outlined in Fensome et al., 1993b) is used in the labeling of individual plates for the gonyaulacaleans. The Kofoid system is used in the labeling of plates in the peridinialeans. The archeopyle location is denoted by diagonal lines. **1.** *Dinopterygium cladoides* Deflandre 1935. Ventral view. Range of type material: overall length = 65 µm, overall width = 75 µm, length (minus septa) = 40 µm, width (minus septa) = 50 µm. **2.** *Diphyes colligerum* (Deflandre and Cookson 1955) Cookson 1965a. Ventral view. Holotype dimensions: central body diameter = 33 µm. **3.** *Diphyes ficusoides* Islam 1983b. Ventral view. Holotype dimensions: central body diameter (without processes) = 28 µm × 36 µm, process length = 15–17 µm, antapical process length = 21 µm, antapical process maximum width = 20 µm. **4.** *Distatodinium apenninicum* Brinkhuis et al. 1992. Ventral view. Holotype dimensions: central body length = 52 µm, central body width = 29 µm, process length = 12 µm. **5.** *Distatodinium biffii* Brinkhuis et al. 1992. Ventral view. Holotype dimensions: central body length = 95 µm, central body width = 52 µm, process length = 45–55 µm. **6.** *Dracodinium condylos* (Williams and Downie 1966b) Costa and Downie 1979. Dorsal view. Holotype dimensions: pericyst length = 103 µm, pericyst width = 112.5 µm. **7.** *Dracodinium politum* Bujak et al. 1980. Dorsal view. Range of type material: pericyst length = 130–150 µm, pericyst width = 140–168 µm, endocyst length = 66–80 µm, endocyst width = 69–76 µm. **8.** *Dracodinium varielongitudum* (Williams and Downie 1966b) Costa and Downie 1979. Dorsal view. Holotype dimensions: pericyst length = 103 µm, pericyst width = 100 µm, endocyst length = 73 µm, endocyst width = 71 µm. **9.** *Dracodinium waipawaense* (Wilson 1967c) Costa and Downie 1979. Dorsal view. Holotype dimensions: pericyst length = 102 µm, pericyst width = 118 µm, endocyst length = 69 µm, endocyst width = 69 µm, apical horn length = 14 µm, right antapical horn length = 11 µm, lateral horn length = 22 µm. **10.** *Eatonicysta furensis* (Heilmann-Clausen in Heilmann-Clausen and Costa 1989) Stover and Williams 1995. Apical view. Holotype dimensions: overall length = 62 µm, overall width = 60 µm, central body length = 40 µm, central body width = 43 µm. **11.** *Eatonicysta pterococcoides* (O. Wetzel 1933b) Sarjeant 1985b. Lateral view. Range of type material: overall size = 64–68 µm, central body diameter = 32–40 µm. **12.** *Eatonicysta ursulae* (Morgenroth 1966a) Stover and Evitt 1978. Apical view. Holotype dimensions: central body diameter = 50 µm. (Continued on next page.)

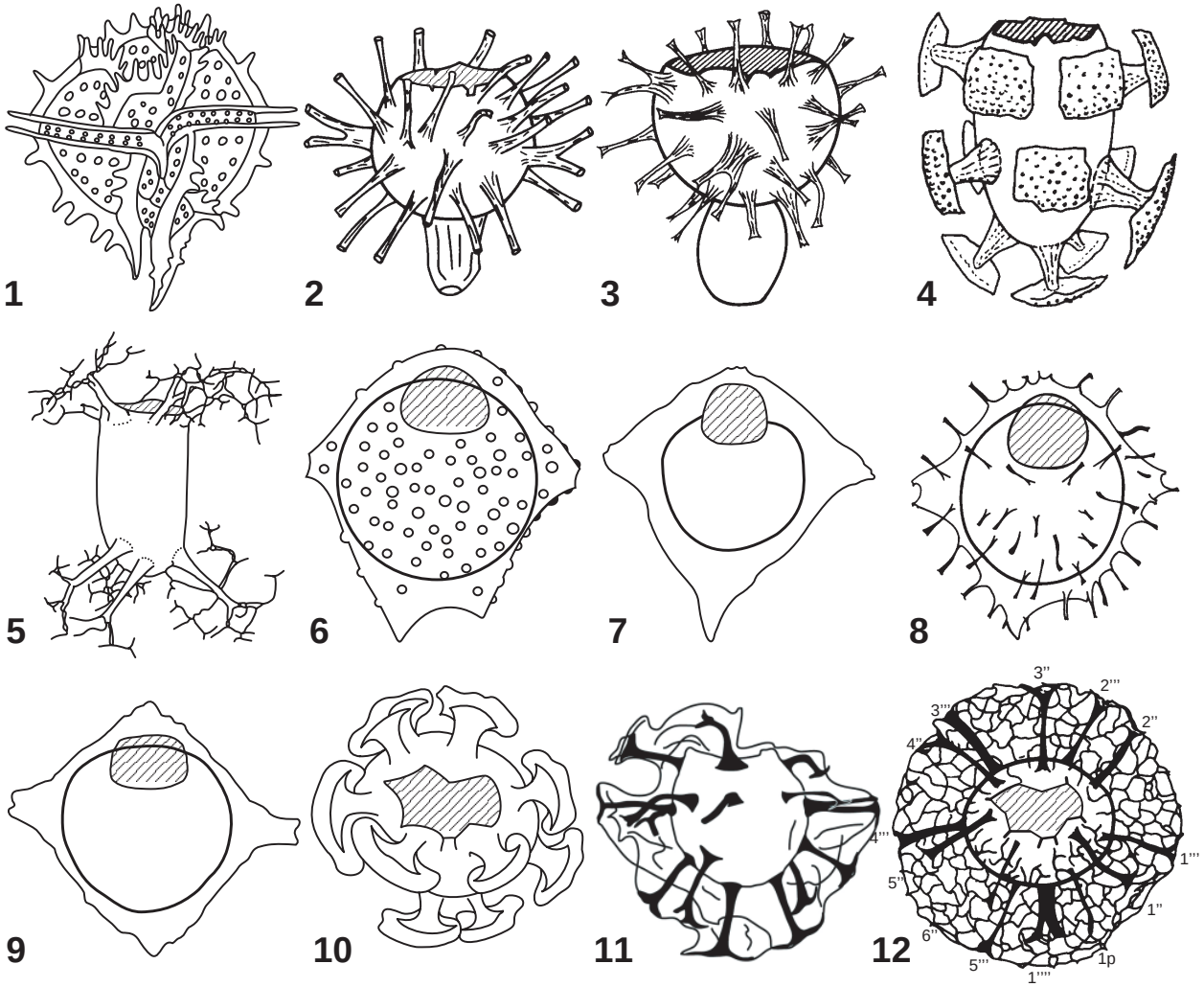


Plate P4 (continued). 13, 14. *Ectosphaeropsis burdigalensis* Londeix and Jan du Chêne 1988. Both right lateral view. Holotype dimensions: overall length = 112 µm, overall diameter = 64 µm, endocyst length = 52 µm, endocyst diameter = 39 µm, process length (excluding apical) = 22–25 µm, apical process length = 41 µm, apical protuberence height = 2.5 µm. **15.** *Edwardsiella sexispinosa* Versteegh and Zevenboom in Versteegh 1995. Dorsal view. Holotype dimensions: length = 55 µm, maximum diameter = 55 µm, process length = 39 µm, apical horn length = 11 µm, antapical horn length = 16 µm, membrane height on upper half of process = 5 µm. **16.** *Ellipsodinium rugulosum* Clarke and Verdier 1967. Oblique right lateral view. Holotype dimensions: length = 40 µm, breadth = 39 µm, ridge height = 1.5 µm. **17.** *Endoscrinium campanula* (Gocht 1959) Vozzhennikova 1967. Dorsal view. Holotype dimensions: overall length = 104 µm, overall width = 91 µm. **18.** *Enneadocysta partridgei* Stover and Williams 1995. Ventral view. Range of type material: overall length without opercula = 44–58 µm (specimens with opercula are 15–20 µm longer), overall width = 88–128 µm, process length = 18–32 µm. **19.** *Enneadocysta pectiniformis* (Gerlach 1961) Stover and Williams 1995. Ventral view. Holotype dimensions: diameter = 32 µm, process length = 13 µm. **20.** *Epelidosphaeridia spinosa* Cookson and Hughes 1964 ex Davey 1969a. Dorsal view. Holotype dimensions: overall length = 55 µm, overall width = 46 µm.

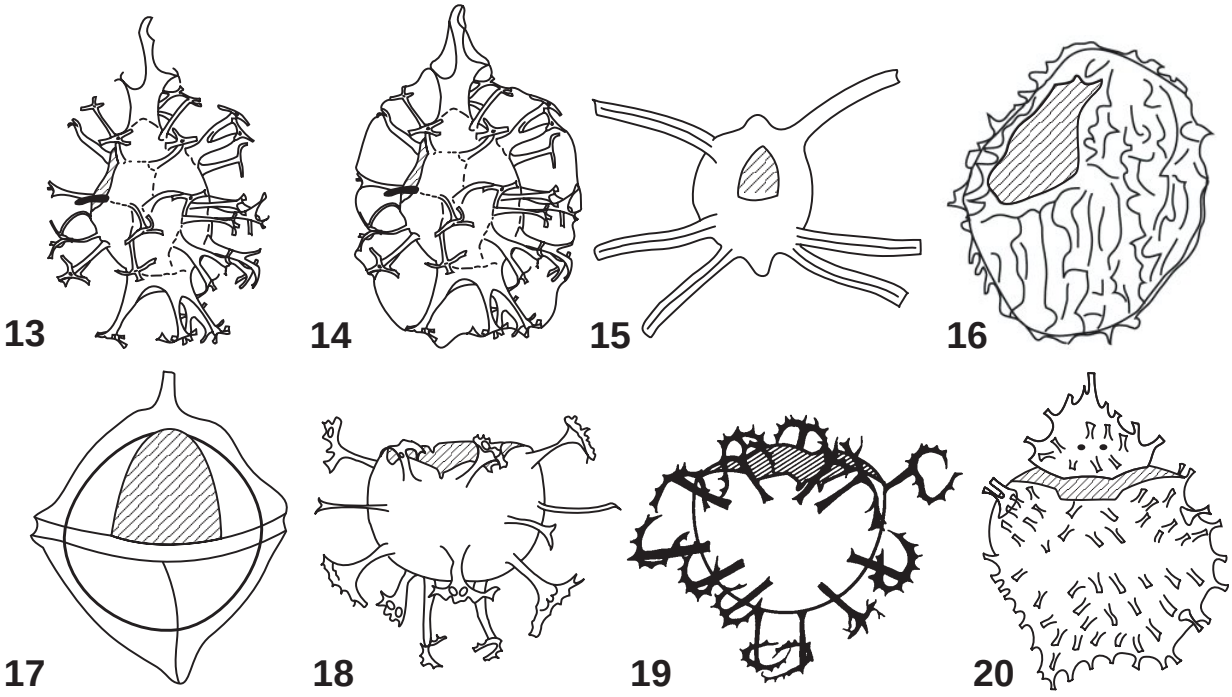


Plate P5. The modified Kofoid system (as outlined in Fensome et al., 1993b) is used in the labeling of individual plates for the gonyaulacaleans. The Kofoid system is used in the labeling of plates in the peridinialeans. The archeopyle location is denoted by diagonal lines. **1.** *Filisphaera filifera* Bujak 1984. Dorsal view. Range of type material: length = 45–60 µm, width = 45–56 µm. **2.** *Florentinia mayii* Kirsch 1991. Dorsal view. Holotype dimensions: central body = 32 µm × 40 µm, broad processes, length and breadth = 19–23 µm × 18–21 µm, slender process length = 11 µm, spine length = 5 µm. **3.** *Galeacysta etrusca* Corradini and Biffi 1988. Right lateral view. Holotype dimensions: pericyst diameter = 78 µm × 80 µm, endocyst diameter = 52 µm × 66 µm. **4.** *Gerdiocysta conopeum* Liengjarern et al. 1980. Dorsal view. Holotype dimensions: central body length (excluding operculum) = 64 µm, central body width = 73 µm, process length up to 20 µm. **5.** *Glaphyrocysta semitecta* (Bujak in Bujak et al. 1980) Lentin and Williams 1981. Ventral view. Range of type material: central body length (without operculum) = 33–52 µm, central body width = 45–60 µm, maximum process length = 15–37 µm, maximum membrane height = 25–46 µm. **6.** *Gramocysta verricula* (Piasecki 1980) Lund and Lund-Christensen in von Daniels et al. 1990. Dorsal view. Holotype dimensions: length (excluding apical area) = 63 µm, width = 77 µm. **7.** *Habibacysta tectata* Head et al. 1989b. Dorsal view. Holotype dimensions: diameter = 33 µm. **8.** *Heterosphaeridium difficile* (Manum and Cookson 1964) Ioannides 1986. Ventral view. Holotype dimensions: diameter = 91 µm, process length = 25 µm. **9, 10.** *Hemiplacophora semilunifera* Cookson and Eisenack 1965a. Holotype dimensions: overall length = 62 µm, overall width = 57 µm; (9) ventral view; (10) dorsal view. **11, 12.** *Heteraulacacysta porosa* Bujak in Bujak et al. 1980. Holotype dimensions: overall diameter = 85 µm × 91 µm; (11) apical view; (12) antapical view. (Continued on next page.)

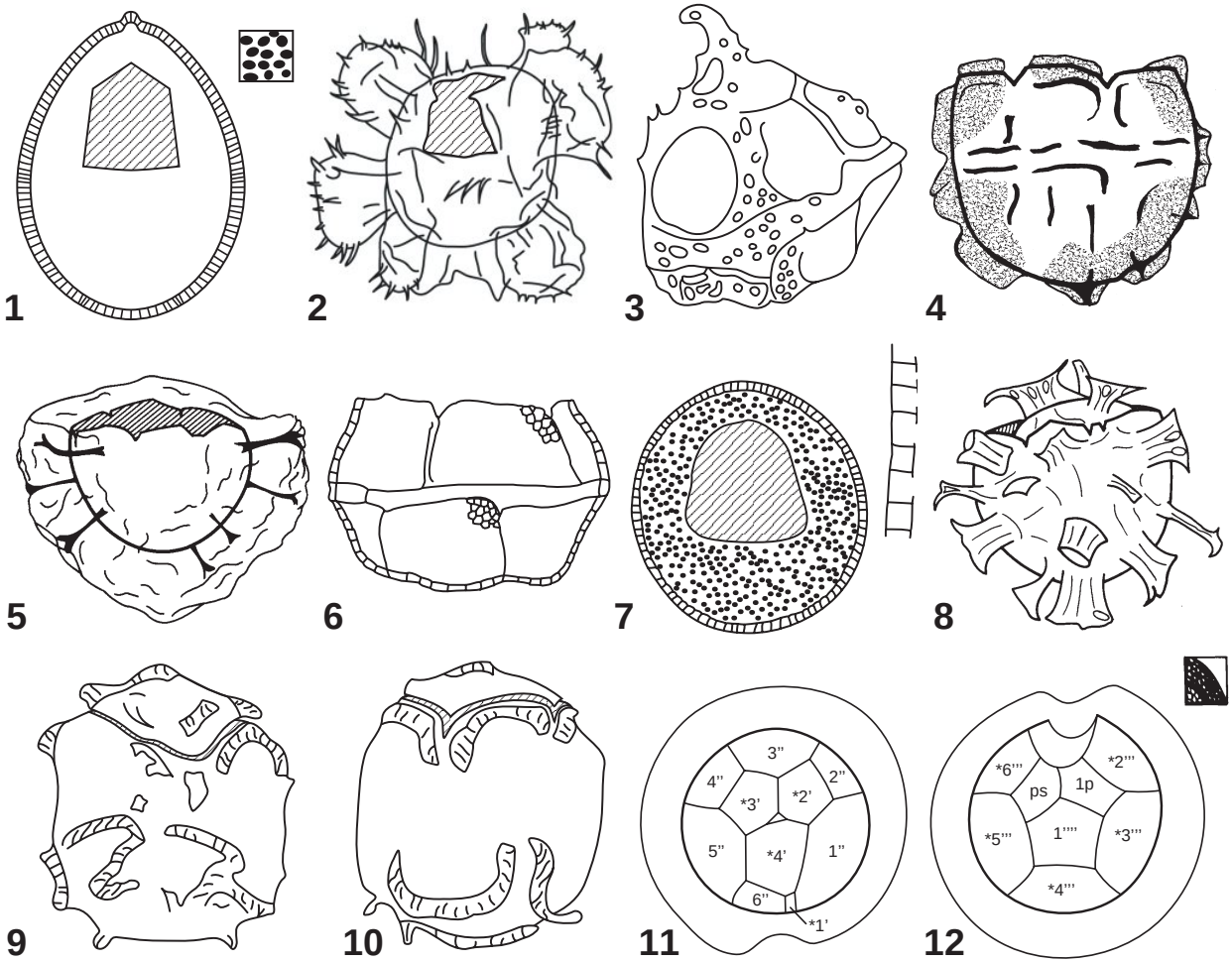


Plate P5 (continued). 13. *Homotryblium floripes* (Deflandre and Cookson 1955) Stover 1975. Antapical view. Range of type material: central body diameter = 45–72 µm × 32–59 µm, process length = 20–46 µm, process width = 3–28 µm. **14, 15.** *Homotryblium tenuispinosum* Davey and Williams 1966b. Holotype dimensions: central body diameter = 41 µm × 48 µm; (14) oblique ventral view; (15) oblique dorsal view. **16.** "*Hystrichokolpoma pseudooceanicum*" Zevenboom and Santarelli in Zevenboom 1995 (considered an unpublished manuscript name by the originating authors). Lateral view. Range of type material: central body length = 25–35 µm, central body width = 30–33 µm, process length = 12–15 µm. **17, 18.** *Hystrichokolpoma bulbosum* (Ehrenberg 1838) Morgenroth 1968. Dimensions of specimens examined by Morgenroth (1968): maximum body length = 31–43 µm, maximum body width = 25–33 µm, process length = 6–31 µm; (17) ventral view; (18) dorsal view. **19, 20.** *Hystrichokolpoma cinctum* Klumpp 1953. Holotype dimensions: central body diameter = 46 µm; (19) ventral view; (20) dorsal view.

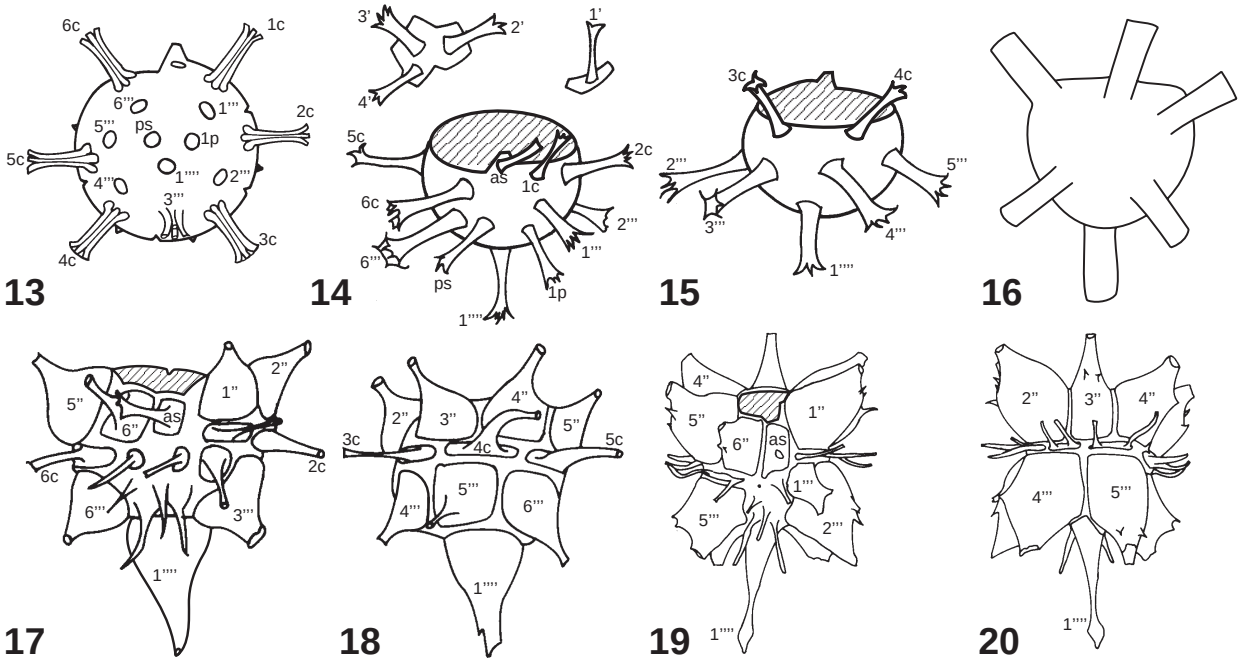


Plate P6. The modified Kofoid system (as outlined in Fensome et al., 1993b) is used in the labeling of individual plates for the gonyaulacaleans. The Kofoid system is used in the labeling of plates in the peridinialeans. The archeopyle location is denoted by diagonal lines. **1–3.** *Hystrichokolpoma pusillum* Biffi and Manum 1988. Holotype dimensions: central body length (with operculum) = 38 µm, central body length (excluding operculum) = 30 µm, central body width = 42 µm, large processes, length = 8–9 µm, large processes, breadth = 6–10 µm, antapical process length = 10 µm, slender processes, length = 8–9 µm; (1, 3) dorsal view; (2) ventral view. **4.** "*Hystrichokolpoma reductum*" Zevenboom and Santarelli in Zevenboom 1995 (considered an unpublished manuscript name by the originating authors). Dorsal view. Range of type material: central body length = 40–50 µm, central body width = 50–72 µm, process length = 30–40 µm. **5.** *Hystrichosphaeridium truswelliae* Wrenn and Hart 1988. Ventral view. Range of type material: overall diameter = 72–85 µm, central body diameter = 39–43 µm, process length = 8–15 µm, endophragm thickness < 1 µm, periphragm thickness < 1 µm. **6.** *Hystrichosphaeridium tubiferum* (Ehrenberg 1838) Deflandre 1937b, emended Davey and Williams 1966b. Apical view. Holotype dimensions: central body diameter = 33 µm × 34 µm. **7.** *Hystrichosphaeropsis quasicribrata* (O. Wetzel 1961) Gocht 1976. Dorsal view. Range of type material: overall size = 100 µm × 50 µm. **8.** *Impagidinium patulum* (Wall 1967) Stover and Evitt 1978. Ventral view. Holotype dimensions: diameter = ~55 µm. **9.** *Invertocysta tabulata* Edwards 1984. Ventral view. Holotype dimensions: length = 90 µm. **10, 11.** *Isabelidinium*? *viborgense* Heilmann-Clausen 1985. Holotype dimensions: pericyst length = 58 µm, pericyst width = 41 µm, endocyst length = 34 µm, endocyst width = 33 µm; (10) ventral view; (11) dorsal view. **12.** *Kleithriasphaeridium loffrense* Davey and Verdier 1976. Dorsal view. Holotype dimensions: central body diameter = 48 µm × 49 µm, process length = 31–34 µm. (Continued on next page.)

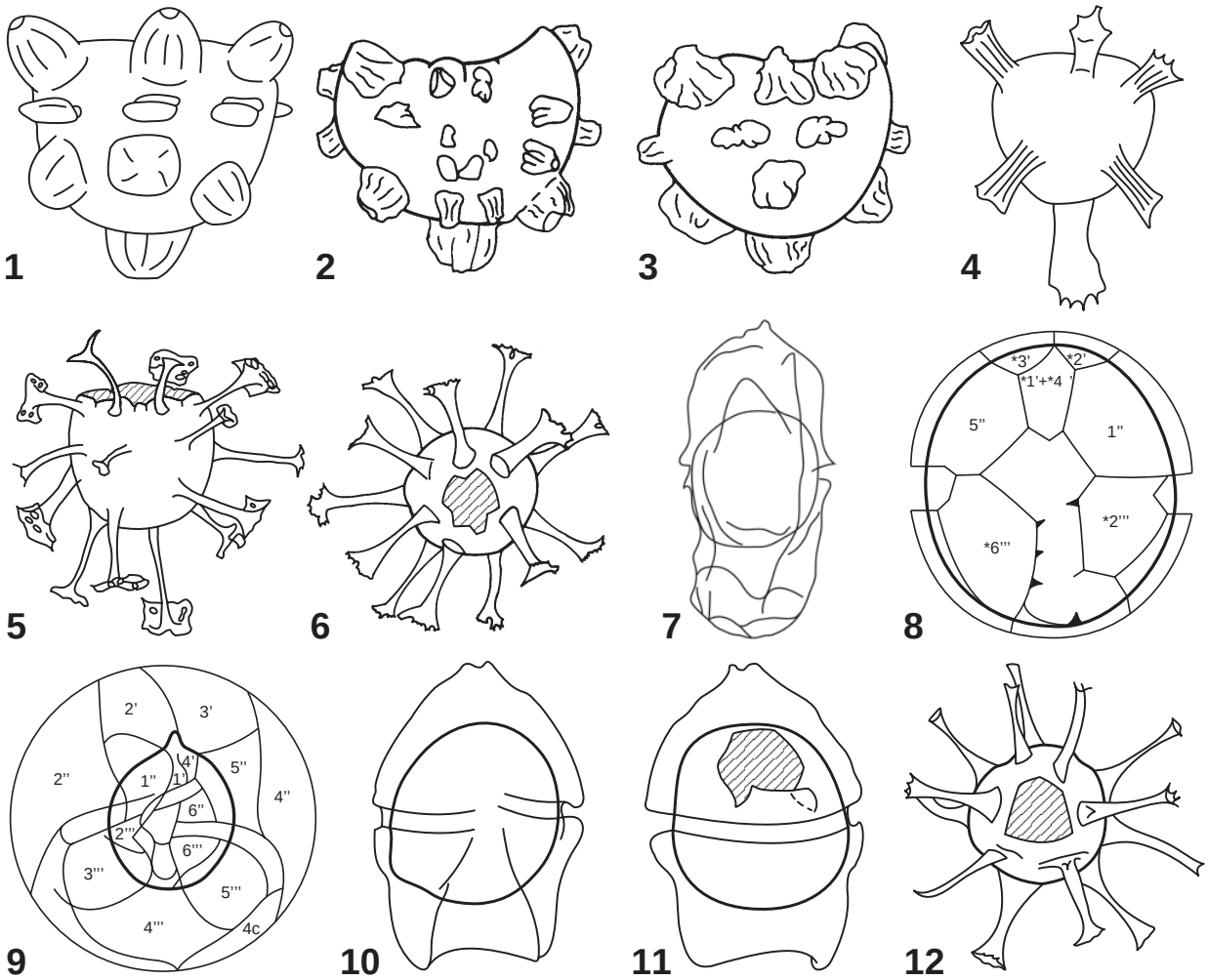


Plate P6 (continued). 13. *Kleithriasphaeridium readii* (Davey and Williams 1966b) Davey and Verdier 1976. Lateral view. Holotype dimensions: central body diameter = 41 µm × 45 µm, process length = 23–29 µm. **14.** *Labyrinthodinium truncatum* Piasecki 1980. Apical view. Holotype dimensions: diameter = 25 µm, process length = 5 µm. **15.** *Laciniadinium biconiculum* McIntyre 1975. Dorsal view. Holotype dimensions: length = 78 µm, width = 53 µm. **16.** *Leptodinium italicum* Biffi and Manum 1988. Dorsal view. Holotype dimensions: length (excluding septa) = 60 µm, width (excluding septa) = 52 µm, septa = 5–6 µm. **17, 18.** *Lentinia serrata* Bujak in Bujak et al. 1980. Holotype dimensions: pericyst length = 52 µm, pericyst width = 32 µm; (17) ventral view; (18) dorsal view. **19.** *Litosphaeridium siphonophorum* (Cookson and Eisenack 1958) Davey and Williams 1966b. Dorsal view. Holotype dimensions: overall diameter = 76 µm. **20.** *Manumiella seelandica* (Lange 1969) Bujak and Davies 1983. Dorsal view. Holotype dimensions: pericyst length = 106 µm, pericyst width = 71 µm.

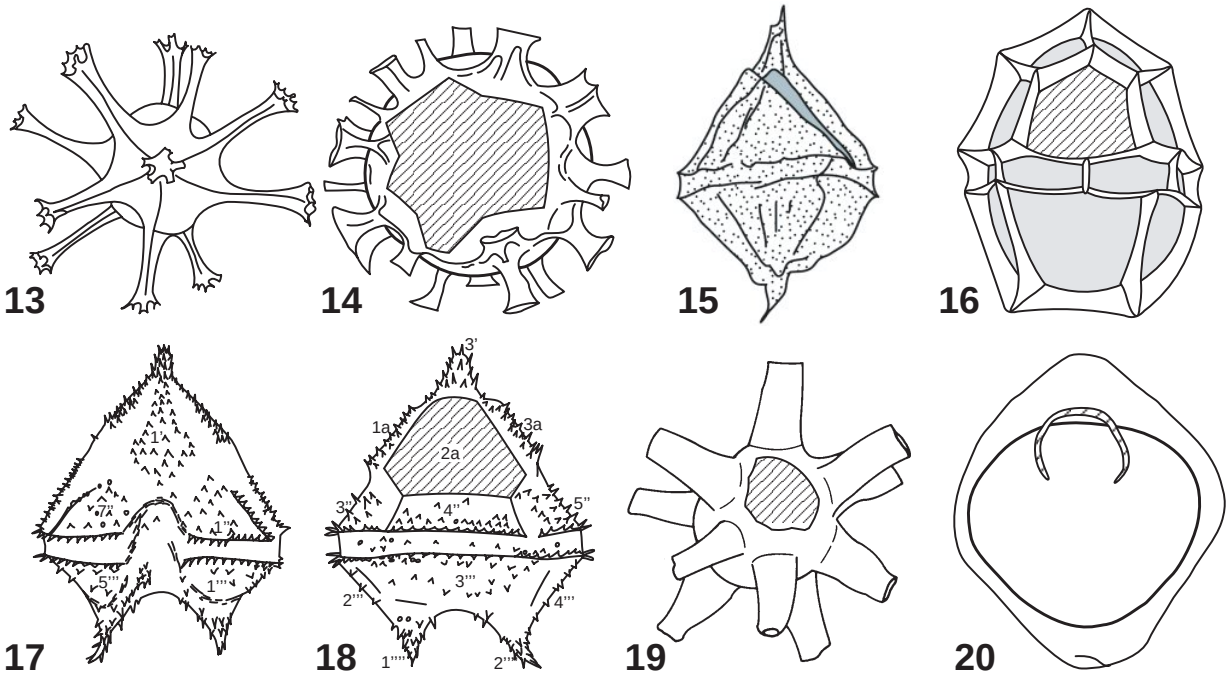


Plate P7. The modified Kofoid system (as outlined in Fensome et al., 1993b) is used in the labeling of individual plates for the gonyaulacaleans. The Kofoid system is used in the labeling of plates in the peridinialeans. The archeopyle location is denoted by diagonal lines. **1.** *Melitasphaeridium pseudorecurvatum* (Morgenroth 1966a) Bujak et al. 1980. Dorsal view. Holotype dimensions: central body diameter = 34 µm. **2, 3.** *Membranilarnacia*? *picena* Biffi and Manum 1988. Holotype dimensions: overall width = 49 µm, central body length (excluding processes) = 40 µm, ectophragm separation = 8 µm; (2) apical view; (3) lateral view. **4.** *Membranophoridium perforatum* Wilson 1988. Ventral view. Holotype dimensions: overall length = 97 µm, overall width = 80 µm, endocyst length = 69 µm, endocyst width = 61 µm. **5.** "*Mendicodinium robustum*" Zevenboom and Santarelli in Zevenboom 1995 (considered an unpublished manuscript name by the originating authors). Ventral view of hypocyst. Range of type material: length = 80–90 µm, width = 80–90 µm, wall thickness = 5–6 µm. **6.** *Nematosphaeropsis downiei* Brown 1986. Dorsal view. Holotype dimensions: overall length = 95 µm, overall width = 88 µm, central body length = 65 µm, central body width = 60 µm, process length = 28–30 µm. **7.** *Octodinium askiniae* Wrenn and Hart 1988. Dorsal view. Range of type material: pericyst width = 21–39 µm, apical horn length up to 54 µm, antapical horn length up to 36 µm, endocyst length = 44–57 µm, endophragm thickness < 0.5 µm. **8.** "*Odontochitina diversa*" Pearce 2000 (unpublished thesis name). Lateral view. **9, 10.** *Odontochitina costata* Alberti 1961. Both dorsal view. Holotype dimensions: pericyst length = 522 µm, central body diameter = 88 µm. **11.** *Odontochitina operculata* (O. Wetzel 1933a) Deflandre and Cookson 1955. Dorsal view. Holotype dimensions: pericyst length = 210 µm, pericyst width = 170 µm. **12.** *Odontochitina porifera* Cookson 1956. Dorsal view. Holotype dimensions: pericyst length = 208 µm, pericyst width = 78 µm. (Continued on next page.)

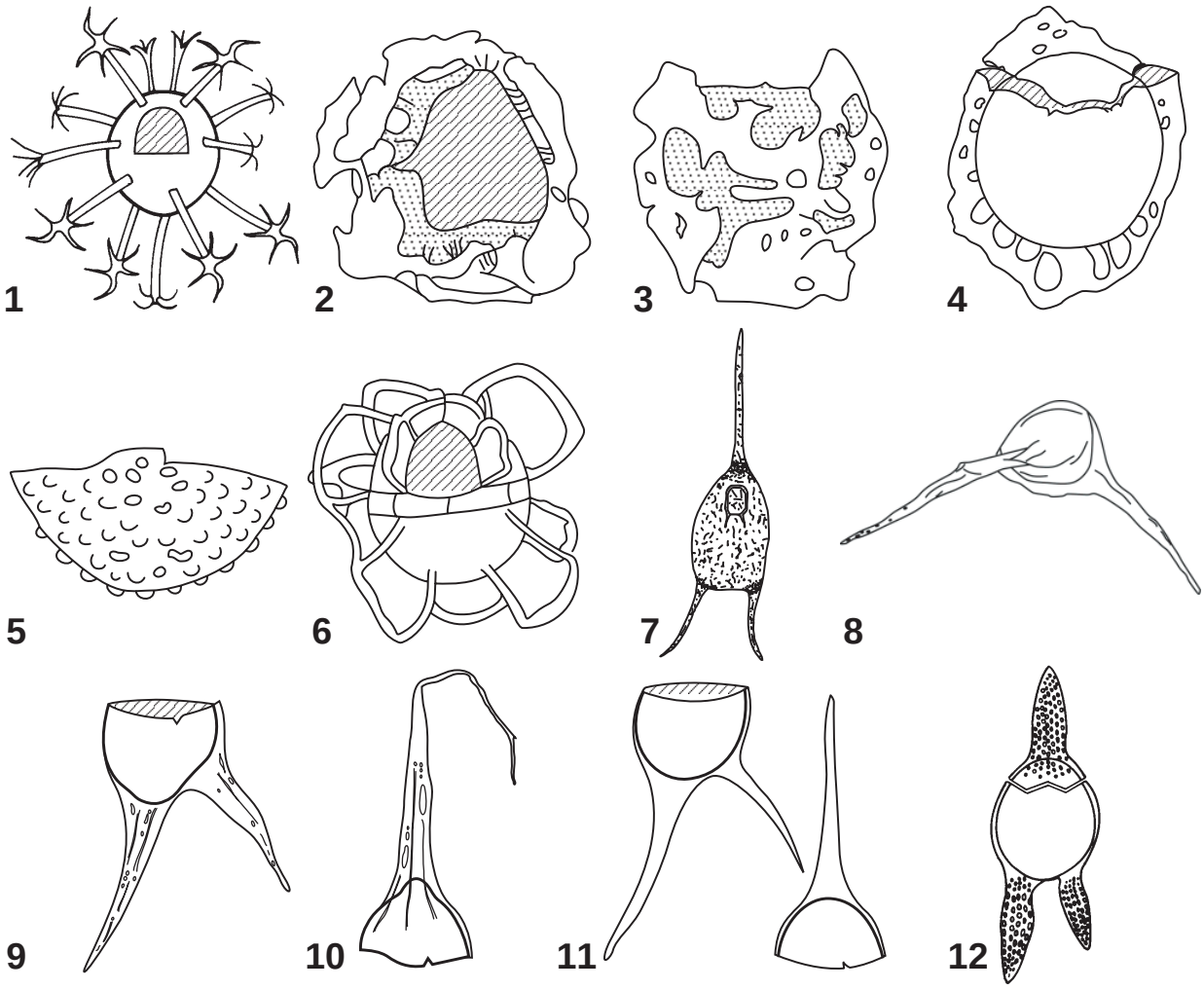


Plate P7 (continued). 13. *Oligosphaeridium poculum* Jain 1977b. Oblique apical view. Holotype dimensions: central body diameter (excluding processes) = 80 µm, process length = 6 µm, process width proximally = up to 16 µm, process width distally = up to 24 µm. **14.** *Oligosphaeridium pulcherrimum* (Deflandre and Cookson 1955) Davey and Williams 1966b. Dorsal view. Holotype dimensions: overall diameter = 118 µm, central body diameter = 47 µm × 61 µm, process length = 26–38 µm. **15.** *Oligosphaeridium* sp. Oblique apical view. **16.** *Operculodinium divergens* (Eisenack 1954b) Stover and Evitt 1978. Dorsal view. Holotype dimensions: overall diameter = 124 µm, central body diameter = 71 µm. **17.** *Operculodinium echigoense* Matsuoka 1983b. Dorsal view. Holotype dimensions: central body diameter = 72 µm, process length = 12 µm. **18.** *Operculodinium*? *eirikianum* Head et al. 1989b. Dorsal view. Holotype dimensions: central body diameter = 34 µm, process length = 8–9 µm. **19.** *Ovoidinium verrucosum* (Cookson and Hughes 1964) Davey 1970. Dorsal view. Holotype dimensions: overall length = 52 µm, overall width = 32 µm. **20.** *Palaeocystodinium bulliforme* Ioannides 1986. Dorsal view. Range of type material: pericyst length (excluding end spine) = 179–240 µm, pericyst width = 64–120 µm, endocyst length = 80–125 µm, endocyst width = 60–102 µm, end spine = up to 7 µm long, pericoel width = up to 6 µm × 28 µm at base of horns, periphragm thickness = up to 1.5 µm.

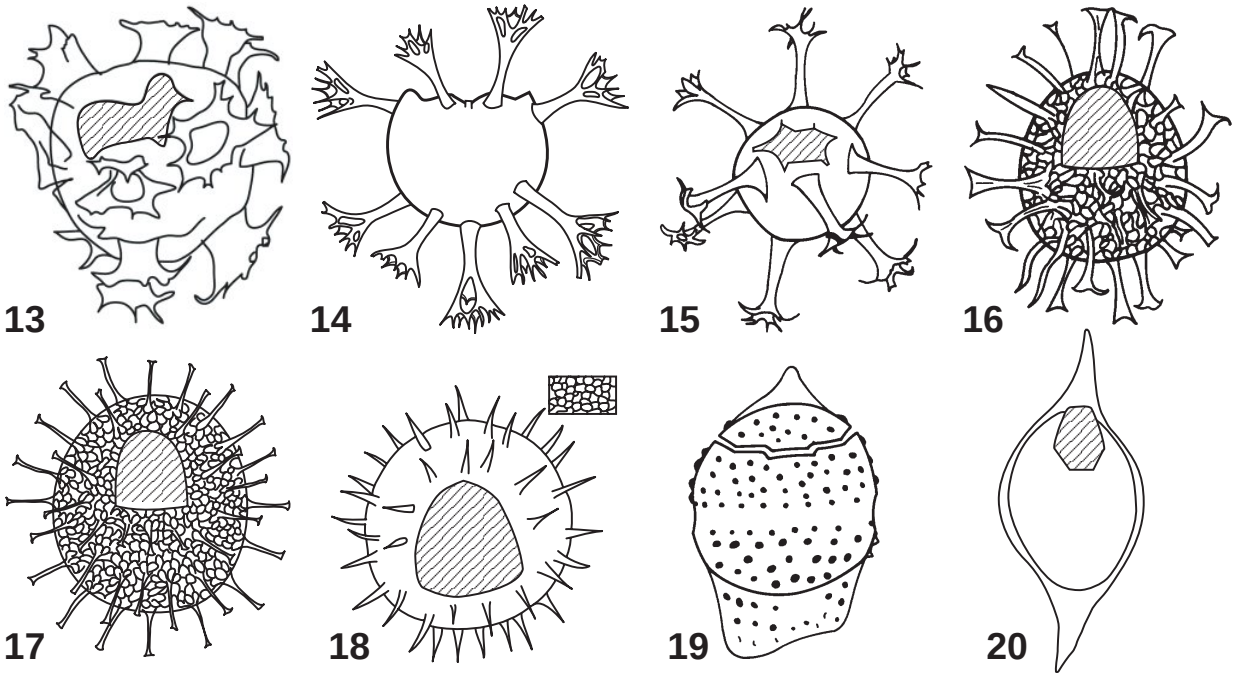


Plate P8. The modified Kofoid system (as outlined in Fensome et al., 1993b) is used in the labeling of individual plates for the gonyaulacaleans. The Kofoid system is used in the labeling of plates in the peridinialeans. The archeopyle location is denoted by diagonal lines. **1.** "*Palaeocystodinium striatogranulosum*" Zevenboom and Santarelli in Zevenboom 1995 (considered an unpublished manuscript name by the originating authors). Dorsal view. Range of type material: pericyst length = 125–170 µm, pericyst width = 20–32 µm, endocyst length = 30–45 µm, endocyst width = 20–30 µm. **2.** *Palaeohystrichophora infusorioides* Deflandre 1935. Dorsal view. Holotype dimensions: overall length (without processes) = 35 µm, overall width (without processes) = 23 µm. ***3.*** *Palaeoperidinium pyrophorum* (Ehrenberg 1838 ex O. Wetzel 1933a) Sarjeant 1967b. Dorsal view. Holotype dimensions: length = 92 µm, width = 74 µm. **4.** *Palaeotetradinium silicorum* Deflandre 1936b. Dorsal view. Holotype dimensions: length = 47 µm, width = 40 µm. **5, 6.** *Palynodinium grallator* Gocht 1970a. Holotype dimensions: overall diameter (with processes) = 106 µm; (5) ventral view; (6) dorsal view. **7.** *Phthanoperidinium amoenum* Drugg and Loeblich 1967. Dorsal view. Holotype dimensions: length = 38 µm, width = 35 µm. **8.** *Phthanoperidinium distinctum* Bujak 1994. Dorsal view. Range of type material: pericyst length = 37–50 µm, pericyst width = 38–46 µm, apical horn length = <2 µm. **9.** *Pyxidinopsis fairhavenensis* de Verteuil and Norris 1996a. Dorsal view. Holotype dimensions: length = 30 µm, width = 25 µm. **10.** *Raetiaedinium truncigerum* (Deflandre 1937b) Kirsch 1991. Dorsal view. Holotype dimensions: central body diameter = 42 µm. **11.** *Raphidodinium fucatum* Deflandre 1936b. Range of type material: cyst length (excluding processes) = 28–30 µm, cyst width = 14–20 µm, process length = 40–50 µm, overall diameter = 110–115 µm. **12.** *Renidinium rigidum* Prince et al., 1999. Ventral view. Holotype dimensions: ectocyst length = 86 µm, ectocyst width = 73 µm, endocyst length = 62 µm, endocyst width = 58 µm, cavities = 2–40 µm. (Continued on next page.)

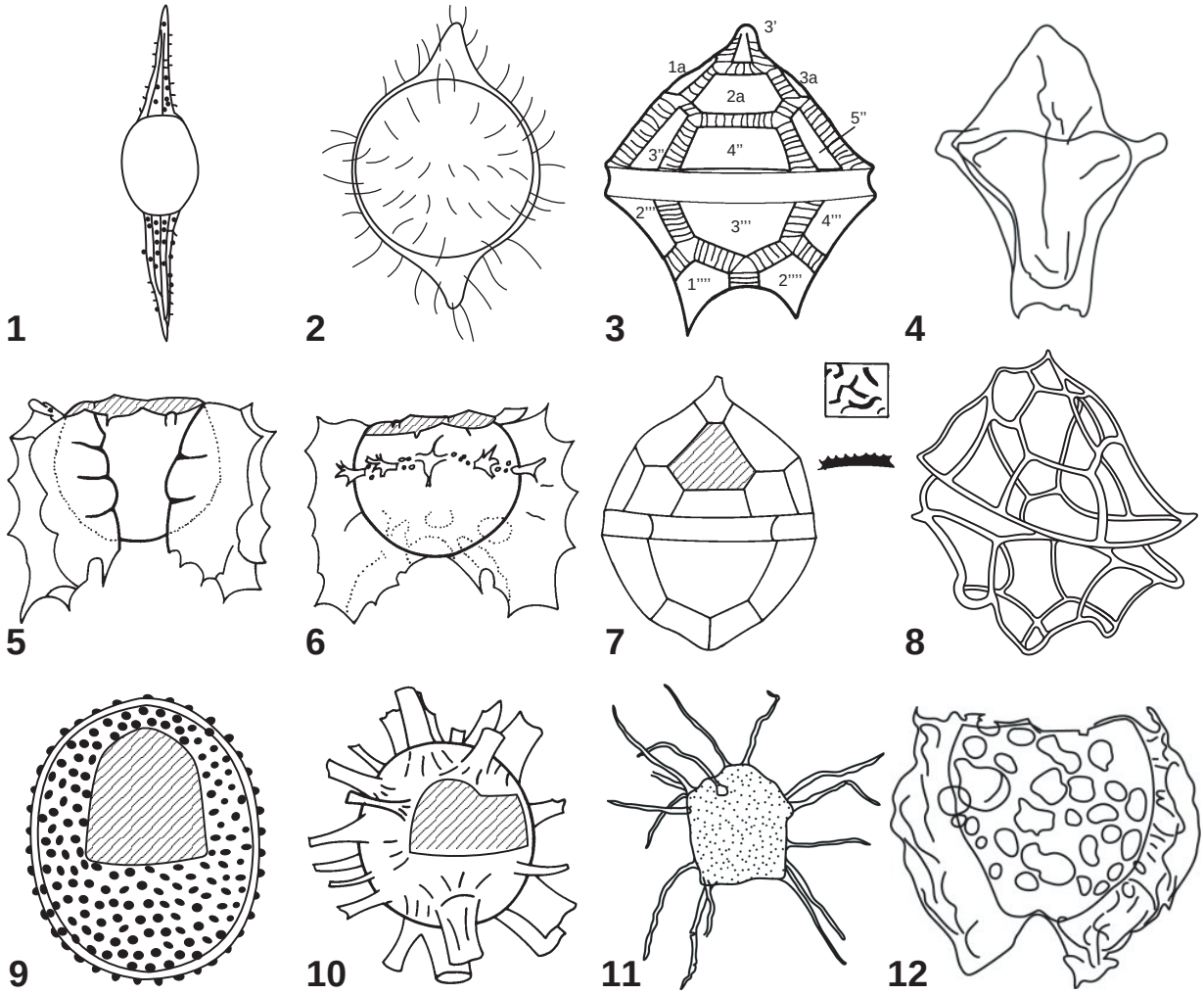


Plate P8 (continued). 13. *Reticulatosphaera actinocoronata* (Benedek 1972) Bujak and Matsuoka 1986. Oblique dorsal view. Holotype dimensions: central body diameter = 14 µm. **14.** *Rhombodinium draco* Gocht 1955. Dorsal view. Holotype dimensions: pericyst length = 150 µm, pericyst width = 158 µm. **15.** *Rhombodinium perforatum* (Jan du Chêne and Châteauneuf 1975) Lentin and Williams 1977b. Dorsal view. Holotype dimensions: pericyst length = 94 µm, pericyst width = 120 µm, apical horn length = 12 µm, left antapical horn length = 10 µm, right antapical horn length = 6 µm, lateral horn length = 22 µm, endocyst length = 70 µm, endocyst width = 84 µm. **16.** *Rhombodinium porosum* Bujak 1979. Dorsal view. Holotype dimensions: pericyst length = 138 µm, pericyst width = 145 µm. **17, 18.** *Saturnodinium pansum* (Stover 1977) Brinkhuis et al. 1992. Range of type material: overall size in apical-antapical view = 64 µm × 66–82 µm × 84 µm, endocyst diameter = 38–50 µm; (17) apical view; (18) dorsal view. **19.** *Saturnodinium perforatum* Brinkhuis et al. 1992. Dorsal view. Holotype dimensions: pericyst length = 71 µm, pericyst width = 51 µm, endocyst length = 25 µm, endocyst width = 22 µm. **20.** *Schematophora speciosa* Deflandre and Cookson 1955. Ventral view. Holotype dimensions: overall diameter = 54 µm × 51 µm. **21.** *Selenopemphix armageddonensis* de Verteuil and Norris 1992. Apical view. Holotype dimensions: major equatorial diameter (excluding processes) = 35 µm, minor equatorial diameter (excluding processes) = 30 µm, process width (based on 13 specimens) = 4–20 µm, process length (based on 13 specimens) = 4–7 µm.

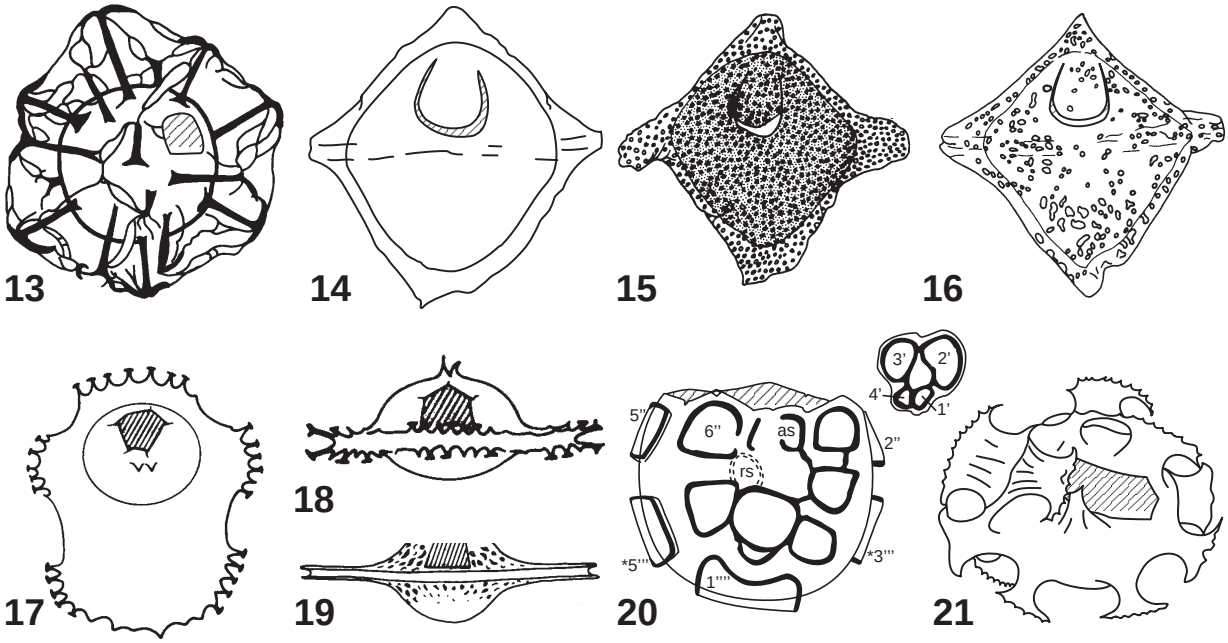


Plate P9. The modified Kofoid system (as outlined in Fensome et al., 1993b) is used in the labeling of individual plates for the gonyaulacaleans. The Kofoid system is used in the labeling of plates in the peridinialeans. The archeopyle location is denoted by diagonal lines. **1.** *Selenopemphix armata* Bujak in Bujak et al., 1980. Apical view. Range of type material: autocyst thickness (excluding processes) = 26–43 µm, autocyst width (excluding processes) = 24–45 µm, process length = 9–17 µm. **2.** *Selenopemphix dionaeacysta* Head et al. 1989b. Apical view. Holotype dimensions: maximum length (excluding processes) = 38 µm, process length (based on 17 specimens) = 4–8 µm. **3.** *Senoniasphaera inornata* (Drugg 1970b) Stover and Evitt 1978. Ventral view. Holotype dimensions: overall length (with operculum) = 118 µm, overall width = 100 µm. **4.** *Senoniasphaera protrusa* Clarke and Verdier 1967. Ventral view. Holotype dimensions: overall length = 100 µm, overall width = 71 µm, endocyst length = 66 µm, endocyst width = 60 µm, apical horn length = 18 µm, antapical horn length = 12 µm, cingulum width = 6–7 µm. **5, 6.** *Senoniasphaera rotundata* Clarke and Verdier 1967. Ventral view. Holotype dimensions: overall length = 92 µm, overall width = 67 µm, endocyst length = 71 µm, endocyst width = 60 µm, apical horn length = 14 µm, antapical horn length = 8 and 2 µm, cingulum width = 3 µm. **7.** *Senoniasphaera rotundata* subsp. *alveolata* Pearce et al. 2003. **8.** *Spinidinium echinoideum* (Cookson and Eisenack 1960a) Lentin and Williams 1976. Ventral view. Holotype dimensions: pericyst length = 80 µm, pericyst with = 57 µm, endocyst diameter = 43 µm. **9.** *Spinidinium macmurdoense* (Wilson 1967a) Lentin and Williams 1976. Dorsal view. Holotype dimensions: pericyst length = 99 µm, pericyst width = 72 µm × 63 µm. **10.** *Spiniferites porosus* (Manum and Cookson 1964) Harland 1973. Showing single plate 4″ and processes. Holotype dimensions: central body diameter = 66 µm × 75 µm, process length = 17–23 µm. **11.** *Spiniferites ramosus* subsp. *maeandriformis* (Corradini 1973) Lentin and Williams 1975. Showing single plate 4‴ and processes. Holotype dimensions: central body diameter = 60 µm × 60 µm, process length = 18–25 µm. **12.** *Spiniferites*? *velatus* (Clarke and Verdier 1967) Stover and Evitt 1978. Ventral view. Holotype dimensions: overall diameter = 100 µm, central body diameter = 55 µm, process length plus ledge = maximum of 32 µm, height of ledges = maximum of 20 µm. (Continued on next page.)

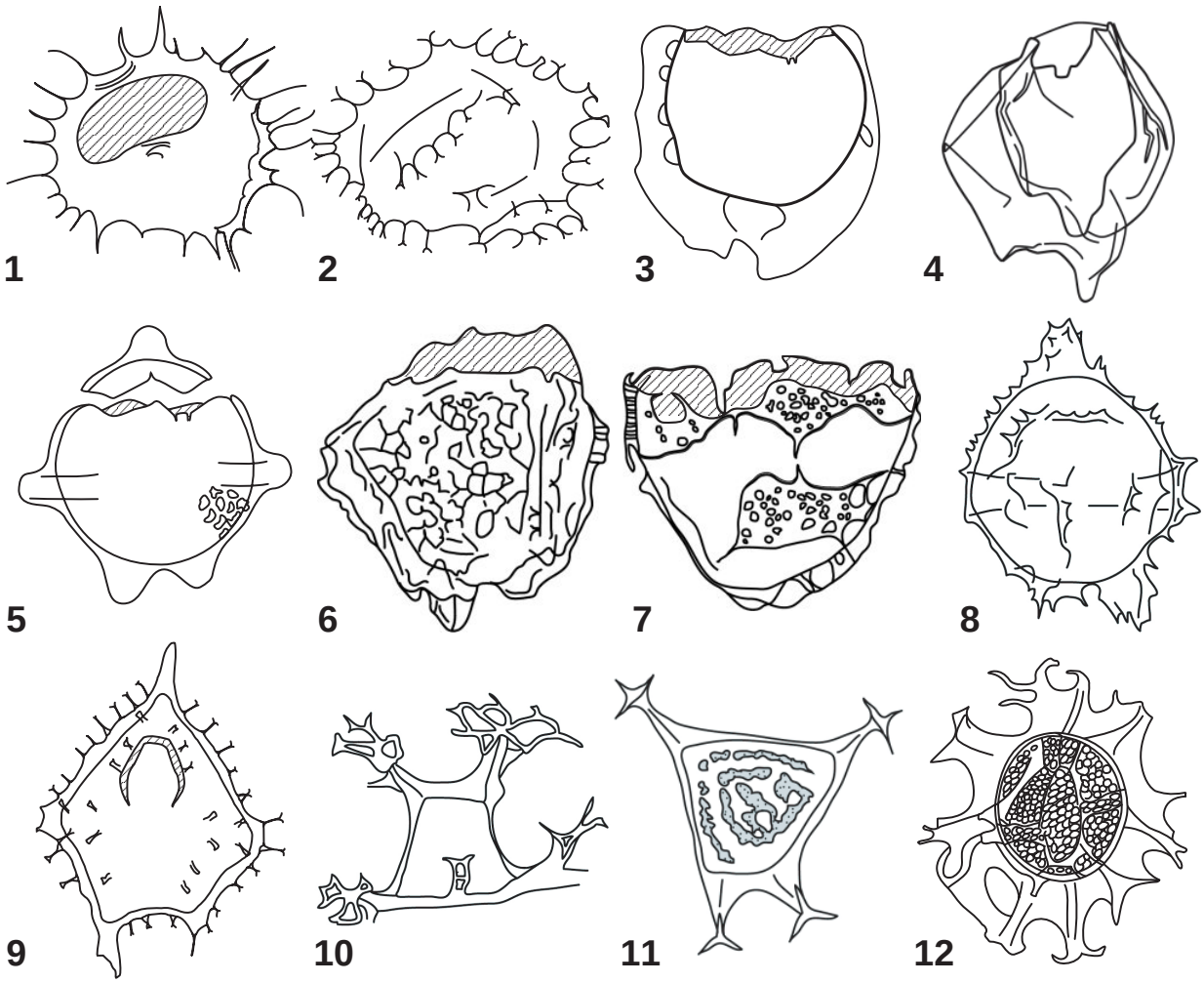


Plate P9 (continued). 13. *Spongodinium delitiense* (Ehrenberg 1838) Deflandre 1936b. Dorsal view. Dimensions of specimens examined by Deflandre (1936b): length = 75–130 µm, width = 70–112 µm. **14, 15.** *Stephodinium coronatum* Deflandre 1936a. Holotype dimensions: equatorial diameter of pericyst = 72 µm, endocyst diameter = 43 µm × 55 µm; (14) dorsal view; (15) apical view. **16.** *Sumatradinium druggii* Lentin et al. 1994. Dorsal view. Holotype dimensions: autocyst length = 76 µm, autocyst width = 70 µm, process length = up to 15 µm. **17, 18.** *Stoveracysta kakanuiensis* Clowes 1985. Holotype dimensions: overall length = 70 µm, length from archeopyle margin to antapex = 49 µm, overall width = 62 µm, archeopyle diameter = 46 µm, cingulum width = 5 µm; (17) ventral view; (18) oblique dorsal view. **19, 20.** *Stoveracysta ornata* (Cookson and Eisenack 1965a) Clowes 1985. Holotype dimensions: length = 70 µm, width = 57 µm; (19) ventral view; (20) dorsal view.

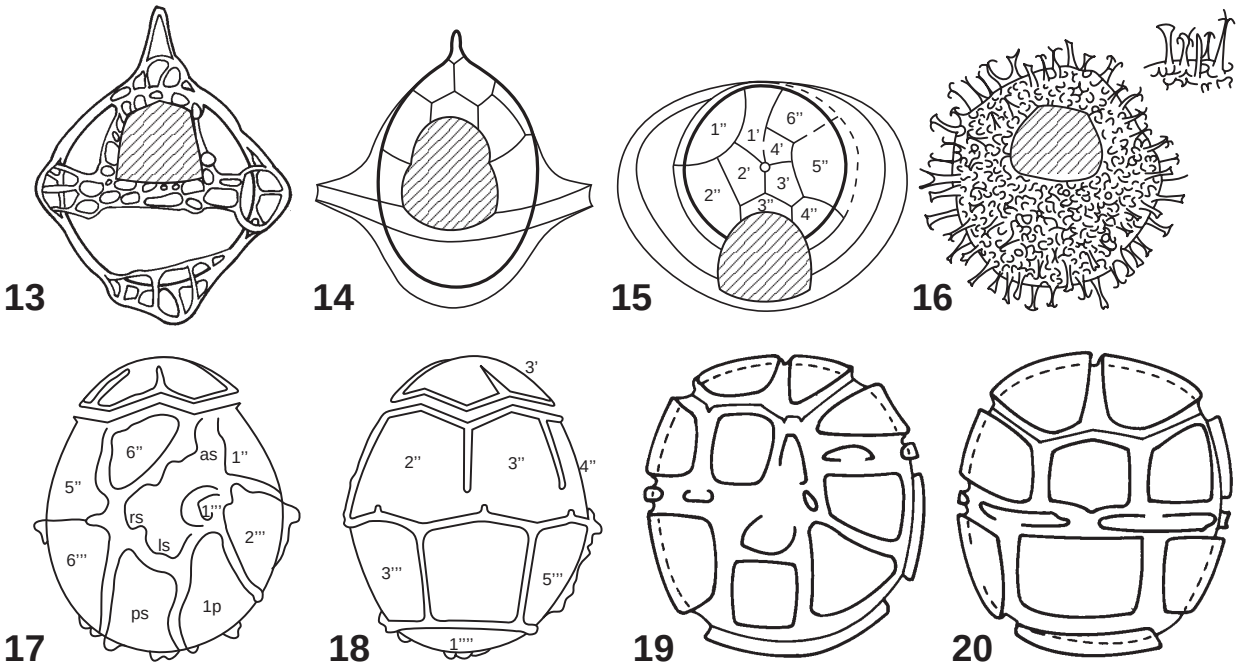


Plate P10. The modified Kofoid system (as outlined in Fensome et al., 1993b) is used in the labeling of individual plates for the gonyaulacaleans. The Kofoid system is used in the labeling of plates in the peridinialeans. The archeopyle location is denoted by diagonal lines. **1.** *Sumatradinium soucouyantiae* de Verteuil and Norris 1992. Dorsal view. Holotype dimensions: mid-body length (excluding processes) = 87 µm, equatorial diameter = 75 µm, process length (based on 15 specimens) = 6–15 µm. **2.** *Surculosphaeridium*? *longifurcatum* (Firtion 1952) Davey et al. 1966. Oblique apical view. Holotype dimensions: central body diameter = 41 µm, process length = 20 µm. **3.** *Thalassiphora delicata* Williams and Downie 1966c. Dorsal view. Holotype dimensions: overall diameter = 74 µm × 75 µm, endocyst diameter = 34 µm × 43 µm. **4.** *Thalassiphora*? *spinosa* (Clarke and Verdier 1967) Foucher 1975. Holotype dimensions: overall diameter = 93 µm, endocyst diameter = 38 µm, process length = 5–12 µm. **5.** *Triblastula utinensis* O. Wetzel 1933b. Dorsal view. Range of type material: length = 100–112 µm, width = 45–50 µm. **6.** *Trichodinium castanea* Deflandre 1935 ex Clarke and Verdier 1967. Dorsal view. Holotype dimensions: overall length = 89 µm, overall width = 73 µm, apical horn length = 11 µm. **7.** *Trigonopyxidia ginella* (Cookson and Eisenack 1960a) Downie and Sarjeant 1965. Lateral view. Holotype dimensions: pericyst diameter = 50 µm, endocyst diameter = 30 µm. **8.** *Trinovantedinium applanatum* (Bradford 1977) Bujak and Davies 1983. Dorsal view. Holotype dimensions: overall length = 78 µm, overall width = 74 µm, distance between antapical horns (distally) = 25 µm, maximum height of processes = 2.5 µm. **9.** *Trinovantedinium glorianum* (Head et al. 1989b) de Verteuil and Norris 1992. Dorsal view. Holotype dimensions: pericyst length (including processes) = 63 µm, endocyst length = 52 µm, process length (based on 12 specimens) = 2.5–8 µm. **10.** *Trithyrodinium evittii* Drugg 1967. Dorsal view. Range of type material: cyst length = 75–95 µm, cyst width = 60–80 µm. **11.** *Trithyrodinium suspectum* (Manum and Cookson 1964) Davey 1969b. Dorsal view. Holotype dimensions: overall length = 118 µm, endocyst diameter = 73 µm. **12.** *Unipontidinium aquaeductum* (Piasecki 1980) Wrenn 1988. Dorsal view. Holotype dimensions: overall length = 39 µm, overall width = 38 µm, central body length = 27 µm, central body width = 26 µm. (Continued on next page.)

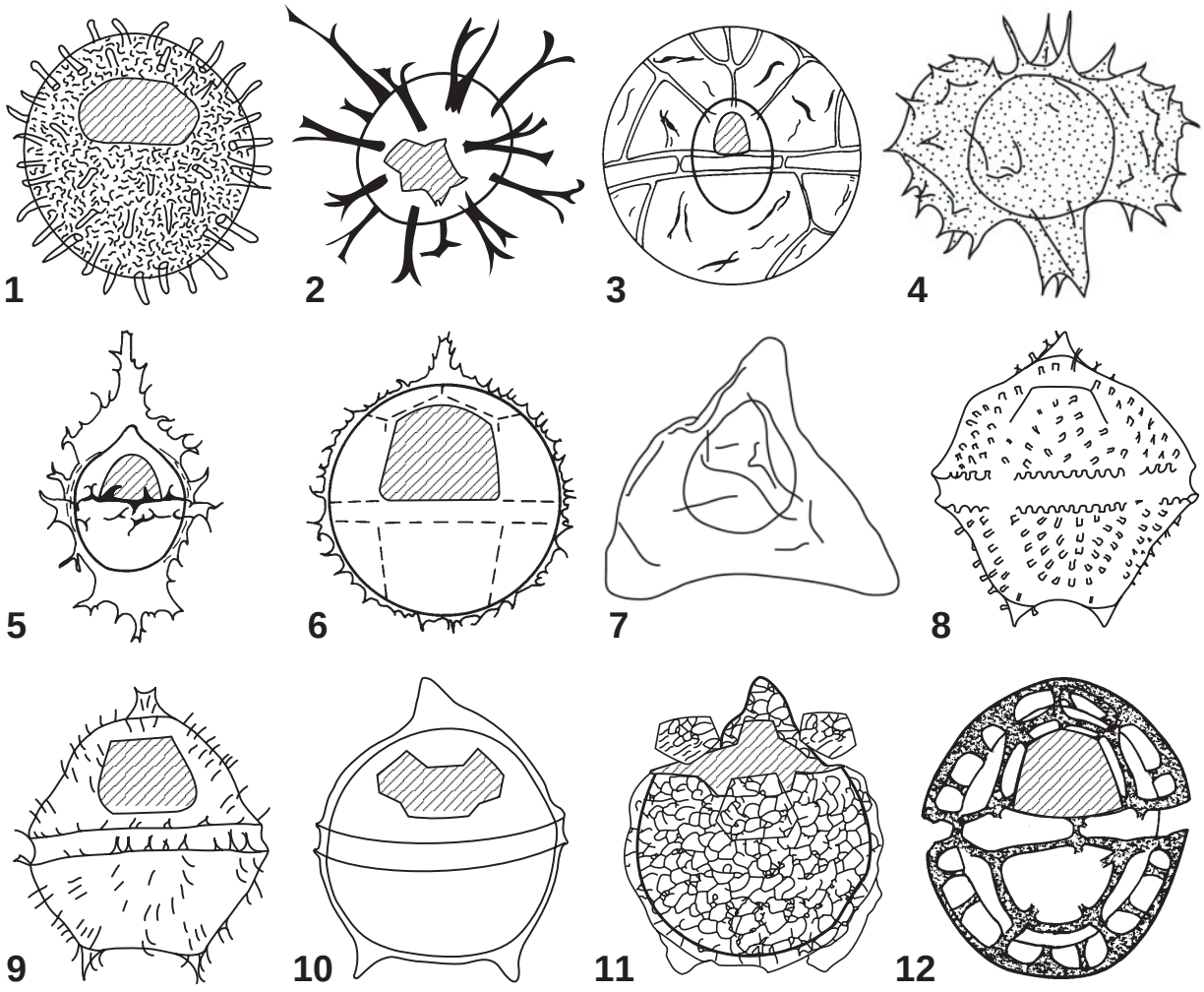


Plate P10 (continued). 13. *Wetzeliella gochtii* Costa and Downie 1976. Dorsal view. Holotype dimensions: pericyst length = 113 µm, pericyst width = 108 µm, endocyst length = 97 µm, endocyst width = 93 µm, apical horn length = 0 µm, lateral horn length = 6 µm, right antapical horn length = 10 µm, left antapical horn length = 6 µm, process length = 6–15 µm. **14.** *Wetzeliella meckelfeldensis* Gocht 1969. Dorsal view. Holotype dimensions: pericyst length = 151 µm, pericyst width = 140 µm, endocyst diameter = 83.75 µm. **15, 16.** *Wilsonidium echinosuturatum* (Wilson 1967c) Lentin and Williams 1976. Holotype dimensions: pericyst length = 149 µm, pericyst width = 143 µm, endocyst diameter = 99 µm × 91 µm, apical horn length = 14 µm, left antapical horn length = 11 µm, right antapical horn length = 22 µm, lateral horns = 16 µm; (15) ventral view; (16) dorsal view. **17, 18.** *Xenascus ceratioides* (Deflandre 1937b) Lentin and Williams 1973. Holotype dimensions: pericyst length = 172 µm; (17) ventral view; (18) dorsal view. **19.** *Xiphophoridium alatum* (Cookson and Eisenack 1962b) Sarjeant 1966b. Dorsal view. Holotype dimensions: overall length = 125 µm, overall width = 96 µm, length (not including ornamentation) = 70 µm, width (not including ornamentation) = 52 µm.

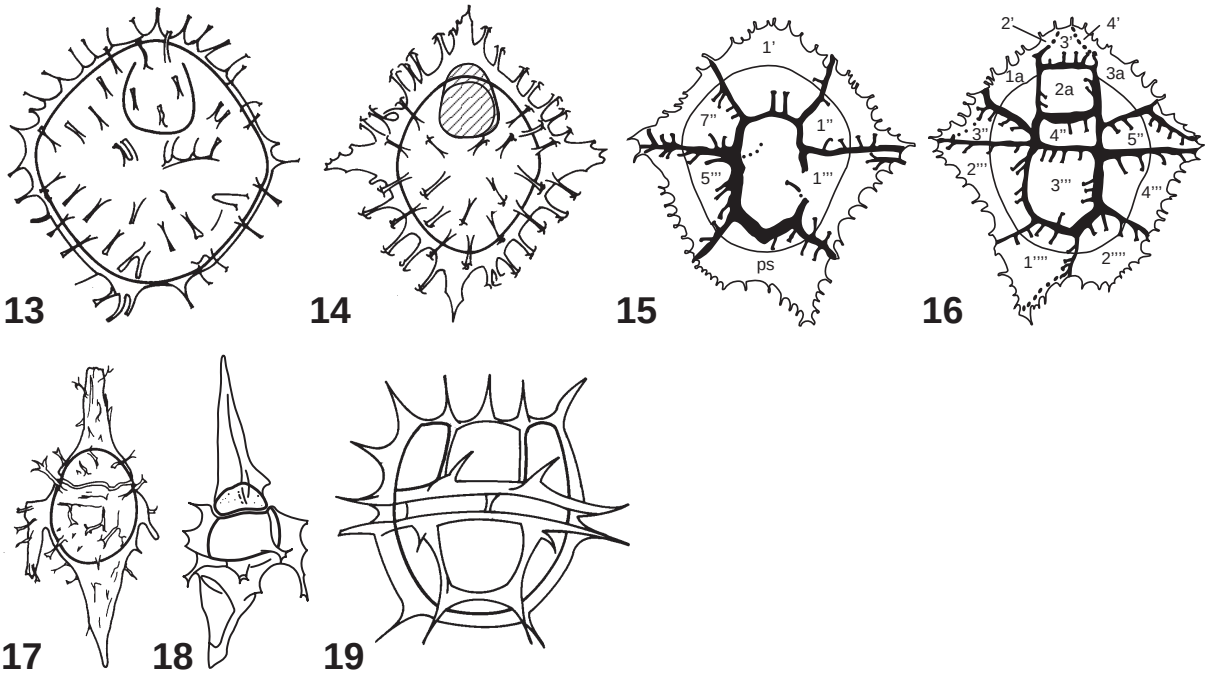


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Plate P11. 1, 2. *Achilleodinium biformoides* (Eisenack 1954b) Eaton 1976; (1) dorsal view of dorsal surface (500×); (2) dorsal view of ventral surface (500×). Courtesy of S.P. Damassa. **3, 4.** *Achomosphaera alcicornu* (Eisenack 1954b) Davey and Williams 1966a; (3) ventral view of dorsal surface (300×); (4) ventral view of ventral surface (300×). **5.** *Achomosphaera andalousiensis* Jan du Chêne 1977. Left lateral view of left lateral surface (500×). **6.** *Adnatosphaeridium tutulosum* (Cookson and Eisenack 1960a) Morgan 1980 (500×). **7.** *Alisocysta circumtabulata* (Drugg 1967) Stover and Evitt 1978. Oblique apical surface (700×). **8.** *Alisocysta margarita* (Harland 1979a) Harland 1979a. Oblique apical surface (700×). (Continued on next page.)

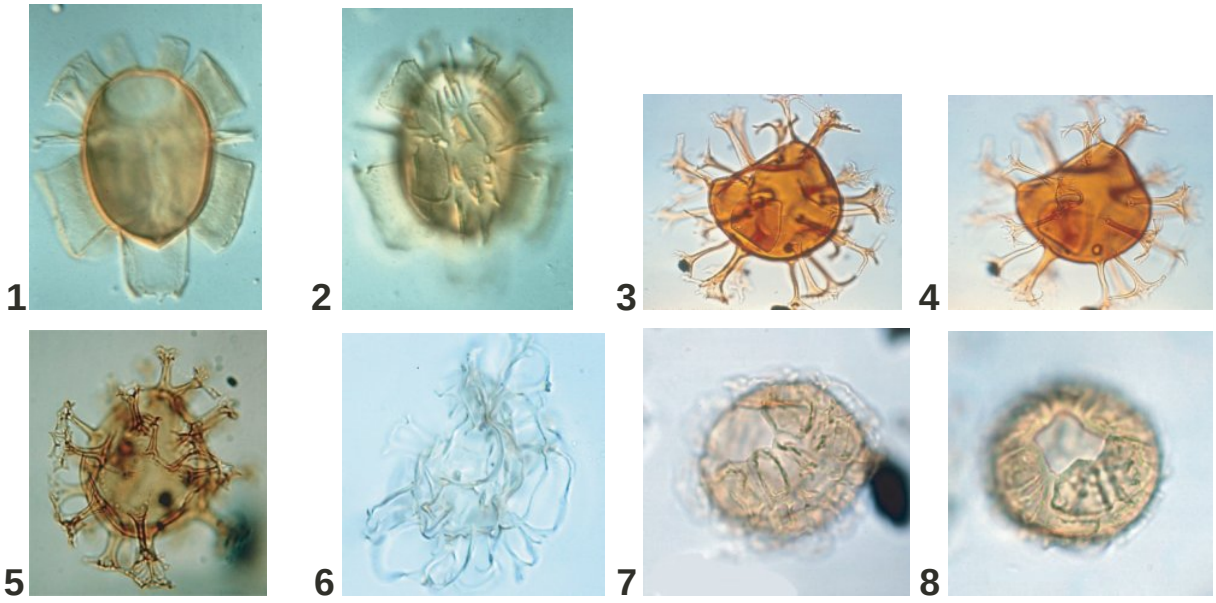


Plate P11 (continued). 9. *Alisocysta reticulata* Damassa 1979b. Right lateral surface (550×). **10, 11.** *Alisogymnium euclaense* (Cookson and Eisenack 1970a) Lentin and Vozzhennikova 1990; (10) 850×; (11) 1000×. **12–14.** *Alterbidinium*? *distinctum* (Wilson 1967a) Lentin and Williams 1985; (12) ventral view of optical section (400×); (13) ventral view of dorsal surface (400×); (14) right lateral view of right lateral surface (400×). **15, 16.** *Amiculosphaera umbraculum* Harland 1979b; (15) oblique lateral surface (400×); (16) optical section (400×). Courtesy of R. Harland. **17.** *Apectodinium augustum* (Harland 1979c) Lentin and Williams 1981. Ventral view of dorsal surface (300×). **18.** *Apteodinium deflandrei* (Clarke and Verdier 1967) Lucas-Clark 1987. Dorsal view of dorsal surface (700×). **19, 20.** *Arachnodinium antarcticum* Wilson and Clowes 1982; (19) ventral surface (300×); (20) optical section (300×).

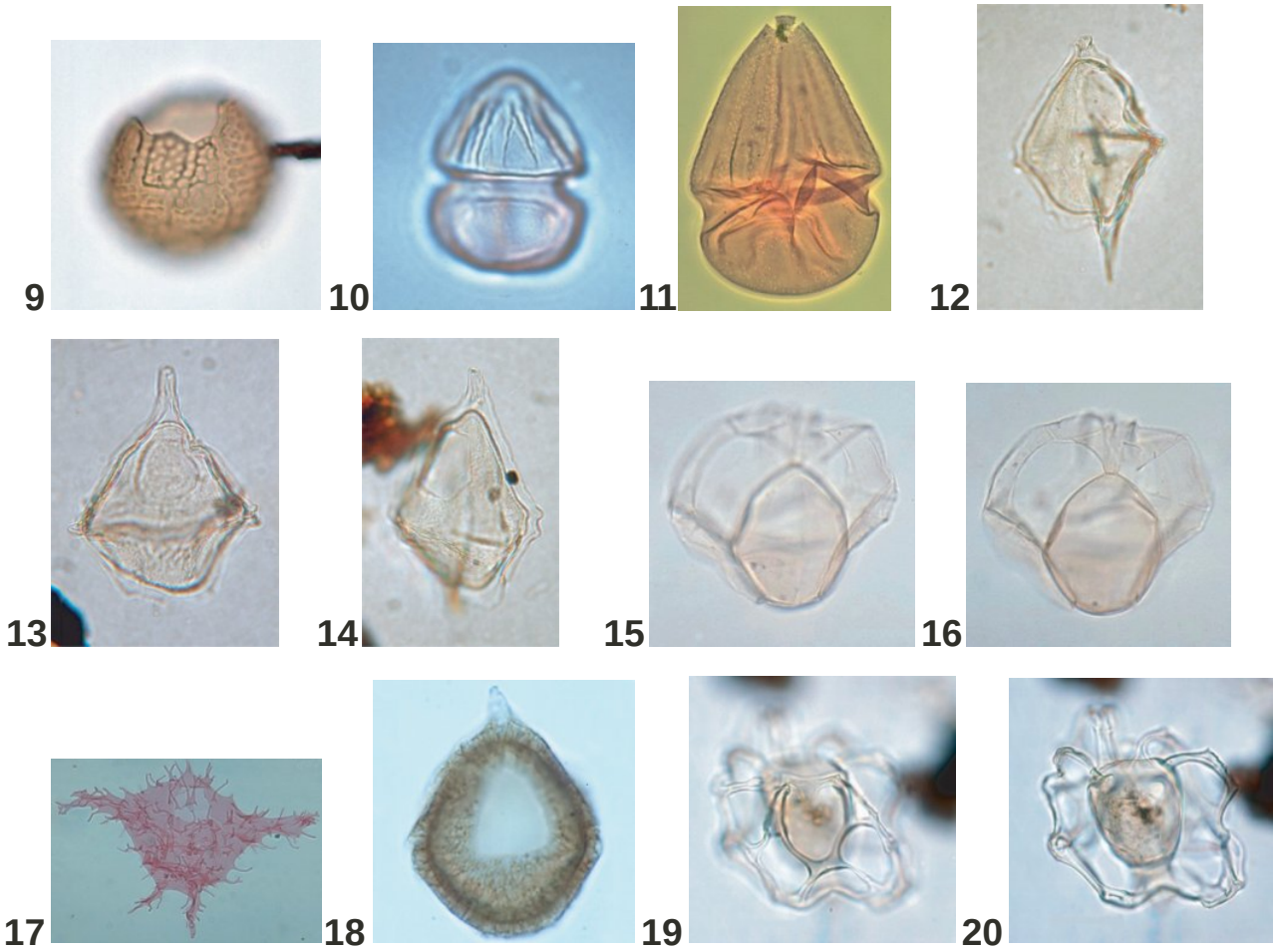


Plate P12. 1–4. *Arachnodinium antarcticum* Wilson and Clowes 1982; (2) upper surface (300×); (3) same specimen as 2, optical section (300×); (3) same specimen as 2, lower surface (300×). **5, 6.** *Areoligera gippingensis* Jolley 1992; (5) ventral surface (600×); (6) oblique apical view (600×). **7, 8.** *Areoligera semicirculata* (Morgenroth 1966b) Stover and Evitt 1978; (7) dorsal surface (450×); (8) ventral view of optical section (450×). (Continued on next page.)

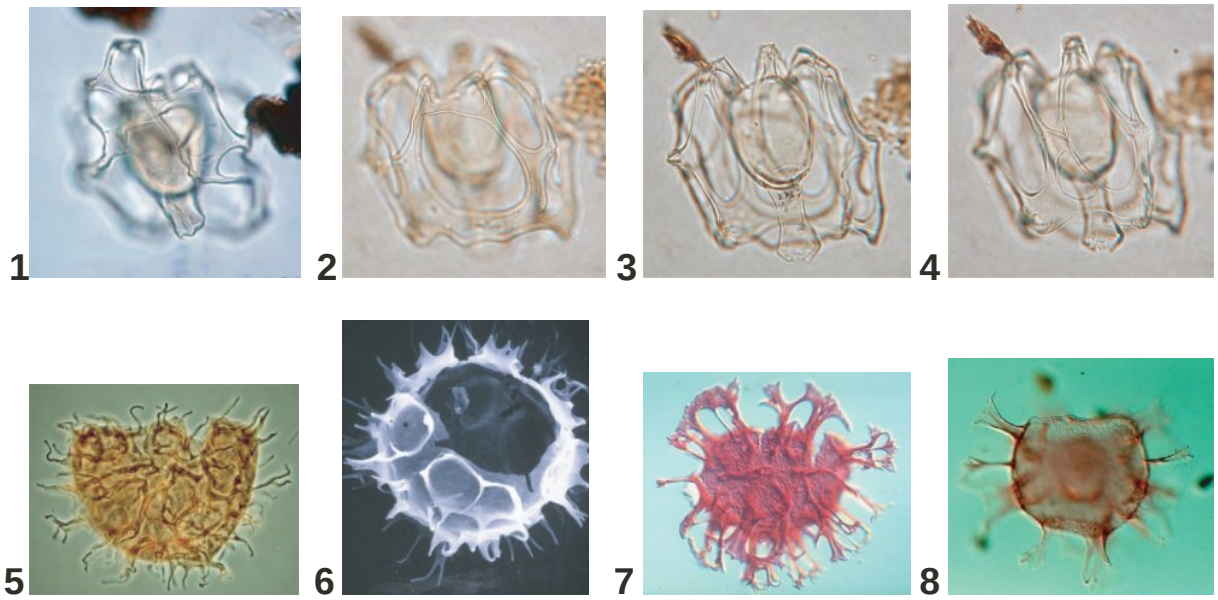


Plate P12 (continued). 9, 10. *Areosphaeridium diktyoplokum* (Klumpp 1953) Eaton 1971; (10) dorsal surface. Both 350×. **11.** *Ataxiodinium choane* Reid 1974. Courtesy of Dan Zevenboom. 700×. **12, 13.** *Ataxiodinium confusum* Versteegh and Zevenboom in Versteegh 1995; (12) dorsal surface (800×); (13) ventral cross-section (800×). **14, 15.** *Barssidinium evangelineae* Lentin et al. 1994; (14) dorsal surface (300×); (15) optical section (300×). **16.** *Biconidinium longissimum* Islam 1983c. 400×. **17, 18.** *Callaiosphaeridium asymmetricum* (Deflandre and Courteville 1939) Davey and Williams 1966b. Both polar views (500×). **19, 20.** *Cannosphaeropsis passio* de Verteuil and Norris 1996a; (19) optical section (350×); (20) dorsal surface (350×).

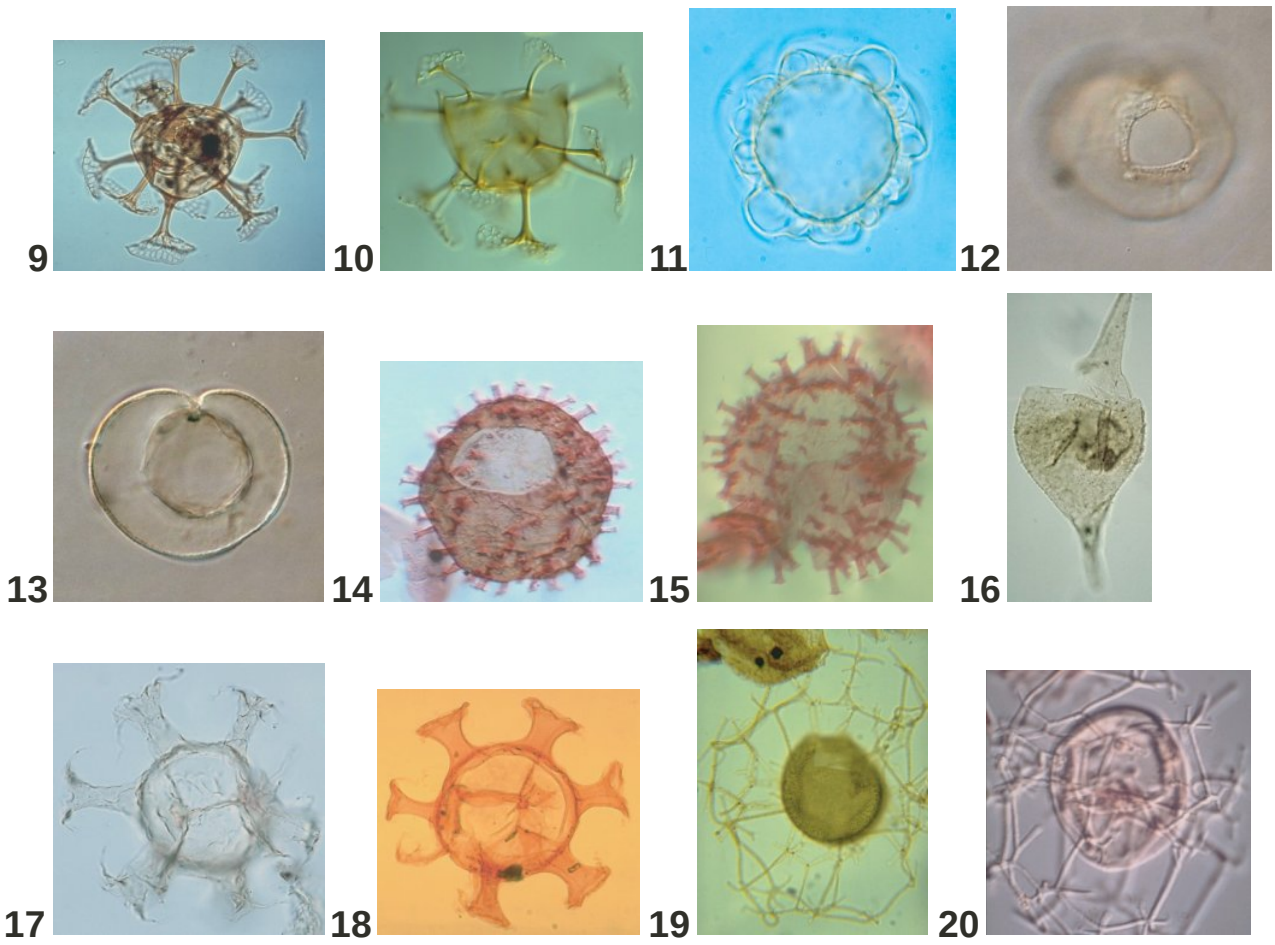


Plate P13. 1, 2. *Cannosphaeropsis utinensis* O. Wetzel 1933b. Same specimen (350×). **3–5.** *Carpatella cornuta* Grigorovich 1969a. Courtesy of S.P. Damassa; (3) scanning electron micrograph (SEM), ventral surface (450×); (4) SEM, dorsal surface (450×); (5) light micrograph, optical section (450×). **6.** *Carpodinium obliquicostatum* Cookson and Hughes 1964. 550×. **7.** *Cassiculosphaeridia reticulata* Davey 1969a. Courtesy of J.P. Verdier. 750×. **8, 9.** *Cerebrocysta bartonensis* Bujak in Bujak et al. 1980; (8) dorsal surface (900×); (9) right lateral view (900×). **10, 11.** *Cerebrocysta poulsenii* de Verteuil and Norris 1996a; (10) optical section of the holotype (750×); (11) ventral view of dorsal surface of the holotype (750×), courtesy of L. de Verteuil. **12, 13.** *Cerodinium diebelii* (Alberti 1959b) Lentin and Williams 1987. 250×. (Continued on next page.)

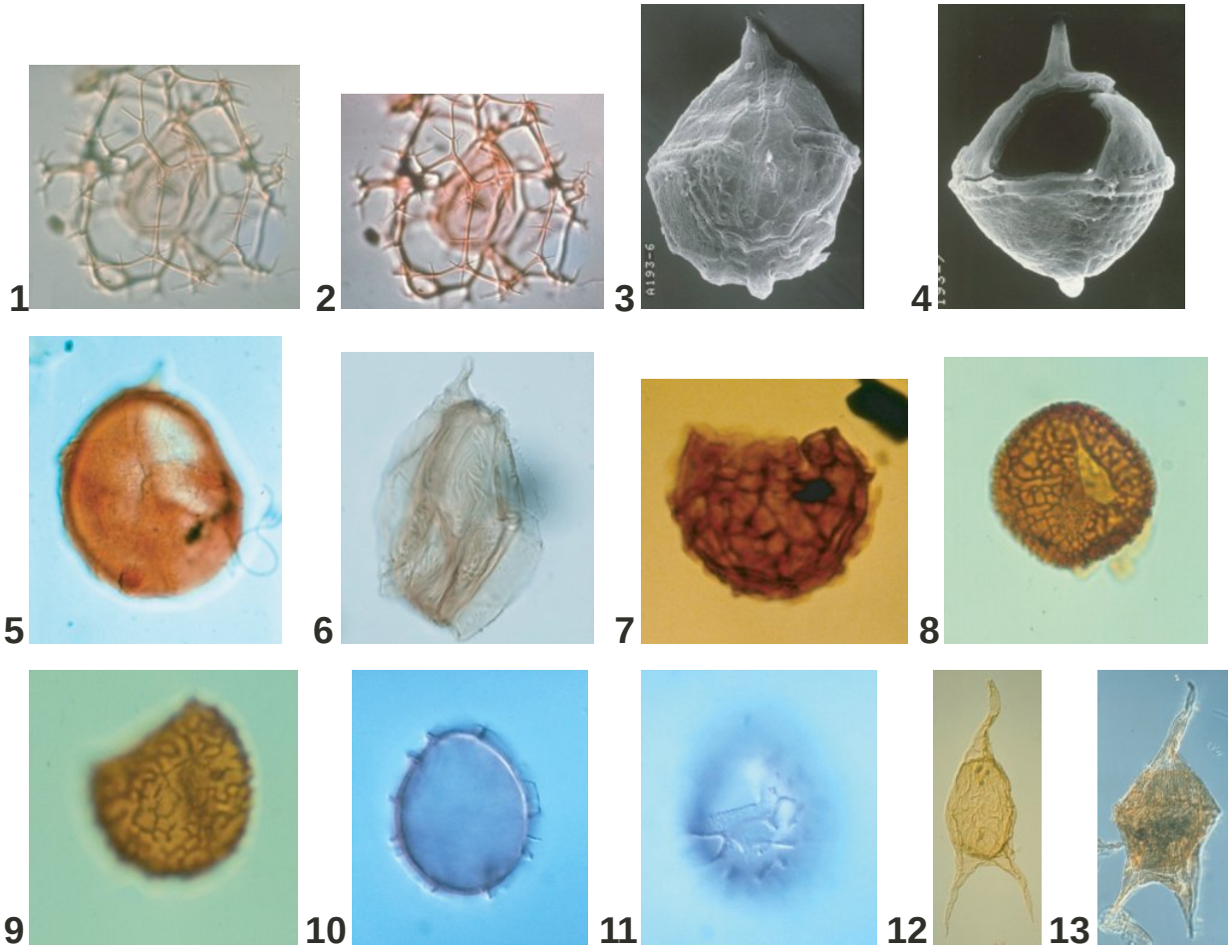


Plate P13 (continued). 14. *Cerodinium wardenense* (Williams and Downie 1966c) Lentin and Williams 1987. Dorsal surface (650×). **15, 16.** *Charlesdowniea columna* (Michoux 1988) Lentin and Vozzhennikova 1990; (15) dorsal view of dorsal surface (350×); (16) SEM, dorsal surface (350×). **17, 18.** *Charlesdowniea crassiramosa* (Williams and Downie 1966b) Lentin and Vozzhennikova 1989; (17) dorsal view of dorsal surface (700×); (18) operculum (350×). **19.** *Charlesdowniea edwardsii* (Wilson 1967c) Lentin and Vozzhennikova 1989. Ventral view of dorsal surface (400×). **20.** *Chatangiella verrucosa* (Manum 1963) Lentin and Williams 1976. Dorsal view of dorsal surface (300×). **21.** *Chichaouadinium vestitum* (Brideaux 1971) Bujak and Davies 1983. Ventral view of dorsal surface (725×). Holotype. Courtesy of W.W. Brideaux.

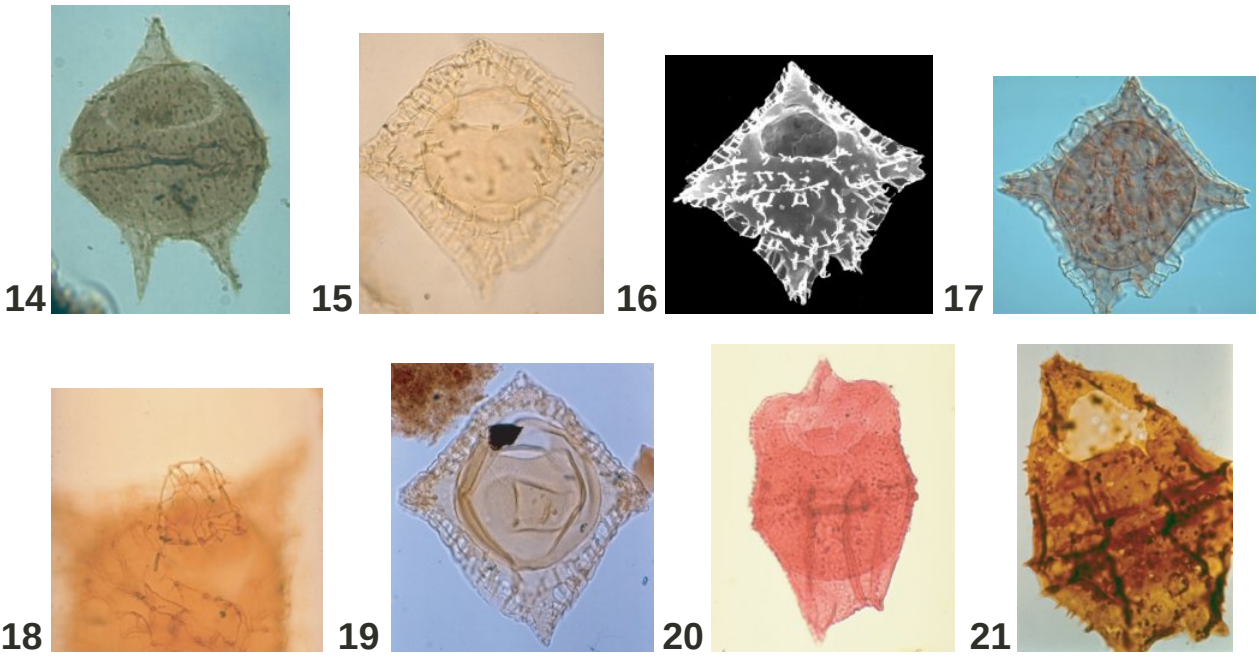


Plate P14. 1. *Chichaouadinium vestitum* (Brideaux 1971) Bujak and Davies 1983. Dorsal view of dorsal surface (600×). **2, 3.** *Chiropteridium galea* (Maier 1959) Sarjeant 1983; (2) ventral view, optical section (325×); (3) dorsal view of ventral surface (325×). **4.** *Conosphaeridium striatoconum* (Deflandre and Cookson 1955) Cookson and Eisenack 1969. Oblique antapical surface (550×). **5, 6.** *Cordosphaeridium cantharellus* (Brosius 1963) Gocht 1969. Courtesy of S.P. Damassa; (5) optical section (350×); (6) dorsal surface (350×). **7, 8.** *Cordosphaeridium funiculatum* Morgenroth 1966a; (7) dorsal view of dorsal surface, courtesy of S.P. Damassa. Both 400×. (Continued on next page.)

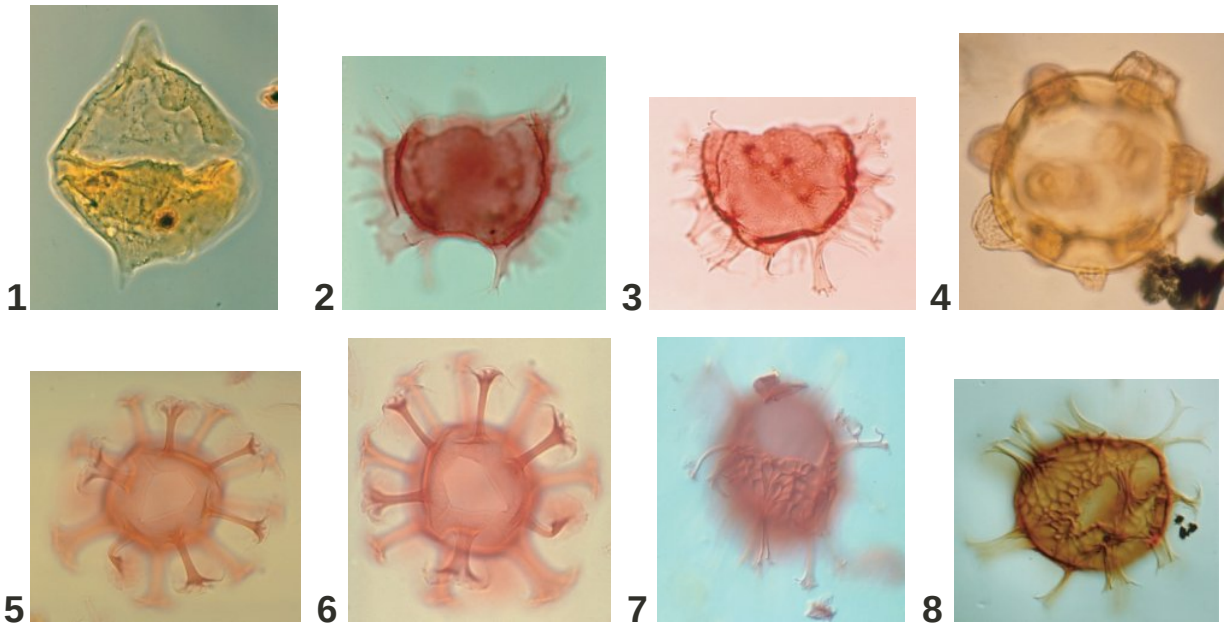


Plate P14 (continued). 9–11. *Corrudinium harlandii* Matsuoka 1983b. Holotype; (9) dorsal view (650×); (10, 11) optical sections (650×), courtesy of K. Matsuoka. **12–14.** *Corrudinium incompositum* (Drugg 1970b) Stover and Evitt 1978; (12) scanning electron micrograph (SEM), oblique apical view (750×); (13) right lateral surface (750×); (14) left lateral surface (750×). **15–17.** *Cousteaudinium aubryae* de Verteuil and Norris 1996a; (15) left ventro-lateral view of left ventro-lateral surface (450×); (16) left ventro-lateral view in optical section (450×). Figures 15, 16 courtesy of L. de Verteuil. **18.** *Cyclapophysis monmouthensis* Benson 1976 (300×). **19.** *Cyclonephelium filoreticulatum* (Slimani 1994) Prince et al., 1999. 450×. **20.** *Cyclonephelium membraniphorum* Cookson and Eisenack 1962b. 300×.

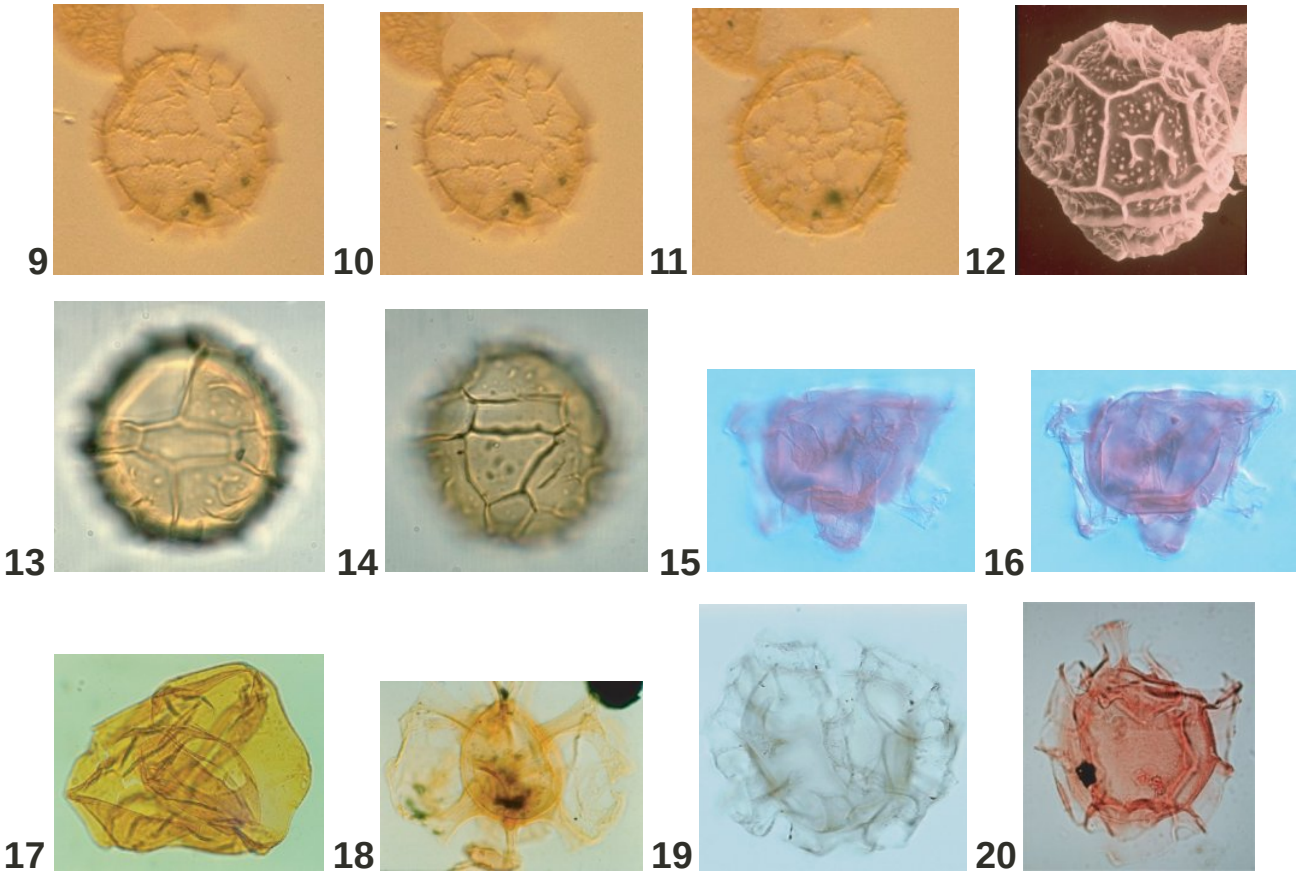


Plate P15. 1, 2. *Cyclonephelium membraniphorum* Cookson and Eisenack 1962b. Both ventral surface (350×). **3, 4.** *Damassadinium californicum* (Drugg 1967) Fensome et al., 1993b; (3) right lateral surface (425×); (4) optical section (425×). **5–8.** *Deflandrea antarctica* Wilson 1967a; (5) dorsal surface (300×); (6) same specimen as 5, optical section (300×); (7) dorsal surface (300×); (8) same specimen as 7, ventral surface (300×). **9–12.** *Deflandrea convexa* Wilson 1988; (9) dorsal surface (450×); (10) optical section of holotype (450×); (11) dorsal surface (300×); (12) same specimen as 11, ventral surface (300×). Figures 9, 10 courtesy of G.J. Wilson. (Continued on next page.)

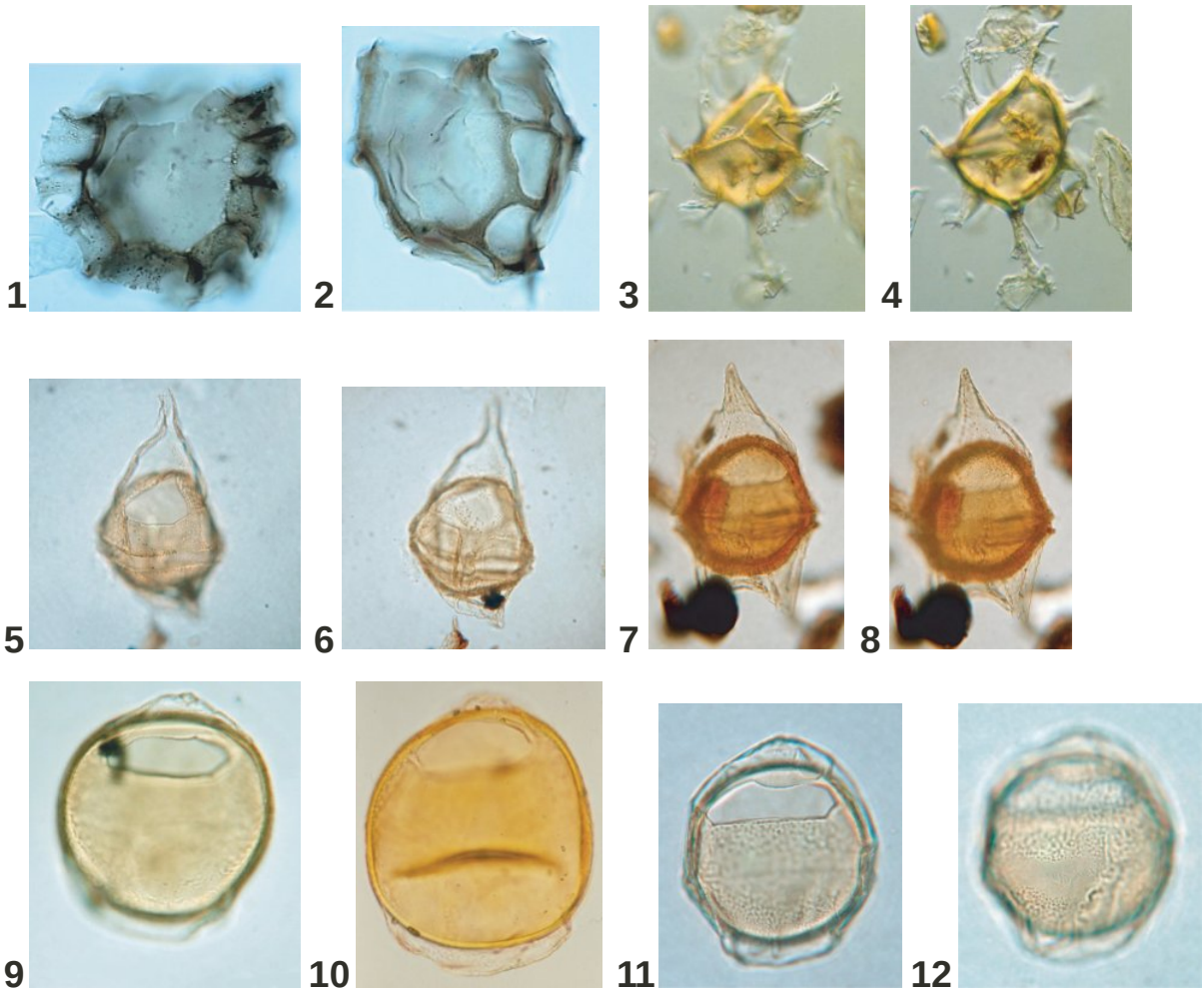
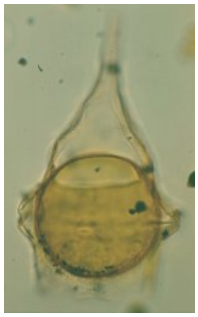


Plate P15 (continued). 13. *Deflandrea cygniformis* Pöthe de Baldis, 1966. 250×. **14, 15.** *Deflandrea oebisfeldensis* Alberti 1959b. 300×. **16.** *Deflandrea phosphoritica* Eisenack 1938b. Optical section (300×). **17.** *Dinogymnium* sp. 900×. **18.** *Dinopterygium cladoides* Deflandre 1935. 375×. **19, 20.** *Diphyes colligerum* (Deflandre and Cookson 1955) Cookson 1965a; (20) optical section. Both 600×.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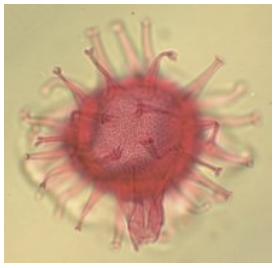
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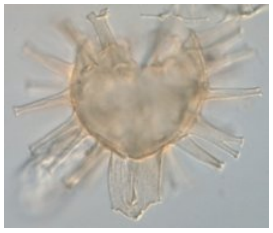
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Plate P16. 1–3. *Diphyes ficusoides* Islam 1983b; (3) with operculum in place. All (550×). **4, 5.** *Distatodinium apenninicum* Brinkhuis et al. 1992; (4) ventral surface (500×); (5) dorsal surface (500×). **6, 7.** *Distatodinium biffii* Brinkhuis et al. 1992. 250×. **8, 9.** *Dracodinium condylos* (Williams and Downie 1966b) Costa and Downie 1979; (8) optical section in dorsal view (300×); (9) ventral surface in ventral view (300×). **10.** *Dracodinium politum* Bujak et al. 1980. Optical section in dorsal view (250×). **11, 12.** *Dracodinium varielongitudum* (Williams and Downie 1966b) Costa and Downie 1979; (11) optical section in ventral view (350×); (12) dorsal surface (300×). (Continued on next page.)

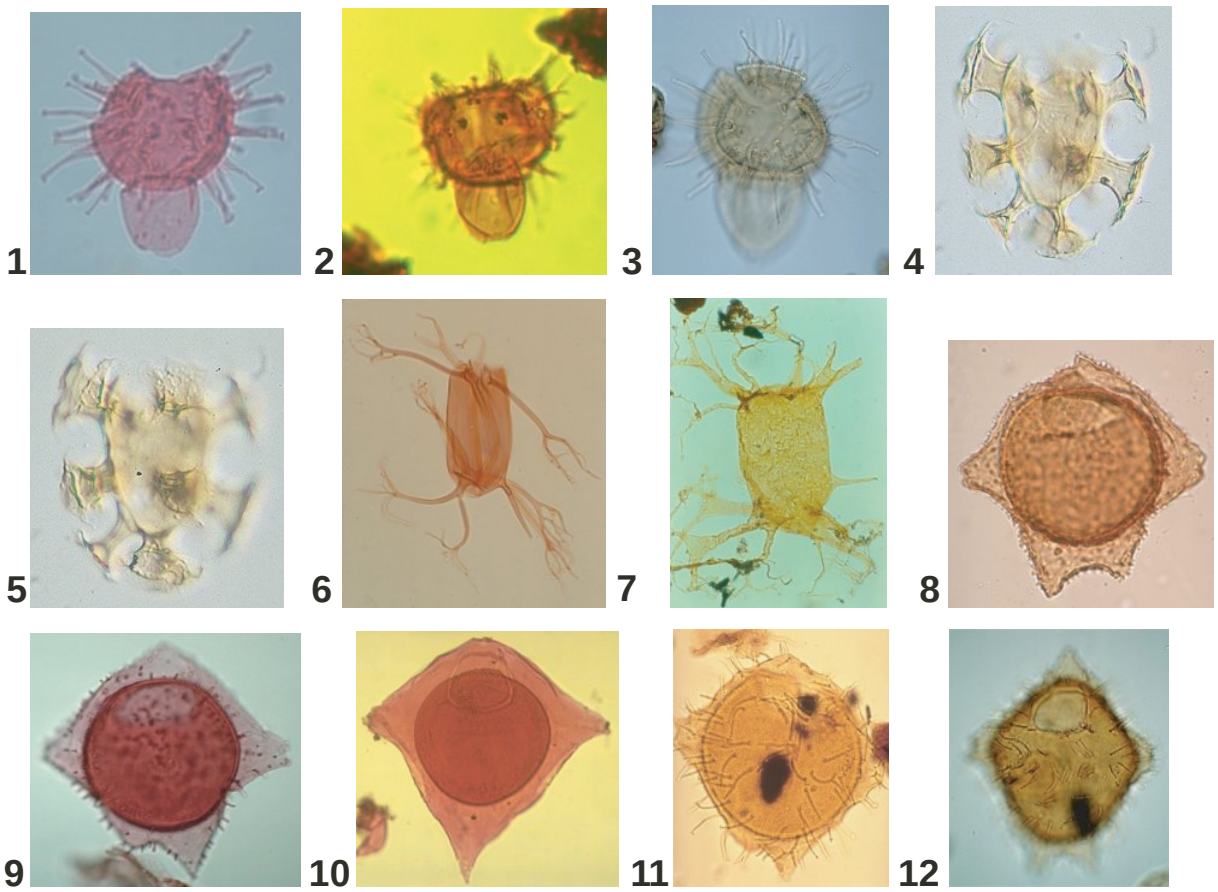

Plate P16 (continued). 13. *Dracodinium waipawaense* (Wilson 1967c) Costa and Downie 1979. Ventral view of dorsal surface (250×). **14.** *Eatonicysta furensis* (Heilmann-Clausen in Heilmann-Clausen and Costa 1989) Stover and Williams 1995. Ventral surface (500×). **15.** *Eatonicysta pterococcoides* (O. Wetzel 1933b) Sarjeant 1985b. 550×. **16–18.** *Eatonicysta ursulae* (Morgenroth 1966a) Stover and Evitt, 1978; (17) with operculum (400×); (18) oblique apical view (400×); (19) oblique ventral view (400×). **19.** *Ectosphaeropsis burdigalensis* Londeix and Jan du Chêne 1988. Dorsal surface (300×).

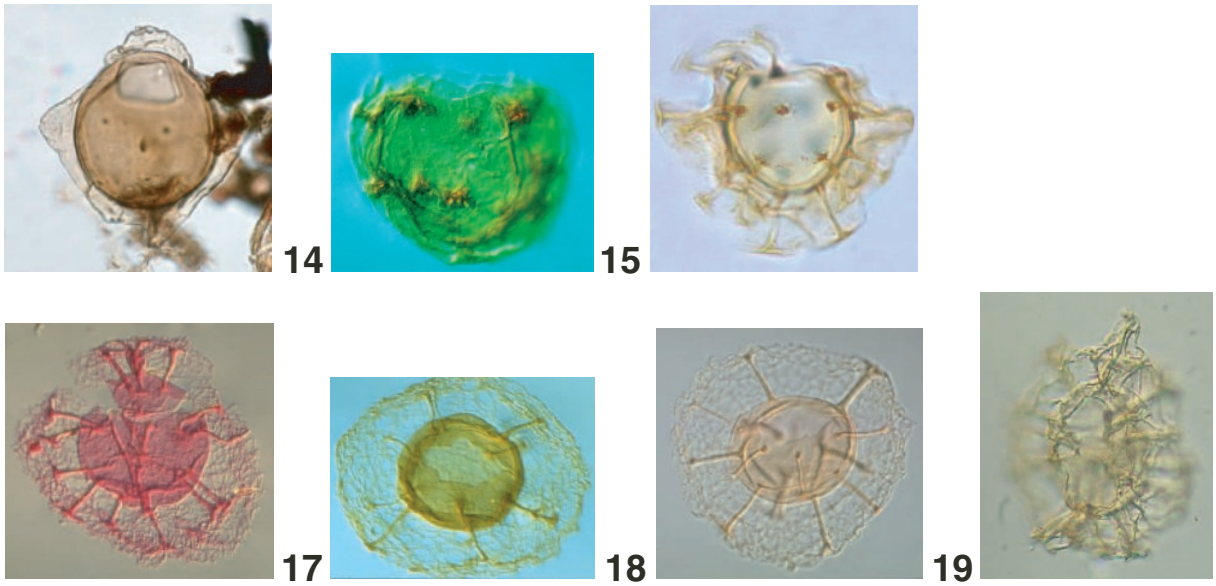

Plate P17. 1–3. *Edwardsiella sexispinosa* Versteegh and Zevenboom in Versteegh 1995; (1, 2) optical sections (300×); (3) dorsal surface (300×), courtesy of G.J.M. Versteegh. **4.** *Ellipsodinium rugulosum* Clarke and Verdier 1967. Right lateral surface (950×). **5, 6.** *Endoscrinium campanula* (Gocht 1959) Vozzhennikova 1967; (5) dorsal surface (350×); (6) scanning electron micrograph (SEM), dorsal surface (300×), courtesy of E.J. Kidson. **7, 8.** *Enneadocysta partridgei* Stover and Williams 1995; (8) same specimen as 7 showing operculum inside. Both (300×). **9–12.** *Enneadocysta pectiniformis* (Gerlach 1961) Stover and Williams 1995; (9, 10). same specimen (500×); (11) dorsal surface (500×); (12) same specimen as 11, ventral surface (500×). (Continued on next page.)

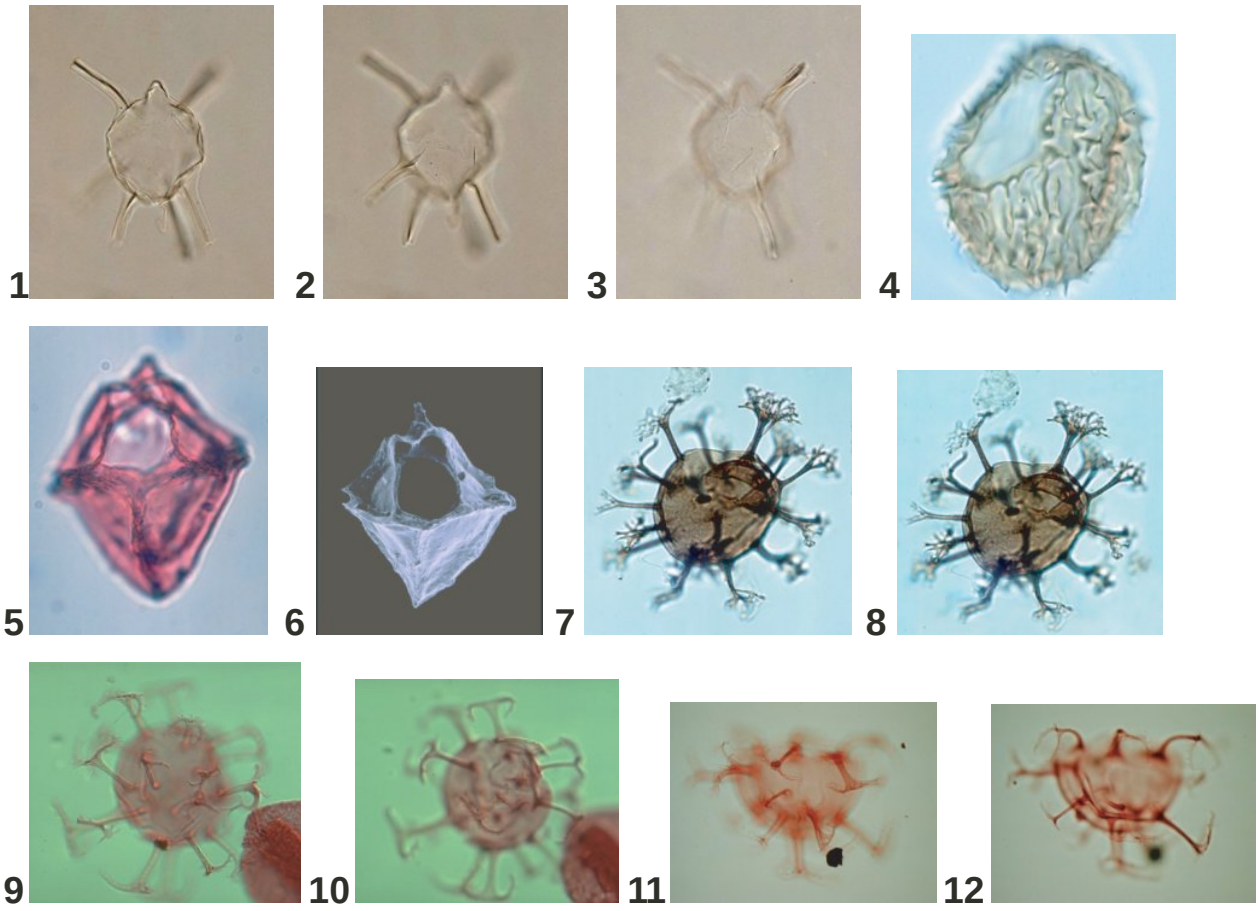

Plate P17 (continued). 13, 14. *Epelidosphaeridia spinosa* Cookson and Hughes 1964 ex Davey 1969a; (13) dorsal view of dorsal surface (700×); (14) ventral view (550×). **15, 16.** *Filisphaera filifera* Bujak 1984; (15) dorsal surface (650×); (16) optical section (650×). **17.** *Florentinia mayii* Kirsch 1991. 600×. **18, 19.** *Galeacysta etrusca* Corradini and Biffi 1988. Holotype; (18) ventral view of dorsal surface (400×); (19) ventral view of ventral surface (400×). **20.** *Gerdiocysta conopeum* Liengjarern et al. 1980. 400×.

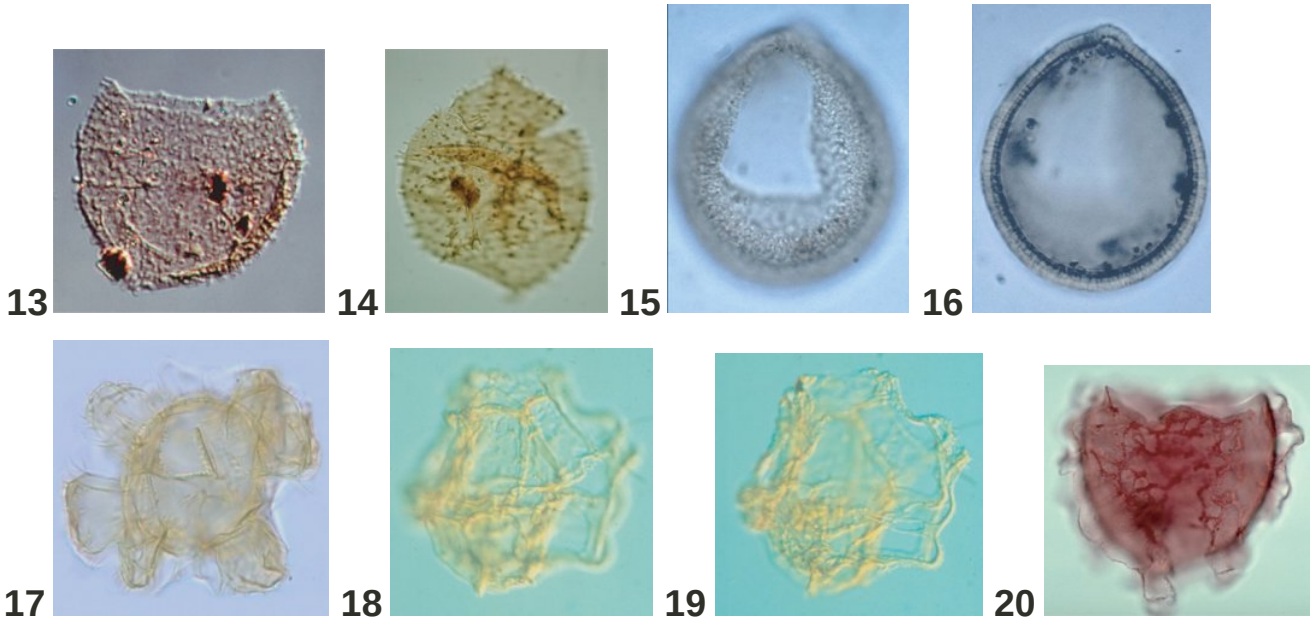

Plate P18. 1. *Gerdiocysta conopeum* Liengjarern et al. 1980. Dorsal view of dorsal surface (400×). **2–4.** *Glaphyrocysta semitecta* (Bujak in Bujak et al. 1980) Lentin and Williams 1981. (2) ventral surface (400×); (3) same specimen as 2, optical section (400×); (4) same specimen as 2, dorsal surface (400×). **5.** *Gramocysta verricula* (Piasecki 1980) Lund and Lund-Christensen in von Daniels et al. 1990. 425×. **6.** *Habibacysta tectata* Head et al. 1989b. Dorsal surface (900×). **7, 8.** *Hemiplacophora semilunifera* Cookson and Eisenack 1965a; (7) operculum (900×); (8) ventral view of dorsal surface plus operculum (500×). (Continued on next page).

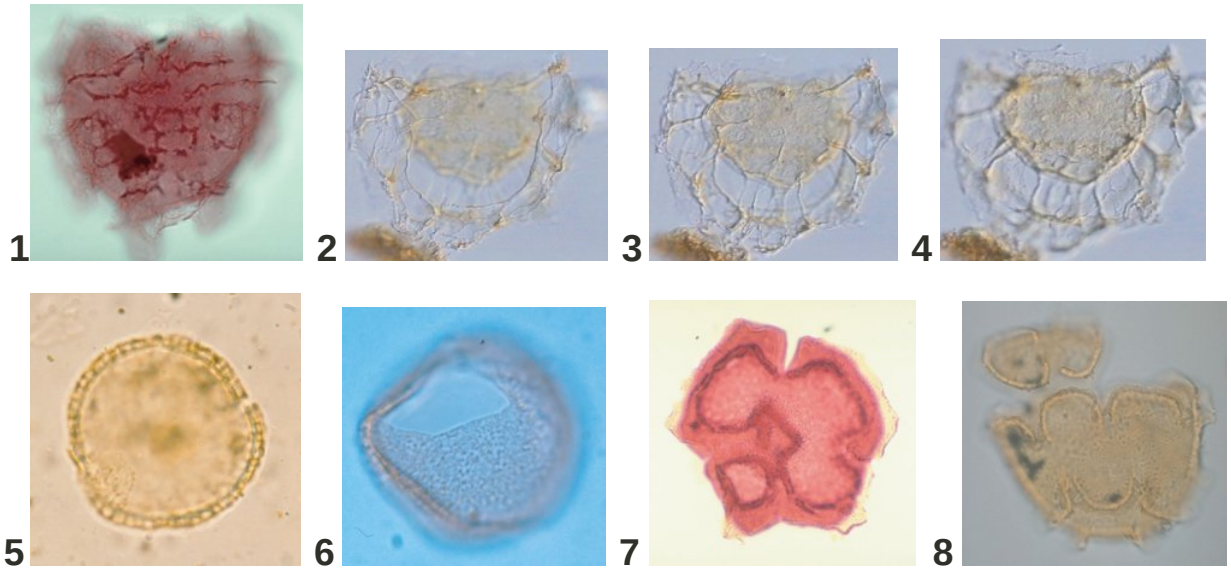

Plate P18 (continued). 9. *Heteraulacacysta porosa* Bujak in Bujak et al. 1980. 350×. **10, 11.** *Heterosphaeridium difficile* (Manum and Cookson 1964) Ioannides 1986. Both 400×. **12–16.** *Homotryblium floripes* (Deflandre and Cookson 1955) Stover 1975; (12) antapical view of antapical surface (350×); (13) same specimen as 12, antapical view of postcingular processes (350×); (14) same specimen as 12, antapical view of cingular processes (350×); (15) antapex (350×); (16) antapex (400×). **17, 18.** *Homotryblium tenuispinosum* Davey and Williams 1966b; (17) lateral view (450×), courtesy of J.P. Bujak; (18) ventral surface showing sulcal tongue (450×). **19, 20.** *Hystrichokolpoma bulbosum* (Ehrenberg 1838) Morgenroth 1968; (19) optical section (800×); (20) same specimen as 19, ventral surface in focus (800×), courtesy of S.P. Damassa.

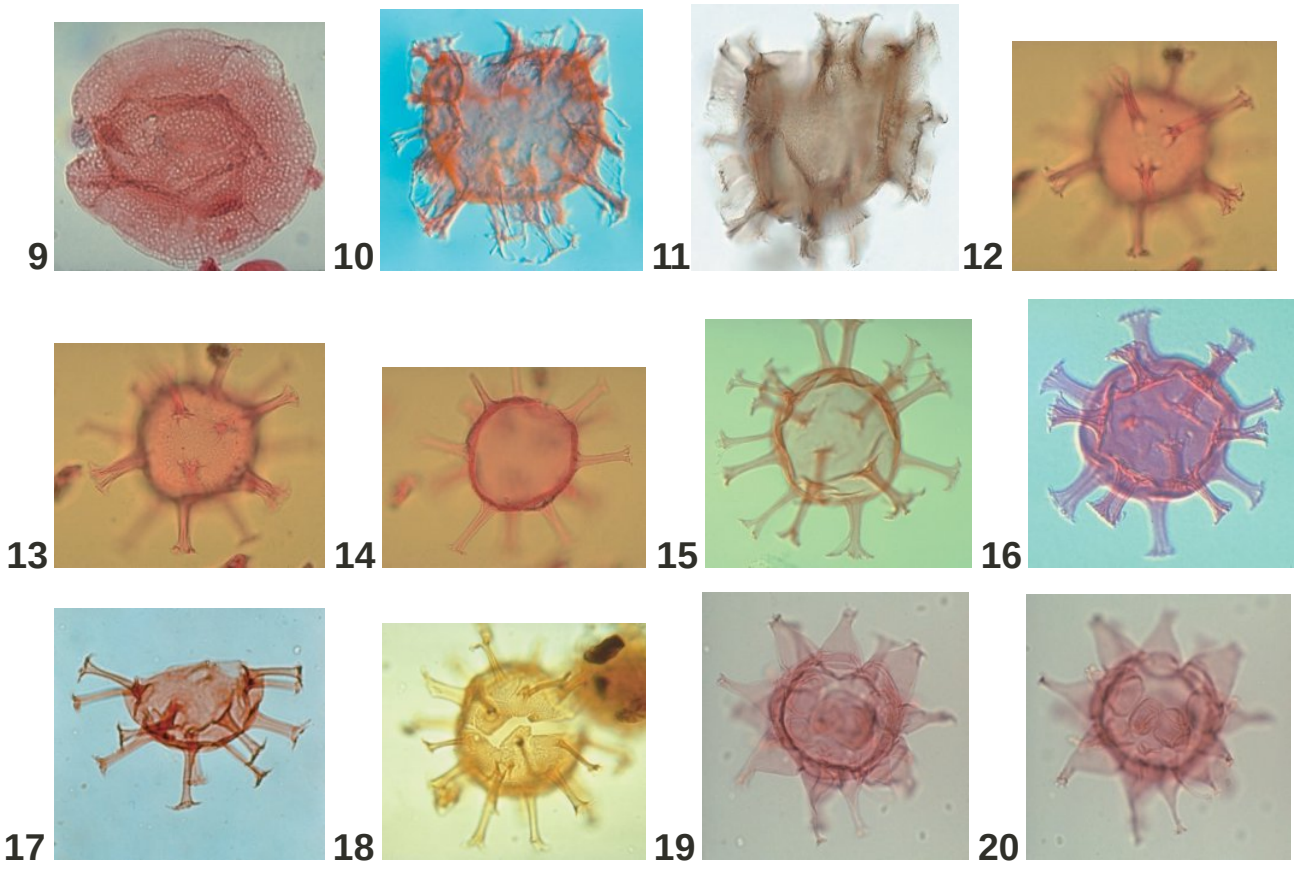

Plate P19. 1. *Hystrichokolpoma bulbosum* (Ehrenberg 1838) Morgenroth 1968. Same specimen as Pl. P18, p. 81, figs. 19, 20. Dorsal surface (800×), courtesy of S.P. Damassa. **2–5.** *Hystrichokolpoma cinctum* Klumpp 1953; (2) optical section (300×); (3) same specimen as 2, ventral surface (300×); (4) same specimen as 2, dorsal survace (300×); (5) dorsal surface (450×), courtesy of S.P. Damassa. **6.** "*Hystrichokolpoma pseudooceanicum*" Zevenboom and Santarelli in Zevenboom 1995 (considered an unpublished manuscript name by the originating authors). 750×. **7.** *Hystrichokolpoma pusillum* Biffi and Manum 1988. Series of successive foci on same specimen (300×), courtesy of S.P. Damassa. **8.** "*Hystrichokolpoma reductum*" Zevenboom and Santarelli in Zevenboom 1995 (considered an unpublished manuscript name by the originating authors). 400×. (Continued on next page.)

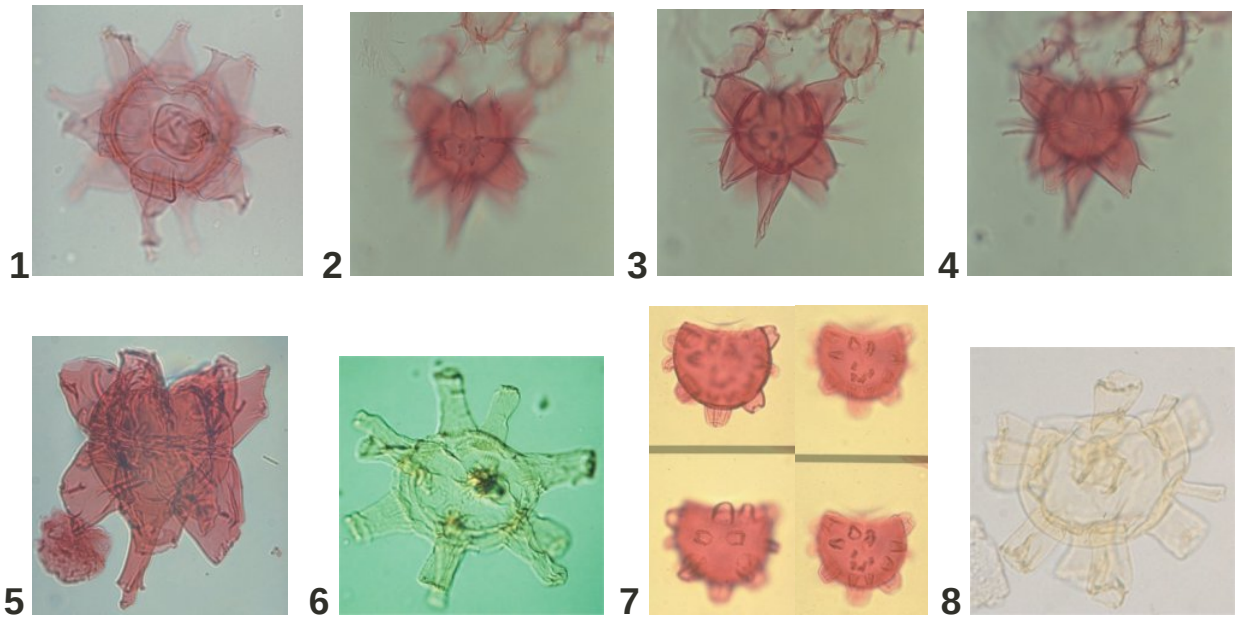

Plate P19 (continued). 9–11. *Hystrichosphaeridium truswelliae* Wrenn and Hart 1988. Same specimen at different focal depths (400×). **12, 13.** *Hystrichosphaeridium tubiferum* (Ehrenberg 1838) Deflandre 1937b, emended Davey and Williams 1966b; (12) apical surface (350×); (13) same specimen as 12, antapical surface (350×). **14.** *Hystrichosphaeropsis quasicribrata* (O. Wetzel 1961) Gocht 1976. 450×. **15, 16.** *Impagidinium patulum* (Wall 1967) Stover and Evitt 1978; (15) dorsal view of ventral surface (500×); (16) same specimen as 15, dorsal view of dorsal surface (500×). **17, 18.** *Invertocysta tabulata* Edwards 1984; (18) Holotype, courtesy of L.E. Edwards. Both 375×. **19.** *Isabelidinium*? *viborgense* Heilmann-Clausen 1985. Courtesy of C. Heilmann-Clausen. 700×. **20.** *Kleithriasphaeridium loffrense* Davey and Verdier 1976. 400×.

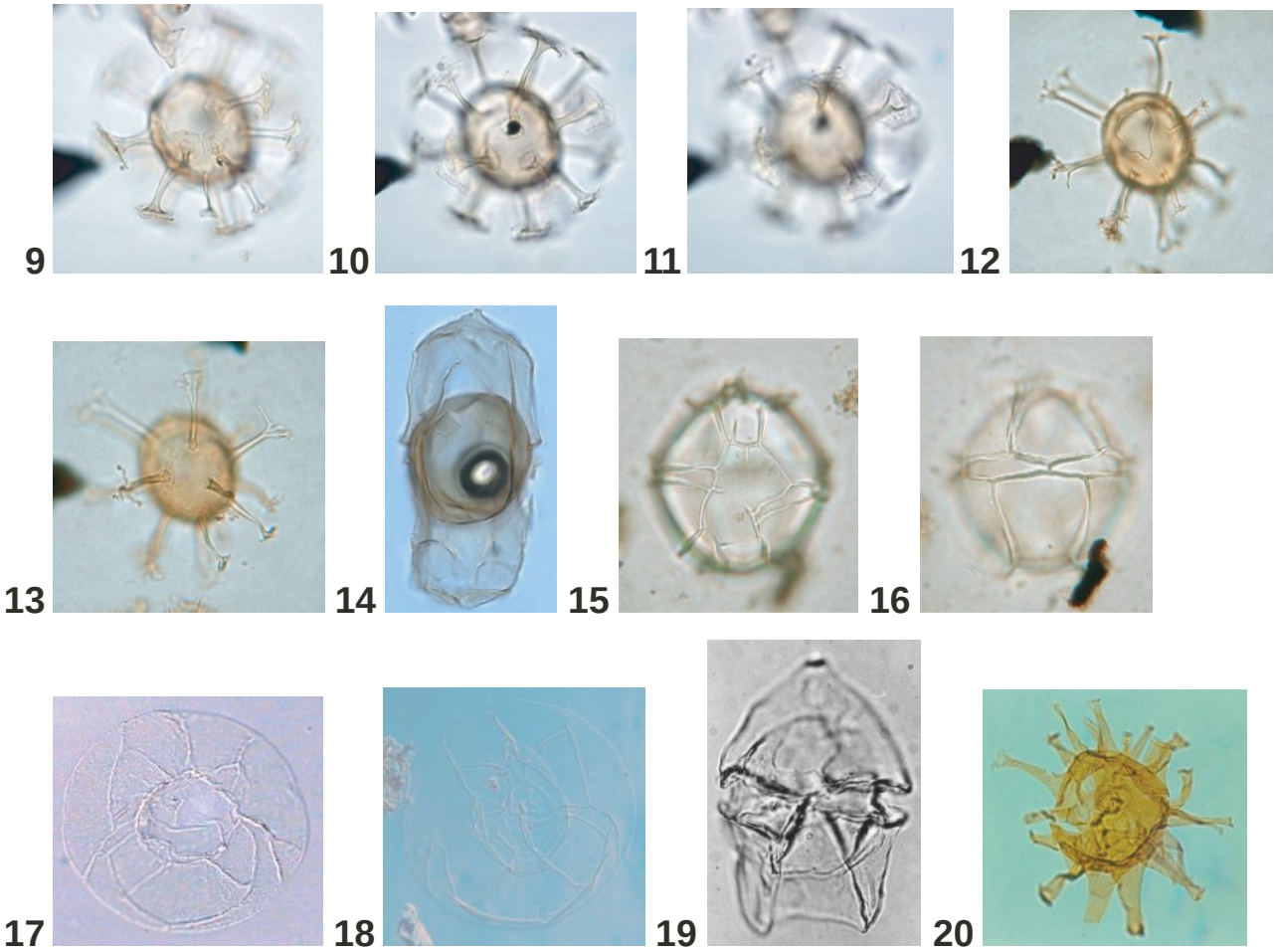

Plate P20. 1, 2. *Kleithriasphaeridium loffrense* Davey and Verdier 1976. Both 400×. **3.** *Kleithriasphaeridium readii* (Davey and Williams 1966b) Davey and Verdier 1976. 300×. **4–6.** *Labyrinthodinium truncatum* Piasecki 1980; (4) antapical surface; (6) archeopyle margin in focus. Courtesy of L. de Verteuil. All 800×. **7–10.** *Laciniadinium biconiculum* McIntyre 1975; (7) optical section in dorsal view (500×); (8) same specimen as 7, dorsal view (500×); (9, 10). Same specimen in dorsal view (500×). **11.** *Lentinia serrata* Bujak in Bujak et al. 1980. Optical section of holotype (650×). (Continued on next page.)

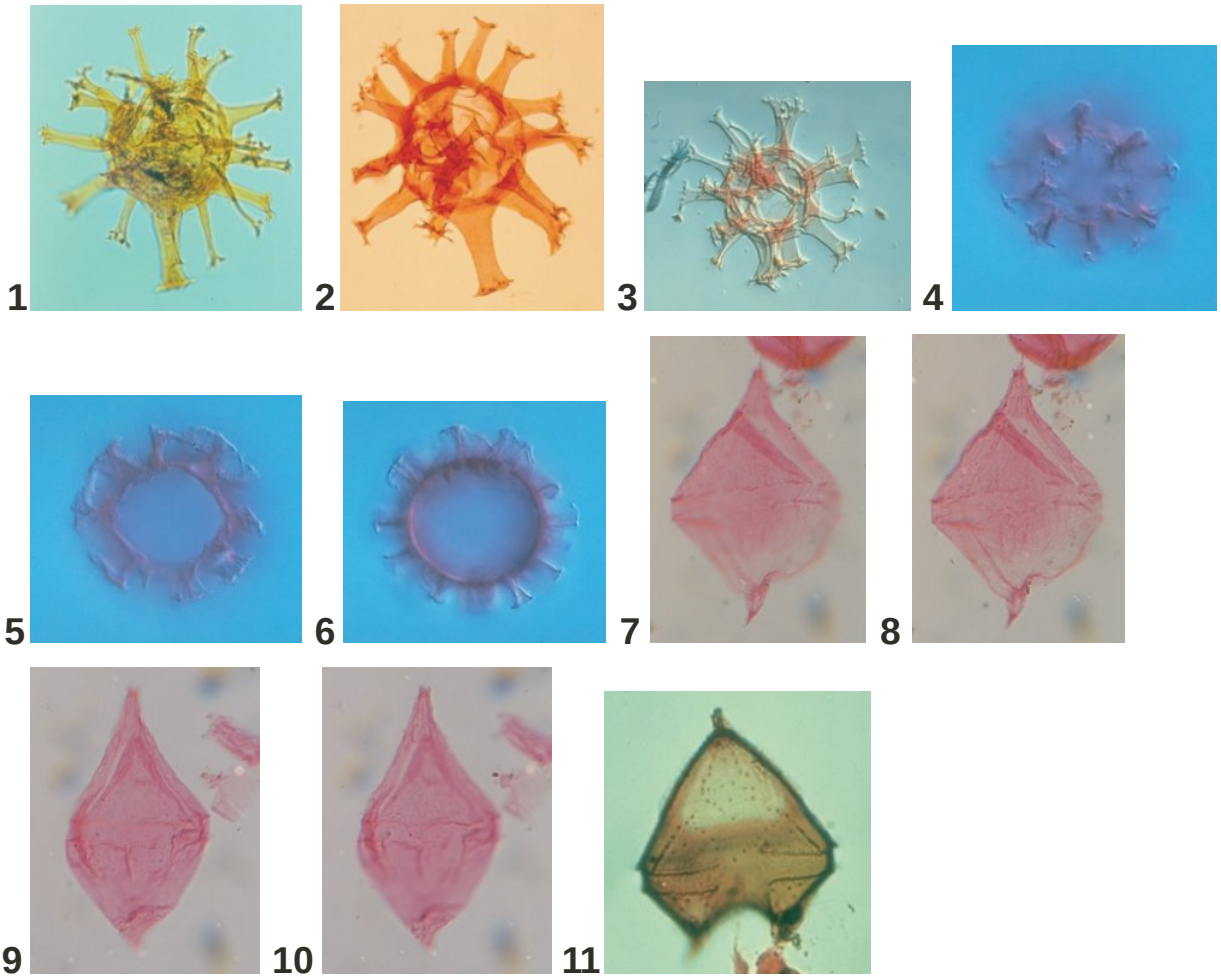

Plate P20 (continued). 12–14. *Leptodinium italicum* Biffi and Manum 1988; (12) scanning electron micrograph (SEM), ventral surface (625×); (13) dorsal view of ventral surface (625×); (14) same specimen as 13, dorsal view of dorsal surface (625×). **15–17.** *Litosphaeridium siphonophorum* (Cookson and Eisenack 1958) Davey and Williams 1966b; (15) SEM (450×), courtesy of E.J. Kidson; (16) 450×; (17) 500×. **18.** *Manumiella seelandica* (Lange 1969) Bujak and Davies 1983. 425×. **19.** *Melitasphaeridium pseudorecurvatum* (Morgenroth 1966a) Bujak et al. 1980. Optical section (525×). **20.** *Membranilarnacia*? *picena* Biffi and Manum 1988. Optical section (675×).


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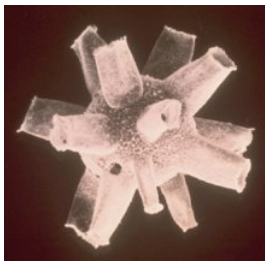
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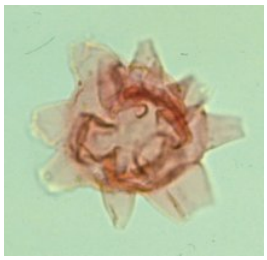
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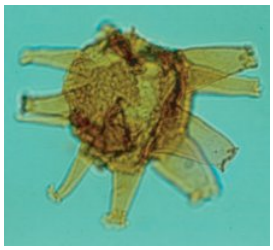
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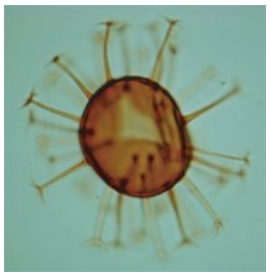
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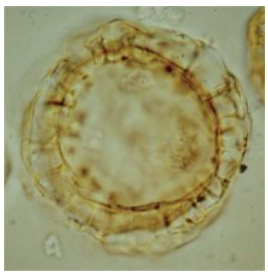
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Plate P21. 1, 2. *Membranophoridium perforatum* Wilson 1988. Holotype, courtesy of G.J. Wilson; (1) 300×; (2) 400×. **3.** "*Mendicodinium robustum*" Zevenboom and Santarelli in Zevenboom 1995 (considered an unpublished manuscript name by the originating authors). 400×. **4.** *Nematosphaeropsis downiei* Brown 1986. 400×. **5, 6.** *Octodinium askiniae* Wrenn and Hart 1988; (5) 300×; (6) 375×. ***7.*** *Odontochitina costata* Alberti 1961. Dorsal view (275×). **8.** *Odontochitina operculata* (O. Wetzel 1933a) Deflandre and Cookson 1955. Ventral view (275×). (Continued on next page.)

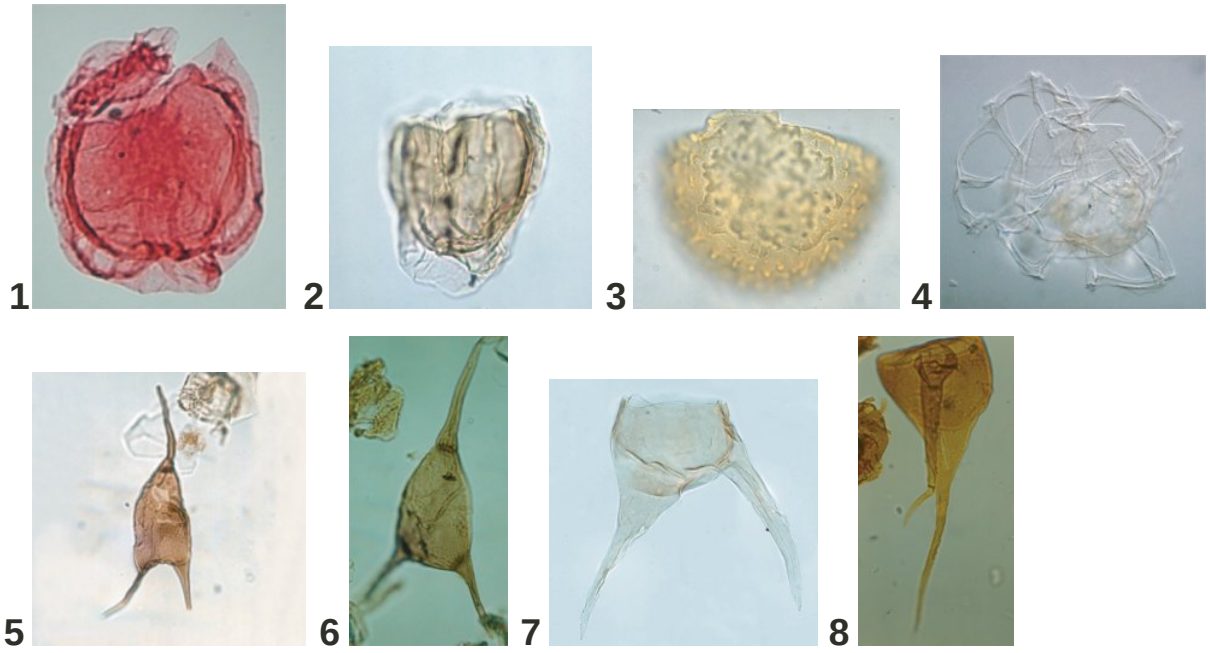

Plate P21 (continued). **9.** "*Odontochitina diversa*" Pearce 2000 unpublished thesis name. 300×. **10–12.** *Odontochitina porifera* Cookson 1956; (10, 11) same specimen in ventral view. All 225×. **13.** *Oligosphaeridium poculum* Jain 1977b. 325×. **14, 15.** *Oligosphaeridium pulcherrimum* (Deflandre and Cookson 1955) Davey and Williams 1966b; (14) ventral surface. Both × 325. **16–18.** *Oligosphaeridium* spp. All 325×. **19, 20.** *Operculodinium divergens* (Eisenack 1954b) Stover and Evitt 1978; (20) courtesy of S.P. Damassa. Both 350×.

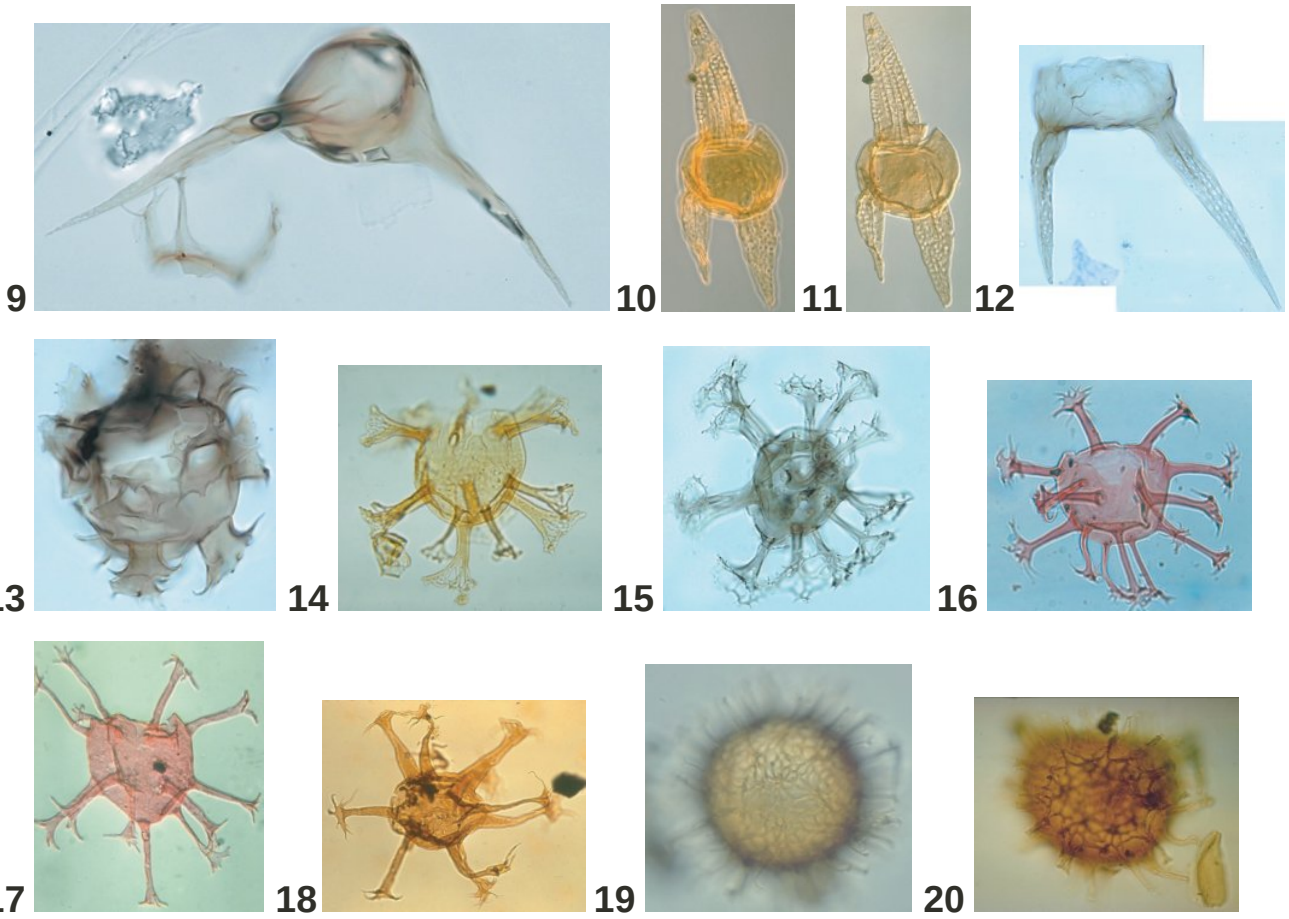

Plate P22. 1, 2. *Operculodinium echigoense* Matsuoka 1983b; (2) courtesy of K. Matsuoka. Both 400×. **3.** *Operculodinium*? *eirikianum* Head et al. 1989b. 700×. ***4.*** *Ovoidinium verrucosum* (Cookson and Hughes 1964) Davey 1970. Ventral view (700×). **5, 6.** *Palaeocystodinium bulliforme* Ioannides 1986. Both 250×. **7.** *"Palaeocystodinium striatogranulosum"* Zevenboom and Santarelli in Zevenboom 1995 (considered an unpublished manuscript name by the originating authors). 300×. **8.** *Palaeohystrichophora infusorioides* Deflandre 1935. Ventral view of dorsal surface (900×). **9, 10.** *Palaeoperidinium pyrophorum* (Ehrenberg 1838 ex O. Wetzel 1933a) Sarjeant 1967b. Dorsal view of dorsal surface; (9) 400×; (10) 450×. **11–13.** *Palynodinium grallator* Gocht 1970a; (11) with operculum (325×); (12) dorsal view of ventral surface (325×); (13) dorsal surface (325×). (Continued on next page).

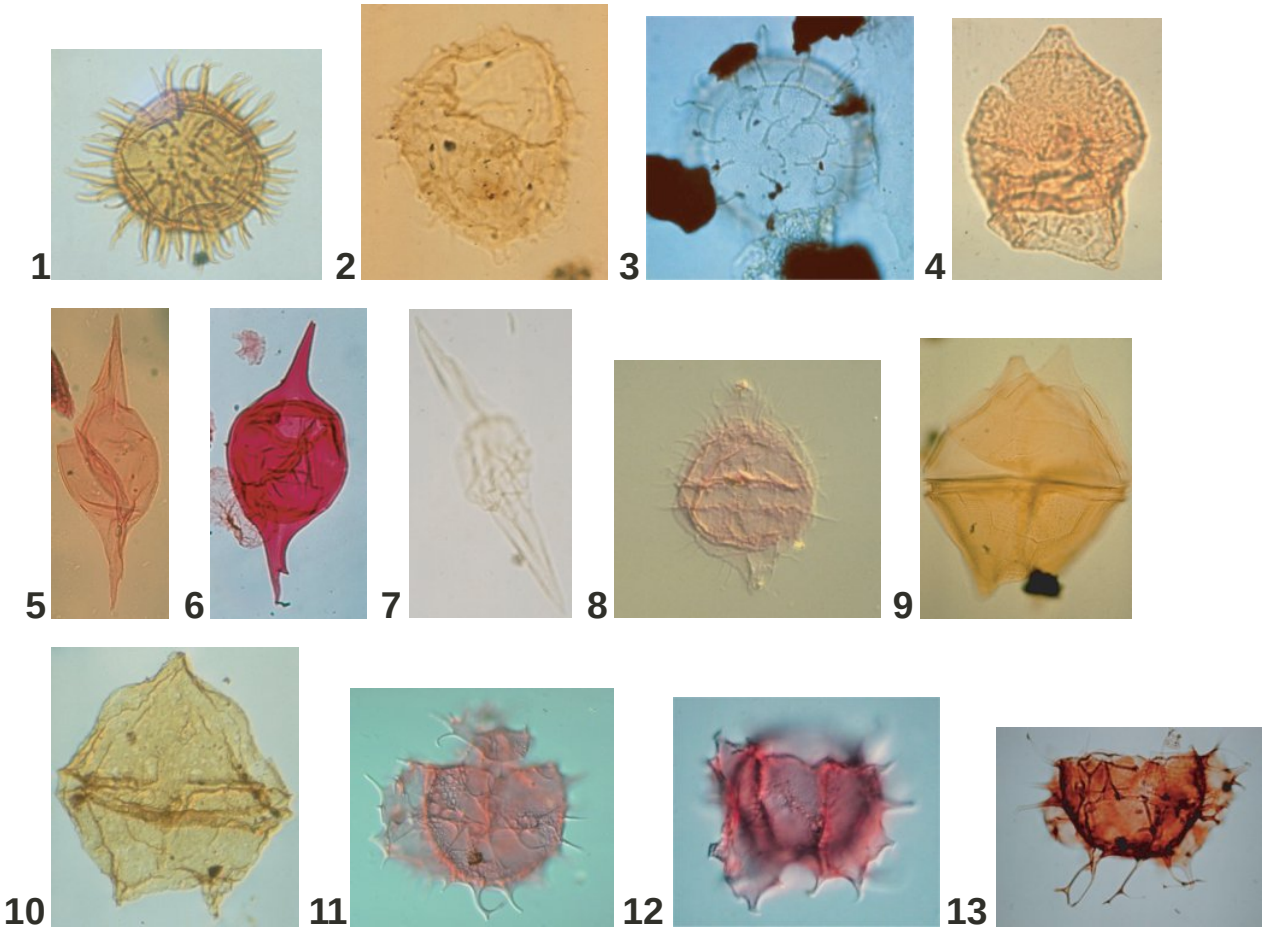

Plate P22 (continued). 14. *Phthanoperidinium amoenum* Drugg and Loeblich 1967. Dorsal view of dorsal surface (850×). **15.** *Phthanoperidinium distinctum* Bujak 1994. Paratype (750×), courtesy of J.P. Bujak. **16–18.** *Pyxidinopsis fairhavenensis* de Verteuil and Norris 1996a; (16, 17) same specimen, dorsal view of dorsal surface (825×); (18) same specimen as 16, optical section (825×), courtesy of L. de Verteuil. **19.** *Raetiaedinium truncigerum* (Deflandre 1937b) Kirsch 1991. Dorsal view of dorsal surface (550×). **20.** *Raphidodinium fucatum* Deflandre 1936b. 400×. **21.** *Renidinium rigidum* Prince et al. 1999. 500×.

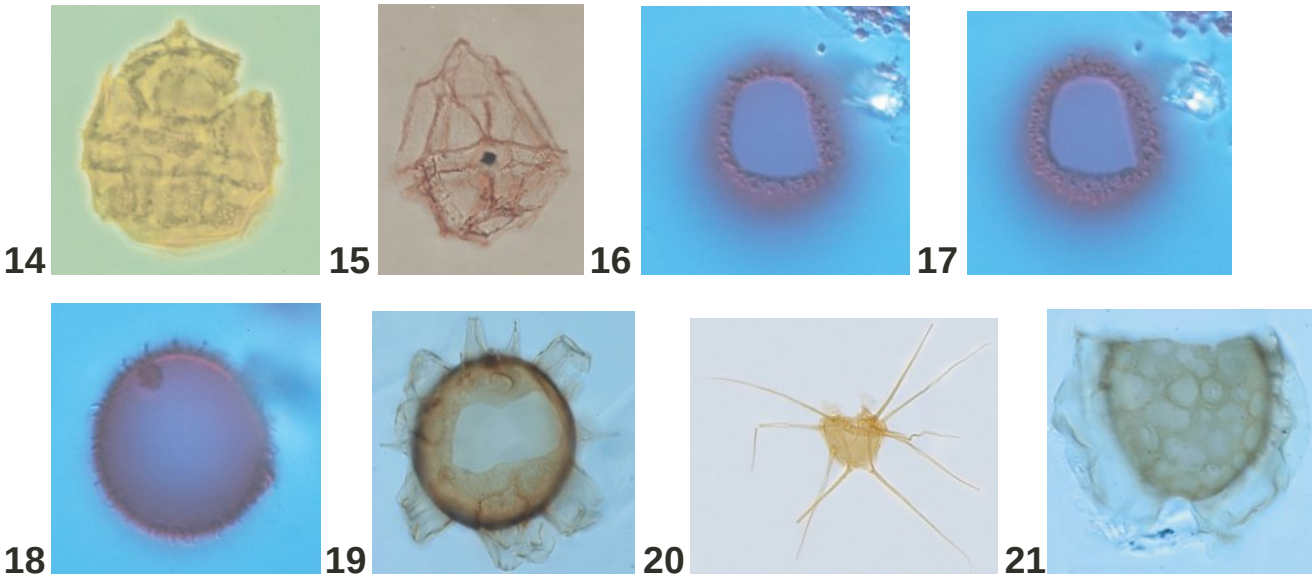

Plate P23. 1. *Renidinium rigidum* Prince et al., 1999. Same specimen as Pl. P22, p. 89, fig. 21. Optical section (500×). **2, 3.** *Reticulatosphaera actinocoronata* (Benedek 1972) Bujak and Matsuoka 1986. Both 850×. **4.** *Rhombodinium draco* Gocht 1955. Dorsal view of ventral surface (300×). **5.** *Rhombodinium perforatum* (Jan du Chêne and Châteauneuf 1975) Lentin and Williams 1977b. Dorsal view of dorsal surface (300×). **6–8.** *Rhombodinium porosum* Bujak 1979; (6) dorsal view, optical section (275×); (7, 8) dorsal view of dorsal surface (275×). **9, 10.** *Saturnodinium pansum* (Stover 1977) Brinkhuis et al. 1992. Apical view; (10) holotype. Both 450×. **11, 12.** *Saturnodinium perforatum* Brinkhuis et al. 1992; (11) scanning electron micrograph (SEM), apical surface. Both 600×. (Continued on next page.)

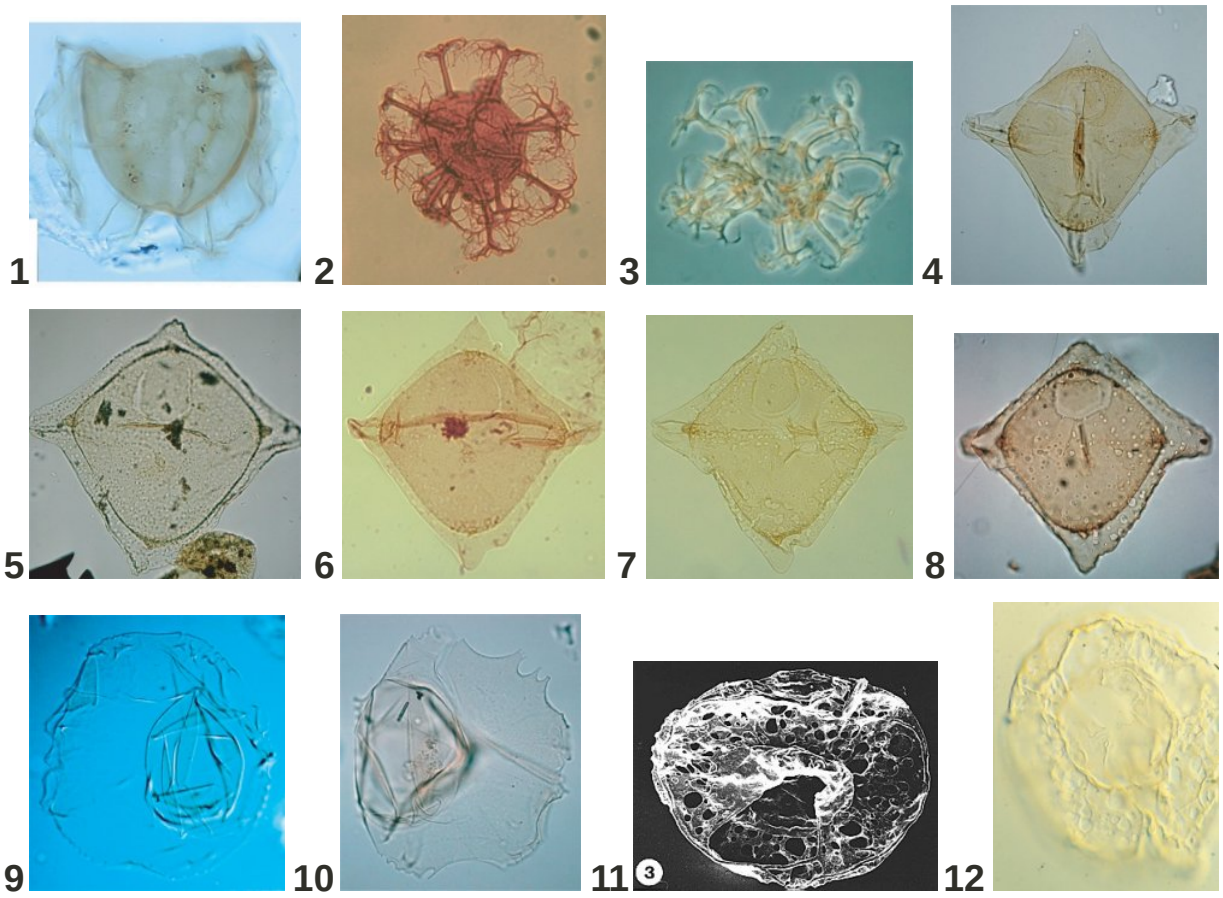

Plate P23 (continued). 13–16. *Schematophora speciosa* Deflandre and Cookson 1955; (13) operculum (950×); (14) dorsal surface (625×); (15) dorsal view of ventral surface (625×); (16) ventral surface (625×). **17, 18.** *Selenopemphix armageddonensis* de Verteuil and Norris 1992; (17) apical view of apical surface (750×); (18) same specimen as 17, apical view of antapical surface (750×), courtesy of L. de Verteuil. **19.** *Selenopemphix armata* Bujak in Bujak et al. 1980. Holotype (575×), courtesy of J.P. Bujak. **20.** *Selenopemphix dionaeacysta* Head et al. 1989b. Courtesy of D. Zevenboom. 750×.

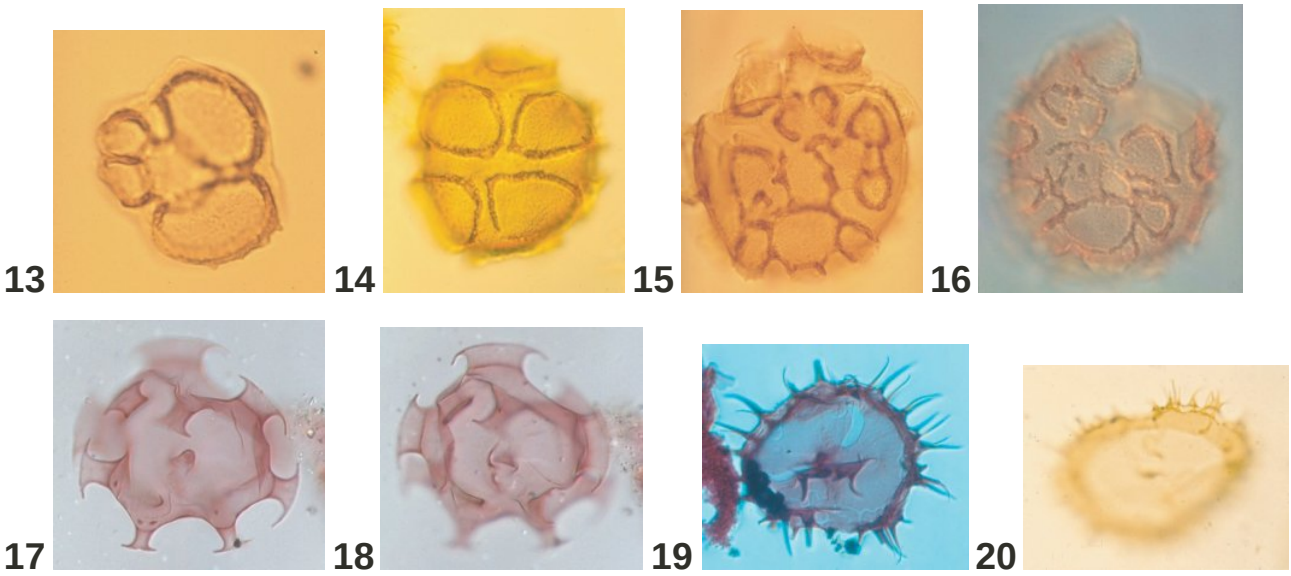

Plate P24. 1. *Selenopemphix dionaeacysta* Head et al. 1989b. Courtesy of M.J. Head. 750×. **2–4.** *Senoniasphaera inornata* (Drugg 1970b) Stover and Evitt 1978; (2) ventral view of ventral surface (350×); (3, 4) dorsal surface (350×). **5.** *Senoniasphaera protrusa* Clarke and Verdier 1967 (475×). **6, 7.** *Senoniasphaera rotundata* Clarke and Verdier 1967; (6) dorsal view of dorsal surface (500×); (7) same specimen as 6, dorsal view, optical section (500×). **8, 9.** *Senoniasphaera rotundata* subsp. *alveolata* Pearce et al. 2003; (8) dorsal surface (500×); (9) same specimen as 8, ventral surface (500×). **10.** *Spinidinium echinoideum* (Cookson and Eisenack 1960a) Lentin and Williams 1976. Holotype (550×), from the L.E. Stover Collection. (Continued on next page).

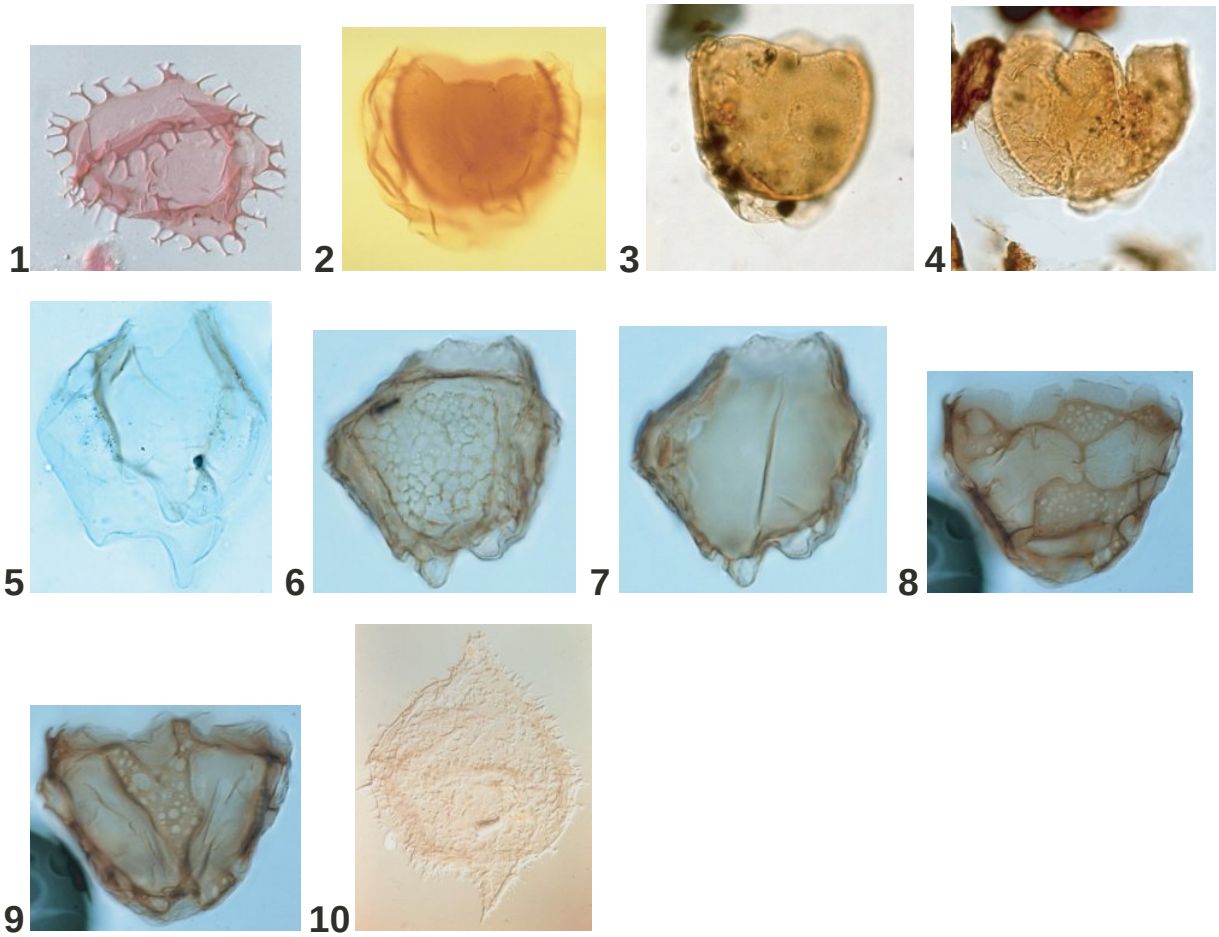

Plate P24 (continued). 11–14. *Spinidinium macmurdoense* (Wilson 1967a) Lentin and Williams 1976; (11) ventral view, optical section (400×); (12) dorsal view of dorsal surface (350×); (13) dorsal view, optical section (400×); (14) ventral view of ventral surface (350×). **15.** *Spiniferites porosus* (Manum and Cookson 1964) Harland 1973. Right lateral view showing right lateral surface (325×). **16.** *Spiniferites ramosus* subsp. *maeandriformis* (Corradini 1973) Lentin and Williams 1975. Left lateral view (425×). **17, 18.** *Spiniferites*? *velatus* (Clarke and Verdier 1967) Stover and Evitt 1978. Both 375×. **19, 20.** *Spongodinium delitiense* (Ehrenberg 1838) Deflandre 1936b; (19) oblique right view of right lateral surface (300×); (20) same specimen as 19, oblique right lateral view of left lateral surface (300×).

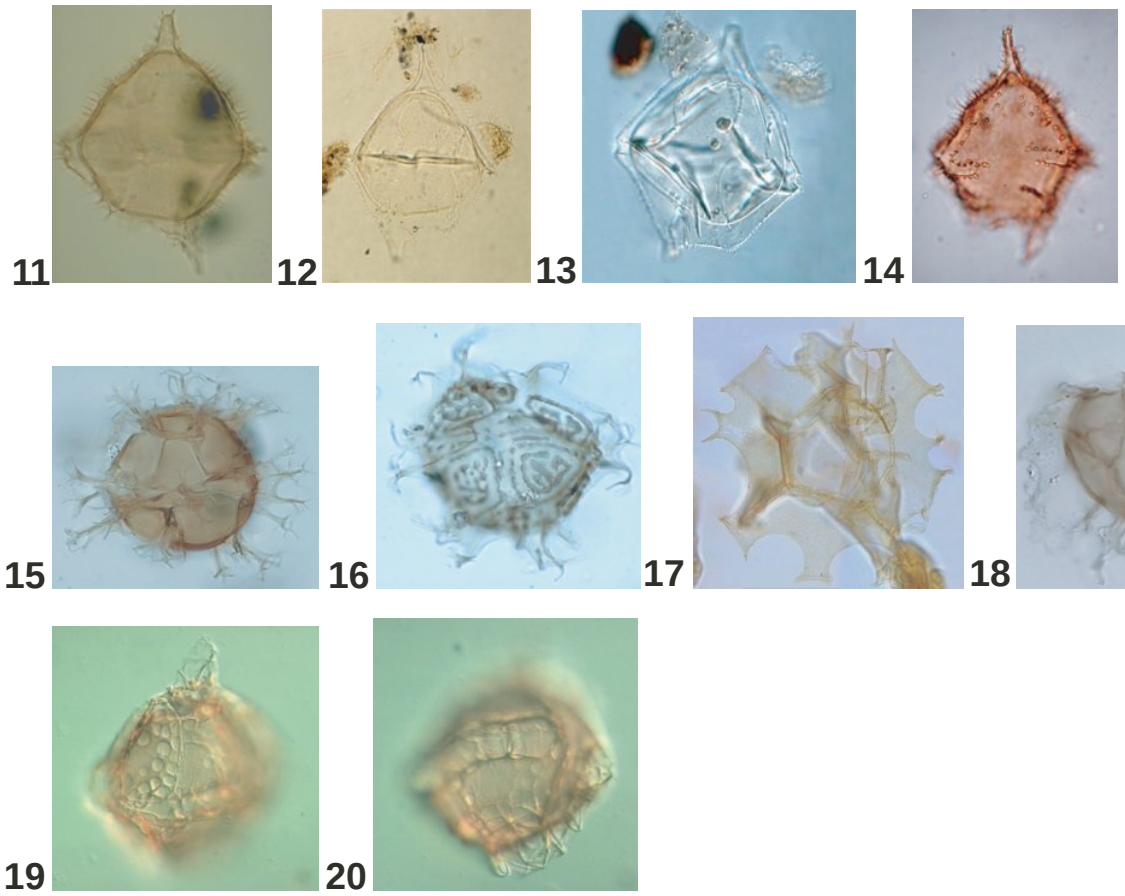

Plate P25. 1, 2. *Spongodinium delitiense* (Ehrenberg 1838) Deflandre 1936b; (1) ventral surface (300×); (2) dorsal surface (350×). **3, 4.** *Stephodinium coronatum* Deflandre 1936a; (3) scanning electron micrograph (SEM), dorsal surface (500×), courtesy of E.J. Kidson; (4) apical surface (500×). **5–10.** *Stoveracysta ornata* (Cookson and Eisenack 1965a) Clowes 1985; (5) dorsal surface (350×); (6) specimen with operculum in place (350×); (7) dorsal surface (350×); (8) same specimen as 7, ventral surface (350×); (9) dorsal surface (350×); (10) same specimen as 9, ventral surface (350×). **11.** *Sumatradinium druggii* Lentin et al. 1994. 275×. **12–14.** *Sumatradinium soucouyantiae* de Verteuil and Norris 1992; (14) dorsal surface. All 350×. **15–17.** *Surculosphaeridium*? *longifurcatum* (Firtion 1952) Davey et al. 1966. All 500×. **18–20.** *Thalassiphora delicata* Williams and Downie 1966c. All 400×.

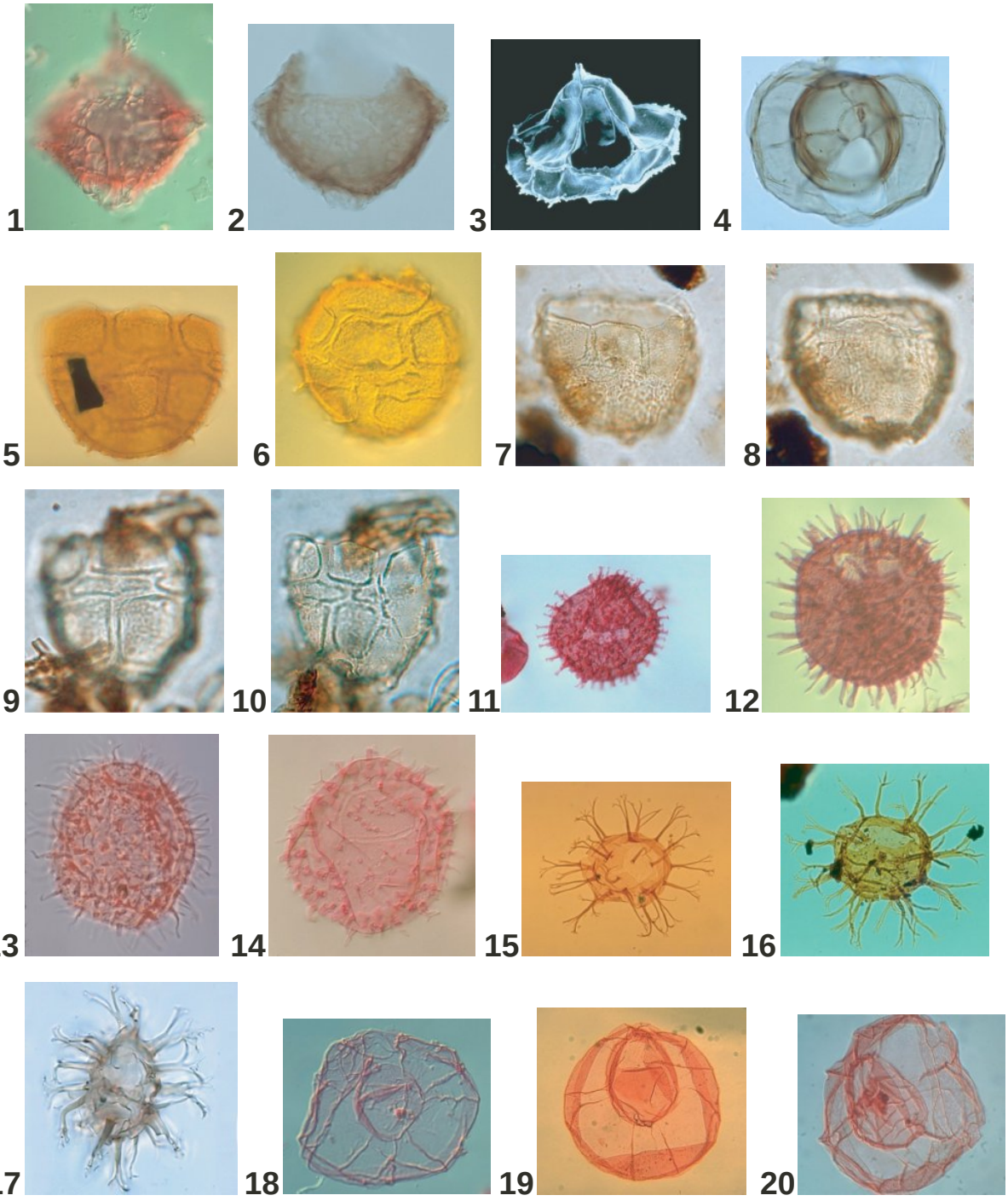

Plate P26. 1. *Thalassiphora delicata* Williams and Downie 1966c. 350×. **2.** *Thalassiphora*? *spinosa* (Clarke and Verdier 1967) Foucher 1975. 350×. **3, 4.** *Triblastula utinensis* O. Wetzel 1933b; (4) left lateral view. Both 350×. **5.** *Trichodinium castanea* Deflandre 1935 ex Clarke and Verdier 1967. 400×. **6.** *Trigonopyxidia ginella* (Cookson and Eisenack 1960a) Downie and Sarjeant 1965. 550×. **7.** *Trinovantedinium applanatum* (Bradford 1977) Bujak and Davies 1983; dorsal view (450×), courtesy of M.R. Bradford. **8.** *Trinovantedinium glorianum* (Head et al. 1989b) de Verteuil and Norris 1992. Ventral view of dorsal surface. Holotype (450×), courtesy of M.J. Head. (Continued on next page).

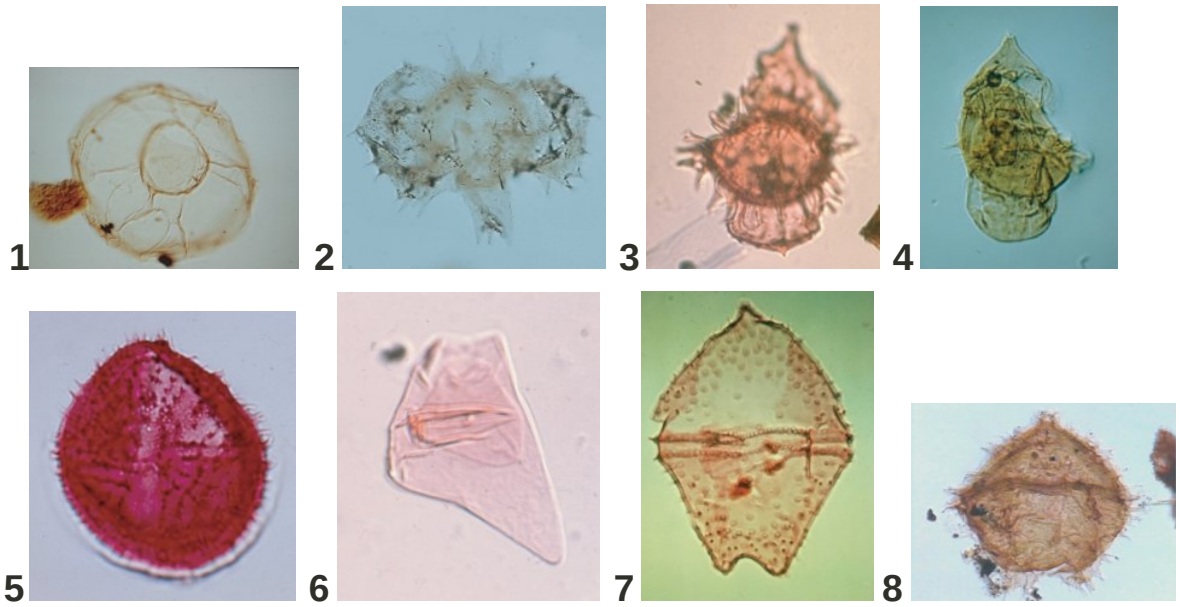

Plate P26 (continued). 9. *Trithyrodinium evittii* Drugg 1967. 400×. **10, 11.** *Trithyrodinium suspectum* (Manum and Cookson 1964) Davey 1969b; (10) 425×; (11) optical section (500×). **12–14.** *Unipontidinium aquaeductum* (Piasecki 1980) Wrenn 1988; (12) scanning electron micrograph (SEM), dorsal surface (850×); (13) dorsal view of ventral surface (750×); (14) dorsal view of dorsal surface (850×). **15–18.** *Wetzeliella gochtii* Costa and Downie 1976; (15) dorsal view of dorsal surface (300×); (16) same specimen as 15, dorsal view of ventral surface (300×); (17) ventral view of ventral surface (300×); (18) same specimen as 17, ventral view of dorsal surface (300×). **19, 20.** *Wetzeliella meckelfeldensis* Gocht 1969; (19) ventral view of ventral surface (250×); (20) same specimen as 19, ventral view of dorsal surface (250×).

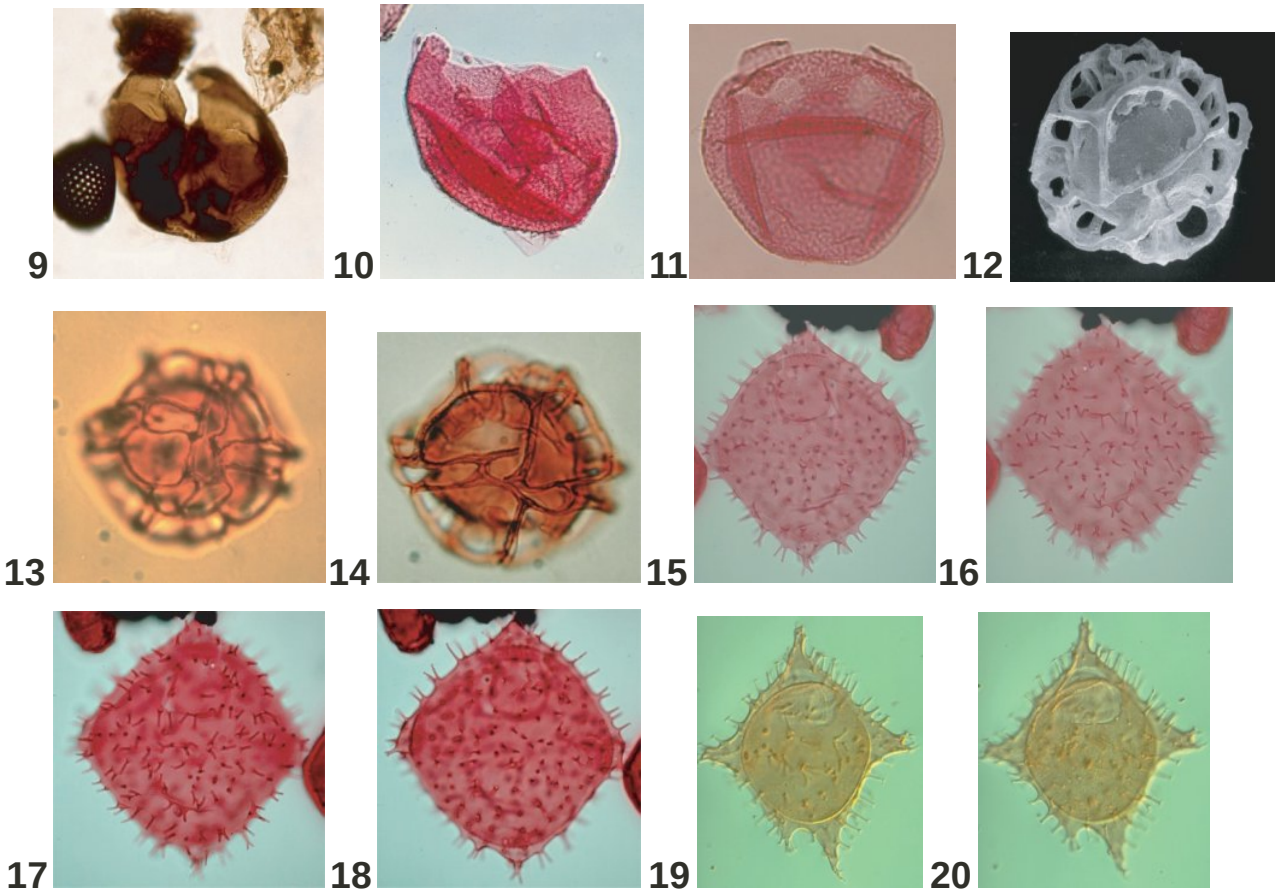

Plate P27. 1–3. *Wilsonidium echinosuturatum* (Wilson 1967c) Lentin and Williams 1976; (1) dorsal view of dorsal surface, holotype (275×); (2) same specimen as 1, ventral surface (250×); (3) same specimen as 1, dorsal surface (250×), courtesy of G.J. Wilson. **4, 5.** *Xenascus ceratioides* (Deflandre 1937b) Lentin and Williams 1973. Same specimen in ventral view, both showing dorsal surface (both 250×). **6–8.** *Xiphophoridium alatum* (Cookson and Eisenack 1962b) Sarjeant 1966b; (7, 8) dorsal views. All 400×. **9, 10.** *Stoveracysta kakanuiensis* Clowes 1985; (9) dorsal surface (475×); (10) dorsal view of ventral surface (475×).