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# Diatom and radiolarian biostratigraphy in the Pliocene sequence of ODP Site 697 (Jane Basin, Atlantic sector of the Southern Ocean)

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## Species list

To indicate the taxonomic concept of the authors, the references used for species identification are presented below.

### Diatoms

*Actinocyclus actinochilus* (Ehrenberg) Simonsen; Harwood and Maruyama, 1992, p. 699, pl. 12, figs. 9–11; Iwai and Winter, 2002, p. 3, pl. 26, fig. 2, pl. 33, fig. 1; Scott and Thomas, 2005, p. 52, fig. 2.22.

*Actinocyclus curvatulus* Janisch; Fenner et al., 1976, p. 763, pl. 6, figs. 1, 2; Akiba, 1982, p. 41–42, pl. 5, figs. 5a, 5b; Harwood and Maruyama, 1992, p. 699, pl. 12, fig. 12; Zielinski and Gersonde, 2002, p. 253, pl. 3, fig. 1.

*Actinocyclus ingens* Rattray; Gombos, 1977, p. 591–592; Akiba, 1982, p. 42, pl. 5, figs. 7–14; Gersonde, 1990, p. 791–792, pl. 1, figs. 1, 3–5, pl. 3, figs. 8, 9, pl. 4, fig. 1; Harwood and Maruyama, 1992, p. 700, pl. 8, fig. 10; pl. 11, figs. 4, 6; pl. 12, fig. 8.

*Actinocyclus karstenii* Van Heurck; Harwood and Maruyama, 1992, p. 700, pl. 13, figs. 1, 2, 6–8, 10, 11, 13; Censarek and Gersonde, 2002, p. 350, pl. 1, fig. 5; Iwai and Winter, 2002, p. 3, pl. P20, figs. 5–8; pl. P24, fig. 8; pl. P26, fig. 1; pl. P27, fig. 9; Zielinski and Gersonde, 2002, p. 253, pl. 3, figs. 4, 5, 7–9, 12.

*Actinocyclus maccollumii* Harwood and Maruyama, 1992, p. 700, pl. 17, fig. 29, Zielinski and Gersonde, 2002, p. 253, pl. 3, figs. 10, 11, 13–15. **Synonym**. *Coscinodiscus*? sp. 3, in McCollum, 1975, p. 527, pl. 7, figs. 1–4.

*Actinocyclus octonarius* Ehrenberg; Iwai and Winter, 2002, p. 3, pl. P20, fig. 3. **Synonym**: *Actinocyclus ehrenbergii* Ralfs; Schrader, 1973, p. 701, pl. 19, fig. 1.

*Azpeitia tabularis* (Grunow) Fryxell et Sims in Fryxell et al., 1986, p. 16, figs. 14-1A–14-3B, 15-1A–15-4B, 30-1; Harwood and Maruyama, 1992, p. 701, pl. 11, fig. 5; Censarek and Gersonde, 2002, p. 350, pl. 1, fig. 7; Iwai and Winter, 2002, p. 4, pl. P21, fig. 4; Zielinski and Gersonde, 2002, p. 255, pl. 3, fig. 2. **Basionym**: *Coscinodiscus tabularis* Grunow; Akiba, 1982, p. 42, pl. 2, figs. 6–9.

*Chaetoceros* spp. (observed in the form of resting spores)

*Cocconeis costata* Gregory; Akiba, 1986, p. 447, pl. 30, fig. 1; Harwood et al., 2000, p. 459, fig. 9h; Iwai and Winter, 2002, p. 4, pl. P6, fig. 16.

*Cocconeis fasciolata* (Ehrenberg) Brown; Scott and Thomas, 2005, p. 127, fig. 2.68; Al-Handal and Wulff, 2008, fig. 37.

*Corethron pennatum* (Grunow) Ostenfeld; Scott and Thomas, 2005, p. 65, fig. 2.29.

*Coscinodiscus asteromphalus* Ehrenberg; Scott and Thomas, 2005, p. 38, fig. 2.15.

*Coscinodiscus marginatus* Ehrenberg; McCollum, 1975, p. 527, pl. 16, figs. 2, 3; Gombos, 1977, p. 593, pl. 5, fig. 5; Akiba, 1982, p. 42, pl. 1, fig. 8; Akiba, 1986, p. 442, pl. 1, figs. 1–4; Iwai and Winter, 2002, p. 5, pl. P30, fig. 2; pl. P31, fig. 5.

*Coscinodiscus radiatus* Ehrenberg; Fenner et al., 1976, p. 774, pl. 7, fig. 1; Iwai and Winter, 2002, p. 5, pl. P22, fig. 1.

*Denticulopsis crassa* Yanagisawa and Akiba, 1990, p. 248–249, pl. 3, figs. 21–27, pl. 12, figs. 1–8; Censarek and Gersonde, 2002, p. 351, pl. 2, fig. 12; Iwai and Winter, 2002, p. 5, pl. P1, figs. 15–18. **Synonym**: *Denticula hustedtii* Simonsen and Kanaya, Schrader, 1973, pl. 2, figs. 29, 30; *Denticulopdis hustedtii* (Simonsen and Kanaya) Simonsen, Akiba, 1986, pl. 28, figs. 5, 9, 14, 15, 18; Akiba and Yanagisawa, 1986, pl. 17, figs. 9, 10, 20.

*Denticulopsis delicata* Yanagisawa and Akiba, 1990, p. 246, pl. 7, figs. 1–4; Iwai and Winter, 2002, p. 5, pl. 2, figs. 9–16, pl. 28, figs. 3–5.

*Denticulopsis dimorpha* (Schrader) Simonsen; Akiba, 1982, pl. 11, figs. 1, 3, 5, 6, *nec* 2–4, 7, 8; Akiba, 1986, p. 442, pl. 27, figs. 3, 4, 7–9, 11–13, *nec* 1, 2, 5, 6, 10; Akiba and Yanagisawa, 1986, p. 488, pl. 15, figs. 2–4, 17, 18, 20, 23–25, *nec* 1, 5–16, 19, 21, 22, pl. 16, figs. 1–16; Yanagisawa and Akiba, 1990, p. 254–255, pl. 4, figs. 42–49, pl. 7, figs. 14–16.

*Denticulopsis dimorpha* var. *areolata* Yanagisawa and Akiba, 1990, p. 257, pl. 4, figs. 40, 41, 50–54, pl. 5, figs. 13–17, pl. 6, fig. 1–5, 15–23, pl. 12, figs. 15, 16. **Synonym**: *Denticulopsis dimorpha* (Schrader) Simonsen; Akiba, 1982, pl. 11, figs. 2–4, 7, 8; Akiba, 1986, pl. 27, figs. 1, 2, 5, 6, 10; Ciesielski, 1986, p. 876, pl. 2, figs. 5–8; Akiba and Yanagisawa, 1986, pl. 15, figs. 1, 5–16, 19, 21, 22, pl. 16, figs. 1–16; Baldauf and Barron, 1991, p. 588, pl. 7, fig. 4.

*Denticulopsis hyalina* (Schrader) Simonsen; Akiba, 1986, pl. 26, figs. 20–25; Akiba and Yanagisawa, 1986, pp. 488, 489, pl. 10, figs. 1–11, 14–16; pl. 11, figs. 1–10; pl. 12, figs. 1–5; Yanagisawa and Akiba, 1990, pp. 240, 241, pl. 2, figs. 14, 33, 34; pl. 9, figs. 8, 9.

*Denticulopsis ovata* (Schrader) Yanagisawa and Akiba, 1990, pp. 257, 258, pl. 6, figs. 6–14, 24–32; Censarek and Gersonde, 2002, p. 351, pl. 2, figs. 13–20; Iwai and Winter, 2002, p. 6, pl. 1, fig. 20. **Basionym**: *Denticula hustedtii* var. *ovata* Schrader, 1976, p. 632, pl. 4, figs. 5, 6, 12, 14, 15.

*Denticulopsis praedimorpha* Barron ex Akiba, 1982, p. 46–48, pl. 11, figs. 9–27; Yanagisawa and Akiba, 1990, pl. 4, figs. 3–5, 10, 12–17, 39, pl. 5, figs. 4–12.

*Denticulopsis simonsenii* Yanagisawa and Akiba, 1990, pp. 242, 243, pl. 3, figs. 1–3; pl. 11, figs. 1, 5; Censarek and Gersonde, 2002, p. 351, pl. 2, figs. 21–24; Iwai and Winter, 2002, pl. 1, figs. 1–6; pl. 28, figs. 1, 2.

*Denticulopsis vulgaris* (Okuno) Yanagisawa and Akiba, 1990, pp. 243, 244, pl. 3, figs. 4–8; pl. 11, figs. 2, 6–10; Iwai and Winter, 2002, p. 6, pl. P1, figs. 7, 8.

*Eucampia antarctica* (Castracane) Mangin; Harwood et al., 2000, p. 459, figs. 7r, 7s; Iwai and Winter, 2002, pl. 7, fig. 12; pl. 27, fig. 6.

*Fragilariopsis arcula* (Gersonde) Gersonde and Bárcena, 1998, p. 92. **Basionym**: *Nitzschia arcula* Gersonde, 1991, p. 143–144, pl. 2, fig. 4, pl. 4, fig. 4, pl. 5, figs. 1–6; Gersonde and Burckle, 1990, p. 780, pl. 1, figs. 25, 26.

*Fragilariopsis aurica* (Gersonde) Gersonde and Bárcena, 1998, p. 92; Censarek and Gersonde, 2002, p. 351, pl. 3, figs. 9–12; Iwai and Winter, 2002, pp. 6, 7, pl. 4, figs. 24–28, pl. 25, fig. 2, pl. 28, fig. 7; Zielinski and Gersonde, 2002, p. 257, pl. 1, figs. 13–15. **Basionym**: *Nitzschia aurica* Gersonde, 1991, pp. 144–146, pl. 1, figs. 18–25, pl. 3, fig. 5, pl. 4, figs. 5, 6, pl. 7, fig. 6; Gersonde and Burckle, 1990, p. 780, pl. 2, figs. 10–12; Harwood and Maruyama, 1992, p. 704, pl. 17, figs. 21–23.

*Fragilariopsis barronii* (Gersonde) Gersonde and Bárcena, 1998, p. 92; Harwood et al., 2000, p. 459, fig. 10m; Iwai and Winter, 2002, p. 7, pl. 25, fig. 3; Zielinski and Gersonde, 2002, p. 257, pl. 1, figs. 29–31. **Basionym**: *Nitzschia barronii* Gersonde, 1991, pp. 146, 147, pl. 3, fig. 6, pl. 4, figs. 1–3, pl. 5, figs. 7–17; Gersonde and Burckle, 1990, p. 780, pl. 1, figs. 11–13; Baldauf and Barron, 1991, p. 589, pl. 7, fig. 14; Harwood and Maruyama, 1992, p. 704, pl. 17, figs. 27, 28.

*Fragilariopsis bohatyi* Sjunneskog and Riesselman in Sjuneskog et al., 2012, p. 275–277, pl. 3, figs. a–x, pl. 4, figs. a–i. **Synonym**: *Fragilariopsis* sp. of Bohaty et al., 1998, pl. 1, figs. 11, 13.

*Fragilariopsis curta* (Van Heurck) Hustedt; Bohaty et al., 1998, pl. 4, fig. 3; Harwood et al., 2000, p. 459, fig. 10. **Synonym**: *Nitzschia curta* (Van Heurck) Hasle; Schrader, 1976, p. 633, pl. 5, figs. 21, 23, 24; Fenner et al., 1976, p. 775, pl. 4, figs. 5–9; Akiba, 1982, p. 44, pl. 10, figs. 1–2b; Koizumi, 1982, p. 80, pl. 1, figs. 1, 2; Hasle and Medlin, 1990, p. 181–182, pl. 24.6, figs. 2–5; Harwood and Maruyama, 1992, p. 704, pl. 17, figs. 1–4.

*Fragilariopsis cylindrus* (Grunow) Krieger; **Basionym**: *NItzschia cylindrus* (Grunow) Hasle; Fenner et al., 1976, p. 775, pl. 4, figs. 10–15; Hasle and Medlin, 1990, p. 181–182, pl. 24.6, figs. 6–12.

*Fragilariopsis interfrigidaria* (McCollum) Gersonde and Bárcena, 1998, p. 92; Iwai and Winter, 2002, p. 7, pl. 3, figs. 16, 17; pl. 25, figs. 6–8; Zielinski and Gersonde, 2002, p. 259, pl. 1, figs. 20, 21. **Basionym**: *Nitzschia interfrigidaria* McCollum, 1975, p. 535, pl. 9, fig. 9; Schrader. 1976, p. 634, pl. 3, figs. 5, 6; Gombos, 1977, p. 595, pl. 7, fig. 3; Ciesielski, 1983, p. 655, pl. 1, figs. 11–18; Ciesielski, 1986, p. 876, pl. 3, figs. 6, 7; Gersonde and Burckle, 1990, p. 780, pl. 1, figs. 1–3.

*Fragilariopsis laqueata* Riesselman in Sjunneskog et al., 2012, p. 274–275, pl. 1, figs. a–w, pl.2, figs. a–i.

*Fragilariopsis praecurta* (Gersonde) Gersonde and Bárcena, 1998, p. 92; Iwai and Winter, 2002, p. 7, pl. P4, figs. 19–23; pl. P28, fig. 8. **Basionym**: *Nitzschia praecurta* Gersonde, 1991, p 148–149, pl. 1, figs. 7–17, pl. 2, figs. 5, 6, pl. 3, figs. 3, 4, pl. 10, fig. 7; Gersonde and Burckle, 1990, p. 782, pl. 1, figs. 21–24; Harwood and Maruyama, 1992, p. 704, pl. 17, figs. 25, 26.

*Fragilariopsis praeinterfrigidaria* (McCollum) Gersonde and Bárcena, 1998, p. 92; Censarek and Gersonde, 2002, p. 352, pl. 3, figs. 22, 23; Iwai and Winter, 2002, p. 7, pl. P3, figs. 13–15; Zielinski and Gersonde, 2002, p. 259, pl. 1, figs. 22, 23. **Basionym**: *Nitzschia praeinterfrigidaria* McCollum, 1975, p. 535, pl. 10, fig. 1; Gombos, 1977, p. 595, pl. 7, figs. 1, 2; Ciesielski, 1983, p. 655, pl. 2, figs. 1–8, 13, 14, pl. 3, fig. 5; Gersonde and Burckle, 1990, p. 782, pl. 1, figs. 4–10; Baldauf and Barron, 1991, p. 589, pl. 7, fig. 12.

*Fragilariopsis robusta* Sjunneskog in Sjunneskog et al., 2012, p. 277–278, pl. 5, figs. a–i, pl. 6, figs. a–i.

*Fragilariopsis sublinearis* (Van Heurck) Heiden and Kolbe; Bohaty et al., 1998, pl. 1, figs. 15–17. **Synonym**: *Nitzschia sublineata* Hasle; Hasle and Medlin, 1990, p. 181–182, pl. 24.3, fig. 1, pl. 24.5, figs. 1–10, pl. 24.6, fig. 1.

*Fragilariopsis weaveri* (Ciesielski) Gersonde and Bárcena, 1998, p. 93; Ciesielski, 1983, p. 655, pl. 1, figs. 1–10; Zielinski and Gersonde, 2002, p. 260, pl. 1, figs. 18, 19.

*Grammatophora* spp.

*Hemidiscus cuneiformis* Wallich; Fenner et al., 1976, p. 774, pl. 11, fig. 17; Harwood and Maruyama, 1992, p. 703, pl. 11, fig.

11; Censarek and Gersonde, 2002, p. 352, pl. 4, fig. 5; Iwai and Winter, 2002, p. 8, pl. 21, fig. 2; Zielinski and Gersonde, 2002, p. 260, pl. 4, figs. 9, 10.

*Hemidiscus karstenii* Jousé; McCollum, 1975, p. 535, pl. 9, figs. 3, 4; Schrader, 1976, p. 632, pl. 14, fig. 2, pl. 15, figs. 17, 18; Gombos, 1977, p. 595, pl. 4, fig. 8; Ciesielski, 1983, p. 656; Censarek and Gersonde, 2002, p. 352, pl. 3, fig. 27; Iwai and Winter, 2002, p. 8, pl. P21, fig. 5; Zielinski and Gersonde, 2002, p. 260, pl. 4, fig. 8.

*Nitzschia denticuloides* Schrader, 1976, p. 633, pl. 3, figs. 7–8, 10, 12, 18–24; Harwood and Maruyama, 1992, p. 704, pl. 8, figs. 5–8, 17, pl. 9, figs. 24–26, pl. 10, fig. 1.

*Paralia* spp.

*Proboscia alata* (Brightwell) Sundström, 1986, pp. 99, 100, figs. 258–266; Iwai and Winter, 2002, p. 9, pl. p5, fig. 21. **Basionym**: *Rhizosolenia alata* Brightwell; Fenner et al., 1976, p. 778, pl. 13, fig. 1; Akiba, 1986, p. 444, pl. 18, fig. 6; Harwood and Maruyama, 1992, pl. 18, figs. 15, 17.

*Proboscia barboi* (Brun) Jordan and Priddle, 1991, p. 56, figs. 1, 2; Harwood et al., 2000, p. 460, fig. 8d; Iwai and Winter, 2002, p. 9. **Basionym**: *Rhizosolenia barboi* (Brun) Tempère et Peragallo; McCollum, 1975, p. 535, pl. 11, fig. 13; Schrader, 1976, p. 635, pl. 9, figs. 11–13; Akiba, 1986, p. 444, pl. 18, fig. 2; Ciesielski, 1986, p. 877, pl. 3, fig. 22; *Simonseniella barboi* (Brun) Fenner, 1991, p. 108, pl. 3, figs. 1, 3; Harwood and Maruyama, 1992, p. 706, pl. 11, fig. 13.

*Rhizosolenia antennata* f. *semispina* Sundström, 1986, p. 44, figs. 20, 114, 116–118; Hasle and Syvertsen, 1996, p. 149; Armand and Zielinski, 2001, pp. 271–276, figs. 3D, 3E. **Synonym**: *Rhizosolenia styliformis* Brightwell sensu Schrader, 1976, p.635, pl. 9, fig. 4; Harwood and Maruyama, 1992, p. 705, pl. 18, fig. 20.

*Rhizosolenia costata* Gersonde, 1991, p. 149–150, pl. 9, figs. 1–6, pl. 10, figs. 1–6; Gersonde and Burckle, 1990, p. 782, pl. 3, fig. 6; Harwood and Maruyama, 1992, p. 705, pl. 18, figs. 1, 2.

*Rhizosolenia crassa* Schimper; Armand and Zielinski, 2001, p. 282, figs. 3J, 3K.

*Rhizosolenia harwoodii* Winter in Winter et al., 2012, p. 72, fig. 5.18. **Synonym**: *Rhizosolenia* sp. D of Harwood and Maruyama, 1992, pl. 18, figs. 7–10; *Rhizosolenia* sp. A. of Akiba, 1986, pl. 18, fig. 11.

*Rhizosolenia polydactyla* Castracane; Sundström, 1986, p. 24, figs. 7–9, 70–72, 74, 76, 77, 79; Hasle and Syvertsen, 1996, p. 150, pl. 27; Armand and Zielinski, 2001, pp. 281, 282, figs. 3F–3I. **Synonym**: *Rhizosolenia styliformis* Brightwell sensu Fenner et al., 1976, p. 779, pl. 13, fig. 3 *nec* 4, 5, 9.

*Rouxia antarctica* Heiden and Kolbe; Hanna, 1930, p. 185, pl. 14, fig. 8; Schrader, 1976, p. 635, pl. 5, figs. 1–8; Gombos, 1977, p. 596, pl. 7, fig. 12; Ciesielski, 1983, p. 656; Harwood and Maruyama, 1992, p. 705, pl. 17, fig. 24.

*Rouxia constricta* Zielinski and Gersonde, 2002, p. 251, pl. 2, figs. 11–19; Zielinski et al., 2002, pl. 1, figs. 8–14. **Synonym**: *Rouxia isopolica* Schrader sensu Akiba, 1982, p. 45, pl. 8, figs. 1–4, 6, 7.

*Rouxia diploneides* Schrader, 1973, p. 710, pl. 3, figs. 24, 25; McCollum, 1975, p. 535, pl. 11, figs. 11, 12; Harwood and Maruyama, 1992, p. 705, pl. 17, fig. 12; Iwai and Winter, 2002, p. 10, pl. 5, fig. 8.

*Rouxia heteropolara* Gombos, 1974, p. 275; Gersonde and Burckle, 1990, p. 782, pl. 5, fig. 2.

*Rouxia isopolica* Schrader, 1976, p. 635, 636, pl. 5, figs. 9, 14, 15, 20; Akiba, 1982, p. 45, pl. 8, fig. 5 *nec* 1–4, 6, 7.

*Rouxia leventerae* Bohaty et al., 1998, p. 444–445, pl. 1, figs. 1–6; Zielinski and Gersonde, 2002, p. 261, pl. 2, figs. 1–7; Zielinski et al., 2002, pl. 1, figs. 1–7.

*Rouxia naviculoides* Schrader, 1973, p. 710, pl. 3, figs. 27–32; McCollum, 1975, p. 535, pl. 11, figs. 14, 15; Schrader, 1976, p. 636, pl. 5, figs. 13, 18; Gombos, 1977, p. 597, pl. 7, figs. 10, 11; Gersonde and Burckle, 1990, p. 782, pl. 4, fig. 16; Harwood et al., 2000, p. 460, fig. 9r; Zielinski and Gersonde, 2002, p. 261, pl. 2, figs. 8, 9.

*Shionodiscus oestrupii* (Ostenfeld) Alverson et al., 2006, p. 258. **Synonym**: *Thalassiosira oestrupii* (Ostenfeld) Proschkina-Lavrenko; Fenner et al., 1976, p. 780, pl. 9, figs. 1–11; Gombos, 1977, p. 598, pl. 5, figs. 1, 2; Akiba, 1982, p. 46, pl. 4, figs. 2a, 2b, 8–10; Koizumi, 1982, p. 81, pl. 2, figs. 1–3; Akiba, 1986, p. 446, pl. 14, figs. 1–6; Gersonde and Burckle, 1990, p. 782, pl. 3, figs. 13, 14; Harwood and Maruyama, 1992, p. 708, pl. 16, figs. 5–7; Bohaty et al., 1998, pl. 2, fig. 3; Censarek and Gersonde, 2002, p. 353, pl. 5, figs. 9, 10; Iwai and Winter, 2002, p. 13, pl. 26, figs. 6a, 6b; *Thalassiosira oestrupii* (Ostenfeld) Hasle; Johansen and Fryxell, 1985, p. 173, figs. 9, 75, 76.

*Shionodiscus tetraoestrupii* (Bodén) Alverson et al., 2006, p. 260. **Basionym**: *Thalassiosira tetraoestrupii* Bodén, 1993, p. 63, 67, pl. 1, figs. A–G, pl. 2, figs. A, B, H, J; Iwai and Winter, 2002, p. 13, pl. P16, figs. 8, 9; pl. 27, fig. 7.

*Stellarima microtrias* Hasle and Sims, 1986, p. 111, figs. 18–21 (vegetative), figs. 22–27 (resting spores); Hasle et al., 1988, p. 196–198, figs. 1–25.

*Stephanopyxis* spp.

*Synedropsis* spp.

*Thalassionema nitzschioides* (Grunow) Hustedt; Schrader, 1973, p. 712, pl. 23, figs. 2, 6, 9, 10; Akiba, 1986, p. 445, pl. 21, figs. 11, 19; Hallegraeff, 1986, p. 58, figs. 1–4; Moreno-Ruiz and Licea, 1995, p. 396, figs. 1–3, 34–38.

*Thalassiosira complicata* Gersonde, 1991, pp. 150, 151, pl. 3, figs. 1, 2, pl. 5, figs. 18–20, pl. 6, figs. 1–6, pl. 7, figs. 1–5; Gersonde and Burckle, 1990, p. 782, pl. 4, figs. 1, 2; Harwood and Maruyama, 1992, p. 707, pl. 14, figs. 18–21; Iwai and Winter, 2002, p. 11–12, pl. 11, figs. 1–9; pl. 12, fig. 1, pl. 26, fig. 3; Zielinski and Gersonde, 2002, p. 263, pl. 4, figs. 3, 4.

*Thalassiosira convexa* var. *aspinosa* Schrader, 1974, p. 916, pl. 2, figs. 8, 9, 13–21; Gersonde, 1990, p. 793, pl. 2, figs. 2, 5, pl. 4, figs. 2–4.

*Thalassiosira fasciculata* Harwood and Maruyama, 1992, p. 707, pl. 15, figs. 4–6; Zielinski and Gersonde, 2002, p. 263, pl. 5, figs. 3, 4.

*Thalassiosira frenguellii* Kozlova; Johansen and Fryxell, 1985, p. 161, 168, figs. 6, 64; Scott and Thomas, 2005, p. 96, pl. 1, fig. 5.

*Thalassiosira gravida* Cleve; Johansen and Fryxell, 1985, p. 170, figs. 27, 43; Akiba, 1986, p. 445, pl. 10, figs. 1–4.

*Thalassiosira insigna* (Jousé) Harwood and Maruyama, 1992, p. 707, pl. 14, figs. 3–5; Zielinski and Gersonde, 2002, p. 264, pl. 5, figs. 14, 15. **Basionym**: *Cosmiodiscus insignis* Jousé; McCollum, 1975, p. 527, pl. 8, fig. 5; Gombos, 1977, p. 593, pl. 4, figs. 4, 5; Ciesielski, 1986, p. 876, pl. 1, figs. 1–5

*Thalassiosira inura* Gersonde, 1991, p. 151, pl. 6, figs. 7–14; pl. 8, figs. 1–6; Gersonde and Burckle, 1990, p. 782, pl. 3, figs. 15–17, pl. 5, fig. 14; Harwood and Maruyama, 1992, p. 707, pl. 5, fig. 14, pl. 14, figs. 12–16; Bohaty et al., 1998, pl. 4, fig. 8; Harwood et al., 2000, p. 460, fig. 7b; Censarek and Gersonde, 2002, p. 353, pl. 4, figs. 11, 12; Iwai and Winter, 2002, p. 12, pl. 12, figs. 2, 3, pl. 26, figs. 8, 9, pl. 27, fig. 3; Zielinski and Gersonde, 2002, p. 264, pl. 5, figs. 12, 13.

*Thalassiosira kolbei* (Jousé) Gersonde, 1990, p. 793, pl. 1, fig. 2, pl. 5, figs. 3, 5, 6; Gersonde and Burckle, 1990, p. 782, pl. 3, fig. 1; Zielinski and Gersonde, 2002, p. 264, pl. 5, fig. 2. **Basionym**: *Coscinodiscus kolbei* Jousé; McCollum, 1975, p. 527, pl. 4, figs. 7–9; Gombos, 1977, p. 593, pl. 6, fig. 3; Ciesielski, 1986, p. 875, pl. 4, figs. 1–4.

*Thalassiosira lentiginosa* (Janisch) Fryxell; Johansen and Fryxell, 1985, p. 170, figs. 13–14; Harwood and Maruyama, 1992, p. 707, pl. 19, fig. 15; Bohaty et al., 1998, pl. 3, fig. 3; Iwai and Winter, 2002, p. 13, pl. 20, figs. 1, 4, pl. 24, fig. 4. **Basionym**: *Coscinodiscus lentiginosus* Janisch; McCollum, 1975, p. 527, pl. 5, fig. 1; Fenner et al., 1976, p. 773, pl. 7, figs. 4–6; Gombos, 1977, p. 593, pl. 3, figs. 4, 5

*Thalassiosira oliverana* (O'Meara) Sournia; Harwood and Maruyama, 1992, p. 708, pl. 14, figs. 1, 2, 6, 11, 17; Harwood et al., 2000, p. 460, fig. 7c.

*Thalassiosira ritscheri* (Hustedt) Hasle; Johansen and Fryxell, 1985, p. 176, figs. 14, 56, 57; Harwood and Maruyama, 1992, p. 708, pl. 16, figs. 1–3.

*Thalassiosira scotia* Fryxell et Hoban; Johansen and Fryxell, 1985, p. 176, figs. 25, 26, 40–42.

*Thalassiosira striata* Harwood and Maruyama, 1992, p. 708, pl. 15, figs. 7–9; Iwai and Winter, 2002, p. 13, pl. 15, fig. 4, pl. 27, fig. 2; Zielinski and Gersonde, 2002, p. 264, pl. 4, fig. 7.

*Thalassiosira torokina* Brady, 1977, p. 122–123, figs. 1–5; Ciesielski, 1983, p. 657, pl. 7, figs. 3–6. Iwai and Winter, 2002, p. 13, pl. 10, figs. 1a, 1b, pl. 15, figs. 6a–6c, 7a, 7b; pl. 24, fig. 6.

*Thalasiosira tumida* (Janisch) Hasle; Fenner et al., 1976, p. 780, pl. 10, figs. 6, 7; Akiba, 1982, p. 46, pl. 4, figs. 1a, 1b; Bohaty et al., 1998, pl. 2, fig. 1.

*Thalasiosira vulnifica* (Gombos) Fenner emend Mahood et Barron; Harwood and Maruyama, 1992, p. 702, pl. 15, fig. 1; Mahood and Barron, 1996, pp. 285, 287, figs. 1–14, 25, 26; Iwai and Winter, 1992, p. 708, pl. 15, fig. 1; Zielinski and Gersonde, 2002, p. 264, pl. 5, figs. 10, 11. **Basionym**: *Coscinodiscus vulnificus* Gombos, 1977, p. 593, pl. 4, figs. 1–3, pl. 42, figs. 1, 2; Ciesielski, 1983, p. 656, pl. 6, figs. 7, 8.

*Thalassiothrix antarctica* Schimper ex Karsten; Hasle and Semina, 1987, p. 181, 184, figs. 26–59; Scott and Thomas, 2005, p. 147, figs. 2.81a–e.

*Thalassiothrix miocenica* Schrader, 1973, p. 713, pl. 23, fig. 2.

*Triceratium* spp.

*Trichotoxon reinboldii* (Van Heurck) Reid and Round; Hasle and Syvertsen, 1996, p. 267, pl. 58; Scott and Thomas, 2005, p. 147, figs. 2.82a, b. **Basionym**: *Synedra reinboldii* van Heurck; Hasle and Semina, 1987, p. 189, figs. 67–75.

**Radiolarians**

*Cycladophora pliocenica* Lombari and Lazarus, 1988, p. 104. **Synonym**: *Clathrocyclas bicornis* Hays, 1965, p.179 pl. 3 fig. 3.

*Desmospyris spongiosa* Hays, 1965, p. 173–175, pl. 2, fig. 1.

*Dendrospyris rhodospyroides* (Petrushevskaya) Abelmann, 1990, pl. 5, fig. 9. **Basionym**: *Desmospyris rhodospyroides* Petrushevskaya, 1975, p. 593, pl. 10, fig. 27–29, 31, 32.

*Eucyrtidium calvertense* Martin; Abelmann, 1990, p. 696, pl. 6, figs. 4–5.

*Eucyrtidium pseudoinflatum* Weaver, 1983, p. 675–676, pl. 5, figs. 8–9; Lazarus, 1990, p. 716, pl. 6, figs. 12–14.

*Lampromitra coronata* Haeckel; Keany, 1979, p. 56, pl. 4, fig. 10, pl. 5, fig. 14.

*Larcopyle polyacantha titan* (Campbell and Clark) Lazarus et al., 2005, p. 108, pl. 3, figs. 1–12.

*Pseudocubus vema* (Hays) Petrushevskaya. **Basionym**: *Helotholus vema* Hays, 1965, p. 176, pl. 2, fig. 3; Lazarus, 1990, pl. 7, figs. 1–5.

*Siphonosphaera vesuvius* Lazarus, 1992, p. 794–795, pl. 2, figs. 1–8.

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