

Fig. A11. Diatoms from the Neogene marine sequence in the surveyed area. Scale bars A and B are for 1–19 and 10–29, respectively. Number in parenthesis after each species name indicates sample number.

- 1: *Crucidenticula nicobarica* (Grunow) Akiba et Yanagisawa [X44]
- 2: *Denticulopsis lauta* (Bailey) Simonsen [Y04]
- 3: *Denticulopsis okunoi* Yanagisawa et Akiba [Y05]
- 4: *Denticulopsis ichikawai* Yanagisawa et Akiba [Y4]
- 5: *Denticulopsis simonsenii* Yanagisawa et Akiba [Q22]
- 6: *Denticulopsis praekatayamae* Yanagisawa et Akiba [L03]
- 7: *Denticulopsis vulgaris* (Okuno) Yanagisawa et Akiba [Q22]
- 8: *Denticulopsis katayamae* Maruyama [L03]
- 9: *Neodenticula kamtschatica* (Zabelina) Akiba et Yanagisawa [I18]
- 10: *Nitzschia rolandii* Schrader emend. Koizumi [I15]
- 11, 14, 15: *Denticulopsis praedimorpha* var. *praedimorpha* Barron ex Akiba [Y19]
- 12, 13: *Denticulopsis praedimorpha* var. *minor* Yanagisawa et Akiba [Y19]
- 16, 17: *Denticulopsis dimorpha* var. *dimorpha* (Schrader) Simonsen [M11]
- 18: *Denticulopsis crassa* Yanagisawa et Akiba [R22]
- 19: *Denticulopsis hustedtii* (Simonsen et Kanaya) Simonsen [Q19]
- 20: *Thalassiosira temperei* (Brun) Akiba et Yanagisawa [R34]
- 21: *Hemidiscus cuneiformis* G.G.Wall. [M05]
- 22: *Rouxia californica* Perag. [M19]
- 23: *Nitzschia pliocena* (Brun) Merz [M25]
- 24: *Cavatatus lanceolatus* Akiba et Hiramatsu [Y04]
- 25: *Thalassionema schraderi* Akiba [M22]
- 26: *Coscinodiscus lewisiyanus* Grev. [Y03]
- 27: *Shionodiscus oestrupii* (Ostenfeld) A.J.Alverson et al. s. l. [I19]
- 28: *Thalassiosira castanea* Akiba et Yanagisawa [I15]
- 29: *Goniothecium rogersii* Ehr. [M01].

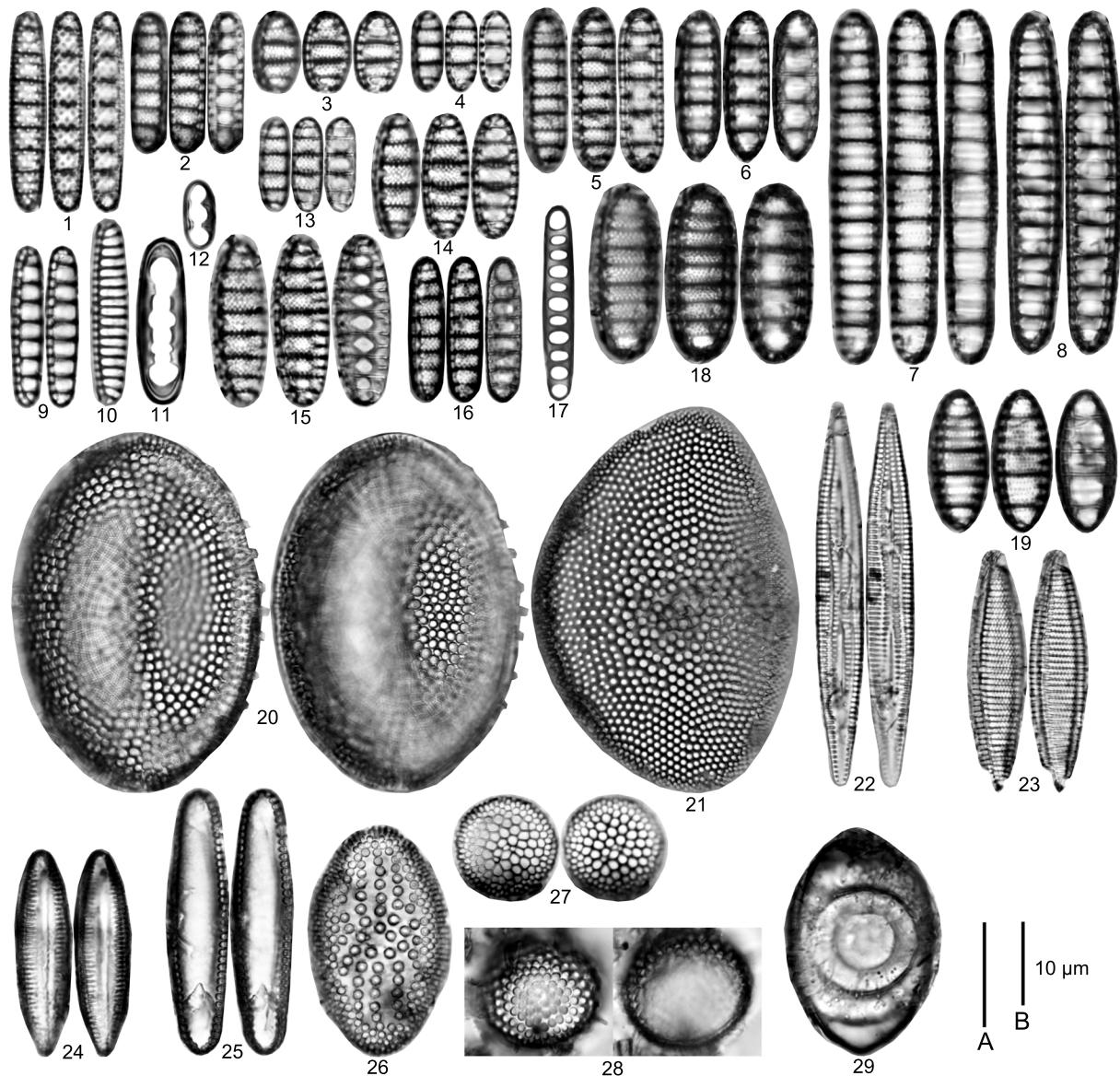


Fig. A11. Diatoms from the Neogene marine sequence in the surveyed area.

Fig. A12. Diatoms from the Neogene sequence in the surveyed area. Scale bars A and B are for 1–45 and 46–67, respectively. Number in parenthesis after each species name indicates sample number.

- 1–5:** *Denticulopsis lauta* (Bailey) Simonsen [1: Y5; 2–5: Y04]
- 6, 7:** *Denticulopsis ichikawai* Yanagisawa et Akiba [Y04]
- 8–11:** *Denticulopsis okunoi* Yanagisawa et Akiba [Y04]
- 12–17:** *Denticulopsis praedimorpha* var. *praedimorpha* Barron ex Akiba [Y19; 12: open copula; 13–17: closed copula]
- 18, 19:** *Denticulopsis dimorpha* var. *dimorpha* (Schrader) Simonsen [M01; closed copula]
- 20, 21:** *Denticulopsis praedimorpha* var. *minor* Yanagisawa et Akiba [Y19; closed copula]
- 22–26:** *Denticulopsis simonsenii* Yanagisawa et Akiba [Y19]
- 27:** *Denticulopsis vulgaris* (Okuno) Yanagisawa et Akiba [Y19]
- 28, 29:** *Denticulopsis praekatayamae* Yanagisawa et Akiba [L03]
- 30–35:** *Denticulopsis praedimorpha* var. *praedimorpha* Barron ex Akiba [Y19]
- 36, 37:** *Denticulopsis dimorpha* var. *dimorpha* (Schrader) Simonsen [36: M07; 37: M08]
- 38–42:** *Denticulopsis praedimorpha* var. *praedimorpha* Barron ex Akiba [Y19]
- 43–45:** *Neodenticula kamtschatica* (Zabelina) Akiba et Yanagisawa [43, 44: I18; 45: I15]
- 46, 47:** *Nitzschia challenger* Schrader [Y05]
- 48:** *Nitzschia maleinterpretaria* Schrader [Y05]
- 49–51:** *Cavitatus lanceolatus* Akiba et Hiramatsu [49: Y05; 50, 51: Y04]
- 52:** *Nitzschia cf. grunowii* Hasle [L11]
- 53, 54:** *Ikebea tenuis* (Brun) Akiba [53: M04; 54: M24]
- 55:** *Rouxia naviculoides* Schrader [Y05]
- 56:** *Nitzschia cf. porteri* Frenguelli [M23]
- 57:** *Delphineis* sp. [M21]
- 58–60:** *Thalassionema hirosakiensis* (Kanaya) Schrader [Y19]
- 61–63:** *Thalassionema* sp. A (sakiboso) [61: M23; 62: M21; 63: M24]
- 64:** *Cocconeis scutellum* Ehr. [M22]
- 65:** *Dimerogramma* sp. [M16]
- 66:** *Adoneis pacifica* G.W.Andrews et Rivera [M07]
- 67:** *Cavitatus exiguum* Yanagisawa et Akiba [Y04]

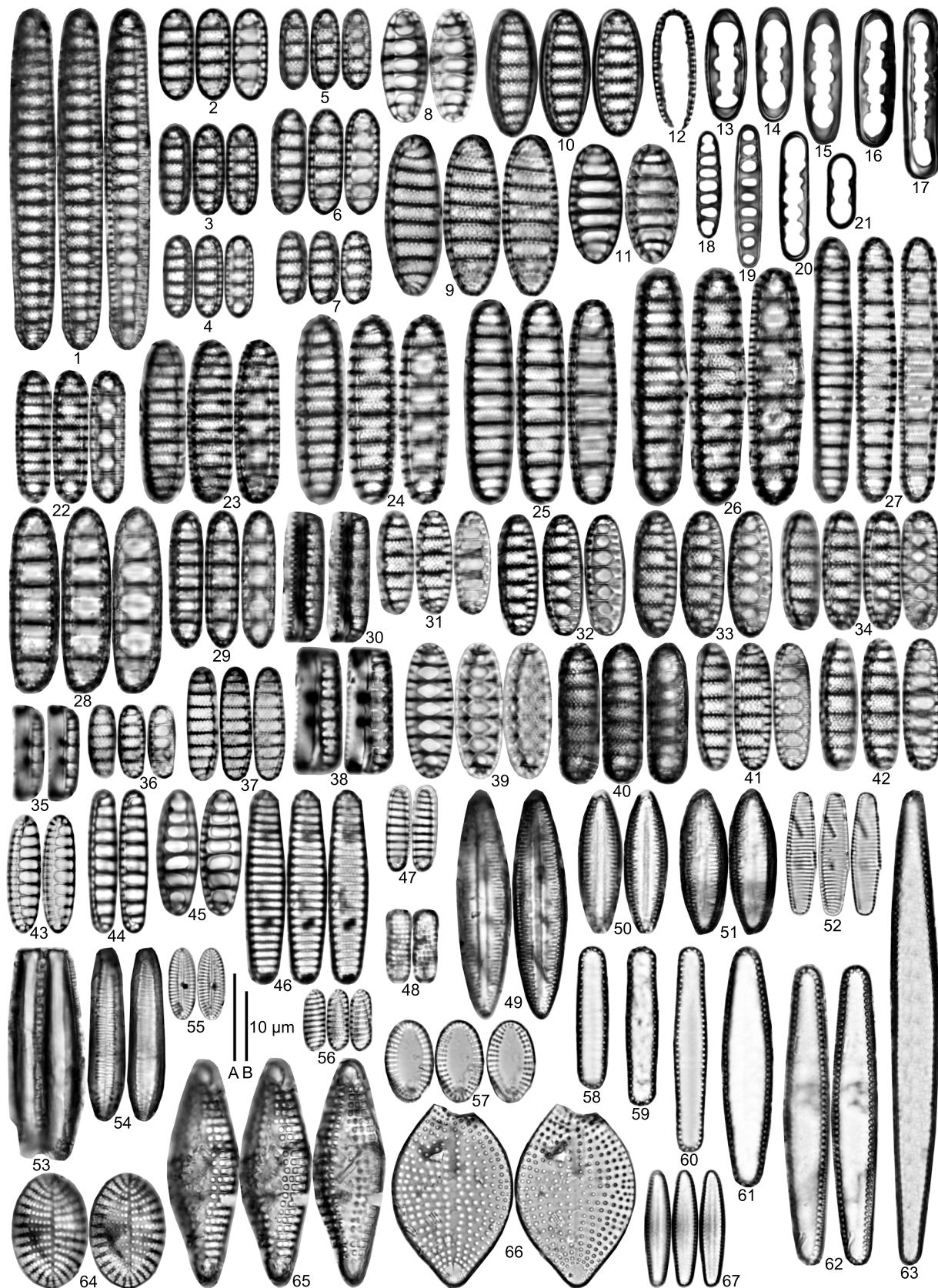


Fig. A12. Diatoms from the Neogene sequence in the surveyed area.

Fig. A13. Diatoms from the Neogene sequence in the surveyed area. Number in parenthesis after each species name indicates sample number.

- 1:** *Actinocyclus ellipticus* Grunow [M07]
- 2:** *Azpetia vetustissima* (Pant.) P.A.Sims [Y19]
- 3:** *Actinocyclus ingens* f. *planus* Whiting et Schrader [Y19]
- 4, 5:** *Actinocyclus ingens* f. *ingens* (Rattray) Whiting et Schrader [Y19]
- 6–9:** *Actinocyclus ellipticus* Grunow [6, 7: M03; 8, 9: M06]
- 10, 11:** *Azpetia vetustissima* (Pant.) P.A.Sims [10: M05; 11: M07]
- 12:** *Melosira scopos* A.Mann [Y05]
- 13:** *Coscinodiscus marginatus* Ehr. [Y19]

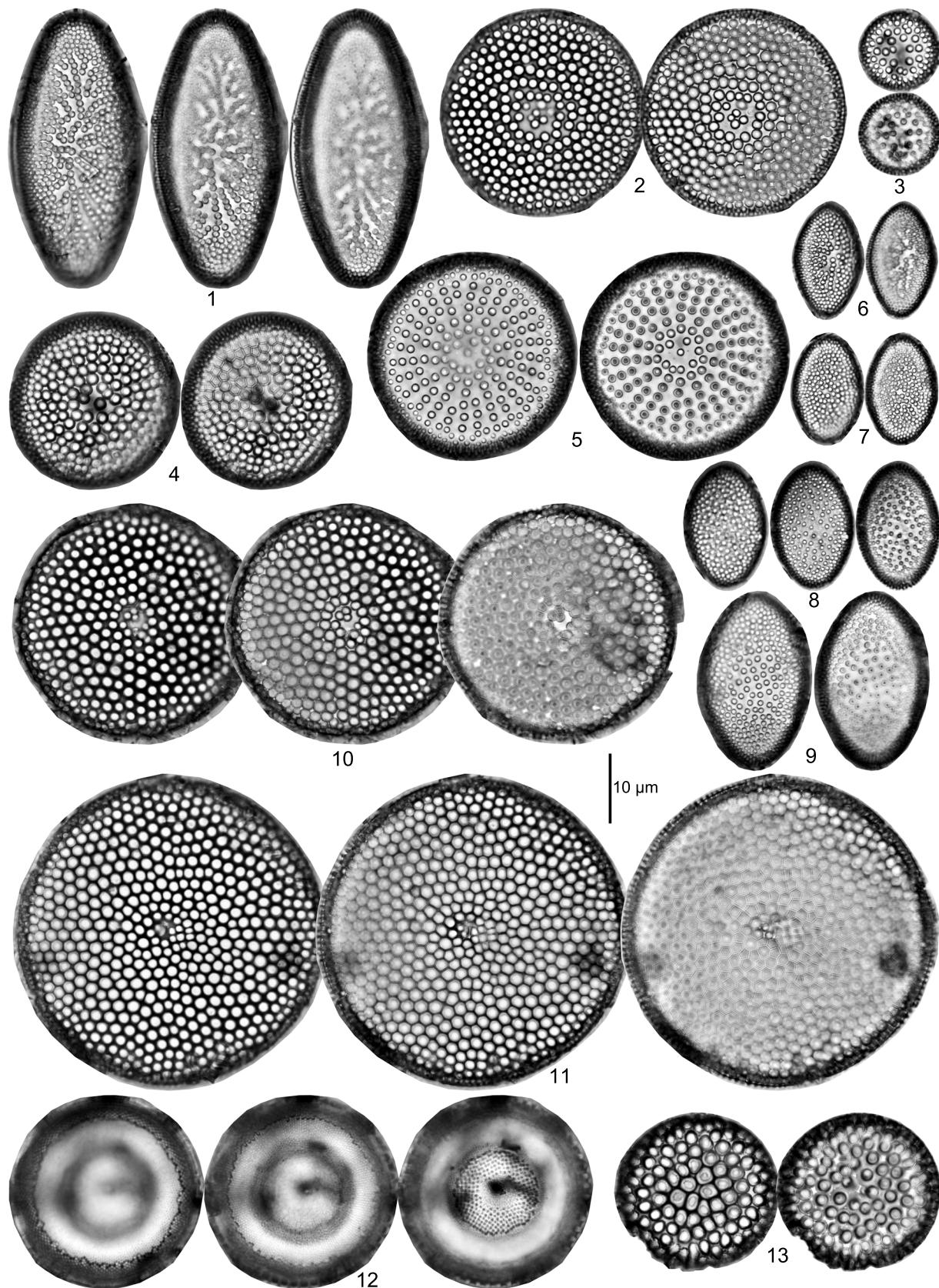


Fig. A13. Diatoms from the Neogene sequence in the surveyed area.

Fig. A14. Diatoms from the Neogene sequence in the surveyed area. Number in parenthesis after each species name indicates sample number.

- 1, 2:** *Goniothecium rogersii* Ehr. [1: M12; 2: M01]
- 3:** Genus et species indet. [I16]
- 4:** *Coscinodiscus lewisiyanus* Grev. [Y04]
- 5:** *Hemidiscus cuneiformis* G.G.Wall. [I07]
- 6-8:** *Hyalodiscus obsoletus* Sheshukova-Poretskaya [6: I18; 7: Y19; 8: I15]
- 9:** *Rhizosolenia* sp. B (flame) [L11]
- 10, 11:** *Rhizosolenia miocenica* Schrader [10: M04; 11: Y19]
- 12, 13:** *Proboscia barboi* (Brun) Jordan et Priddle [12: Y19; 13: L11]
- 14:** *Melosira sol* (Ehr.) Kützing [Y04]
- 15:** *Rhizosolenia* sp. C (costa) [I09]

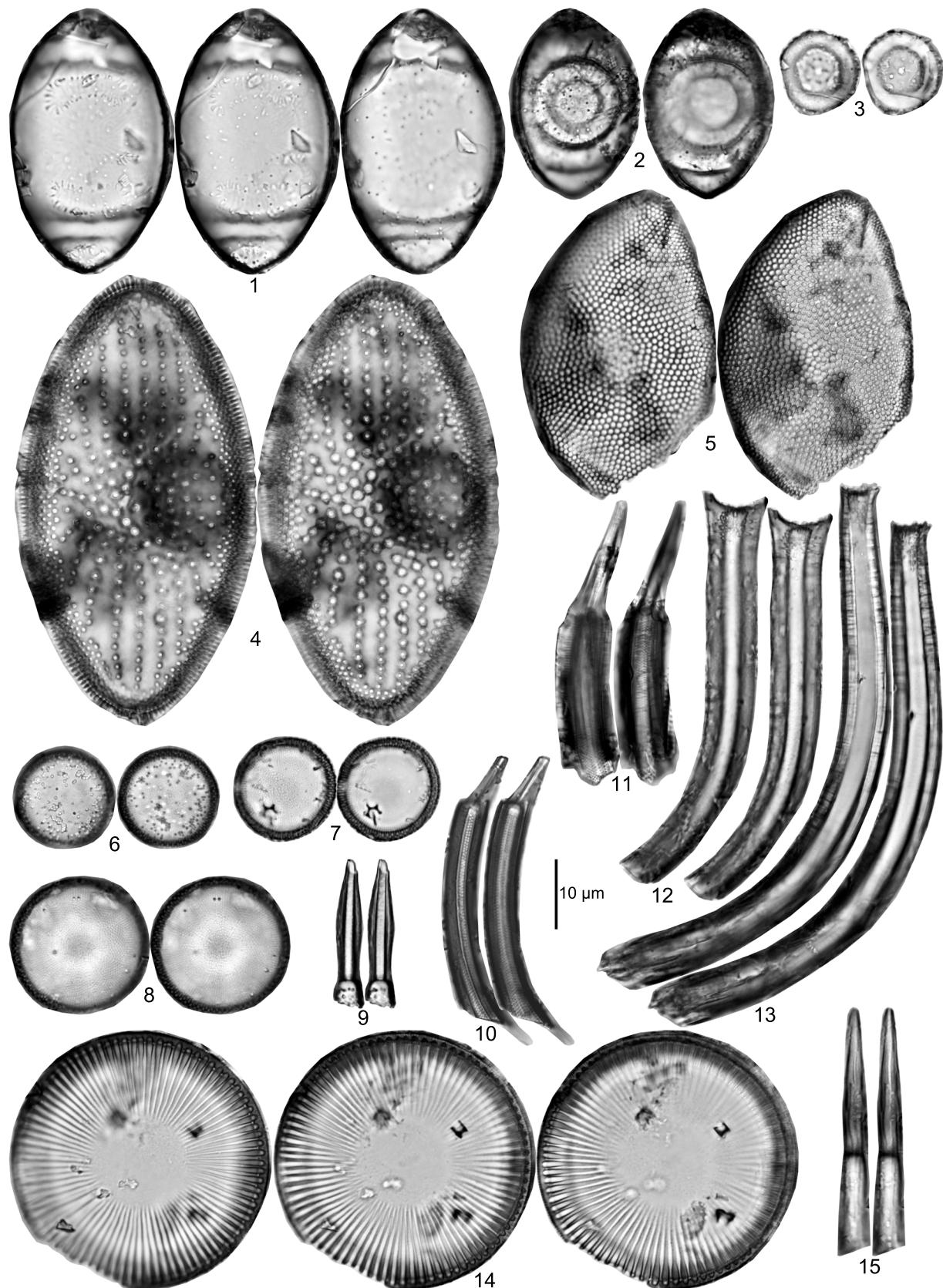


Fig. A14. Diatoms from the Neogene sequence in the surveyed area.

Fig. A15. Diatoms from the Neogene sequence in the surveyed area. Number in parenthesis after each species name indicates sample number.

- 1:** *Thalassiosira* sp. B [M20]
- 2:** *Thalassiosira brunii* Akiba et Yanagisawa [M12]
- 3, 4:** *Thalassiosira jacksonii* Koizumi et Barron in Koizumi [3: I07; 4: I15]
- 5, 6:** *Thalassiosira marujamica* Sheshukova [5: I08; 6: M20]
- 7:** *Thalassiosira castanea* Akiba et Yanagisawa [I14]
- 8:** *Thalassiosira opposita* Koizumi [I12]
- 9–11:** *Thalassiosira minutissima* Oreshkina [M14]
- 12:** *Thalassiosira singularis* Sheshukova [Initial valve ?; I13]
- 13:** *Thalassiosira* sp. [M09]
- 14:** *Thalassiosira* sp. (Matsushima) [Y05]
- 15:** *Thalassiosira* sp. [I18]
- 16:** *Thalassiosira* sp. A [I18]
- 17:** *Pseudotriceratium punctatum* (Ralfs) Simonsen [M06]

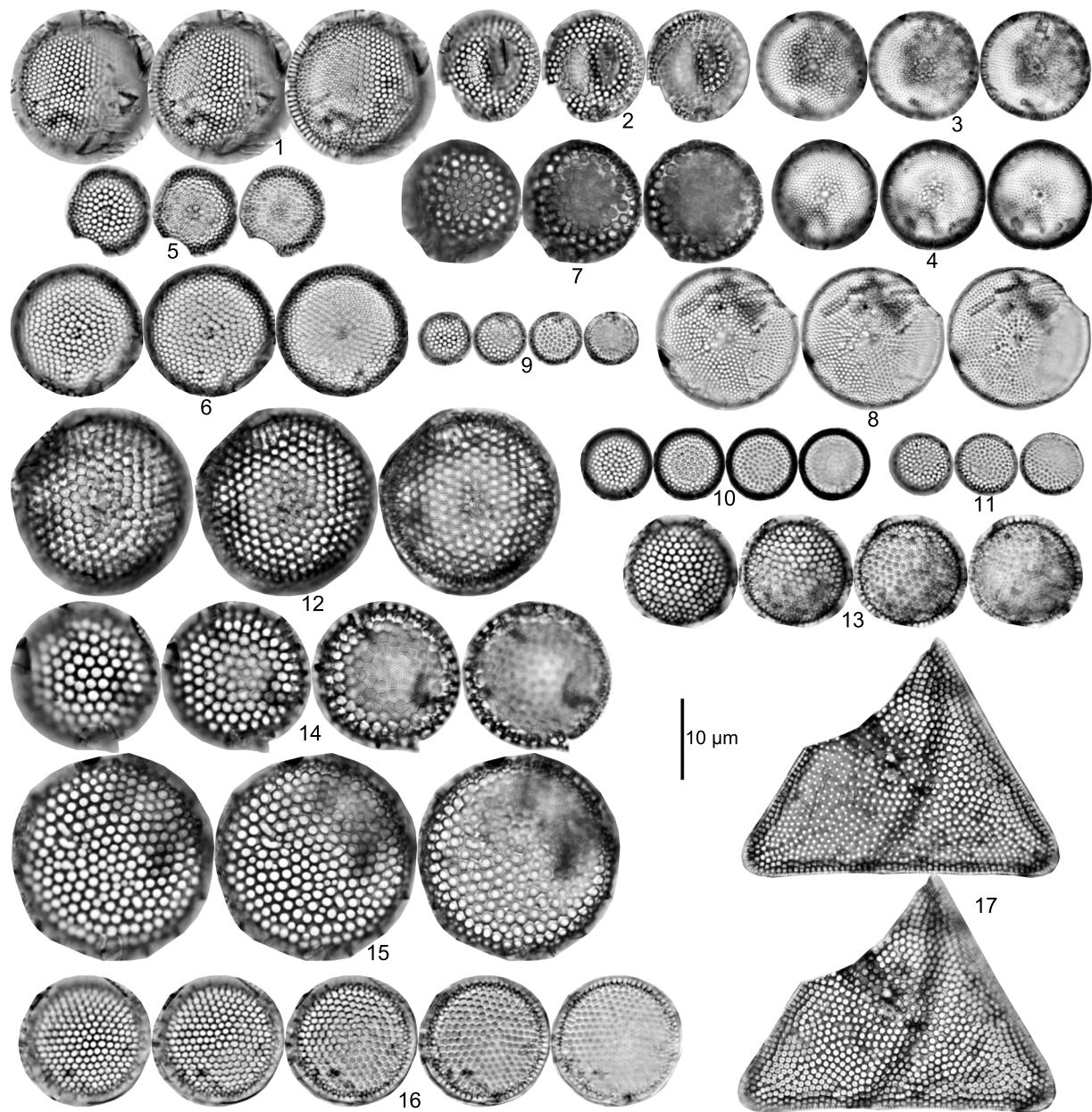


Fig. A15. Diatoms from the Neogene sequence in the surveyed area.