

**Fig. A1.** Photographs of diatom species from the Kaya Tuffaceous Mudstone Member of the Okuyamada Formation, Tsuzuki Group. Scale A is for photographs 1–4 and scale B for 5–51.

**1, 2:** *Crucidenticula sawamurae* Yanagisawa & Akiba [Sample O4].

**3, 4:** *Nitzschia* sp. A [Sample O4].

**5, 6:** *Thalassionema nitzschioides* (Grunow) Mereschkowsky s.l. [Sample O4].

**7:** *Cavatus cf. linearis* (Sheshukova-Poretsukaya) Akiba & Yanagisawa [Sample O4].

**8–10:** *Cavatus jouseanus* (Sheshukova-Poretsukaya) D.M. Williams [Sample O4].

**11, 12:** *Kisseleviella carina* Sheshukova-Poretsukaya [Sample O4].

**13, 14:** *Cymatosira* cf. *lorentziana* Grunow [Sample O4].

**15:** *Cymatosira?* sp. [Sample O4].

**16:** *Porosira* sp. [Sample O4].

**17–22:** *Delphineis* cf. *miocenica* (Schrader) G.W.Andrews [Sample O4].

**23:** *Ikebea tenuis* (Brun) Akiba [Sample O4].

**24–26:** *Trochosira spinosa* Kitton [Sample O4].

**27:** *Proboscia alata* (Brightw.) Sundstöm [Sample O4].

**28:** *Delphineis ovata* G.W.Andrews [Sample O4].

**29:** *Cymatosira biharensis* Pant. [Sample O4].

**30:** *Actinoptychus senarius* (Ehrenb.) Ehrenb. [Sample O4].

**31:** *Coccconeis costata* Greg. [Sample O10].

**32:** *Actinoptychus vulgaris* Schumann [Sample O4].

**33, 34:** *Proboscia* cf. *interposita* (Hajós) Jordan & Priddle [Sample O4].

**35:** *Diploneis* sp. [Sample O4].

**36:** *Rhizosolenia* sp. [Sample O4].

**37:** *Thalassiothrix longissima* Cleve & Grunow [Sample O4].

**38:** *Cestodiscus* sp. [Sample O4].

**39:** *Coccconeis scutellum* Ehrenb. [Sample O10].

**40:** *Pseudodimerogramma elegans* Schrader [Sample O10].

**41:** *Aulacoseira* sp. [Sample O10].

**42:** *Paralia sulcata* (Ehrenb.) Cleve [Sample O4].

**43:** *Diploneis smithii* (Bréb.) Cleve [Sample O4].

**44:** *Actinocyclus* sp. [Sample O4].

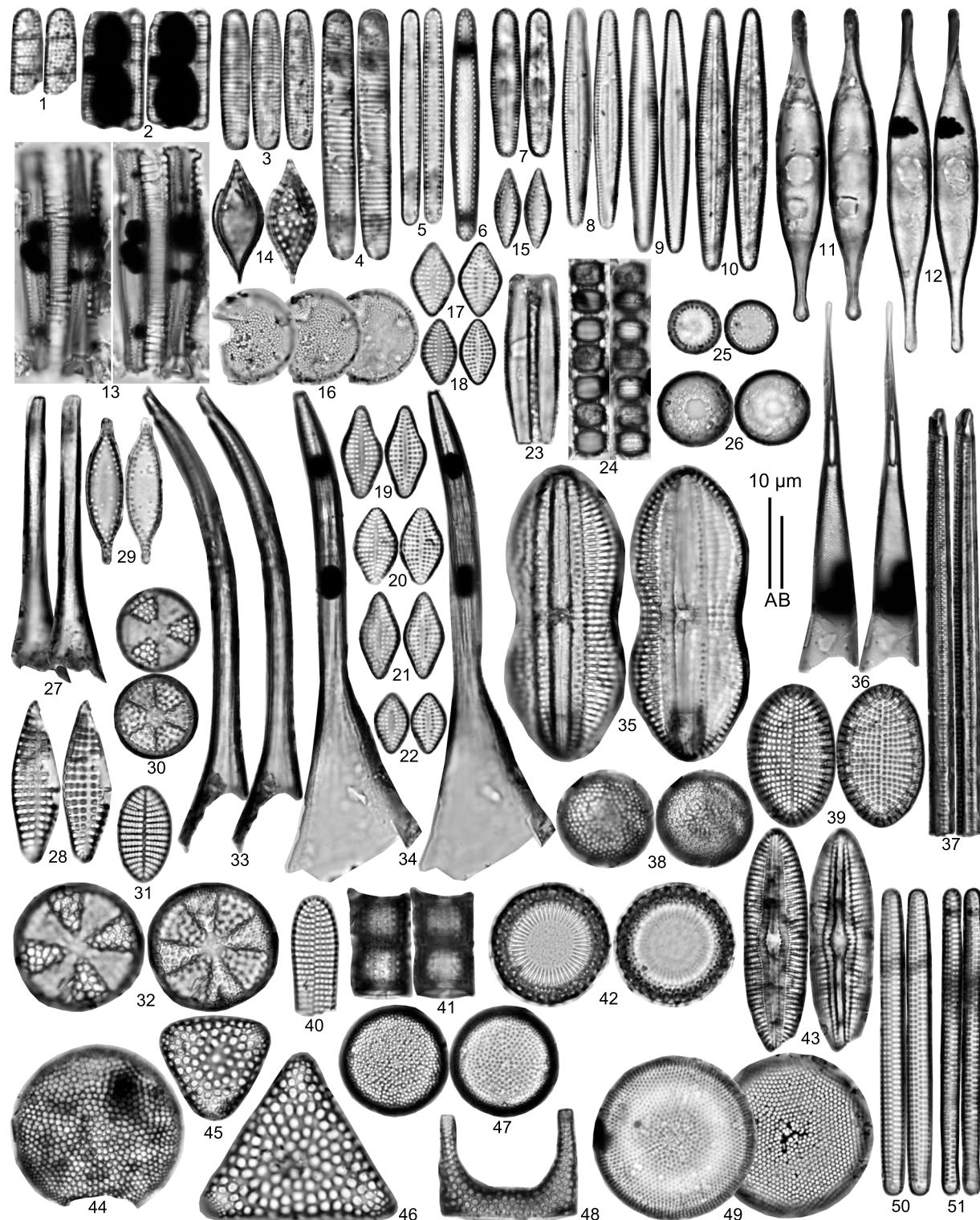
**45, 46:** *Triceratium condecorum* Brightw. [45: Sample O9, 46: Sample O4].

**47:** *Actinocyclus octonarius* Ehrenb. [Sample O10].

**48:** *Eucampia* sp A. [Sample O10].

**49:** *Stellarima microtrias* (Ehrenb.) Hasle & P.A.Sims. [Sample O8].

**50, 51:** *Pseudodimerogramma elliptica* Schrader [Sample O4].



**Fig. A1.** Photographs of diatom species from the Kaya Tuffaceous Mudstone Member of the Okuyamada Formation, Tsuzuki Group. Scale A is for photograph 1–4 and scale B for 5–51.

**Fig. A2.** Photographs of diatom species from the Yamabe and Yamagasu groups (part 1).

**1–4:** *Thalassiosira fraga* Schrader [1: Sample H2, 2: Sample N3, 3: Sample H6, 4: Sample N5].

**5, 6:** *Thalassiosira cf. umaoiensis* Akiba [Sample H7].

**7:** *Actinptychus senarius* Ehrenb. [Sample H7].

**8, 9:** *Thalassiosira* sp. 1 [8: Sample H7, 9: Sample N4].

**10:** *Nephrodiscus sawamurae* (Akiba) Komura [Sample H7].

**11, 12:** *Actinocyclus* sp. [Sample H7].

**13:** *Porosira* sp. [Sample H7].

**14, 19:** *Trochosira spinosa* Kitton [Sample H7].

**15, 20:** *Actinocyclus octonarius* Ehrenb. [Sample H7].

**16:** *Paralia sulcata* (Ehrenb.) Cleve [Sample H3].

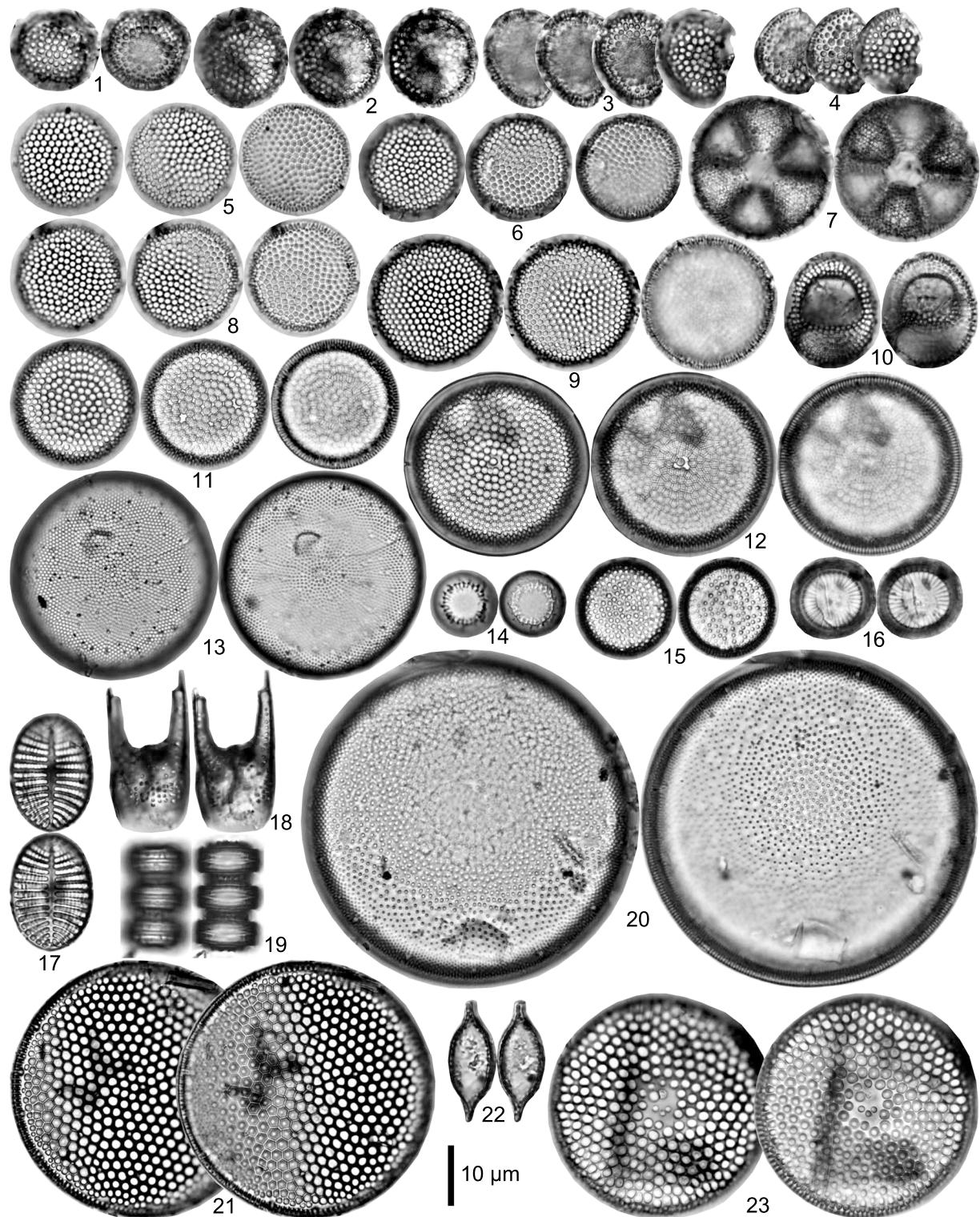
**17:** *Cocconeis costata* Greg. [Sample H7].

**18:** *Hemiaulus* sp. [Sample H7].

**21:** *Azpeitia bukryi* (Barron) Barron [Sample H7].

**22:** *Cymatosira debyi* Temp. & Brun [Sample H7].

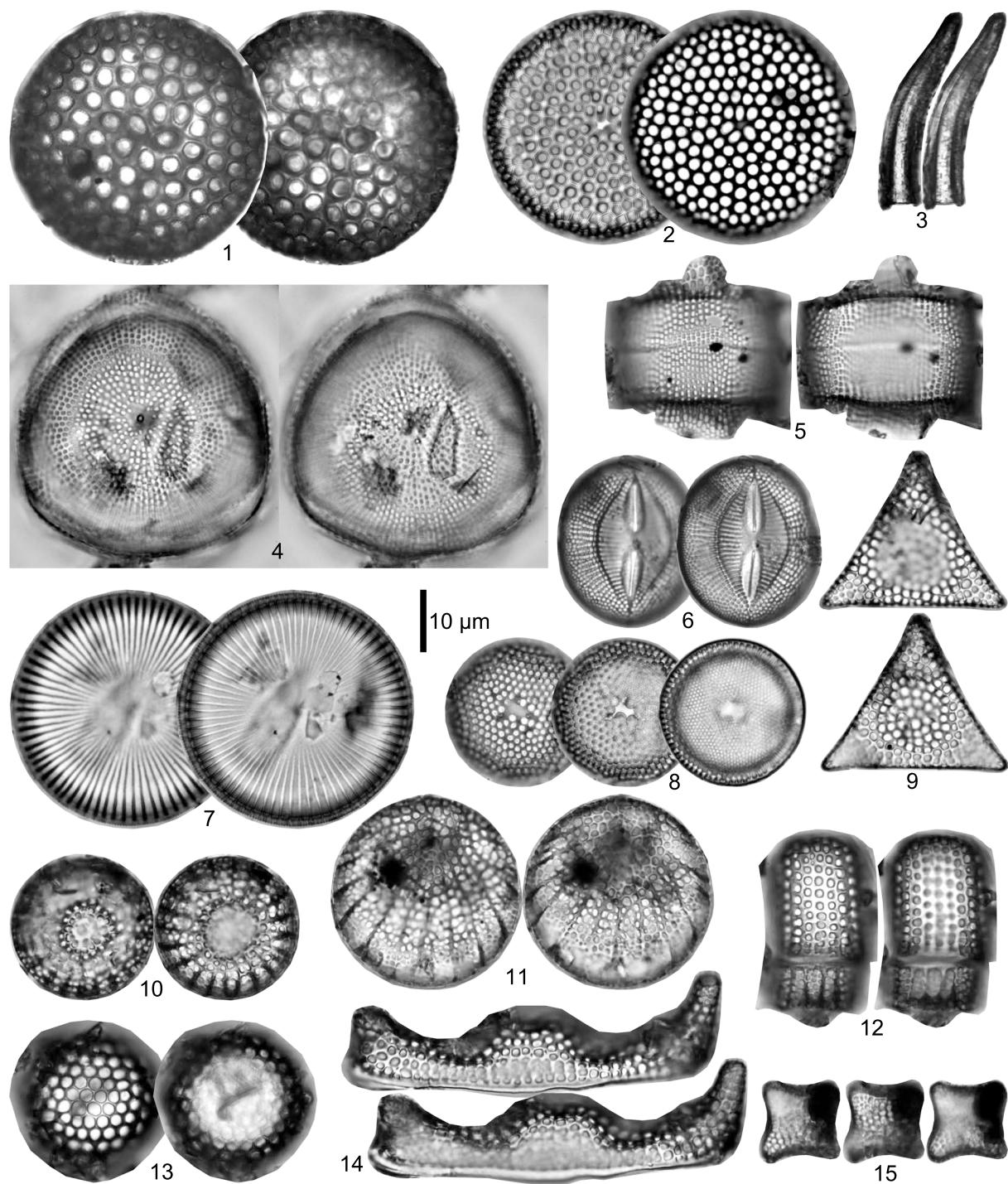
**23:** *Azpeitia praenodulifera* (Barron) P.A.Sim & G.A.Fryxell [Sample H7].



**Fig. A2.** Photographs of diatom species from the Yamabe and Yamagasu groups (part 1).

**Fig. A3.** Photographs of diatom species from the Yamabe and Yamagasu groups (part 2).

- 1:** *Coscinodiscus marginatus* Ehrenb. [Sample H7].
- 2:** *Coscinodiscus perforatus* Ehrenb. [Sample H7].
- 3:** *Proboscia interposita* (Hajós) Jordan & Priddle [Sample N3].
- 4, 5:** *Ditylum* sp. [Sample H7].
- 6:** *Raphidodiscus marylandicus* Christian [Sample H7].
- 7:** *Melosira sol* (Ehrenb) Kützing [Sample H7].
- 8:** *Stellarima* sp. [Sample H7].
- 9:** *Triceratium condecorum* Brightw. [Sample H7].
- 10, 11:** *Stictodiscus kittonianus* Greville [Sample H7].
- 12:** *Aulacoseira* sp. [Sample H7].
- 13:** *Stephanopyxis* sp. [Sample H7].
- 14:** *Eucampia* sp. A [Sample H7].
- 15:** *Pseudotriceratium punctatum* (Ralfs) Simonsen [Sample H7].



**Fig. A3.** Photographs of diatom species from the Yamabe and Yamagasu groups (part 2).

**Fig. A4.** Photographs of diatom species from the Yamabe and Yamagasu groups (part 3).

Scale bar A is for photograph 10 and scale bar B for others.

**1, 2:** *Kisseleviella carina* Sheshukova-Poretsukaya [Sample H7].

**3, 4:** *Rhizosolenia styliformis* Brightw. [3: Sample H1, 4: Sample H7].

**5:** *Pseudodimerogramma elliptica* Schrader [Sample H7].

**6:** *Cavitatus linearis* (Sheshukova-Poretsukaya) D.M.Williams [Sample H7].

**7, 9:** *Cavitatus jouseanus* (Sheshukova-Poretsukaya) D.M.Williams [Sample H7].

**8:** *Cavitatus exiguum* Yanagisawa et Akiba [Sample H7].

**10:** *Cavitatus miocenicus* (Schrader) Akiba et Yanagisawa [Sample H7].

**11, 12:** *Thalassionema nitzschiooides* (Grunow) Mereschkowsky s.l. [Sample H7].

**13:** *Ikebea tenuis* (Brun) Akiba [Sample H7].

**14, 15:** Genus et species indet. [Sample H7].

**16:** *Rhabdonema* sp. [Sample H7].

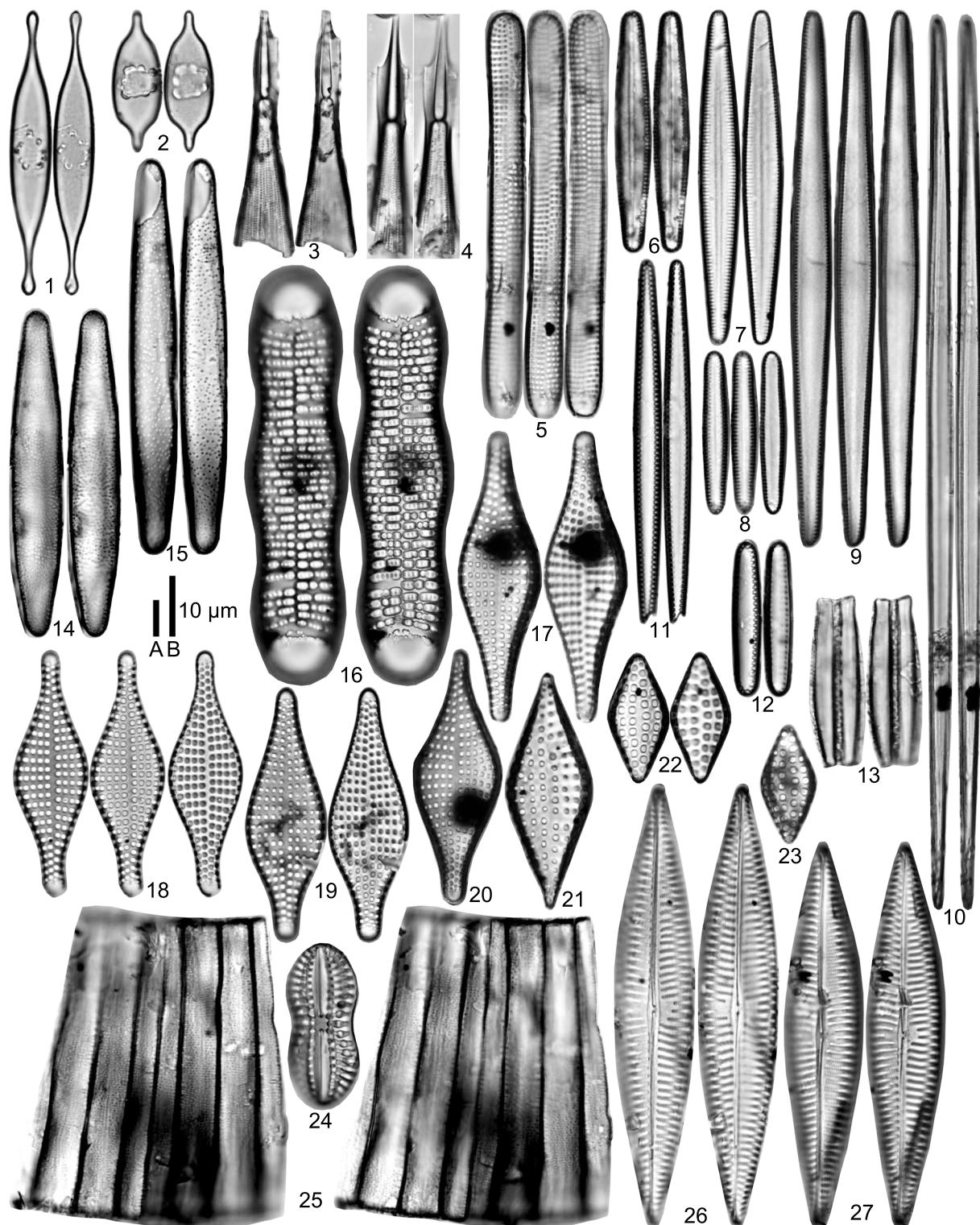
**17–21:** *Raphoneis* cf. *fusiformis* G.W.Andrews [Sample H7].

**22, 23:** *Raphoneis diamantella* G.W.Andrews [Sample H7].

**24:** *Diploneis didyma* (Ehrenb.) Cleve [Sample H7].

**25:** Genus et species indet. [Sample H7].

**26, 27:** *Navicula* sp. [Sample H7].



**Fig. A4.** Photographs of diatom species from the Yamabe and Yamagasu groups (part 3).  
Scale bar A is for photograph 10 and scale bar B for others.