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France

Ph.D Cotutelle Thesis

Sofie SPATHARIS

PHYTOPLANKTON DIVERSITY AND BLOOM DYNAMICS IN
COASTAL ECOSYSTEMS UNDER THE INFLUENCE OF
TERRESTRIAL RUNOFF

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Mytilini 19 December 2007

APPENDIX 4 – SPECIES LIST

Table showing the average abundance of all identified species found in the water column of the Gulf of Kalloni during the studied annual cycle from August '04 to July '05. For each sampling cruise abundance was averaged using pooled samples from all sampling stations (excluding Tsiknias River stations) at 1 and 5m depth.

APPENDIX 5 - DIATOM AND DINOFLAGELLATE PLATES

Plate 1 – Bacillariophyceae

(scale bar = 10µm)

1. *Actinocyclus subtilis* (W. Gregory) J. Ralfs
2. *A. ochotensis* Jouse
3. *T. proschkinae* Makarova
4. *Actinocyclus octonarius* var. *tenellus* (Brebisson) ex Fryxell
5. *Asteromphalus heptactis* (Brébisson) Ralfs in Pritchard
6. *Bacteriastrum hyalinum* Lauder
7. *Cerataulus radiatus* (Roper) R. Ross in Hartley
8. *Coscinodiscus concinnus* W. Smith
9. *Pyxidicula mediterranea* Grunow
10. *Thalassiosira eccentrica* (Ehrenberg) Cleve
11. *Coscinodiscus sublineatus* Grunow

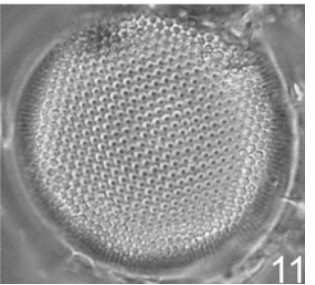
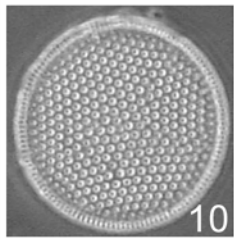
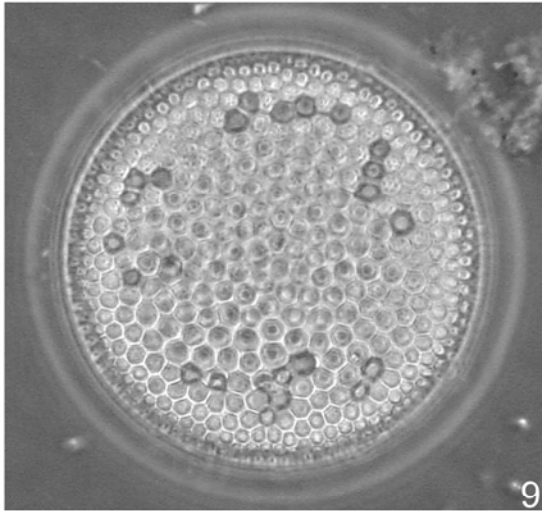
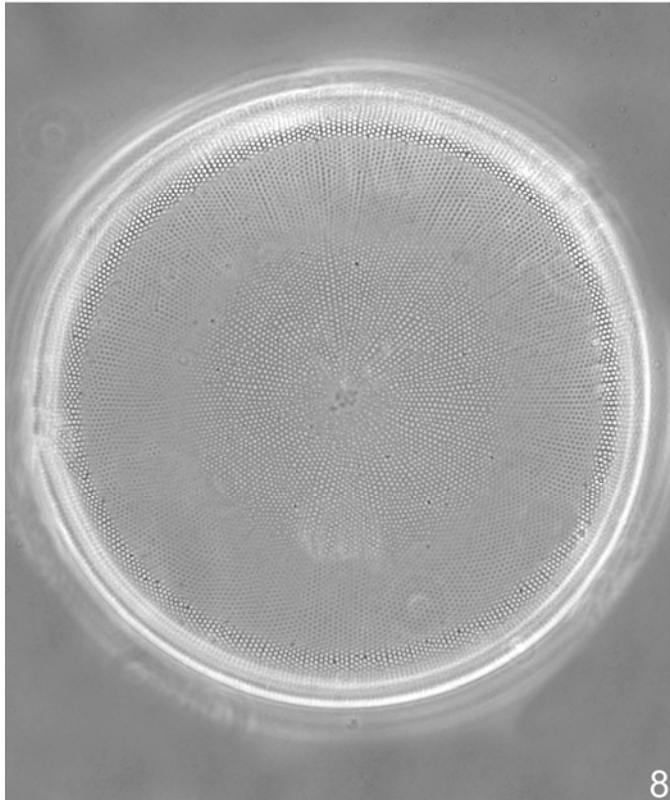
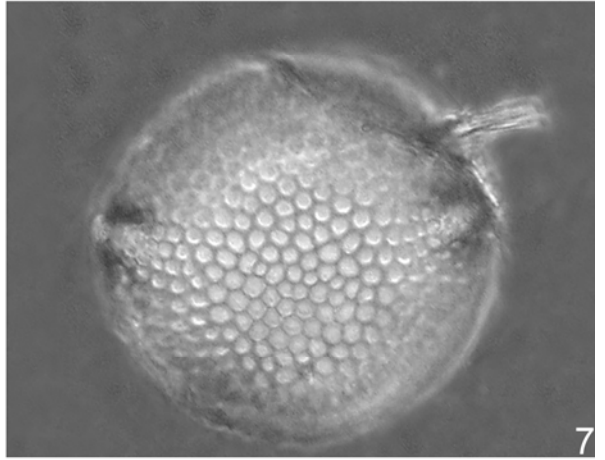
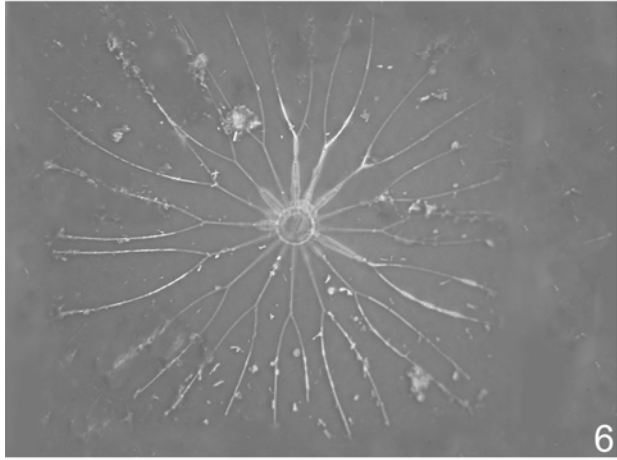
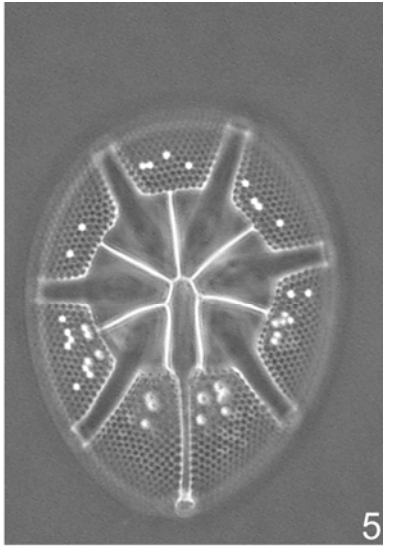
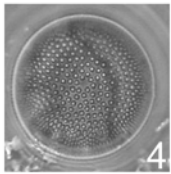
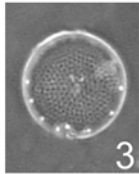
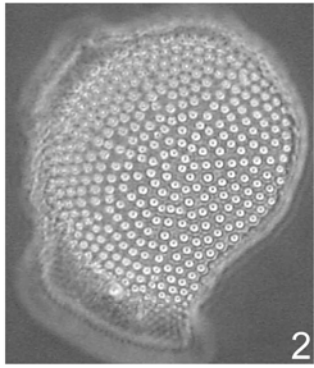
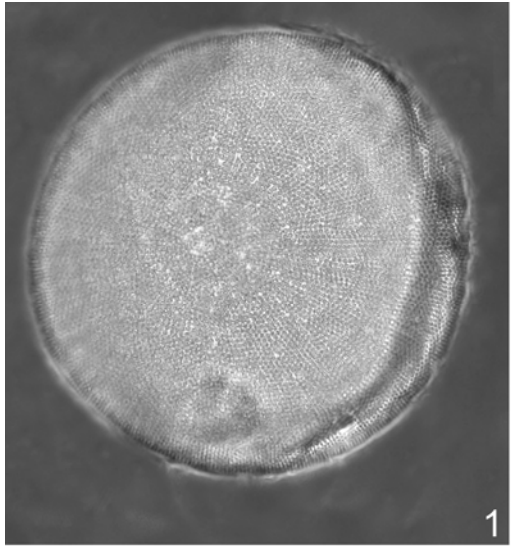


Plate 2 - Bacillariophyceae

(scale bar = 10µm)

1. *Cyclostephanus dubius* (Fricke) Round
2. *Cyclotella elgeri* Hustedt
3. *C. ocellata* Pant
4. *C. striata* (Kutzing) Grunow
5. *C. distiguenta* var. *unipunctata* (Hustedt) Håkansson & Carter
6. *C. cf. radiosa* (Grunow) Lemmermann
7. *Eucampia cornuta* (Cleve) Grunow
8. *Guinardia flaccida* (Castracane) H. Peragallo
9. *Hemiaulus hauckii* Grunow in Van Heurck
10. *H. sinensis* Greville
11. *Leptocylindrouis minimus* Gran
12. *Paralia sulcata* (Ehrenberg) Cleve
13. *Orthoseira roseana* (Rabenhorst) O'Meara
14. *Biddulphia pulchella* S.F. Gray

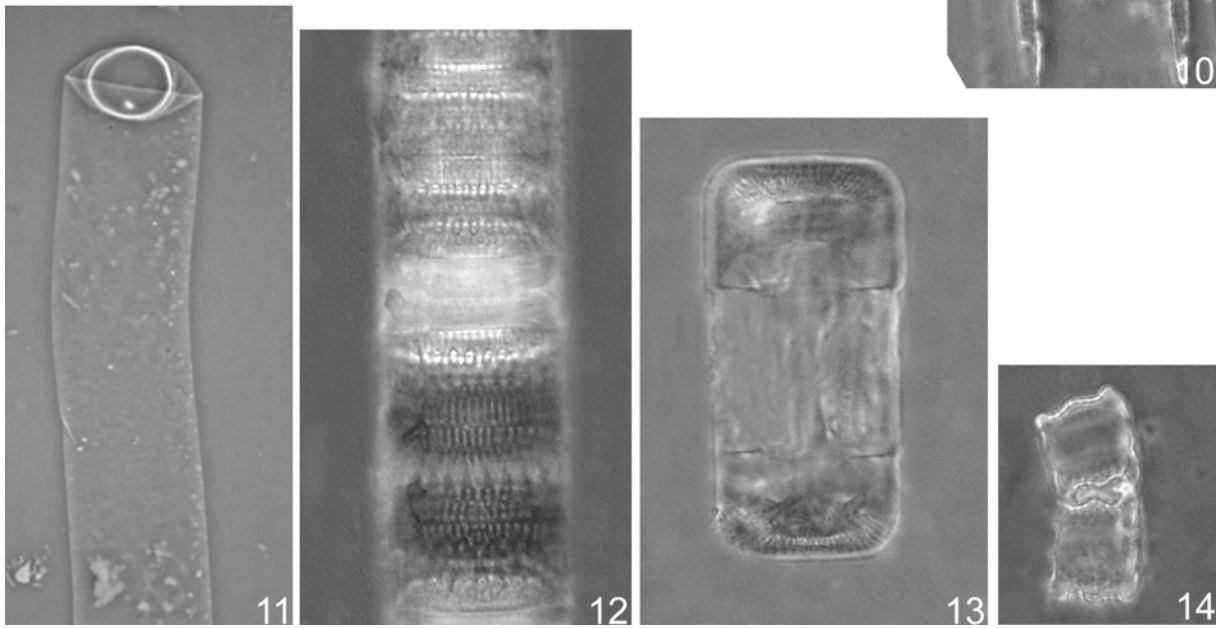
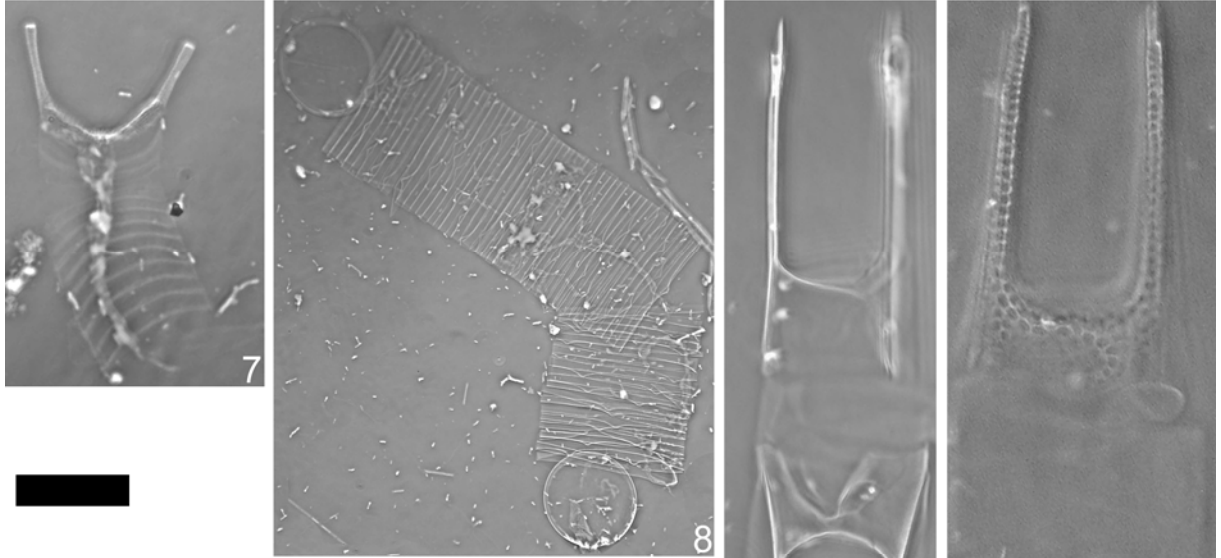
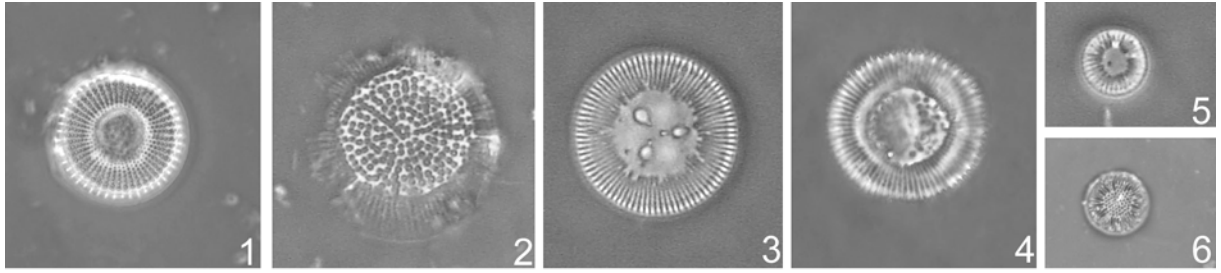


Plate 3 – Bacillariophyceae

(scale bar = 10µm)

1. *Asterionellopsis glacialis* (Castracane) F.E. Round
2. *Asterionella formosa* Hassall
3. *Arcocellulus mammifer* Hasle, von Stosch & Syvertsen
4. *Diatoma ehrenbergii* Kutzing
5. *D. vulgare* Bory
6. *D. moniliformis* Kutzing
7. *Fragilaria tenera* (W. Smith) Lange-Bertalot
8. *Ulnaria acus* (Kutzing) M. Aboal
9. *U. delicatissima* (W. Smith) M. Aboal & P. C. Silva
10. *Fragilaria capucina* Desmazières
11. *F. construens* (Ehrenberg) Grunow
12. *Grammatophora oceanica* (Ehrenberg) Grunow
13. *G. angulosa* Ehrenberg
14. *Licmophora ehrenbergii* (Kützing) Grunow
15. *L. gracilis* var. *anglica* (Kutzing) Peragallo
16. *L. paradoxa* var. *tincta* (Agardh) Hustedt
17. *L. abbreviata* Agardh
18. *Neosynedra provincialis* (A. Grunow) DM Williams & FE Round
19. *Tabularia parva* (Kützing) Williams & Round
20. *Opephora mutabilis* (Grunow in Cleve & Möller) Sabbe & Vyverman
21. *Thalasionema nitzschioides* f. *parva* Heiden and Kolbe
22. *T. nitzschioides* (Grunow) Mereschowsky
23. *Psammodiscus nitidus* (Gregory) F.E. Round & D.G. Mann

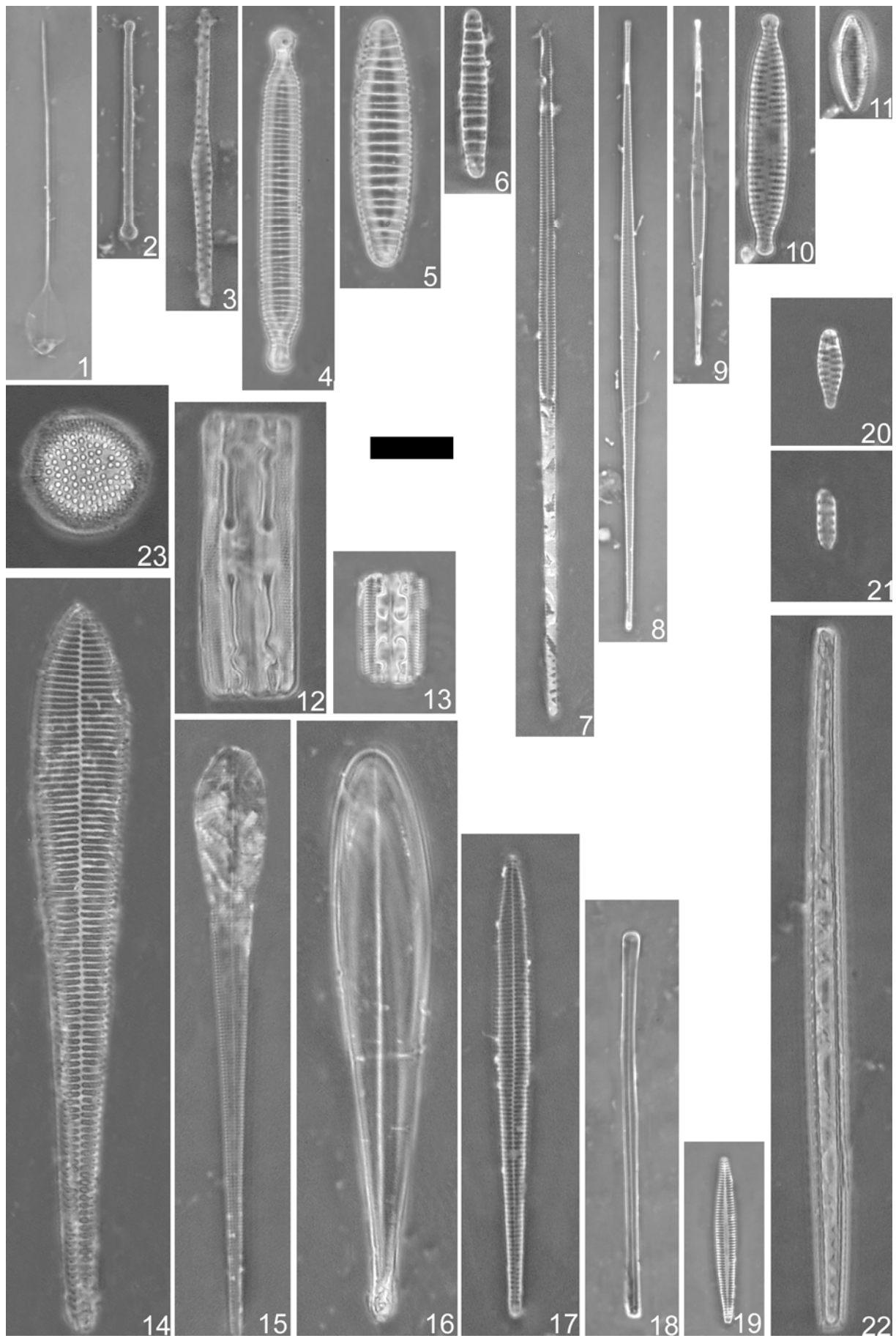


Plate 4 – Bacillariophyceae

(scale bar = 10µm)

1. *Achnanthes longipes* Agardh
2. *A. brevipes* Agardh
3. *A. pseudogroenlandica* Hendey
4. *A. cf. lorenziana* Grunow ex A. Schmidt
5. *A. parvula* Kützing
6. *A. coarctata* (Brébisson) Grunow
7. *Cocconeis scutellum* Ehrenberg
8. *C. placentula* var. *lineata* (C.G. Ehrenberg) P.T. Cleve
9. *C. pediculus* Ehrenberg
10. *C. placentula* Ehrenberg
11. *C. molesta* var. *crucifera* Grunow in Van Heurck
12. *C. maxima* (Grunow) H.Perag. & M.Perag.
13. *C. discoloides* Hustedt
14. *C. diruptoides* Hustedt
15. *C. placentula* var. *pseudolineata* Geitler
16. *C. scutellum* var. *scutellum* Ehrenberg
17. *Cocconeis* sp.2
18. *Cocconeis* sp.1
19. *C. hoffmannii* Simonsen
20. *C. distans* Gregory
21. *C. peltoides* Hustedt
22. *Planothidium lanceolatum* (Brébisson ex Kützing) Round & Bukhtiyarova
23. *Psammothidium cf. montanum* (Krasske) M. Aboal
24. *Planothidium delicatulum* (Kützing) Round & L. Bukhtiyarova
25. *Achnantheidium cf. exiguum* (Grunow) D.B. Czarnecki
26. *Planothidium* sp.

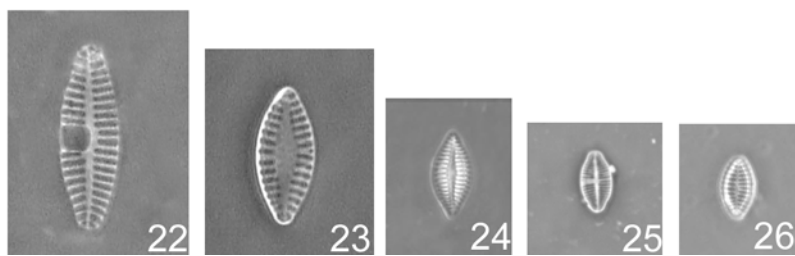
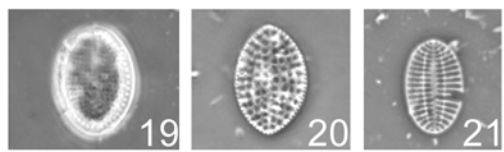
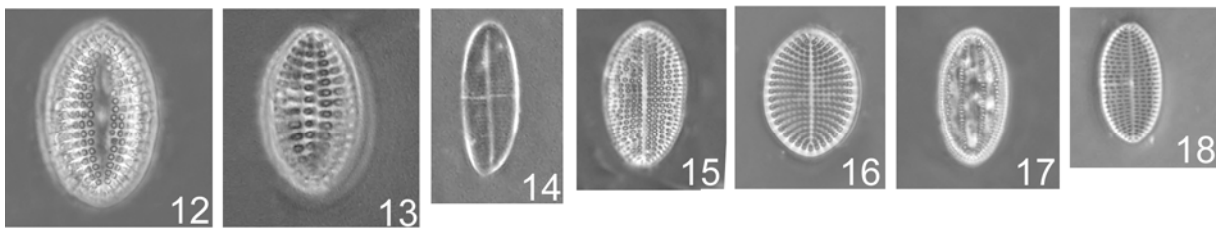
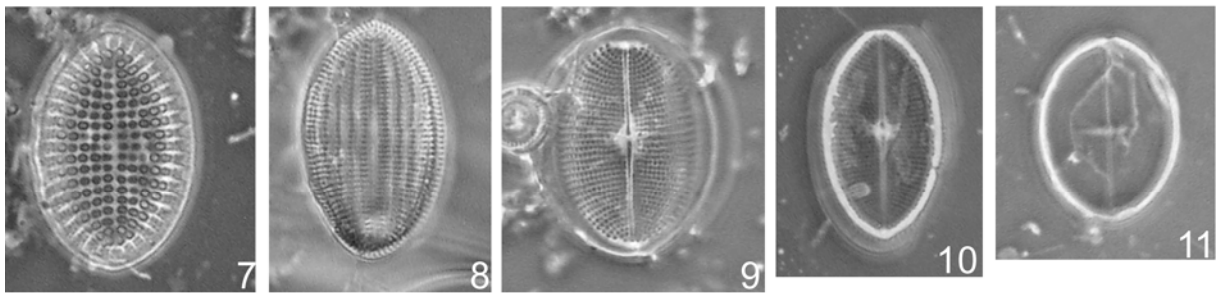
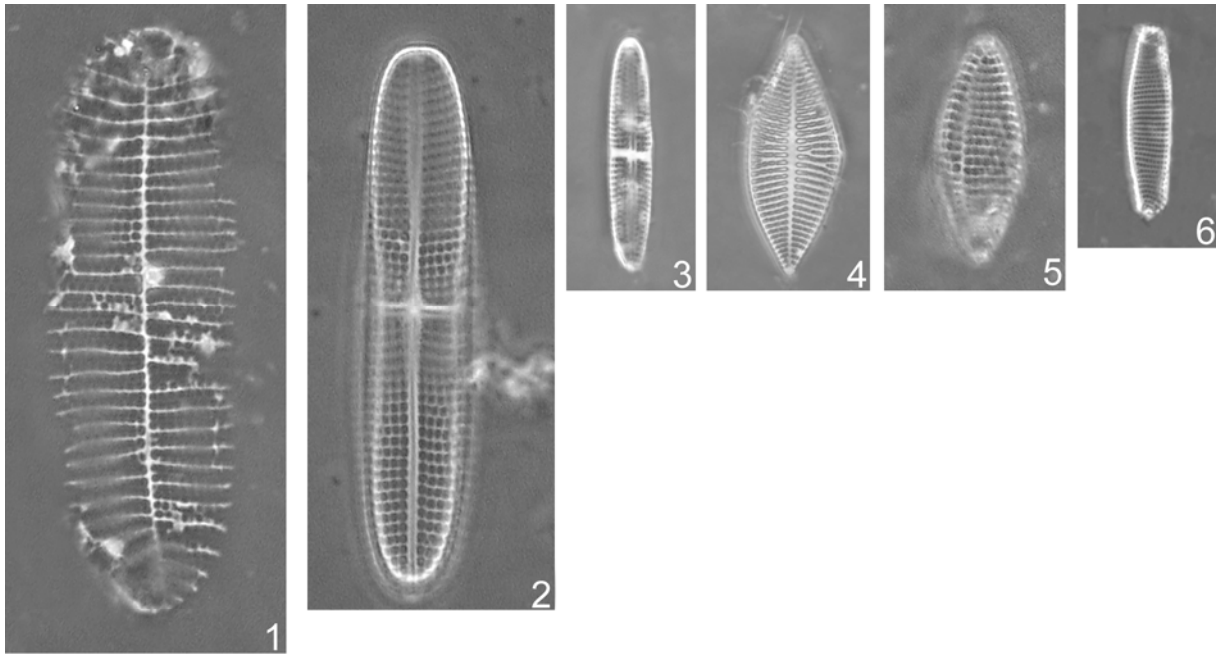
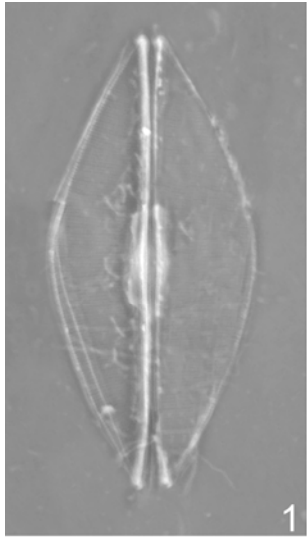


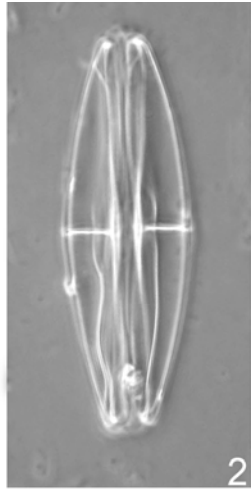
Plate 5 – Bacillariophyceae

(scale bar = 10µm)

1. *Amphora hyalina* Kützing
2. *A. laevissima* (Gregory) Cleve
3. *Amphora* sp.5
4. *A. acutiuscula* (Kützing) Hustedt
5. *A. cymbifera* Gregory
6. *A. marina* W. Smith
7. *A. graeffeana* Hendey
8. *A. lineolata* Ehrenberg
9. *Amphora* sp.4
10. *A. ovalis* (Kützing) Kützing
11. *A. bigibba* Grunow ex A. Schmidt
12. *A. coffeaeformis* (C. Agardh) Kützing
13. *A. lybica* Ehrenberg
14. *Amphora* sp.1
15. *A. veneta* Kützing
16. *A. pediculus* (Kützing) Grunow
17. *A. delicatissima* Krasske
18. *Amphipleura fennica* Juhlin-Dannfelt



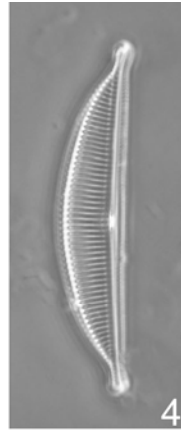
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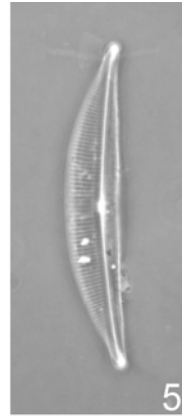
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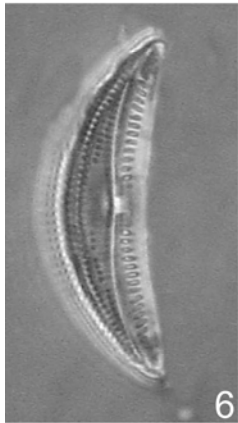
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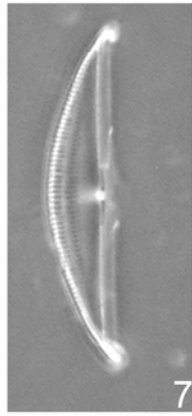
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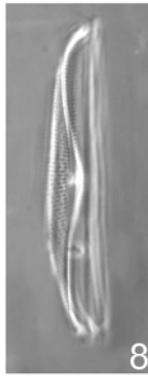
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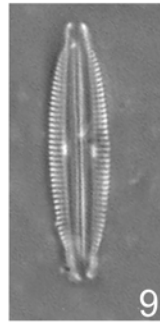
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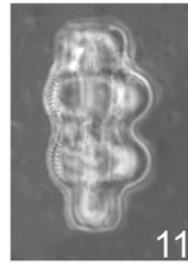
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9



10



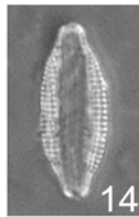
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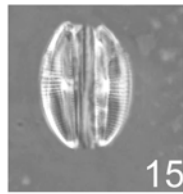
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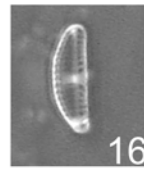
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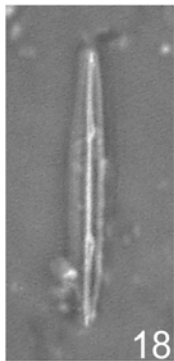
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16



17



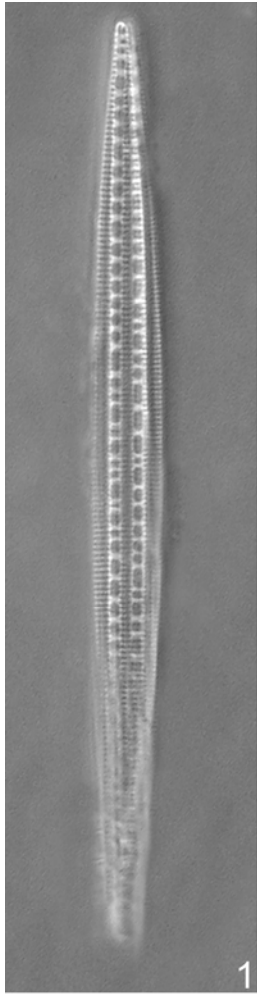
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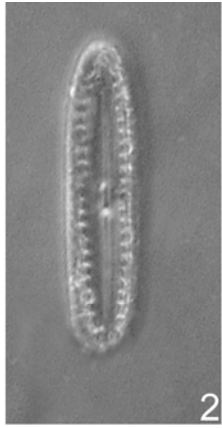
Plate 6 – Bacillariophyceae

(scale bar = 10µm)

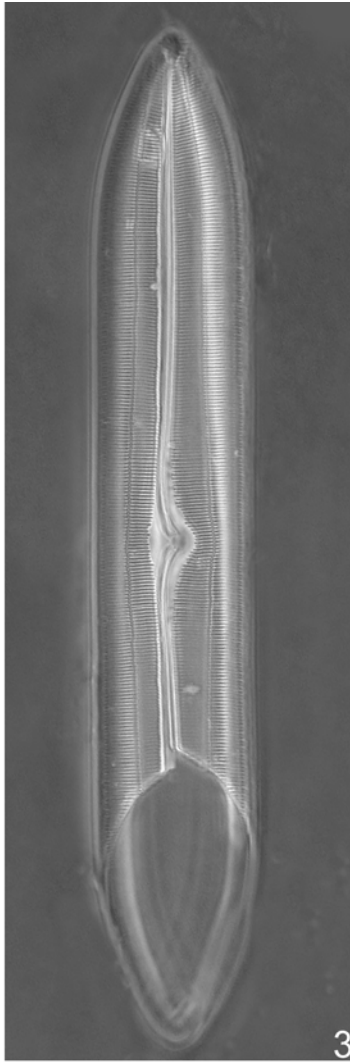
1. *Bacillaria paxillifera* (O.F. Müller) Hendeby
2. *Biremis ambigua* (Cleve) Mann
3. *Caloneis bicuneata* (Grunow) Wolle
4. *C. linearis* (Grunow) Boyer
5. *C. bacillum* (Grunow) Cleve
6. *Cymbella affinis* Kützing
7. *C. tumida* (Brebisson) van Hoerck
8. *C. sileciaca* Bleisch in Rabenhorst
9. *C. pussila* Grunow in A. Schmidt
10. *C. microcephala* Grunow
11. *C. sinuata* Gregory
12. *Encyonema minutum* (Hilse in Rabenhorst) D.G. Mann



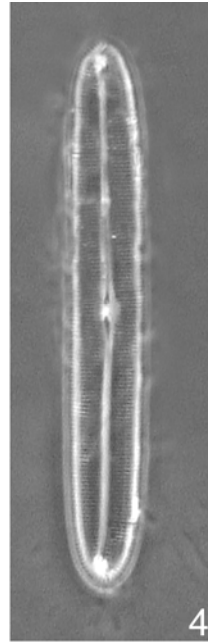
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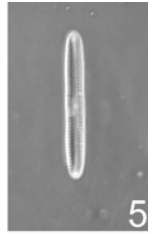
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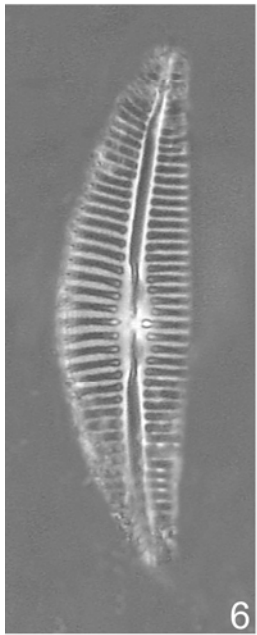
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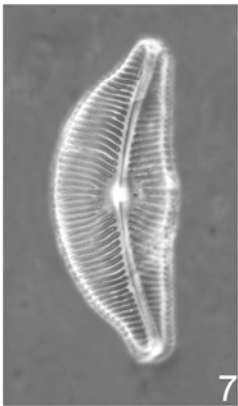
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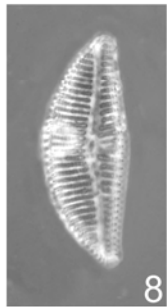
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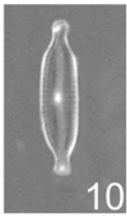
7



8



9



10



11



12

Plate 7 – Bacillariophyceae

(scale bar = 10µm)

1. *Diploneis crabro* Ehrenberg
2. *D. notabilis* (Greville) Cleve
3. *D. suborbicularis* var. *constricta* Hustedt
4. *D. smithii* var. *recta* (Brebisson) Cleve
5. *D. hersonensis* (Grunow) Cleve
6. *D. papula* (A. Schmidt) Cleve
7. *D. sejuncta* var. *constricta* Hustedt
8. *D. weissflogii* (A. Schmidt) Cleve
9. *D. vacillans* (A. Schmidt) Cleve
10. *D. coffaeiformis* (A. Schmidt) Cleve
11. *D. litoralis* var. *clathrata* Ostrup
12. *Donkinia recta* (Donkin) Grunow ex Van Heurck
13. *Gomphonema angustatum* (Kützing) Rabenhorst
14. *G. olivaceum* (Hornemann) Brébisson
15. *Fogedia giffeniana* (Foged) Witkowski, Lange-Bertalot, Metzeltin, & Bafana
16. *Luticola mutica* (Kützing) D.G. Mann
17. *Entomoneis alata* (Ehrenberg) Ehrenberg
18. *E. paludosa* (W. Smith) Reimer in R.M. Patrick & Reime
19. *Fallacia forcipata* var. *elongata* (Peragallo) Louvrou et Economou-Amilli
20. *F. forcipata* (Greville) Stickle & D.G. Mann
21. *F. cryptolyra* (Brockmann) Stickle & D.G. Mann
22. *F. florinae* (Möller) Witkowski
23. *F. zonata* (Hustedt) D.G. Mann

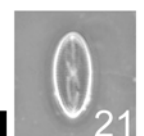
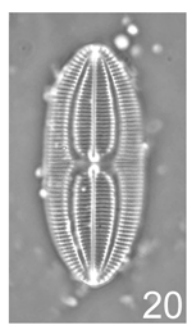
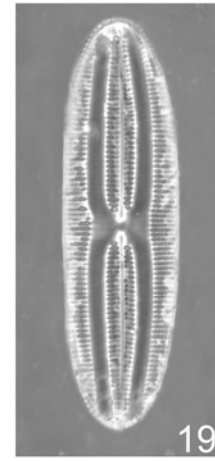
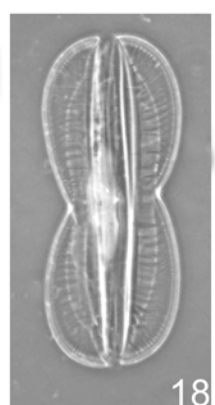
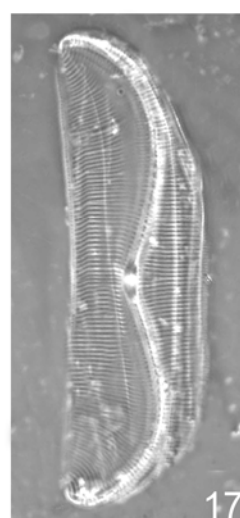
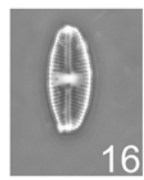
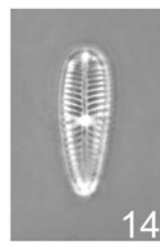
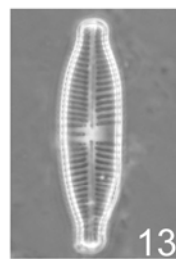
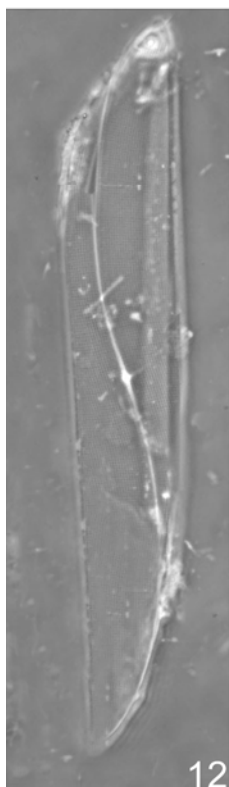
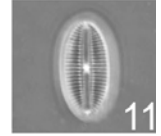
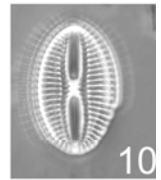
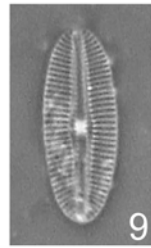
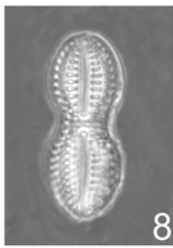
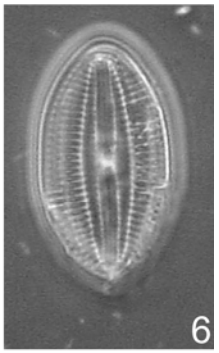
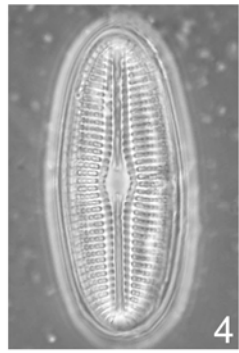
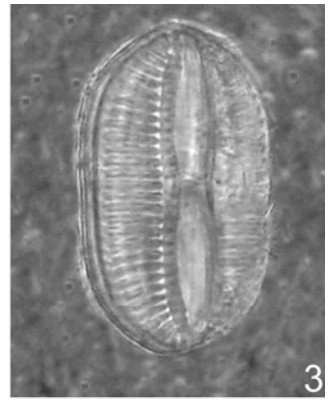
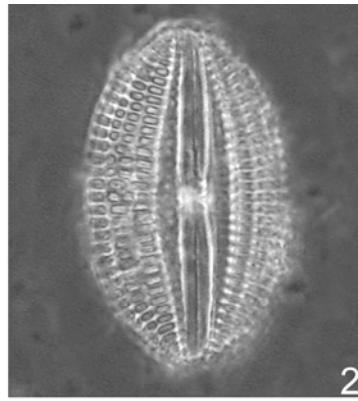
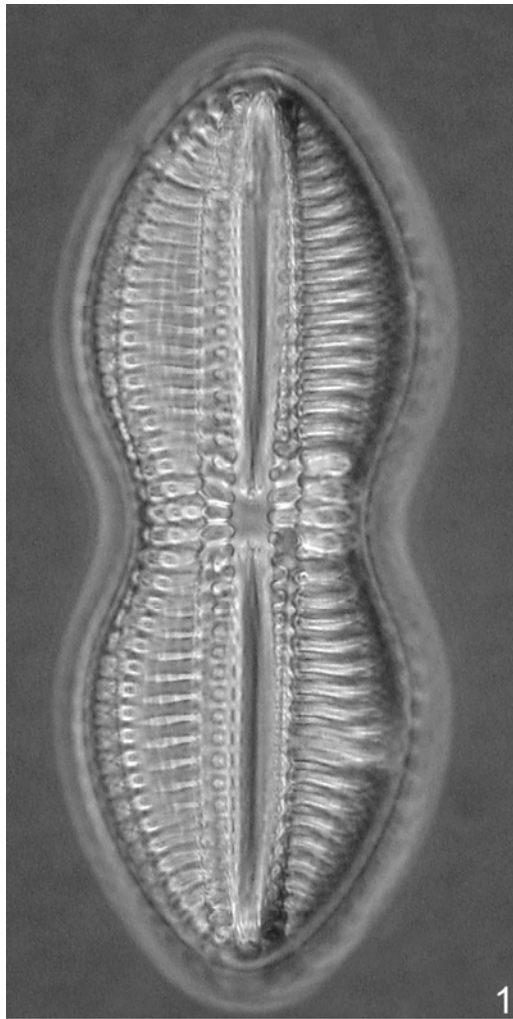


Plate 8 – Bacillariophyceae

(scale bar = 10µm)

1. *Gyrosigma balticum* (Ehrenberg) Rabenhorst
2. *G. fasciola* (Ehrenberg) Griffith & Henfrey
3. *G. tenuissimum* var. *angustissima* Simonsen
4. *G. wansbeckii* (Donkin) Cleve
5. *G. beufortianum* Hustedt
6. *Haslea ostrearia* (Gaillon) Simonsen
7. *Hantzschia amphioxys* (Ehrenberg) Grunow
8. *Lyrella abrupta* (Gregory) D.G. Mann
9. *Mastogloia acutiouscula* Grunow in Cleve
10. *M. horvathiana* Grunow
11. *M. fallax* Cleve
12. *M. crucicula* (Grunow) Cleve
13. *M. cuneata* (Meister) R. Simonsen
14. *M. ovulum* Hustedt
15. *M. linearis* Simonsen
16. *M. acutiouscula* var. *elliptica* Hustedt

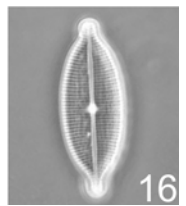
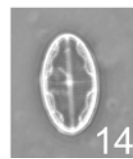
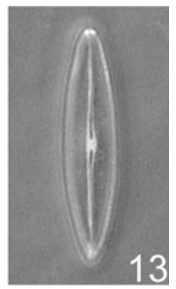
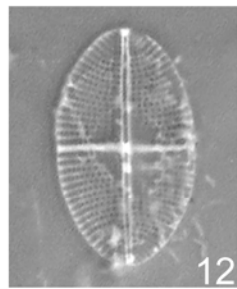
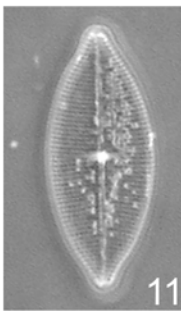
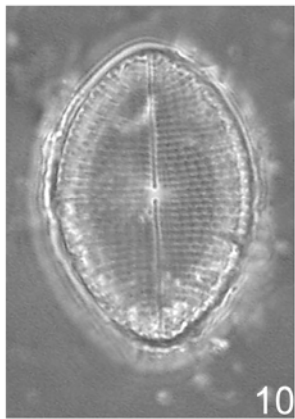
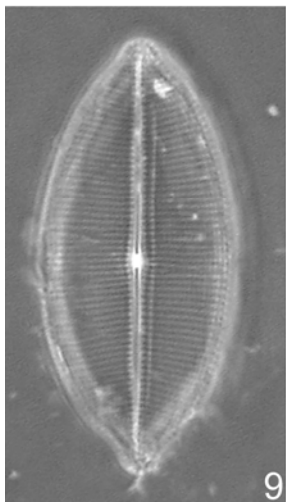
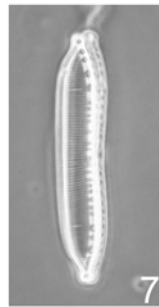
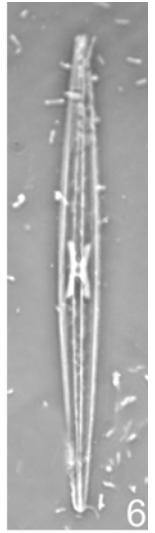
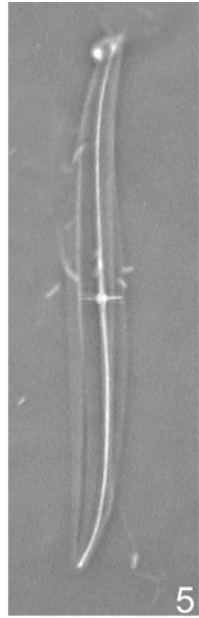
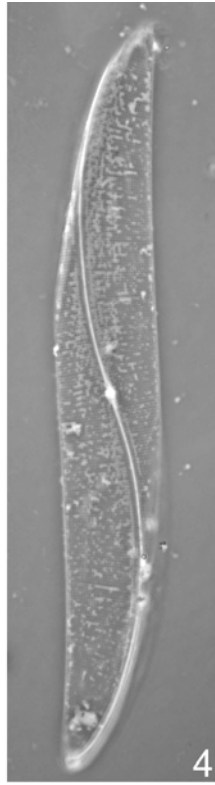
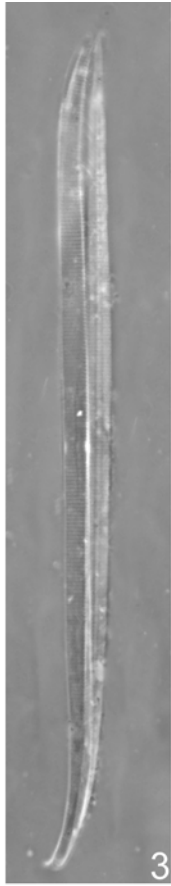
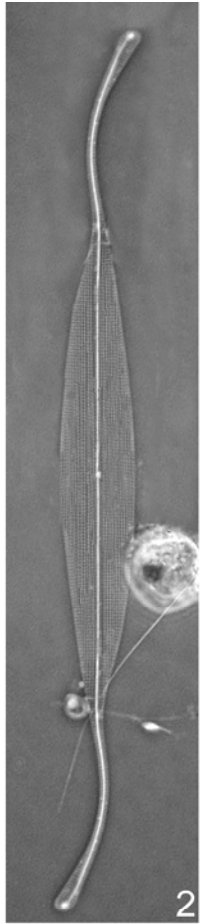
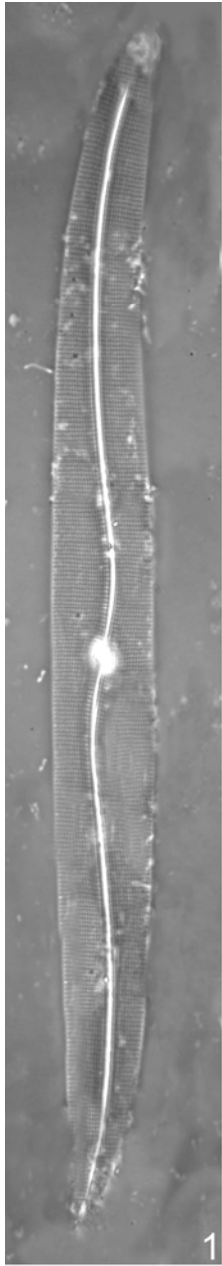


Plate 9 – Bacillariophyceae

(scale bar = 10µm)

1. *Navicula peregrina* (Ehrenberg) Kützing
2. *N. pseudolanceolata* var. *pseudolanceolata* Lange-Bertalot
3. *N. margalithii* Lange-Bertalot
4. *N. pavillardii* Hustedt
5. *N. tripunctata* (O.F. Müller) Bory
6. *N. leptostriata* Jørgensen
7. *N. microdigitoradiata* Lange-Bertalot
8. *N. abunda* Hustedt
9. *N. salinarum* Grunow in Cleve
10. *N. ammophila* Grunow
11. *N. perminuta* Grunow
12. *N. decussis* Østrup
13. *N. duerrenbergiana* Hustedt in Schmidt
14. *N. agnita* Hustedt
15. *Navicula* sp.1
16. *N. palpebralis* var. *angulosa* (Gregory) Van Heurck
17. *N. phylleptosoma* Lange-Bertalot
18. *N. palpebralis* var. *minor* (Gregory) Grunow
19. *N. palpebralis* Brébisson ex W. Smith
20. *N. phyllepta* Kützing
21. *N. gregaria* Donkin
22. *Luticola nivalis* (Ehrenberg) D.G. Mann
23. *N. erifuga* Lange-Bertalot
24. *N. fracta* Hustedt
25. *N. naumannii* Hustedt
26. *N. tropicoidea* Witkowski, Metzeltin & H. Lange-Bertalot
27. *Sellaphora vitabunda* (Hustedt) D.G. Mann
28. *N. ignota* var. *acceptata* (Hustedt,) Lange-Bertalot

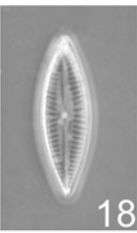
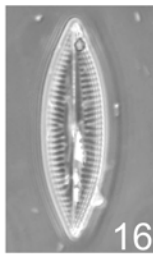
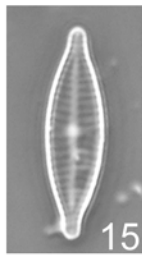
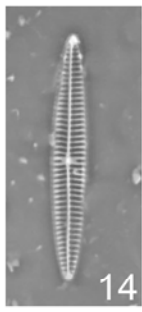
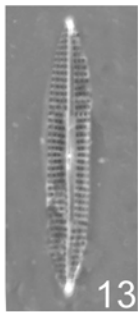
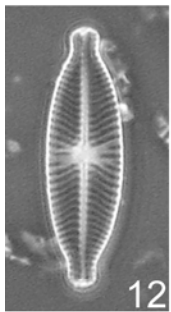
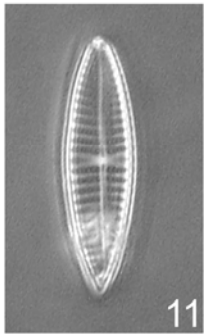
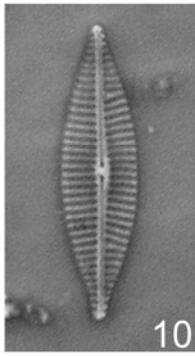
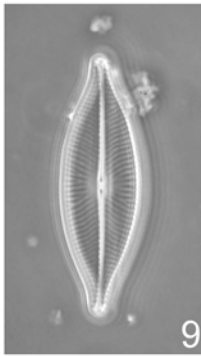
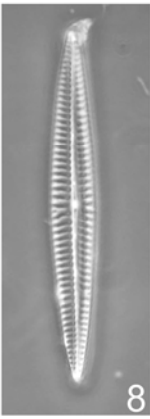
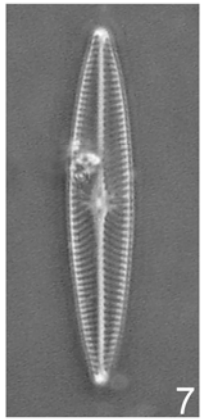
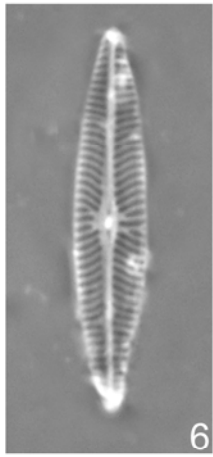
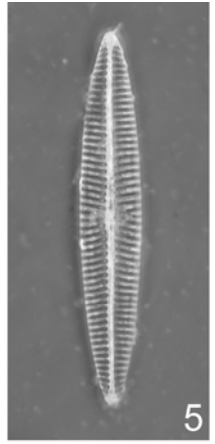
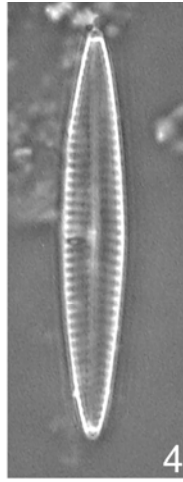
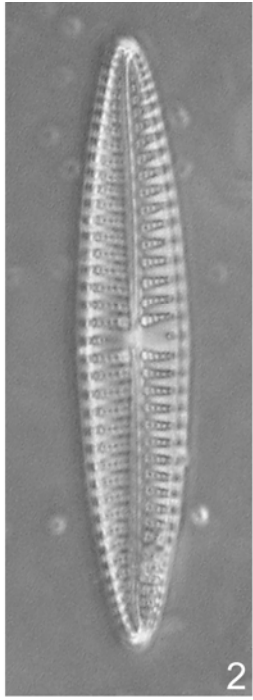
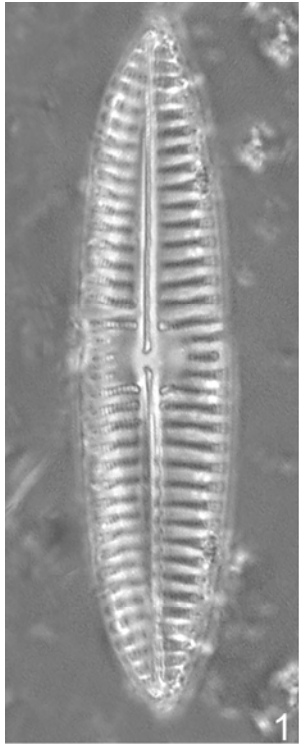


Plate 10 – Bacillariophyceae

(scale bar = 10µm)

1. *N. longissima* (Brébisson in Kützing) Ralfs in Pritchard
2. *N. lorenziana* Grunow in Cleve & Grunow
3. *N. sigma* (Kützing) W. Smith
4. *N. pellucida* Grunow
5. *Nitzschia distans* var. *tumescens* Grunow
6. *N. vermicularis* (Kützing) Hantzsch in Rabenhorst
7. *N. agnita* Hustedt
8. *N. oblonga* L.W. Bailey
9. *N. incognita* Legler & Krasske
10. *N. obtusa* var. *scalpelliformis* Grunow in Cleve & Möller
11. *N. distans* Gregory
12. *N. dissipata* (Kützing) Grunow
13. *N. grossestriata* Hustedt
14. *N. umbonata* (Ehrenberg) Lange-Bertalot
15. *N. tubicola* Grunow
16. *N. palea* (Kützing) Smith

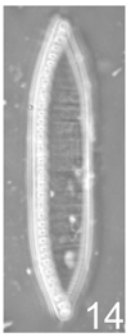
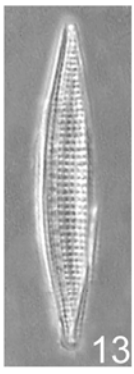
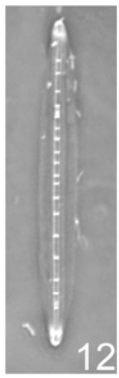
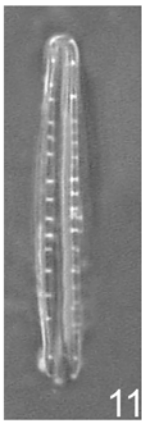
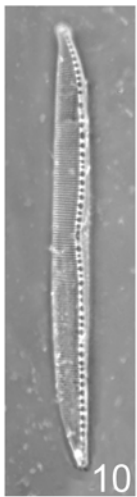
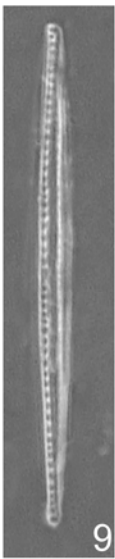
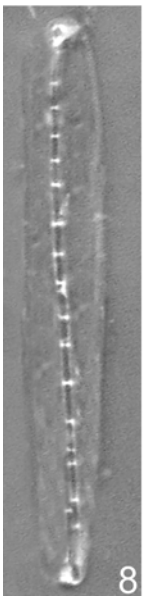
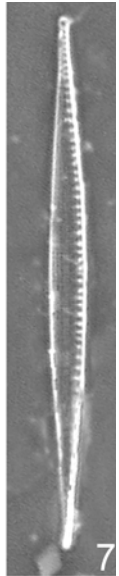
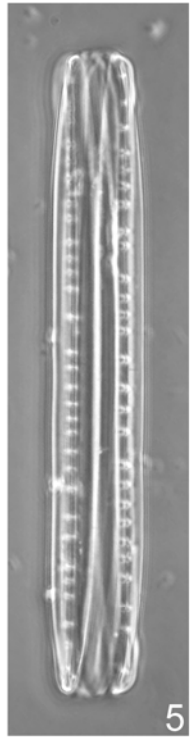
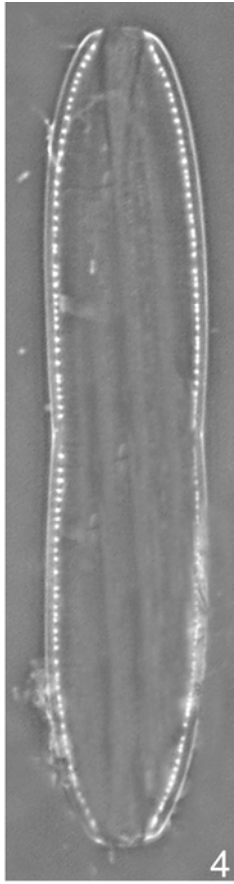
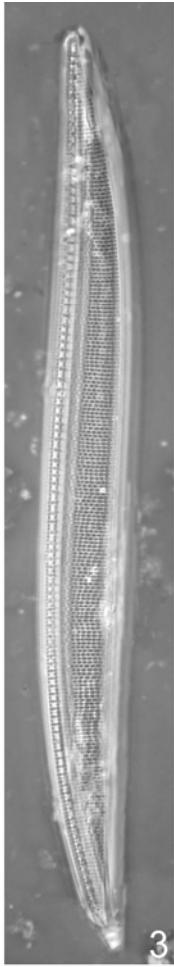
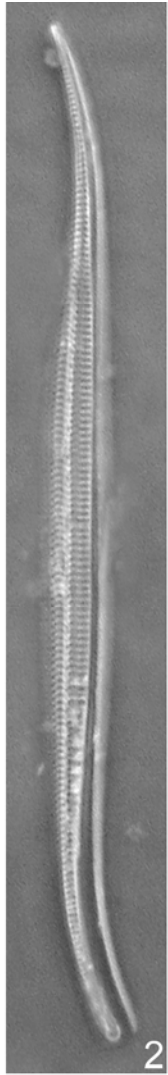
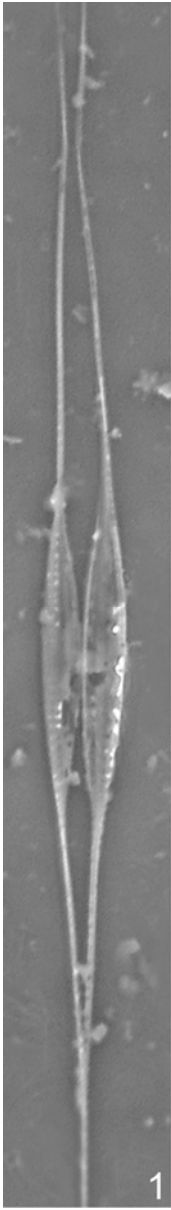


Plate 11 – Bacillariophyceae

(scale bar = 10µm)

1. *Petrodictyon gemma* (Ehrenberg) Mann
2. *Nitzschia ovalis* H.J. Arnott ex Grunow
3. *N. cf. grossestriata*
4. *N. amphibia* Grunow
5. *N. solita* Hustedt
6. *N. frustulum* (Kützing) Grunow in Cleve & Grunow
7. *N. aequorea* Hustedt
8. *N. laevis* Hustedt
9. *Psammodictyon panduriforme* var. *delicatulum* (Grunow) M. Poulin
10. *P. constrictum* (Gregory) D.G. Mann in Round et al.
11. *P. panduriforme* (Gregory) D.G. Mann
12. *Pinnularia infirma* Krammer
13. *P. obscura* Krasske
14. *Pseudo-nitzschia calliantha* Lundholm, Moestrup & Hasle
15. *P. pungens* (Grunow in Cleve & Möller ex P.T. Cleve) Hasle
16. *Rhopalodia gibba* (Ehrenberg) O. Müller
17. *R. acuminata* Krammer
18. *R. brebissonii* Krammer
19. *R. musculus* (Kützing) O. Müller

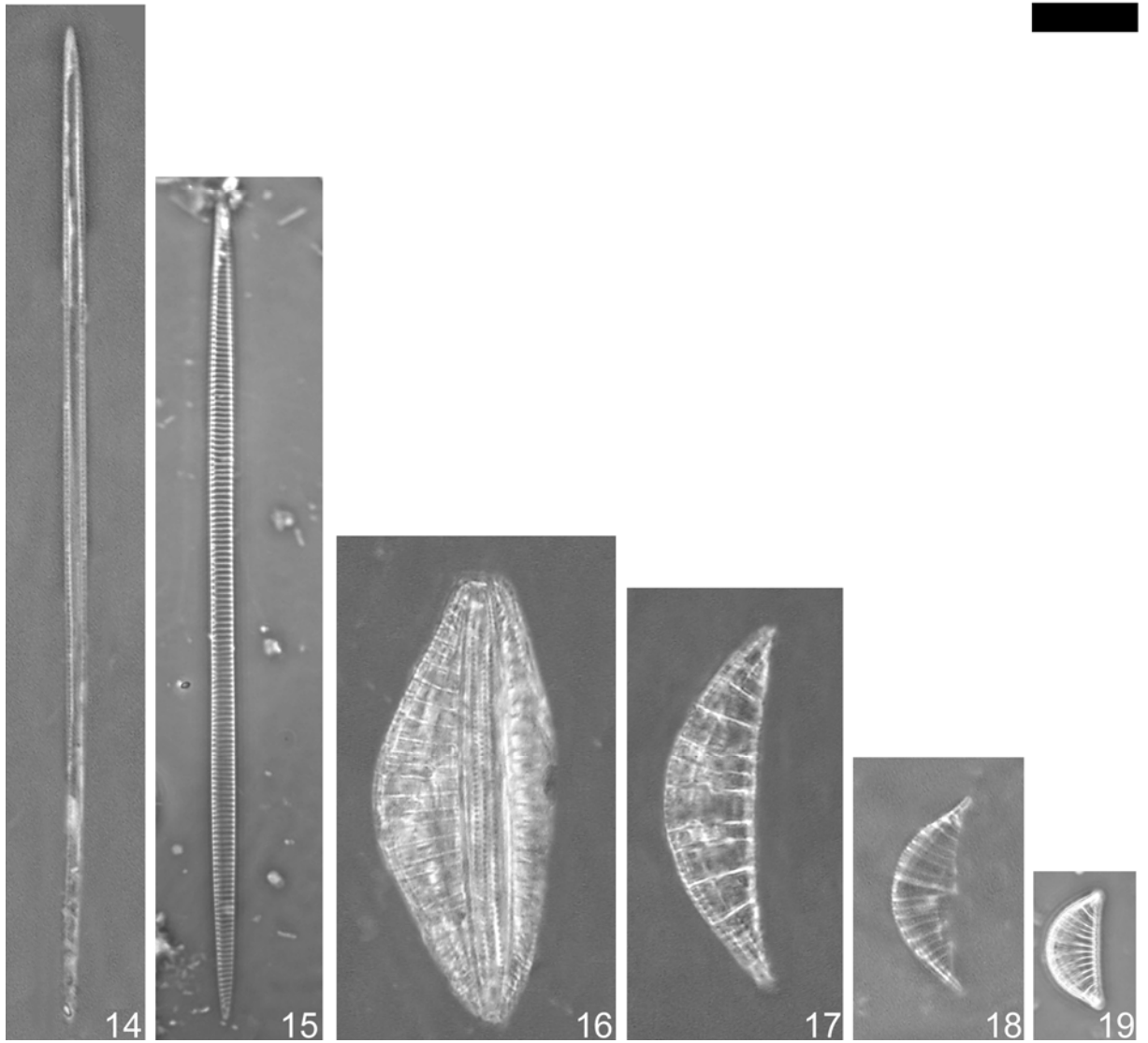
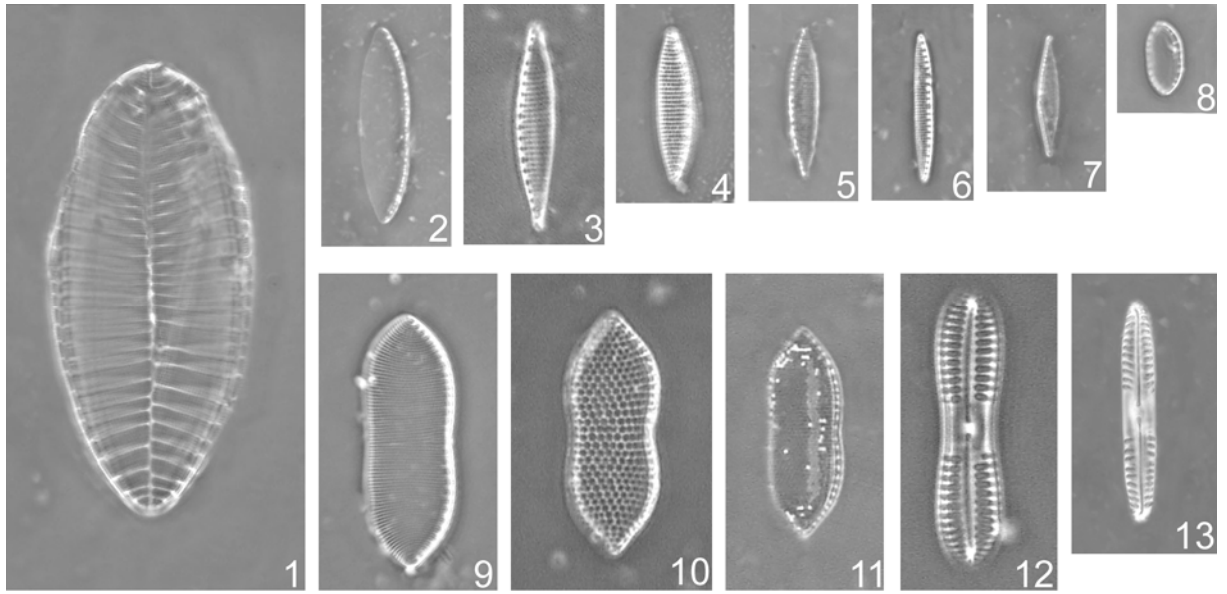


Plate 12 – Bacillariophyceae

(scale bar = 10µm)

1. *Pleurosigma* sp1.
2. *P. stringosum* W. M. Smith
3. *P. marinum* Donkin
4. *P. normanii* Ralfs in Pritchard
5. *Tryblionella marginulata* (Grunow) D.G. Mann
6. *T. navicularis* (Brébisson ex Kützing) Ralfs in A. Pritchard
7. *T. granulata* (Grunow) Mann in Round
8. *T. constricta* Gregory
9. *T. lanceola* Grunow ex Cleve
10. *T. pararostrata* (Lange-Bertalot) Louvrou et Economou-Amilli

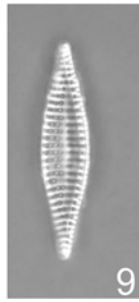
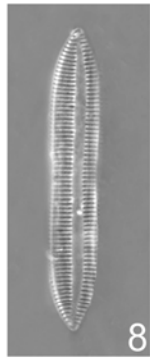
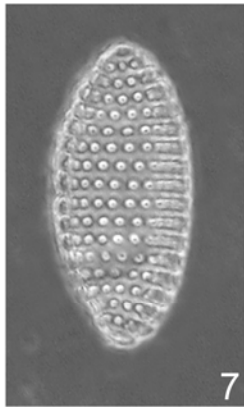
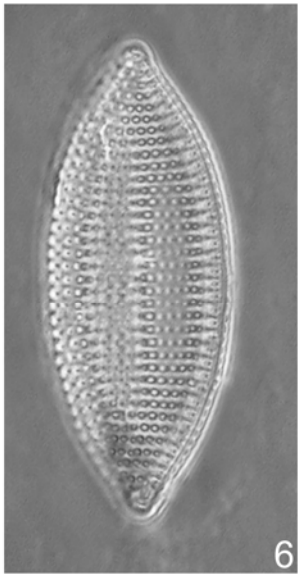
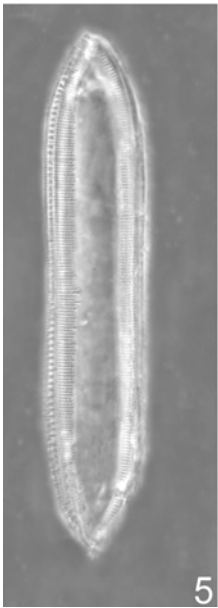
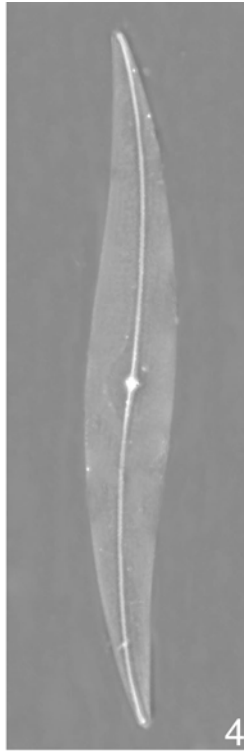
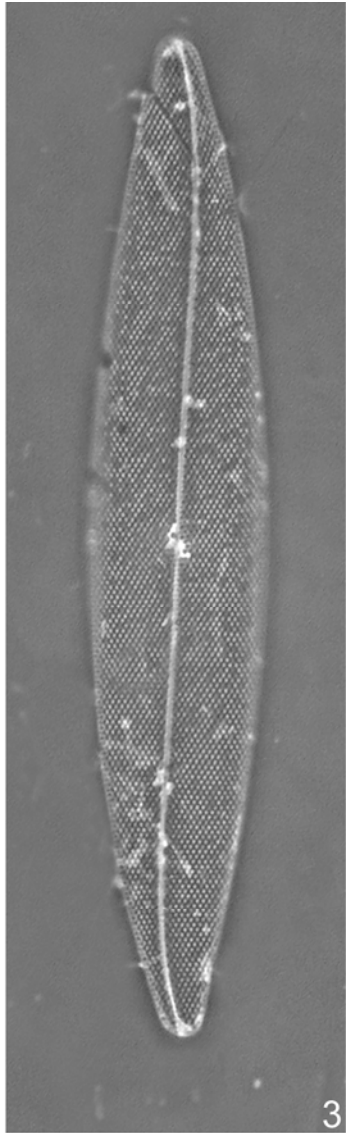
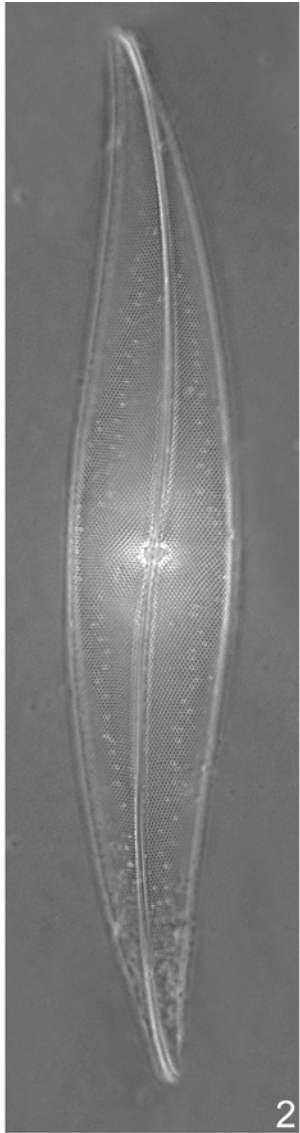
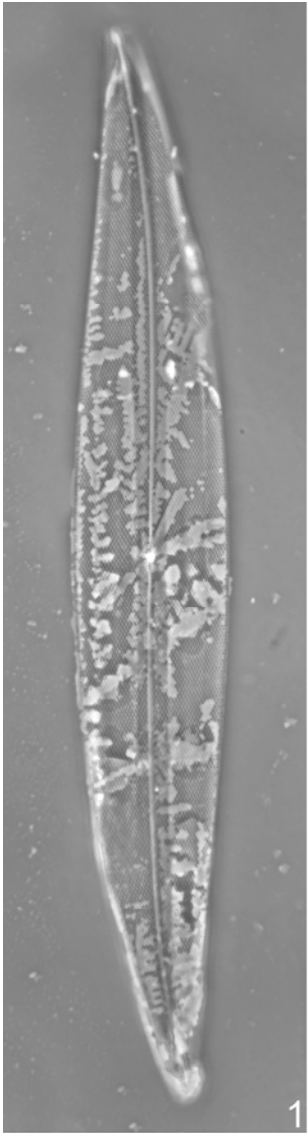


Plate 13 – Bacillariophyceae

(scale bar = 10µm)

1. *Surirella fluminensis* Grunow
2. *S. americana* Peragallo
3. *Stauropora salina* (W. Smith) Mereschkowsky
4. *Selaphora cf. blackfordensis* Mann & Droop
5. *S. pupula* Mann
6. *Seminavis arranensis* Danielidis & Mann
7. *Amphora zebrina* A. Schmidt
8. *Seminavis stringosa* (Hustedt) Danielidis & Economou-Amili
9. *Seminavis* sp.1
10. *Amphora zebrina* A. Schmidt
11. *Seminavis macilenta* (Gregory) Danielidis & Mann

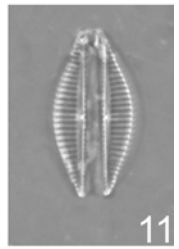
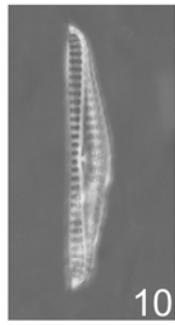
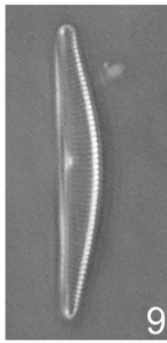
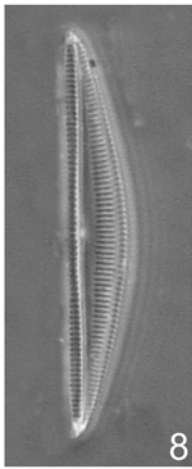
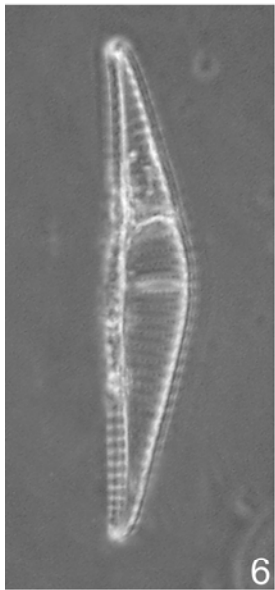
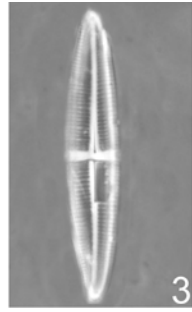
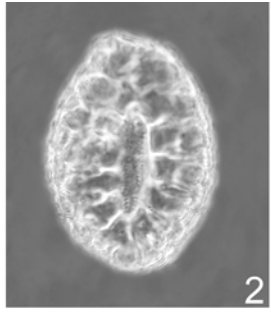


Plate 14 – Bacillariophyceae

1. *Asterionellopsis glacialis* (Castracane) F.E. Round (scale bar: 40 μm)
2. *Bacteriastrum hyalinum* Lauder (scale bar: 20 μm)
3. *Cerataulina pelagica* (Cleve) Hendey (scale bar: 40 μm)
4. *Ceratoneis closterium* Ehrenbeng (scale bar: 10 μm)
5. *Chaetoceros affinis* Lauder (scale bar: 30 μm)
6. *Ch. brevis* Schütt (scale bar: 40 μm)
7. *Ch. ceratosporum* (scale bar: 40 μm)
8. *Ch. curvisetus* Cleve (scale bar: 30 μm)
9. *Ch. didymus* Ehrenberg (scale bar: 30 μm)
10. *Ch. diversus* Cleve (scale bar: 30 μm)
11. *Ch. lauderi* Ralfs in Lauder (scale bar: 30 μm)
12. *Ch. pendulus* Karsten (scale bar: 40 μm)
13. *Ch. peruvianum* Brightwell (scale bar: 50 μm)

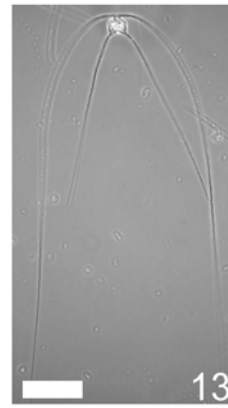
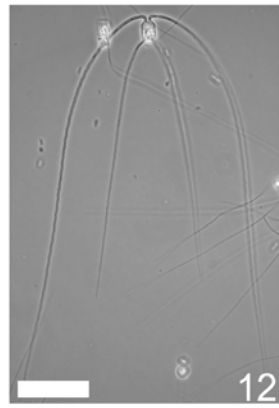
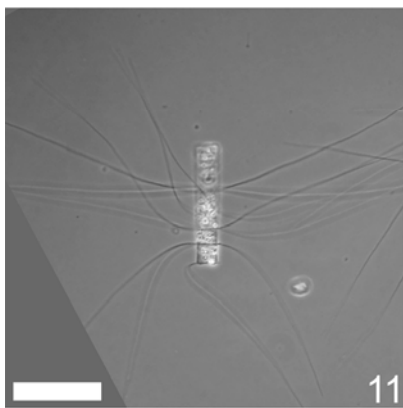
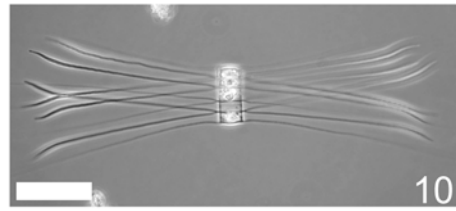
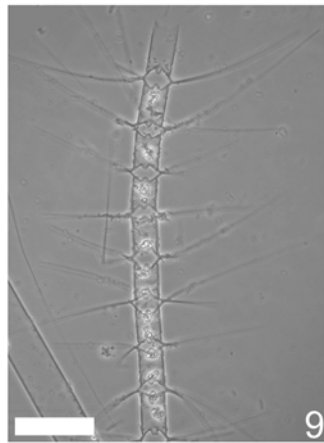
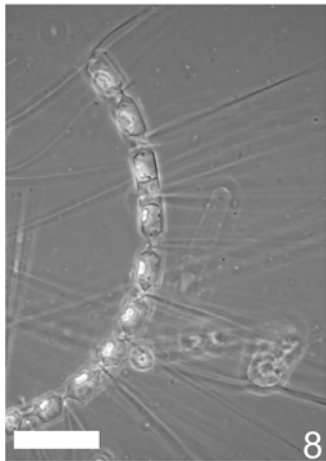
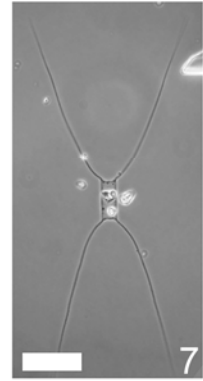
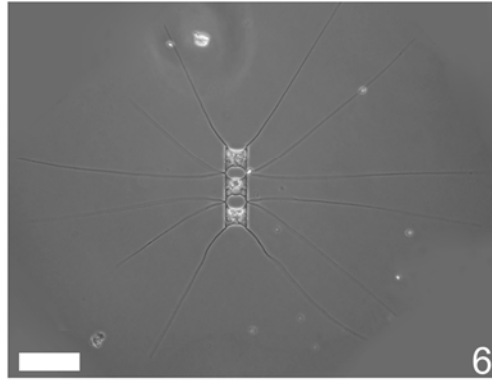
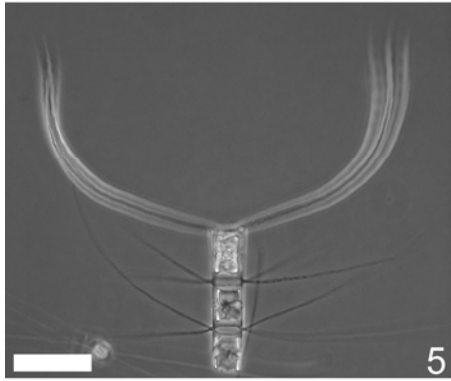
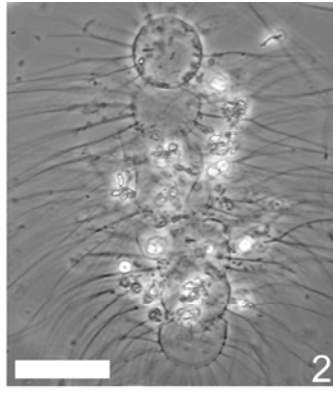
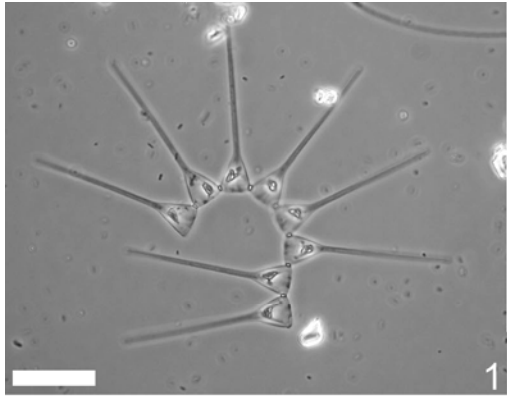


Plate 15 – Bacillariophyceae

1. *Dactyliosolen fragilissimus* (P. Bergon) G.R. Hasle (scale bar: 20 μm)
2. *D. phucetensis* (B.G. Sundström) G.R. Hasle (scale bar: 10 μm)
3. *Eucampia cornuta* (Cleve) Grunow (scale bar: 30 μm)
4. *Guinardia flaccida* (Castracane) H. Peragallo (scale bar: 40 μm)
5. *Hemiaulus hauckii* Grunow in Van Heurck (scale bar: 10 μm)
6. *Leptocylindrus minimus* Gran (scale bar: 30 μm)
7. *Lithodesmium undulatum* Ehrenberg (scale bar: 20 μm)
8. *Paralia sulcata* (Ehrenberg) Cleve (scale bar: 30 μm)
9. *Proboscia alata* (Brightwell) Sundström (scale bar: 10 μm)
10. *P. alata* f. *gracillima* (Cleve) Gran (scale bar: 10 μm)
11. *Pseudo-nitzschia calliantha* Lundholm, Moestrup & Hasle (scale bar: 20 μm)

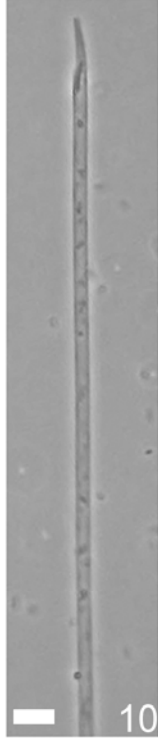
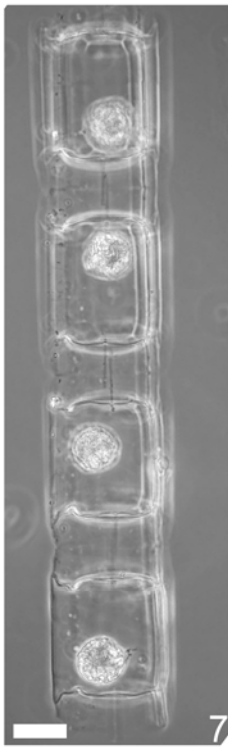
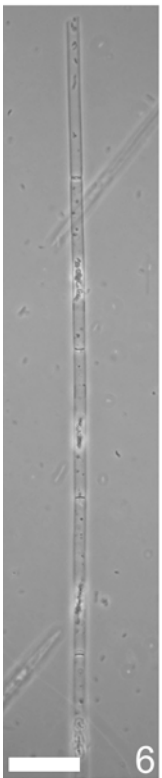
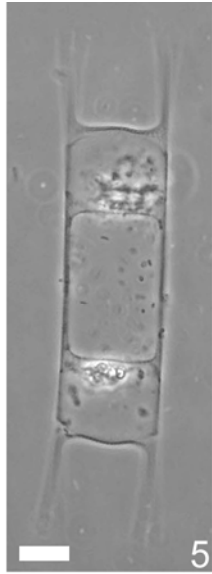
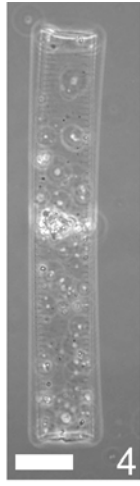
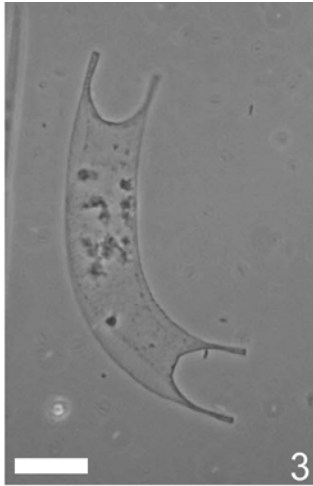
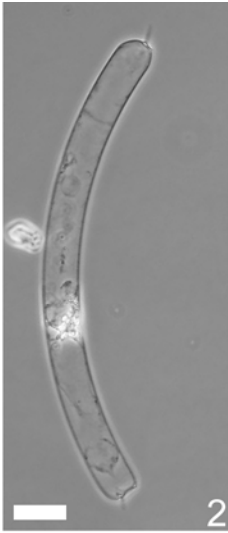
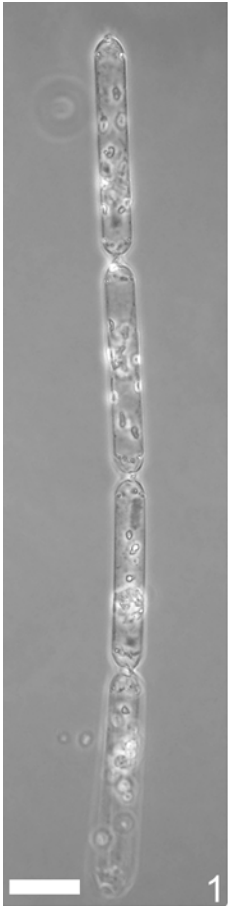


Plate 16 - Bacillariophyceae

1. *Rhizosolenia imbricata* Brightwell (scale bar: 20µm)
2. *Rh. imbricata* Brightwell (scale bar: 20µm)
3. *Rh. calcar-avis* Schultze (scale bar: 20 µm)
4. *Rh. calcar-avis* Schultze (scale bar: 20 µm)
5. *Rh. robusta* Norman in Pritchard (scale bar: 50 µm)
6. *Rh. setigera* Brightwell (scale bar: 40 µm)
7. *Skeletonema costatum* (Greville) Cleve (scale bar: 10µm)
8. *Thalassionema nitzschioides* (Grunow) Mereschkowsky (scale bar: 20µm)

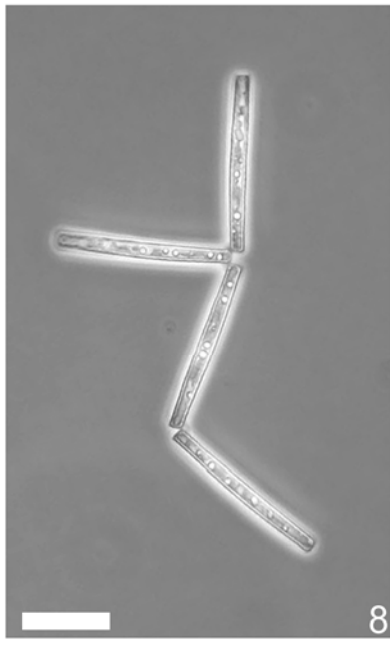
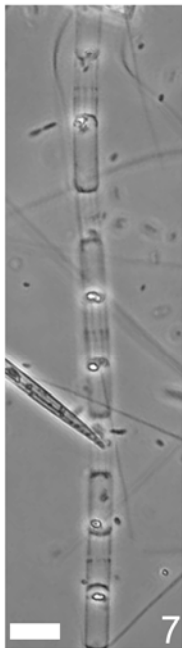
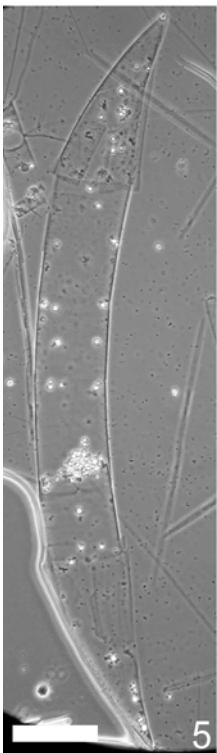
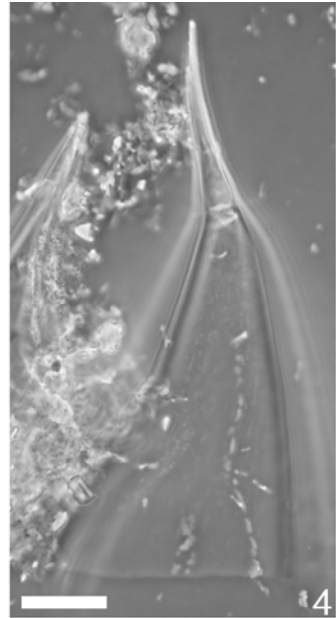
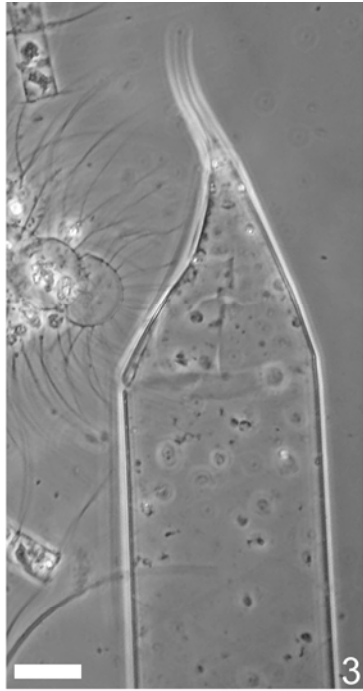
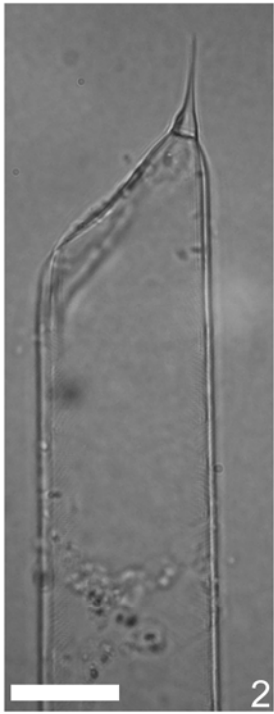
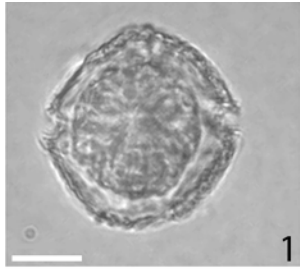


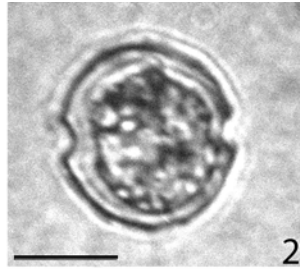
Plate 17 – Dinophyceae

Gonyaulacales

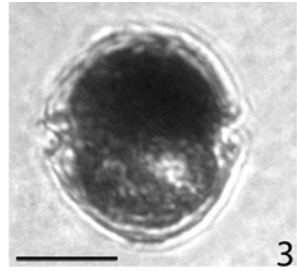
1. *Alexandrium insuetum* Balech (scale = 10 μm)
2. *A. cf. minutum* Halim (scale = 10 μm)
3. *Alexandrium* sp.1 (scale = 10 μm)
4. *Alexandrium* sp.2 (scale = 10 μm)
5. *Ceratium furca* (Ehrenberg) Claparède & Lachmann (scale = 20 μm)
6. *C. fusus* (Ehrenberg) Dujardin (scale = 20 μm)
7. *C. pentagonum* Gourret (scale = 20 μm)
8. *C. lineatum* (Ehrenberg) Cleve (scale = 20 μm)
9. *C. tripos* (Müller) Nitzsch (scale = 40 μm)
10. *C. macroceros* (Ehrenberg) Vanhöffen (scale = 50 μm)



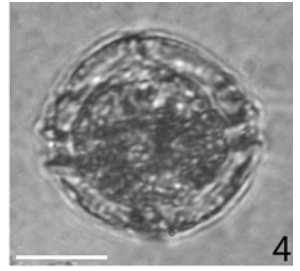
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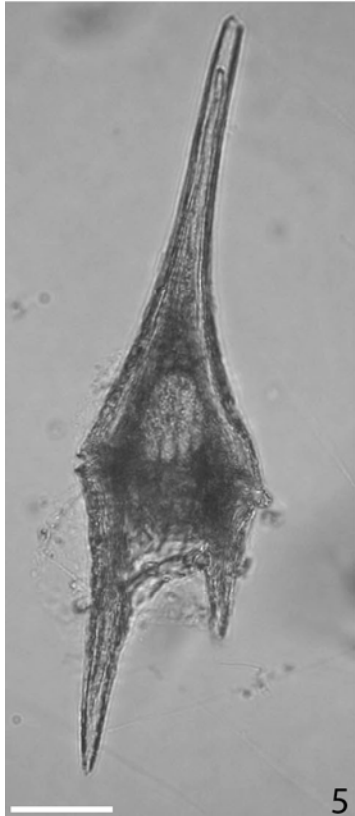
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3



4



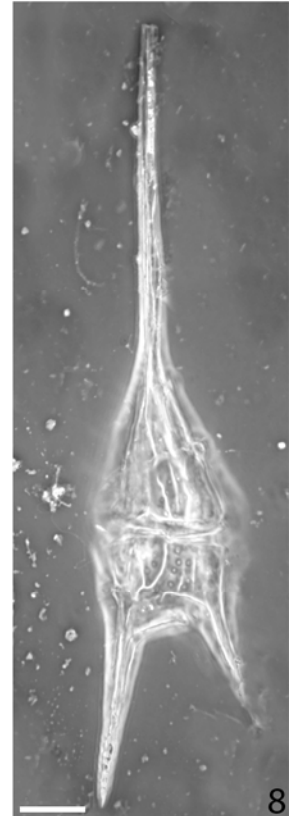
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6



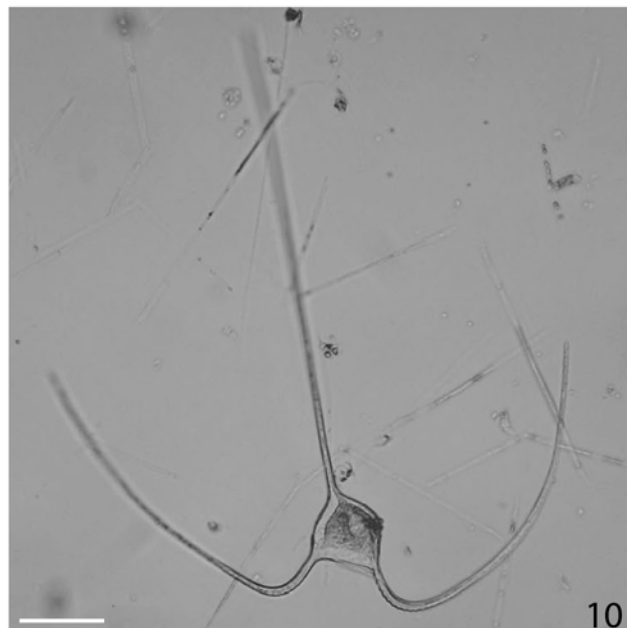
7



8



9



10

Plate 18 – Dinophyceae

Gonyaulacales

1. *Gonyaulax cf. membranacea* (Rossignol) Ellegaard (scale = 10 µm)
2. *G. spinifera* (Claparede et Lachmann) Diesing (scale = 10 µm)
3. *Goniodoma sphaericum* Murray et Whitting (scale = 10 µm)
4. *Ostreopsis ovata* Fukuyo (scale = 20 µm)
5. *Oxytoxum mediterraneum* Schiller (scale = 10 µm)
6. *Pyrophacus horologium* Stein (scale = 20 µm)
7. *P. horologium* Stein (scale = 20 µm)

Dinophysiales

8. *Dinophysis sacculus* Stein (scale = 20 µm)
9. *Dinophysis caudata* Saville-Kent (scale = 20 µm)
10. *Pseudophalacroma nasutum* Jorgensen (scale = 20 µm)

Gymnodiniales

11. *Gyrodinium fusiforme* Kofoid and Swezy (scale = 10 µm)
12. *Karlodinium veneficum* (Ballantine) Larsen (scale = 5 µm)
13. *K. veneficum* (Ballantine) Larsen (scale = 5 µm)
14. *Polycrikos* sp. (scale = 10 µm)

Prorocentrales

15. *Prorocentrum arcuatum* Issel (scale = 10 µm)
16. *Prorocentrum micans* Ehrenberg (scale = 10 µm)
17. *Prorocentrum lima* (Ehrenberg) Dodge (scale = 10 µm)
18. *Mesoporos perforatus* (Gran) Lillick (scale = 10 µm)

Peridiniales

19. *Diplopsalis lenticula* Bergh (scale = 20 µm)
20. *Diplopsalis lenticula* Bergh (scale = 20 µm)
21. *Heterocapsa circularisquama* Horiguchi (scale = 10 µm)
22. *Pentapharsodinium* sp. (scale = 10 µm)
23. *Peridinium quinquecorne* Abe (scale = 10 µm)

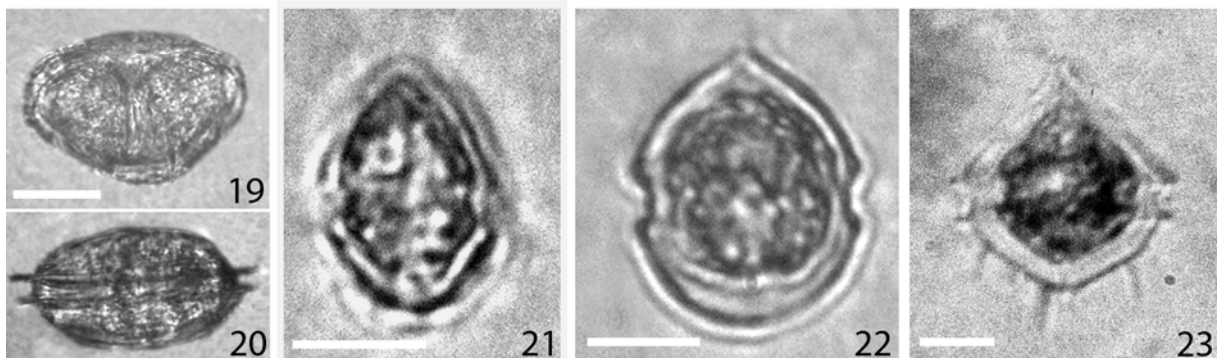
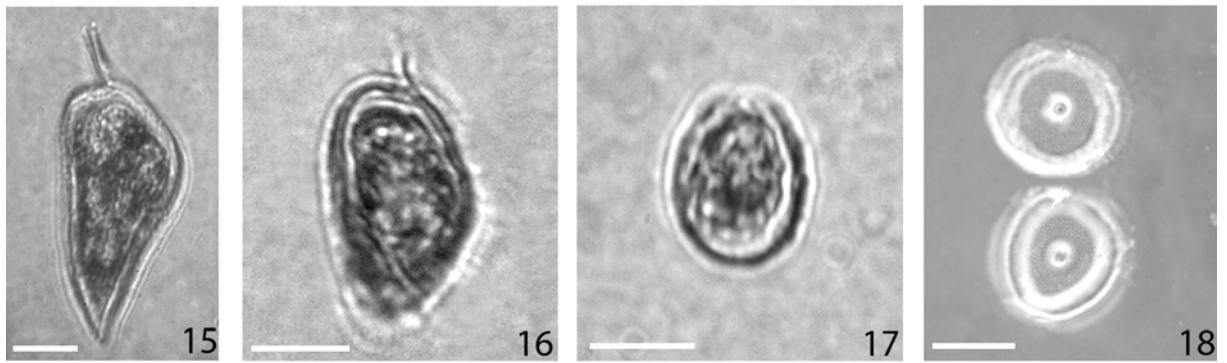
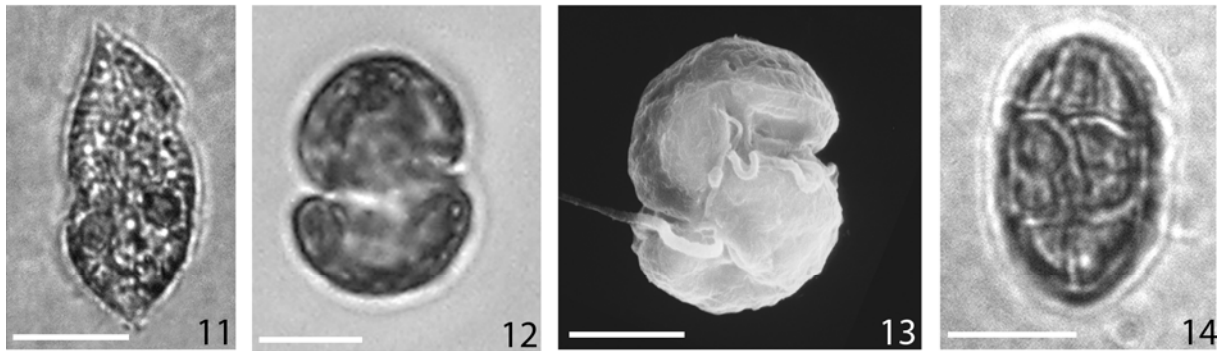
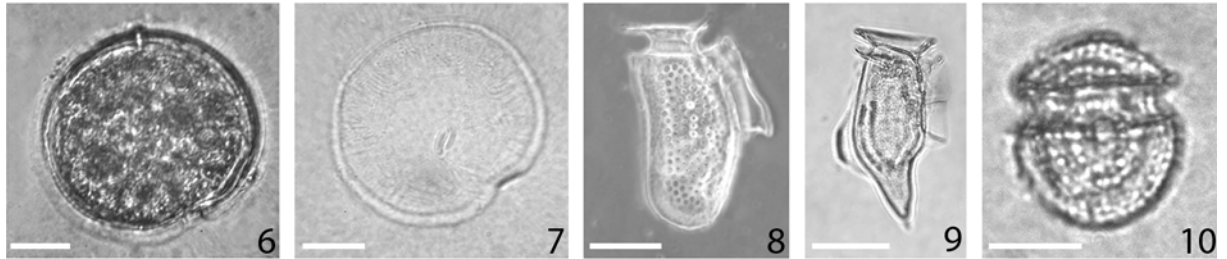
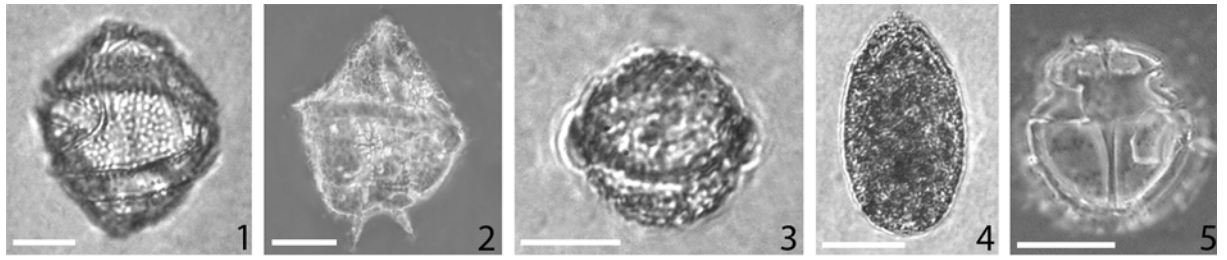


Plate 19 – Dinophyceae

Peridinales

1. *Protoperidinium conicoides* (Paulsen) Balech (scale = 10 μm)
2. *P. conicoides* (Paulsen) Balech (scale = 10 μm)
3. *P. cerasus* (Paulsen) Balech (scale = 10 μm)
4. *P. crassipes* (Kofoid) Balech (scale = 10 μm)
5. *P. diabolus* (Cleve) Balech (scale = 10 μm)
6. *P. divergens* (Ehrenberg) Balech (scale = 10 μm)
7. *P. grande* (Kofoid) Balech (scale = 10 μm)
8. *P. oceanicum* (Vanhöffen) Balech (scale = 10 μm)
9. *P. oviformis* (Dangeard) Balech (scale = 10 μm)
10. *P. pentagonum* (Gran) Balech (scale = 10 μm)
11. *P. tenuissimum* Kofoid (scale = 10 μm)
12. *Scrippsiella trochoidea* (Stein) Loeblich (scale = 10 μm)
13. *S. trochoidea* (Stein) Loeblich (scale = 10 μm)

