

Diatom Flora of the New Jersey Coastal Wetlands

FINAL REPORT

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Summary

In 2012-2017 the New Jersey Department of Environmental Protection sponsored several research projects aimed at evaluating the potential use of diatoms for monitoring present and inferring past environmental conditions in New Jersey coastal wetlands. The goal of this report is to document the most common diatom taxa from studied wetlands, with high-resolution light and electron microscopy images. The images of 499 taxa found in the sub-, inter- and supratidal habitats and in sediment core samples are presented. Genera with the most species are *Navicula* (148), *Fallacia* (34), *Nitzschia* (21), and *Parlibellus* (16). Some taxa could not be identified to species level and are listed under provisional names. Voucher slides are deposited in the Diatom Herbarium of the Academy of Natural Sciences of Drexel University.

List of diatom taxa

Division BACILLARIOPHYTA

Class *Coscinodiscophyceae* (CENTRIC DIATOMS)

Subclass *Chaetocerotophycidae*

Order *Leptocylindrales* Round & Crawford 1990

Family *Leptocylindraceae* Lebour 1930

Genus: ***Leptocylindrus* Cleve 1889, *Tenuicylindrus* Nanjappa & Zingone 2013**

***Leptocylindrus minimus*..... Plate 1; Figs 1-5**

***Leptocylindrus danicus* Plate 1; Fig. 6**

***Tenuicylindrus belgicus* Plate 1; Fig. 7**

Order *Chaetocerotales* Round & Crawford 1990

Family *Chaetocerotaceae* Ralfs in Pritchard 1861

Genus: ***Chaetoceros* Ehrenberg 1844**

***Chaetoceros affinis*..... Plate 2; Fig 1**

***Chaetoceros* sp. 1..... Plate 2; Fig 2**

***Chaetoceros brevis*..... Plate 3; Figs 1-5**

***Chaetoceros decipiens* Plate 4; Figs 1-7**

***Chaetoceros* cf. *elegans* Plate 5; Figs 1-6**

***Chaetoceros tenuissimus* Plate 6; Figs 1-10**

Order *Hemiaulales* Round & Crawford 1990

Family *Hemiaulaceae* Heiberg 1863

Genus: ***Hemialus* Ehrenberg 1844**

***Hemialus* sp. 1 Plate 7; Fig 1**

Subclass *Rhizosoleniophycidae*

Order *Rhizosoleniales* Silva 1962

Family *Rhizosoleniaceae* De Toni 1890

Genera: ***Rhizosolenia* Brightwell 1858; *Dactyliosolen* Castracane 1886; *Guinardia* Peragallo 1892**

***Rhizosolenia setigera*..... Plate 8; Figs 1-5**

***Rhizosolenia hyalina* Plate 8; Figs 6-7**

***Dactyliosolen fragilissimus* Plate 9; Figs 1-4**

***Dactyliosolen tenuijunctus*..... Plate 9; Figs 5**

***Guinardia* spp Plate 10; Figs 1-6**

Family *Probosciceae* De Toni 1890

Genus: ***Proboscia* Sundström 1986**

***Proboscia alata* Plate 11; Figs 1-6**

Subclass *Coscinodiscophycidae*

Order *Aulacoseirales* Crawford 1990

Family *Aulacoseiraceae* Crawford 1990

Genus: ***Aulacoseira* Thwaites 1848**

***Aulacoseira ambigua* Plate 12; Figs 1-9**

***Aulacoseira valida*..... Plate 12; Figs 10-11**

***Aulacoseira pusilla*..... Plate 12; Figs 12-14**

***Aulacoseira crassipunctata*..... Plate 12; Figs 15-17**

Order *Melosirales* Crawford 1990

Family *Melosiraceae* Kützinger 1844, *sensu emend.*

Genus: ***Melosira* Agardh 1824**

***Melosira nummuloides*..... Plate 13; Figs 1-9**

Order *Paraliales* Crawford 1990

Family *Paraliaceae* Crawford 1988

Genus: ***Paralia* Heiberg 1863**

***Paralia sulcata*..... Plate 14; Figs 1-21**

Family *Hyalodiscaceae* Lebour 1930, *sensu emend.*

Genus: ***Hyalodiscus* Ehrenberg 1845**

***Hyalodiscus scoticus*..... Plate 15; Figs 1-12**

Order *Coscinodiscales* Round & Crawford 1990

Family *Hemidiscaceae* Hendey 1937 *emend* Simonsen 1975

Genus: ***Actinocyclus* Ehrenberg 1837**

***Actinocyclus normanii*..... Plate 16; Figs 1-5**

***Actinocyclus theleus* Plate 17; Figs 1-8**

Family *Heliopeltaceae* Smith 1872

Genus: ***Actinoptychus* Ehrenberg 1841**

***Actinoptychus senarius* Plate 18; Figs 1-6**

Family *Coscinodiscaceae* Kützing 1844

Genus: ***Coscinodiscus* Ehrenberg 1840**

***Coscinodiscus centralis* Plate 19**

***Coscinodiscus granii* Plate 20; Figs 1-2**

***Coscinodiscus radiatus*..... Plate 20; Fig 3**

Subclass *Biddulphiophycidae*

Order *Biddulphiales* Krieger 1954

Family *Biddulphiaceae* Kützing 1844

Genus: ***Biddulphia* Gray 1821, *Neohuttonia* Kuntze 1898**

<i>Biddulphia alternans</i>	Plate 21; Figs 1-7
<i>Biddulphia antediluviana</i>	Plate 22; Fig. 1
<i>Biddulphia pulchella</i>	Plate 22; Figs 2-6
<i>Neohuttonia reichardtii</i>	Plate 23; Figs 1-7

Order *Hemiaulales* Round & Crawford 1990

Family *Hemiaulaceae* Heiberg 1863

Genus: *Eucampia* Ehrenberg 1839

<i>Eucampia zodiacus</i>	Plate 24
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Order *Triceratiales* Round & Crawford 1990

Family *Triceratiaceae* (Schütt) Lemmermann 1899

Genera: *Odontella* Agardh 1832; *Auliscus* Ehrenberg 1843;
Pseudoauliscus Schmidt 1875

<i>Triceratium favus</i>	Plate 25; Fig. 1
<i>Auliscus sculptus</i>	Plate 25; Fig. 2
<i>Pseudoauliscus peruvianus</i>	Plate 25; Fig. 3
<i>Odontella mobilensis</i>	Plate 26; Fig. 1
<i>Odontella aurita</i>	Plate 26; Figs 2-3

Family *Plagiogrammaceae* De Toni 1890

Genera: *Plagiogrammopsis* Hasle, von Stosch & Syvertsen 1983;
Dimeregramma Ralf in Pritchard 1861

<i>Dimeregramma minor</i>	Plate 27; Figs 1-11
<i>Plagiogrammopsis vanheurckii</i>	Plate 27; Figs 12-17

Order *Anaulales* Round & Crawford 1990

Family *Anaulaceae* (Schütt) Lemmermann 1899

Genera: *Anaulus* Ehrenberg 1844; *Eunotogramma* Weisse 1855

<i>Anaulus balticus</i>	Plate 28; Figs 1-17
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***Eunotogramma marinum*..... Plate 28; Figs 18-21**

***Eunotogramma dubium* Plate 29; Figs 1-15**

Subclass *Lithodesmiophycidae*

Order *Lithodesmiales* Round & Crawford 1990

Family *Lithodesmiaceae* Round 1990

Genera: ***Lithodesmium* Ehrenberg 1839; *Ditylum* Bailey 1862**

***Lithodesmium undulatum*..... Plate 30; Figs 1-5**

***Ditylum brightwellii*..... Plate 30; Figs 6-7**

Subclass *Thalassiosirophycidae*

Order *Thalassiosirales* Glezer & Makarova 1986

Family *Skeletonemataceae* Lebour 1930, *sensu emend.*

Genus: ***Skeletonema* Greville 1865**

***Skeletonema costatum*..... Plate 31**

***Skeletonema marinoi*..... Plate 32**

***Skeletonema menzelli*..... Plate 33**

Family *Thalassiosiraceae* Lebour 1930

Genera: ***Conticribra* Williams; *Thalassiosira* Cleve 1873; *Minidiscus*
Hasle 1973**

***Conticribra guillardii* Plate 34**

***Conticribra weissflogii*..... Plate 35**

***Thalassiosira nordenskioeldii* Plate 36**

***Thalassiosira angulata* Plate 37**

***Thalassiosira cedarkeyansis*..... Plate 38; Figs 1-7**

***Thalassiosira tenera* Plate 38; Figs 8-15**

***Thalassiosira nanolineata*..... Plate 38; Figs 16-17**

***Thalassiosira oestrupii* Plate 38; Figs 18-26**

<i>Thalassiosira concaviuscula</i>	Plate 39
<i>Thalassiosira levanderi</i>	Plate 40
<i>Thalassiosira lundiana</i>	Plate 41
<i>Thalassiosira eccentrica</i>	Plate 42
<i>Thalassiosira</i> cf. <i>oestrupii</i>	Plate 43; Fig. 1
<i>Thalassiosira</i> cf. <i>levanderi</i>	Plate 43, Figs 2-7
<i>Thalassiosira curviseriata</i>	Plate 43, Figs 8-13
<i>Thalassiosira</i> sp. 2.....	Plate 43, Figs 14-16
<i>Thalassiosira grvida</i>	Plate 44
<i>Thalassiosira minima</i>	Plate 45
<i>Minidiscus proschkinae</i>	Plate 46
<i>Minidiscus comicus</i>	Plate 47
<i>Minidiscus trioculatus</i>	Plate 48

Family *Stephanodiscaceae* Glezer & Makarova 1986

Genera: *Cyclotella* (Kützing) Brébisson 1838, *Discotella* Houk & Klee
2004

<i>Cyclotella atomus</i> var. <i>gracilis</i>	Plate 49
<i>Cyclotella atomus</i> var. <i>atomus</i>	Plate 50
<i>Cyclotella marina</i>	Plate 51
<i>Cyclotella choctawacheeana</i>	Plate 52
<i>Cyclotella striata</i>	Plate 53; Figs 18-20
<i>Cyclotella</i> sp. 5.....	Plate 53; Figs 21-26
<i>Cyclotella meneghiniana</i>	Plate 53; Figs 27-33
<i>Discotella stelligera</i>	Plate 53; Figs 34-35
<i>Cyclotella katiana</i>	Plate 54

Cyclotella cf. katiana Plate 55

Cyclotella sp. 1..... Plate 56

Cyclotella sp. 2..... Plate 57

Subclass *Cymatosirophyceae*

Order *Cymatosirales* Round & Crawford 1990

Family *Cymatosiraceae* Hasle, von Stosch & Syvertsen 1983

Genera: *Cymatosira* Grunow 1862; *Campylosira* Grunow 1885;
Brockmaniella Hasle, von Stosch & Syvertsen 1983;
Arcocellulus Hasle, von Stosch & Syvertsen 1983;
Minutocellus Hasle, von Stosch & Syvertsen, 1983
Extubocellulus Hasle, von Stosch & Syvertsen 1983;
Pierrecomperia Sabbe, Vyverman & Ribero 2010

Cymatosira belgica Plate 58

Cymatosira minutissima..... Plate 59

Campylosira alexandricum Plate 60; Figs 1-2

Campylosira cymbelliformis..... Plate 60; Figs 3-4

Brockmaniella brockmanii..... Plate 60; Figs 5-13

Extubocellulus sp. 1 Plate 60; Figs 14-18

Minutocellus polymorphus..... Plate 60; Figs 19-21

Arcocellulus cornucervis..... Plate 61

Pierrecomperia catenuloides..... Plate 62

Class *Fragilariophyceae* (ARAPHID, PENNATE DIATOMS)

Subclass *Fragilariophycidae*

Order *Fragilariales* Silva 1962, *sensu emend.*

Family *Fragilariaceae* Greville 1833

Genera: *Fragilaria* Lyngbye 1819; *Staurosirella* Williams & Round
1987; *Staurosira* Ehrenberg 1843; *Pseudostaurosira* Williams
& Round 1987; *Punctastriata* Williams & Round 1987;

Fragilariaforma Williams & Round 1988; *Martyana* ;
Diatoma de Candole 1805; *Meridion* Agardh 1824; *Synedra*
Ehrenberg 1830; *Ctenophora* Williams & Round 1986;
Neosynedra Williams & Round 1986, *Tabularia* Williams &
Round 1986, *Martyana* Round 1990, *Opephora* Petit 1882,
Trachysphenia Petit 1877, *Pteroncola* Holmes & Croll 1984,
Asterionellopsis Round 1990

<i>Fragilaria amicornum</i>	Plate 63; Figs 1-26
<i>Fragilaria</i> sp. 10	Plate 63; Figs 27-48
<i>Fragilaria bronkei</i>	Plate 64; Figs 1-13
<i>Pseudostaurosira</i> cf. <i>brevistriata</i>	Plate 64; Figs 14-20
<i>Fragilaria</i> sp. 3	Plate 64; Figs 21-24
<i>Tabularia waernii</i>	Plate 64; Figs 25-41
<i>Fragilaria cassubica</i>	Plate 65
<i>Martyana atomus</i>	Plate 66
<i>Stauroforma exiguiformis</i>	Plate 67
<i>Staurosira punctiformis</i>	Plate 68
<i>Psammogramma vigoense</i>	Plate 69
<i>Fragilaria gedanensis</i>	Plate 70; Figs 1-10
<i>Fragilaria</i> sp. 1	Plate 70; Figs 11-16
<i>Pseudostaurosira subsalina</i>	Plate 71
<i>Pseudostaurosira perminuta</i>	Plate 72
<i>Pseudostaurosira medliniae</i>	Plate 73
<i>Pseudostaurosira</i> sp. 1.....	Plate 74
<i>Pseudostaurosira</i> sp. 2.....	Plate 75; Figs 1-11
<i>Pseudostaurosiropsis</i> sp. 1	Plate 75; Figs 12-16
<i>Pseudostaurosiropsis</i> sp. 2	Plate 76

<i>Pseudostaurosiropsis</i> sp. 4	Plate 77
<i>Pseudostaurosira trainorii</i>	Plate 78
<i>Fragilaria sopotensis</i>	Plate 79
<i>Synedra famelica</i>	Plate 80
<i>Tabularia fasciculata</i>	Plate 81
<i>Opephora</i> sp. 2	Plate 82; Figs 1-18
<i>Opephora</i> sp. 8	Plate 82; Figs 19-37
<i>Opephora</i> sp. 13	Plate 83
<i>Asterionellopsis glacialis</i>	Plate 84

Order *Tabellariales* Round 1990

Family *Tabellariaceae* Kützing 1844

Genus: *Tabellaria* Ehrenberg & Kützing 1844

<i>Tabellaria fenestrata</i>	Plate 85; Figs 1-4
<i>Tabellaria flocculosa</i>	Plate 85; Fig. 5

Order *Licmophorales* Round 1990

Family *Licmophoraceae* Kützing 1844

Genus: *Licmophora* Agardh 1827

<i>Licmophora grandis</i>	Plate 85; Figs 6-7
<i>Licmophora paradoxa</i> var. <i>tincta</i>	Plate 85; Fig. 8
<i>Licmophora abbreviata</i>	Plate 86

Order *Rhaphoneidales* Round 1990

Family *Rhaphoneidaceae* Forti 1912

Genera: *Rhaphoneis* Ehrenberg 1844, *Delphineis* Andrews 1977,
Neodelphineis Takano 1982

<i>Rhaponeis amphiceros</i>	Plate 87
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***Rhaponeis crinigera* Plate 88**

***Delphineis minutissima* Plate 89**

Family *Psammodiscaceae* Round & Mann 1990

Genus: ***Psammodiscus* Round & Mann 1990**

Order *Ardissoneales* Round 1990

Family *Ardissonaceae* Round 1990

Genus: ***Ardissonea* De Notaris 1870**

***Ardissonea robusta* Plate 90**

Order *Thalassionematales* Round 1990

Family *Thalassionemataceae* Round 1990

Genus: ***Thalassionema* Grunow & Hustedt 1932**

***Thalassionema nitzschioides* Plate 91**

Order *Rhabdonematales* Round & Crawford 1990

Family *Rhabdonemataceae* Round & Crawford 1990

Genus: ***Rhabdonema* Kützing 1844**

***Rhabdonema adriaticum* Plate 92**

Order *Striatellales* Round & Crawford 1990

Family *Striatellaceae* Round & Crawford 1990

Genera: ***Striatella* Agardh 1832, *Grammatophora* Ehrenberg 1840**

***Striatella unipunctata* Plate 93**

***Grammatophora oceanica* Plate 94; Figs 1-10**

***Grammatophora angulosa* Plate 94; Figs 11-19**

Class *Bacillariophyceae* (RAPHID, PENNATE DIATOMS)

Subclass *Eunotiophycidae*

Order *Eunotiales* Silva 1962

Family *Eunotiaceae* Kützing 1844

Genus: *Eunotia* Ehrenberg 1837

<i>Eunotia myrmica</i>	Plate 95; Figs 1-2
<i>Eunotia glacialis</i>	Plate 95; Figs 3-4
<i>Eunotia naegeli</i>	Plate 95; Figs 5-6
<i>Eunotia serra</i>	Plate 96; Fig. 1
<i>Eunotia pectinalis</i>	Plate 96; Figs 2-6
<i>Eunotia minor</i>	Plate 96; Figs 7-10
<i>Eunotia bidentula</i>	Plate 96; Fig. 11
<i>Eunotia sudetica</i>	Plate 96; Figs 12-15
<i>Eunotia nymannia</i>	Plate 97; Figs 1-11
<i>Eunotia tenella</i>	Plate 97; Figs 12-13
<i>Eunotia latinasuta</i>	Plate 97; Figs 14-15
<i>Eunotia paludosa</i>	Plate 97; Figs 16-18
<i>Eunotia rhomboidea</i>	Plate 97; Figs 19-21
<i>Eunotia incisadistans</i>	Plate 97; Figs 22-25
<i>Eunotia incisa</i>	Plate 97; Figs 26-35

Subclass *Bacillariophycidae*

Order *Lyrellales* Mann 1990

Family *Lyrellaceae* Mann 1990

Genera: *Lyrella* Karayeva 1595, *Petroneis* Stickle & Mann 1990

<i>Lyrella amphoroides</i>	Plate 98, Fig. 1
<i>Navicula implana</i>	Plate 98, Fig. 2
<i>Lyrella clavata</i>	Plate 98, Figs 3-7
<i>Petroneis granulata</i>	Plate 99, Figs 1-5

***Petroneis marina* Plate 99, Figs 6-7**

***Petroneis humerosa* Plate 99, Figs 8**

Order *Mastogloiales* Mann 1990

Family *Mastogloiaceae* Mereschkowsky 1903

Genus: *Mastogloia* Thwaites & Smith 1856

***Mastogloia pumila* Plate 100, Figs 1-11**

***Mastogloia pusilla* Plate 100, Figs 12-17**

***Mastogloia linearis* Plate 100, Fig. 18**

***Mastogloia lanceolata* Plate 100, Figs 19-20**

***Mastogloia erythraea* Plate 100, Figs 21-22**

***Mastogloia braunii* Plate 100, Fig. 23**

***Mastogloia smithii* Plate 100, Figs 24-27**

Order *Cymbellales* Mann 1990

Family *Rhoicospheniaceae* Chen & Zhu 1983

Genera: *Rhoicosphenia* Grunow 1860, *Gomphonemopsis* Medlin 1986

***Gomphonemopsis* sp. 2 Plate 101, Figs 1-3**

***Gomphonemopsis* sp. 3 Plate 101, Figs 12-17**

***Gomphonemopsis* sp. 1 Plate 101, Figs 12-17**

***Rhoicosphenia abbreviata* Plate 101, Figs 1-11**

Family *Anomoeoneidaceae* Mann 1990

Genus: *Staurophora* Mereschkowsky 1903, *Adlafia* Lange-Bertalot
1998

***Adlafia* sp. 3 Plate 102**

***Adlafia* sp. 4 Plate 103**

Family *Cymbellaceae* Greville 1833

Genera: *Placoneis* Mereschkowsky 1903, *Cymbella* Agardh 1830,
Brebissonia Grunow 1860, *Encyonema* Kützing 1833,
Gomphocymbella Müller 1905

Brebissonia lanceolata Plate 104

Order *Achnanthes* Silva 1962

Family *Achnanthaceae* Kützing 1844, *sensu emend.*

Genera: *Achnanthes* Bory 1822

Achnanthes brevipes..... Plate 105

Achnanthes curvirostrum..... Plate 106, Figs 1-4

Achnanthes danica Plate 106, Figs 5-8

Achnanthes pseudoobliqua Plate 106, Figs 9-11

Achnanthes leonardi Plate 106, Figs 12-13

Family *Cocconeidaceae* Kützing 1844

Genera: *Cocconeis* Ehrenberg 1835, *Campyloneis* Grunow 1862,
Anorthoneis Grunow 1868, *Cocconeopsis* Witkowski, Lange-
Bertalot & Metzeltin 2000, *Amphicocconeis* Stefano &
Marino 2003

Cocconeis neothumensis Plate 107

Cocconeis peltoides..... Plate 108; Figs 1-12

Cocconeis sigillata..... Plate 108; Figs 13-22

Cocconeis stauroneiformis..... Plate 109

Cocconeis cf. scutellum..... Plate 110; Figs 1-11

Cocconeis Sp. 5..... Plate 110; Figs 12-21

Amphicocconeis disculoides..... Plate 111

Cocconeopsis breviata Plate 112; Figs 1-14

Cocconeopsis fraudulenta..... Plate 112; Figs 15-21

Cocconeopsis sp. 1..... Plate 112; Fig. 22

***Cocconeopsis* sp. 2..... Plate 112;Figs 23-24**

Family *Achnanthidiaceae* Mann 1990

Genera: *Achnanthidium* Kützing 1844, *Eucocconeis* Cleve 1896,
Madinithidium Desrosiers, Witkowski, Riaux-Gobin,
Zglobicka, Kurzydowski, Eulin, Leflaive, & Ten-Hage 2014,
Karayevia Round & Bukhtiyarova 1996, *Planothidium* Round
& Bukhtiyarova 1996, *Astartiella* Witkowski, Lange-Bertalot
& Metzeltin, 1998

***Astartiella bahusiensis*..... Plate 113**

***Planothidium delicatulum*..... Plate 114**

***Planothidium* sp. 11..... Plate 115**

***Planothidium rodriguense*..... Plate 116**

***Planothidium* cf. *frequentissimum* Plate 117**

***Planothidium* cf. *frequentissimum* morphotype2. Plate 118**

***Planothidium deperditum*..... Plate 119**

***Planothidium lemermanni* Plate 120**

***Planothidium oculatum*..... Plate 121**

***Karayevia submarina*..... Plate 122; Figs 1-15**

***Karayevia amoena* Plate 122; Figs15-21**

***Madinithidium capitatum*..... Plate 123**

***Madinithidium flexuistriatum*..... Plate 124**

Order *Naviculales* Bessey 1907 *sensu emend.*

Suborder *Neidiineae* Mann 1990

Family *Berkeleyaceae* Mann 1990

Genera: *Parlibellus* Cox 1988, *Berkeleya* Greville 1827,

***Parlibellus crucicula* Plate 125; Figs 1-2**

***Parlibellus grevilleoides* Plate 125; Fig. 3**

<i>Parlibellus</i> sp. 1	Plate 125; Figs 4-5
<i>Parlibellus plicatus</i>	Plate 125; Figs 6-7
<i>Parlibellus</i> sp. 8	Plate 125; Figs 8-9
<i>Parlibellus</i> sp.9	Plate 125; Figs10-13
<i>Parlibellus</i> cf. <i>crucicula</i>	Plate 126; Figs 1-9
<i>Parlibellus</i> sp. 3	Plate 126; Fig. 10
<i>Parlibellus</i> sp. 6	Plate 126; Fig. 11
<i>Parlibellus</i> sp. 7	Plate 126; Fig. 12
<i>Parlibellus</i> sp. 10	Plate 126; Fig. 13
<i>Parlibellus</i> sp. 11	Plate 126; Fig. 14
<i>Parlibellus</i> sp. 12	Plate 126; Fig. 15
<i>Parlibellus</i> sp. 13	Plate 126; Fig. 16
<i>Parlibellus protracta</i>	Plate 126; Figs17-18
<i>Parlibellus</i> sp. 5	Plate 126; Figs19-21
<i>Parlibellus</i> sp. 14	Plate 126; Fig. 22
<i>Parlibellus</i> sp. 15	Plate 126; Fig. 23
<i>Parlibellus</i> sp. 2	Plate 126; Fig. 24
<i>Parlibellus</i> sp. 4	Plate 126; Figs25-36
<i>Parlibellus hendeyi</i>	Plate 126; Figs37-40
<i>Berkeleya rutilans</i>	Plate 127

Family *Cosmioneidaceae* Mann 1990

Genus: *Cosmioneis* Mann & Stickle 1990

<i>Cosmioneis pusila</i>	Plate 128
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Family *Scolioneidaceae* Mann 1990

Genus: *Scolioneis* Mann 1990

Scolioneis tumida..... Plate 129; Figs 1-5

Scolioneis sp 1 Plate 129; Fig. 6

Family *Diadesmidaceae* Mann 1990

Genera: *Humidophila* Lowe, Kociolek, Johansen, Van de Vijver,
Lange-Bertalot & Kopalová, 2014, Mann 1990, *Luticola*
Mann 1990, *Olifantiella* Riaux-Gobin & Compère 2009.

Luticola mutica..... Plate 130

Olifantiella sp. 1 Plate 131

Family *Amphipleuraceae* Grunow 1862

Genera: *Amphipleura* Kützing 1844, *Frustulia* Rabenhosrt 1853,
Halamphora Levkov 2009

Halamphora acutiuscula..... Plate 132

Halamphora aponina Plate 133

Halamphora crenatuloides..... Plate 134

Halamphora tenerrima..... Plate 135

Halamphora coffeaeformis Plate 136

Halamphora cymbifera Plate 137

Halamphora lineata..... Plate 138

Halamphora mosensis Plate 139

Amphora polita Plate 140

Halamphora staurophora..... Plate 141

Halamphora laevis..... Plate 142; Fig.1

Amphora abludens..... Plate 142; Figs 2-7

Amphora sublaevis Plate 142; Figs 8-9

Family *Scoliotropidaceae* Mereschowsky 1903

Genera: *Scoliotropis* Cleve 1894, *Biremis* Mann & Cox 1990

Biremis lucens Plate 143

Suborder *Sellaphorineae* Mann 1990

Family *Sellaphoraceae* Mereschkowsky 1902

Genera: *Sellaphora* Mereschkowsky 1902, *Fallacia* Stickle & Mann
1990

Fallacia pygmaea..... Plate 143

Fallacia pseudolitoricola..... Plate 144; Figs 1-5

Fallacia sp. 8 Plate 144; Figs 6-8

Fallacia litoricola Plate 144; Figs 9-18

Fallacia sp. 7 Plate 144; Figs 19-24

Fallacia forcipata Plate 145; Figs 1-5

Fallacia scaldensis..... Plate 145; Figs 7-10

Fallacia sp. 14 Plate 145; Figs 11-17

Fallacia veterana Plate 145; Figs 18-21

Fallacia nyella Plate 146; Figs 1-5

Fallacia florinae Plate 146; Figs 15-27

Fallacia cryptolyra..... Plate 147; Figs 1-15

Fallacia melanocephala Plate 147; Figs 18-33

Fallacia amphipleuroides..... Plate 148; Figs 1-17

Fallacia margino-punctata Plate 148; Figs 18-30

Fallacia sp. 1 Plate 149; Figs 1-9

Fallacia cf. *tenera*..... Plate 149; Figs 10-13

Fallacia tenera..... Plate 149; Fig. 14

Fallacia cf. *teneroides* Plate 149; Figs 15-21

Fallacia teneroides Plate 149; Fig. 22

<i>Fallacia auriculata</i>	Plate 149; Figs23-30
<i>Fallacia</i> sp. 12	Plate 149; Figs31-37
<i>Fallacia</i> sp. 9	Plate 150; Figs 1-3
<i>Fallacia wuestii</i>	Plate 150; Figs 4-5
<i>Fallacia</i> sp. 11	Plate 150; Fig. 6
<i>Fallacia</i> sp. 16	Plate 150; Fig. 7
<i>Fallacia</i> sp. 3	Plate 150; Fig. 8
<i>Fallacia fracta</i>	Plate 150; Figs 9-12
<i>Fallacia pulchella</i>	Plate 150; Figs13-15
<i>Fallacia</i> sp. 2	Plate 159; Fig. 16
<i>Fallacia</i> sp. 10	Plate 159; Figs17-19
<i>Fallacia aequorea</i>	Plate 150; Fig 20-39
<i>Fallacia gemmifera</i>	Plate 151
<i>Fallacia</i> cf. <i>fossulae</i>	Plate 152

Family *Pinnulariaceae* Mann 1990

Genus: *Pinnularia* Ehrenberg 1843

<i>Pinnularia aestuarii</i>	Plate 153
<i>Pinnularia birnirkiana</i>	Plate 154
<i>Pinnularia</i> cf. <i>brebissonii</i> var. <i>minuta</i>	Plate 155; Figs 1-12
<i>Pinnularia</i> cf. <i>divergentissima</i>	Plate 155; Figs13-24
<i>Pinnularia quadratera</i> var. <i>quadratera</i>	Plate 155; Figs 25-32
<i>Pinnularia viridiformis</i>	Plate 156
<i>Pinnularia viridis</i>	Plate 157

Suborder *Diploneidineae* Mann 1990

Family *Diploneidiaceae* Mann 1990

Genus: *Diploneis* Ehrenberg & Cleve 1894

<i>Diploneis bombus</i>	Plate 158; Figs 1-5
<i>Diploneis didyma</i>	Plate 158; Figs 6-10
<i>Diploneis stroemi</i>	Plate 159
<i>Diploneis</i> cf. <i>litoralis</i>	Plate 160
<i>Diploneis</i> cf. <i>smithii</i>	Plate 161
<i>Diploneis</i> cf. <i>sejuncta</i>	Plate 162

Suborder *Naviculineae* Hendey 1937

Family *Naviculales incertae sedis*

Genera: *Mayamaea* Lange-Bertalot 1997, *Amicula* Witkowski 2000,
Chamaepinnularia Wetzel & Ector 2013

<i>Mayamaea fossalis</i> var. <i>obsidialis</i>	Plate 163
<i>Amicula specululum</i>	Plate 164
<i>Chamaepinnularia</i> aff. <i>begeri</i>	Plate 165; Figs 1-11
<i>Chamaepinnularia</i> sp. 7	Plate 165; Figs 12-19
<i>Chamaepinnularia</i> sp. 12	Plate 165; Figs 20-28
<i>Chamaepinnularia</i> sp. 14	Plate 165; Figs 29-32
<i>Chamaepinnularia</i> sp. 8	Plate 165; Figs 33-42
<i>Chamaepinnularia</i> sp.	Plate 165; Figs 43-47
<i>Chamaepinnularia wiktoriae</i>	Plate 165; Figs 48-52

Family *Naviculaceae* Kützing 1844

Genera: *Navicula* Bory 1822, *Trachyneis* Cleve 1894, *Seminavis* Mann
1990, *Haslea* Simonsen 1974, *Pinnunavis* Okuno, 1975,
Cymatoneis Cleve 1894

<i>Navicula palpebralis</i> (part 2)	Plate 166
<i>Navicula palpebralis</i> (part 2)	Plate 167

<i>Navicula digitoradiata</i>	Plate 168
<i>Navicula peregrina</i>	Plate 169
<i>Navicula perigrinopsis</i>	Plate 170
<i>Navicula kevfangensis</i>	Plate 171
<i>Navicula hanseatica</i>	Plate 172
<i>Navicula sieminskiae</i>	Plate 173; Figs 1-12
<i>Navicula vaneerii</i>	Plate 173; Figs 13-15
<i>Navicula lindae</i>	Plate 173; Figs 16-18
<i>Navicula</i> cf. <i>valida</i> var. <i>minuta</i>	Plate 173; Fig. 19
<i>Navicula</i> sp. 104	Plate 173; Fig. 20
<i>Navicula</i> sp. 52	Plate 174
<i>Navicula digitoconvergens</i>	Plate 175; Figs 1-9
<i>Navicula</i> cf. <i>digitoconvergens</i>	Plate 175; Figs 10-18
<i>Navicula normalis</i>	Plate 175; Figs 19-21
<i>Navicula</i> cf. <i>normalis</i>	Plate 175; Figs 10-14
<i>Navicula microdigitoradiata</i>	Plate 176; Figs 1-13
<i>Navicula cincta</i>	Plate 176; Figs 14-25
<i>Navicula halinae</i>	Plate 177
<i>Navicula directa</i>	Plate 178
<i>Navicula antverpiensis</i>	Plate 179
<i>Navicula</i> cf. <i>geronimensis</i>	Plate 180; Figs 1-8
<i>Navicula agnita</i>	Plate 180; Figs 9-12
<i>Navicula</i> cf. <i>directa</i>	Plate 180; Figs 13-14
<i>Navicula</i> sp. 62	Plate 180; Figs 16-31
<i>Navicula</i> sp. 27	Plate 180; Fig. 17

<i>Navicula</i> cf. <i>agnita</i>	Plate 180; Fig. 18
<i>Navicula salinarum</i>	Plate 181; Figs 1-7
<i>Navicula salinarum</i> var. <i>minima</i>	Plate 181; Figs 9-13
<i>Navicula salinarum</i> var. <i>rostrata</i>	Plate 181; Figs 14-23
<i>Navicula jonssonii</i>	Plate 182
<i>Navicula willisiae</i>	Plate 183; Figs 1-20
<i>Navicula</i> sp. 29	Plate 183; Figs 21-24
<i>Navicula</i> sp. 66	Plate 183; Figs 25-34
<i>Navicula</i> sp. 58	Plate 183; Figs 35-36
<i>Navicula</i> sp. 18	Plate 183; Figs 37-39
<i>Navicula</i> cf. <i>agatkae</i>	Plate 183; Figs 40-45
<i>Navicula</i> sp. 42	Plate 183; Figs 46-47
<i>Navicula</i> sp. 108	Plate 183; Figs 50-51
<i>Navicula consentanea</i>	Plate 184
<i>Navicula salinicola</i>	Plate 185
<i>Navicula</i> sp. 63	Plate 186
<i>Navicula flantica</i>	Plate 187; Figs 1-10
<i>Navicula spartinetensis</i>	Plate 187; Figs 11-14
<i>Navicula</i> cf. <i>spartinetensis</i>	Plate 187; Figs 16-19
<i>Navicula flagellifera</i>	Plate 187; Figs 20-21
<i>Navicula</i> cf. <i>flagellifera</i>	Plate 187; Fig. 22
<i>Navicula</i> cf. <i>longa</i> var. <i>irregularis</i>	Plate 187; Figs 23-24
<i>Navicula escambia</i>	Plate 187; Fig. 25
<i>Navicula arenaria</i>	Plate 187; Fig. 26
<i>Navicula</i> cf. <i>transistantioides</i>	Plate 187; Fig. 27

<i>Navicula agatkae</i>	Plate 187; Figs 28-32
<i>Navicula normaloides</i>	Plate 187; Fig. 33
<i>Navicula gregaria</i>	Plate 188; Figs 1-15
<i>Navicula</i> sp. 34	Plate 188; Figs 16-30
<i>Navicula ammophila</i>	Plate 189; Figs 1-11
<i>Navicula</i> sp. 111	Plate 189; Figs 12-19
<i>Navicula apta</i>	Plate 189; Figs 20-22
<i>Navicula hamiltonii</i>	Plate 189; Figs 23-27
<i>Navicula</i> sp. 17	Plate 189; Figs 28-31
<i>Navicula</i> sp. 112	Plate 189; Figs 32-33
<i>Navicula</i> cf. <i>cryptocephala</i>	Plate 190; Figs 1-12
<i>Navicula</i> cf. <i>phyllepta</i>	Plate 190; Fig. 13
<i>Navicula transitans</i> var. <i>derasa</i>	Plate 190; Fig. 14
<i>Navicula</i> sp. 114	Plate 190; Fig. 15
<i>Navicula</i> cf. <i>salinicola</i>	Plate 190; Figs 16-20
<i>Navicula pseudosalinarioides</i>	Plate 190; Figs 21-26
<i>Navicula biskanterae</i>	Plate 190; Figs 27-35
<i>Navicula dilucida</i>	Plate 190; Figs 36-43
<i>Navicula</i> cf. <i>gregaria</i>	Plate 191; Fig. 1
<i>Navicula vandamii</i> var. <i>mertensiae</i>	Plate 191; Figs 2-4
<i>Navicula</i> sp. 22	Plate 191; Fig. 5
<i>Navicula</i> sp. 31	Plate 191; Fig. 6
<i>Navicula</i> sp. 5	Plate 191; Fig. 7
<i>Navicula</i> sp. 14	Plate 191; Fig. 8
<i>Navicula</i> sp. 37	Plate 191; Figs 9-25

<i>Navicula</i> sp. 101	Plate 192; Figs 1-11
<i>Navicula</i> sp. 4	Plate 192; Figs 12-13
<i>Navicula</i> sp. 55	Plate 192; Figs 14-15
<i>Navicula diserta</i>	Plate 192; Figs 16-21
<i>Navicula</i> sp. 51	Plate 192; Figs 22-34
<i>Navicula vekhovii</i>	Plate 192; Figs 35-37
<i>Navicula</i> sp. 9	Plate 192; Fig. 38
<i>Navicula</i> sp. 15	Plate 192; Figs. 39
<i>Navicula</i> sp. 33	Plate 192; Fig. 40
<i>Navicula</i> sp. 1	Plate 193
<i>Navicula perminuta</i>	Plate 194; Figs 1-24
<i>Navicula</i> sp. 23	Plate 194; Figs 25-31
<i>Navicula microcari</i>	Plate 195; Figs 1-17
<i>Navicula</i> sp. 53	Plate 195; Figs 18-20
<i>Navicula</i> cf. <i>libonensis</i>	Plate 195; Figs 21-24
<i>Navicula</i> cf. <i>microcari</i>	Plate 195; Figs 25-31
<i>Navicula platyventris</i>	Plate 196; Figs 1-12
<i>Navicula viminoides</i>	Plate 196; Figs 13-24
<i>Navicula binodulosa</i>	Plate 197; Figs 1-10
<i>Navicula pargemina</i>	Plate 197; Figs 11-15
<i>Navicula</i> cf. <i>arenaria</i>	Plate 197; Figs 16-17
<i>Navicula</i> sp. 24	Plate 197; Fig. 18
<i>Navicula</i> sp. 60	Plate 197; Fig. 19
<i>Navicula</i> sp. 12	Plate 197; Fig. 20
<i>Navicula</i> sp. 57	Plate 197; Fig. 21

<i>Navicula bipustulata</i>	Plate 198; Figs 1-3
<i>Navicula</i> sp. 69	Plate 198; Fig. 4
<i>Navicula cancellata</i>	Plate 198; Figs 5-8
<i>Navicula</i> sp. 47	Plate 198; Figs 9-14
<i>Navicula</i> sp. 7	Plate 198; Figs 15-18
<i>Navicula</i> sp. 25	Plate 198; Fig. 19
<i>Navicula</i> cf. <i>duerrenbergiana</i>	Plate 198; Figs 20-24
<i>Navicula</i> cf. <i>formenterae</i>	Plate 198; Figs 25-26
<i>Navicula pavillardii</i>	Plate 198; Figs 27-28
<i>Navicula</i> sp. 13	Plate 199; Figs 1-6
<i>Navicula</i> sp. 45	Plate 199; Figs 7-14
<i>Navicula</i> sp. 120	Plate 199; Figs 15-17
<i>Navicula</i> sp. 8	Plate 199; Figs 18-19
<i>Navicula</i> sp. 19	Plate 199; Fig. 20
<i>Navicula</i> sp. 50	Plate 199; Figs 21-26
<i>Navicula</i> sp. 20	Plate 199; Fig. 27
<i>Navicula lineola</i> var. <i>perpelida</i>	Plate 199; Fig. 28
<i>Navicula</i> sp. 80	Plate 199; Figs 29-30
<i>Navicula</i> sp. 48	Plate 199; Figs 31-33
<i>Navicula</i> sp. 28	Plate 199; Fig. 34
<i>Navicula</i> sp. 39	Plate 199; Figs 35-38
<i>Navicula</i> sp. 32	Plate 200; Figs 1-4
<i>Navicula</i> sp. 11	Plate 200; Figs 5-7
<i>Navicula</i> sp. 21	Plate 200; Figs 8-9
<i>Navicula</i> sp. 2	Plate 200; Figs 10-14

<i>Navicula</i> sp. 16	Plate 200; Fig. 15
<i>Navicula</i> sp. 116	Plate 200; Fig. 16
<i>Navicula</i> sp. 36	Plate 200; Fig. 17
<i>Navicula</i> sp. 40	Plate 200; Fig. 18
<i>Navicula</i> sp. 44	Plate 200; Figs 19-20
<i>Navicula</i> sp. 43	Plate 200; Figs 21-23
<i>Navicula</i> sp. 106	Plate 200; Figs 24-27
<i>Navicula</i> cf. <i>veneta</i>	Plate 201; Figs 1-8
<i>Navicula</i> sp. 10	Plate 201; Figs 9-10
<i>Navicula</i> sp. 49	Plate 201; Fig. 11
<i>Navicula</i> sp. 46	Plate 201; Fig. 12
<i>Navicula</i> sp. 56	Plate 201; Fig. 13
<i>Navicula</i> <i>abunda</i>	Plate 201; Figs 14-20
<i>Navicula</i> sp. 59	Plate 201; Fig. 21
<i>Navicula</i> sp. 109	Plate 201; Fig. 22
<i>Navicula</i> sp. 103	Plate 201; Figs 23-25
<i>Navicula</i> sp. 57	Plate 201; Figs 26-34
<i>Navicula</i> sp. 41	Plate 201; Figs 35-39
<i>Navicula</i> sp. 54	Plate 202; Figs 1-15
<i>Navicula</i> <i>diversistriata</i>	Plate 202; Figs 16-17
<i>Navicula</i> sp. 35	Plate 202; Figs 28-30
<i>Navicula</i> sp. 30	Plate 202; Figs 31-36
<i>Fogedia</i> <i>finmarchica</i>	Plate 202; Fig. 37
<i>Fogedia</i> <i>heterovalvata</i>	Plate 202; Figs 38-44
<i>Navicula</i> sp. 3	Plate 203; Figs 1-3

Trachyneis aspera.....Plate 203; Figs 4-6

Pinnuavis genustriata.....Plate 204

Seminavis pusillaPlate 205

Seminavis robusta.....Plate 206

Family *Pleurosigmataceae* Mereschkowsky 1903

Genera: *Pleurosigma* Smith 1852, *Gyrosigma* Hassall 1845

Pleurosigma gracile.....Plate 207

Pleurosigma salinarumPlate 208; Figs 1-5

Pleurosigma distinguendumPlate 208; Fig. 6

Pleurosigma indicum.....Plate 209; Fig. 1

Gyrosigma parvulumPlate 209; Fig. 2

Gyrosigma prolongatum.....Plate 209; Fig. 3

Gyrosigma fasciolaPlate 210

Family *Stauroneidaceae* Mann 1990

Genera: *Stauroneis* Ehrenberg 1843, *Craticula* Round, Crawford,
Mann 1990

Craticula sp. 1.....Plate 211

Order *Thalassiophysales* Mann 1990

Family *Catenulaceae* Mereschkowsky 1902

Genera: *Catenula* Mereschkowsky 1903, *Amphora* Ehrenberg 1844,
Undatella Paddock & Sims 1980

Catenula adhaerens.....Plate 212

Amphora micrometraPlate 213

Amphora indistinctaPlate 214

Amphora sp. 2.....Plate 215

Amphora pusio.....Plate 216

<i>Amphora allanta</i>	Plate 217
<i>Amphora pediculus</i>	Plate 218
<i>Amphora pseudohyalina</i>	Plate 219; Figs 1-7
<i>Amphora adumbrata</i>	Plate 219; Figs 8-9

Order *Bacillariales* Hendey 1937

Family *Bacillariaceae* Ehrenberg 1831

Genera: *Bacillaria* Gmelin 1791, *Hantzschia* Grunow 1877,
Psammodictyon Mann 1990, *Tryblionella* Smith 1958,
Nitzschia Hassall 1845, *Denticula* Kützing 1844, *Fragilariopsis*
Hustedt 1866, *Cylindrotheca* Rabenhorst 1859, *Simonsenia*
Lange-Bertalot 1979

<i>Bacillaria paradoxa</i>	Plate 220
<i>Tryblionella plana</i>	Plate 221
<i>Tryblionella</i> sp. 1	Plate 222; Figs 1-2
<i>Tryblionella</i> sp. 4	Plate 222; Figs 3-4
<i>Tryblionella apiculata</i>	Plate 223
<i>Tryblionella hungarica</i>	Plate 224
<i>Tryblionella debilis</i>	Plate 225
<i>Tryblionella levidensis</i>	Plate 226; Figs 1-5
<i>Tryblionella</i> sp. 5	Plate 226; Figs 6-8
<i>Tryblionella</i> sp. 3	Plate 226; Figs 9-15
<i>Tryblionella</i> sp. 6	Plate 226; Figs 16-17
<i>Tryblionella</i> sp. 2	Plate 226; Figs 18-35
<i>Nitzschia</i> cf. <i>perversa</i>	Plate 227
<i>Nitzschia amabilis</i>	Plate 228
<i>Nitzschia brevissima</i>	Plate 229

<i>Nitzschia scalpelliformis</i>	Plate 230
<i>Nitzschia</i> cf. <i>rosenstockii</i>	Plate 231
<i>Nitzschia calciola</i>	Plate 232; Figs 1-12
<i>Nitzschia</i> cf. <i>brevissima</i>	Plate 232; Figs 13-18
<i>Nitzschia vasta</i>	Plate 232; Figs 19-30
<i>Nitzschia frequens</i>	Plate 234
<i>Nitzschia frustulum</i>	Plate 235; Figs 1-20
<i>Nitzschia granulata</i>	Plate 235; Figs 21-26
<i>Nitzschia palea</i>	Plate 236; Figs 1-17
<i>Nitzschia pusilla</i>	Plate 236; Figs 18-32
<i>Nitzschia</i> sp. 3.....	Plate 236; Figs 33-44
<i>Nitzschia</i> sp. 1.....	Plate 237
<i>Nitzschia communata</i>	Plate 238; Figs 1-6
<i>Nitzschia terrestris</i>	Plate 238; Figs 7-18
<i>Nitzschia distans</i> var. <i>distans</i>	Plate 239
<i>Nitzschia microcephala</i>	Plate 240
<i>Nitzschia pararostrata</i>	Plate 241; Figs 1-3
<i>Nitzschia thermaloides</i>	Plate 241; Figs 4-5
<i>Simonsenia</i> sp. 1.....	Plate 242
<i>Denticula subtilis</i>	Plate 243
<i>Cylindrotheca gracilis</i>	Plate 244

Order *Rhopalodiales* Mann 1990

Family *Rhopalodiaceae* (Karsten) Topachevs'kyj & Oksiyuk 1960

Genera: *Epithemia* Kützing 1844, *Rhopalodia* Müller 1895

<i>Rhopalodia musculus</i>	Plate 245
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Plate 1

(Scale bars: Figs 1-3=10 µm; Figs 4-7=1 µm)

Figs 1-5: *Leptocylindrus minimus* Gran

Lit.: Gran 1915, p. 72; fig. 5; Hargraves 1990, p. 49, Figs 2-16, p. 51, Figs 17-23, p. 52, Figs 24-26.

Figs 1-5: Barnegat Bay, NJ.

Fig. 6: *Leptocylindrus danicus* Cleve

Lit.: Cleve 1889, p. 54, Nanjappa, Kooistra, & Zingone 2013, p. 925, Fig. 3.

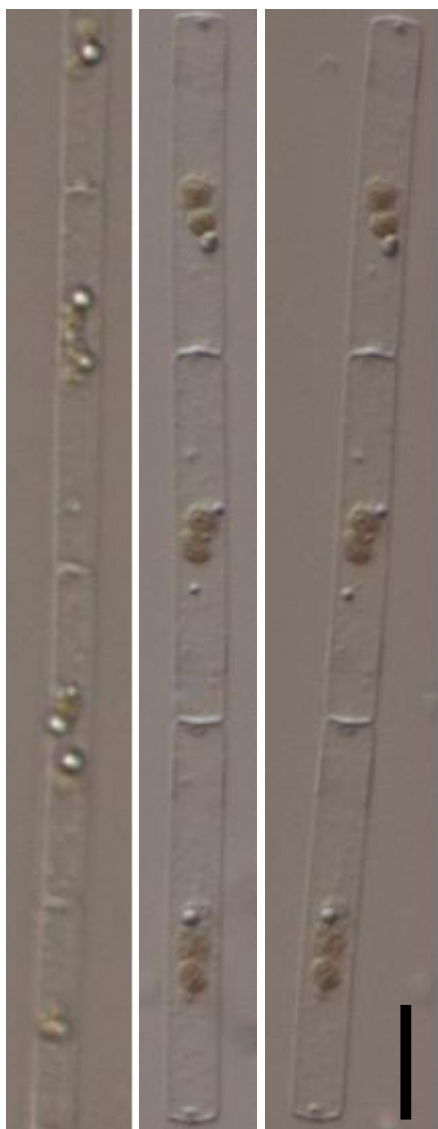
Fig. 6: Sample COAST096, Grassy Sound, NJ.

Fig. 7: *Tenuicylindrus belgicus* (Meunier) Nanjappa & Zingone

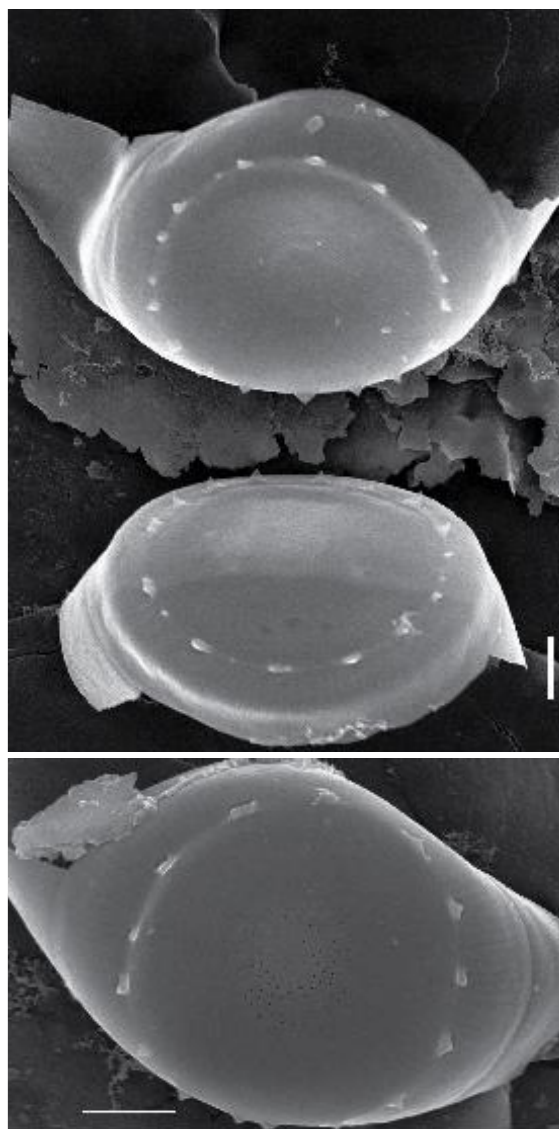
Lit.: Nanjappa, Kooistra, & Zingone 2013, p. 925, Fig. 7.

Basionym: *Leptocylindrus belgicus* Meunier 1915

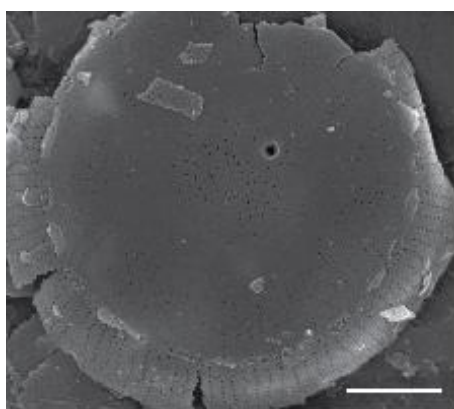
Fig. 7: Sample COAST059, Barnegat Bay, NJ.



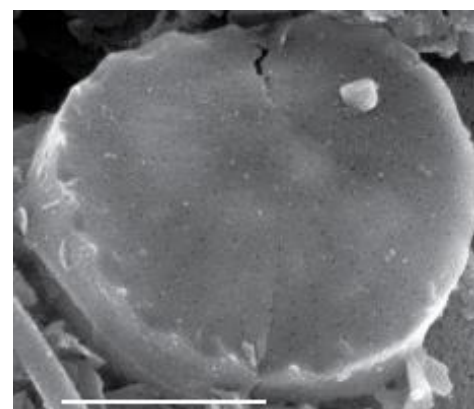
1 - 3



4 - 5



6



7

Plate 2

(Scale bars: Figs 1-2=10 µm)

Fig. 1: *Chaetoceros affinis* Lauder

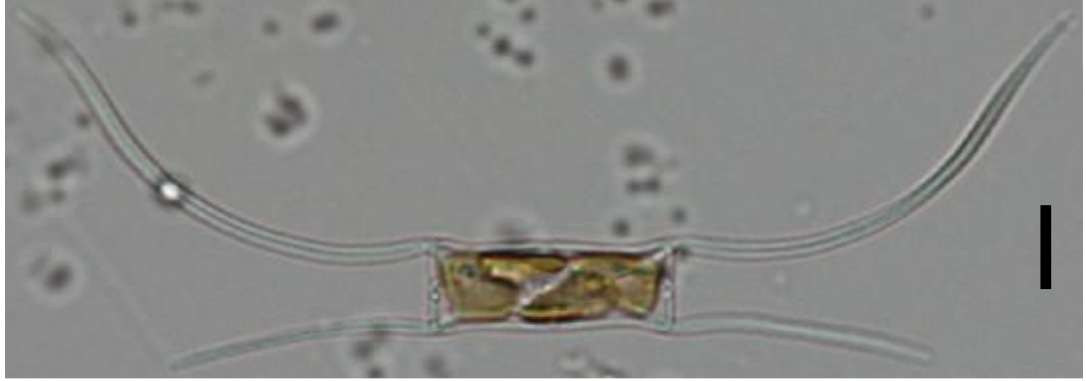
Lit.: Lauder 1864, p. 78; pl. 8, fig. 5

Basionym: *Bacteriastrum affine* (Lauder) Tempère & Peragallo 1889

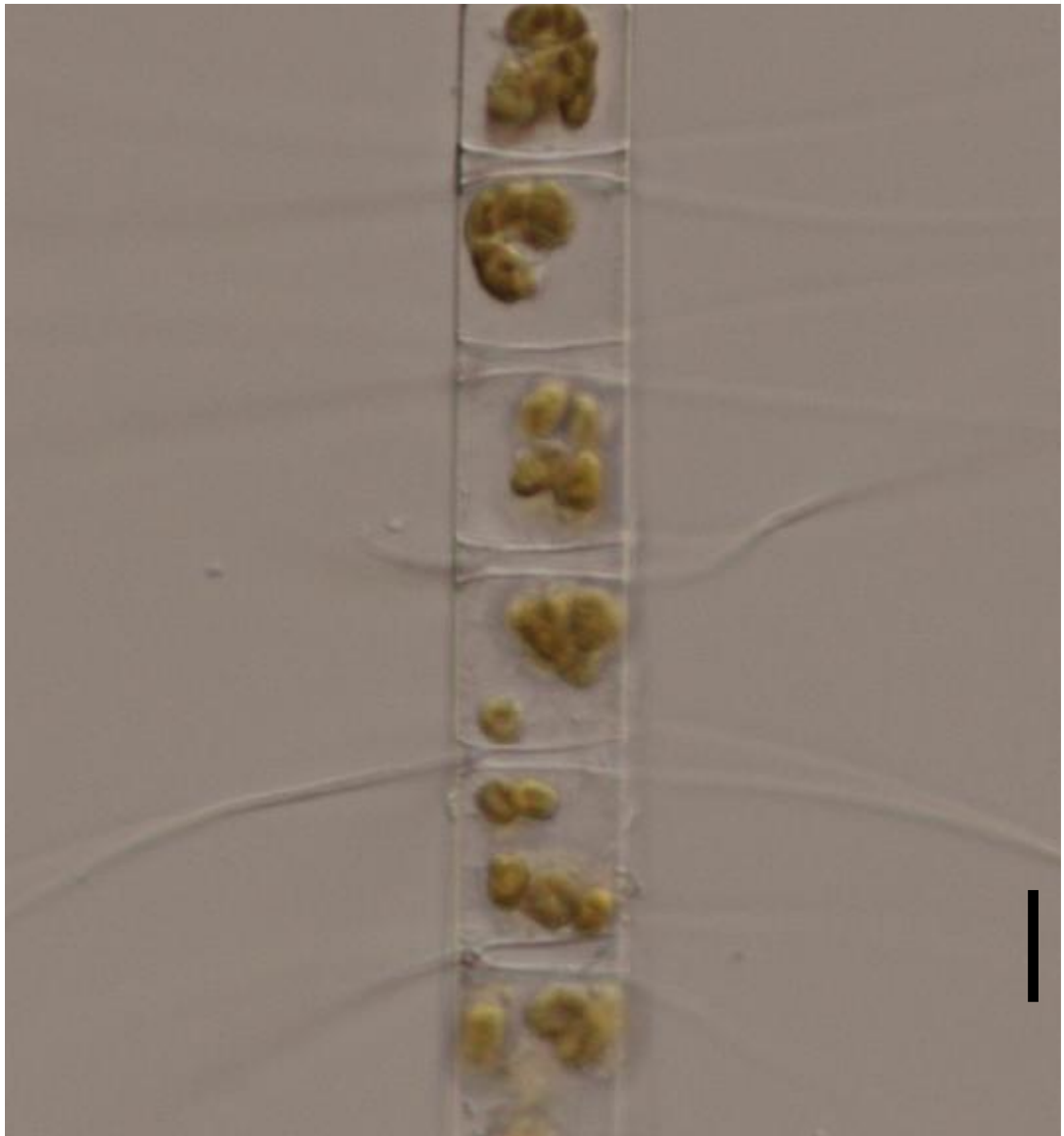
Fig. 1: Barnegat Bay, NJ.

Fig. 2: *Chaetoceros* sp. 1

Fig. 2: Barnegat Bay, NJ.



1



2

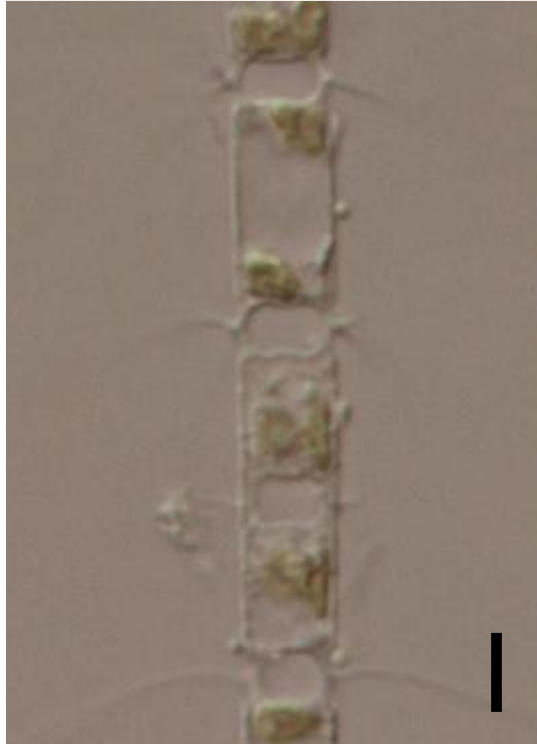
Plate 3

(Scale bars: Fig. 1=10 μm ; Figs 2-5=1 μm)

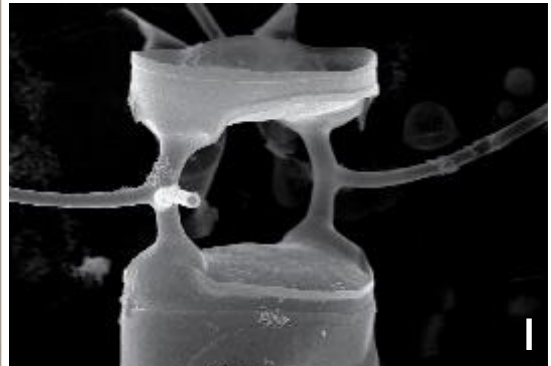
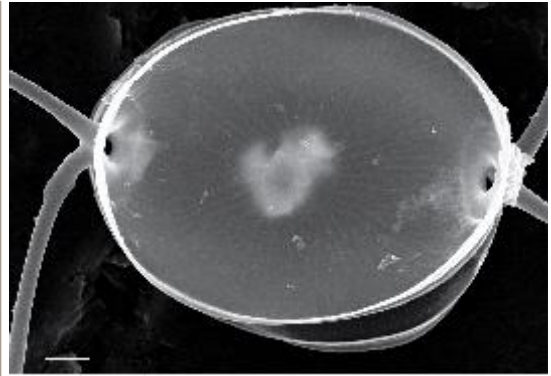
Chaetoceros brevis Schütt

Lit.: Schütt 1895, p. 38; fig. 4

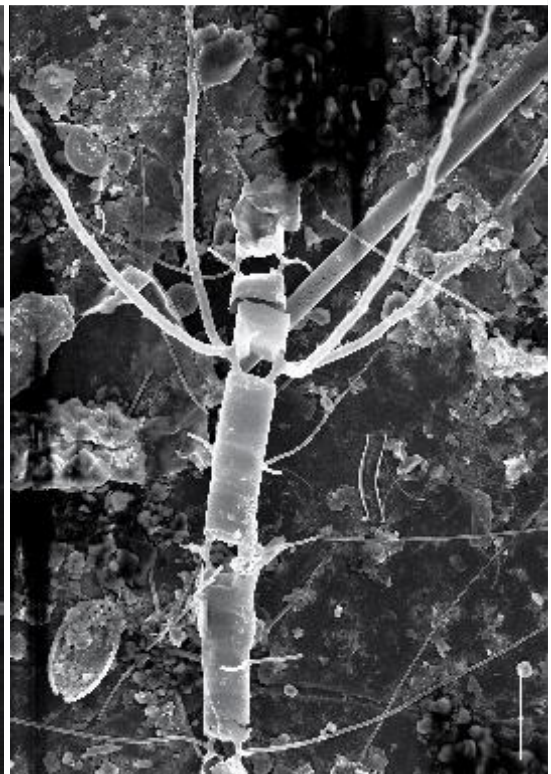
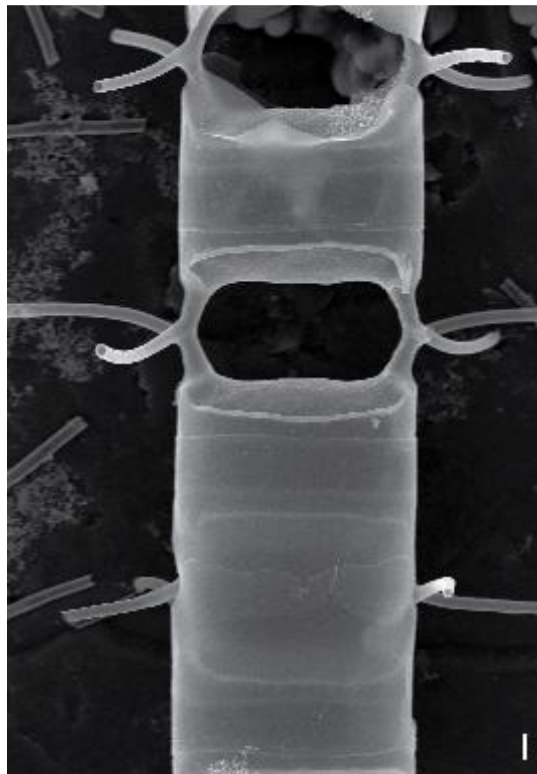
Figs 1-5: Barnegat Bay, NJ.



1



2 - 3



4 - 5

Plate 4

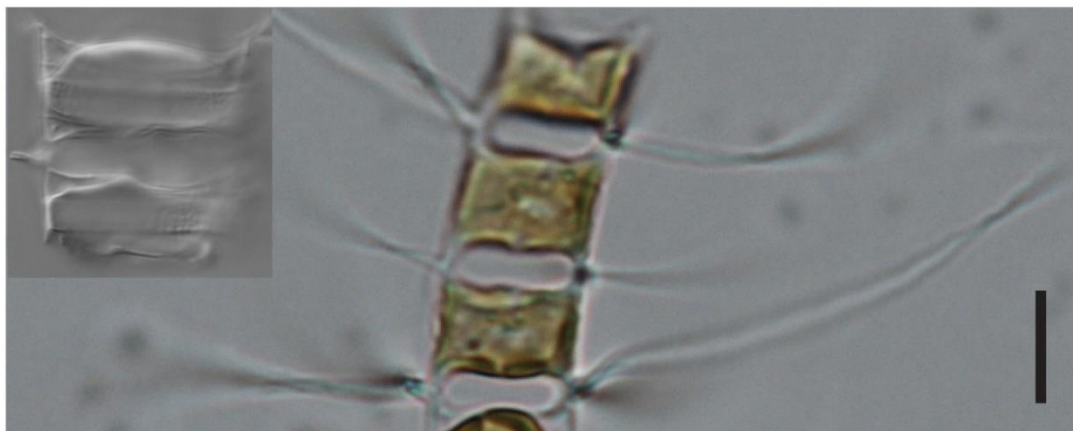
(Scale bars: Fig. 1=10 μm ; Figs 4-7=1 μm)

***Chaetoceros decipiens* Cleve**

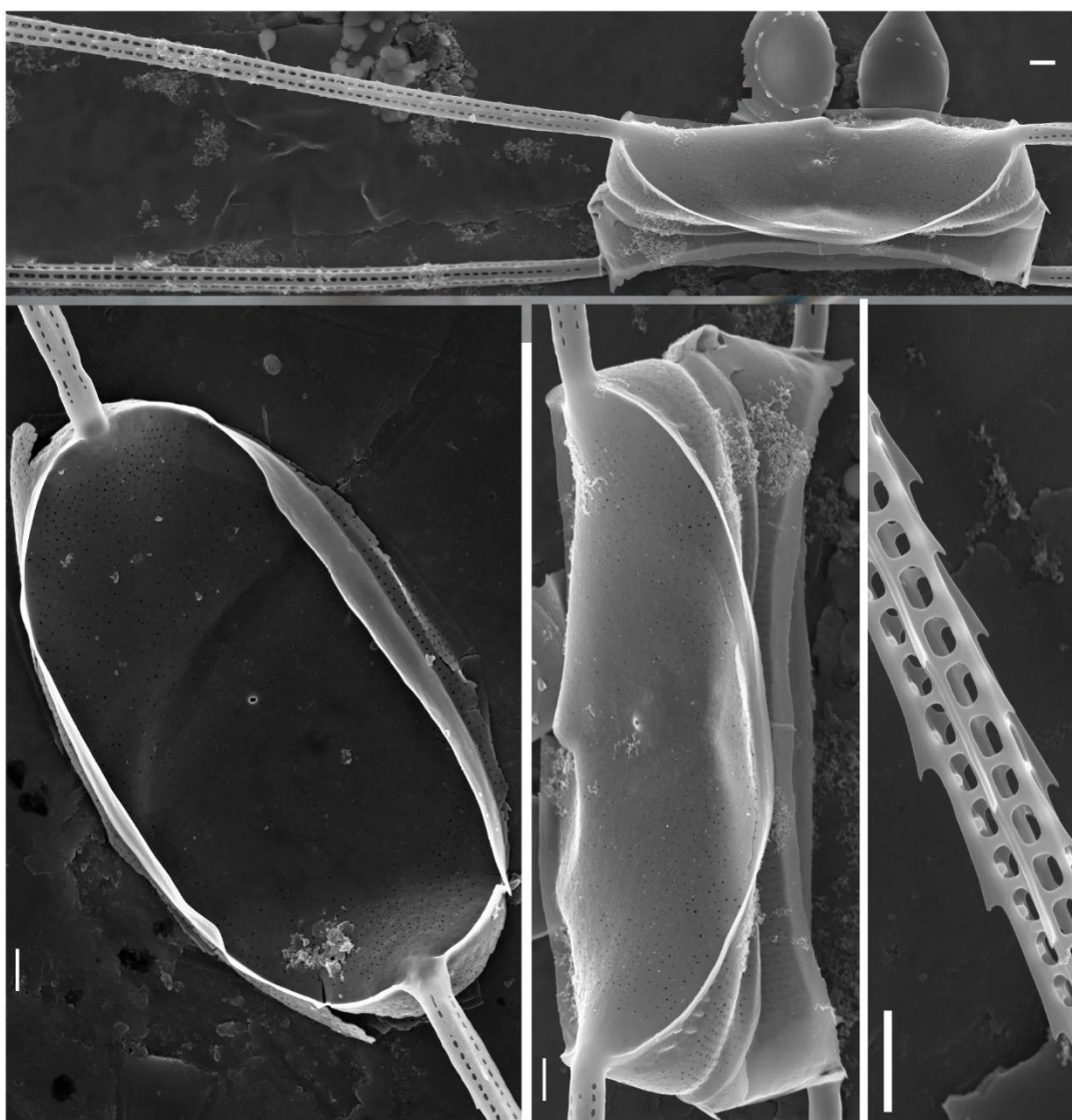
Lit.: Cleve 1873, p. 11; pl. 1, fig. 5

Fig. 1: Tuckerton Bay, NJ.

Figs 2-8: Barnegat Bay, NJ.



1 - 2



5 - 8

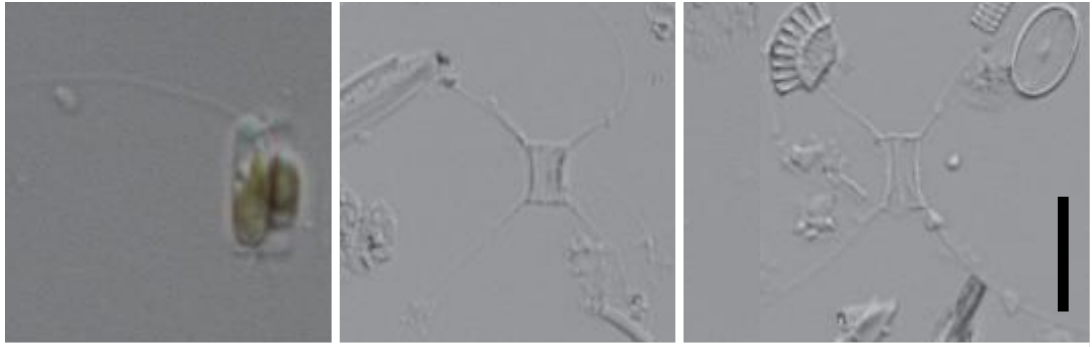
Plate 5

(Scale bars: Figs 1-3=10 μm ; Figs 4-6=1 μm)

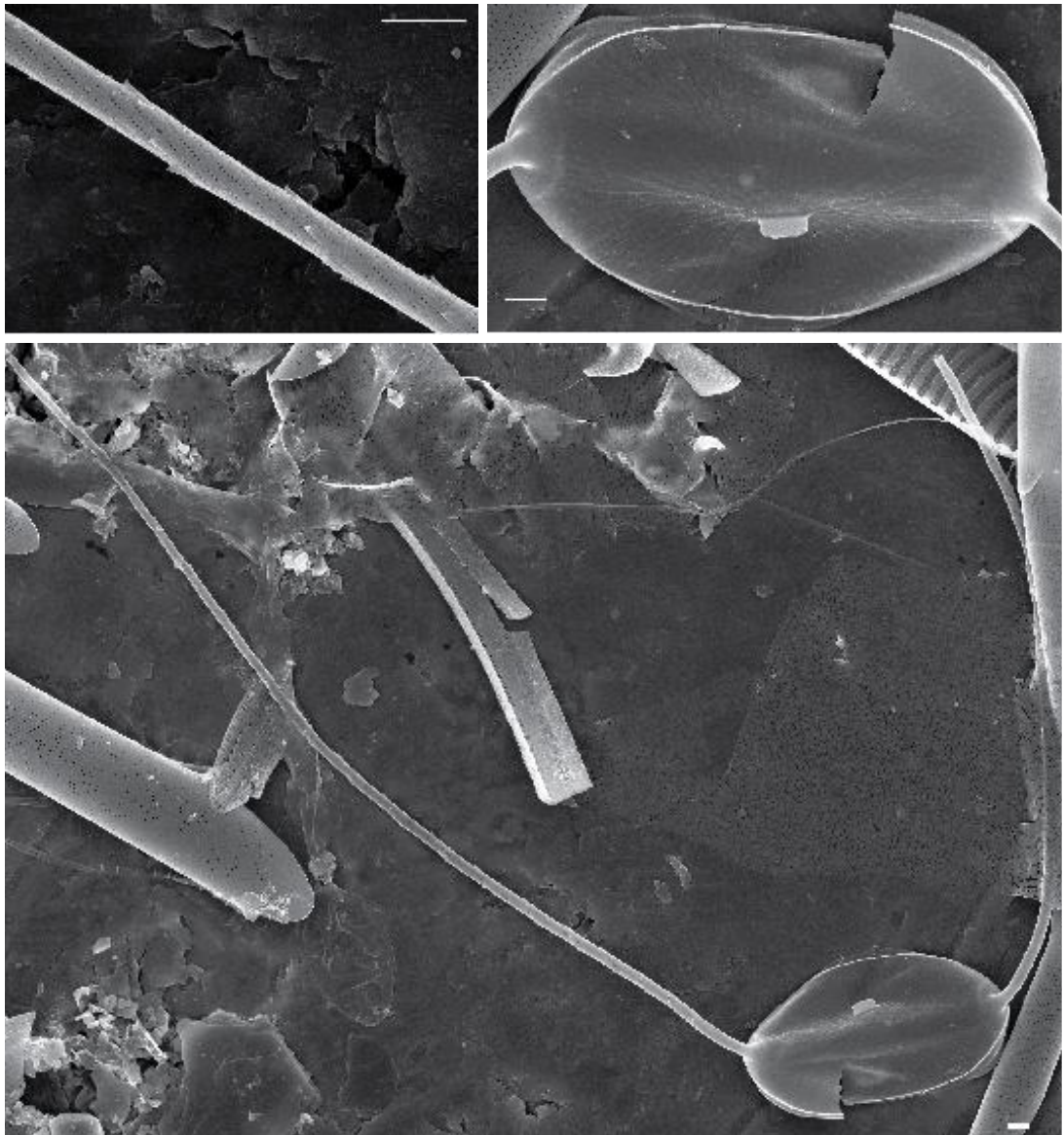
Chaetoceros cf. elegans

Figs 1-6: Barnegat Bay, NJ.

Figs 2-3: Sample BBDC0028, Barnegat Bay, NJ.



1 - 3



4 - 6

Plate 6

(Scale bars: Figs 1-6=10 μm ; Figs 7-10=1 μm)

***Chaetoceros tenuissimus* Meunier**

Lit.: Meunier 1913, p. 49; pl. 7, fig. 55

Figs 1-10: Barnegat Bay, NJ.

Fig. 2: Sample BBDC0002, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0101, Great Bay, NJ.

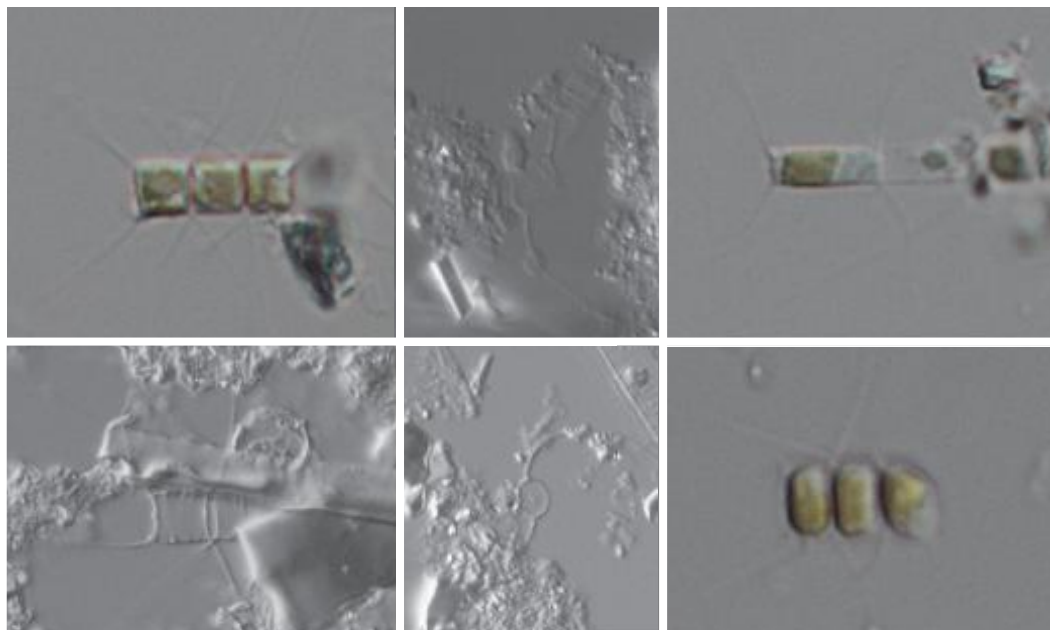
Fig. 5: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 7: Sample BBDC0016, Barnegat Bay, NJ.

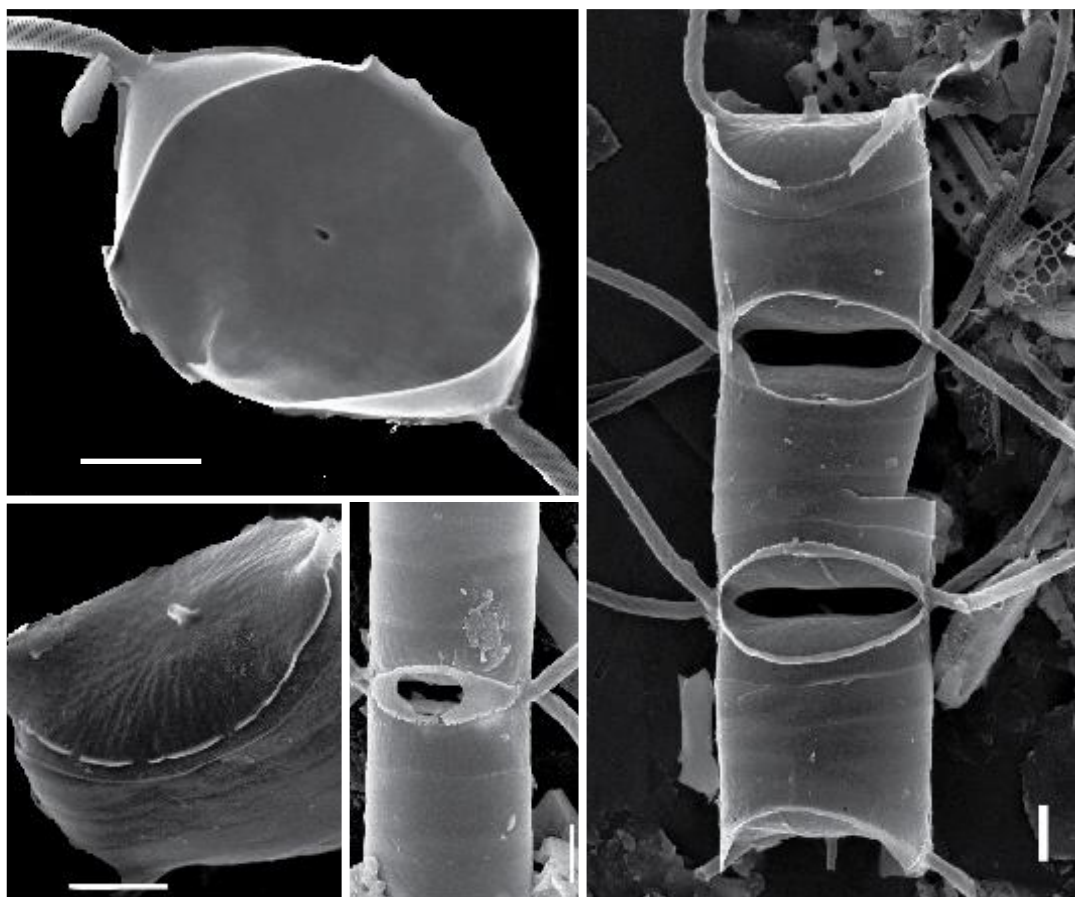
Fig. 8: Sample BBDC0015, Barnegat Bay, NJ.

Fig. 9: Sample COAST096, Grassy Sound, NJ.

Fig. 10: Sample COAST073, North East, NJ shore.



1 - 6



7 - 10

Plate 7

(Scale bar: Fig. 1=10 μm)

***Hemialus* sp. 1**

Fig. 1: Sample BBDC00107, Great Bay, NJ.



1

Plate 8

(Scale bars: Figs 1-3=10 µm; Figs 4-7=1 µm)

Figs 1-5: ***Rhizosolenia setigera*** Brightwell

Lit.: Brightwell 1858, p. 95; pl. 5, fig. 7

Figs 1-5: Barnegat Bay, NJ.

Figs 6-7: ***Rhizosolenia hyalina*** Ostefeld

Lit.: Ostefeld & Schmidt 1901, p. 160; fig. 11

Figs 6-7: Sample COAST096, Grassy Sound, NJ.

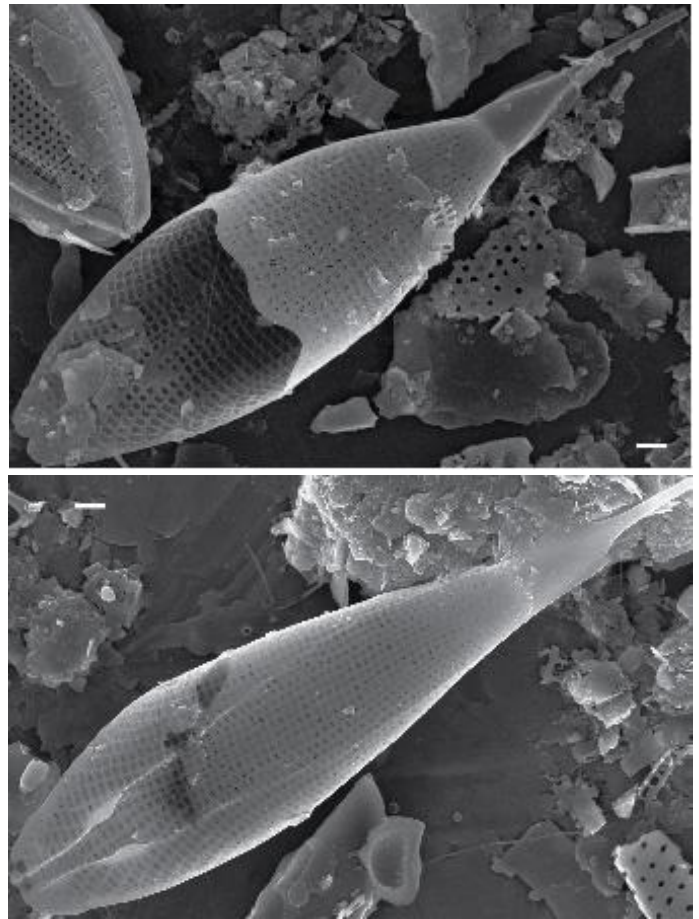
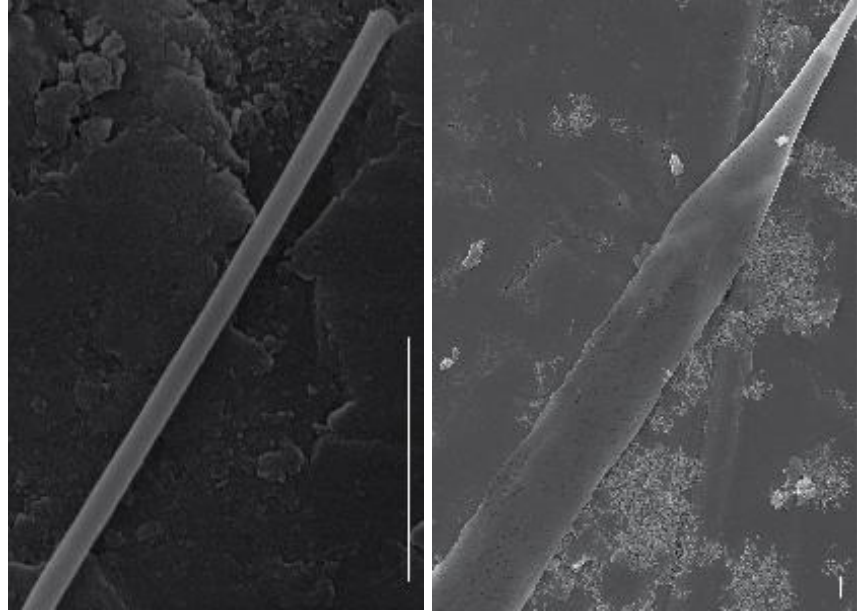


Plate 9

(Scale bars: Figs 1-3,5=10 µm; Fig. 4=1 µm)

Figs 1 – 4: *Dactyliosolen fragilissimus* (Bergon) Hasle

Lit.: Hasle & Syvertsen 1996, p. 167, 340; pl. 31

Basionym: *Rhizosolenia fragilissima* Bergon 1903

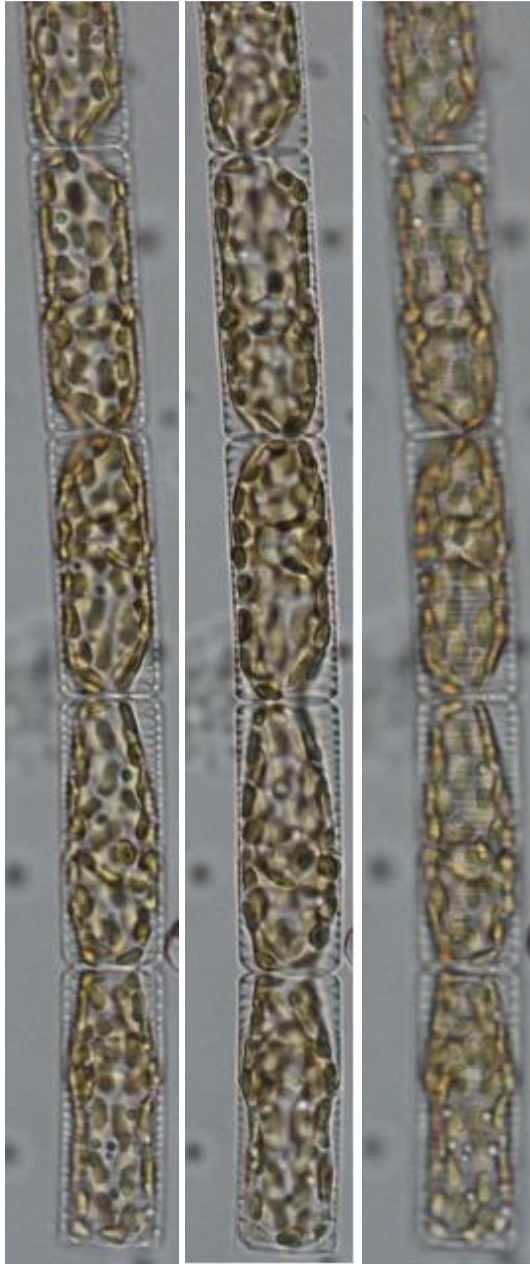
Figs 1-4: Barnegat Bay, NJ.

Fig. 5: *Dactyliosolen tenuijunctus* (Manguin) Hasle

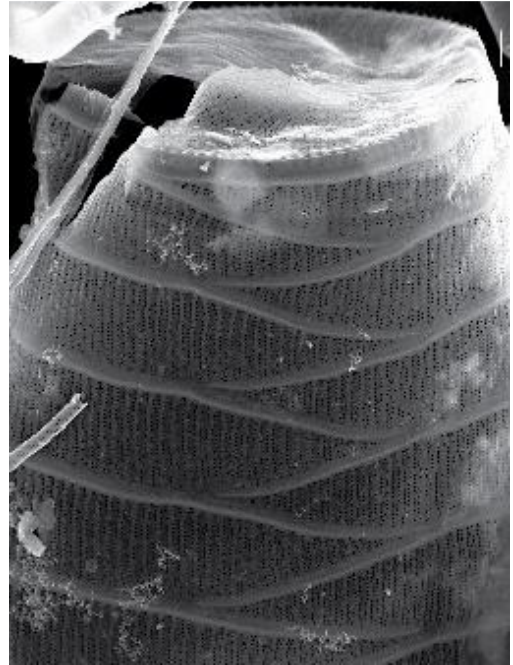
Lit.: Hasle 1975, p. 122-123; fig. 114-120

Basionym: *Rhizosolenia tenuijuncta* Manguin 1957

Fig. 5: Barnegat Bay, NJ.



1 - 3



4



5

Plate 10

(Scale bars: Fig. 1=10 μm ; Figs 2-6=1 μm)

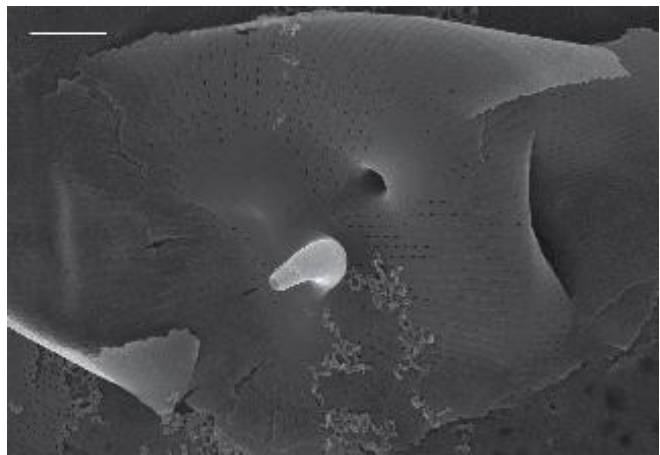
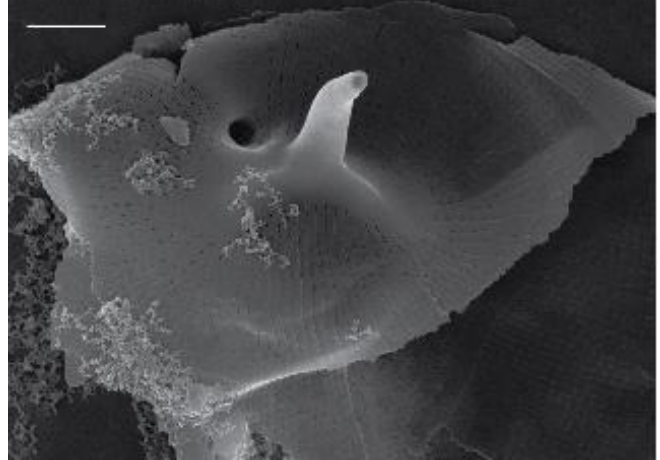
***Guinardia* spp.**

Figs 1-3: Barnegat Bay, NJ.

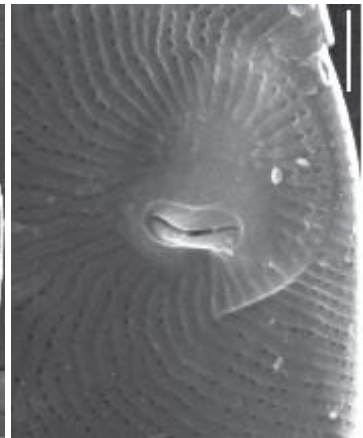
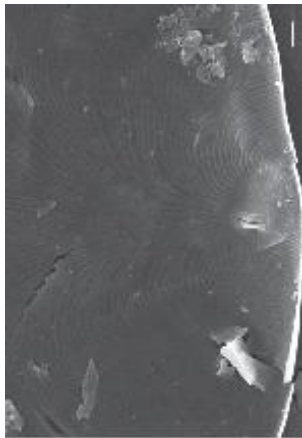
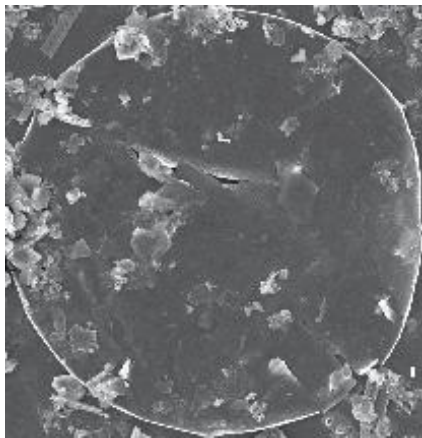
Figs 4-6: Sample COAST096, Grassy Sound, NJ.



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2 - 3



4 - 6

Plate 11

(Scale bars: Figs 1=10 μm ; Figs 2-6=1 μm)

Proboscia alata (Brightwell) Sundstrom

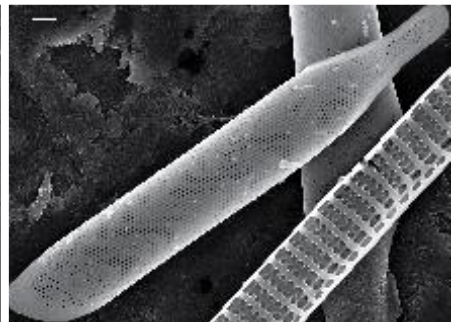
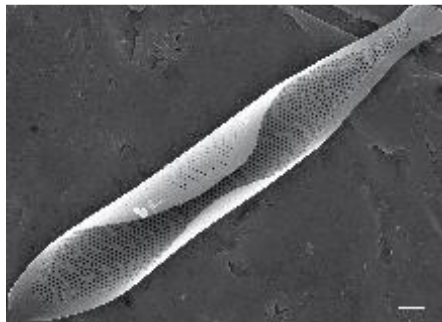
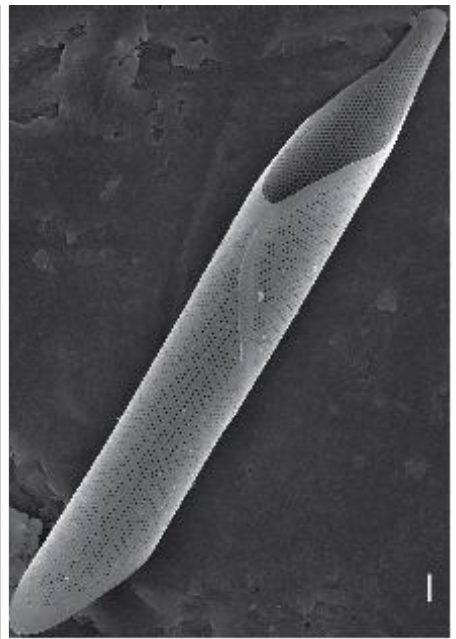
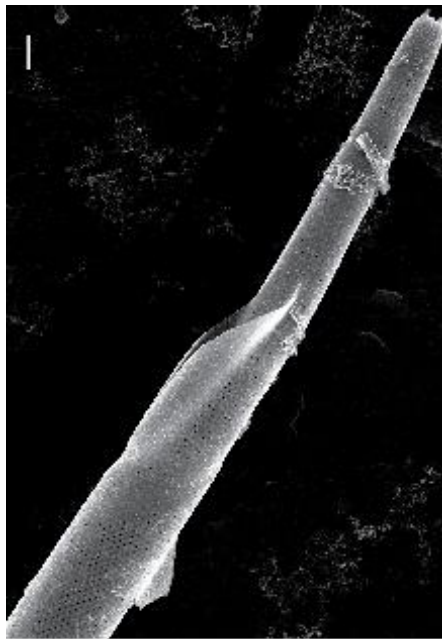
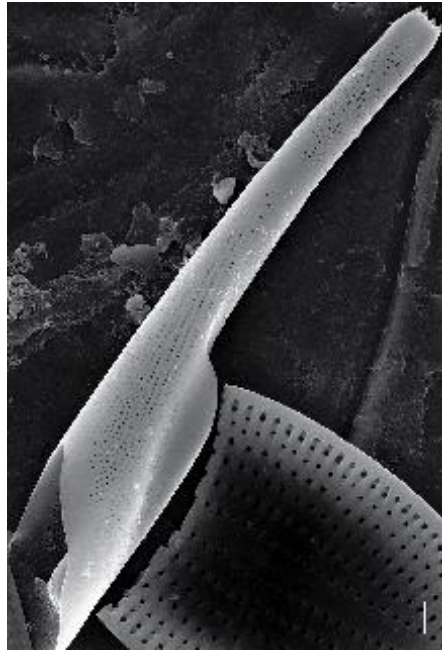
Lit.: Sundstrom 1986, p. 99-100; fig. 258-266

Basionym: *Rhizosolenia alata* Brightwell 1858

Figs 1-6: Barnegat Bay, NJ.



1



2 - 6

Plate 12 (Scale bars: Figs 1-9; 12-19; =10 µm; Figs 4-7=1 µm)

Figs 1-9: *Aulacoseira ambigua* (Grunow) Simonsen

Lit.: Simonsen 1979, p. 56

Basionym: *Melosira crenulata* var. *ambigua* Grunow in Van Heurck 1882

Synonyms: *Melosira ambigua* (Grunow in Van Heurck) Otto Müller 1903

Melosira granulata var. *ambigua* (Grunow in Van Heurck) Thum 1889

Melosira italica var. *ambigua* (Grunow in Van Heurck) Cleve-Euler in Backmann & Cleve-Euler 1922

Melosira italica f. *ambigua* (Grunow in Van Heurck) Balachonzew (Bolochozow) 1909

Melosira italica subsp. *ambigua* (Grunow) Cleve-Euler 1938

Melosira italica var. *ambigua* (Grunow) Cleve-Euler 1951

Fig. 1: Sample BB0069, Barnegat Bay, NJ.

Fig. 2: Sample BB0056, Barnegat Bay, NJ.

Figs 3,6: Sample BB0060, Barnegat Bay, NJ.

Figs 4,8: Sample BB0055, Barnegat Bay, NJ.

Fig. 7: Sample BB0059, Barnegat Bay, NJ.

Fig. 9: Sample BB0053, Barnegat Bay, NJ.

Figs 10-11: *Aulacoseira valida* (Grunow in Van Heurck) Krammer

Lit.: Krammer 1991, p. 98

Basionym: *Melosira crenulata* var. *valida* Grunow in Van Heurck 1882

Synonyms: *Melosira distans* var. *valida* (Grunow in Van Heurck) F.W. Mills 1934

Melosira italica var. *valida* (Grunow in Van Heurck) Hustedt 1927

Melosira polymorpha var. *valida* (Grunow in Van Heurck) Bethge 1925

Melosira valida (Grunow in Van Heurck) Meister 1912

Figs 10-11: Sample BB0010, Barnegat Bay, NJ.

Figs 12-14: *Aulacoseira pusilla* (Meister) Tuji & Houki

Lit.: Tuji & Houki 2004, p. 38

Basionym: *Melosira pusilla* Meister 1913

Fig. 12: Sample BBDC0006, Barnegat Bay, NJ.

Fig. 13: Sample BB0054, Barnegat Bay, NJ.

Fig. 14: Sample BB0060, Barnegat Bay, NJ.

Figs 15-19: *Aulacoseira crassipunctata* Krammer

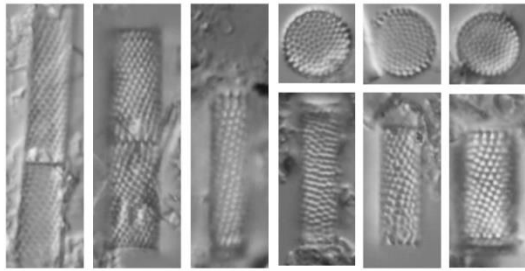
Lit.: Krammer 1991, p. 490; fig. 71-79

Figs 15, 16: Sample BBDC0004, Barnegat Bay, NJ.

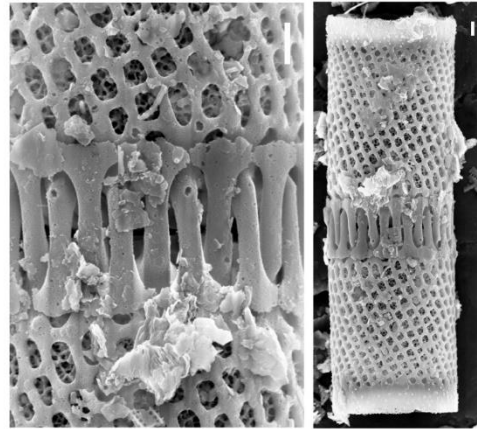
Fig. 17: Sample BB0071, Barnegat Bay, NJ.

Fig. 18: Sample BBDC0007, Barnegat Bay, NJ.

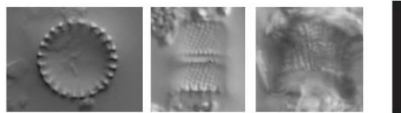
Fig. 19: Sample BB0035, Barnegat Bay, NJ.



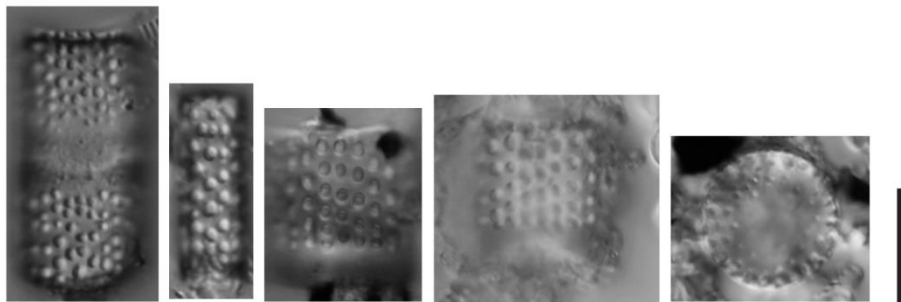
1 - 9



10 - 11



12 - 14



15 - 19

Plate 13

(Scale bars: Figs 1-5=10 µm; Figs 6-9=1 µm)

Melosira nummuloides (Dillwyn) Agardh

Lit.: Agardh 1824, p. 8; Crawford 1975 p. 323-338, Figs 1-29

Basionym: *Conferva nummuloides* Dillwyn 1809

Synonym: *Fragilaria nummuloides* (Dillwyn) Lyngbye 1819

Gaillonella nummuloides (Dillwyn) Bory 1831

Lysigonium nummuloides (Dillwyn) Trevisan 1848

Figs 1, 3-4: Sample BBDC0058, Barnegat Bay, NJ.

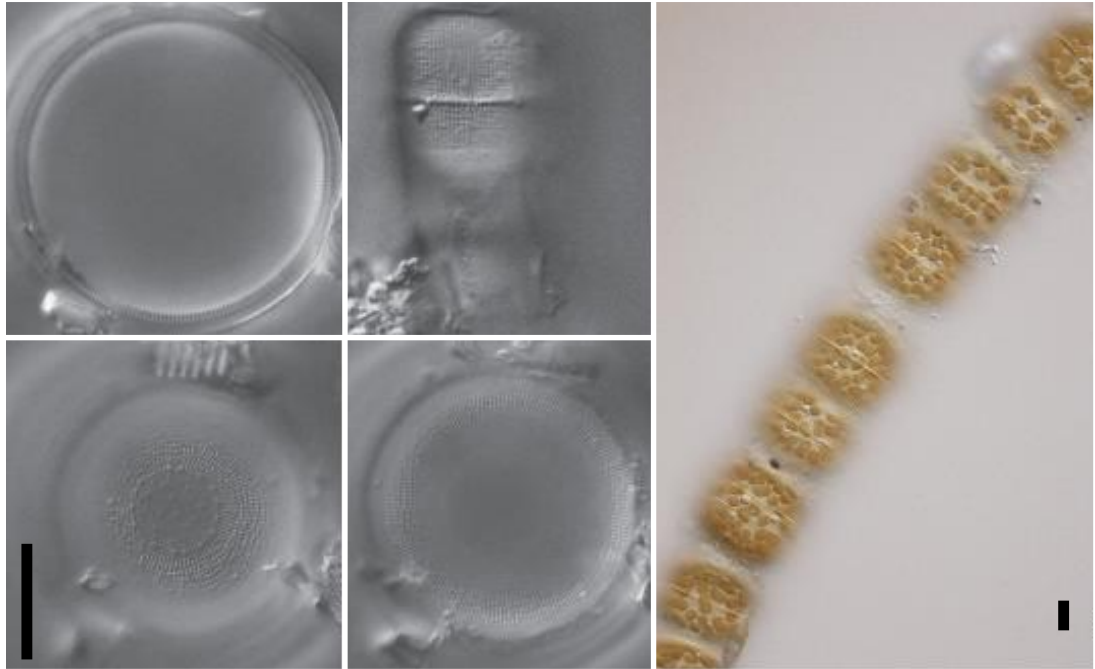
Fig. 2: Sample GB001, Great Bay, NJ.

Fig. 5: Barnegat Bay, NJ.

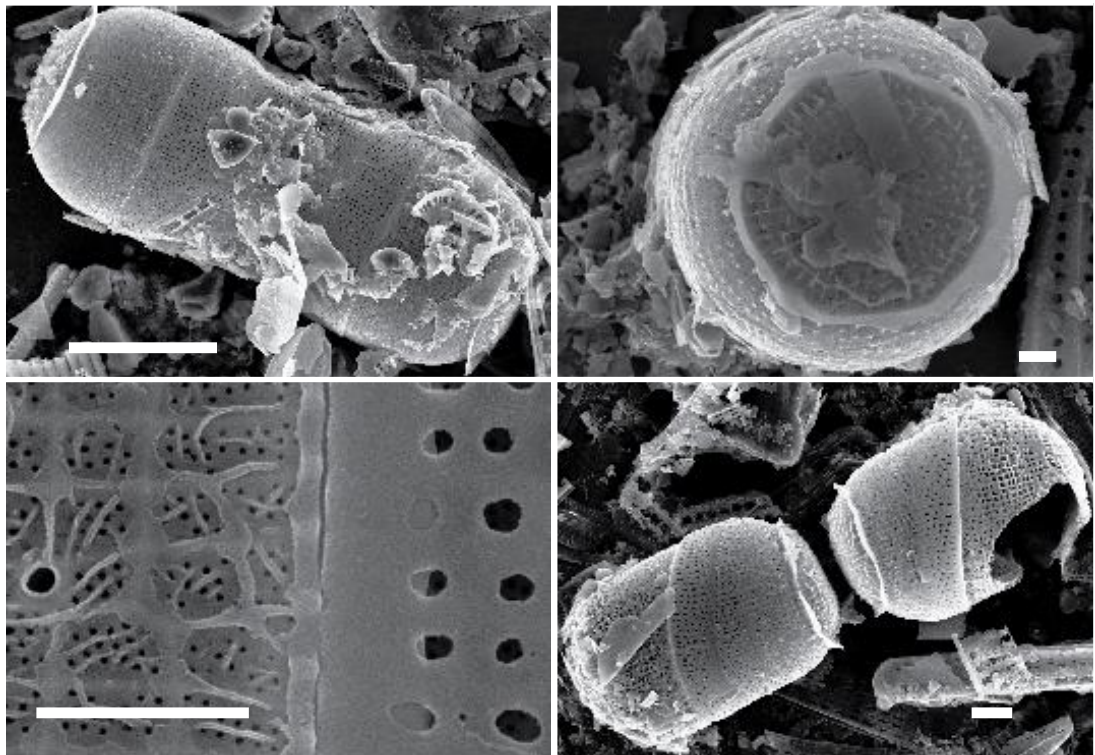
Figs 6,8: Sample BBDC0106, Great Bay, NJ.

Fig. 7: Sample BB0032, Barnegat Bay, NJ.

Fig. 9: Sample BBDC0016, Barnegat Bay, NJ.



1 - 5



6 - 9

***Paralia sulcata* (Ehrenberg) Cleve**

Lit.: Cleve 1873, p. 7

Basionym: *Gaillonella (Gallionella) sulcata* Ehrenberg 1838

Synonyms: *Melosira sulcata* (Ehrenberg) Kützing 1844

Lysigonium sulcatum (Ehrenberg) Trevisan 1848

Orthosira sulcata (Ehrenberg) O'Meara 1875

Melosira sulcata (Ehrenberg) Hanna 1932

Fig. 1: Sample BBDC0012, Barnegat Bay, NJ.

Figs 2,5,13,17-18: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 3: Sample BB0052, Barnegat Bay, NJ.

Fig. 4: Sample BB0068, Barnegat Bay, NJ.

Fig. 6: Sample BBDC0045, Barnegat Bay, NJ.

Fig. 7: Sample COAST062, Great Bay, NJ.

Fig. 8: Sample BBDC0042, Barnegat Bay, NJ.

Fig. 9: Sample BB0066, Barnegat Bay, NJ.

Fig. 10: Sample BBDC0002, Barnegat Bay, NJ.

Fig. 11: Sample BB0069, Barnegat Bay, NJ.

Fig. 12: Sample BB0076, Barnegat Bay, NJ.

Fig. 14: Sample BBDC0110, Great Bay, NJ.

Fig. 15: Sample BBDC0065, Barnegat Bay, NJ.

Fig. 16: Sample BBDC0007, Barnegat Bay, NJ.

Fig. 19: Sample BB0073, Barnegat Bay, NJ.

Figs 20-21: Barnegat Bay, NJ.

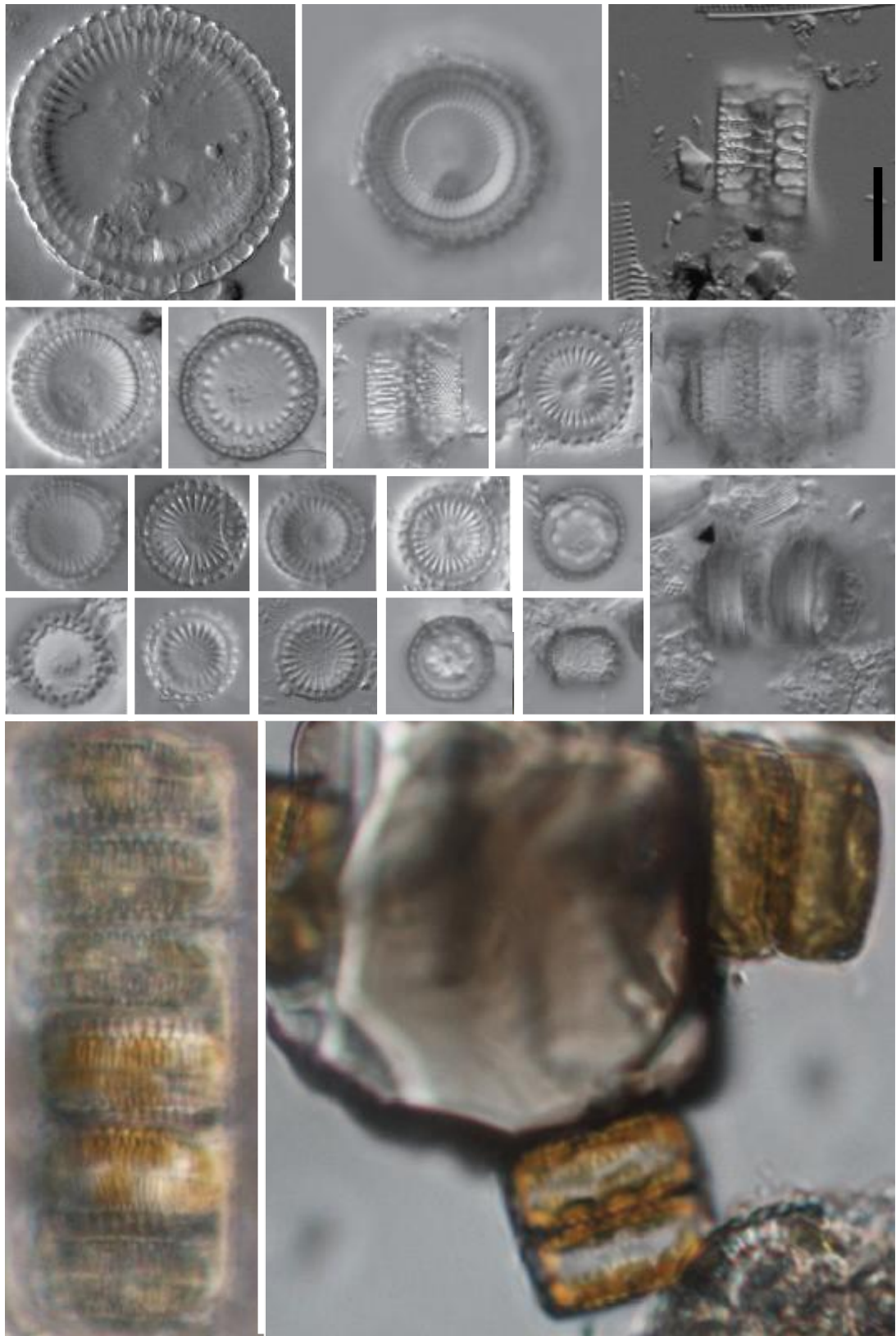


Plate 15

(Scale bars: Figs 1-9=10 µm; Figs 10-12=1 µm)

Hyalodiscus scoticus (Kützing) Grunow

Lit.: Grunow 1879, p. 690; pl. 21, fig. 5

Basionym: *Cyclotella scotica* Kützing 1844

Synonyms: *Hyalodiscus subtilis* var. *scotica* (Kützing) Peragallo & Peragallo 1897-1908

Cycloplea scotica (Kützing) Trevisan 1848

Figs 1-2,5,9: Sample BBDC0044, Barnegat Bay, NJ.

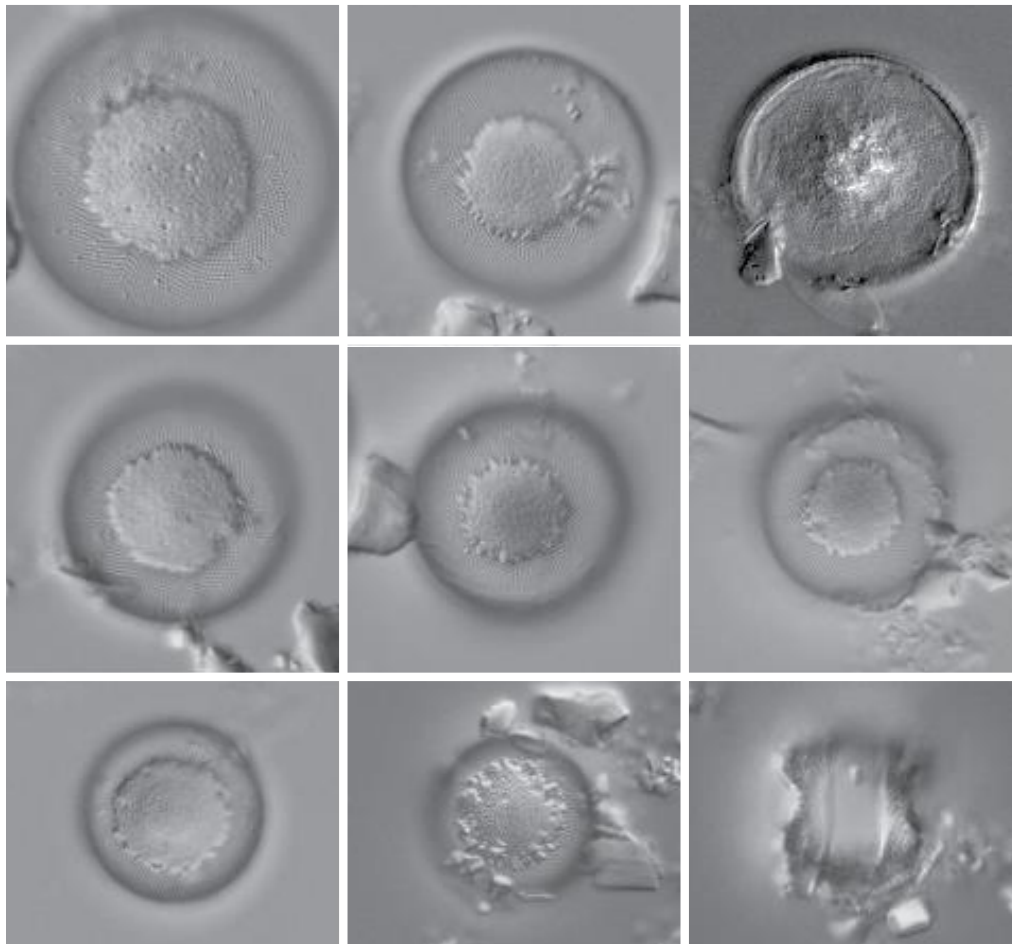
Fig. 3: Sample BBDC0001, Barnegat Bay, NJ.

Figs 4, 10-12: Sample BBDC0051, Barnegat Bay, NJ.

Figs 6-7: Sample BBDC0041, Barnegat Bay, NJ.

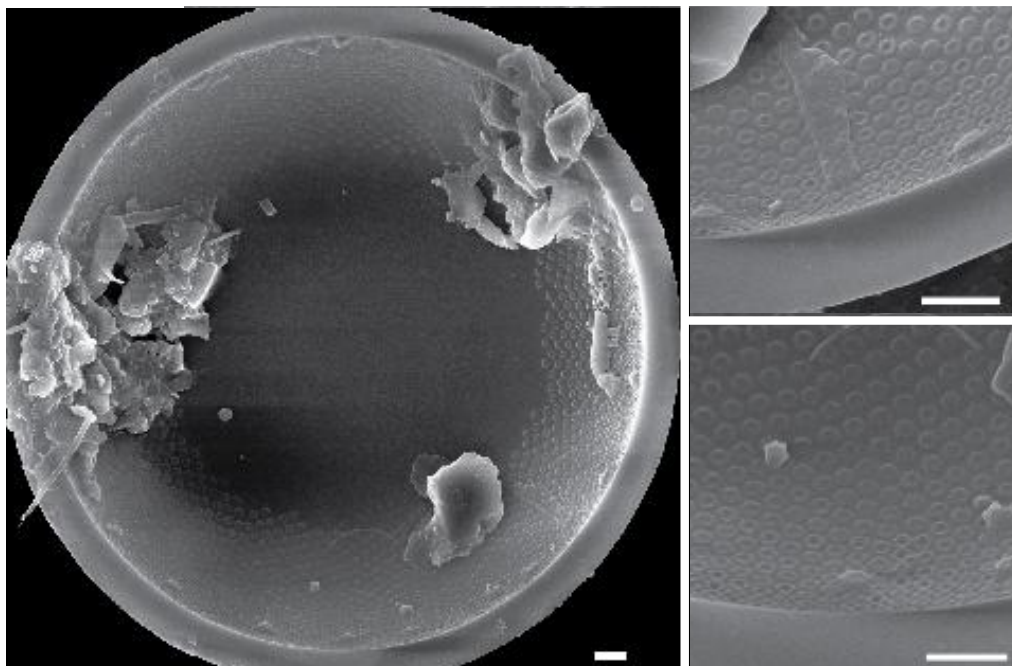
Fig. 8: Sample BB0066, Barnegat Bay, NJ.

Fig. 7: Sample COAST062, Great Bay, NJ.



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1 - 9



10 - 12

Actinocyclus normanii (Gregory ex Greville) Hustedt

Lit.: Hustedt 1957, p. 218; pl. 1, fig. 5-6

Basionym: *Coscinodiscus normanii* Gregory ex Greville 1859

Synonyms: *Coscinodiscus curvatulus* var. *normanni* (Gregory manuscript in Greville) Cleve 1883

Coscinodiscus rothii var. *normani* (*normanii*) (Gregory) Van Heurck 1885

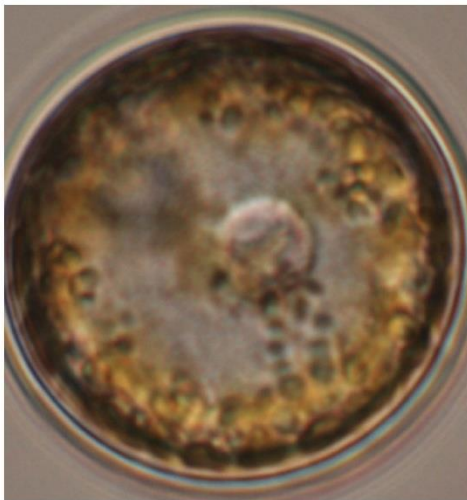
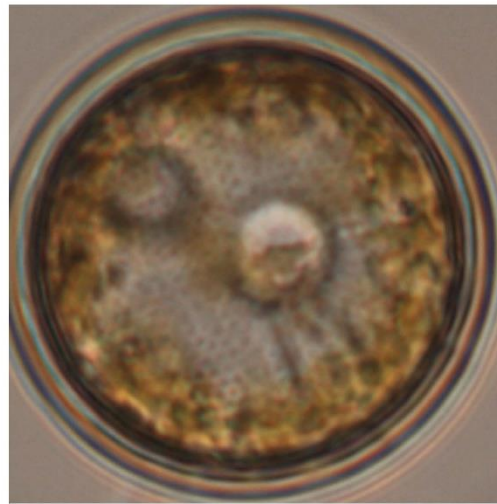
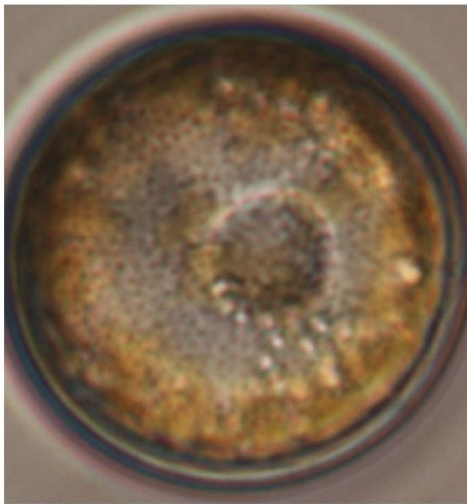
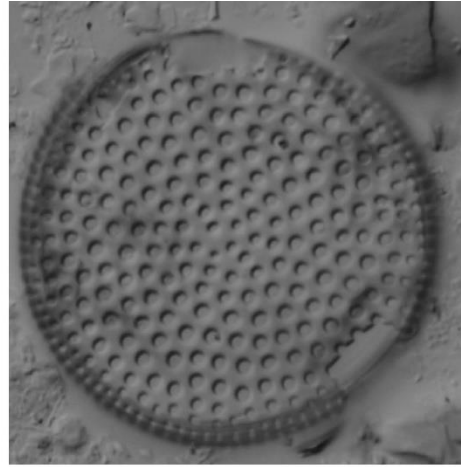
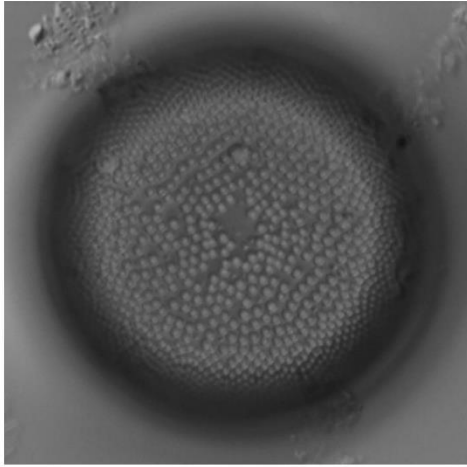
Coscinodiscus subtilis var. *normannii* (*-manii*, *-manni*) (Gregory) Van Heurck 1885

Coscinodiscus normannicus Gregory ex Greville Gregory in Van Heurck 1883

Fig. 1: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 2: Sample BBDC0072, Barnegat Bay, NJ.

Figs 3-5: Barnegat Bay, NJ.



1 - 5

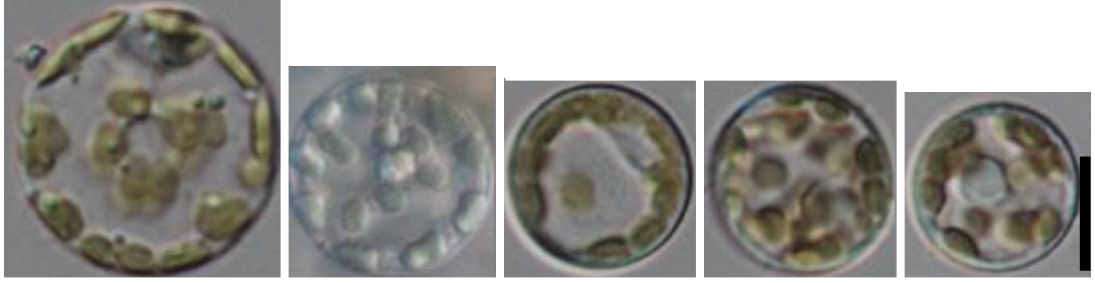
Plate 17

(Scale bars: Figs 1-5=10 μm ; Figs 6-8=1 μm)

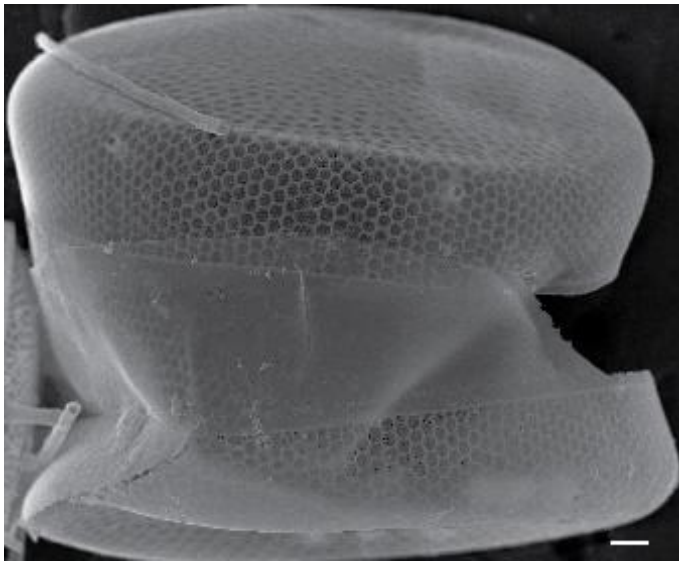
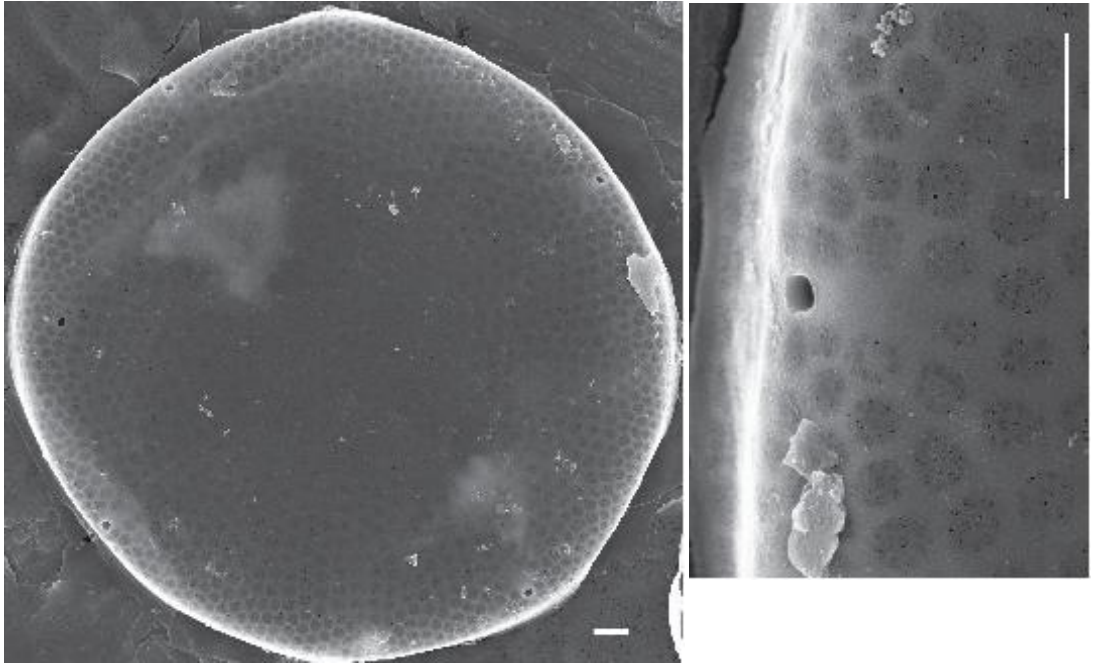
Actinocyclus theleus Bradbury & Krebs

Lit.: Bradbury & Krebs 1995, p. 12-13; pl. 13, fig. 7, pl. 14, fig. 1-4

Figs 1-8: Barnegat Bay, NJ.



1 - 5



6 - 8

Plate 18

(Scale bars: Figs 1-5=10 μm ; Fig 6=1 μm)

***Actinoptychus senarius* (Ehrenberg) Ehrenberg**

Lit.: Ehrenberg 1843, p. 298, 301, 322, 328, 437, 438, 443; pl. I/I, fig. 27, pl. I/III, fig. 21, pl. III/VII, fig. 1

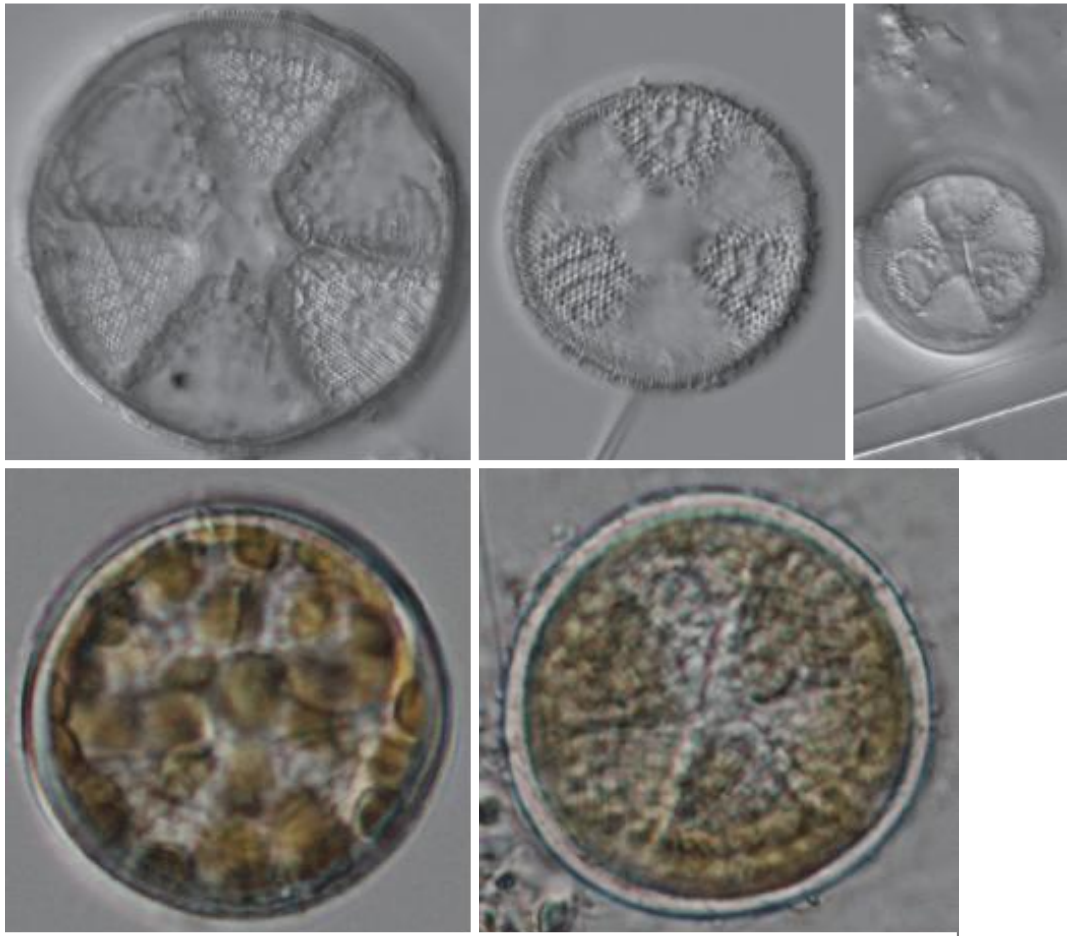
Basionym: *Actinocyclus senarius* Ehrenberg 1837

Figs 1-2: Sample BBDC0044, Barnegat Bay, NJ.

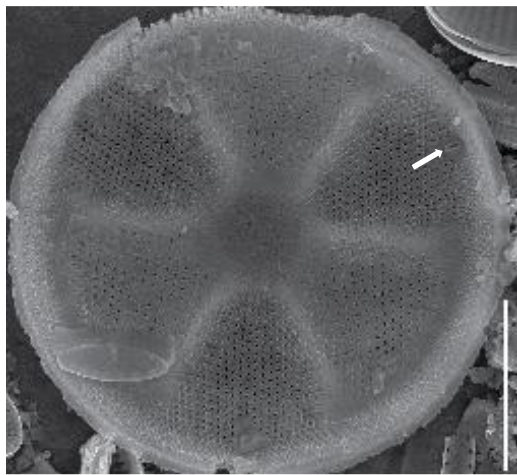
Fig. 3: Sample BBDC0080, Barnegat Bay, NJ.

Figs 4-5: Barnegat Bay, NJ.

Fig. 6: Sample COAST010, Moriches Bay, NY.



1 - 5



6

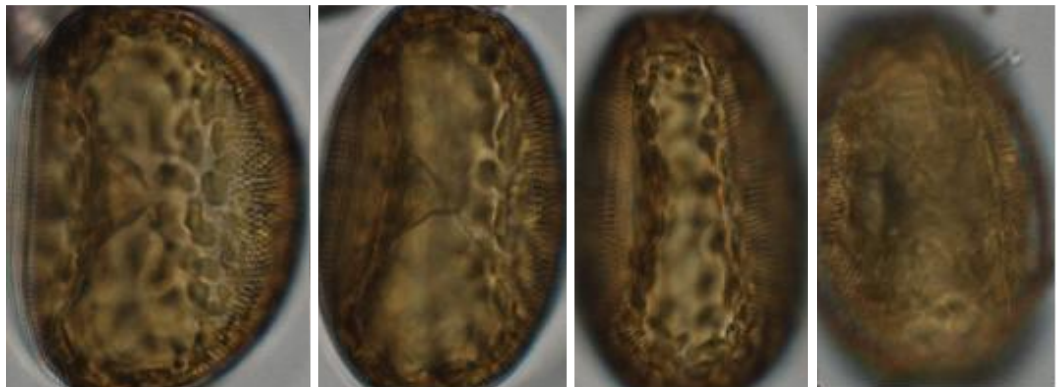
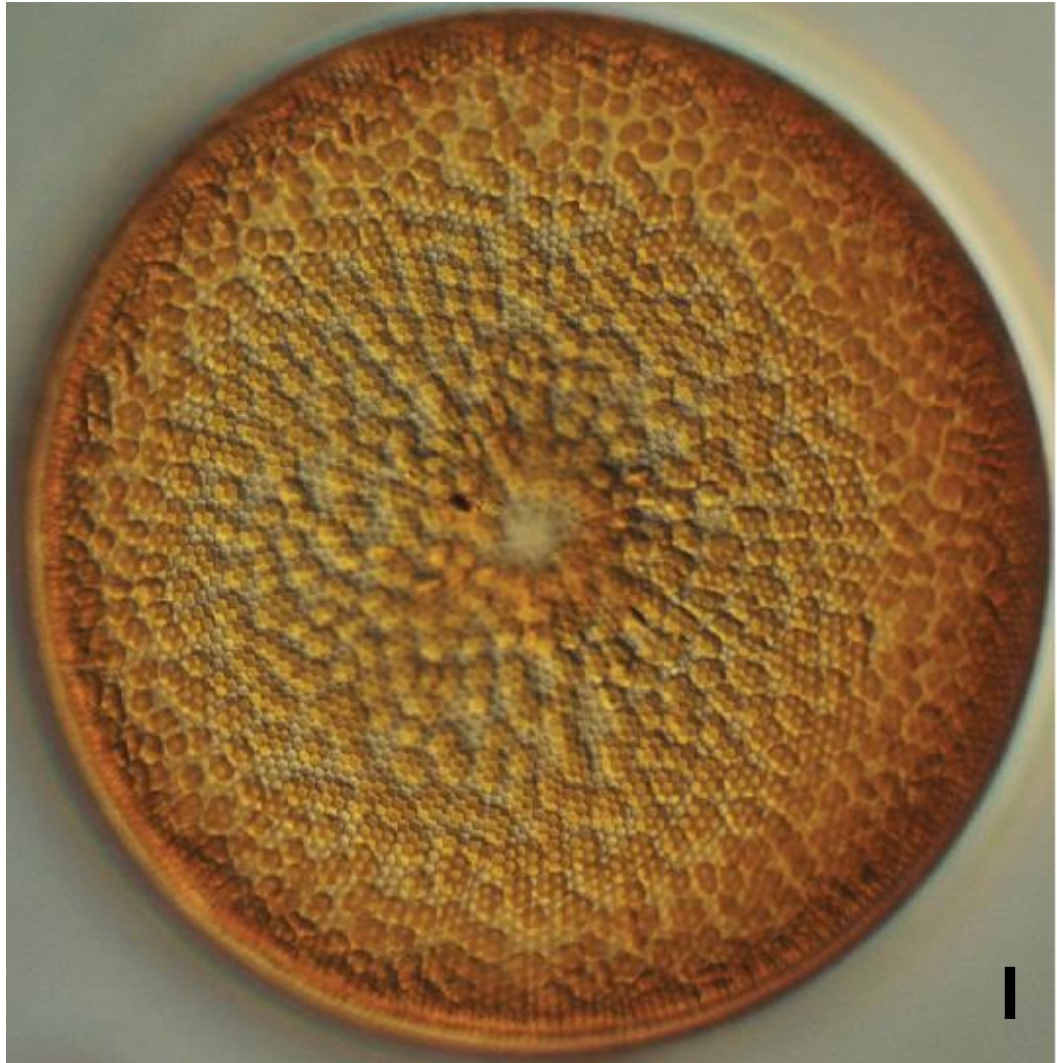
Coscinodiscus centralis Ehrenberg

Lit.: Ehrenberg 1854, p. 9; pl. 21, fig. 3

Synonyms: *Coscinodiscus asteromphalus* var. *centralis* (Ehrenberg) Grunow 1884

Coscinodiscus radiatus var. *centralis* (Ehrenberg; Ehrenberg) Van Heurck 1896

Figs 1-5: Barnegat Bay, NJ.



1 - 5

Plate 20

(Scale bars: Figs 1-3=10 µm)

Figs 1-2: *Coscinodiscus granii* Gough

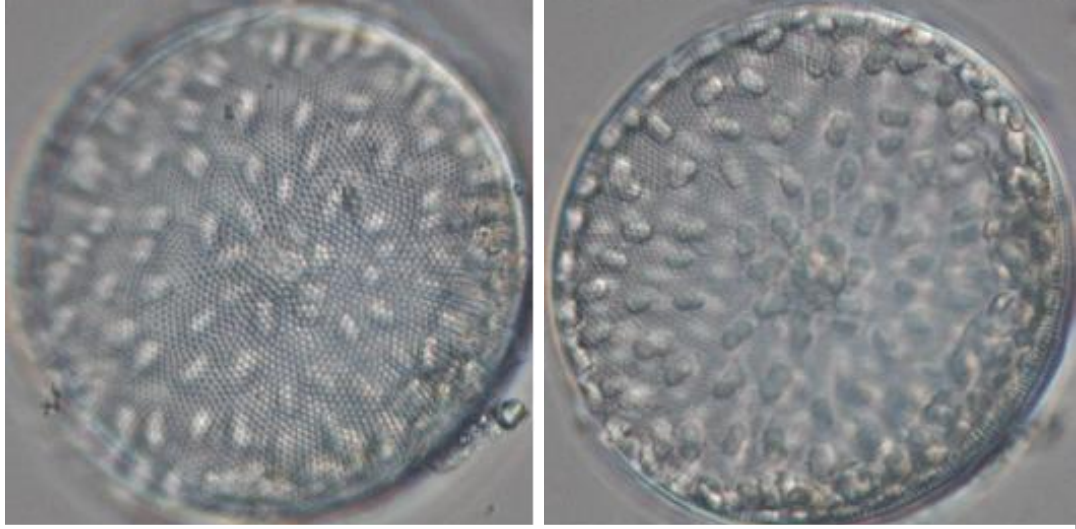
Lit.: Gough 1905, p. 338; fig. 313 (335)

Figs 1-2: Barnegat Bay, NJ.

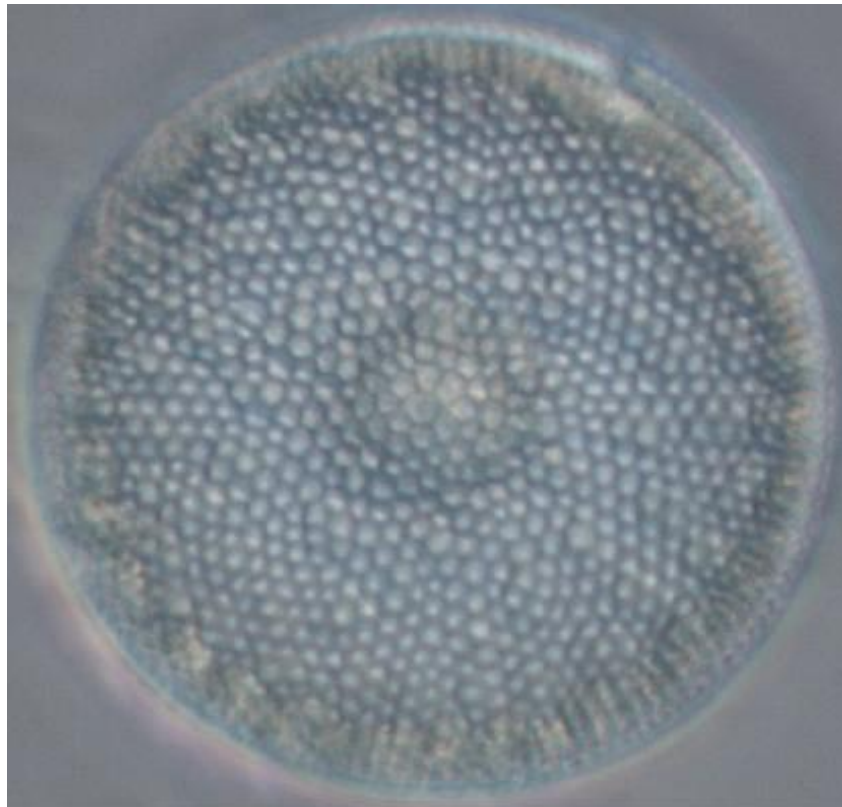
Figs 3: *Coscinodiscus radiatus* Ehrenberg

Lit.: Ehrenberg 1854, pl. 21, fig. 1

Fig. 3: Barnegat Bay, NJ.



1 - 2



3

Plate 21

(Scale bars: Figs 1-5=10 µm; Fig 6-7=1 µm)

Biddulphia alternans (Bailey) Van Heurck

Lit.: Van Heurck 1885, p. 208

Basionym: *Triceratium alternans* J.W. Bailey 1851

Synonym: *Trigonium alternans* (J.W. Bailey) Mann 1907

Fig. 1: Sample BBDC0002, Barnegat Bay, NJ.

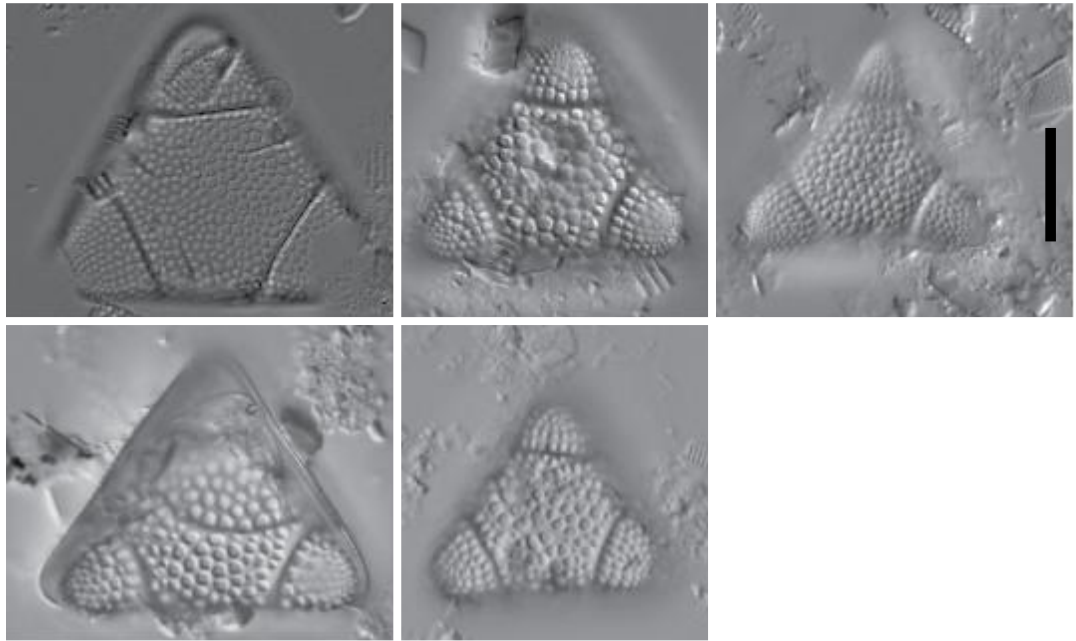
Fig. 2: Sample BBDC0009, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0008, Barnegat Bay, NJ.

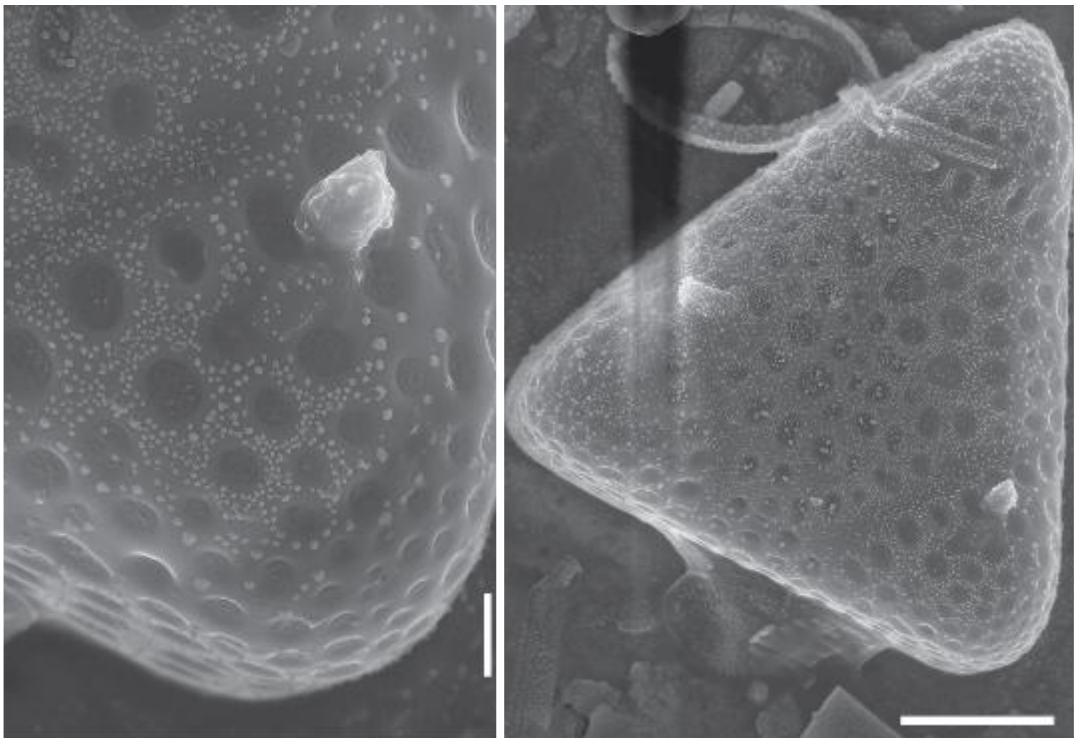
Fig. 4: Sample BBDC0045, Barnegat Bay, NJ.

Fig. 5: Sample BBDC0051, Barnegat Bay, NJ.

Figs 6-7: Sample BBDC0001, Barnegat Bay, NJ.



1 - 5



6 - 7

Fig.1: ***Biddulphia antediluviana*** (Ehrenberg) Van Heurck

Lit.: Van Heurck 1885, p. 208

Basionym: *Amphitetras antediluviana* Ehrenberg 1840

Synonyms: *Odontella antediluviana* (Ehrenberg) M. Peragallo 1903

Triceratium antediluvianum (Ehrenberg) Grunow 1867

Fig. 1: Sample BBDC0074, Barnegat Bay, NJ.

Figs 2-6: ***Biddulphia pulchella*** Gray

Lit.: Gray 1821, p. 294

Synonyms: *Conferva biddulphiana* J.E. Smith 1790-1814

Biddulphia biddulphiana (J.E. Smith) Boyer 1900

Biddulphia pulchella var. *quinelocularis* (Kützinger) Rabenhorst 1864

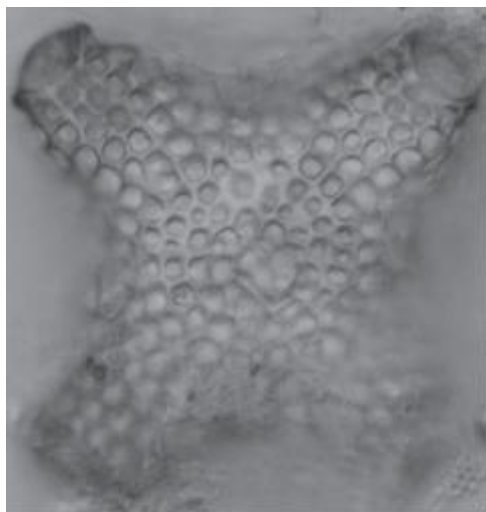
Biddulphia quinelocularis Kützinger 1844

Diatoma biddulphianum (J.E. Smith) Agardh 1824

Diatoma biddulphiana (J.E. Smith) Agardh 1817

Figs 1-2: Barnegat Bay, NJ.

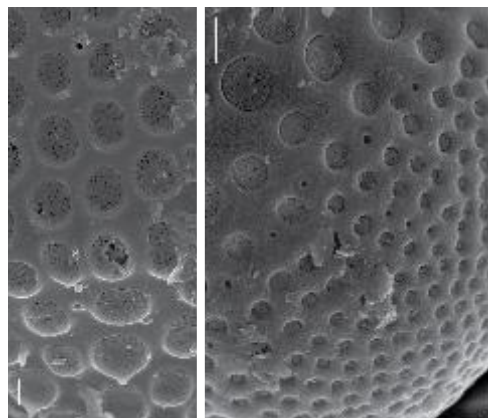
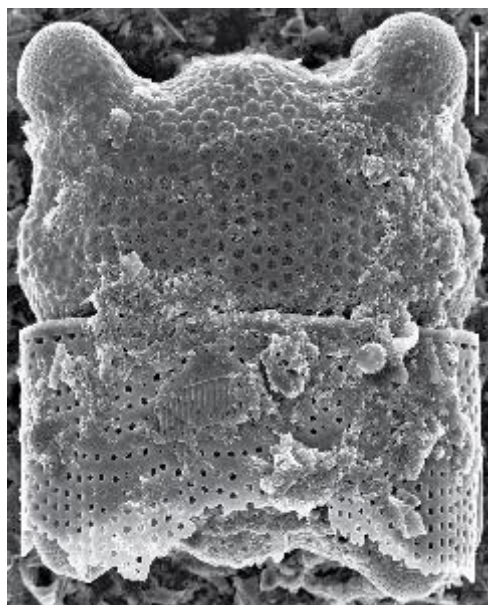
Figs 4-6: Sample BBDC0038, Barnegat Bay, NJ.



1



2 - 3



4 - 6

Neohuttonia reichardtii (Grunow) Kuntze

Lit.: Kuntze 1898, p. 417

Basionym: *Cerataulus reichardtii* Grunow 1863

Synonyms: *Huttonia reichardtii* (Grunow) Grunow 1887

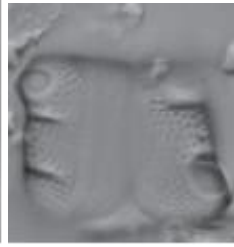
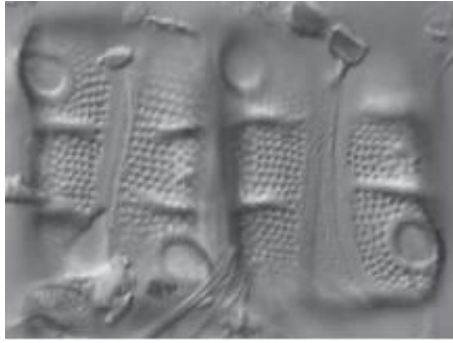
Huttoniella reichardtii (*reichardtii*) (Grunow) Hustedt 1955

Huttonia reichardtii (Grunow) Grunow 1888

Fig. 1: Sample BBDC0084, Barnegat Bay, NJ.

Fig. 2: Sample BBDC0094, Great Bay, NJ.

Fig. 3: Barnegat Bay, NJ.



1 - 3

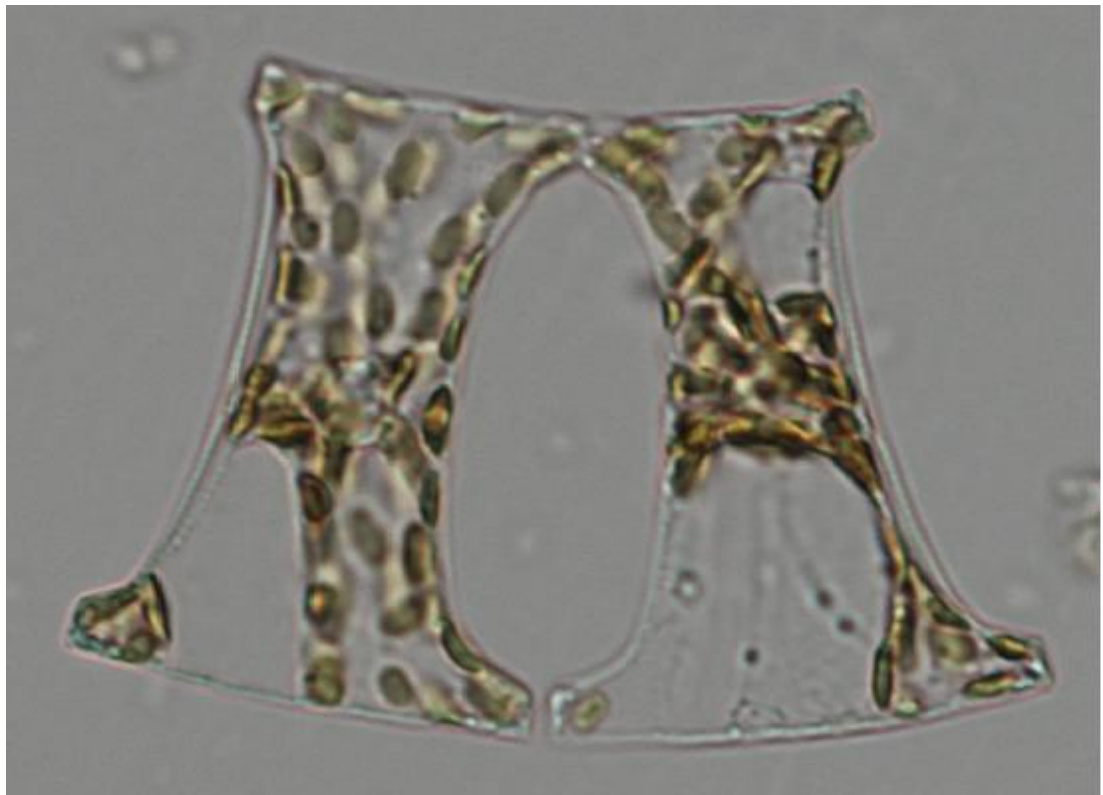
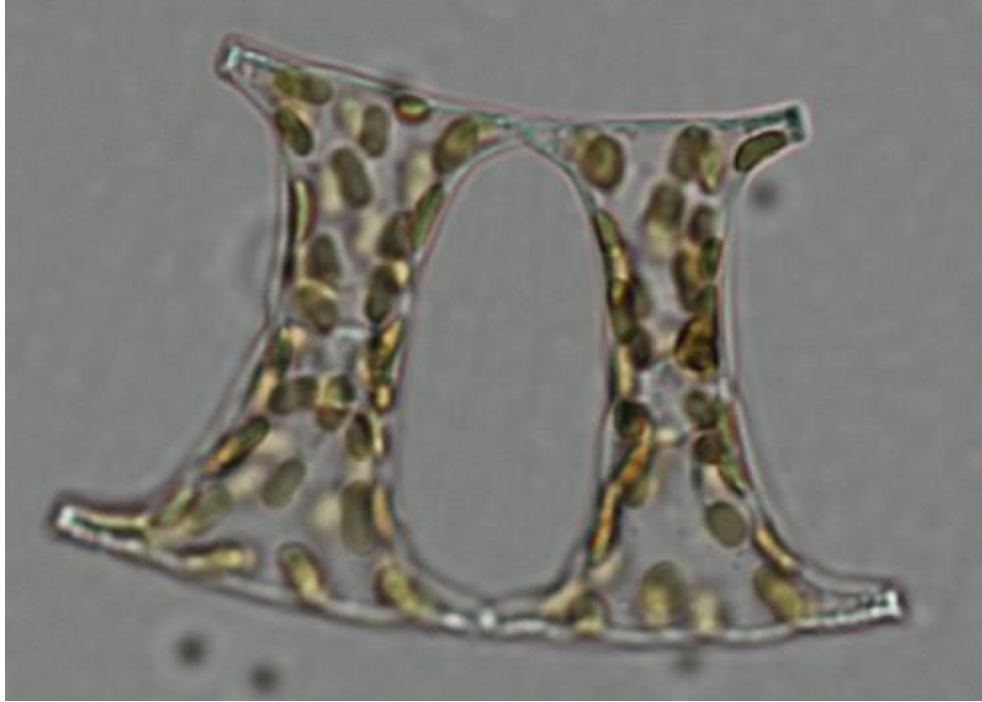
Plate 24

(Scale bar: Figs 1-2=10 μ m)

Eucampia zodiacus Ehrenberg

Lit.: Ehrenberg 1840, p. 71 (151); pl. 4, fig. 8

Figs 1-2: Barnegat Bay, NJ.



1 - 2

Fig. 1: ***Triceratium favus*** Ehrenberg

Lit.: Ehrenberg 1840, p. 79 (159); pl. 4, fig. 10

Synonyms: *Odontella favus* (Ehrenberg) M. Peragallo 1903

Biddulphia favus (Ehrenberg) Van Heurck 1885

Odontella favus (Ehrenberg) Cleve 1901

Fig. 1: Sample BBDC0063, Barnegat Bay, NJ.

Fig. 2: ***Auliscus sculptus*** (Smith) Brightwell

Lit.: Brightwell 1860, p. 139

Basionym: *Eupodiscus sculptus* W. Smith 1853

Synonym: *Aulacodiscus sculptus* (W. Smith) Brightwell 1860

Fig. 2: Sample BB0015, Barnegat Bay, NJ.

Fig. 3: ***Pseudoauliscus peruvianus*** (Kitton ex Pritchard) Schmidt

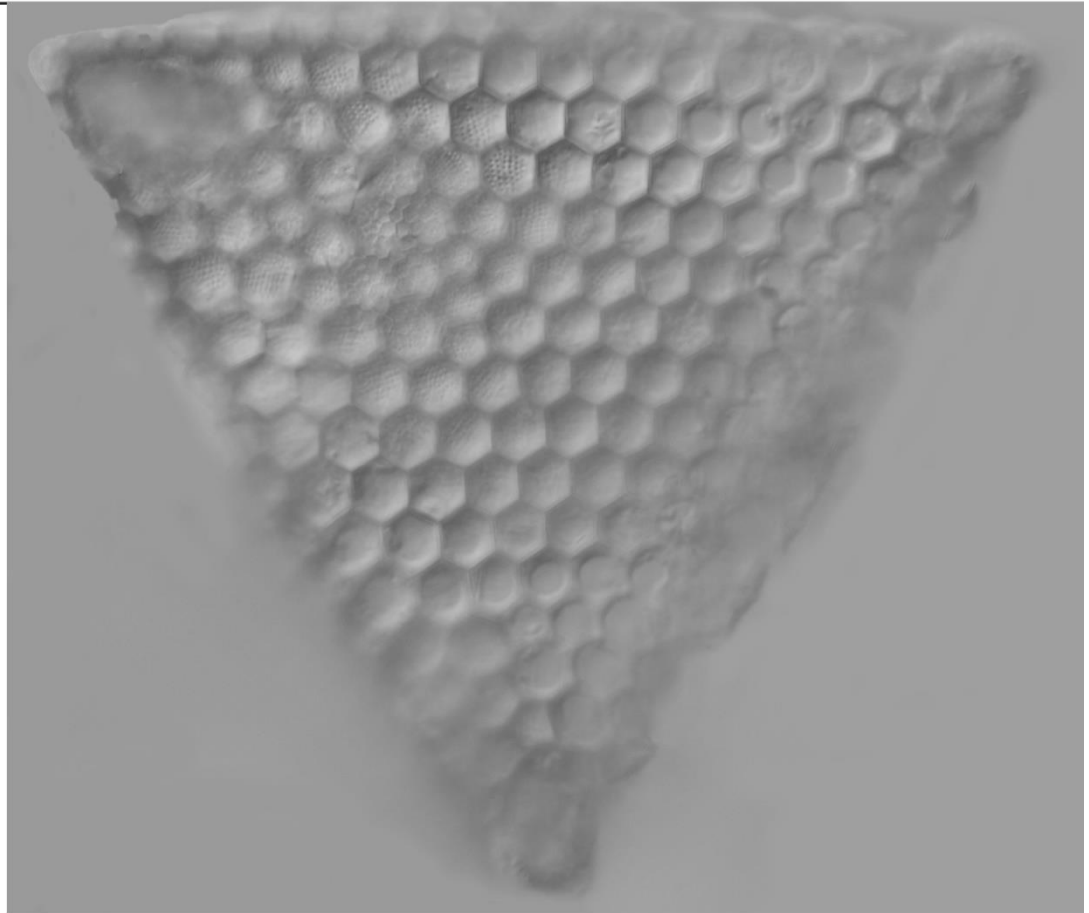
Lit.: Schmidt et al. 1875, pl. 32, fig. 29

Basionym: *Eupodiscus peruvianus* Kitton ex Ralfs in Pritchard 1861

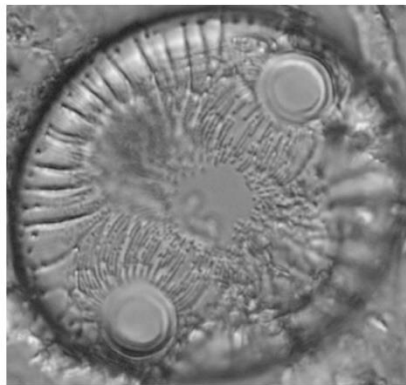
Synonyms: *Auliscus peruvianus* (Kitton ex Pritchard) Greville 1862

Eupodiscus peruvianus Kitton ex Ralfs in Pritchard 1861

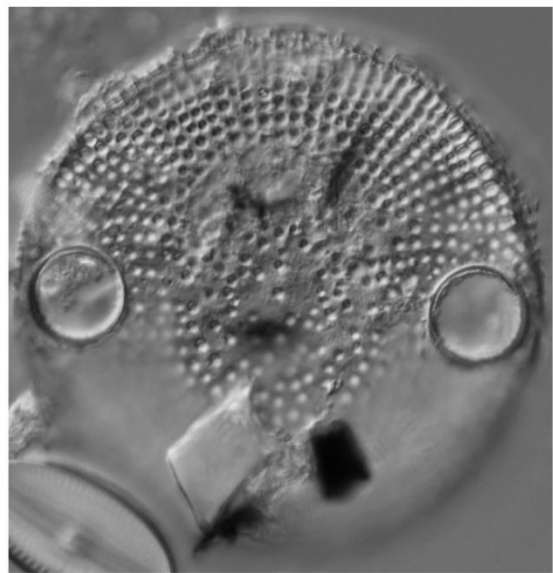
Fig. 3: Sample BB0066, Barnegat Bay, NJ.



1



2



3

Plate 26

(Scale bar: Figs 1-4=10 µm)

Fig. 1: *Odontella mobilensis* Bailey

Lit.: Bailey 1851, p. 6

Fig. 1: Barnegat Bay, NJ.

Fig. 2-4: *Odontella aurita* Agardh

Lit.: Agardh 1832, p. 56

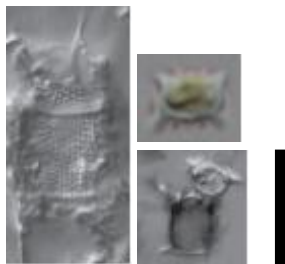
Fig. 2: Sample BBDC0065, Barnegat Bay, NJ.

Fig. 3: Barnegat Bay, NJ.

Fig. 4: Sample BB0071, Barnegat Bay, NJ.



1



2 - 4

Plate 27 (Scale bars: Figs 1-9;12-17=10 µm; Fig. 10-11=1 µm)

Figs 1-11: ***Dimerogramma minor*** (Gregory) Ralfs

Lit.: Pritchard 1861, p. 790

Basionym: *Denticula minor* Gregory 1857

Fig. 1: Sample BBDC0002, Barnegat Bay, NJ.

Figs 2-3: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 4: Sample RUTG0870, Bayville, NJ.

Fig. 5: Sample BBDC0007, Barnegat Bay, NJ.

Fig. 6: Sample BB0073, Barnegat Bay, NJ.

Fig. 7: Sample BBDC0003, Barnegat Bay, NJ.

Fig. 8: Sample BB0061, Barnegat Bay, NJ.

Fig. 9: Sample BBDC0047, Barnegat Bay, NJ.

Figs 12-17: ***Plagiogrammopsis vanheurckii*** (Grunow) Hasle

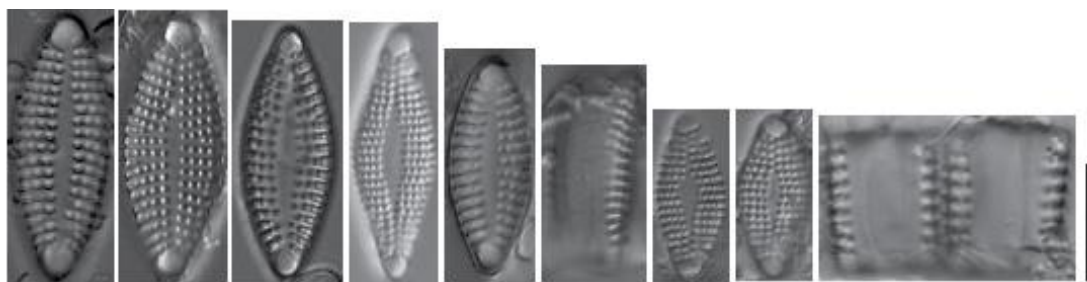
Lit.: Hasle, von Stosch & Syvertsen 1983, p. 31-34; text fig. 4, fig. 104-131

Basionym: *Plagiogramma vanheurckii* Grunow in Van Heurck 1881

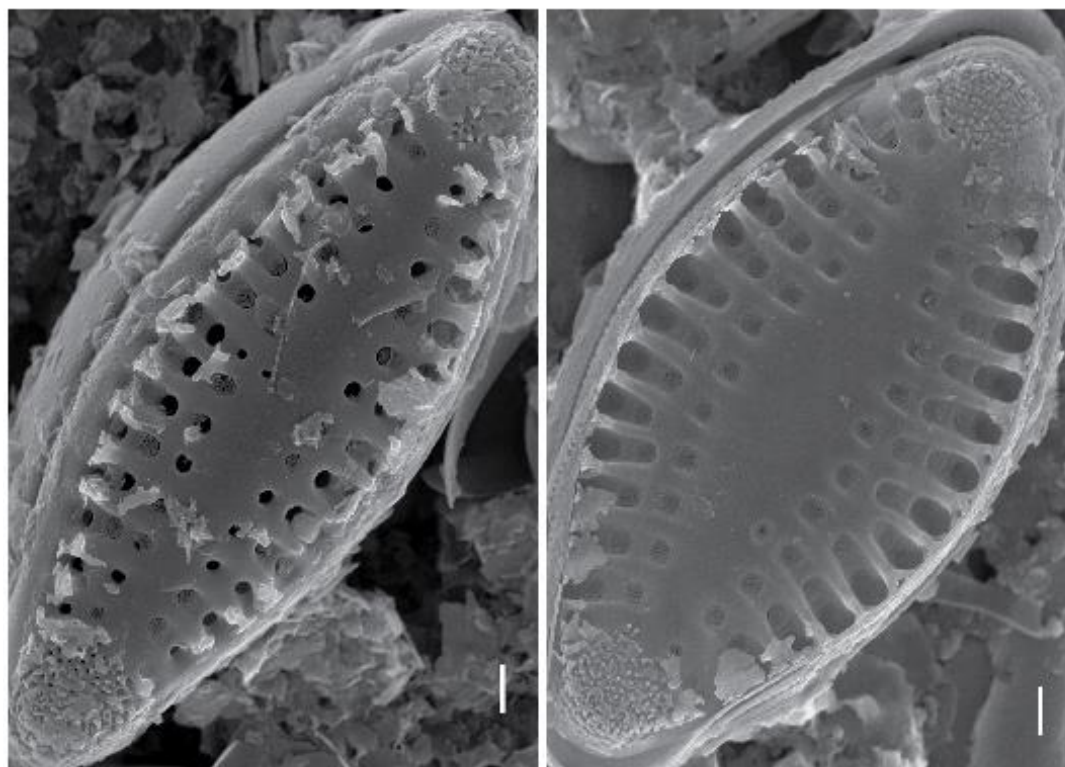
Figs 12-13,17: Barnegat Bay, NJ.

Fig. 14: Sample RUTG0380, Cheesequake State Park, NJ.

Figs 15-16: Sample BBDC0045, Barnegat Bay, NJ.



1 - 9



10 - 11



12 - 17

Figs 1-17: *Anaulus balticus* Simonsen

Lit.: Simonsen 1959, p. 74; pl. 10, fig. 1-3

- Fig. 1: Sample BBDC0062, Barnegat Bay, NJ.
- Fig. 2: Sample BBDC0069, Barnegat Bay, NJ.
- Fig. 3: Sample BB0061, Barnegat Bay, NJ.
- Fig. 4: Sample BBDC0047, Barnegat Bay, NJ.
- Fig. 5: Sample BB0066, Barnegat Bay, NJ.
- Fig. 6: Sample BB0059, Barnegat Bay, NJ.
- Fig. 7: Sample BBDC0050, Barnegat Bay, NJ.
- Fig. 8: Barnegat Bay, NJ.
- Fig. 9: Sample BBDC0051, Barnegat Bay, NJ.
- Fig. 10: Sample BB0064, Barnegat Bay, NJ.
- Fig. 11: Sample BB0065, Barnegat Bay, NJ.
- Fig. 12: Sample BBDC0096, Great Bay, NJ.

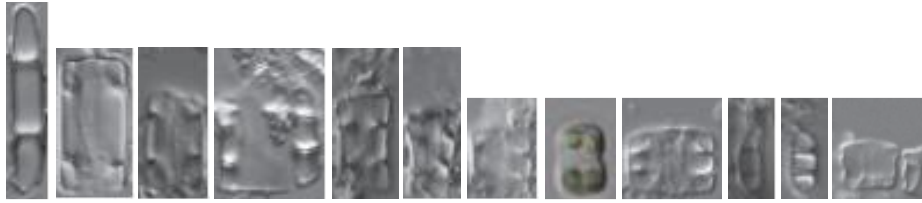
Figs 18-21: *Eunotogramma marinum* (W. Smith) Peragallo & Peragallo

Lit.: Peragallo & Peragallo 1908, p. x

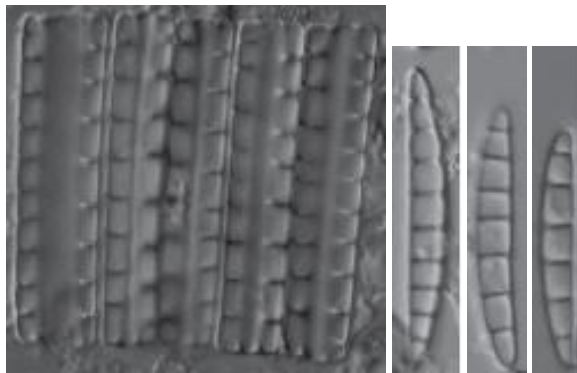
Basionym: *Himantidium marinum* W. Smith 1857

Synonym: *Smithiella marina* (W. Smith) Peragallo & Peragallo 1901

- Fig. 13,18: Sample COAST062, Great Bay, NJ.
- Fig. 14: Sample BBDC0094, Great Bay, NJ.
- Fig. 15: Sample BBDC0065, Barnegat Bay, NJ.
- Fig. 16: Sample BBDC0108, Great Bay, NJ.
- Fig. 17: Sample BBDC0082, Barnegat Bay, NJ.



1 - 17



18 - 21



Plate 29

(Scale bars: Figs 1-9=10 μm ; Fig 10-15=1 μm)

Eunotogramma dubium Hustedt

Lit.: Hustedt 1939, p. 592; fig. 8-10

Fig. 1: Sample BBDC0072, Barnegat Bay, NJ.

Fig. 2: Sample BBDC0051, Barnegat Bay, NJ.

Fig. 3: Barnegat Bay, NJ.

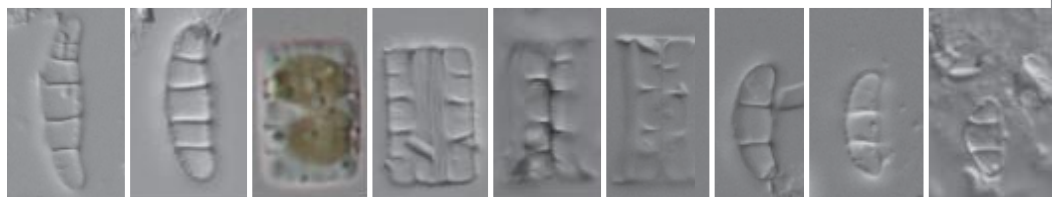
Figs 4, 10: Sample BBDC0045, Barnegat Bay, NJ.

Figs 5-6, 11-15: Sample BBDC0080, Barnegat Bay, NJ.

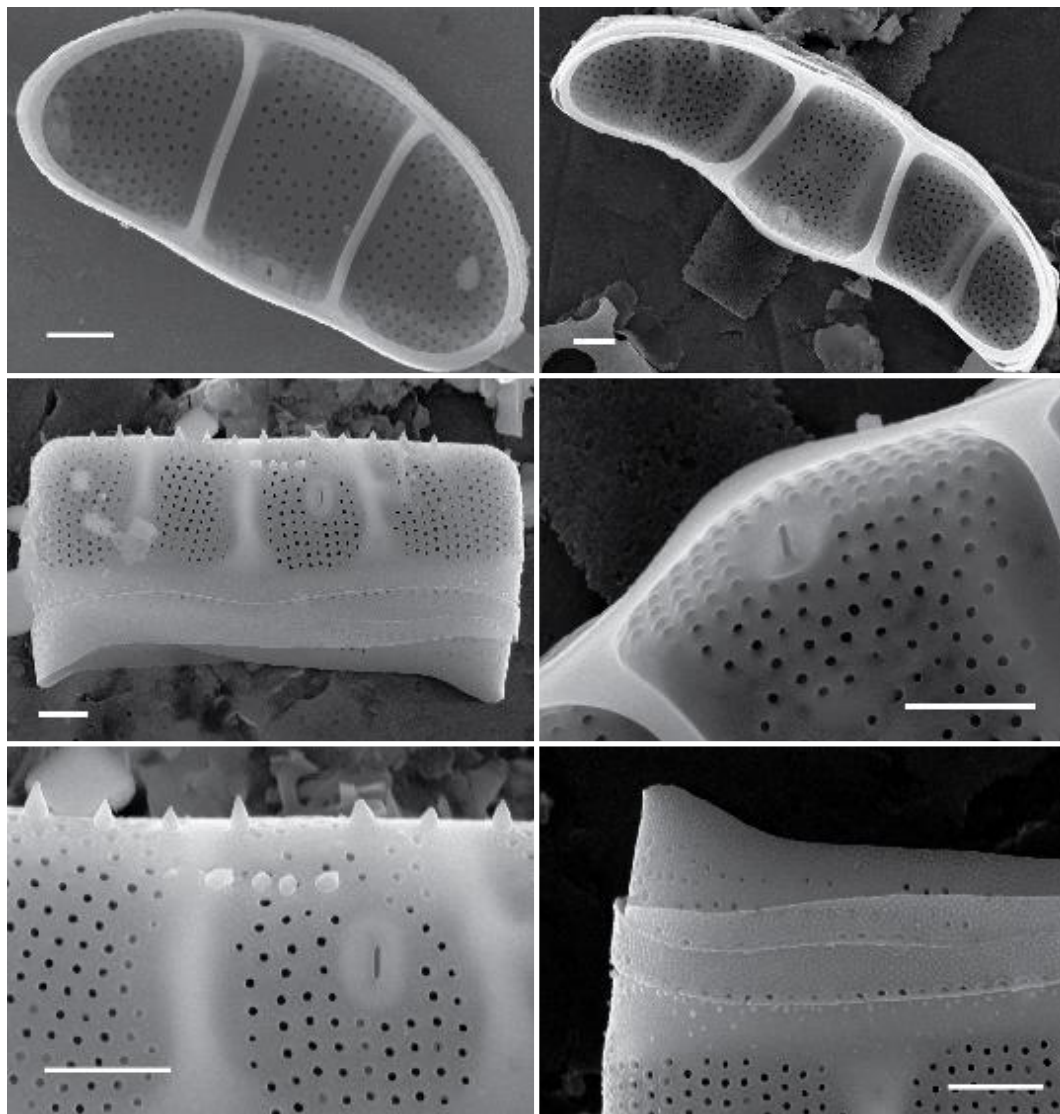
Fig. 7: Sample RUTG0803, Cape May, NJ.

Fig. 8: Sample BBDC0110, Great Bay, NJ.

Fig. 9: Sample RUTG0807, Cape May, NJ.



1 - 9



10 - 15

Figs 1-3: ***Lithodesmium undulatum*** Ehrenberg

Lit.: Ehrenberg 1840, p. 75(155); pl. 4, fig. 13

Fig. 1: Sample BBDC0107, Great Bay, NJ.

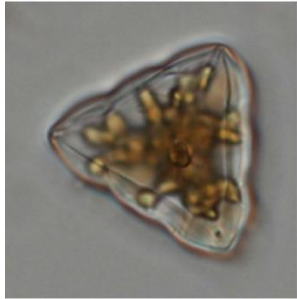
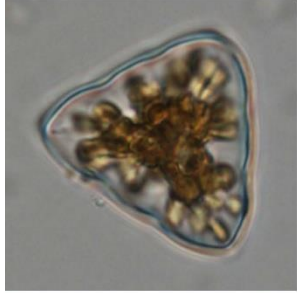
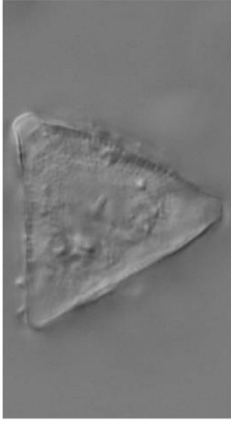
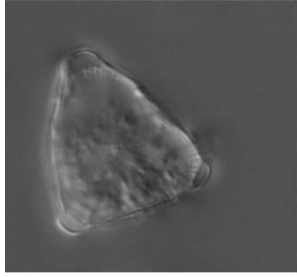
Fig. 2: Sample BBDC0080, Barnegat Bay, NJ.

Figs 3-5: Barnegat Bay, NJ.

Figs 6-7: ***Ditylum brightwellii*** Peragallo & Peragallo

Lit.: Peragallo & Peragallo 1901, pl. 96, fig. 10, 11

Figs 6-7: Barnegat Bay, NJ.



1 - 5



6 - 7



Plate 31

(Scale bars: Figs 1-4=10 μm ; Figs 5-11 =1 μm)

Skeletonema costatum (Greville) Cleve

Lit.: Cleve 1873, p. 7

Basionym: *Melosira costata* Greville 1866

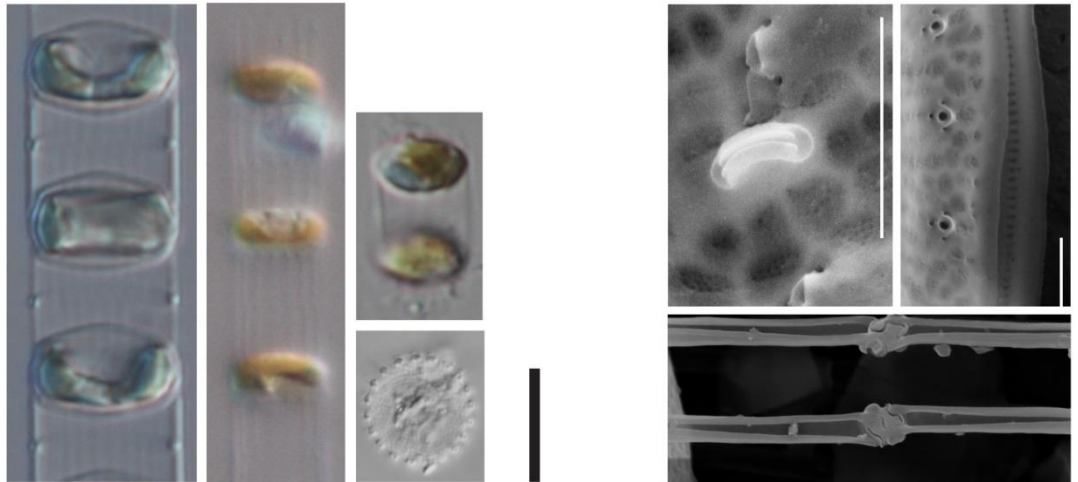
Synonym: *Stephanopyxis costata* (Greville) Hustedt 1956

Figs 1-3: Barnegat Bay, NJ.

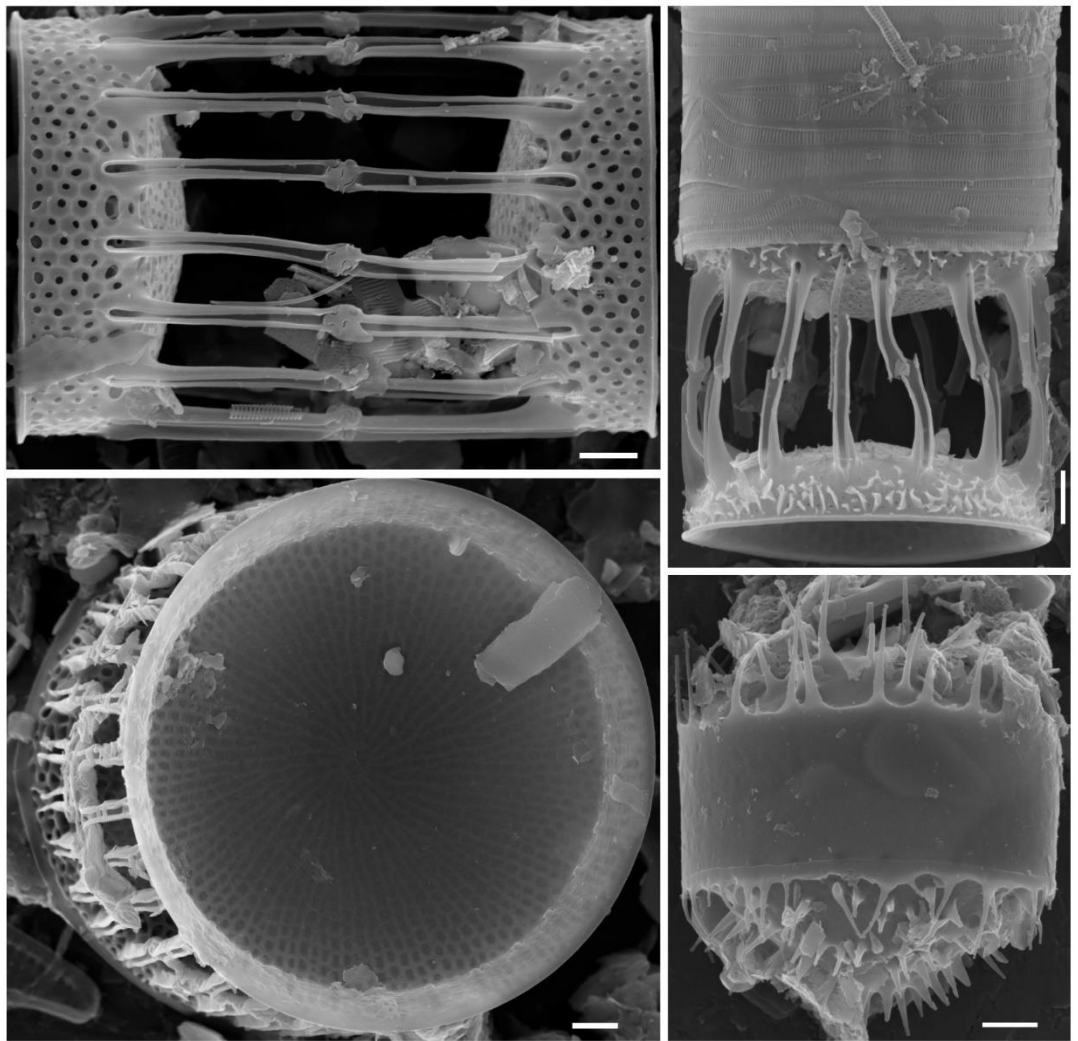
Figs 4 -6: Sample BBDC0045, Barnegat Bay, NJ.

Fig. 7-9: Sample COAST015, Great South Bay, NY.

Figs 10-11: Sample COAST054, Barnegat Bay, NJ.



1 - 4



5 - 11

Plate 32

(Scale bars: Figs 1-4=10 μm ; Figs 5-9 =1 μm)

Skeletonema marinoi Zingone & Sarno

Lit.: Sarno et al. 2005, p. 160; fig. 5, A-H

Figs 1-4: Barnegat Bay, NJ.

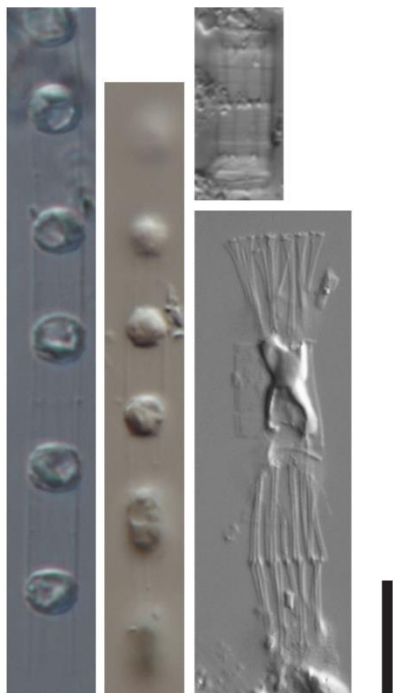
Fig. 5: Sample BBDC0045, Barnegat Bay, NJ.

Fig. 6: Sample BBDC0080, Barnegat Bay, NJ.

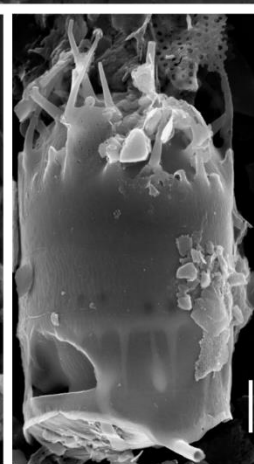
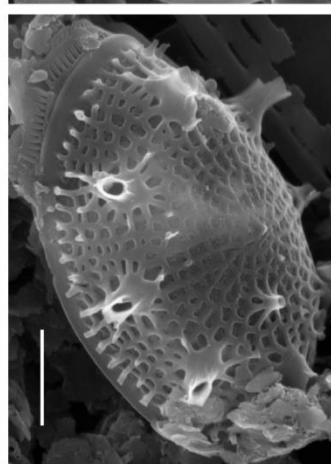
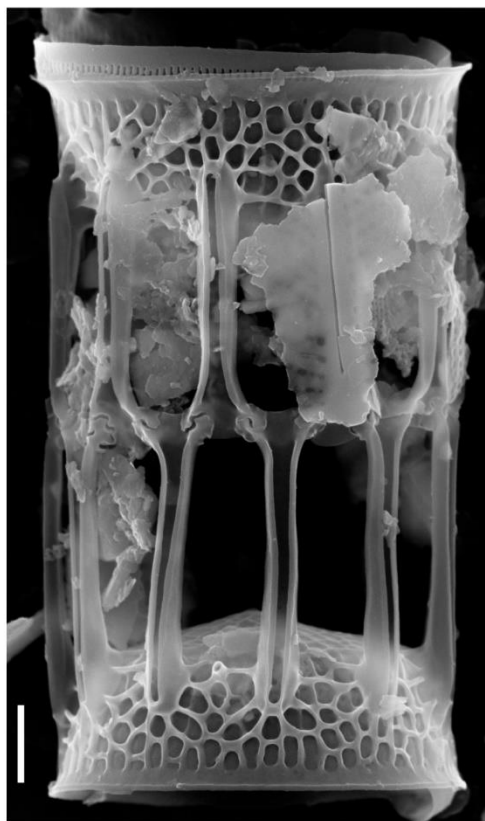
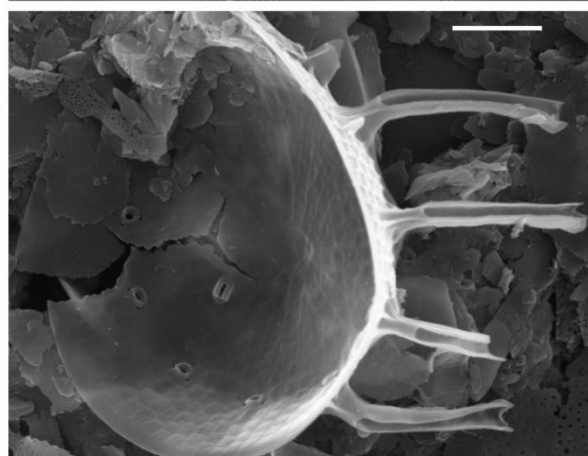
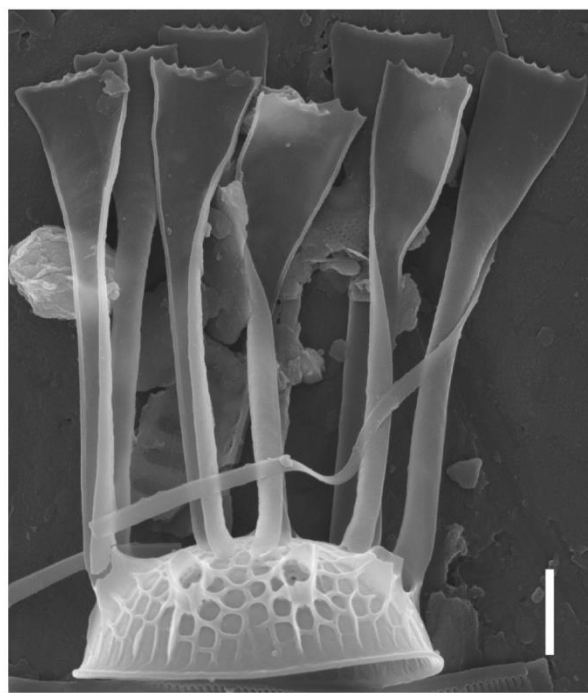
Fig. 7: Sample COAST031, Western Bay, NY.

Fig. 8: Sample COAST073, North East, New Jersey shore.

Fig. 9: Sample COAST015, Great South Bay, NY.



1 - 4



5- 9

Plate 33

(Scale bars: Figs 1-3=10 μm ; Figs 4-9 =1 μm)

Skeletonema menzelii Guillard, Carpenter & Reimer

Lit.: Guillard, Carpenter & Reimer, 1974, v. 13: p. 131

Fig. 1: Barnegat Bay, NJ.

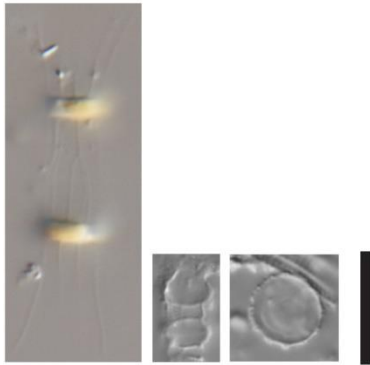
Fig. 2: Sample COAST004, Peconic Bay, NY.

Fig. 3: Sample COAST051, Barnegat Bay, NJ.

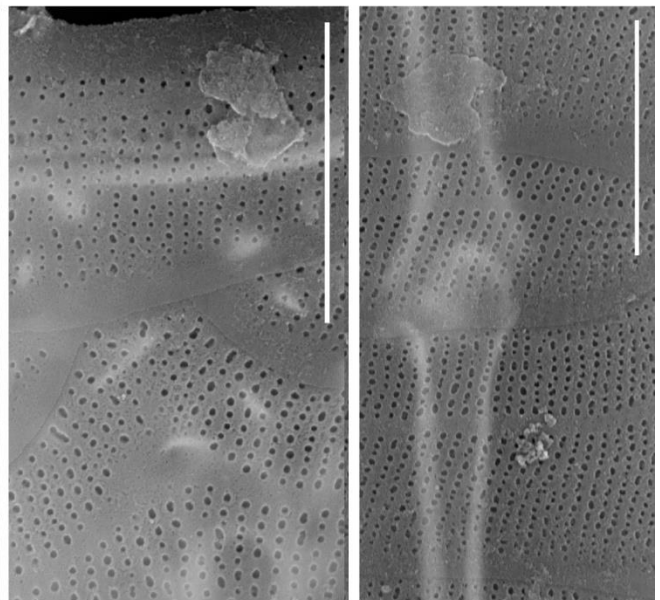
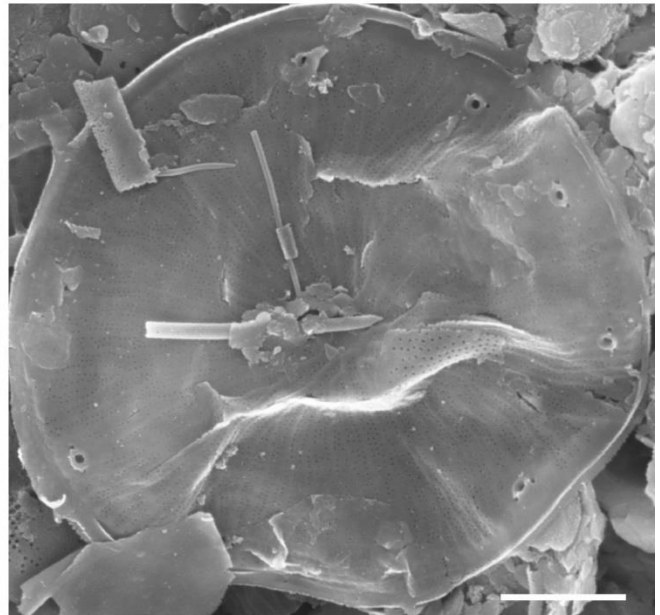
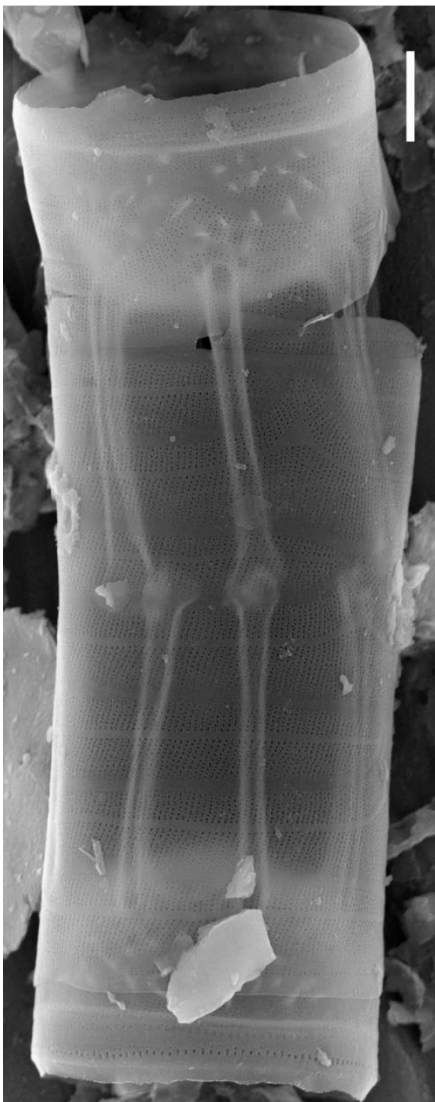
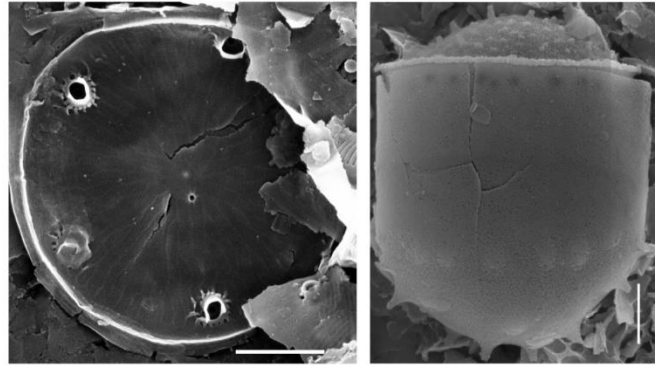
Fig. 4: Sample COAST073, North East, New Jersey shore.

Fig 5-6: Sample COAST071, North East, New Jersey shore.

Fig 7-9: Sample RUGT0549, Fortescue, New Jersey.



1 - 3



4 - 9

Plate 34

(Scale bars: Figs 1-10=10 μm ; Figs 11-18=1 μm)

Conticribra guillardii (Hasle) Stachura-Suchoples & Williams

Lit.: Stachura-Suchoples & Williams 2009, p. 482

Basionym: *Thalassiosira guillardii* Hasle 1978

Figs 1,4,7-8,10: Sample RUTG0804, Cape May, NJ.

Figs 2-3,5,9: Sample RUTG0805, Cape May, NJ.

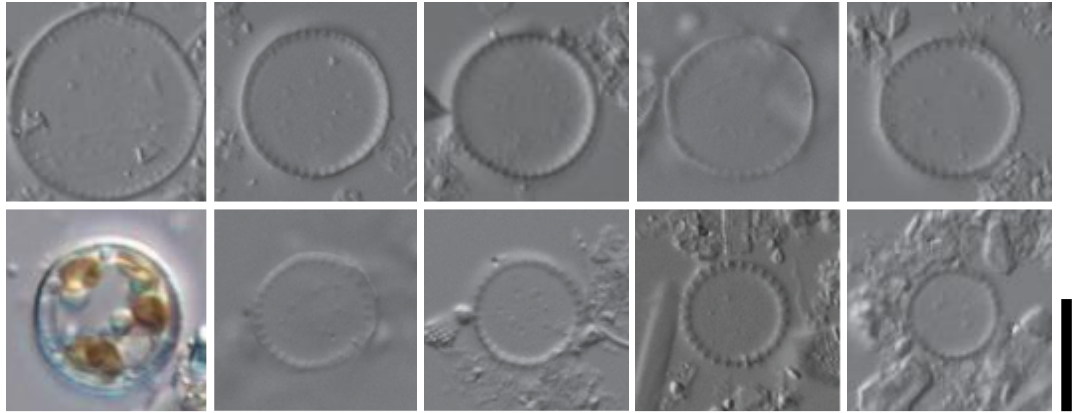
Fig. 6: Sample RUTG0831, Cheesequake State Park, NJ.

Figs 11-12, 15: Sample RUTG0803, Cape May, NJ.

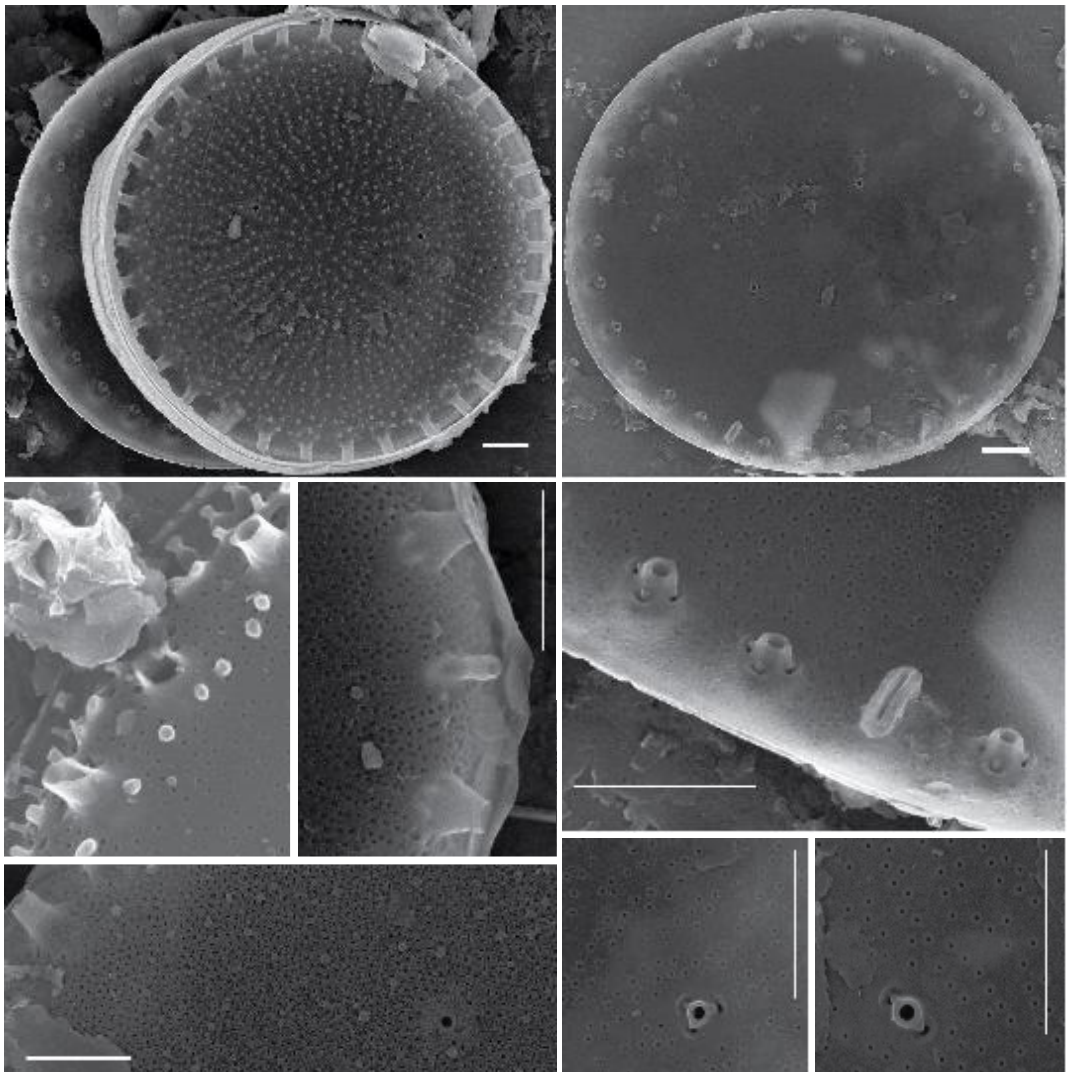
Fig. 13, 17-18: Sample COAST071, North East, NJ shore.

Fig. 14: Sample RUTG0825, Cheesequake State Park, NJ.

Fig. 16: Sample RUTG0811, Cape May, NJ.



1 - 10



11 - 18

Conticribra weissflogii (Grunow) Stachura-Suchoples & Williams

Lit.: Stachura-Suchoples & Williams 2009, p. 482

Basionym: *Eupodiscus weissflogii* Grunow in Van Heurck 1882-1885

Synonyms: *Micropodiscus weissflogii* Grunow in Van Heurck 1882-1885

Eupodiscus weissflogii (Grunow in Van Heurck) De Toni 1894

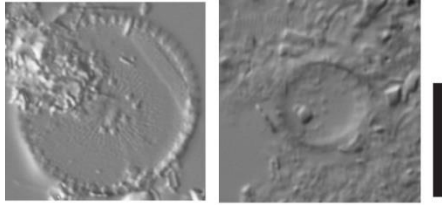
Thalassiosira weissflogii (Grunow) G. Fryxell & Hasle 1977

Micropodiscus weissflogii (Grunow in Van Heurck) Grunow in Van Heurck 1885

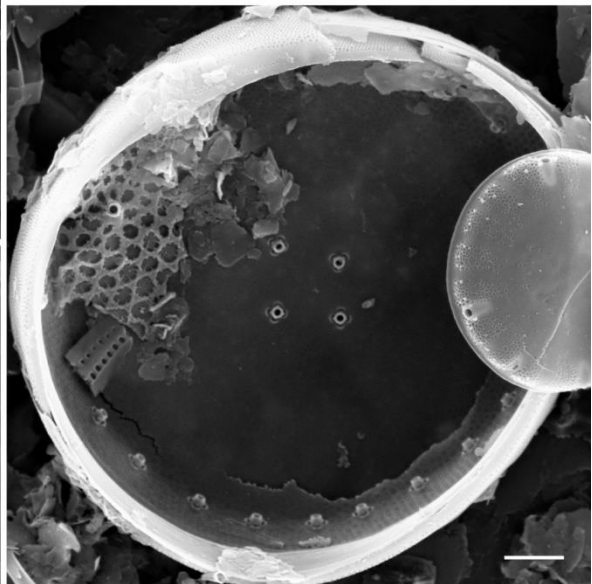
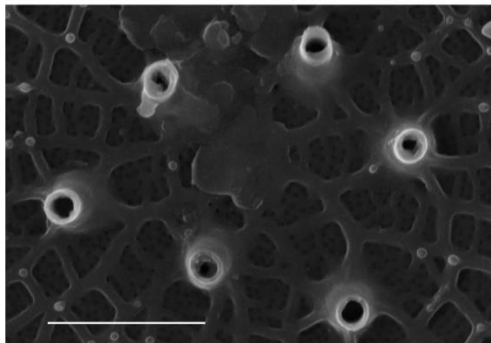
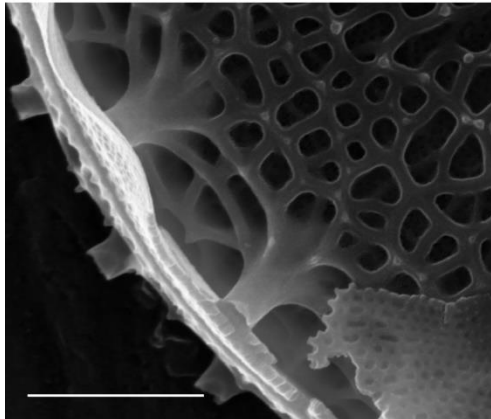
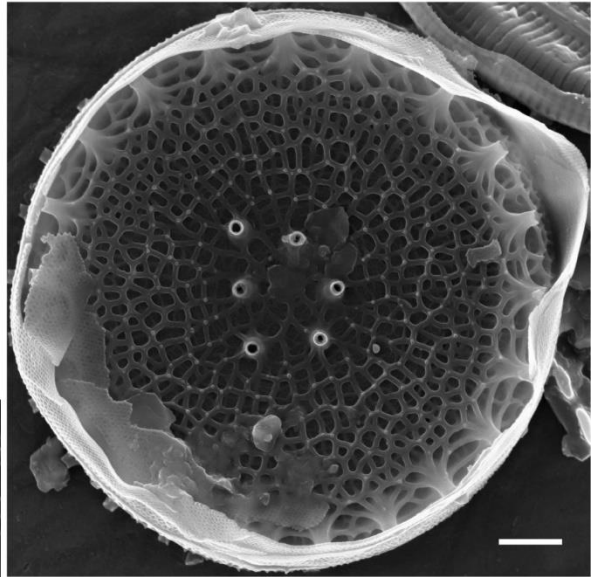
Fig. 1: Sample BBDC0049, Barnegat Bay, NJ.

Fig. 2: Sample BB0073, Barnegat Bay, NJ.

Figs 3-6: Sample BBDC0071, Barnegat Bay, NJ.



1 - 2



3 - 6

Plate 36

(Scale bars: Figs 1-12=10 μm ; Fig 13-14=1 μm)

***Thalassiosira nordenskiöldii* Cleve**

Lit.: Cleve 1873, p. 7; pl. 1, fig. 1

Synonym: *Coscinodiscus nordenskiöldii* (Cleve) Cleve-Euler 1951

Fig. 1: Sample RUTG0842, Leeds Point, NJ.

Figs 2-3,5-7,9,12: Sample COAST003, Peconic Bay, NY.

Figs 4: Sample GB001, Great Bay, NJ.

Fig. 8: Sample COAST015, Great South Bay, NY.

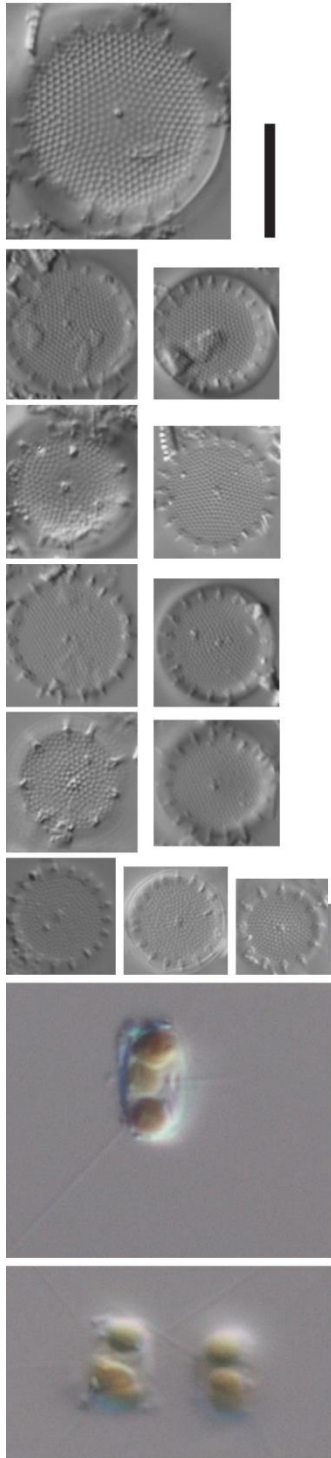
Fig. 10: Sample BBDC0080, Barnegat Bay, NJ.

Fig. 11: Sample COAST004, Peconic Bay, NY.

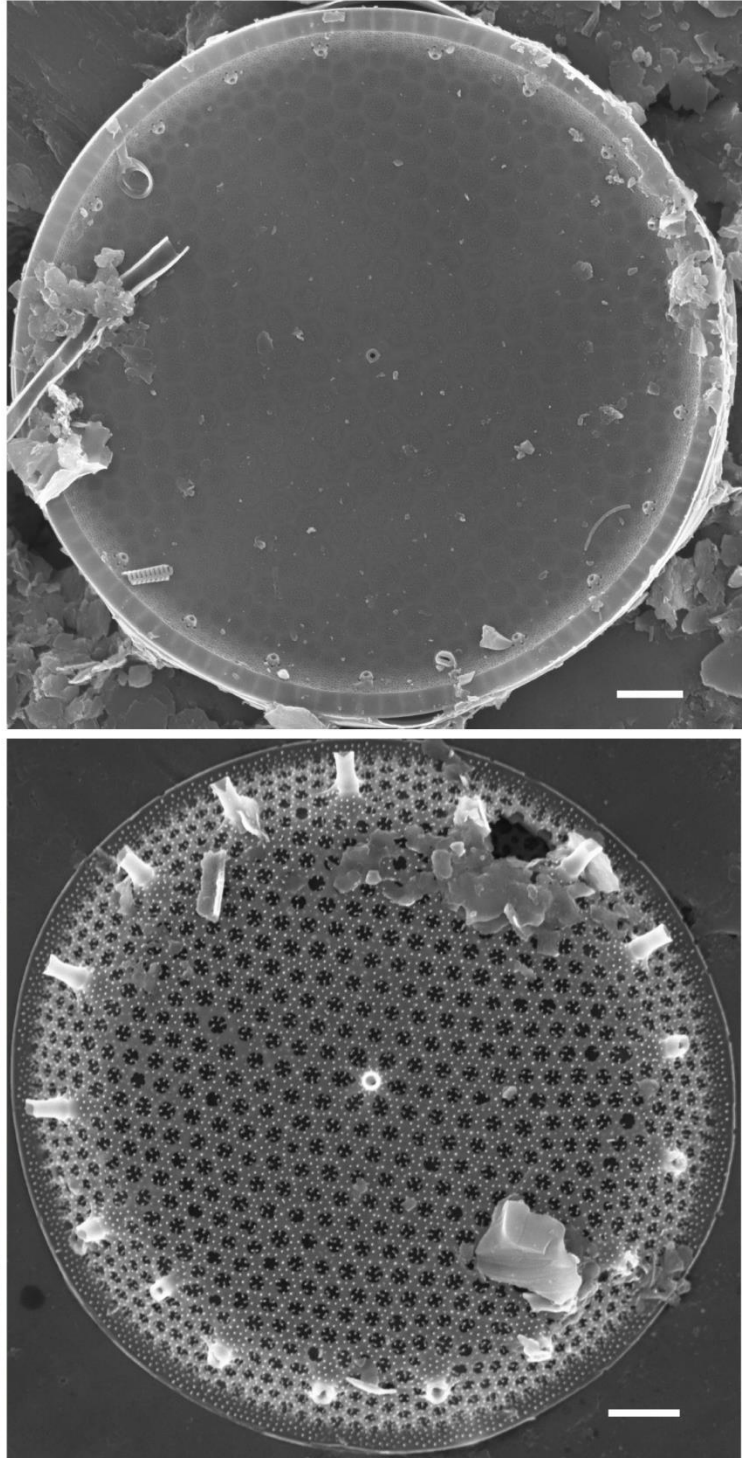
Figs 13-14: Barnegat Bay, NJ.

Fig. 15: Sample COAST054, Barnegat Bay, NJ.

Fig. 16: Sample COAST002, Peconic Bay, NY.



1 - 14



15 - 16

Thalassiosira angulata (Gregory) Hasle

Lit.: Hasle 1978, p. 93; fig. 4, 41, 70-99

Basionym: *Orthosira angulata* Gregory 1857

Synonyms: *Melosira angulata* (Gregory) Rabenhorst 1864

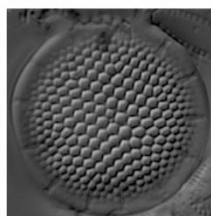
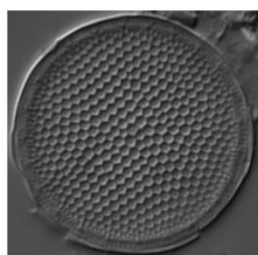
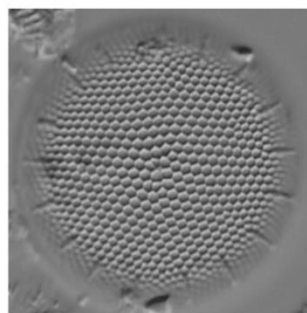
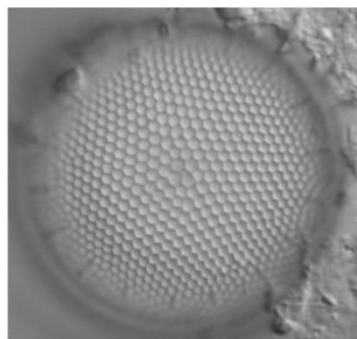
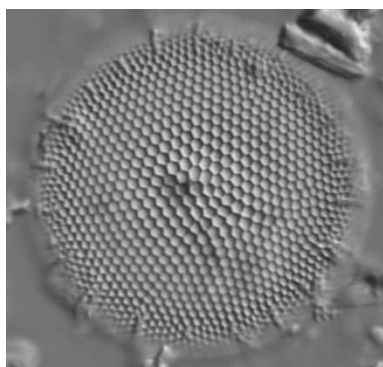
Lysigonium angulatum (Gregory) Kuntze 1891

Figs 1-3: Sample BBDC0080, Barnegat Bay, NJ.

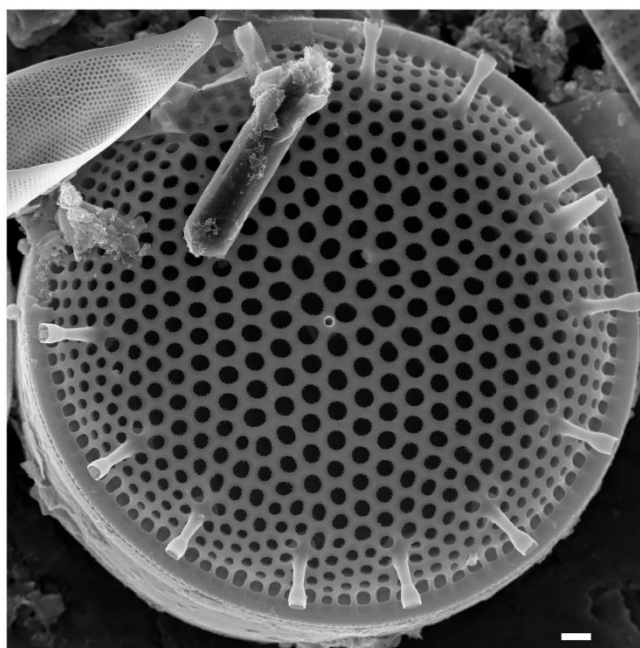
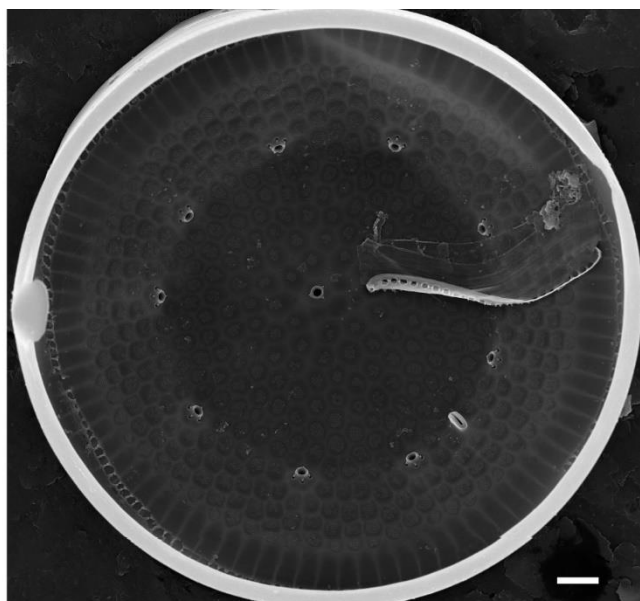
Fig. 4: Sample BBDC0009, Barnegat Bay, NJ.

Fig. 5: Sample BBDC0007, Barnegat Bay, NJ.

Figs 6-7: Barnegat Bay, NJ.



1 - 5



6 - 7

Figs 1-7: *Thalassiosira cedarkeyansis* Prasad in Prasad, Fryxell & Livingston

Lit.: Prasad, Fryxell & Livingston 1993, p. 205-206; fig. 3-23

Figs 1,6: Sample RUTG0842, Leeds Point, NJ.

Figs 2-5: Sample BBDC0104, Great Bay, NJ.

Fig. 7: Sample BBDC0064, Barnegat Bay, NJ.

Figs 8-15: *Thalassiosira tenera* Proschkina-Lavrenko

Lit.: Proschkina-Lavrenko 1961, p. 33; pl. 1, fig. 1-4, pl. 2, fig. 5-7

Figs 8-9: Sample BBDC0080, Barnegat Bay, NJ.

Figs 10-12,15: Sample RUTG0005, Cape May Courthouse, NJ.

Fig. 13: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 14: Sample BBDC0048, Barnegat Bay, NJ.

Fig. 16: Sample RUTG0619, Sea Breeze, NJ.

Figs 16-17: *Thalassiosira nanolineata* (Mann) Fryxell & Hasle

Lit.: Fryxell & Hasle 1977, p. 32-33; fig. 74-80

Basionym: *Coscinodiscus nanolineatus* 'nano-lineatus' Mann 1925

Fig. 16: Sample BBDC0048, Barnegat Bay, NJ.

Fig. 17: Sample BBDC0044, Barnegat Bay, NJ.

Figs 18-26: *Shionodiscus oestrupii* (Ostenfeld) Alverson, Kang & Theriot

Lit.: Alverson, Kang & Theriot 2006, p. 258

Basionym: *Coscinosira oestrupii* Ostenfeld 1900

Synonyms: *Thalassiosira oestrupii* (Ostenfeld) Proschkina-Lavrenko ex Hasle 1960

Thalassiosira oestrupii (Ostenfeld) Hasle 1972

Fig. 18: Sample BBDC0067, Barnegat Bay, NJ.

Fig. 19: Sample BB0061, Barnegat Bay, NJ.

Fig. 20: Sample BB0052, Barnegat Bay, NJ.

Fig. 21: Sample BB0076, Barnegat Bay, NJ.

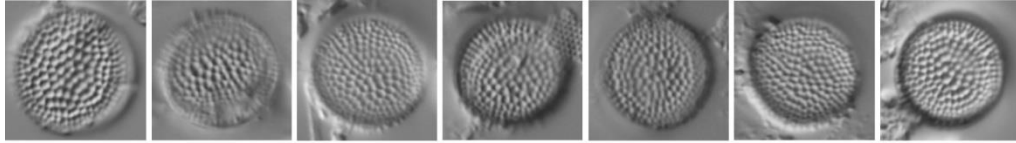
Fig. 22: Sample BB0068, Barnegat Bay, NJ.

Fig. 23: Sample COAST062, Great Bay, NJ.

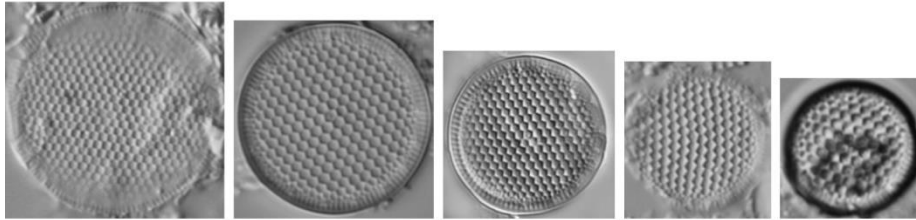
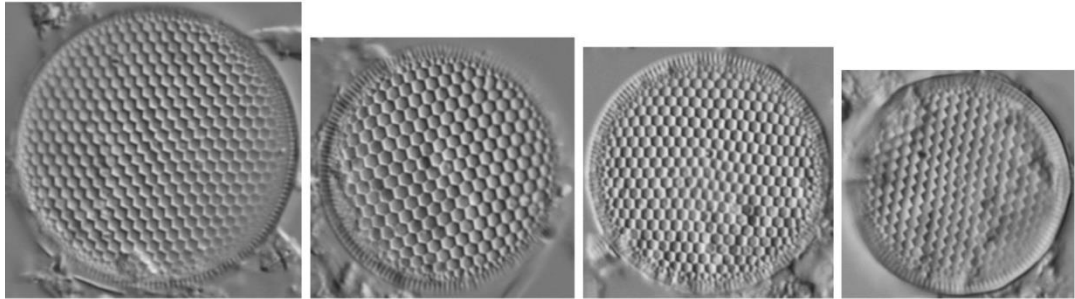
Fig. 24: Sample BB0067, Barnegat Bay, NJ.

Fig. 25: Sample BBDC0060, Barnegat Bay, NJ.

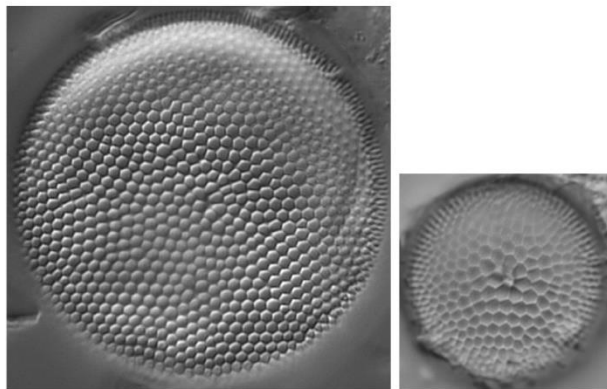
Fig. 26: Sample COAST015, Great South Bay, NY.



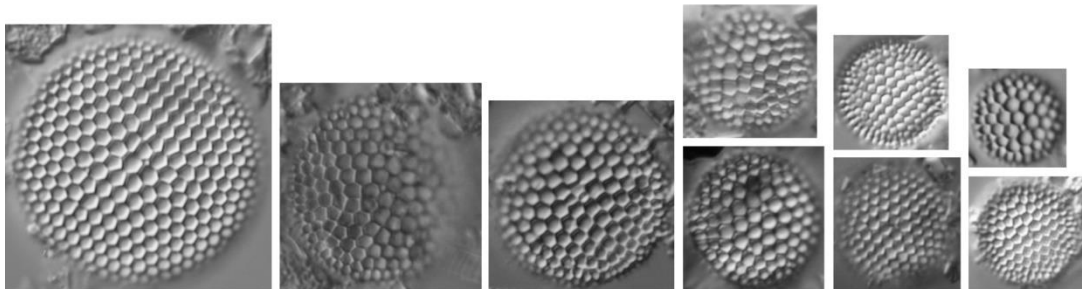
1 - 7



8 - 15



16 - 17

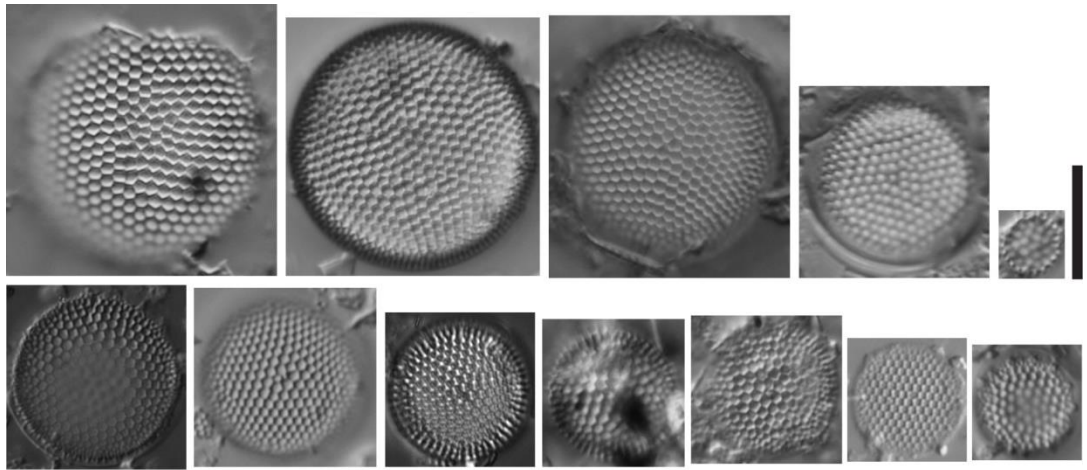


18 - 26

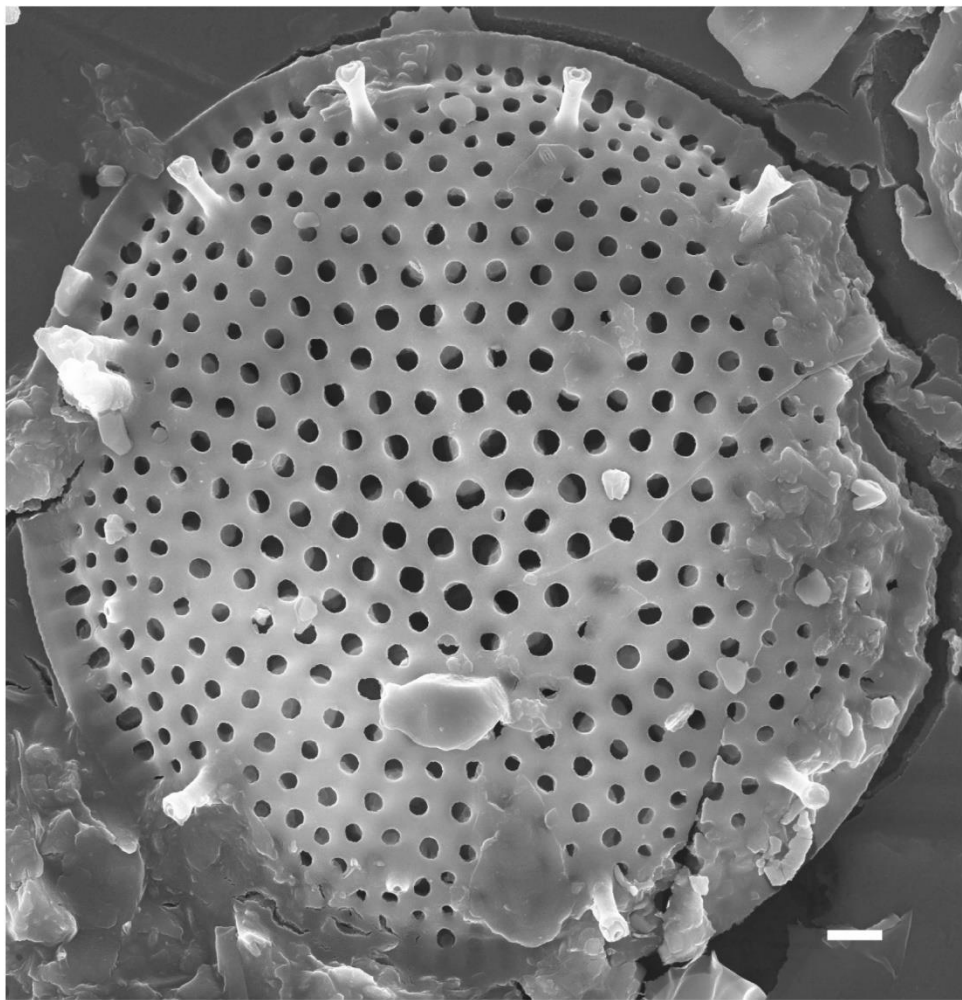
***Thalassiosira concaviuscula* Makarova**

Lit.: Makarova 1978, p. 222-223; pl. 1, fig. 1-11

- Fig. 1: Sample BB0068, Barnegat Bay, NJ.
- Fig. 2: Sample BBDC0044, Barnegat Bay, NJ.
- Fig. 3: Sample BBDC0002, Barnegat Bay, NJ.
- Fig. 4: Sample BB0004, Barnegat Bay, NJ.
- Fig. 5: Sample BBDC0045, Barnegat Bay, NJ.
- Fig. 6: Sample BBDC0003, Barnegat Bay, NJ.
- Fig. 7: Sample BBDC0080, Barnegat Bay, NJ.
- Fig. 8: Sample BBDC0001, Barnegat Bay, NJ.
- Fig. 9: Sample BB0071, Barnegat Bay, NJ.
- Fig. 10: Sample BB0066, Barnegat Bay, NJ.
- Fig. 11: Sample COAST012, Great South Bay, NY.
- Figs 12-13: Sample BBDC0065, Barnegat Bay, NJ.



1 - 12



13

Thalassiosira levanderi Van Goor

Lit.: Van Goor 1924, p. 322; fig. 11

Synonyms: *Coscinodiscus levanderi* (Van Goor) Cleve-Euler 1951

Thalassiosira decipiens f. *levanderi* (Van Goor) Takano 1956

Figs 1,4: Sample BBDC0044, Barnegat Bay, NJ.

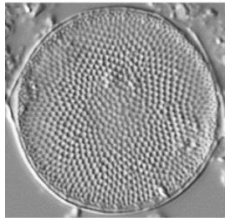
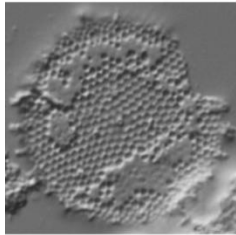
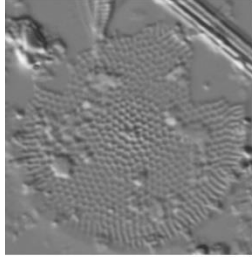
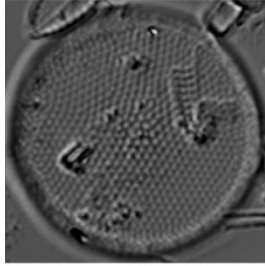
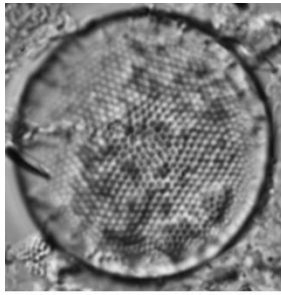
Fig. 2: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 3: Sample COAST053, Barnegat Bay, NJ.

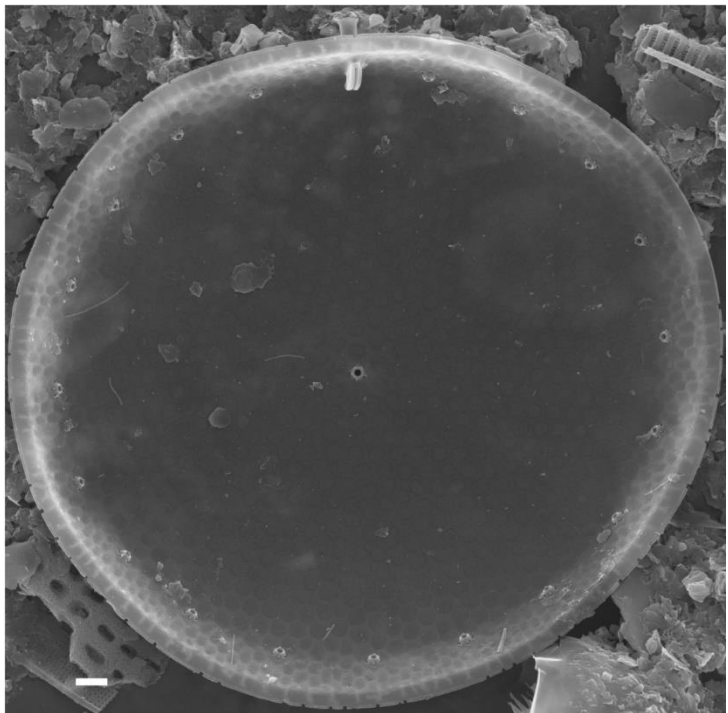
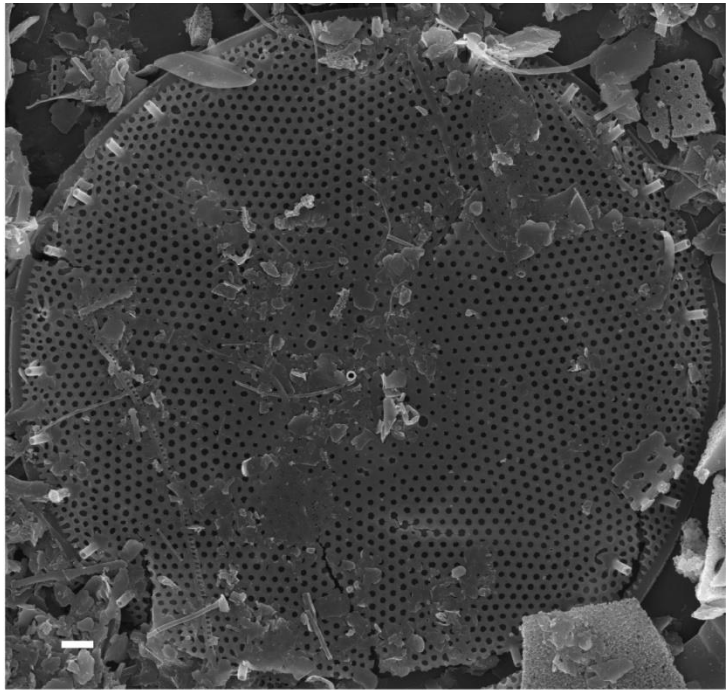
Fig. 5: Sample BBDC0048, Barnegat Bay, NJ.

Fig. 6: Sample COAST015, Great South Bay, NY.

Fig. 7: Sample COAST054, Barnegat Bay, NY.



1 - 5



6 - 7

Plate 41

(Scale bar: Figs 1-6=10 μm , Figs 7-11=1 μm)

Thalassiosira lundiana Fryxell

Lit.: Fryxell 1975, p. 64-65; text fig. 2A, fig. 14-24

Fig. 1: Sample BBDC0088, Barnegat Bay, NJ.

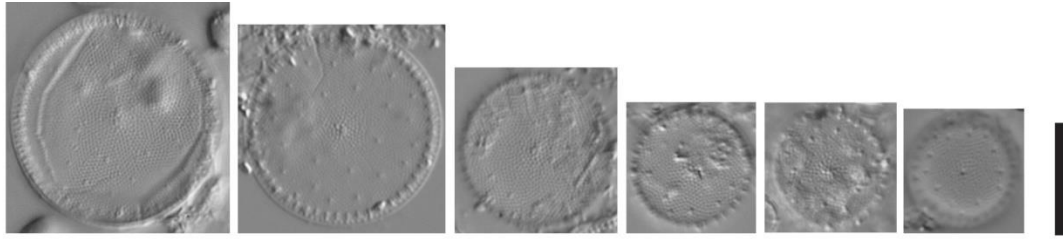
Fig. 2: Sample COAST031, Western Bay Bay, NY.

Figs 3-4: Sample COAST025, Great South Bay, NY.

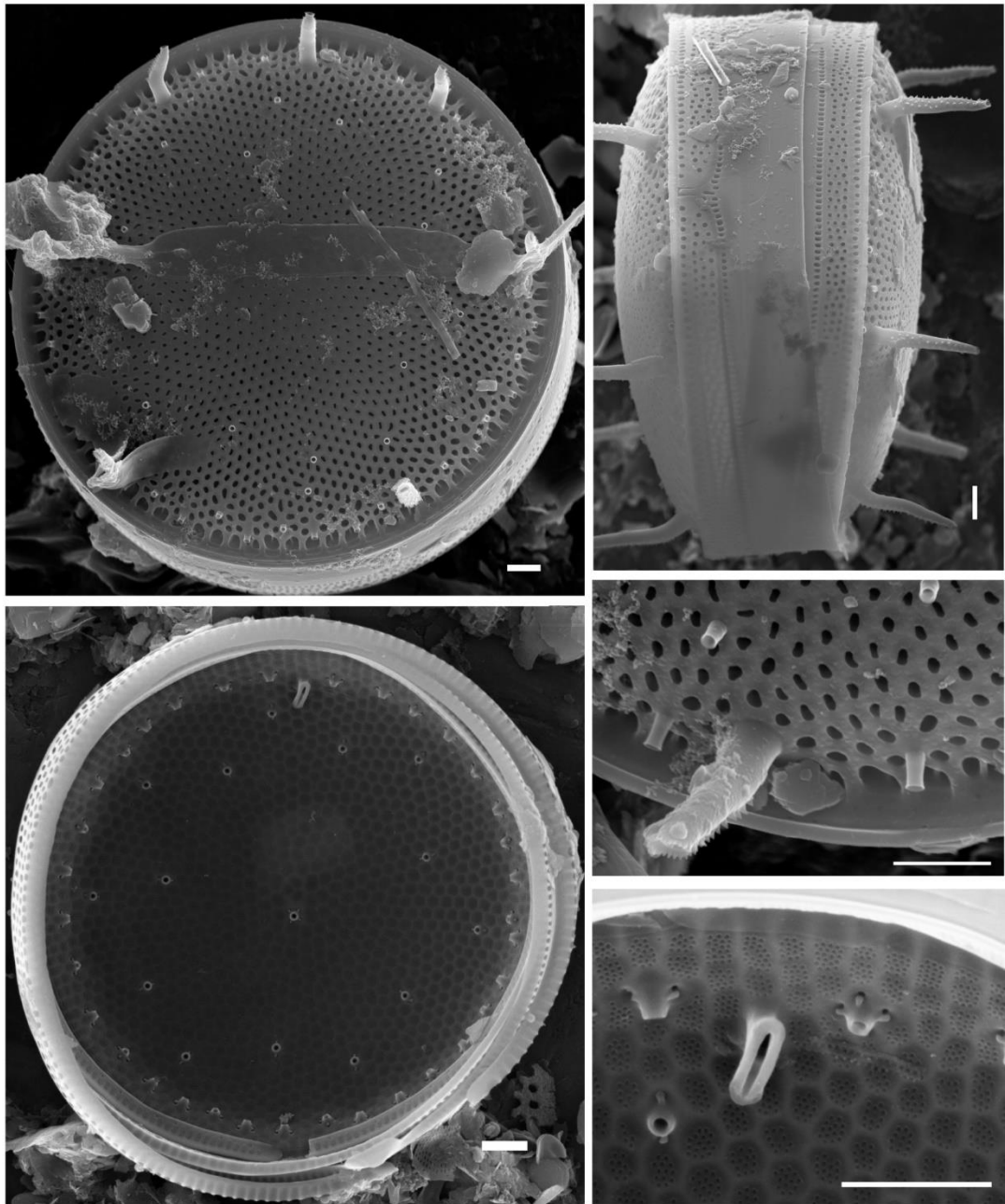
Fig. 5: Sample COAST071, North East, New Jersey shore.

Fig. 6: Sample BBDC0045, Barnegat Bay, NJ.

Figs 7-11: Barnegat Bay, NJ.



1 - 6



7 - 11

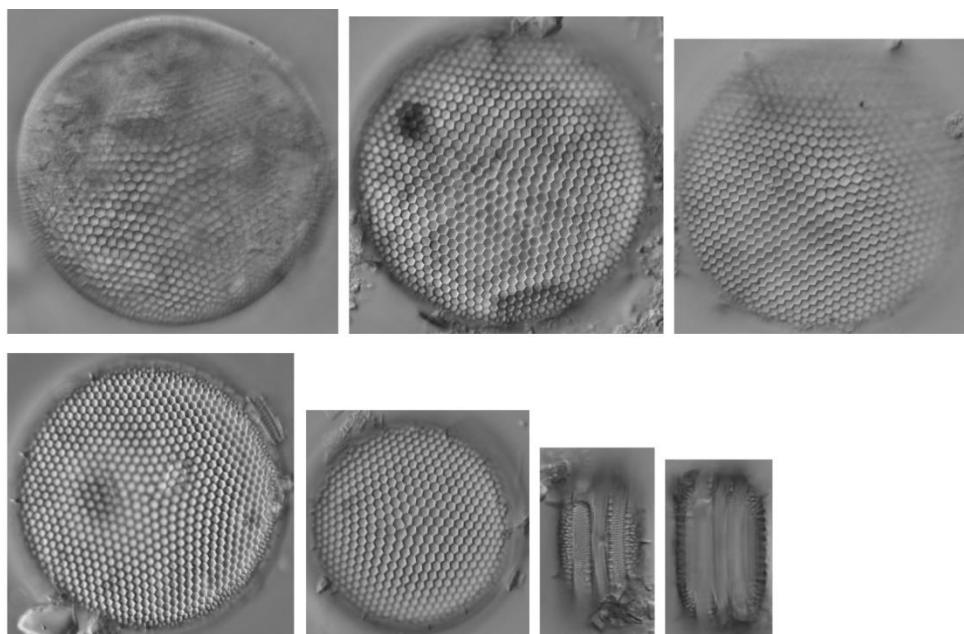
Thalassiosira eccentrica (Ehrenberg) Cleve emend Fryxell & Hasle

Lit.: Fryxell & Hasle 1972, v. 8(4): p. 302; fig. 1-18

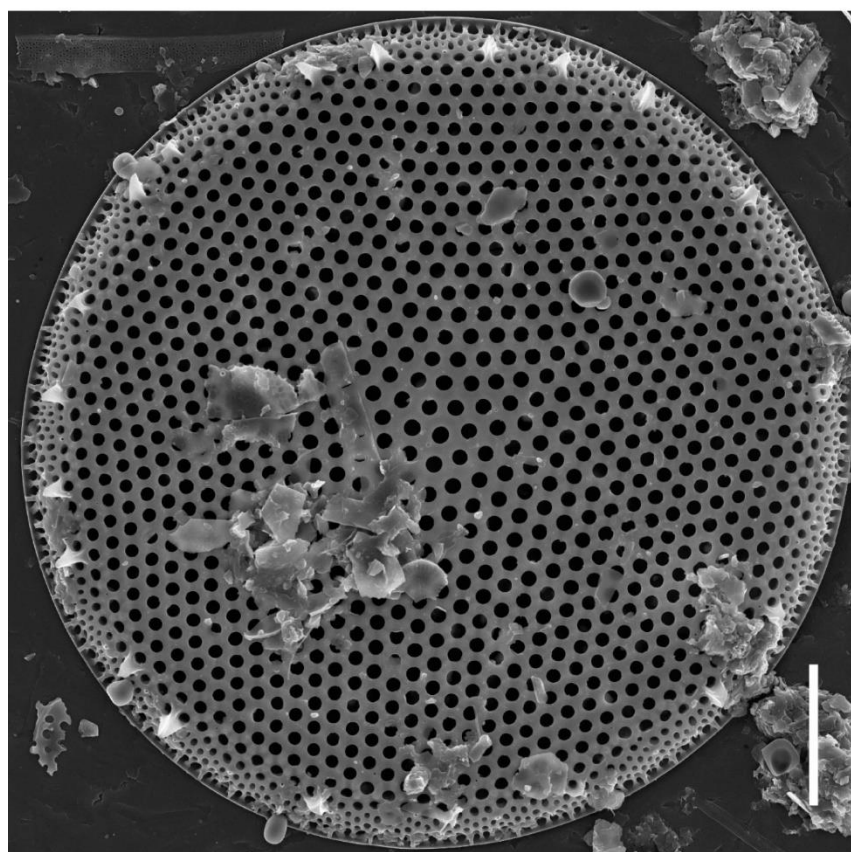
Figs 1-2,4,6-8: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0072, Barnegat Bay, NJ.

Fig. 5: Sample BBDC0051, Barnegat Bay, NJ.



1 - 7



8

Plate 43 (Scale bars: Figs 1-11,14=10 μm ; Figs 12-13,15-16=1 μm)

Fig. 1: *Shionodiscus cf. oestrupii*

Fig. 1: Sample BBDC0044, Barnegat Bay, NJ.

Figs 2-7: *Thalassiosira cf. levanderi*

Figs 2,6: Sample BBDC0045, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0072, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0002, Barnegat Bay, NJ.

Fig. 5: Sample COAST054, Barnegat Bay, NJ.

Fig. 7: Sample BBDC0051, Barnegat Bay, NJ.

Figs 8-13: *Thalassiosira curviseriata* Takano

Lit.: Takano 1981, v. 105: p. 34-35; fig. 1C, 26-38

Figs 8-11: Barnegat Bay, NJ.

Fig. 12: Sample COAST054, Barnegat Bay, NJ.

Fig. 13: Sample COAST096, Cape May Peninsula, NJ.

Figs 14-16: *Thalassiosira sp. 2*

Fig. 14: Sample COAST004, Peconic Bay, NY.

Fig. 15: Sample COAST003, Peconic Bay, NY.

Fig. 16: Sample COAST054, Barnegat Bay, NJ.

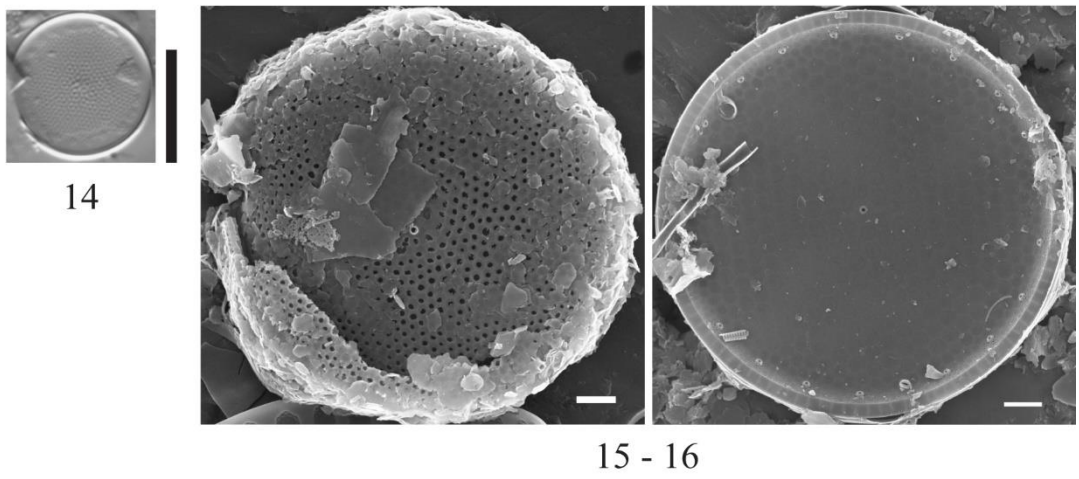
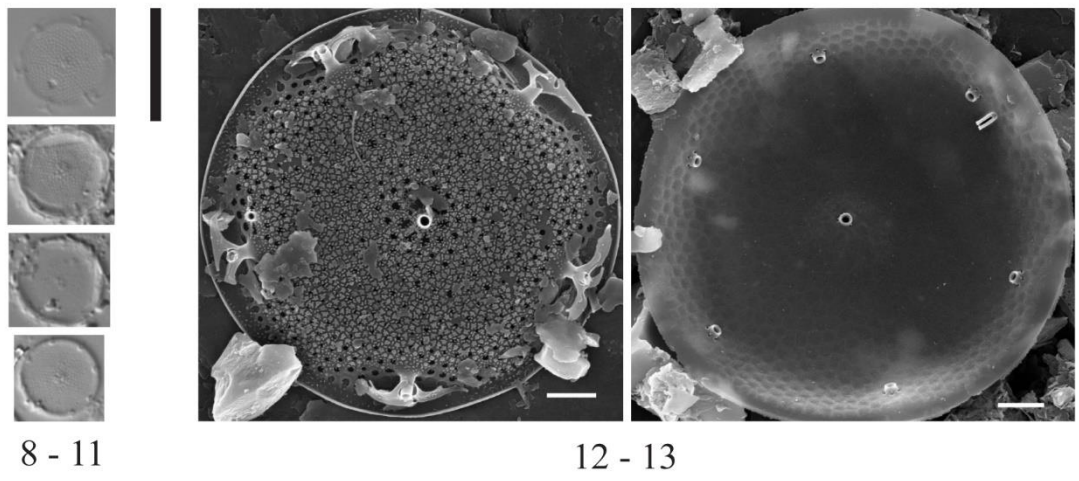
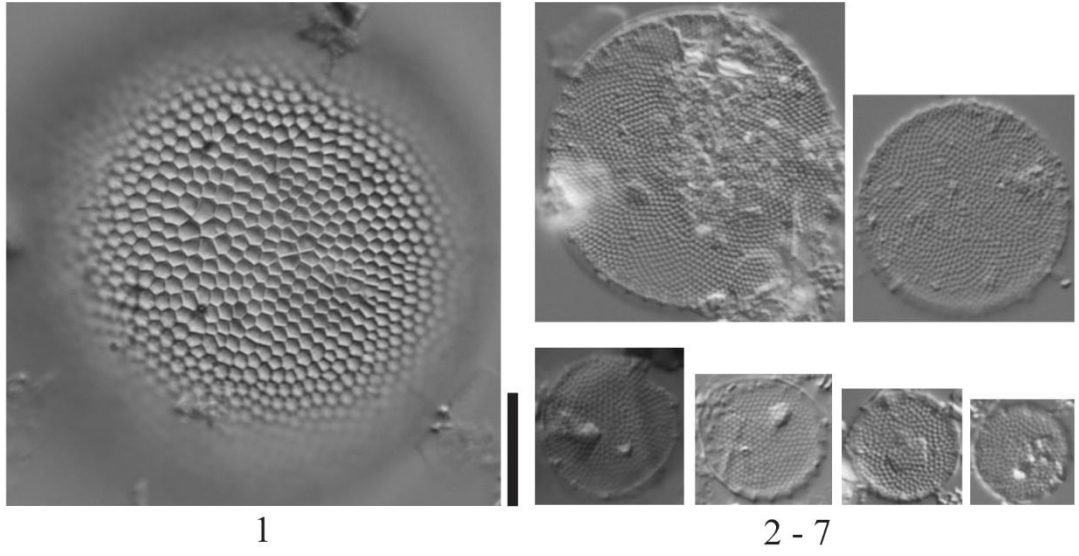


Plate 44

(Scale bar: Figs 1-12=10 µm; Figs 13-15=1 µm)

***Thalassiosira gravida* Cleve**

Lit.: Cleve 1896, p. 12; pl. 2, fig. 14-16

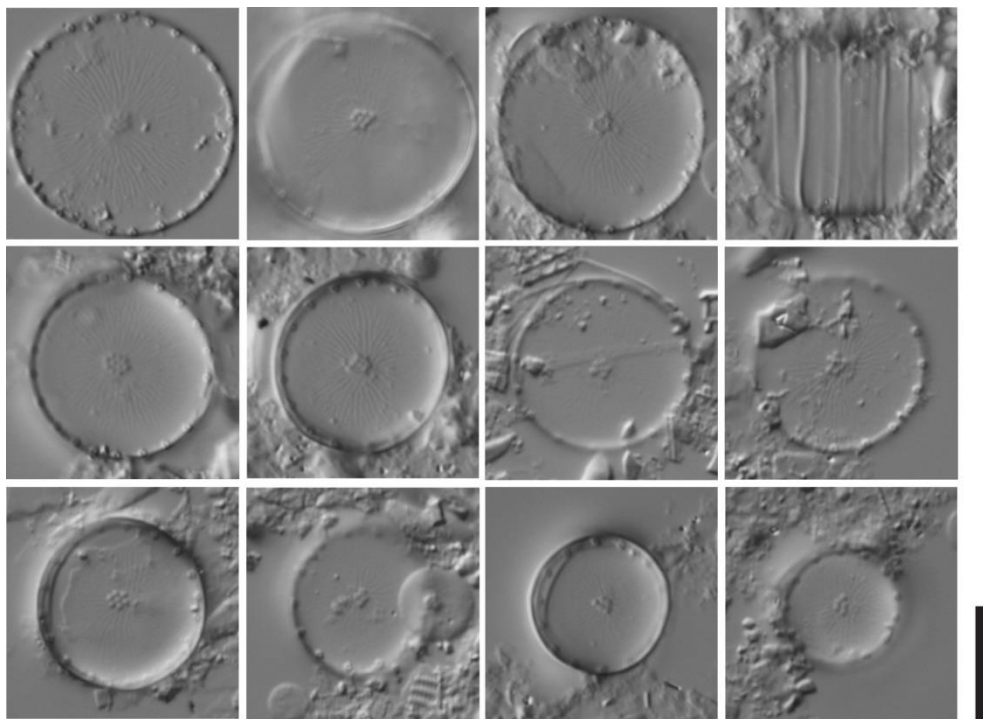
Synonym: *Coscinodiscus gravidus* (Cleve) Cleve-Euler 1951

Figs 1-6,8-12: Sample RUTG0835, Cheesequake State Park, NJ.

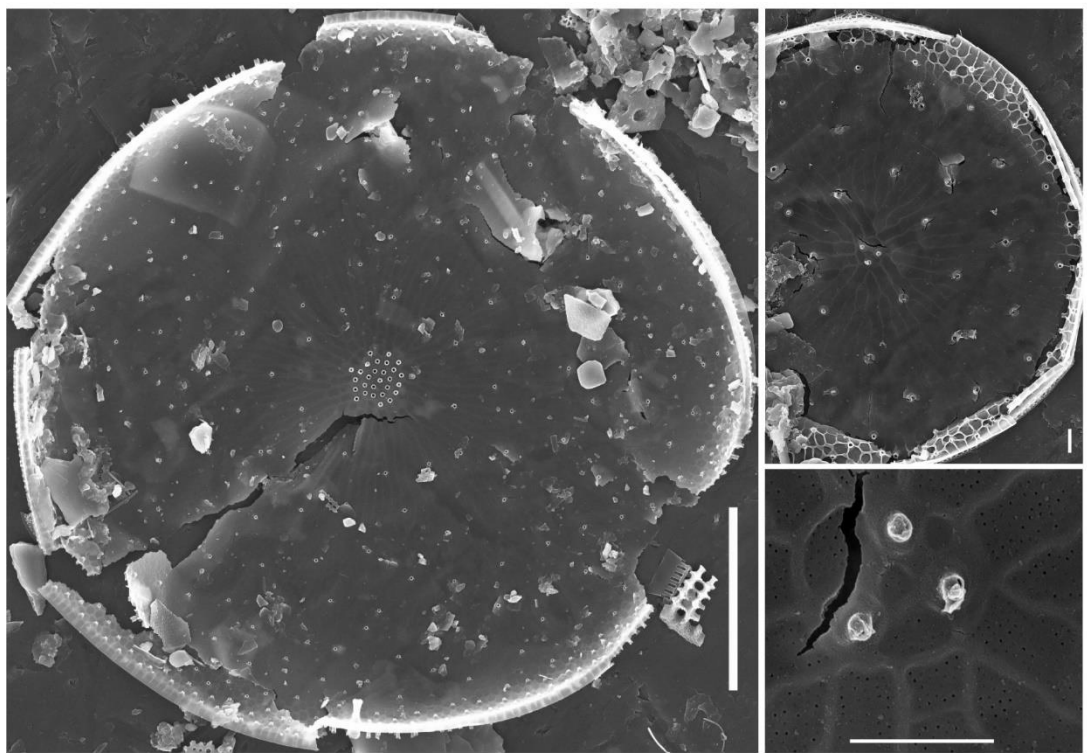
Fig. 7: Sample RUTG0843, Leeds Point, NJ.

Fig. 13: Sample BBDC0045, Barnegat Bay, NJ.

Figs 14-15: Barnegat Bay, NJ.



1 - 12



13 - 15

Plate 45

(Scale bars: Figs 1-7=10 μm ; Fig 8-11=1 μm)

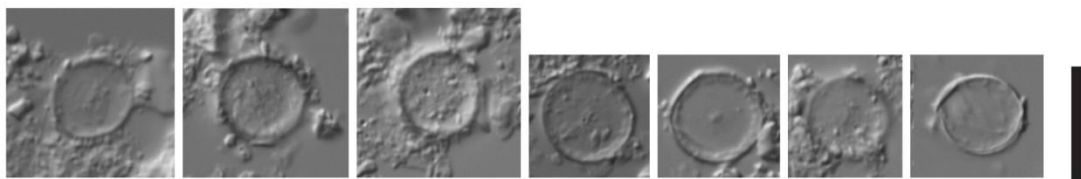
Thalassiosira minima Gaarder emend Hasle

Lit.: Hasle 1980, v. 27(3): p. 167-170; fig. 1-17

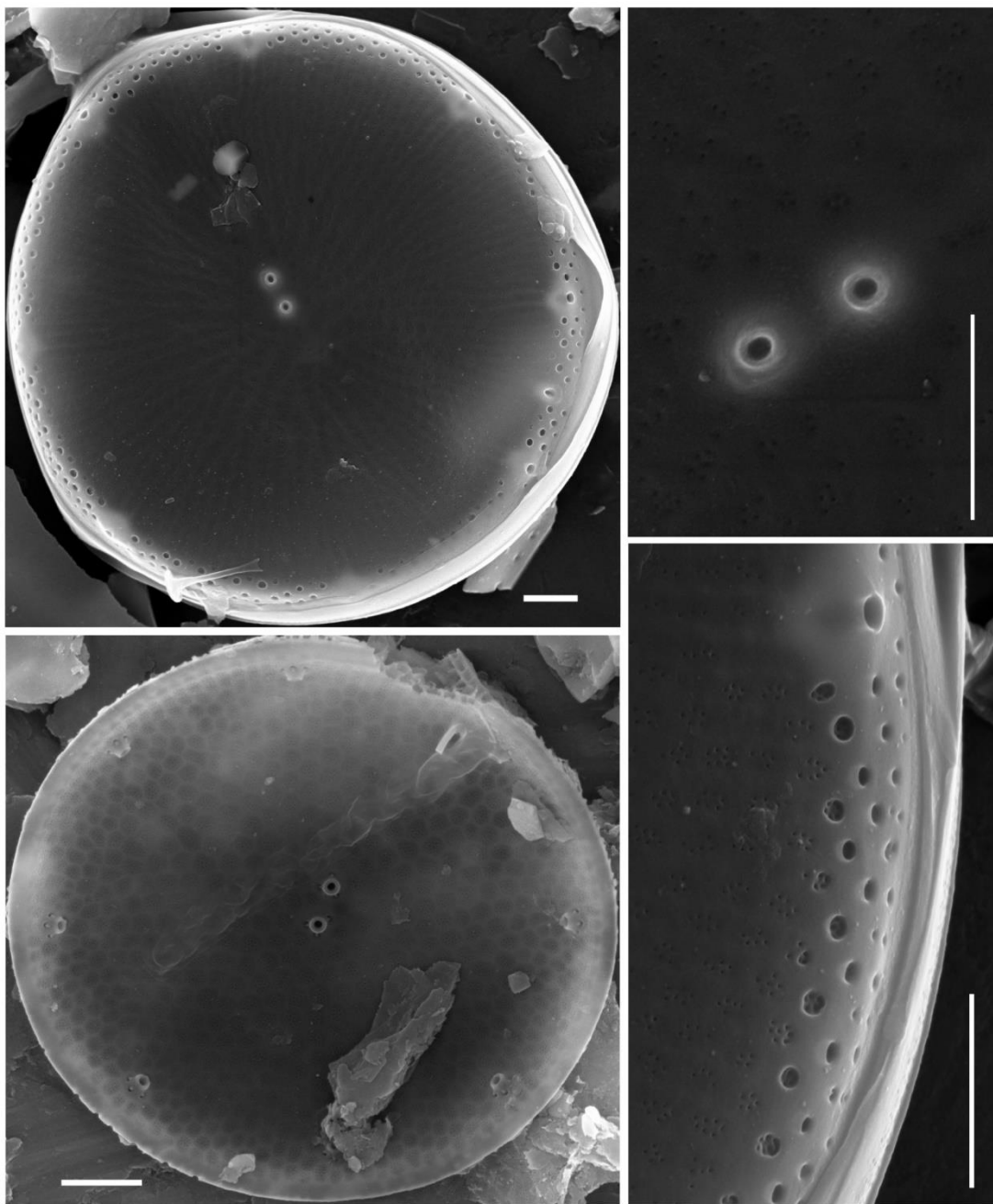
Figs 1-7: Sample BBDC0109, Great Bay, NJ.

Figs 8-9,11: Sample BBDC0080, Barnegat Bay, NJ.

Fig. 10: Sample COAST059, Barnegat Bay, NJ.



1 - 7



8 - 11

Plate 46

(Scale bars: Figs 1-10=10 µm; Fig 11-14=1 µm)

Minidiscus proschkinae (Makarova) Park & Lee

Lit.: Park et al. 2017 p.1-20; fig. 2-5

Basionym: *Thalassiosira proschkinae* Makarova in Makarova, Genkal & Kuzmin 1979

Figs 1, 13-15: Sample BBDC0080, Barnegat Bay, NJ.

Fig. 2,4,8,10: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0110, Great Bay, NJ.

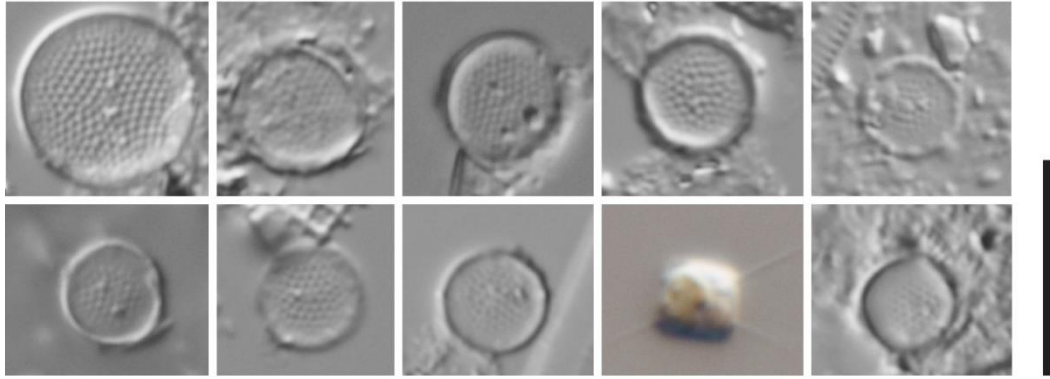
Fig. 5: Sample COAST051, Barnegat Bay, NJ.

Fig. 6: Sample BB0079, Barnegat Bay, NJ.

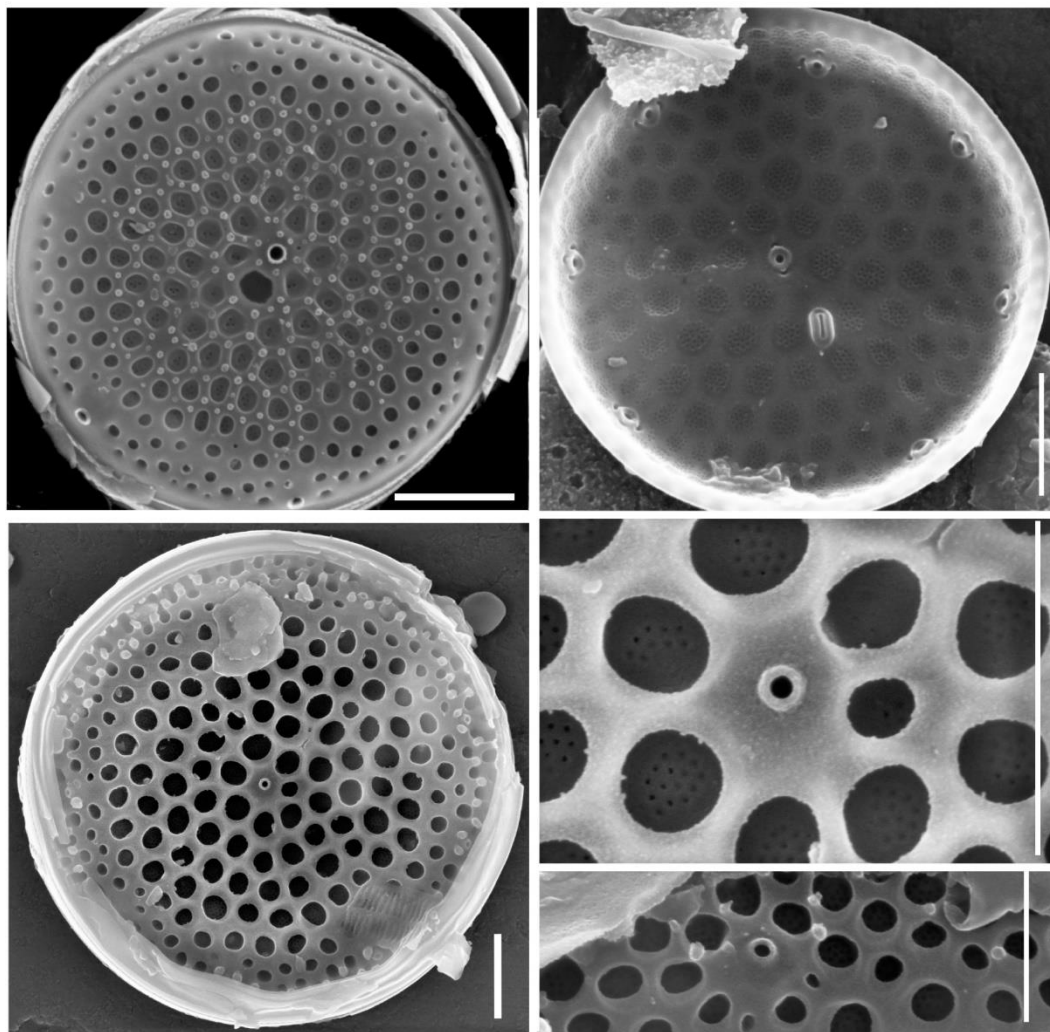
Fig. 7: Sample BBDC0045, Barnegat Bay, NJ.

Fig. 9: Barnegat Bay, NJ.

Figs 11-12: Sample COAST025, Great Bay South, NY.



1 - 10



11 - 15

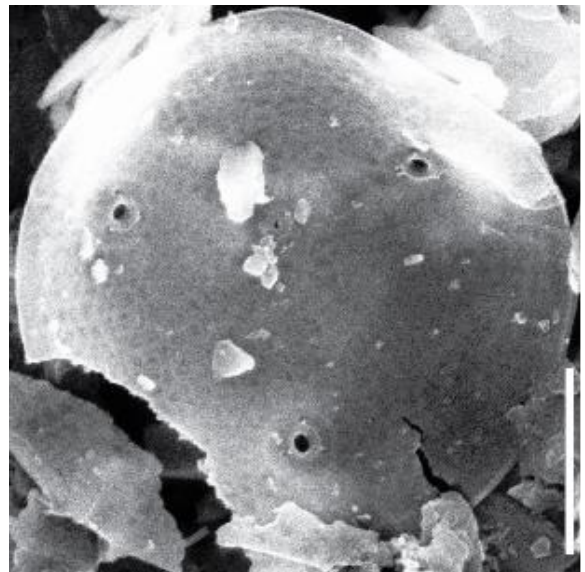
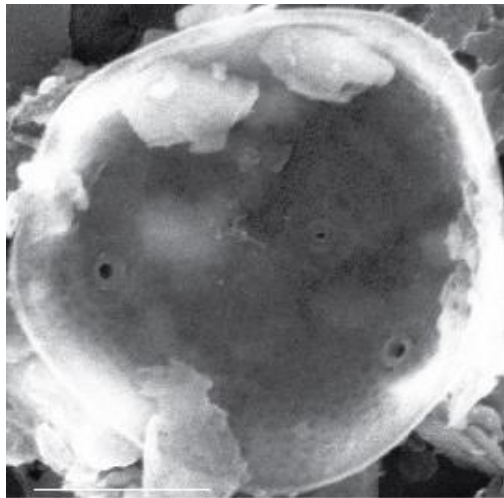
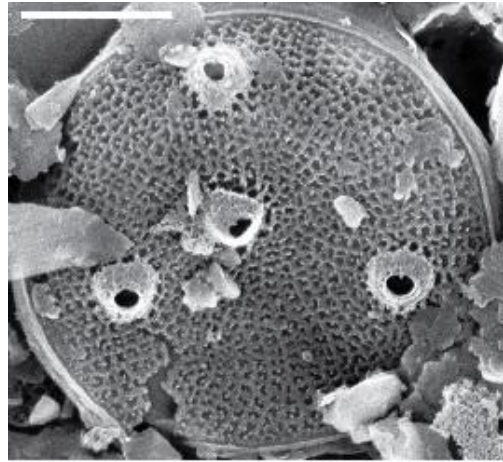
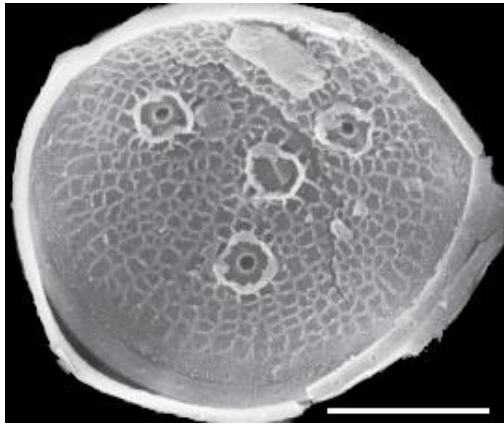
Minidiscus comicus Takano

Lit.: Takano 1981, v. 105: p. 32-33; fig. 1A, 2-13

Fig. 1: Sample COAST071, North East, NJ shore.

Fig. 2: Sample BBEDC027, Tuckerton Bay, NJ.

Figs 3-4: Sample BBEDC026, Tuckerton Bay, NJ.



1 - 4

Minidiscus trioculatus (Taylor) Hasle

Lit.: Hasle, G.R. 1973, v. 20(1): p. 67-69

Basionym: *Coscinodiscus trioculatus* Taylor 1967

Figs 1,4: Sample BBDC0080, Barnegat Bay, NJ.

Fig. 2: Sample COAST051, Barnegat Bay, NJ.

Fig. 3: Sample COAST007, Peconic Bay, NY.

Figs 5-6: Barnegat Bay, NJ.

Fig. 7: Sample COAST007, Barnegat Bay, NJ.

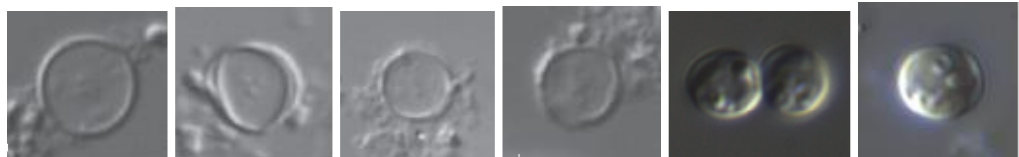
Fig. 8: Sample COAST096, Grassy Sound, NJ.

Fig. 9: Sample BBDC0030, Barnegat Bay, NJ.

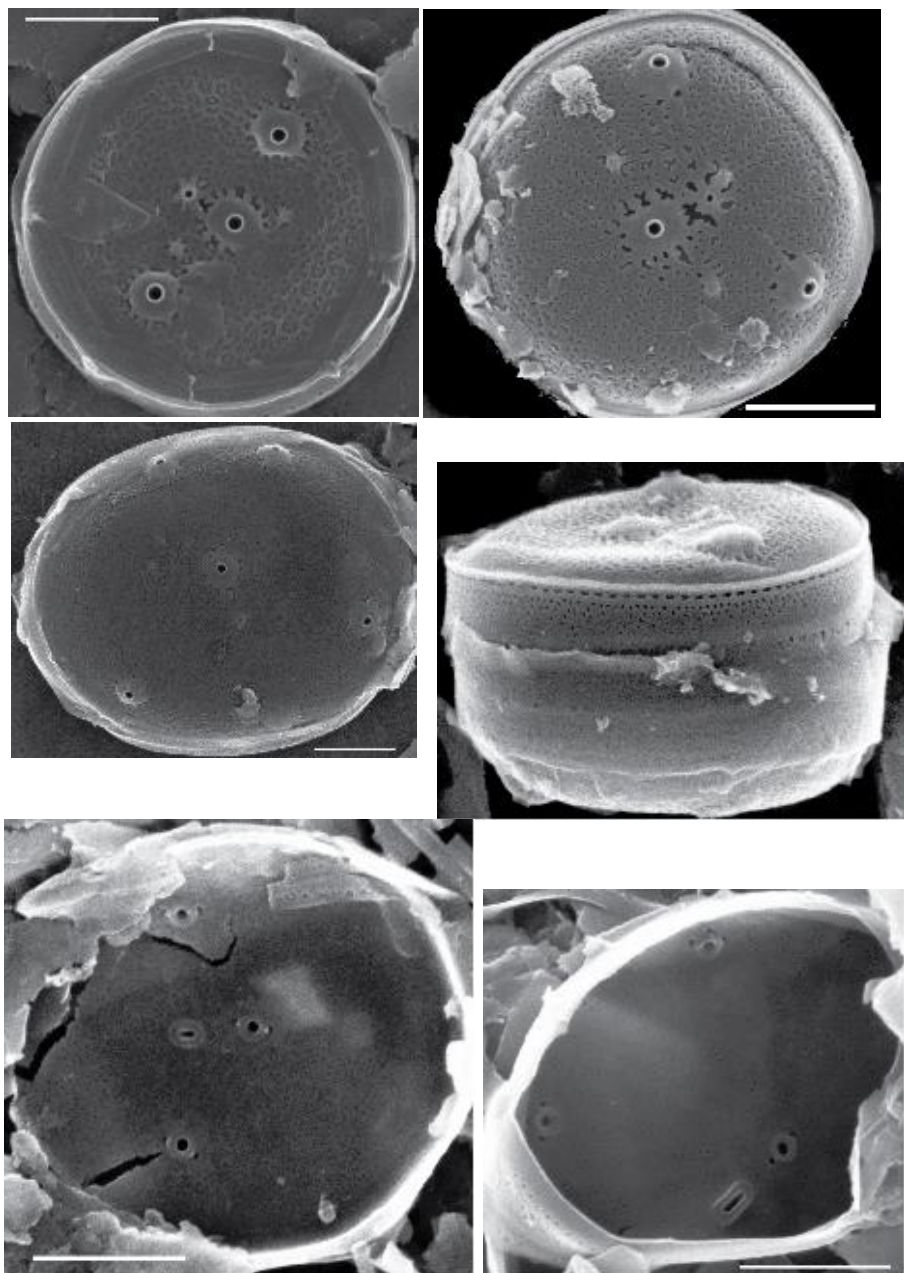
Fig. 10: Sample BBEDC046, Tuckerton Bay, NJ.

Fig. 11: Sample BBEDC026, Tuckerton Bay, NJ.

Fig. 12: Sample COAST011, Great South Bay, NY.



1 - 6



7 - 12

Plate 49

(Scale bars: Figs 1-14=10 μm ; Figs 15-21=1 μm)

Cyclotella atomus* var. *gracilis Genkal & Kiss

Lit.: Genkal & Kiss 1993, p. 42, figs 10-16, p. 43, figs 17-19

Fig. 1: Barnegat Bay, NJ.

Figs 2-3,6,11: Sample BBDC0041, Barnegat Bay, NJ.

Figs 4-5: Sample BBDC0044, Barnegat Bay, NJ.

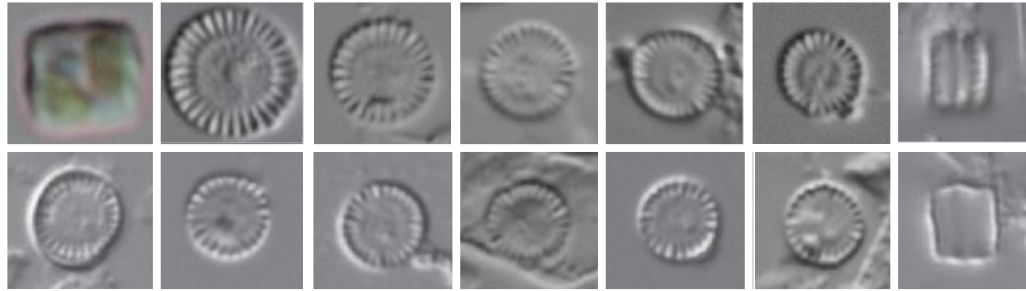
Figs 7,9-10,12-13: Sample BBDC0051, Barnegat Bay, NJ.

Fig. 8: Sample COAST071, North East, NJ shore.

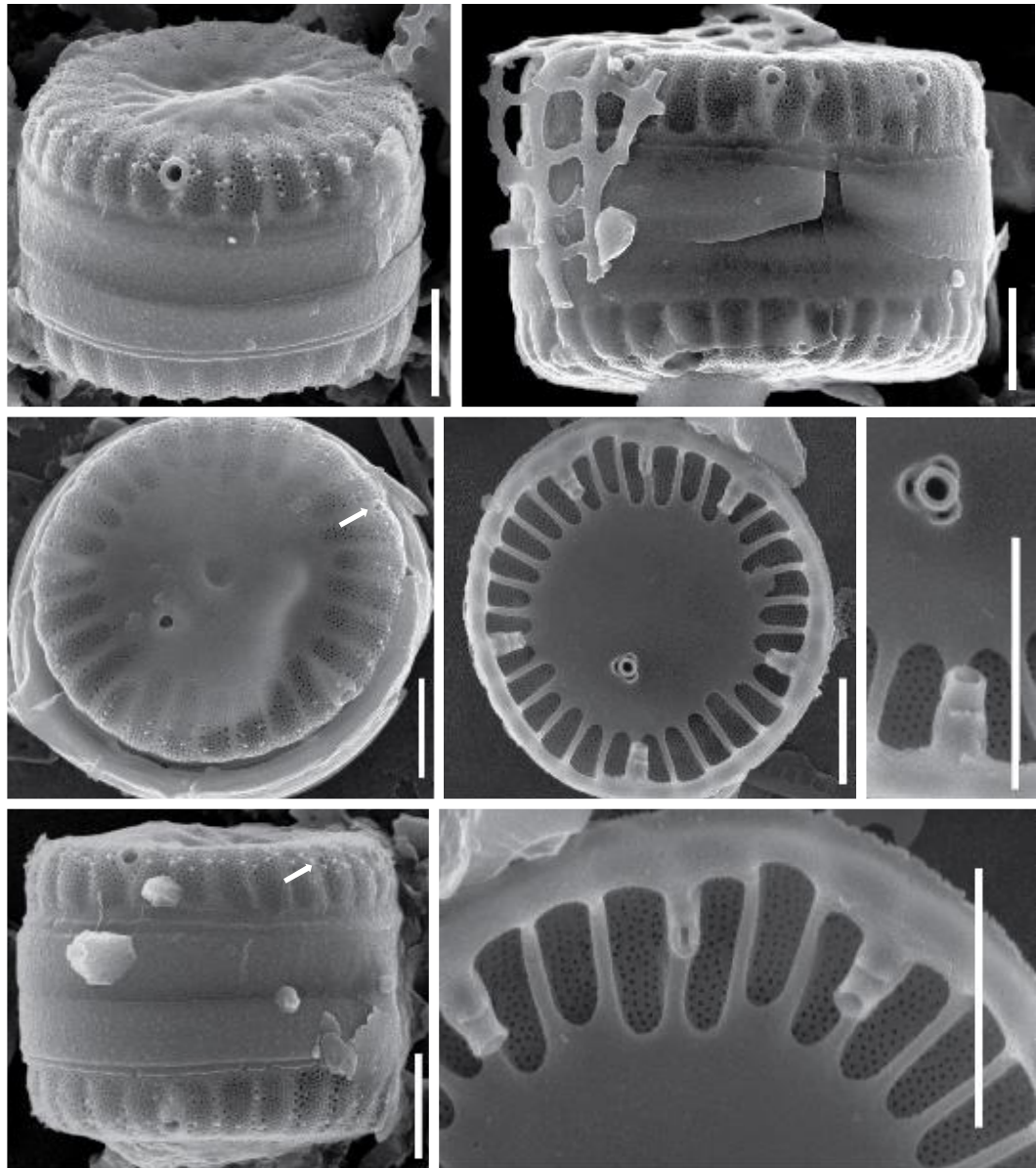
Fig. 14: Sample COAST003, Peconic Bay, NY.

Figs 15,20: Sample BBDC0051, Barnegat Bay, NJ.

Figs 16-19,21: Sample BBDC0080, Barnegat Bay, NJ.



1 - 14



15 - 21

Plate 50

(Scale bars: Figs 1-14=10 μm ; Figs 15-18=1 μm)

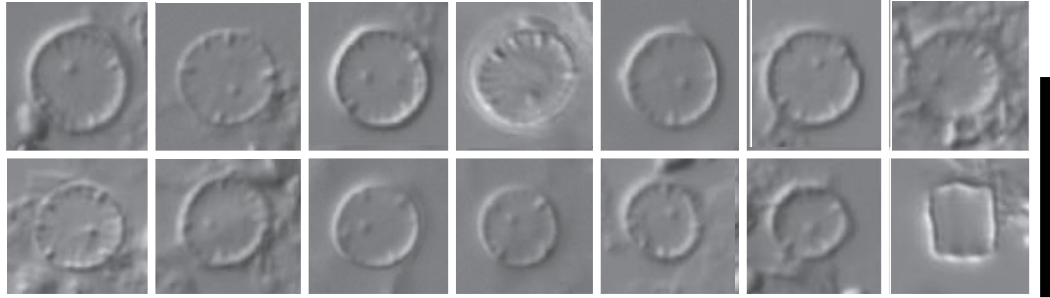
***Cyclotella atomus* var. *atomus* Hustedt**

Lit.: Hustedt 1937, Supplement 15:131-177, pls 9-12.

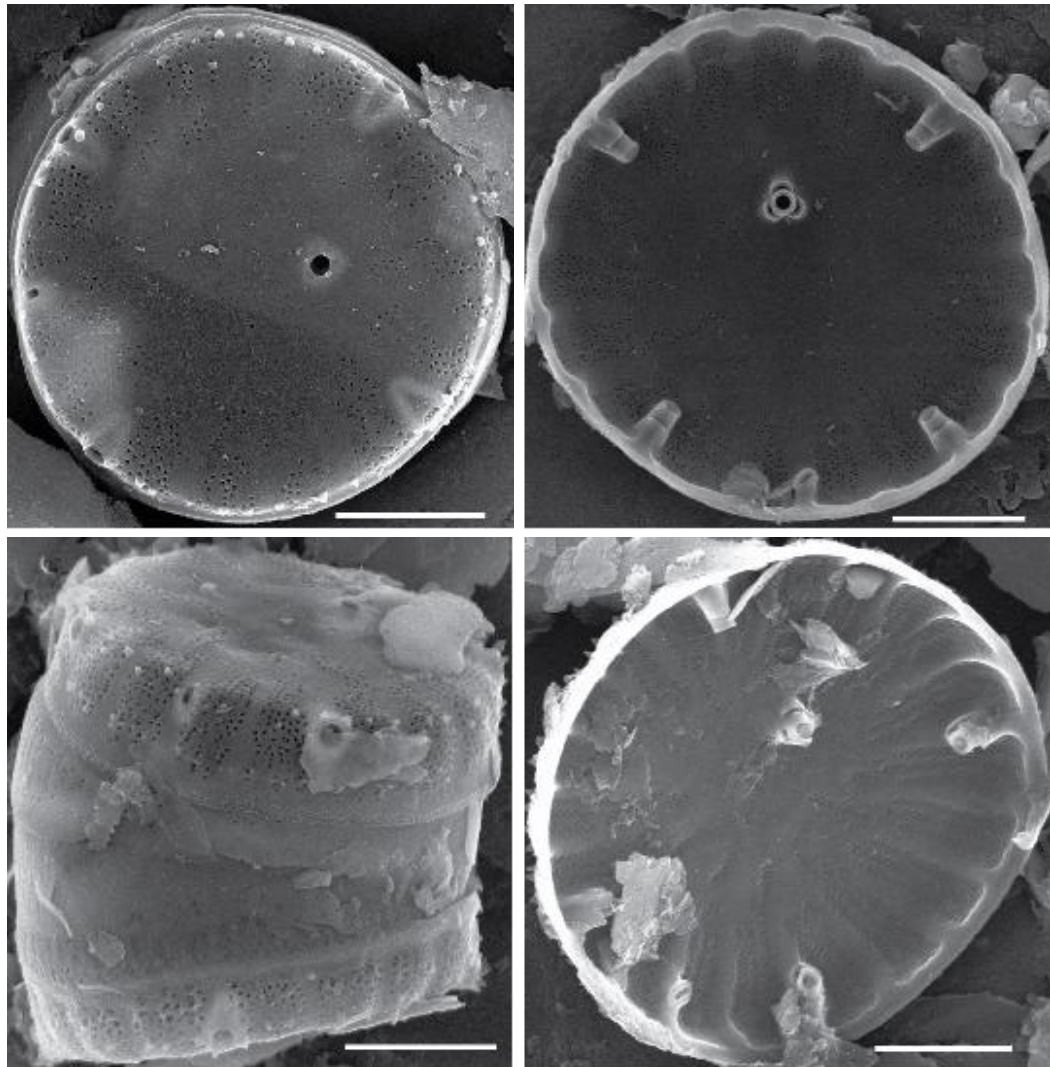
Figs 1-13, 16-18: Sample COAST071, North East, NJ shore.

Fig. 14: Sample COAST003, Peconic Bay, NY.

Fig. 15: Sample BBDC0051, Sluice Creek at South Dennis, NJ.



1 - 14



15 - 18

Plate 51

(Scale bars: Figs 1-14=10 μm ; Figs 15-21=1 μm)

Cyclotella marina Takano

Lit.: Takano 1981

Figs 1-2,6,8-12, 15,17: Sample COAST071, North East, NJ shore.

Figs 3-4: Sample BB0069, Barnegat Bay, NJ.

Fig. 5: Sample BBDC0002, Barnegat Bay, NJ.

Fig. 7: Sample COAST003, Peconic Bay, NY.

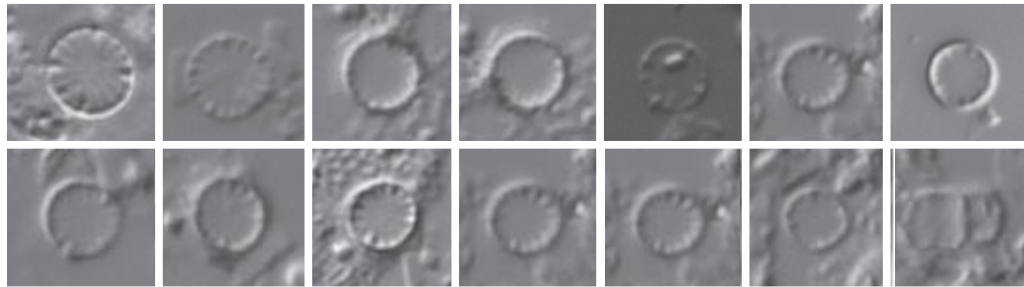
Figs 13-14: Sample RUTG807, Cape May, NJ.

Fig. 16: Sample RUTG0811, Cape May, NJ.

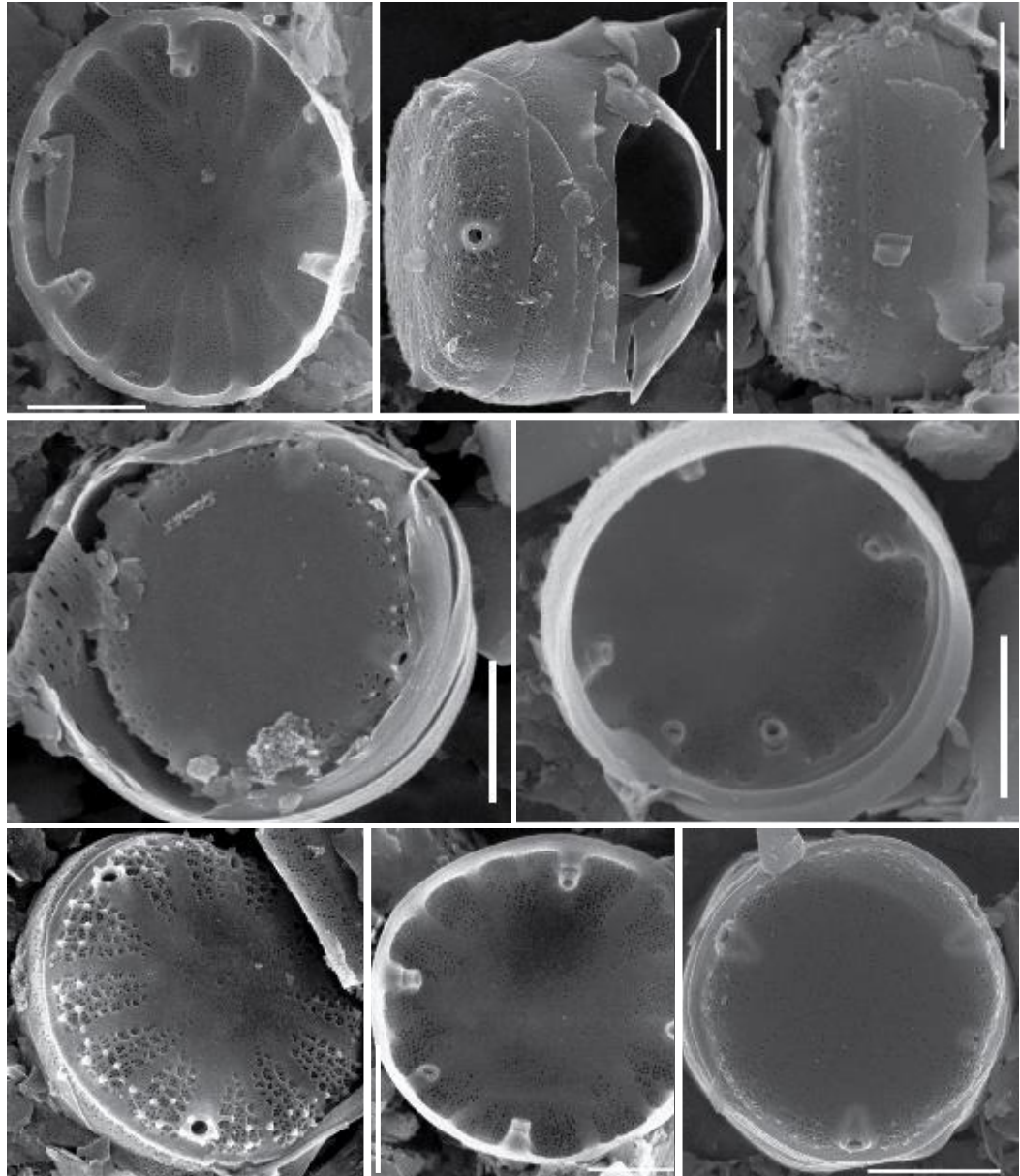
Figs 18-19: Sample COAST031, Hempstead Bay, NY.

Figs 20-21: Sample COAST073, North East, NJ shore.

Fig. 22: Sample RUTG0803, Cape May, NJ.



1 - 14



10 - 14

Plate 52

(Scale bars: Figs 1-10=10 μm ; Figs 11-15=1 μm)

***Cyclotella choctawacheana* Genkal & Kiss**

Lit.: Genkal & Kiss 1993, p. 42, figs 10-16, p. 43, figs 17-19

Fig. 1: Sample COAST089, Sea Isle City, NJ.

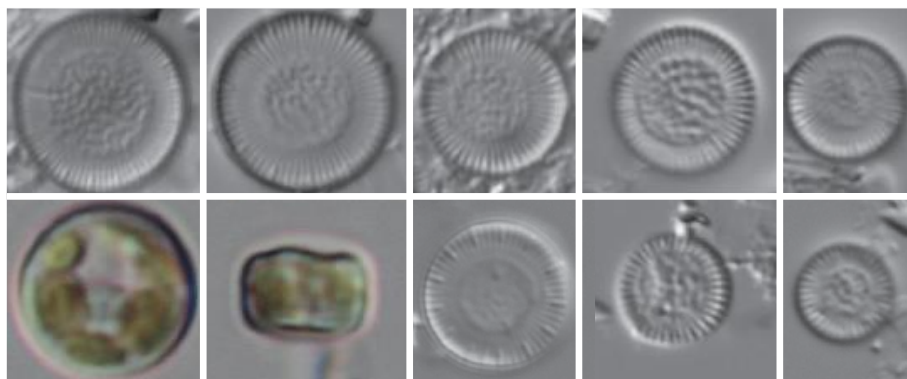
Figs 2-5,9-10: Sample BBDC0044, Barnegat Bay, NJ.

Figs 6-7: Barnegat Bay, NJ.

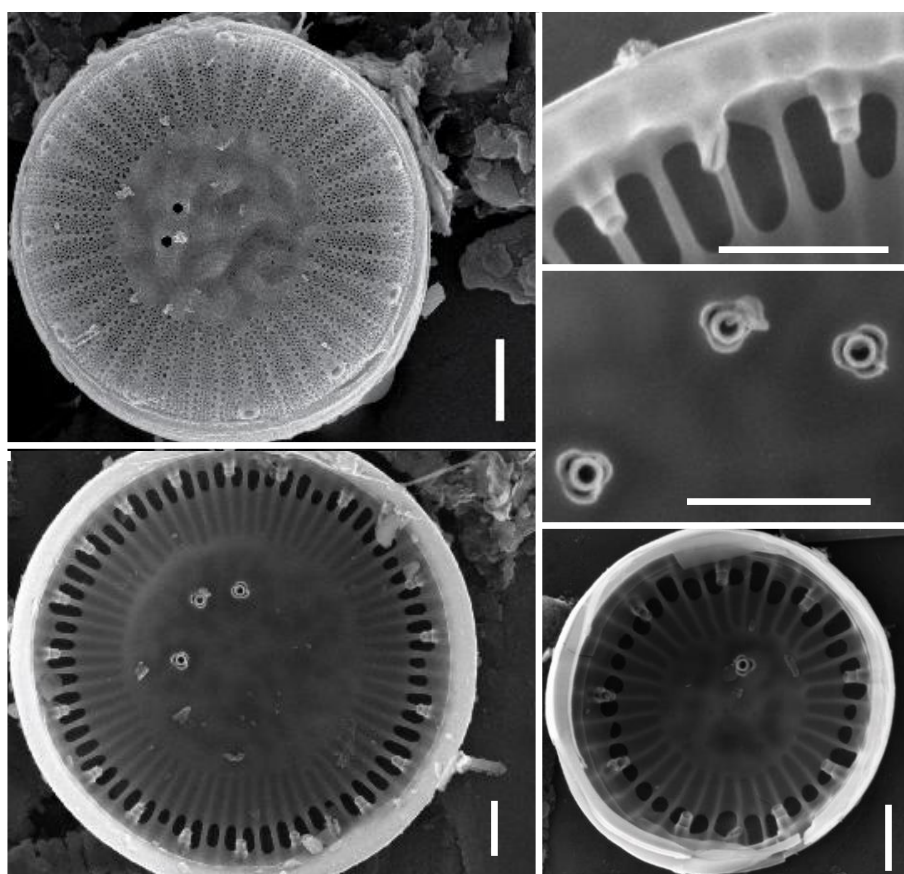
Fig. 8: Sample BBDC0051, Barnegat Bay, NJ.

Fig. 11: Sample BBDC0028, Barnegat Bay, NJ.

Figs 12-15: Sample BBDC0030, Barnegat Bay, NJ.



1 - 10



11 - 15

Plate 53

(Scale bar: Figs 18-20=10 µm; Fig. 26=1 µm)

Figs 18-20: *Cyclotella striata* (Kützinger) Grunow in Cleve & Grunow
Lit.: Cleve & Grunow 1880, p. 119

Basionym: *Coscinodiscus striatus* Kützinger 1844

Figs 18-20: Sample BBDC0044, Barnegat Bay, NJ.

Figs 21-26: *Cyclotella* sp. 5

Fig. 21: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 22: Sample BBDC0091, Barnegat Bay, NJ.

Fig. 23: Sample BBDC0080, Barnegat Bay, NJ.

Fig. 24: Sample BBDC0041, Barnegat Bay, NJ.

Fig. 25: Sample BBDC0076, Barnegat Bay, NJ.

Fig. 26: Sample COAST070, North East, NJ shore.

Figs 27-33: *Cyclotella meneghiniana* Kützinger

Lit.: Kützinger 1844, p. 50; pl. 30, fig. 68

Synonyms: *Surirella melosiroides* Meneghini ms. in Kützinger 1844

Cyclotella kutzingiana var. *meneghiniana* (Kützinger) Brun 1880

Fig. 27: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 28: Sample BBDC0004, Barnegat Bay, NJ.

Fig. 29: Sample BBDC0006, Barnegat Bay, NJ.

Fig. 30: Sample BBDC0046, Barnegat Bay, NJ.

Fig. 31: Sample BBDC0069, Barnegat Bay, NJ.

Fig. 32: Sample BBDC0009, Barnegat Bay, NJ.

Fig. 33: Sample BBDC0007, Barnegat Bay, NJ.

Figs 34-35: *Discostella stelligera* (Cleve et Grunow) Houk & Klee

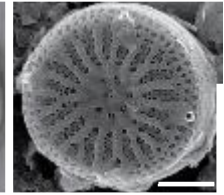
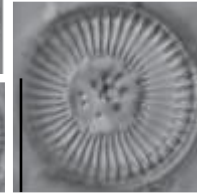
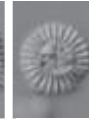
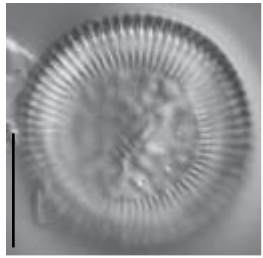
Basionym: *Cyclotella meneghiniana* var. *stelligera* Cleve & Grunow in Cleve 1881

Synonym: *Cyclotella stelligera* (Cleve & Grunow in Cleve) Van Heurck 1882

Lit.: Houk & Klee 2004, p. 208

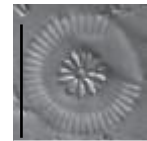
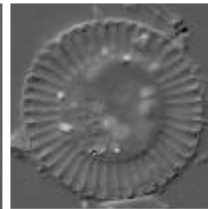
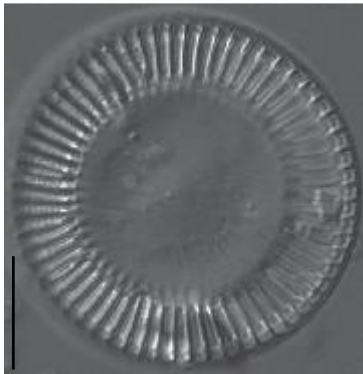
Fig. 34: Sample BBDC0005, Barnegat Bay, NJ.

Fig. 35: Sample BBDC0065, Barnegat Bay, NJ.



18 - 20

21 - 26



27 - 33

34 - 35

Plate 54

(Scale bars: Figs 1-10=10 μm ; Fig 11-16=1 μm)

Cyclotella* aff. *katiana Sala & Ramírez

Lit.: Sala & Ramírez. 2008, p. 149; fig. 2-12

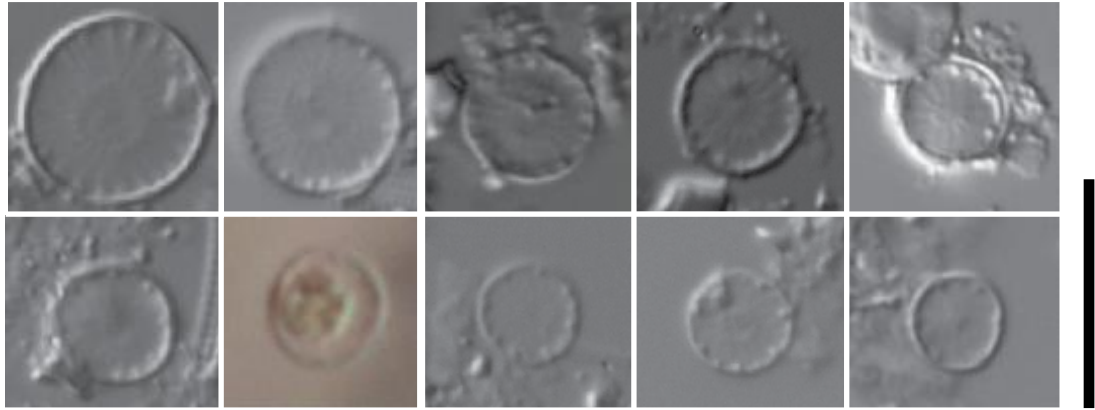
Figs 1-2,6,7-12,14-16: Sample RUTG0803, Cape May, NJ.

Fig. 3: Sample RUTG0131, Cape May, NJ.

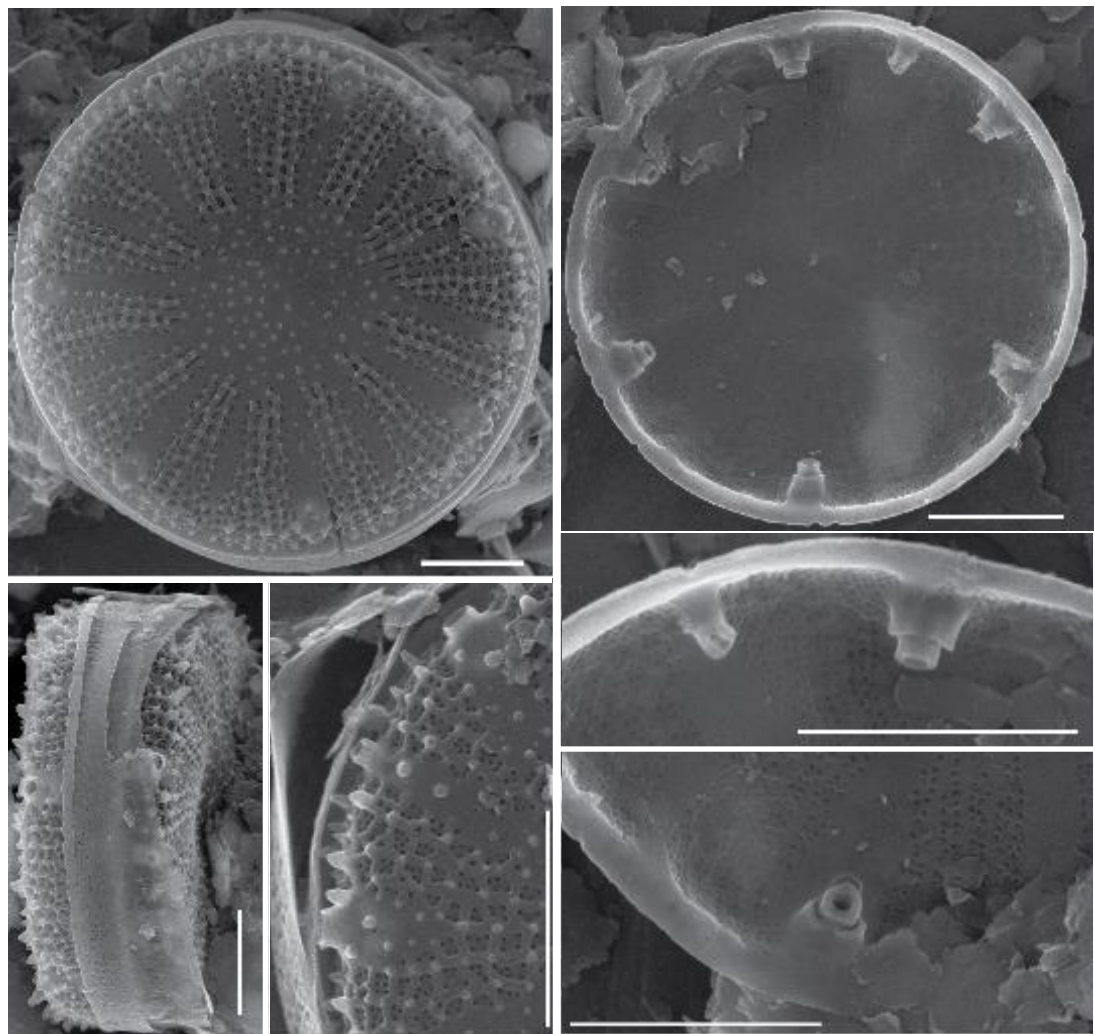
Fig. 4: Sample RUTG0111, Cape May, NJ.

Fig. 5: Sample RUTG0076, Cape May, NJ.

Fig. 13: Sample RUTG0811, Cape May, NJ.



1 - 10



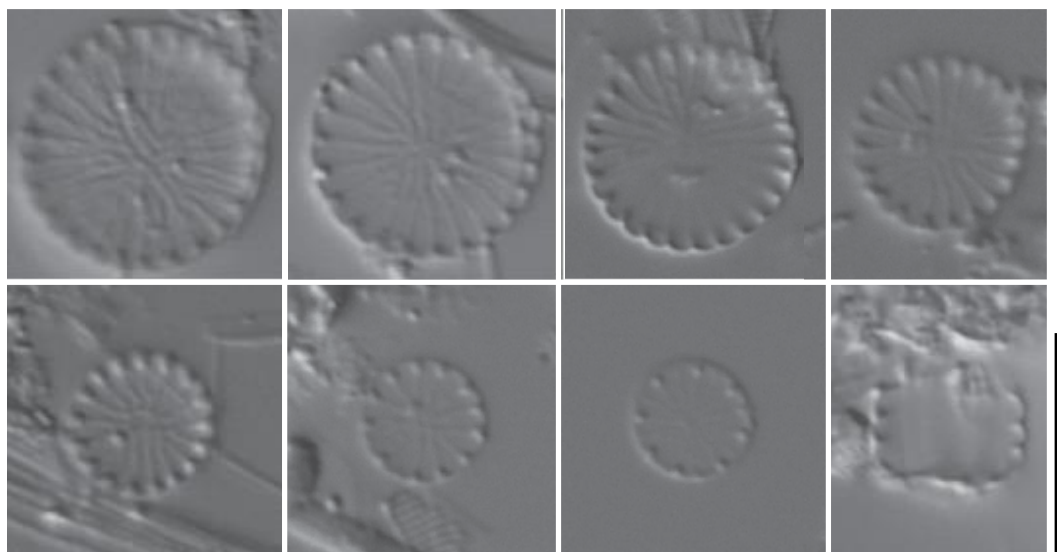
11 - 16

Plate 55

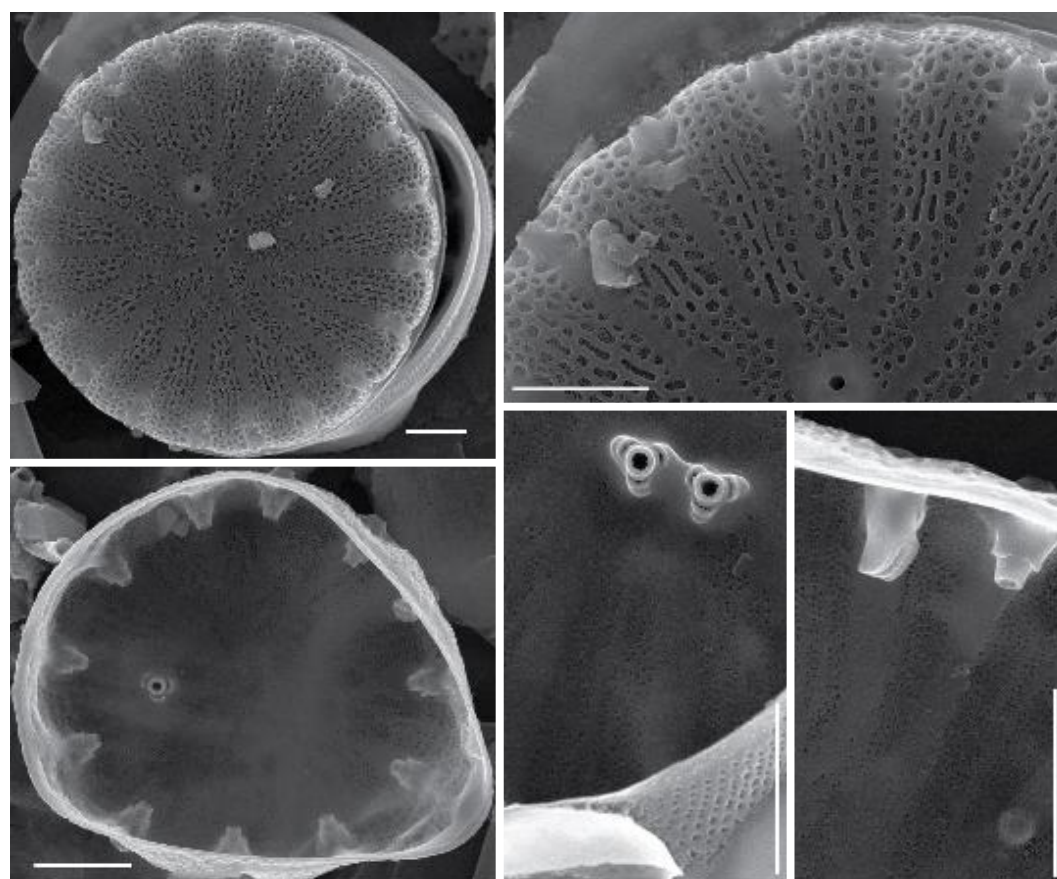
(Scale bars: Figs 1-8=10 μm ; Fig 9-13=1 μm)

Cyclotella cf. katiana

Figs 1-13: Sample BBDC0031, Barnegat Bay, NJ.



1 - 8



9 - 13

Plate 56

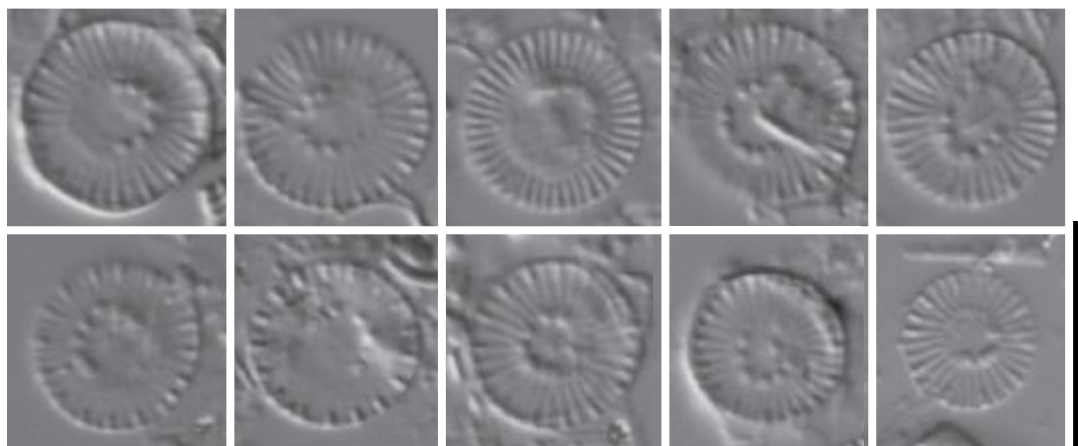
(Scale bars: Figs 1-10=10 μm ; Fig 11-16=1 μm)

***Cyclotella* sp. 1**

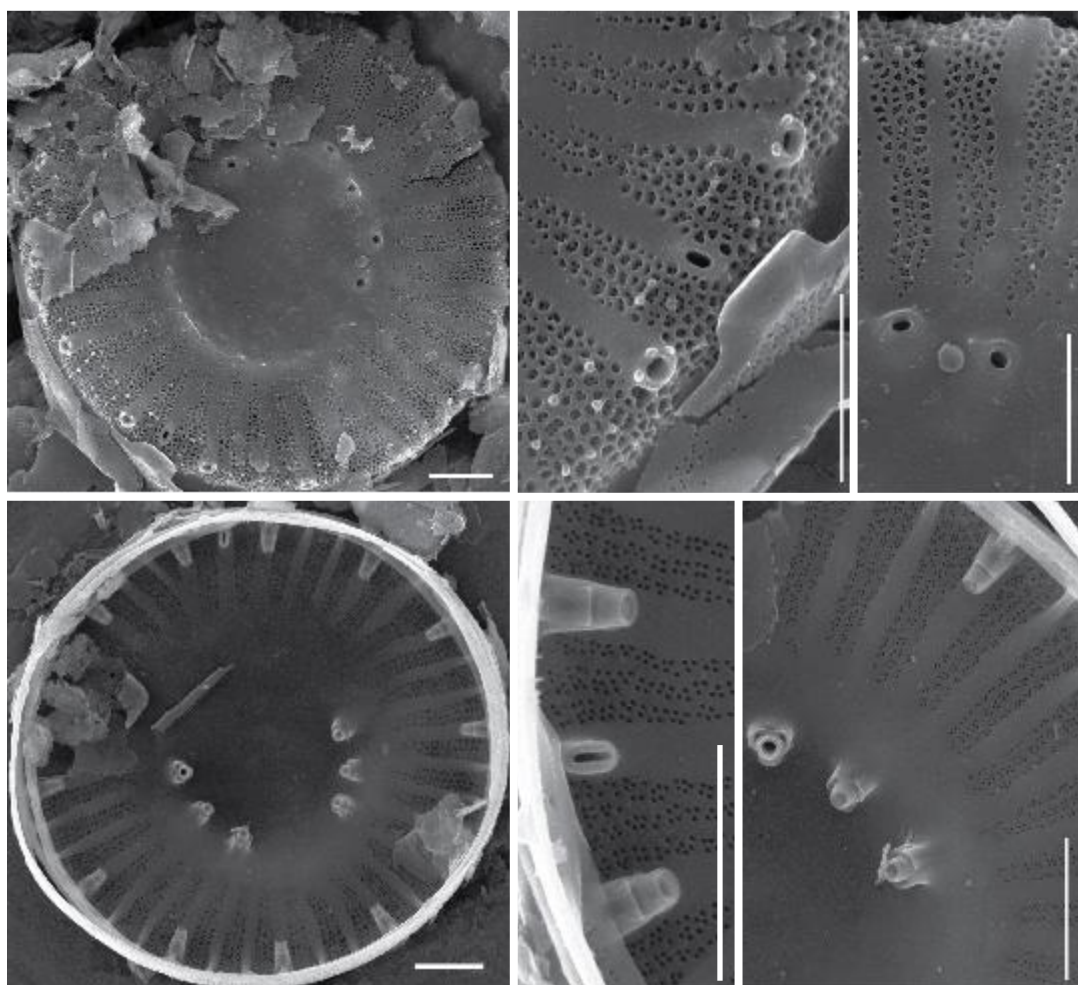
Figs 1-10: Sample COAST071, North East, NJ shore.

Fig. 10: Sample COAST004, Flanders Bay, NY.

Figs 11-16: Sample COAST071, North East, NJ shore.



1 - 10



11 - 16

***Cyclotella* sp. 2**

Fig. 1: Sample RUTG0842, Leeds Point, NJ.

Fig. 2: Sample BBDC0051, Barnegat Bay, NJ.

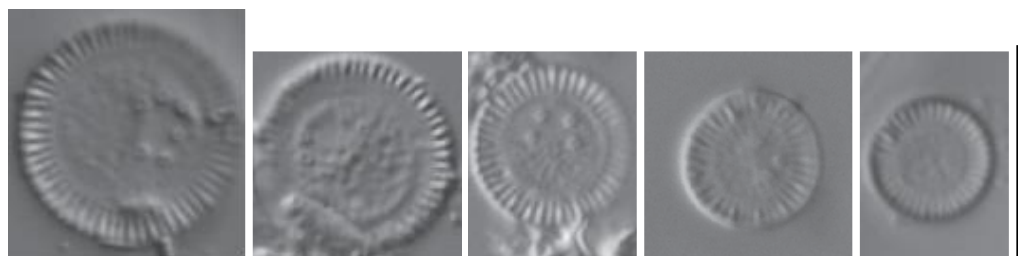
Fig. 3: Sample BBDC0074, Barnegat Bay, NJ.

Fig. 4: Sample RUTG0805, Cape May, NJ.

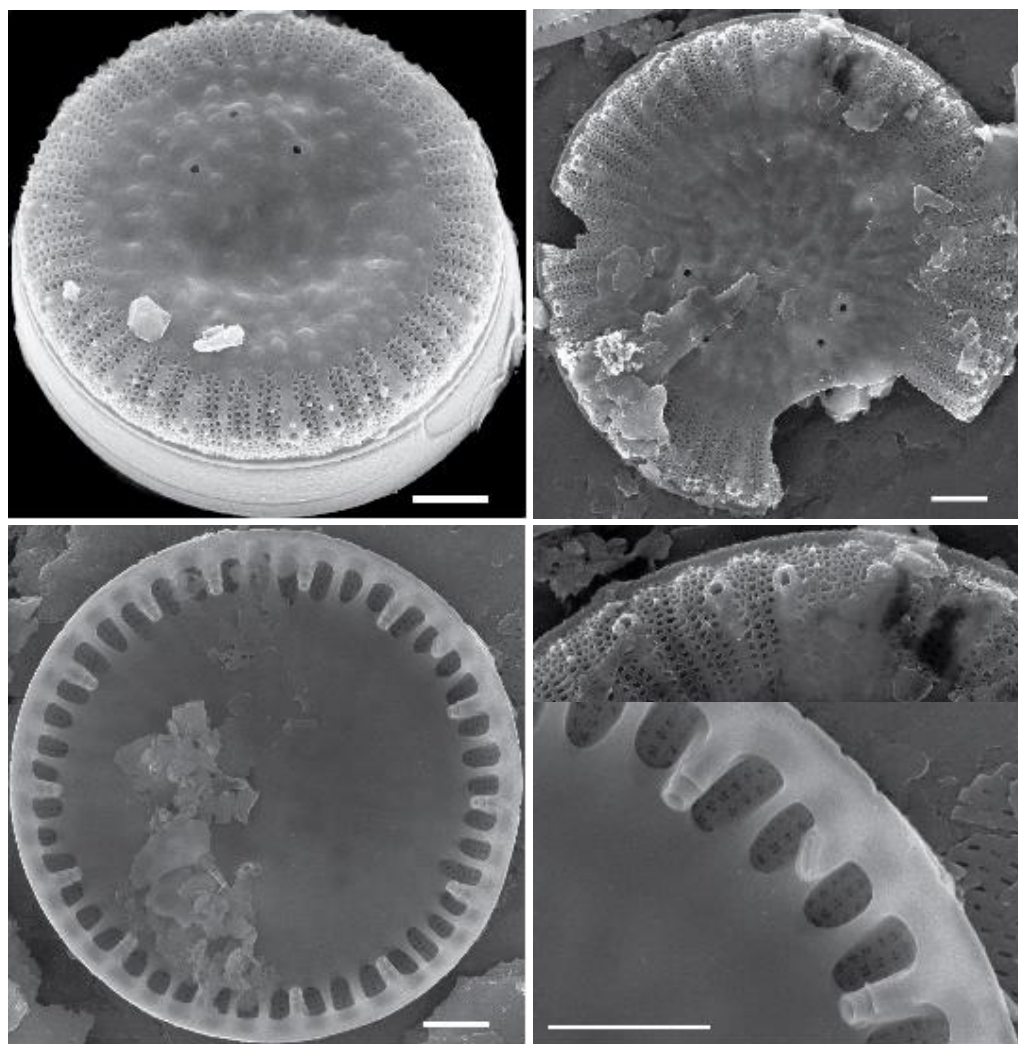
Fig. 5: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 6: Sample BBDC0051, Barnegat Bay, NJ.

Figs 7-10: Sample COAST071, North East, NJ shore.



1 - 5



6 - 10

Cymatosira belgica Grunow in Van Heurck

Lit.: Van Heurck 1881, pl. 45, fig. 38-41

Fig. 1: Sample BB0068, Barnegat Bay, NJ.

Figs 2,4: Sample BB0075, Barnegat Bay, NJ.

Fig. 3: Sample BB0074, Barnegat Bay, NJ.

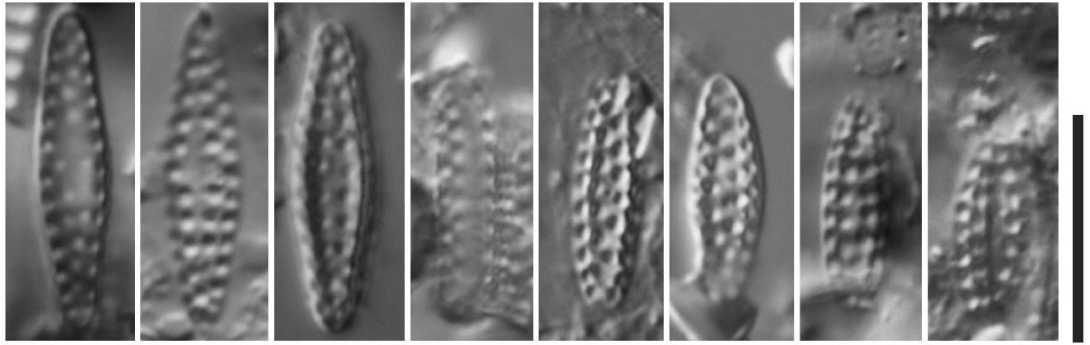
Fig. 5: Sample BB0065, Barnegat Bay, NJ.

Fig. 6: Sample BBDC0048, Barnegat Bay, NJ.

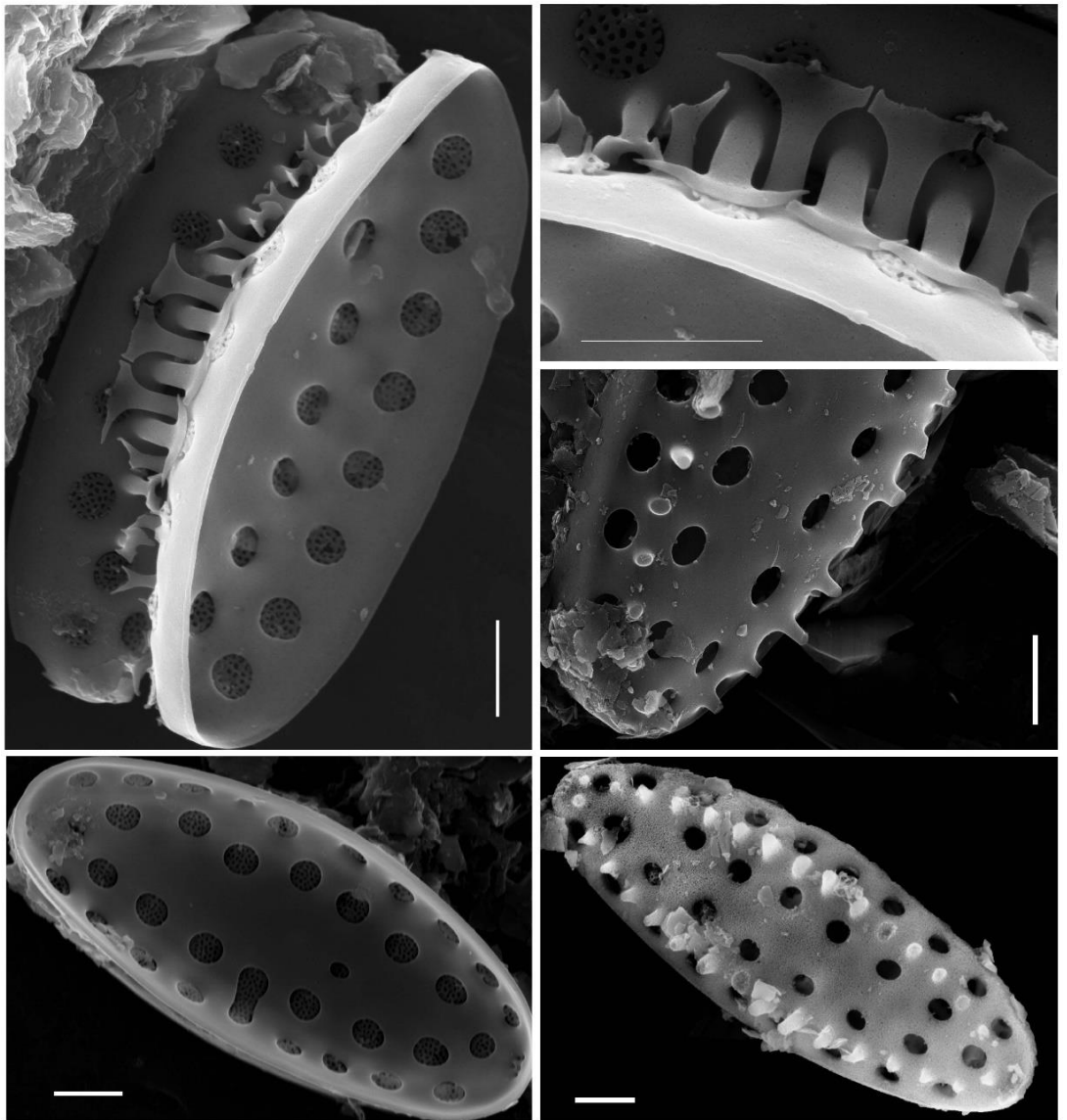
Fig. 2: Sample BB0069, Barnegat Bay, NJ.

Fig. 2: Sample BB0075, Barnegat Bay, NJ.

Fig. 2: Sample BB0062, Barnegat Bay, NJ.



1 - 8



9 - 12

Plate 59

(Scale bars: Figs 1-6=10 µm; Figs 7-11=1 µm)

Cymatosira minutissima Sabbe & Muylaert

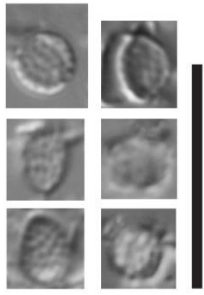
Lit.: Sabbe et al. 2010, p. 246; fig. 17-20, 28-31

Figs 1-2: Sample COAST025, Great South Bay, NY.

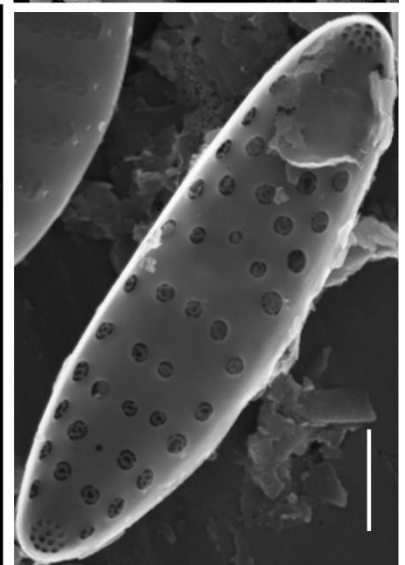
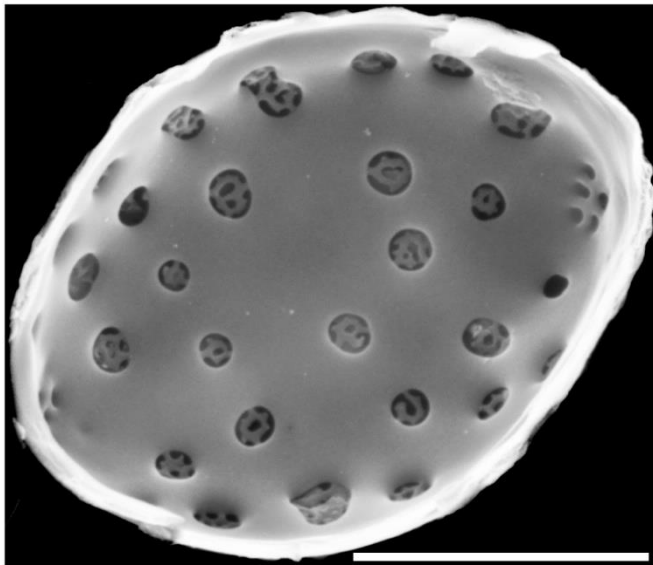
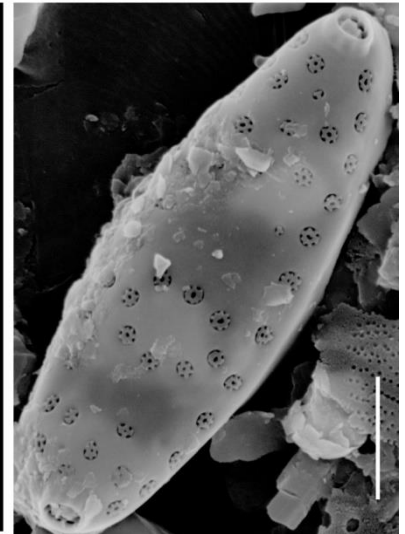
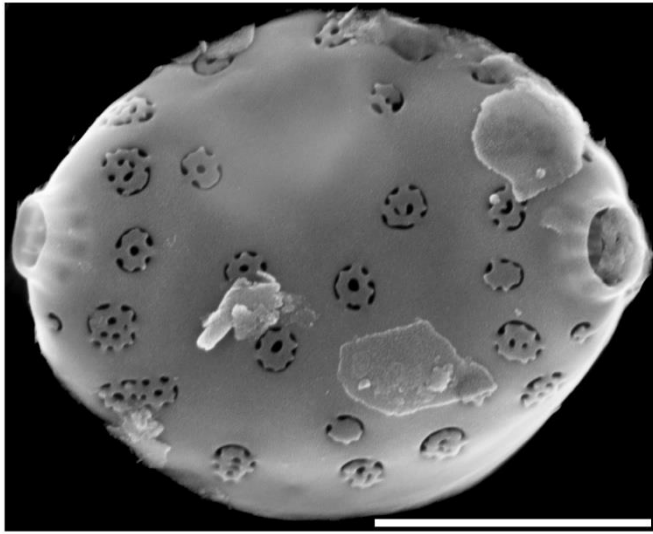
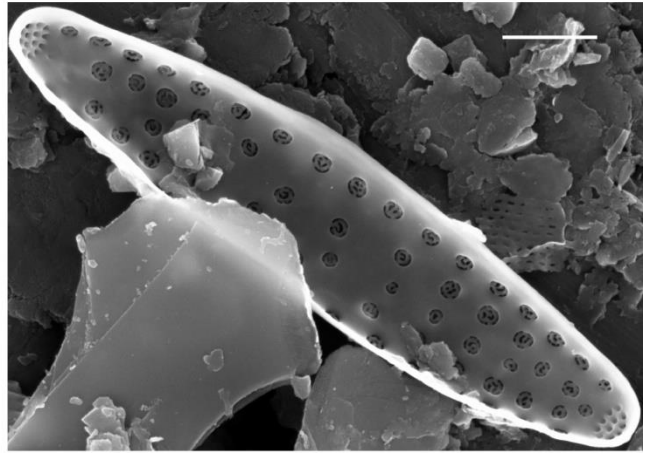
Figs 3,7-9: Sample BBDC0095, Great Bay, NJ.

Fig. 10: Sample COAST011, Great South Bay, NY.

Fig. 11: Sample COAST062, Western Bay, NY.



1 - 6



7 - 11

Plate 60(Scale bar: Figs 1-12,14-15,19=10 µm; Figs 13,16-18,20-21=1 µm)

Figs 1-2: ***Campylosira alexandrica*** Salah

Lit.: Salah 1955, p. 92; pl. 1, fig. 17

Fig. 1: Sample RUTG0619, Sea Breeze, NJ.

Fig. 2: Sample RUTG0541, Fortescue, NJ.

Figs 3-4: ***Campylosira cymbelliformis*** (Schmidt) Grunow in Van Heurck

Lit.: Van Heurck 1881, pl. 45, fig. 43

Basionyms: *Synedra cymbelliformis* Schmidt 1874

Fig. 3: Sample BB0068, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0095, Great Bay, NJ.

Figs 5-13: ***Brockmaniella brockmanii*** (Hustedt) Hasle, von Stosch & Syvertsen

Lit.: Hasle, von Stosch & Syvertsen 1983, p. 35-38; text fig. 5, fig. 132-155

Basionyms: *Plagioygramma brockmanni* Hustedt 1939

Fig. 5: Sample COAST062, Great Bay, NJ.

Figs 6,10,12-13: Sample BBDC0095, Great Bay, NJ.

Fig. 7: Sample BBDC0003, Barnegat Bay, NJ.

Fig. 8: Sample BBDC0048, Barnegat Bay, NJ.

Fig. 9: Sample BBDC0045, Barnegat Bay, NJ.

Fig. 11: Sample COAST062, Western Bay, NY.

Figs 14-18: ***Extubocellulus* sp. 1**

Figs 14-17: Sample BBDC0095, Great Bay, NJ.

Fig. 18: Sample COAST015, Great South Bay, NY.

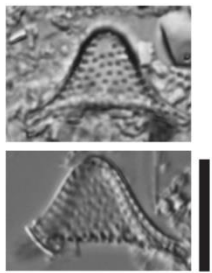
Figs 19-21: ***Minutocellus polymorphus*** (Hargraves & Guillard) Hasle, Stosch, & Syvertsen

Lit.: Hasle, Stosch, & Syvertsen 1983: 38, text figs 6, 8, figs 156-189, 220-242

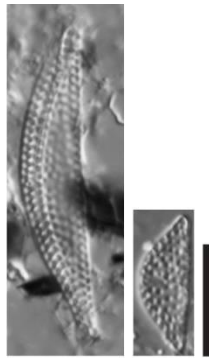
Basionyms: *Bellerochea polymorpha* Hargraves & Guillard 1974

Figs 19,21: Barnegat Bay, NJ.

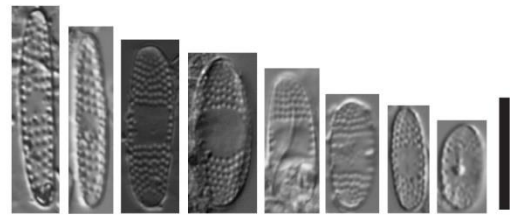
Fig. 20: Sample COAST096, Cape May Peninsula, NJ.



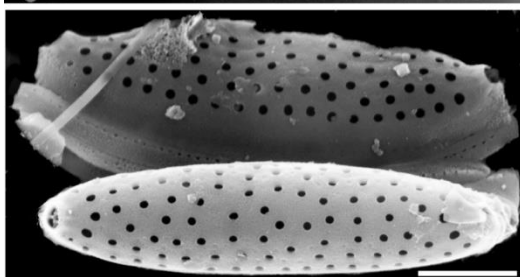
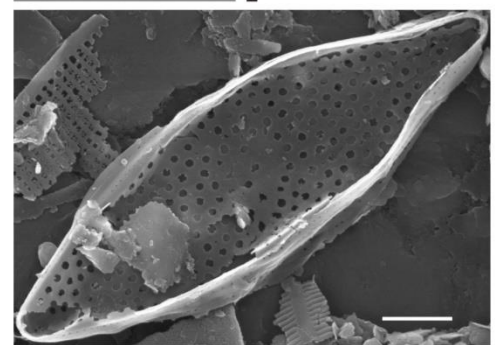
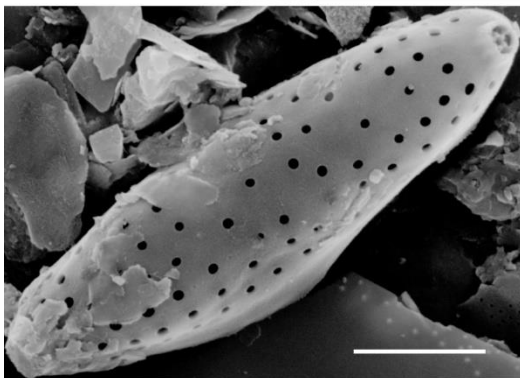
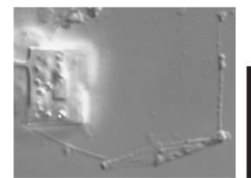
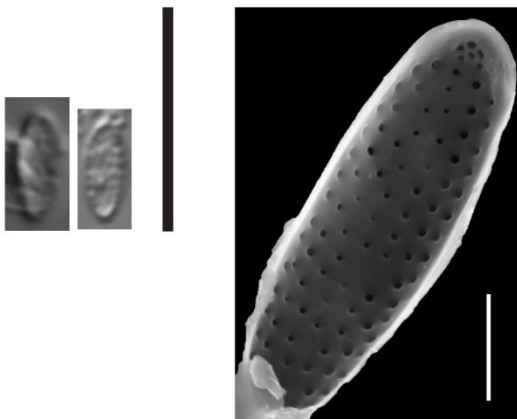
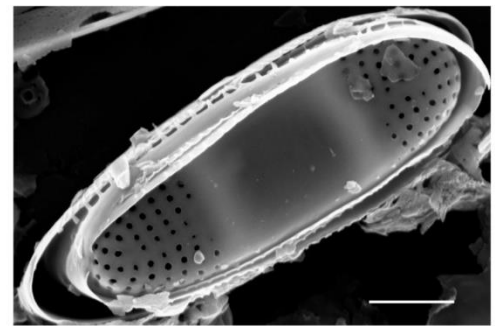
1 - 2



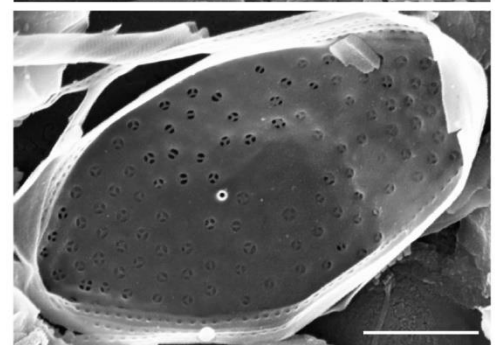
3 - 4



5 - 13



14 - 18



19 - 21

Plate 61

(Scale bars: Figs 1-2=10 µm; Figs 3-9=1 µm)

Arcocellulus cornucervis Hasle, von Stosch & Syvertsen

Lit.: Hasle, von Stosch & Syvertsen 1983, p. 59-63; text fig. 11, fig. 301-333, 408-414

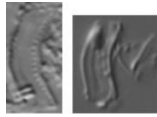
Fig. 1: Sample BBDC00109, Great Bay, NJ.

Fig. 2: Sample BB0029, Barnegat Bay, NJ.

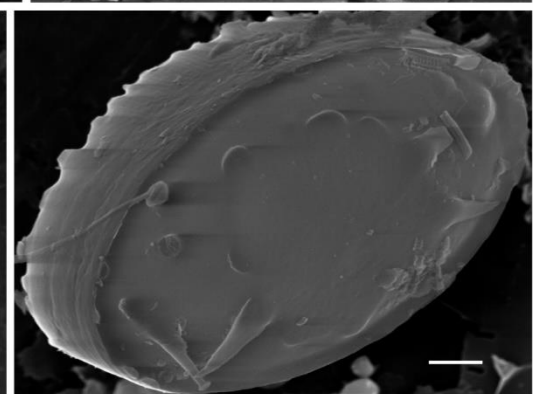
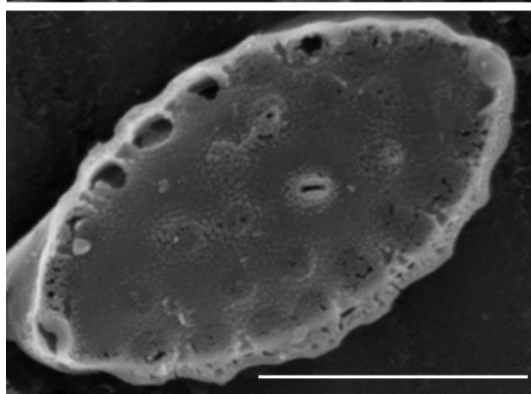
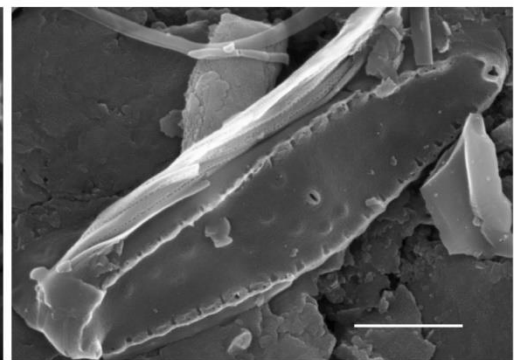
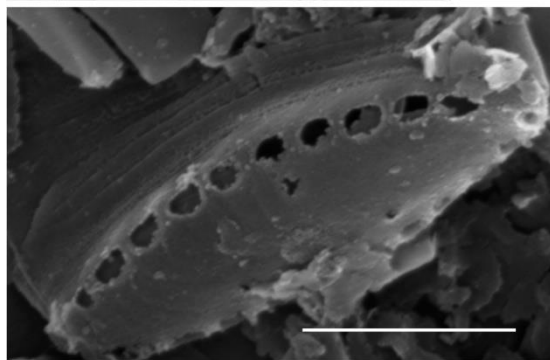
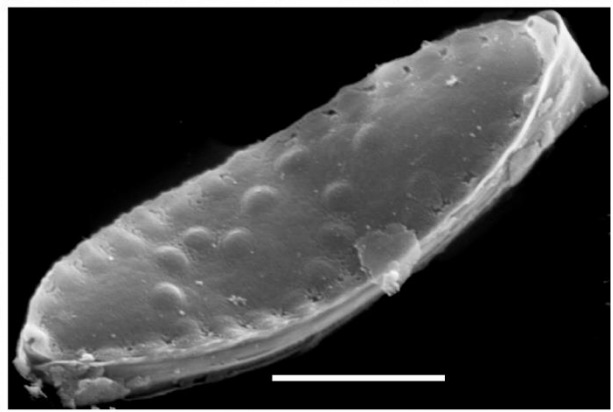
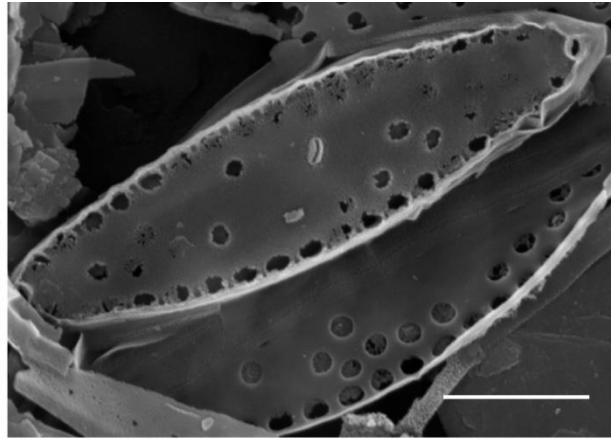
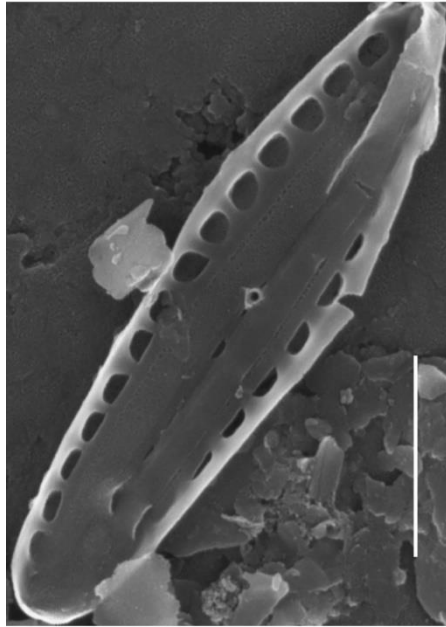
Figs 3,8: Sample COAST015, Great South Bay, NY.

Figs 4,7,9: Sample COAST054, Barnegat Bay, NJ.

Figs 5-6: Sample COAST096, Cape May Peninsula, NJ.



1 - 2



3 - 9

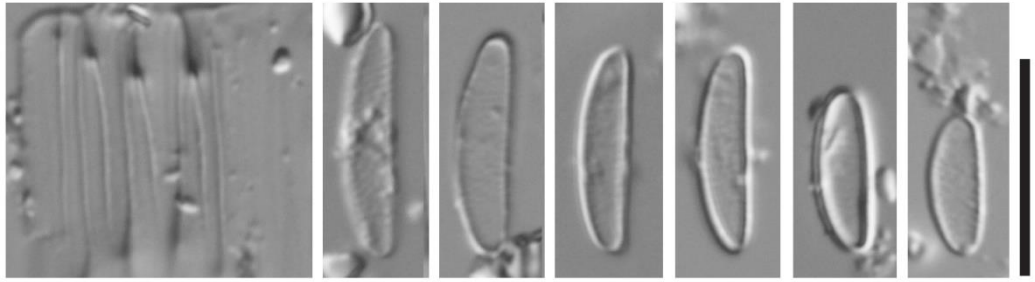
Plate 62

(Scale bars: Figs 1-7=10 µm; Figs 8-10=1 µm)

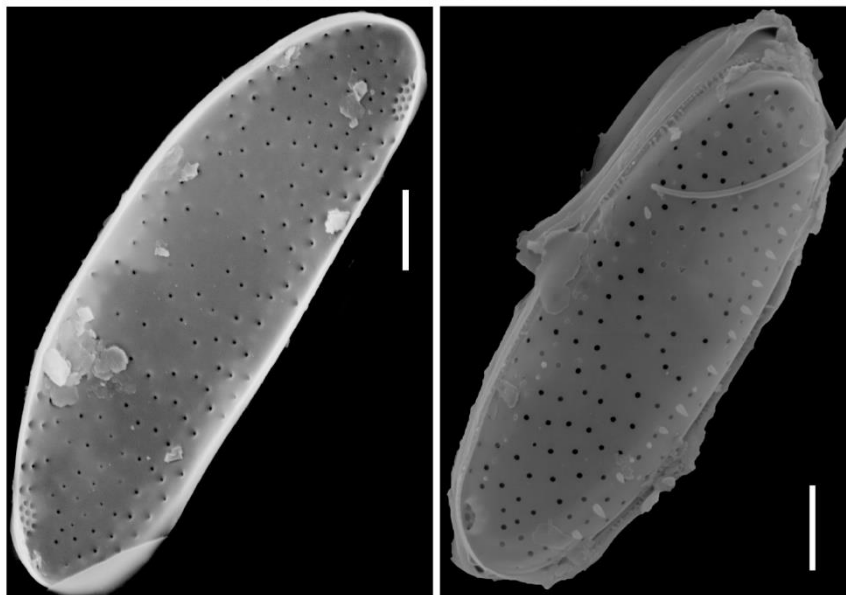
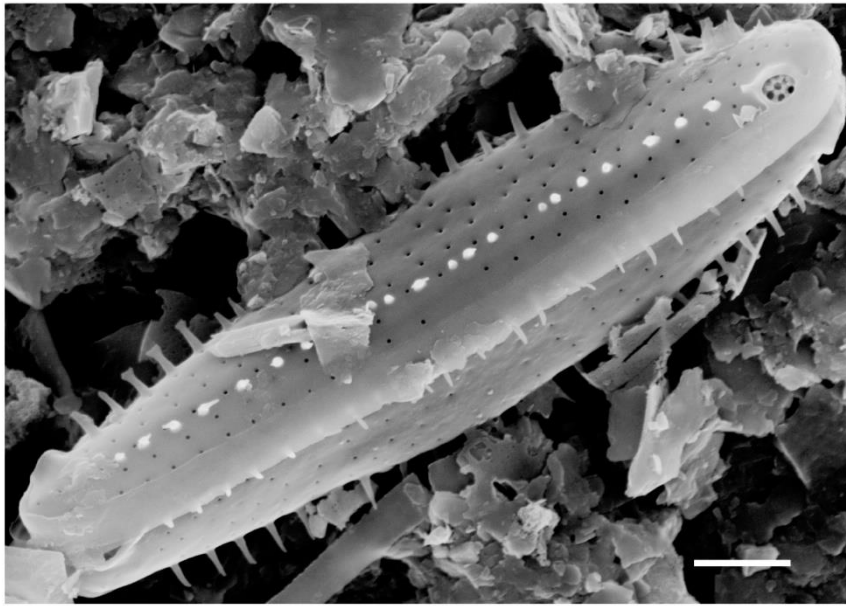
Pierrecomperia catenuloides Sabbe, Vyverman & Ribeiro

Lit.: Sabbe et al. 2010, p. 251; fig. 21-27, 37-38, 40-42, 45-47

Figs 1-10: Sample BBDC0095, Great Bay, NJ.



1 - 7



8 - 10

Plate 63 (Scale bars: Figs 1-21; 27-46=10 µm; Figs 22-26; 47-48=1 µm)

Figs 1-26: ***Fragilaria amicornum*** Witkowski et Lange-Bertalot

Lit.: Witkowski et Lange-Bertalot 1993, v. 23 (1): p. 62; fig. 3a-k

Fig. 1: Sample BBDC0095, Great Bay, NJ.

Figs 2,7,10,12-13,15,19-20: Sample BBEDC098, Cattus Island, NJ.

Figs 3,14,16-17: Sample BBDC0016, Barnegat Bay, NJ.

Fig. 4: Sample BB0001, Barnegat Bay, NJ.

Figs 5,8: Sample BBEDC058, Cattus Island, NJ.

Figs 6,21,25: Sample BB0054, Barnegat Bay, NJ.

Fig. 9: Sample BBDC0018, Barnegat Bay, NJ.

Fig. 11: Sample BB0032, Barnegat Bay, NJ.

Fig. 18: Sample BB0060, Barnegat Bay, NJ.

Figs 22,24: Sample COAST015, Great South Bay, NY.

Figs 23: Sample BBDC0028, Barnegat Bay, NJ.

Figs 27-48: ***Fragilaria* sp. 10**

Figs 27-28,30-32,44: Sample BBEDC098, Cattus Island, NJ.

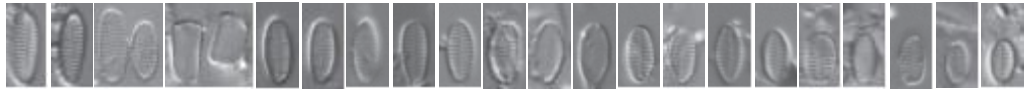
Figs 29,35-38,40-41,46-48: Sample BBDC0016, Barnegat Bay, NJ.

Figs 33,39,45: Sample BBEDC059, Cattus Island, NJ.

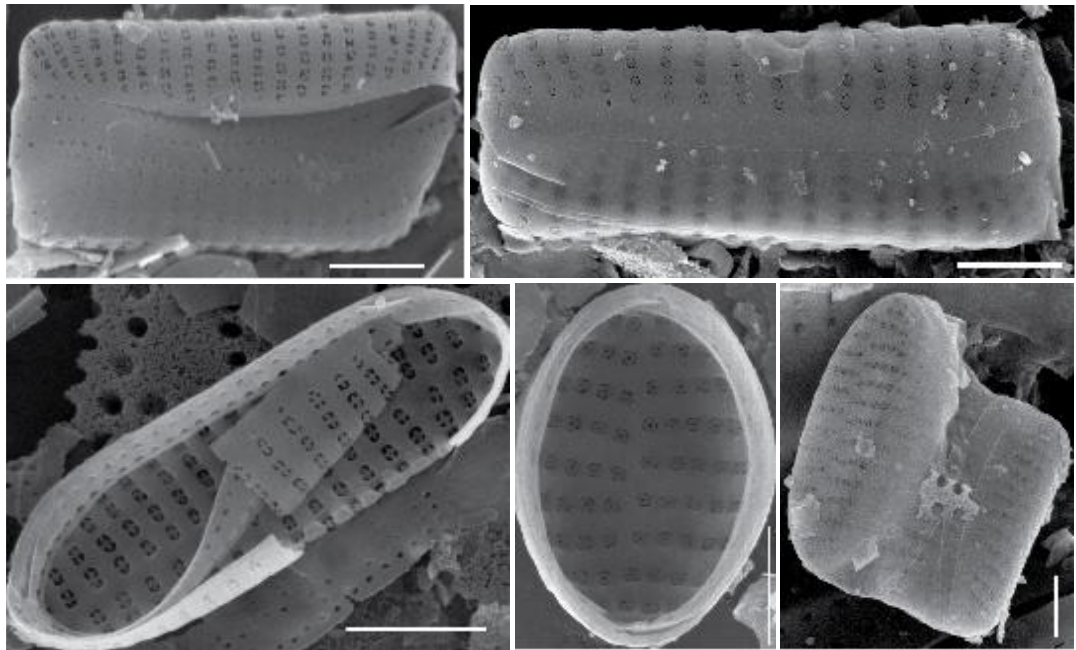
Figs 34: Sample COAST015, Great South Bay, NY.

Fig. 42: Sample BB0071, Barnegat Bay, NJ.

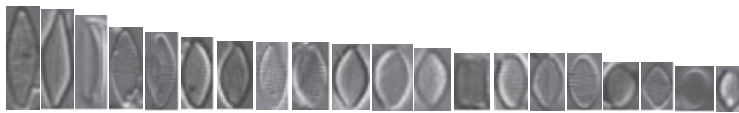
Figs 43: Sample BBEDC058, Cattus Island, NJ.



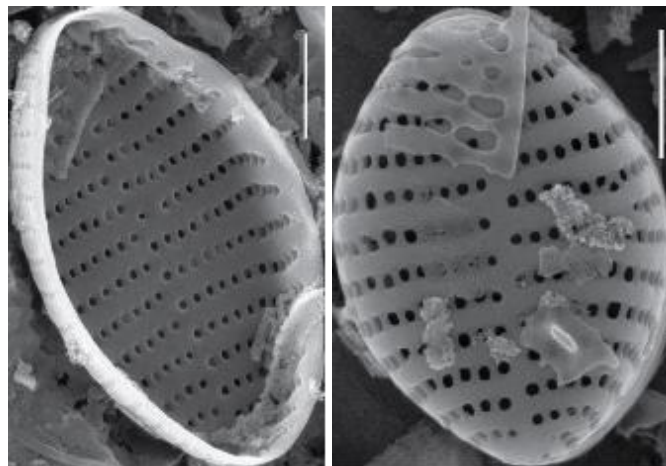
1 - 21



22 - 26



27 - 46



47 - 48

Plate 64 (Scale bars: Figs 1-9; 14-19; 21-39=10 µm; Figs 10-13; 20; 40-41=1 µm)

Figs 1-13: ***Fragilaria bronkei*** Witkowski, Lange-Bertalot & Metzeltin

Lit.: Witkowski, Lange-Bertalot & Metzeltin 2000, p. 48, 427; pl. 12, fig. 1-12

Figs 1,3,5,8-12: Sample COAST062, Great Bay, NJ.

Figs 2: Sample COAST022, Great South Bay, NY.

Figs 4: Sample COAST015, Great South Bay, NY.

Figs 6,13: Sample BBDC0095, Great Bay, NJ.

Fig. 7: Sample BB0008, Barnegat Bay, NJ.

Figs 14-20: ***Pseudostaurosira cf. brevistriata***

Figs 14-20: Sample BBDC00028, Barnegat Bay, NJ.

Figs 21-24: ***Fragilaria sp. 3***

Fig. 21: Sample BBDC00038, Barnegat Bay, NJ.

Fig. 22: Sample BBDC00018, Barnegat Bay, NJ.

Fig. 23: Sample BB0070, Barnegat Bay, NJ.

Fig. 24: Sample BBDC0095, Great Bay, NJ.

Figs 25-41: ***Tabularia waernii*** Snoeijs

Lit.: Snoeijs & Kuylenstierna 1991, p. 352; fig. 1-34

Figs 25-26: Sample COAST019, Great South Bay, NY.

Figs 27,29-30,35,37: Sample BBDC0095, Great Bay, NJ.

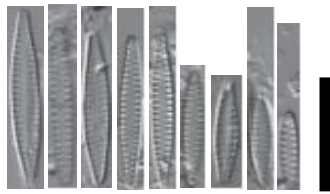
Fig. 28: Sample BBDC00015, Barnegat Bay, NJ.

Figs 31,33-34,40-41: Sample COAST015, Great South Bay, NY.

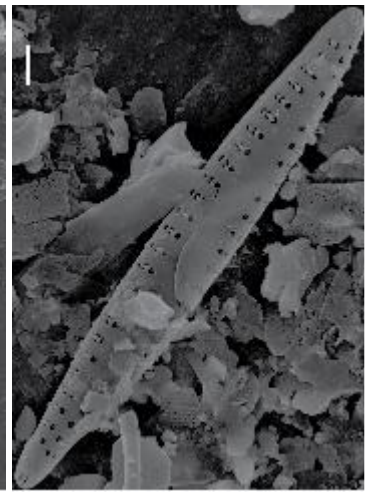
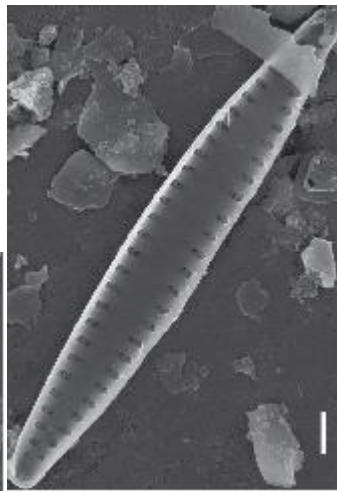
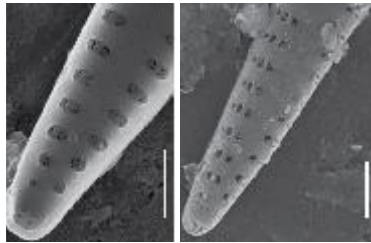
Fig. 32: Sample BBDC00016, Barnegat Bay, NJ.

Figs 36,39: Sample BBEDC098, Cattus Island, NJ.

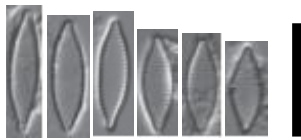
Fig. 38: Sample BBDC00028, Barnegat Bay, NJ.



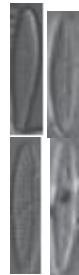
1 - 9



10 - 13



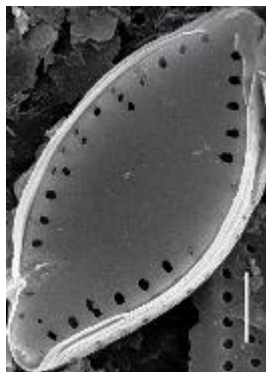
14 - 19



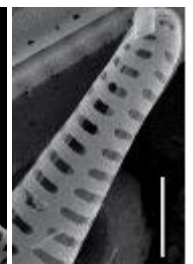
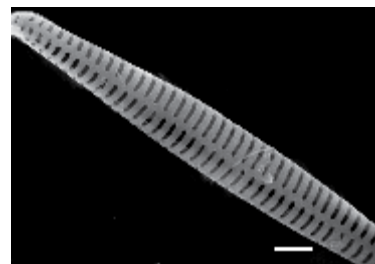
21 - 24



25 - 39



20



40 - 41

Fragilaria cassubica Witkowski et Lange-Bertalot

Lit.: Witkowski et Lange-Bertalot 1993, v. 23 (1): p. 65; fig. 4a-m

Figs 1,8: Sample BBDC00029, Barnegat Bay, NJ.

Figs 2,4: Sample BBDC00001, Barnegat Bay, NJ.

Fig. 3: Sample COAST051, Barnegat Bay, NY.

Fig. 5: Sample BB0067, Barnegat Bay, NJ.

Figs 6,13: Sample BBDC00002, Barnegat Bay, NJ.

Fig. 7: Sample BB0058, Barnegat Bay, NJ.

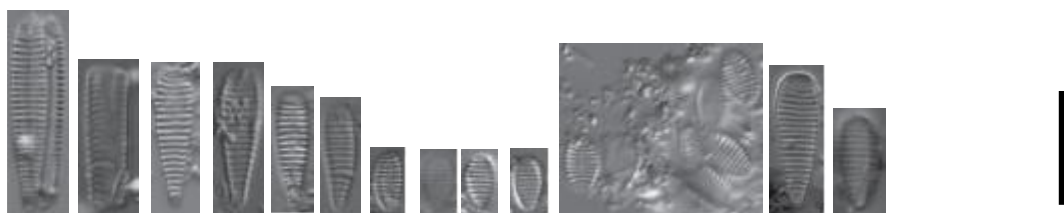
Figs 9-10,16: Sample BB0054, Barnegat Bay, NJ.

Fig. 11: Sample BB0009, Barnegat Bay, NJ.

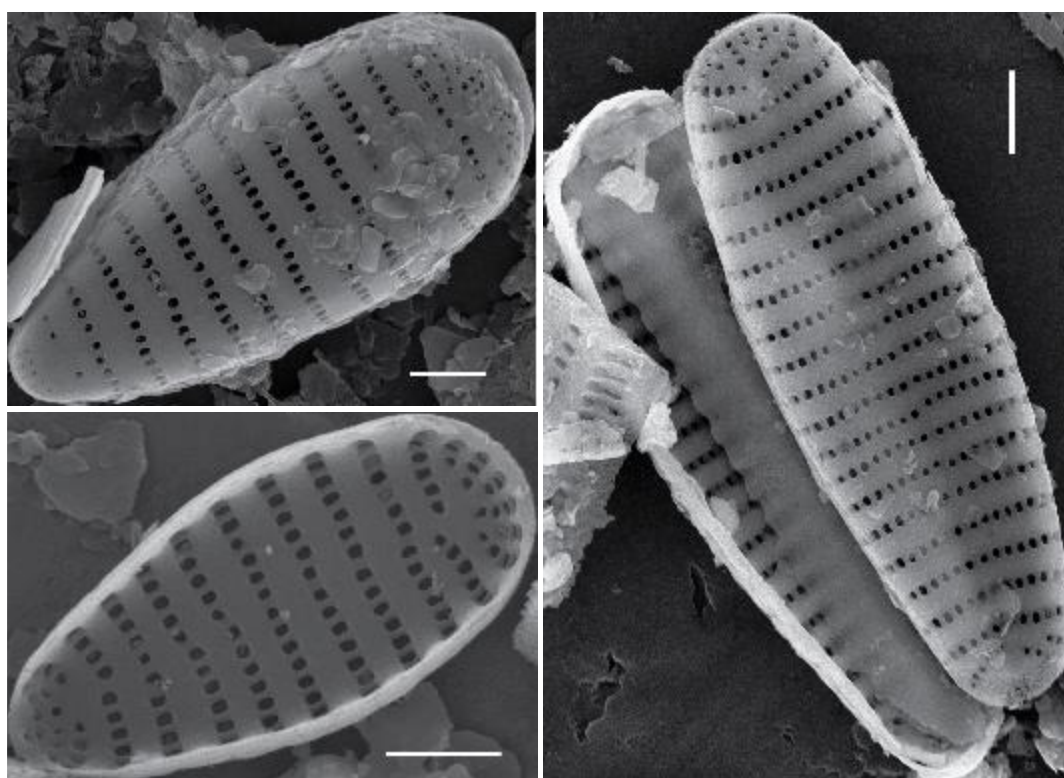
Fig. 12: Sample BBDC00007, Barnegat Bay, NJ.

Fig. 14: Sample COAST031, Western Bay, NY.

Fig. 15: Sample BB0029, Barnegat Bay, NJ.



1 - 13



14 - 16

Plate 66

(Scale bars: Figs 1-2=10 µm; Figs 3-7=1 µm)

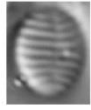
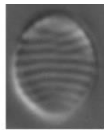
Martyana atomus (Hustedt) Snoeijs

Lit.: Snoeijs, Hallfors & Leskinen 1991, p. 166; fig. 1-18, 23-25

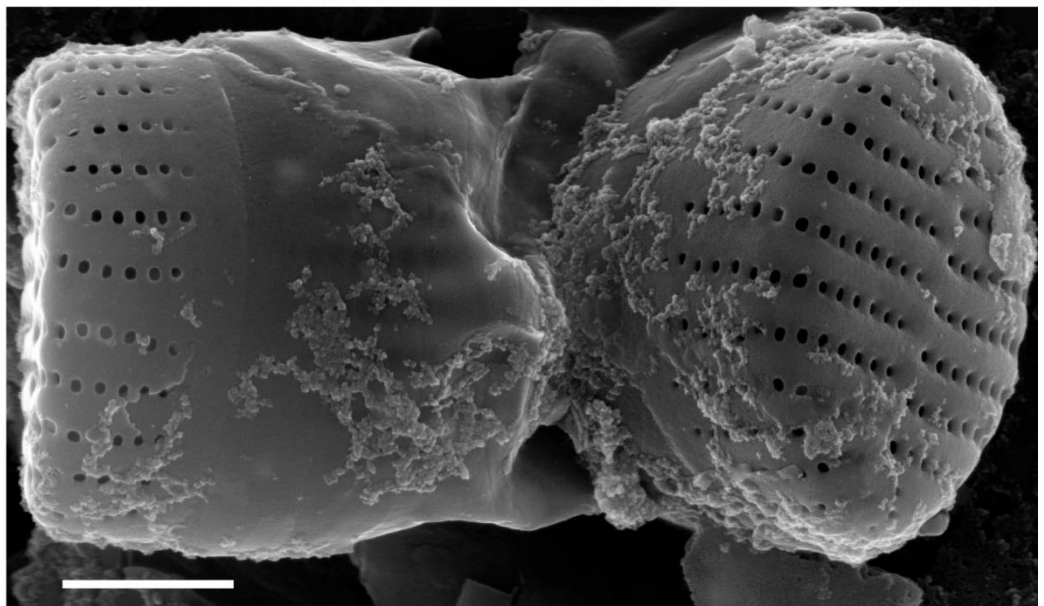
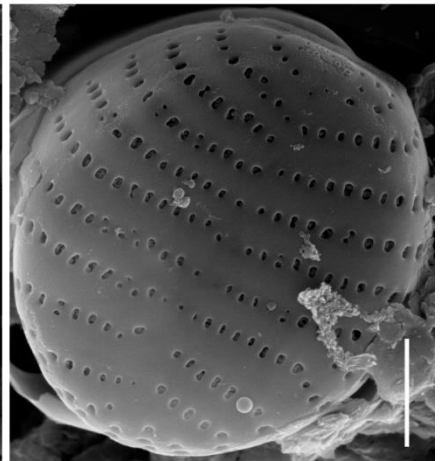
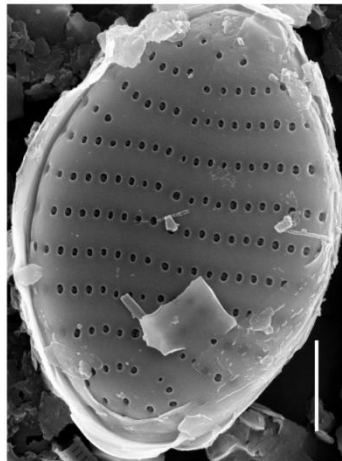
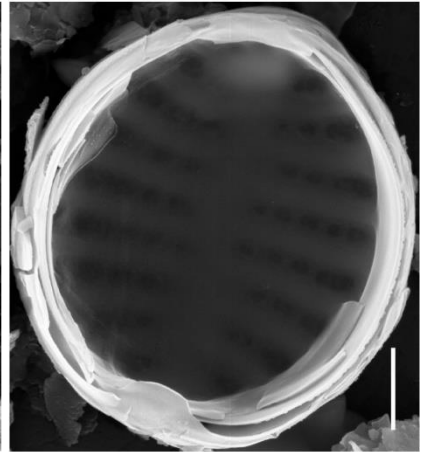
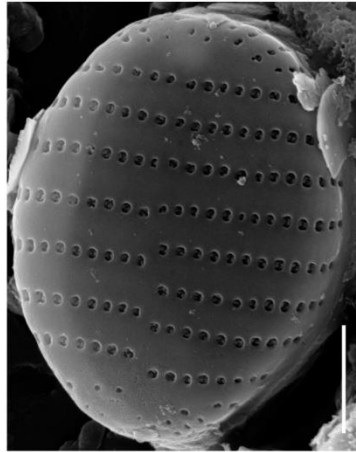
Basionyms: *Fragilaria atomus* Hustedt 1931

Figs 1-6: Sample BBDC00028, Barnegat Bay, NJ.

Fig. 7: Sample BBDC00016, Barnegat Bay, NJ.



1 - 2



3 - 7

Stauroforma exiguiformis (Lange-Bertalot) Flower, Jones & Round

Lit.: Flower, Jones & Round 1996, p. 53-54; fig. 16-22

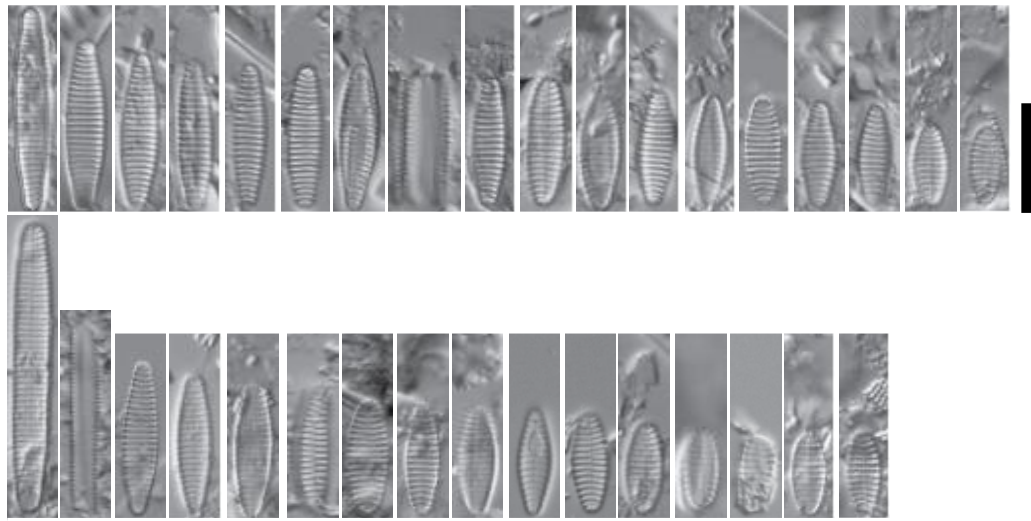
Basionyms: *Fragilaria exiguiformis* Lange-Bertalot 1993

Fig. 1: Sample BB0054, Barnegat Bay, NJ.

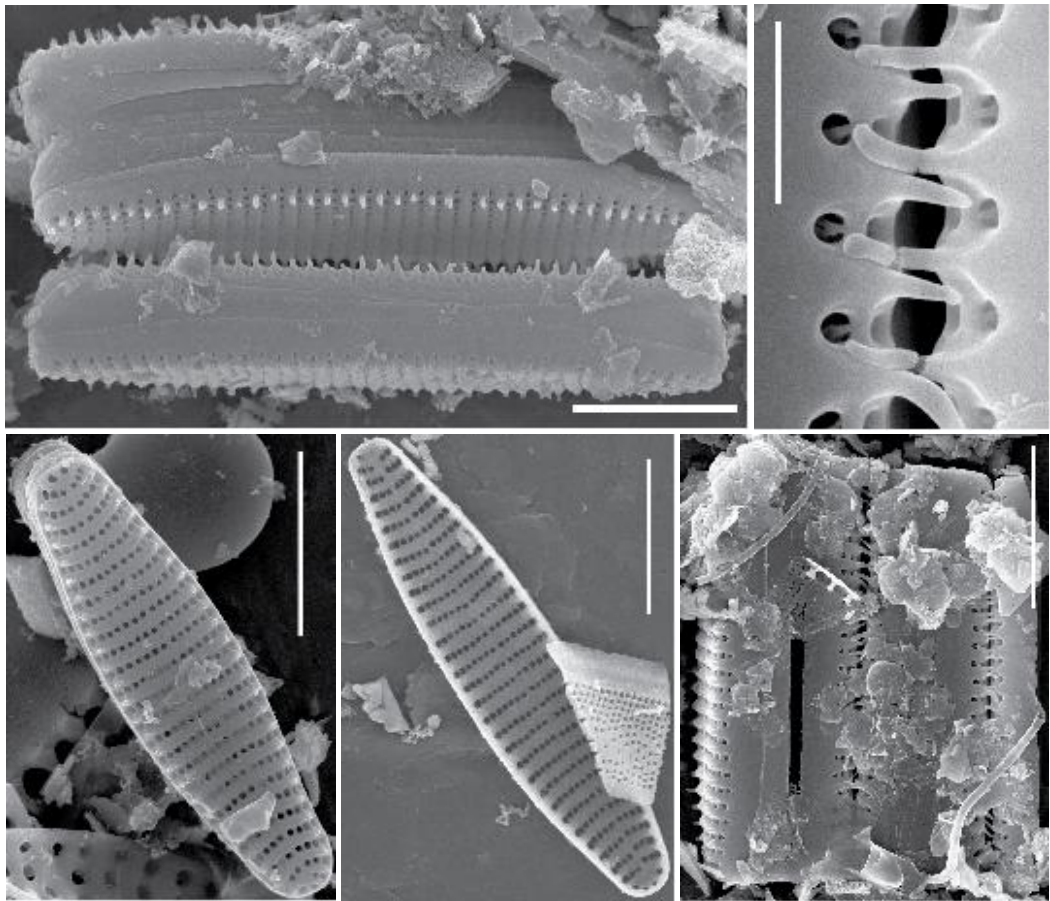
Figs 2-18,37-38: Sample BB0032, Barnegat Bay, NJ.

Figs 19-35: Sample BB0031, Barnegat Bay, NJ.

Figs 36,39: Sample BBDC00028, Barnegat Bay, NJ.



1 - 34



35 - 39

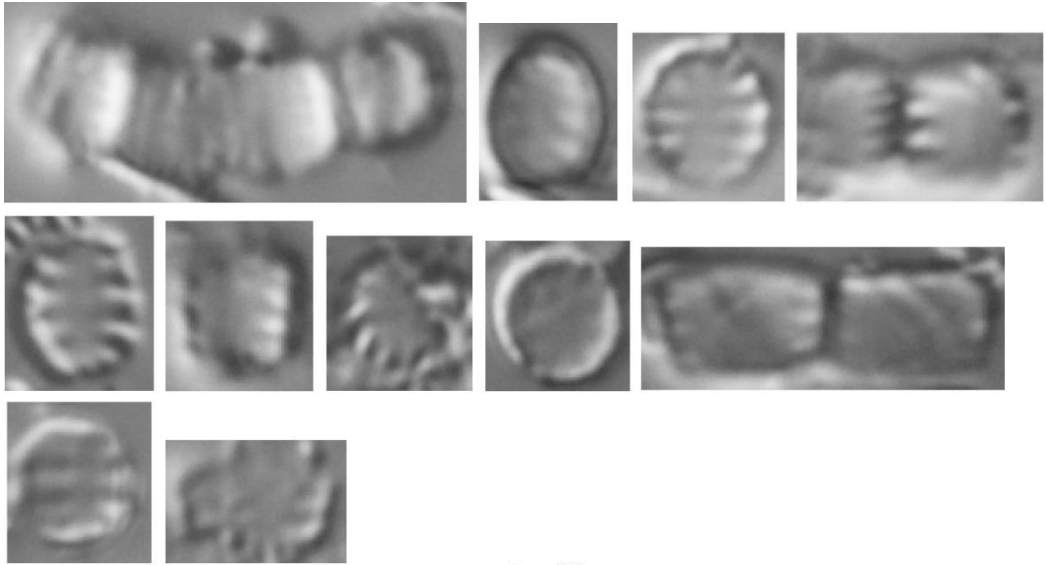
Plate 68

(Scale bars: Figs 1-11=10 µm; Figs 12-15=1 µm)

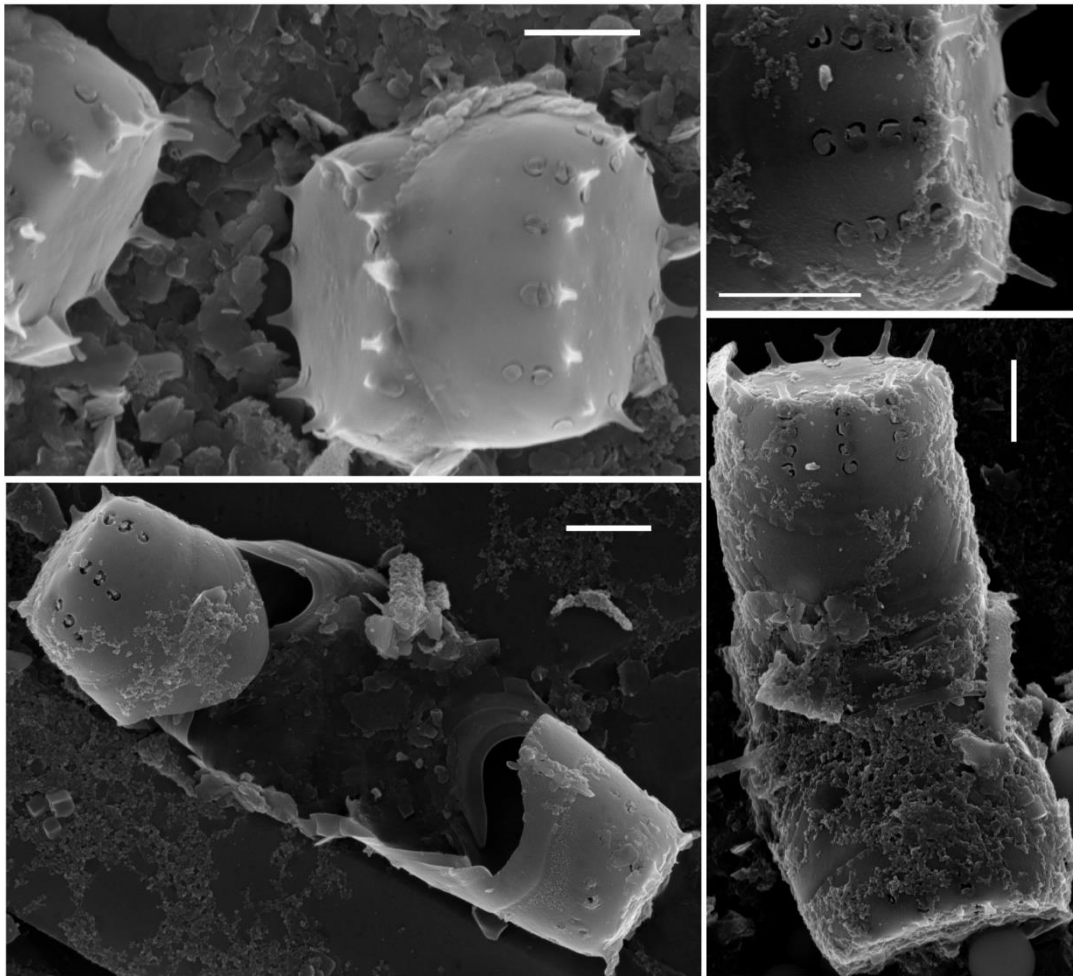
Staurosira punctiformis Witkowski, Metzeltin & Lange-Bertalot

Lit.: Witkowski, Lange-Bertalot & Metzeltin 2000, p. 78, 441; pl. 24, fig. 51-58, pl. 26, fig. 1-2

Figs 1-15: Sample BBDC00016, Barnegat Bay, NJ.



1 - 11



12 - 15

Plate 69 (Scale bar: Figs 1-20=10 µm)

Psammogramma vigoense Sato & Medlin

Lit.: Sato et al. 2008, p. 258; fig. 1-19

Figs 1-3,5-14,16-21,23,25: Sample BBDC0095, Great Bay, NJ.

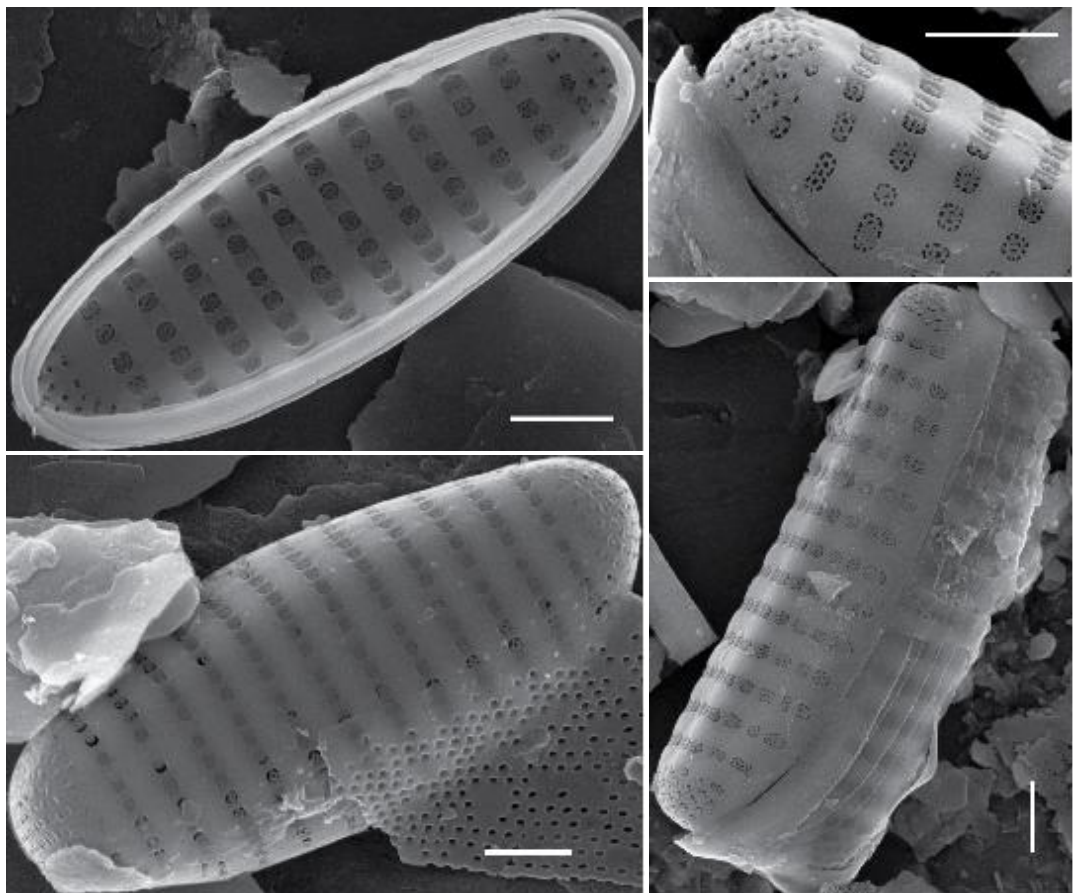
Fig. 15: Sample BBDC00036, Barnegat Bay, NJ.

Figs 22: Sample COAST062, Great Bay, NY.

Figs 24: Sample COAST013, Great South Bay, NY.



1 - 21



22 - 25

Plate 70(Scale bars: Figs 1-7,11-14=10 µm; Figs 8-10,15-16=1 µm)

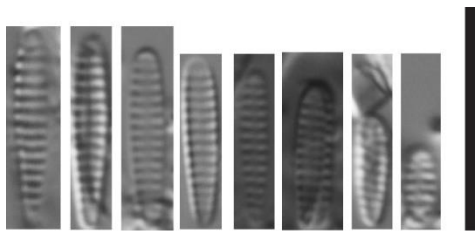
Figs 1-10: ***Fragilaria gedanensis*** Witkowski

Lit.: Witkowski 1993, v. 56 (3-4): p. 498; fig. 1-18

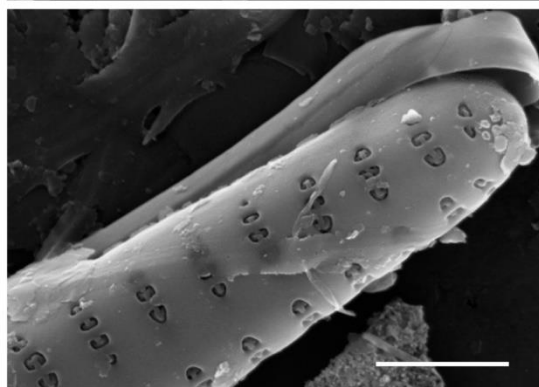
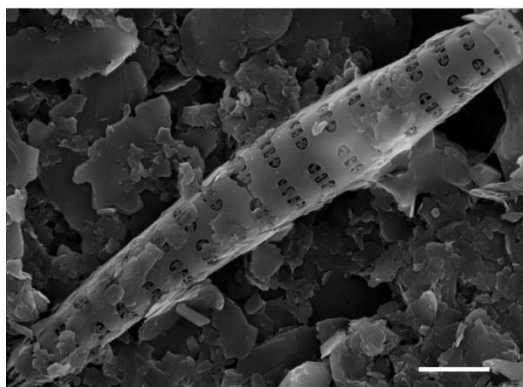
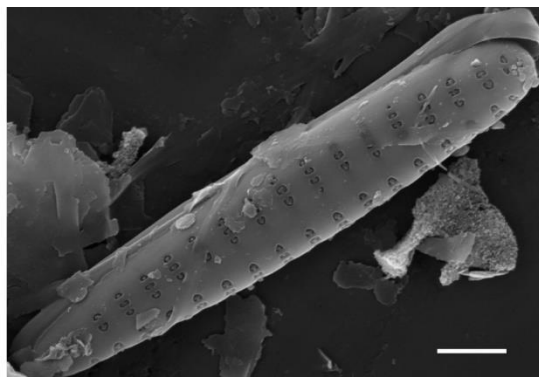
- Fig. 1: Sample BBDC0029, Barnegat Bay, NJ.
- Figs 2,7-8: Sample BBDC0095, Great Bay, NJ.
- Fig. 3: Sample BBDC00054, Barnegat Bay, NJ.
- Fig. 4: Sample BB0055, Barnegat Bay, NJ.
- Fig. 5: Sample BBDC0036, Barnegat Bay, NJ.
- Fig. 6: Sample BBDC0002, Barnegat Bay, NJ.
- Figs 9-11: Sample COAST022, Great South Bay, NY.

Figs 11-16: ***Fragilaria sp. 1***

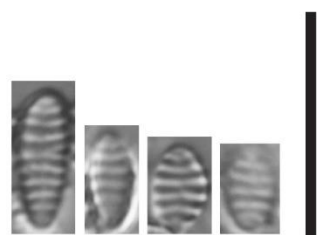
- Figs 12-15,17: Sample BBDC0018, Barnegat Bay, NJ.
- Fig. 16: Sample BBDC0016, Barnegat Bay, NJ.



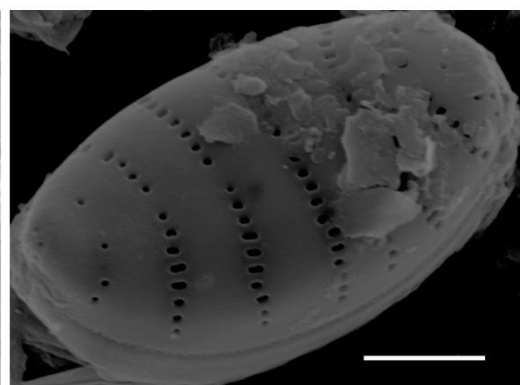
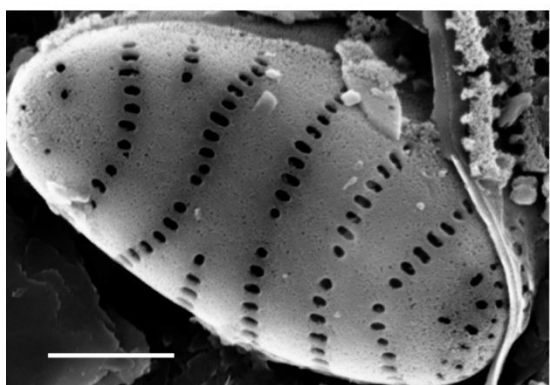
1 - 8



9 - 11



12 - 15



16 - 17

Plate 71

(Scale bars: Figs 1-13=10 µm; Figs 14-18=1 µm)

Pseudostaurosira subsalina (Hustedt) Morales

Lit.: Morales 2005, p. 115

Basionym: *Fragilaria construens* var. *subsalina* Hustedt 1925

Synonyms: *Fragilaria construens* f. *subsalina* (Hustedt) Hustedt 1957

Staurosira construens f. *subsalina* (Hustedt) Bukhtiyarova 1995

Fig. 1: Sample BB0065, Barnegat Bay, NJ.

Fig. 2: Sample BB0027, Barnegat Bay, NJ.

Fig. 3: Sample BB0071, Barnegat Bay, NJ.

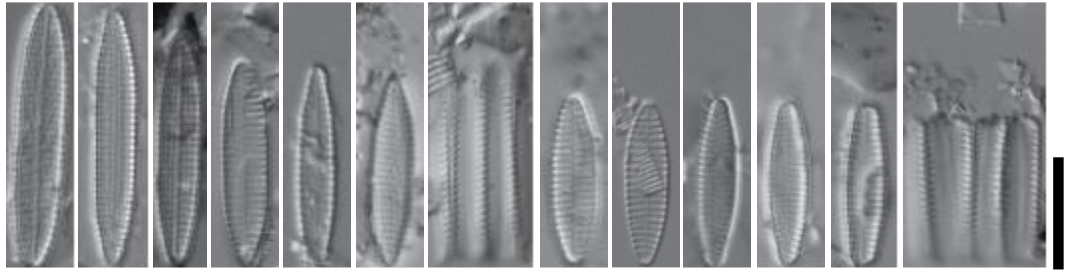
Figs 4,6-8,10,13: Sample BB0031, Barnegat Bay, NJ.

Figs 11-12: Sample BB0032, Barnegat Bay, NJ.

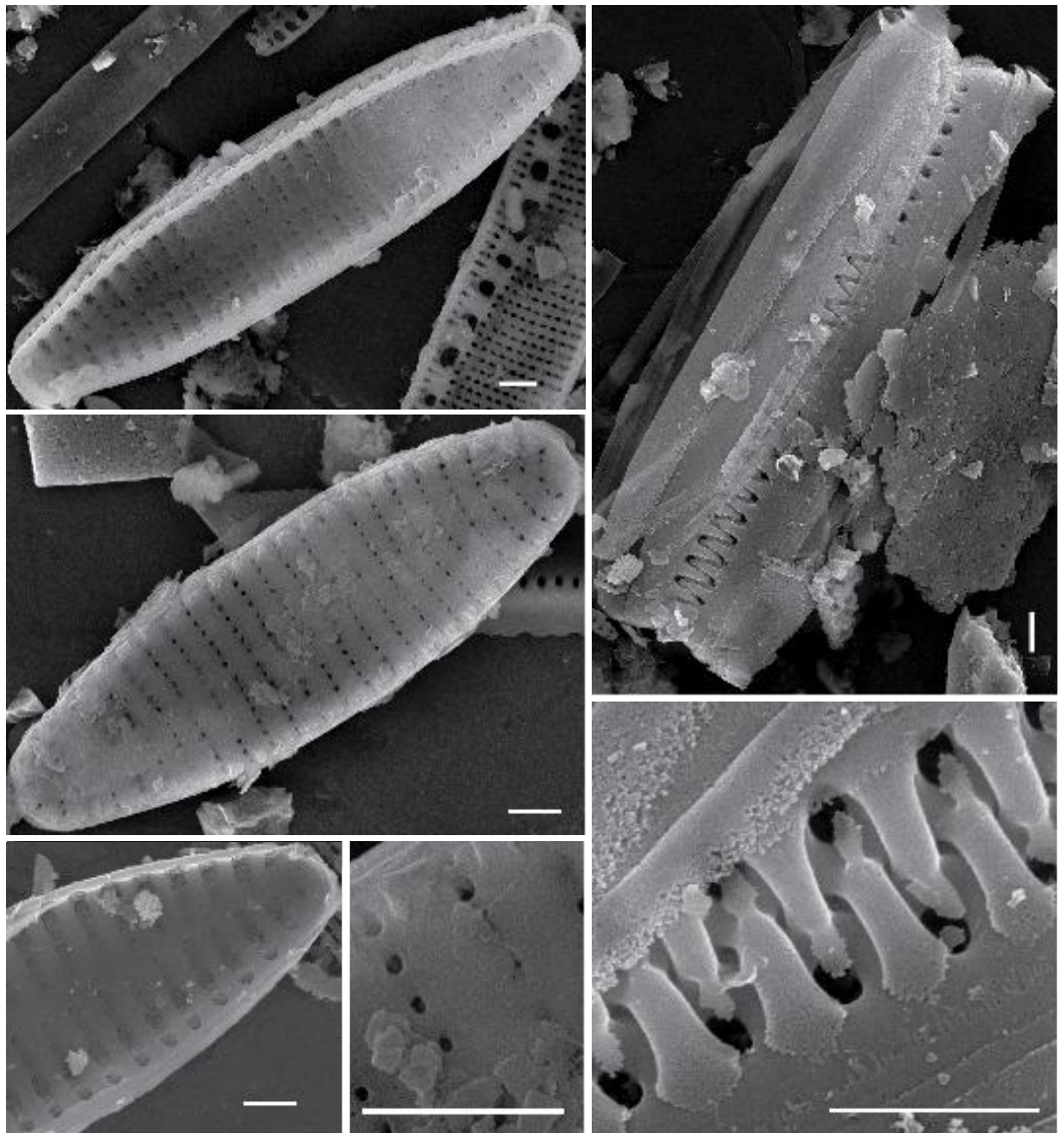
Fig. 5: Sample BBDC0095, Great Bay, NJ.

Fig. 9: Sample BBDC00028, Barnegat Bay, NJ.

Figs 14-18: Sample BB0029, Barnegat Bay, NJ.



1 - 13



14 - 18

***Pseudostaurosira perminuta* (Grunow) Sabbe & Vyverman**

Lit.: Sabbe & Vyverman 1995, p. 237; fig. 1-12, 54-60

Basionym: *Sceptroneis marina* var. *perminuta* Grunow in Van Heurck 1881

Synonyms: *Grunoviella (Grunowiella) perminuta* (Grunow in Van Heurck) Peragallo & Peragallo 1901

Opephora marina var. *perminuta* (Grunow in Van Heurck) Proschkina-Lavrenko 1950

Opephora perminuta (Grunow in Van Heurck) Frenguelli 1938

Sceptroneis marina var. *perminuta* Grunow in Van Heurck 1881

Grunovia perminuta (Grunow) H. Peragallo & M. Peragallo 1901

Figs 1,3,5,7-8: Sample BBDC00002, Barnegat Bay, NJ.

Fig. 2: Sample COAST029, Western Bay, NY.

Figs 4,6,23-25: Sample COAST031, Western Bay, NY.

Figs 9,18-19: Sample BBDC0095, Great Bay, NJ.

Figs 10,17: Sample BBDC00003, Barnegat Bay, NJ.

Figs 11,13,21: Sample BB0032, Barnegat Bay, NJ.

Fig. 12: Sample COAST062, Great Bay, NY.

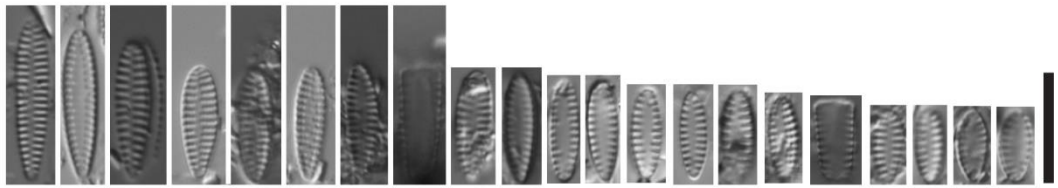
Fig. 14: Sample COAST025, Great South Bay, NY.

Fig. 15: Sample BB0060, Barnegat Bay, NJ.

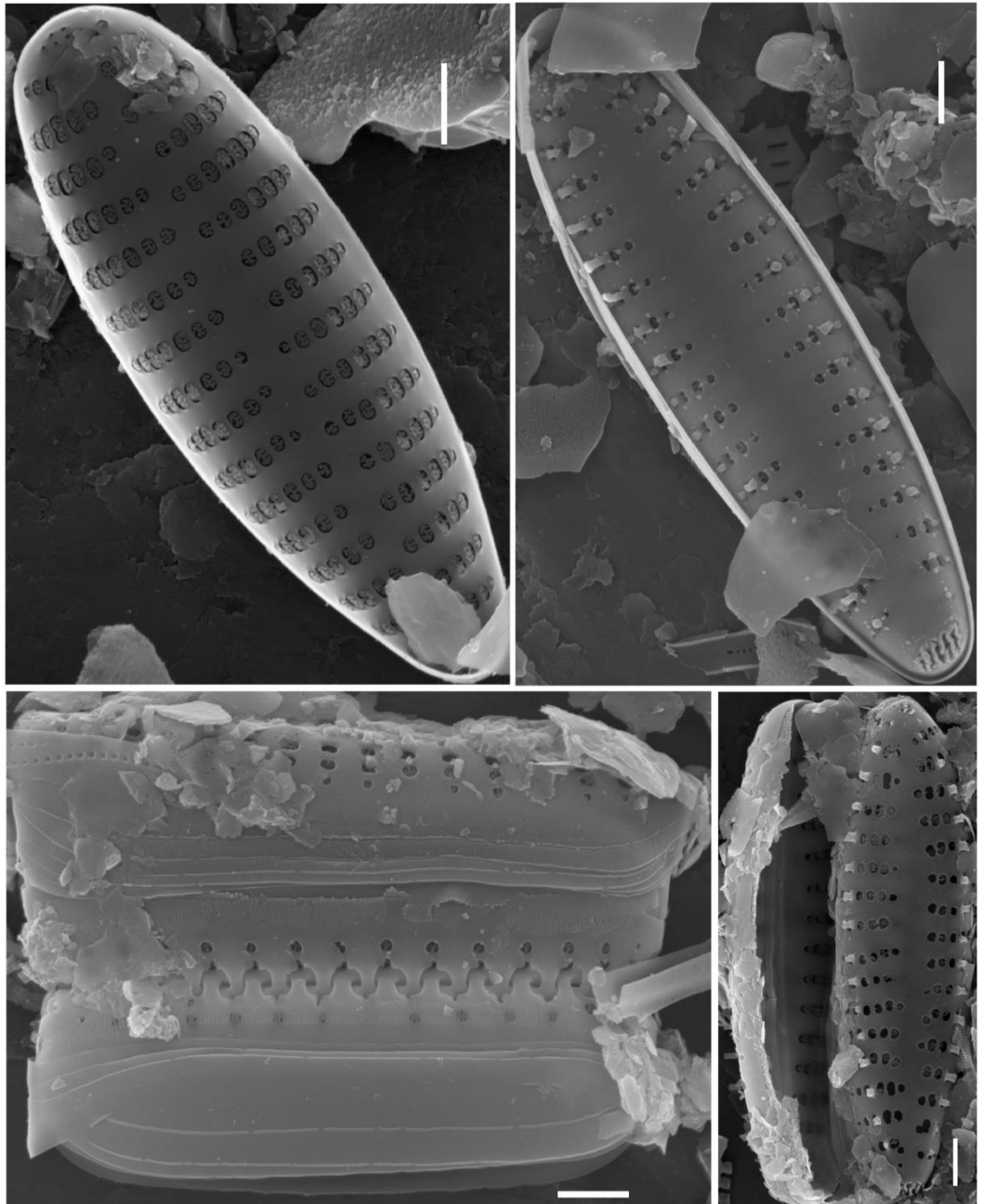
Fig. 16: Sample BB0054, Barnegat Bay, NJ.

Fig. 20: Sample BB0001, Barnegat Bay, NJ.

Fig. 22: Sample COAST010, Great South Bay, NY.



1 - 21



22 - 25

Plate 73

(Scale bars: Figs 1-23=10 µm; Figs 24-29=1 µm)

Pseudostaurosira medliniae Williams & Morales

Lit.: Williams & Morales 2010, p. 226-226

Synonyms: *Fragilaria zeilleri* var. *elliptica* Gasse 1980

Pseudostaurosira elliptica (F. Gasse) I. Jung & L.K. Medlin in L. Medlin et al. 2008

Pseudostaurosira zeilleri var. *elliptica* (F. Gasse) Kulikovskiy 2008

Figs 1,3,6,8-11,16-17,19-21,25-28: Sample BB0032, Barnegat Bay, NJ.

Fig. 2: Sample BBDC0095, Great Bay, NJ.

Figs 4,15: Sample COAST053, Barnegat Bay, NJ.

Fig. 5: Sample BB0067, Barnegat Bay, NJ.

Figs 7,13: Sample BB0069, Barnegat Bay, NJ.

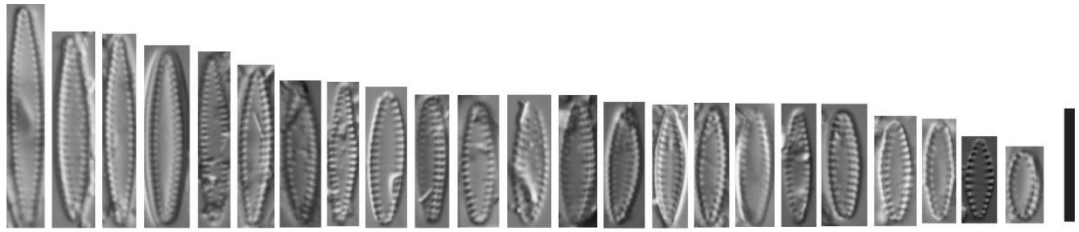
Fig. 12: Sample BBDC00029, Barnegat Bay, NJ.

Fig. 14: Sample BBEDC061, Cattus Island, NJ.

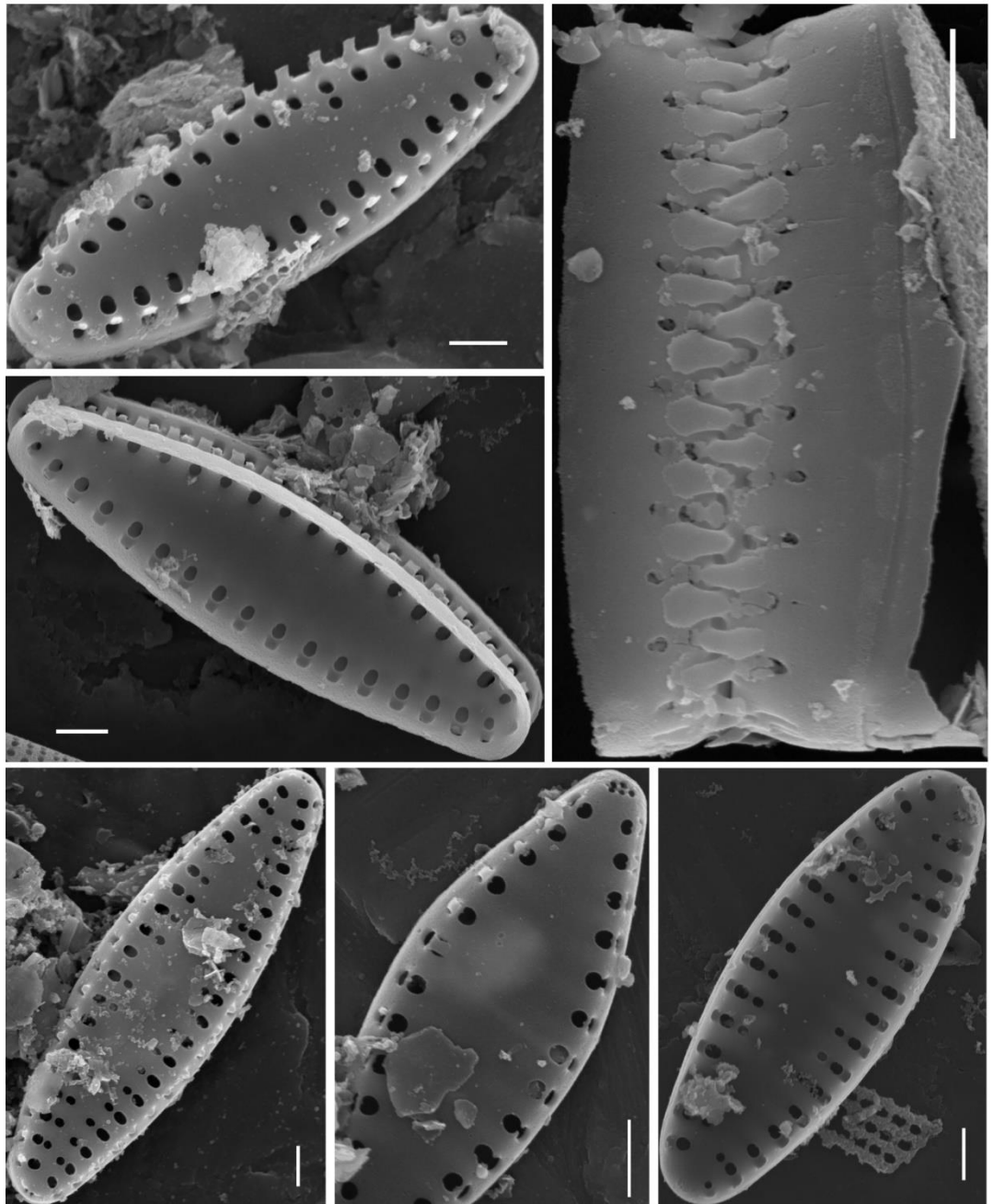
Fig. 18: Sample BBDC00001, Barnegat Bay, NJ.

Figs 22-23: Sample BBDC00004, Barnegat Bay, NJ.

Figs 24,29: Sample BB0031, Barnegat Bay, NJ.



1 - 23



24 - 29

***Pseudostaurosira* sp. 1**

Figs 1: Sample BBDC00003, Barnegat Bay, NJ.

Fig. 2-11,13,15,17: Sample BB0032, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0095, Great Bay, NJ.

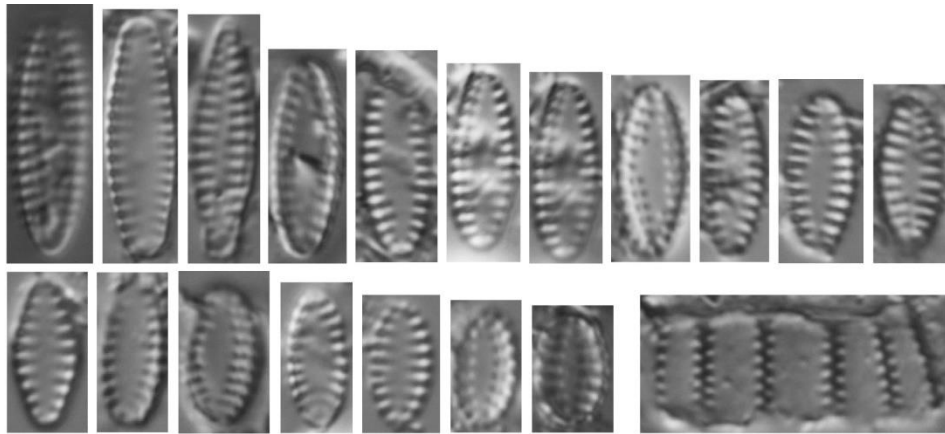
Figs 12,16,20,22-23: Sample BBDC00016, Barnegat Bay, NJ.

Fig. 14: Sample BB0069, Barnegat Bay, NJ.

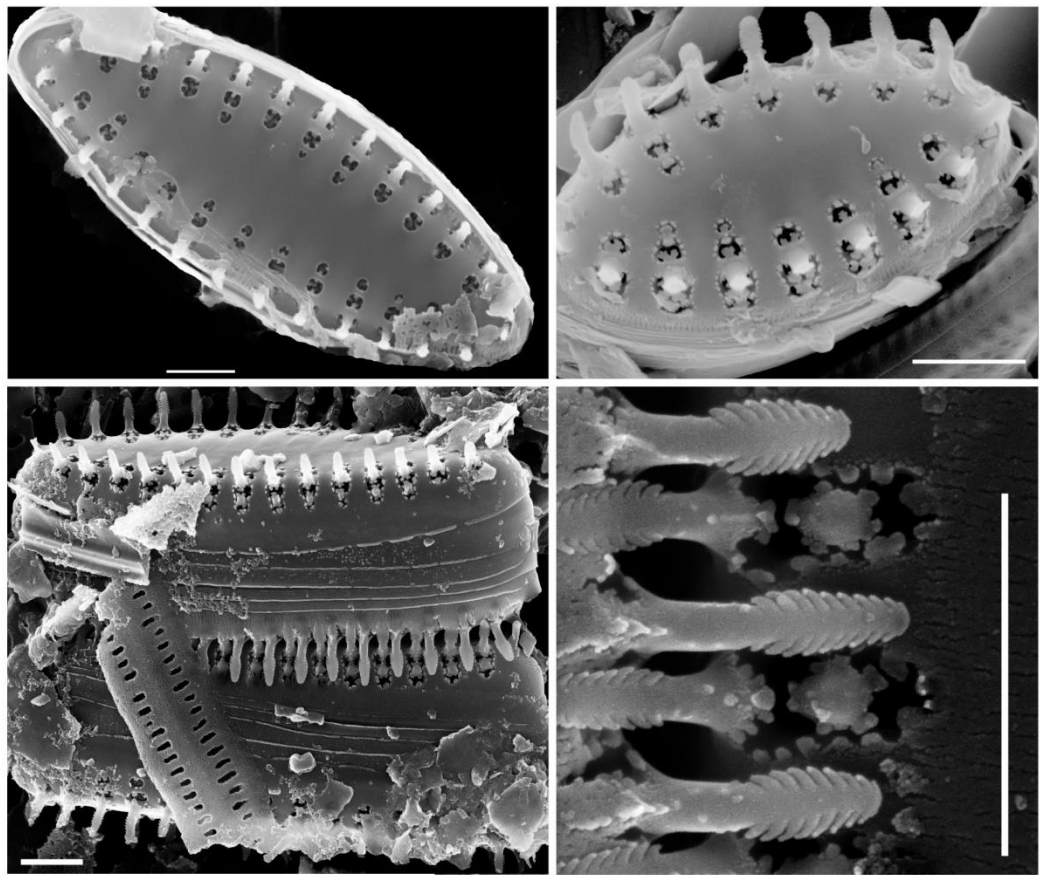
Fig. 18: Sample BB0054, Barnegat Bay, NJ.

Fig. 19: Sample BBDC00017, Barnegat Bay, NJ.

Fig. 21: Sample BBDC00018, Barnegat Bay, NJ.



1 - 19



20 - 23

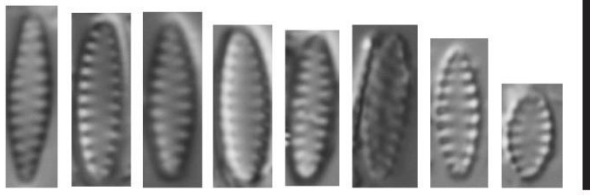
Plate 75 (Scale bars: Figs 1-8; 12-14=10 μm ; Figs 9-11; 15-16=1 μm)

Figs 1-11: ***Pseudostaurosira* sp. 2** Williams & Morales

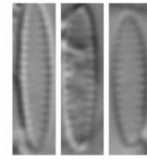
- Figs 1,6: Sample BBDC00029, Barnegat Bay, NJ.
- Fig. 2: Sample BBEDC058, Cattus Island, NJ.
- Figs 3,7,9-11: Sample BBDC00016, Barnegat Bay, NJ.
- Fig. 4: Sample BBDC00018, Barnegat Bay, NJ.
- Fig. 5: Sample BBDC00095, Great Bay, NJ.
- Fig. 8: Sample COAST053, Barnegat Bay, NY.

Figs 12-16: ***Pseudostaurosiropsis* sp. 1**

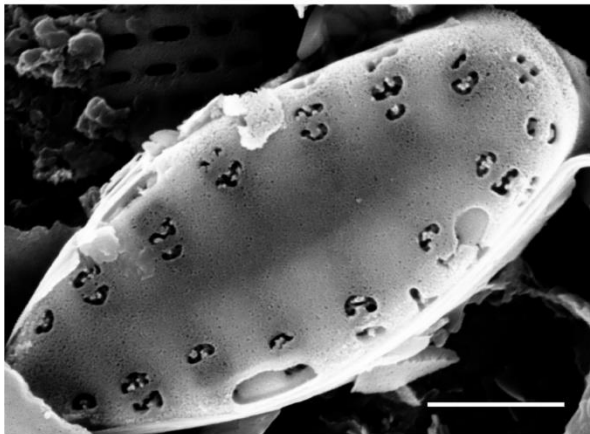
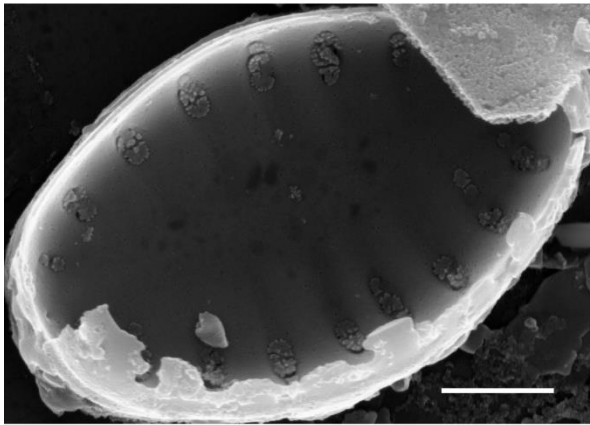
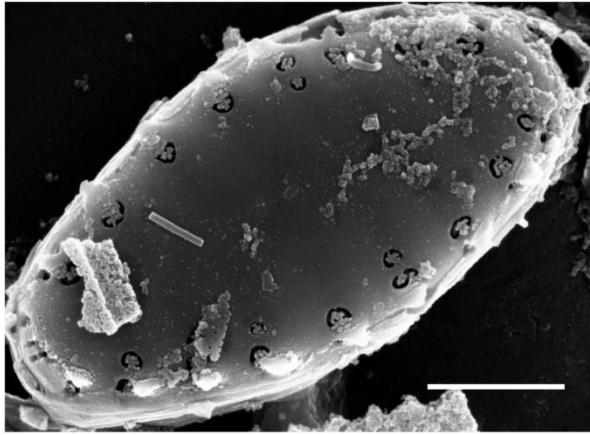
- Figs 12,14: Sample COAST022, Great South Bay, NY.
- Fig. 13: Sample BBDC00095, Great Bay, NJ.
- Fig. 15: Sample BBDC00028, Barnegat Bay, NJ.
- Fig. 16: Sample BBDC00038, Barnegat Bay, NJ.



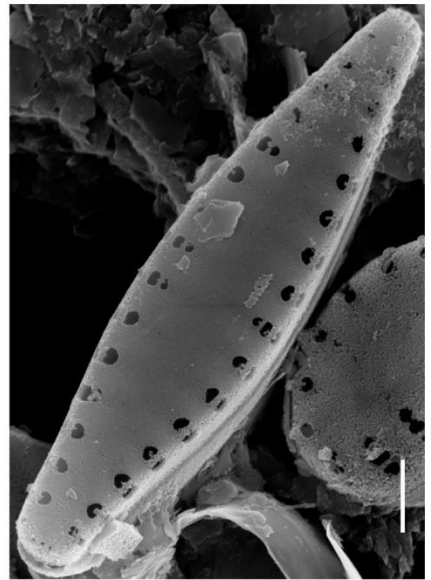
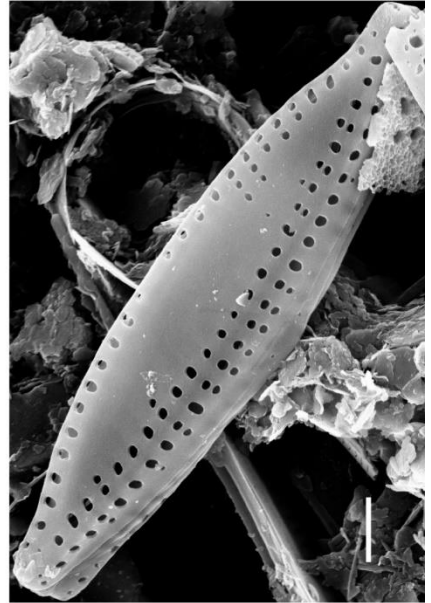
1 - 8



12 - 14



9 - 11



15 - 16

***Pseudostaurosiropsis* sp. 2**

Fig. 1: Sample BB0065, Barnegat Bay, NJ.

Fig. 2: Sample BBDC00029, Barnegat Bay, NJ.

Figs 3,9: Sample BB0032, Barnegat Bay, NJ.

Fig. 4: Sample BB0009, Barnegat Bay, NJ.

Fig. 5: Sample BB0010, Barnegat Bay, NJ.

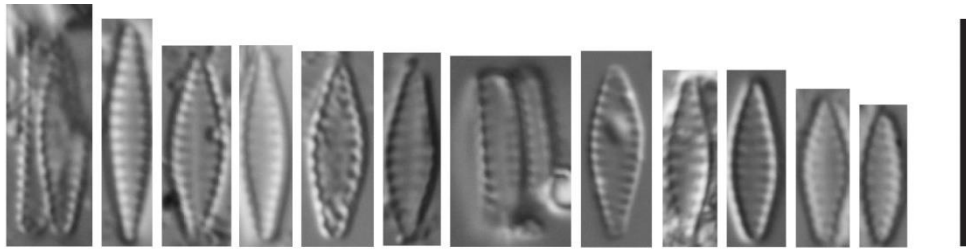
Fig. 6: Sample BBDC00018, Barnegat Bay, NJ.

Figs 7,11,13-15: Sample BBDC00016, Barnegat Bay, NJ.

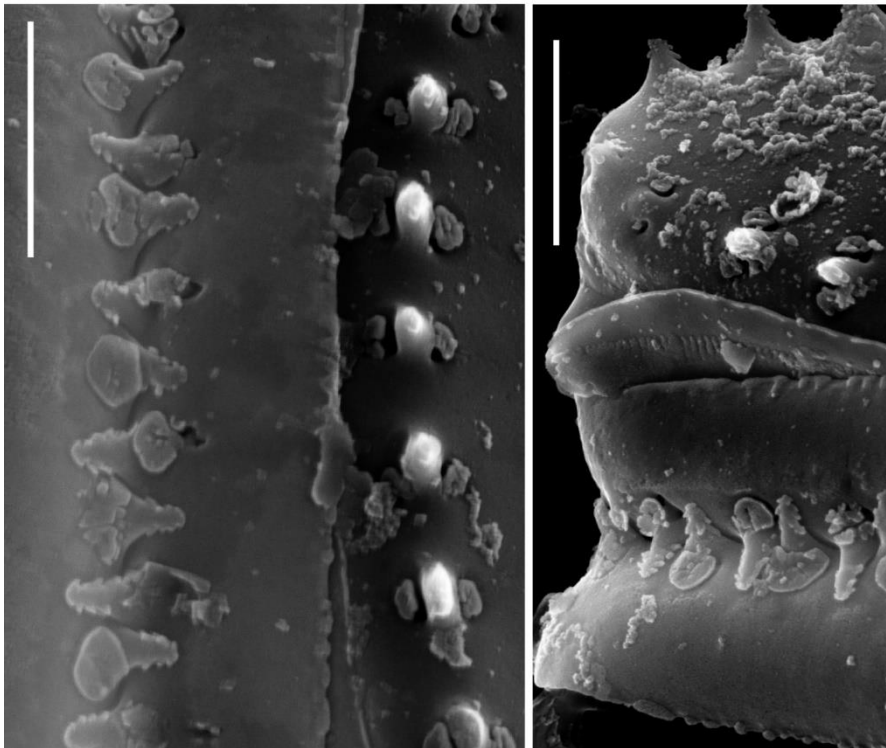
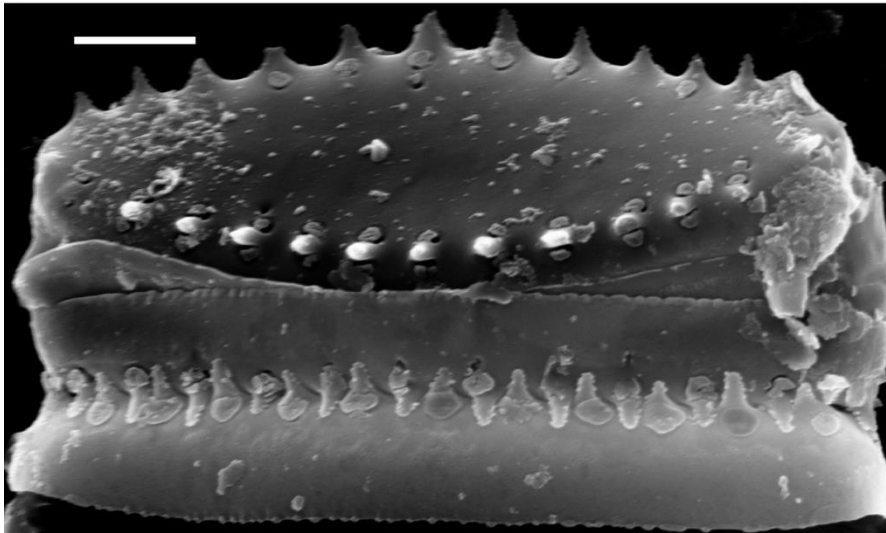
Fig. 8: Sample BBDC00095, Great Bay, NJ.

Fig. 10: Sample BBDC00017, Barnegat Bay, NJ.

Fig. 12: Sample BB0055, Barnegat Bay, NJ.



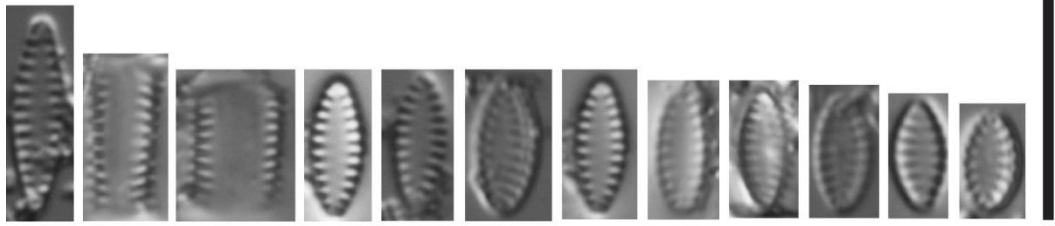
1 - 12



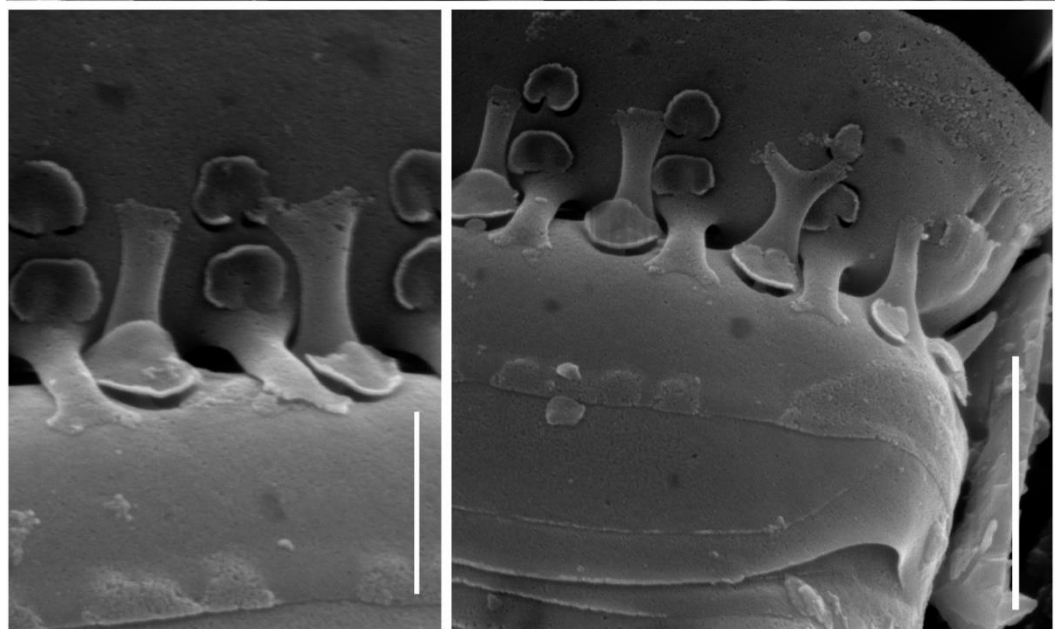
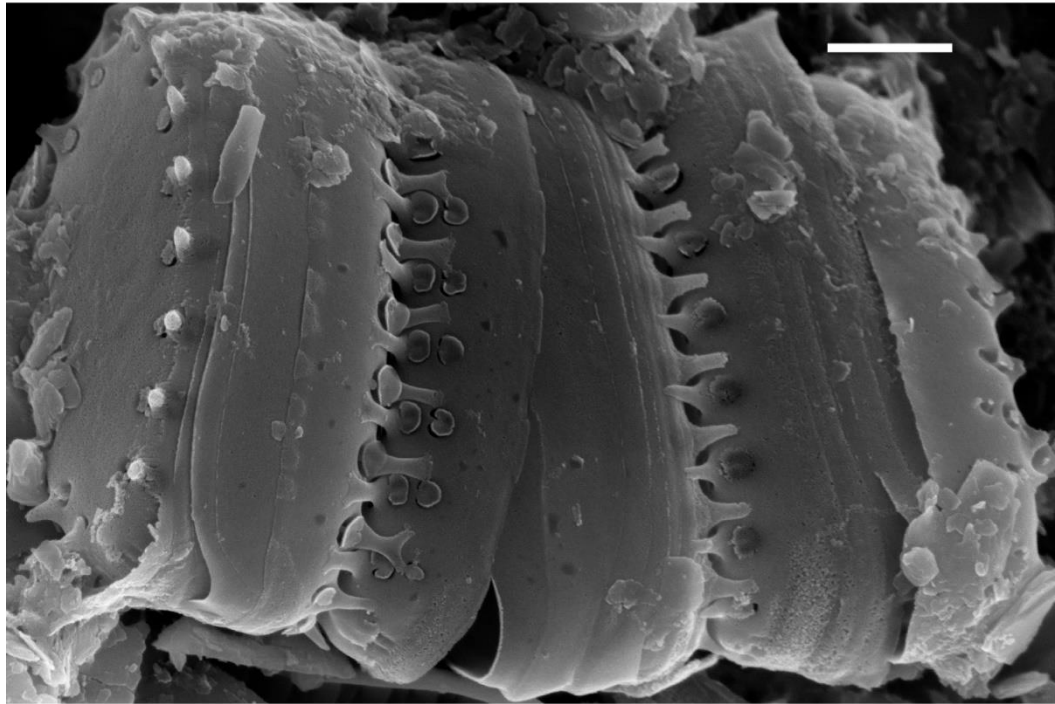
13 - 15

***Pseudostaurosiropsis* sp. 4**

- Fig. 1: Sample BBEDC058, Cattus Island, NJ.
Figs 2-3,9: Sample BB0001, Barnegat Bay, NJ.
Figs 4,7-8,11: Sample BBDC00016, Barnegat Bay, NJ.
Figs 5,10: Sample BBEDC059, Cattus Island, NJ.
Fig. 6: Sample BBEDC061, Cattus Island, NJ.
Fig. 12: Sample BBEDC098, Cattus Island, NJ.
Figs 13-15: Sample BBDC00038, Barnegat Bay, NJ.



1 - 12



13 - 15

***Pseudostaurosira trainorii* Morales**

Lit.: Morales 2001, p. 113; fig. 6:a-l

Figs 1,17,19,24: Sample BBDC00016, Barnegat Bay, NJ.

Figs 2-4,10: Sample BBDC00046, Barnegat Bay, NJ.

Fig. 5: Sample BB0073, Barnegat Bay, NJ.

Fig. 6: Sample BB0072, Barnegat Bay, NJ.

Fig. 7: Sample BB0067, Barnegat Bay, NJ.

Fig. 8: Sample BB0002, Barnegat Bay, NJ.

Fig. 9: Sample BBEDC058, Cattus Island, NJ.

Fig. 11: Sample BBDC00051, Barnegat Bay, NJ.

Fig. 12: Sample BBDC00052, Barnegat Bay, NJ.

Fig. 13: Sample BB0064, Barnegat Bay, NJ.

Fig. 14: Sample BB0009, Barnegat Bay, NJ.

Fig. 15: Sample BB0052, Barnegat Bay, NJ.

Fig. 16: Sample BB0060, Barnegat Bay, NJ.

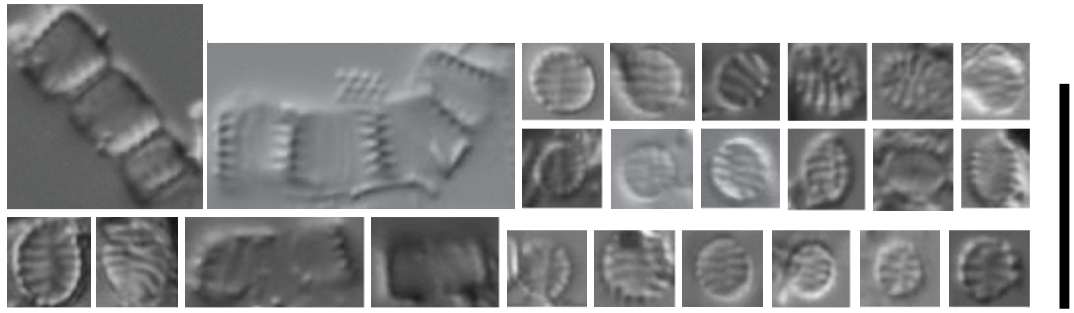
Fig. 18: Sample BBEDC059, Cattus Island, NJ.

Fig. 20: Sample BB0008, Barnegat Bay, NJ.

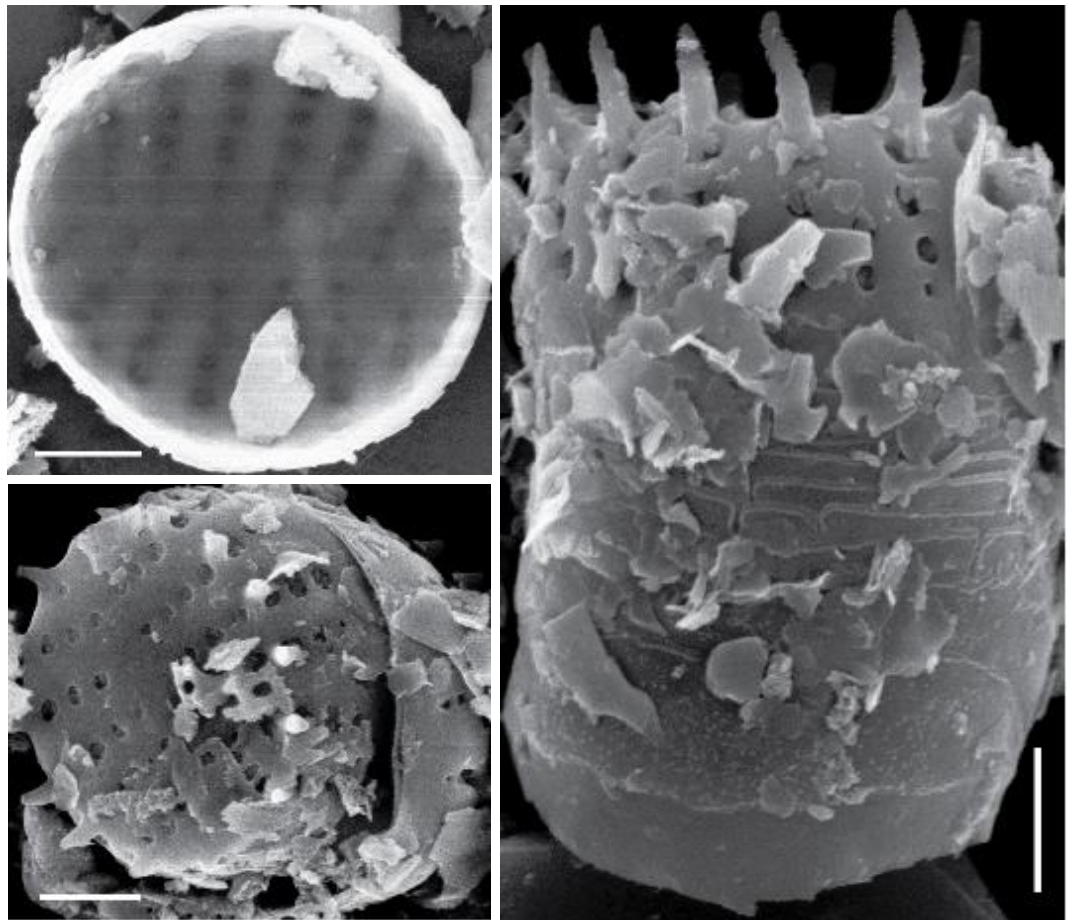
Figs 21,25-27: Sample BB0001, Barnegat Bay, NJ.

Fig. 22: Sample COAST051, Barnegat Bay, NY.

Fig. 23: Sample BB0055, Barnegat Bay, NJ.



1 - 24



25 - 27

Fragilaria sopotensis Witkowski & Lange-Bertalot

Lit.: Witkowski & Lange-Bertalot 1993, v. 23 (1): p. 67; fig. 6a-p

Fig. 1: Sample BB0002, Barnegat Bay, NJ.

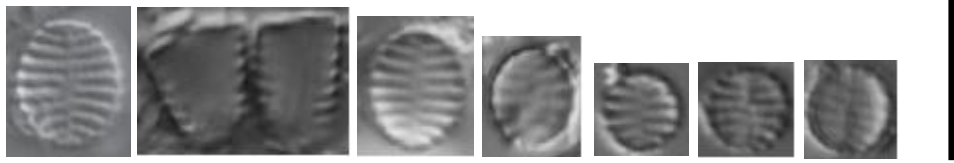
Figs 2,6: Sample BBDC00003, Barnegat Bay, NJ.

Figs 3,4: Sample BB0001, Barnegat Bay, NJ.

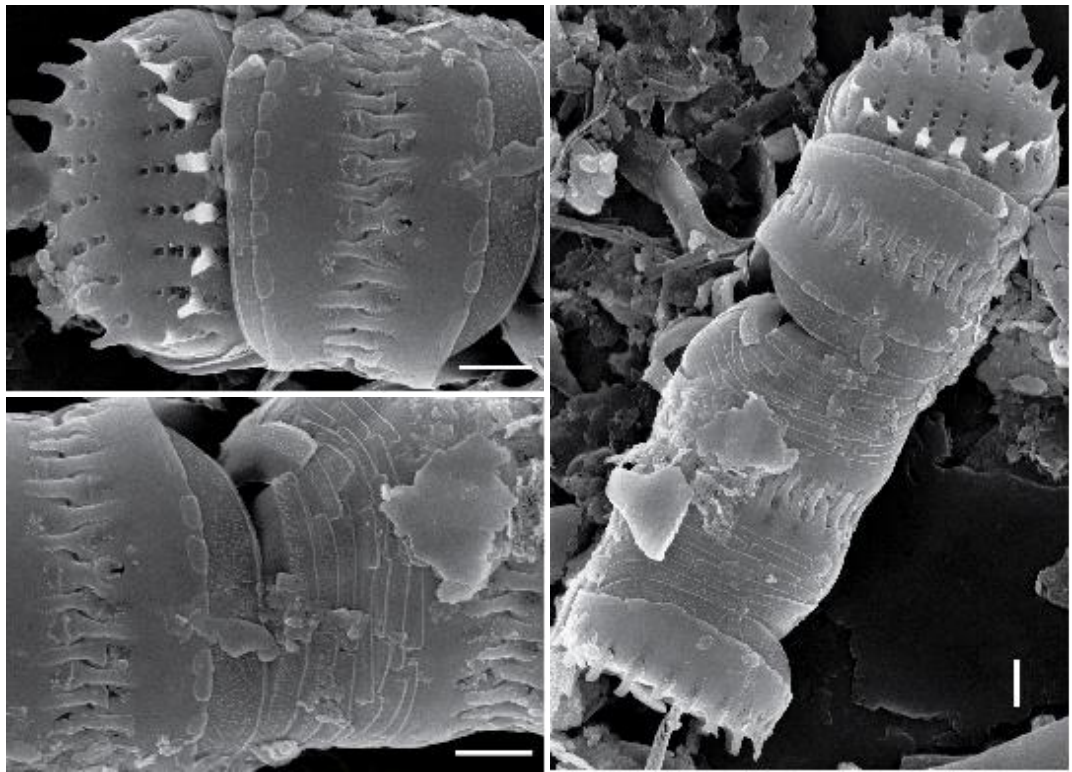
Fig. 5: Sample BBEDC098, Cattus Island, NJ.

Fig. 7: Sample BBEDC059, Cattus Island, NJ.

Figs 8-10: Sample BBDC00028, Barnegat Bay, NJ.



1 - 7



8 - 10

***Synedra famelica* Kützing**

Lit.: Kützing 1844, p. 64; pl. 14/8, fig. 1

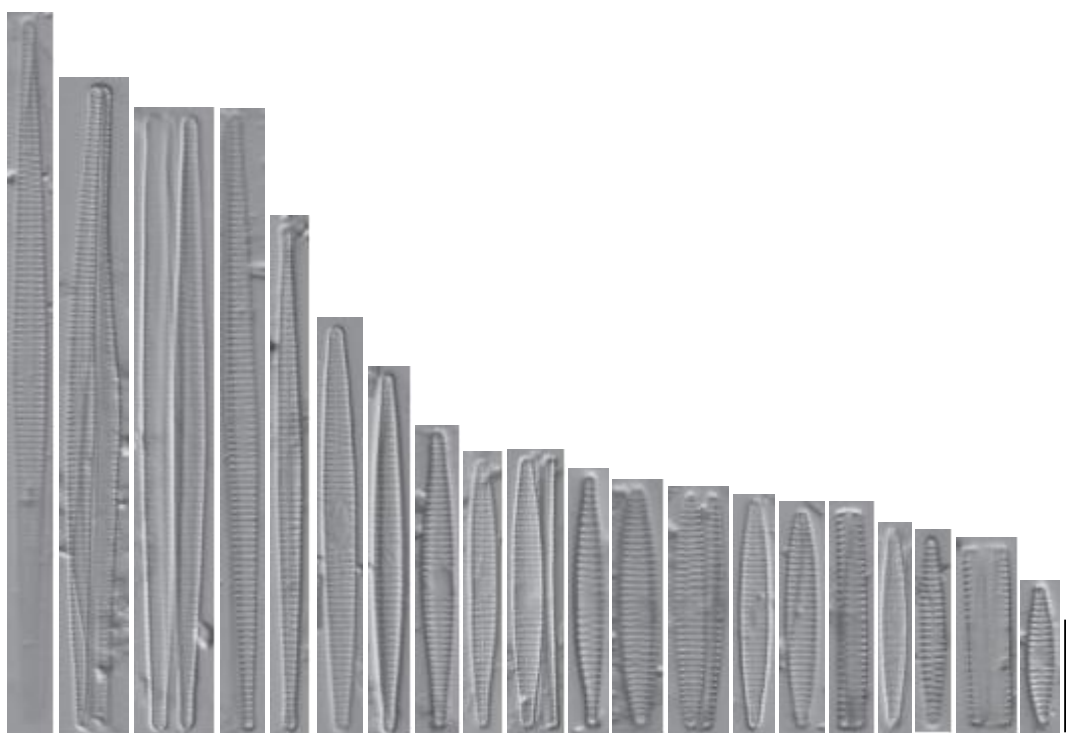
Synonyms: *Nitzschia palea* f. *famelica* (Kützing) Rabenhorst 1864

Nitzschia palea var. *famelica* (Kützing) M. Peragallo 1903

Fragilaria famelica (Kützing) Lange-Bertalot 1980

Nitzschia famelica (Kützing) Rabenhorst 1863

Figs 1-20: Sample RUTG0795, Tuckerton Bay, NJ.



1 - 20

Tabularia fasciculata (Agardh) Williams & Round

Lit.: Williams & Round 1986, p. 326; fig. 46-52

Synonyms: *Ctenophora pulchella* var. *fasciculata* (Agardh ex specim., Kützing) Schonfeldt 1907

Exilaria fasciculata Kützing 1833

Echinella fasciculata (Agardh) Jurgens 1816-1822

Fragilaria fasciculata (Agardh) Lange-Bertalot 1980

Exilaria fasciculata (Agardh) Greville 1827

Lyngbyea fasciculata (Agardh) Sommerfelt 1826

Diatoma fasciculata Agardh 1812

Figs 1,5: Sample BBDC00044, Barnegat Bay, NJ.

Fig. 2: Sample BBDC00047, Barnegat Bay, NJ.

Fig. 3: Sample BBDC00048, Barnegat Bay, NJ.

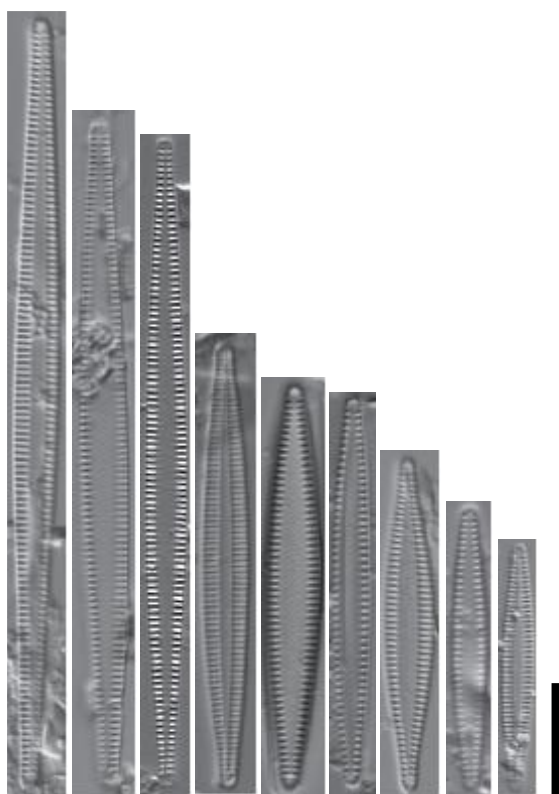
Fig. 4: Tuckerton Bay, NJ.

Fig. 6: Sample BBDC00008, Barnegat Bay, NJ.

Fig. 7: Sample BBDC00051, Barnegat Bay, NJ.

Fig. 8: Sample BB0009, Barnegat Bay, NJ.

Figs 9-10: Sample BBDC00052, Barnegat Bay, NJ.



1 - 9

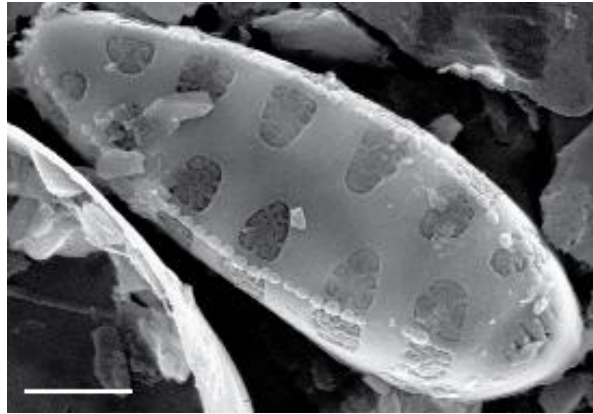
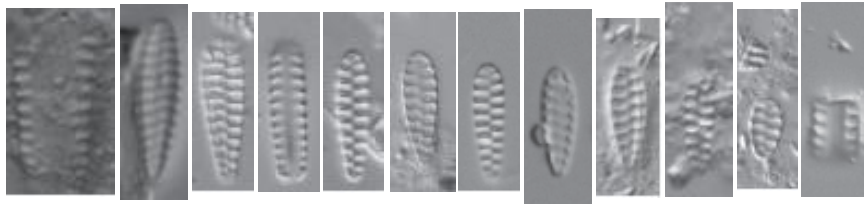


10

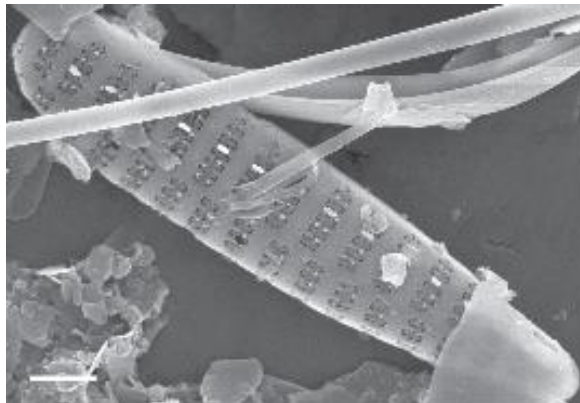
Plate 82 (Scale bars: Figs 1-16; 19-35=10 μm ; Figs 18; 36-37=1 μm)

Figs 1-18: *Opephora* sp. 2

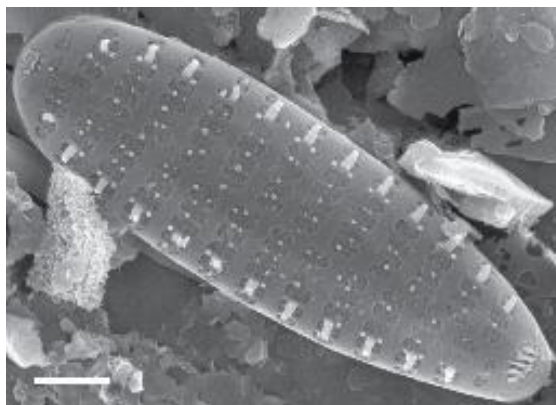
Figs 19-37: *Opephora* sp. 8



1 - 17



19 - 37



***Opephora* sp. 13**

Fig. 1: Sample BBDC00109, Great Bay, NJ.

Fig. 2: Sample BB0029, Barnegat Bay, NJ.

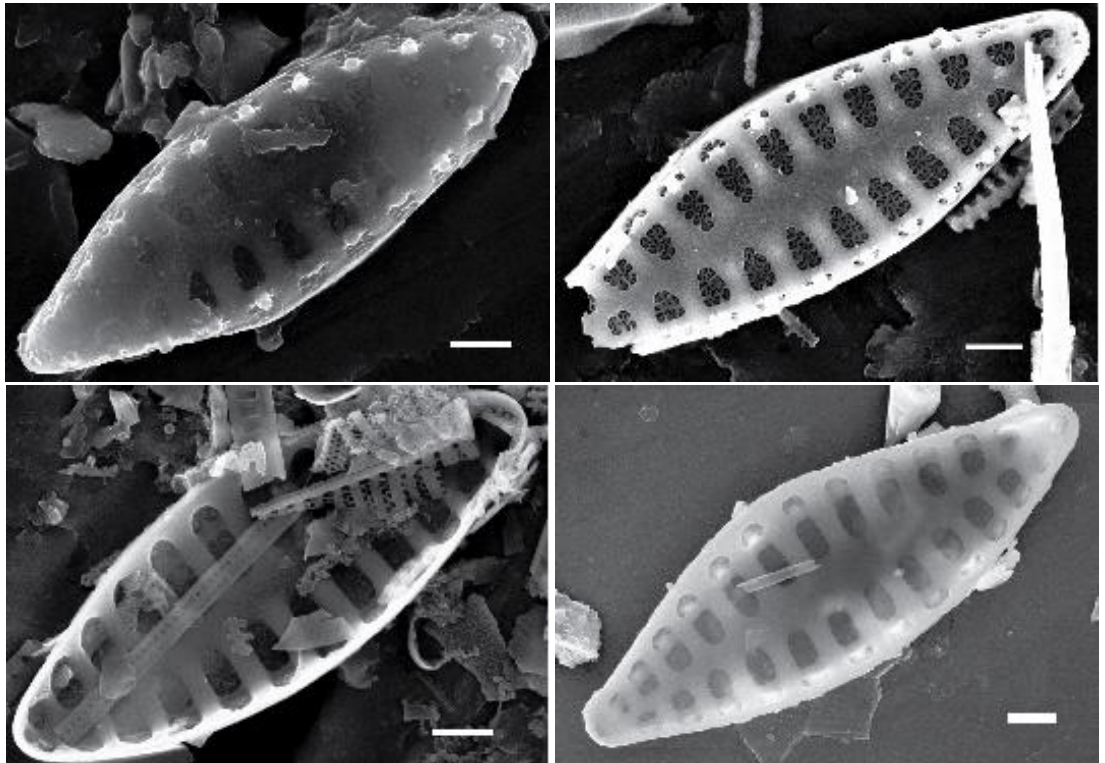
Figs 3,8: Sample COAST015, Great South Bay, NY.

Figs 4,7,9: Sample COAST054, Barnegat Bay, NY.

Figs 5-6: Sample COAST096, Cape May Peninsula, NJ.



1 - 7



9 - 11

***Asterionellopsis glacialis* (Castracane) Round**

Lit.: Round, Crawford & Mann 1990, p. 664

Fig. 1: Sample BBDC00109, Great Bay, NJ.

Fig. 2: Sample BB0029, Barnegat Bay, NJ.

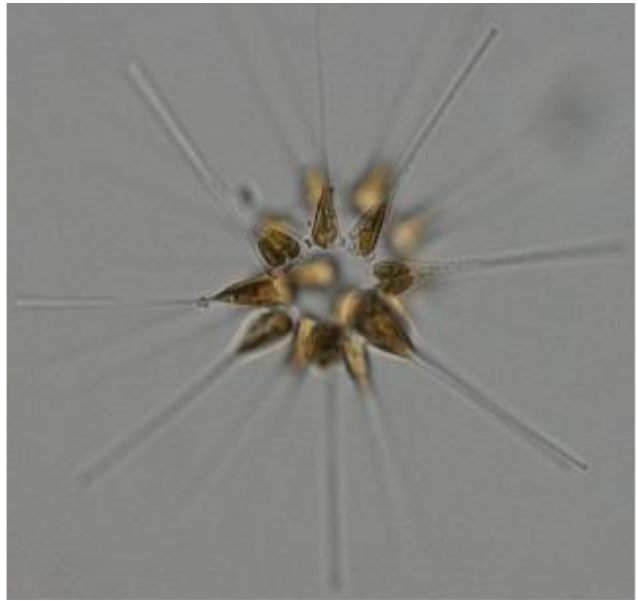
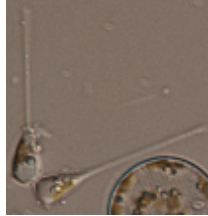
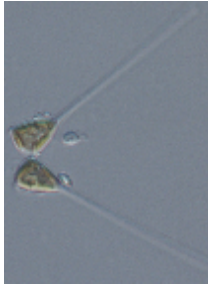
Figs 3,8: Sample COAST015, Great South Bay, NY.

Figs 4,7,9: Sample COAST054, Barnegat Bay, NY.

Figs 5-6: Sample COAST096, Cape May Peninsula, NJ.



1



2- 6

Figs 1-4: ***Tabellaria fenestrata*** (Lyngbye) Kützing

Lit.: Kützing 1844, p. 127; pl. 17, fig. 22, pl. 18, fig. 2

Basionym: *Diatoma fenestratum* Lyngbye 1819Synonyms: *Striatella fenestrata* (Lyngbye) Kuntze 1898*Tabellaria flocculosa* var. *fenestrata* (Lyngbye) Rabenhorst 1847

Figs 1,4: Sample BBDC00007, Barnegat Bay, NJ.

Fig. 2: Sample BBDC00004, Barnegat Bay, NJ.

Fig. 3: Sample BBDC00028, Barnegat Bay, NJ.

Fig. 5: ***Tabellaria flocculosa*** (Roth) Kützing

Lit.: Kützing 1844, p. 127; pl. 17, fig. 21

Basionym: *Conferva flocculosa* Roth 1797Synonyms: *Bacillaria flocculosa* (Roth) Ehrenberg 1832*Bacillaria tabellaris* Ehrenberg 1835*Striatella flocculosa* (Roth) Kuntze 1898*Tabellaria flocculosa* (Roth) Knudson 1952*Bacillaria flocculosa* (Roth) Leiblein 1827*Candollella flocculosa* (Roth) Gaillon 1833

Fig. 5: Sample BBDC00059, Barnegat Bay, NJ.

Figs 6-7: ***Licmophora grandis*** (Kützing) Grunow

Lit.: Van Heurck 1881, pl. 48, fig. 2, 3

Basionym: *Rhipidophora grandis* Kützing 1844Synonyms: *Licmophora gracilis* f. *grandis* (Kützing) Grunow 1867*Stylaria grandis* (Kützing) Trevisan 1848*Styllaria grandis* (Kützing) Trevisan 1848

Fig. 6: Sample BBDC00001, Barnegat Bay, NJ.

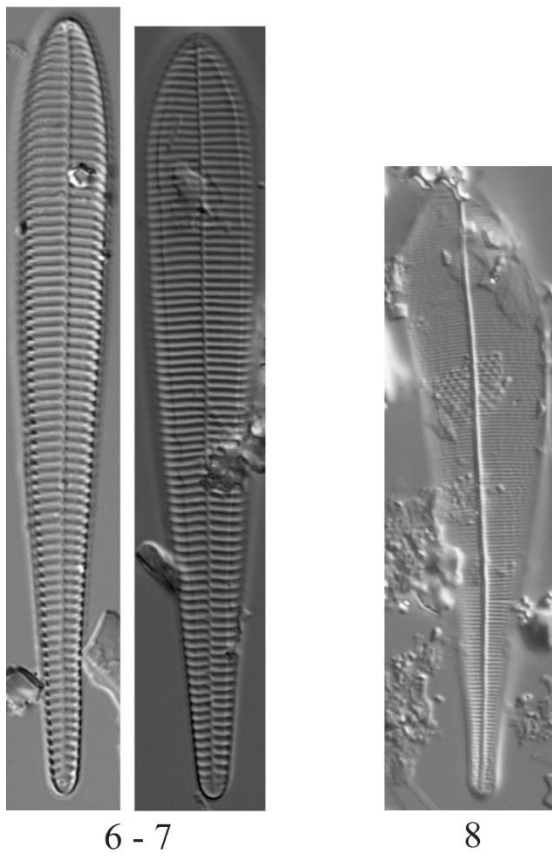
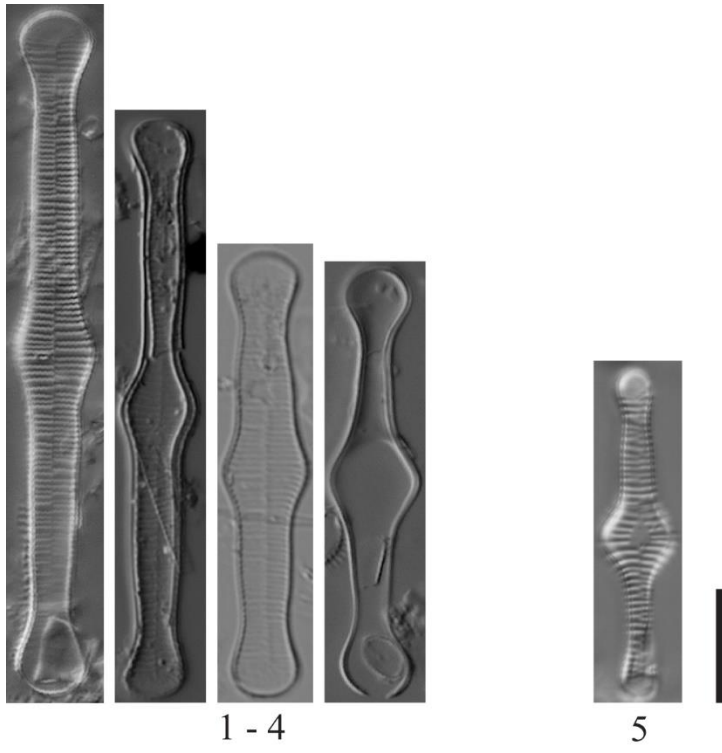
Fig. 7: Sample BBDC00002, Barnegat Bay, NJ.

Fig. 8: ***Licmophora paradoxa* var. *tincta*** (Agardh) Hustedt

Lit.: Hustedt 1931, p. 77; fig. 607

Basionym: *Gomphonema tinctum* Agardh 1831Synonyms: *Licmophora tincta* (Agardh) Grunow 1867*Rhipidophora tincta* (Agardh) Ralfs in Pritchard 1861

Fig. 8: Sample BBDC00048, Barnegat Bay, NJ.



Licmophora abbreviata Agardh

Lit.: Agardh 1831, p. 42

Synonyms: *Licmophora lyngbyei* f. *abbreviata* (Agardh) Frenguelli 1930

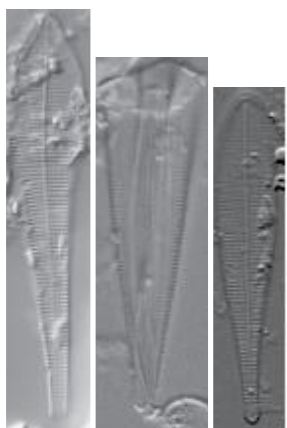
Fig. 1: Sample BBDC00109, Great Bay, NJ.

Fig. 2: Sample BB0029, Barnegat Bay, NJ.

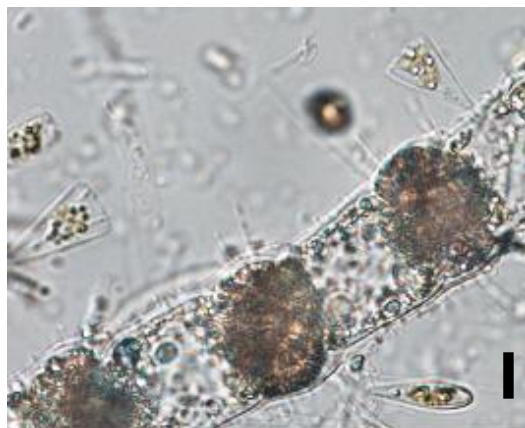
Figs 3,8: Sample COAST015, Great South Bay, NY.

Figs 4,7,9: Sample COAST054, Barnegat Bay, NY.

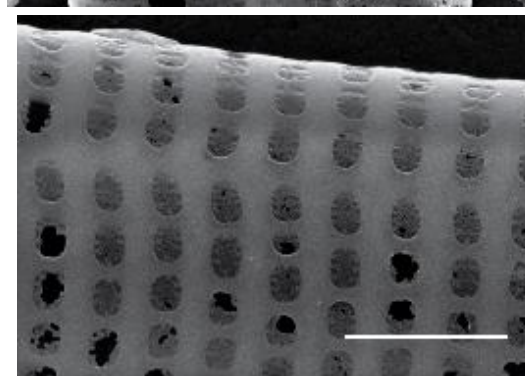
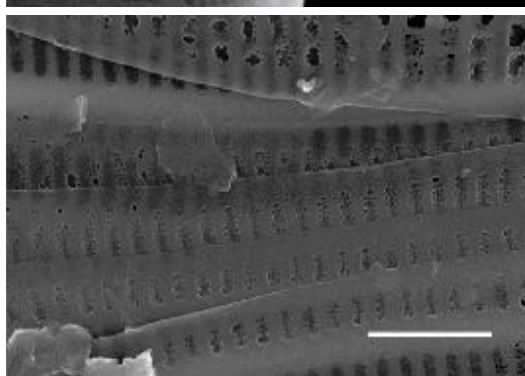
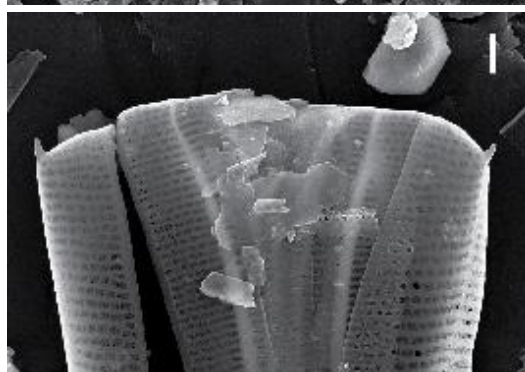
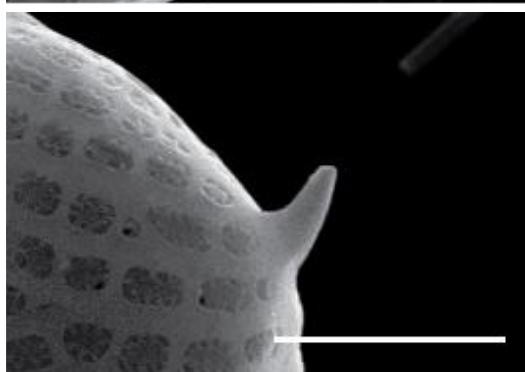
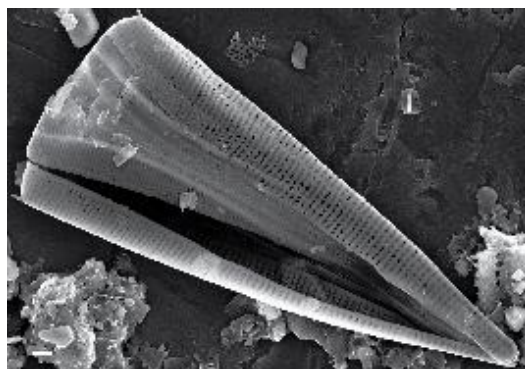
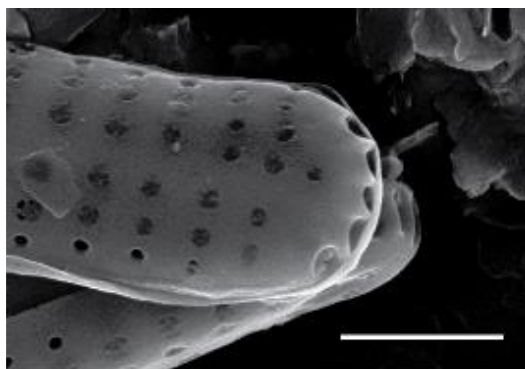
Figs 5-6: Sample COAST096, Cape May Peninsula, NJ.



1 - 3



4



5 - 10

***Rhaphoneis ampiceros* (Ehrenberg) Ehrenberg**

Lit.: Ehrenberg 1844, p. 87

Basionym: *Cocconeis ampiceros* Ehrenberg 1840

Synonyms: *Fragilaria ampiceros* (Ehrenberg) Ehrenberg 1843

Nematoplatea (Nematoplate) ampiceros (Ehrenberg) Kuntze 1898

Odontidium ampiceros (Ehrenberg) Kützing 1849

Doryphora ampiceros (Ehrenberg) Kützing 1844

Figs 1,6,9: Barnegat Bay, NJ.

Fig. 2: Sample BBDC00048, Barnegat Bay, NJ.

Fig. 3: Sample BB0085, Barnegat Bay, NJ.

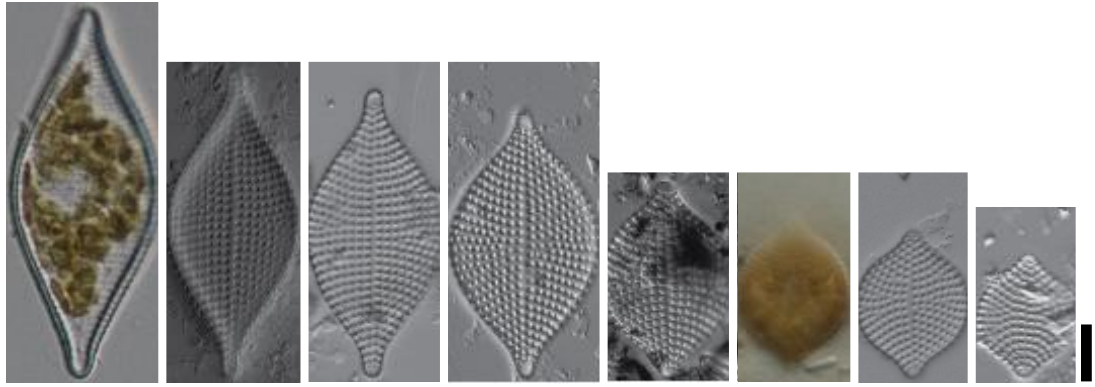
Fig. 4: Sample BBDC0095, Great Bay, NJ.

Fig. 5: Sample BB0071, Barnegat Bay, NJ.

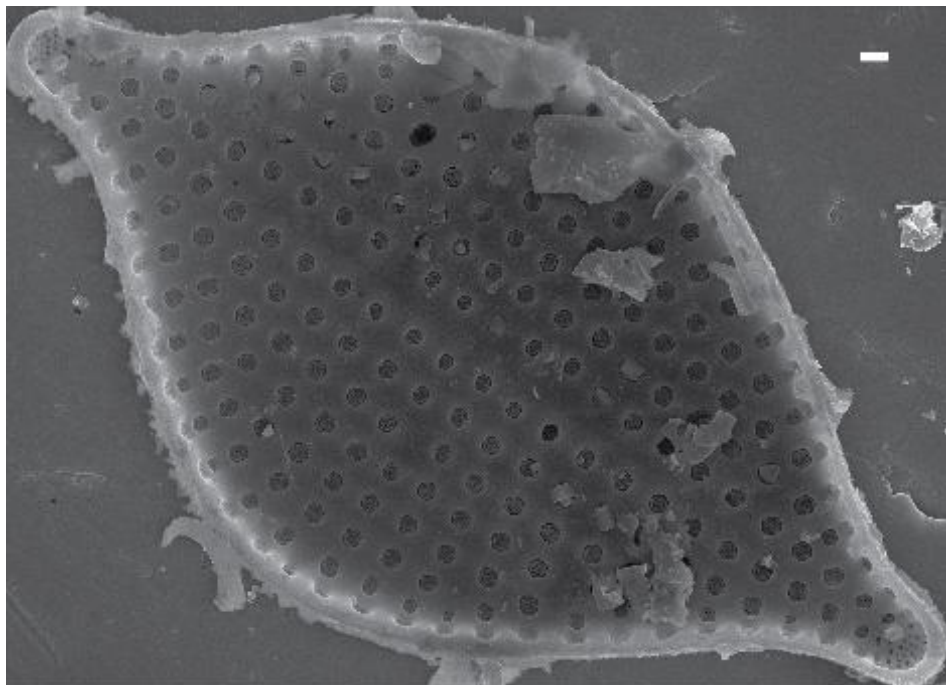
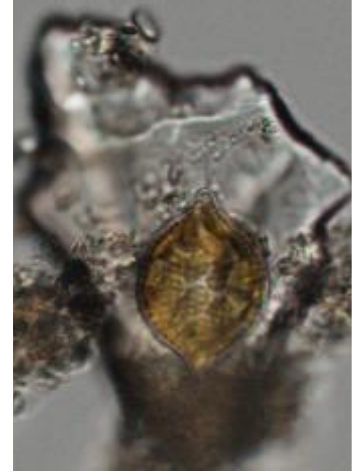
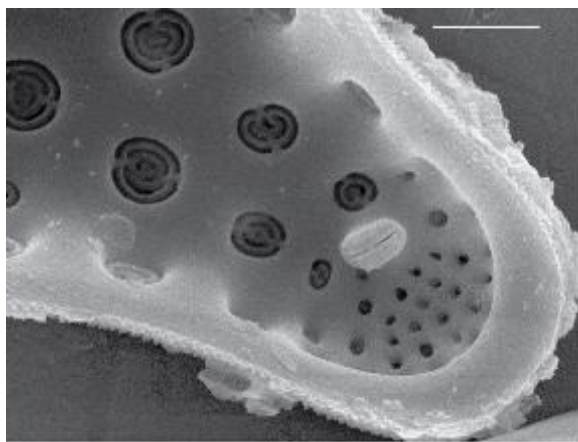
Fig. 7: Sample BBDC0108, Great Bay, NJ.

Fig. 8: Sample BBDC00065, Barnegat Bay, NJ.

Figs 10-11: Lewes-Rehoboth, DE.



1 - 9



10 - 11

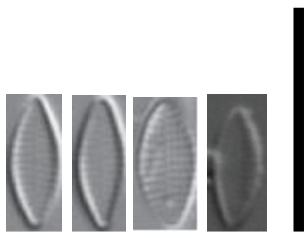
Rhaphoneis crinigera Takano

Lit.: Takano 1983, v. 109: p. 28; fig. 1-20

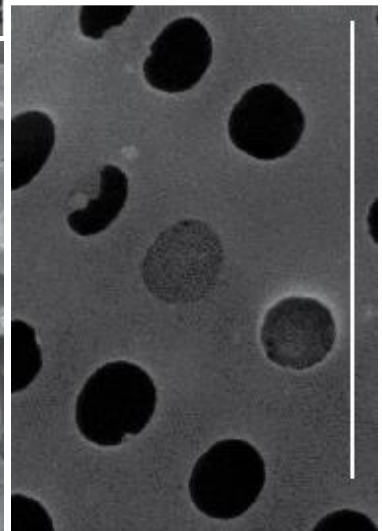
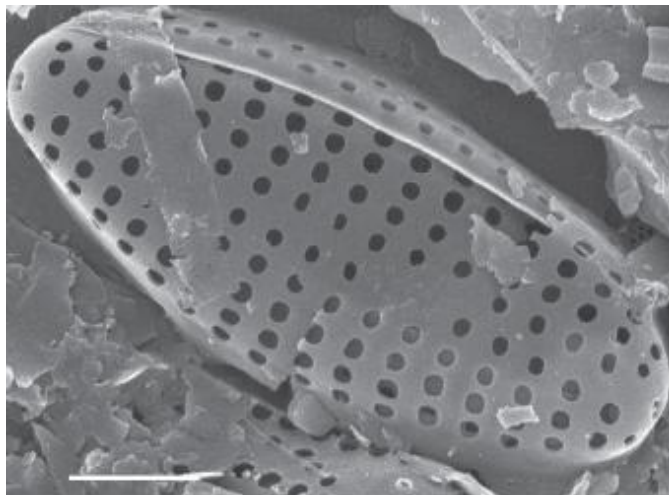
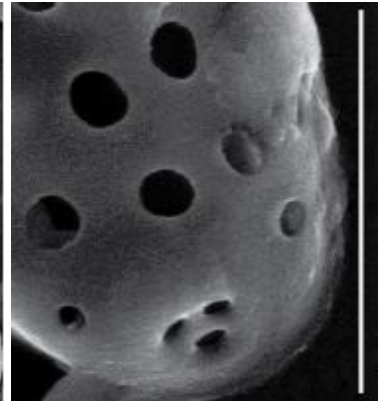
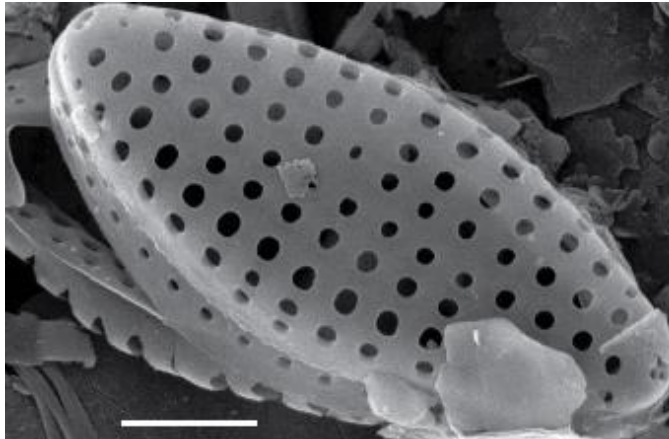
Fig. 1: Sample COAST015, Great South Bay, NY.

Figs 4,7,8: Sample COAST054, Barnegat Bay, NY.

Figs 5-6: Sample COAST096, Cape May Peninsula, NJ.



1 - 4



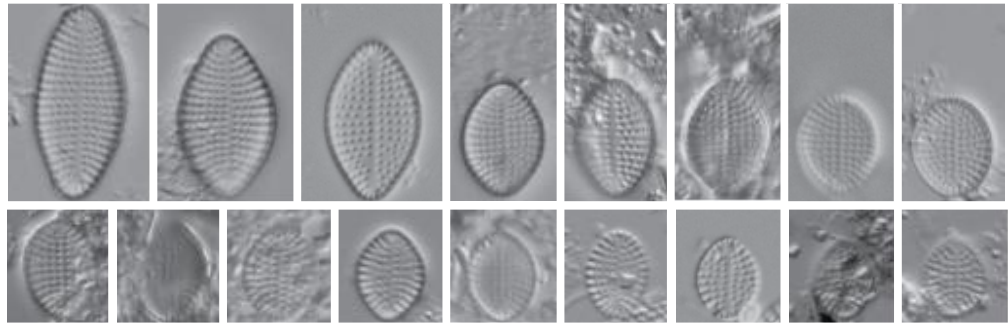
6 - 8

Delphineis minutissima (Hustedt) Simonsen

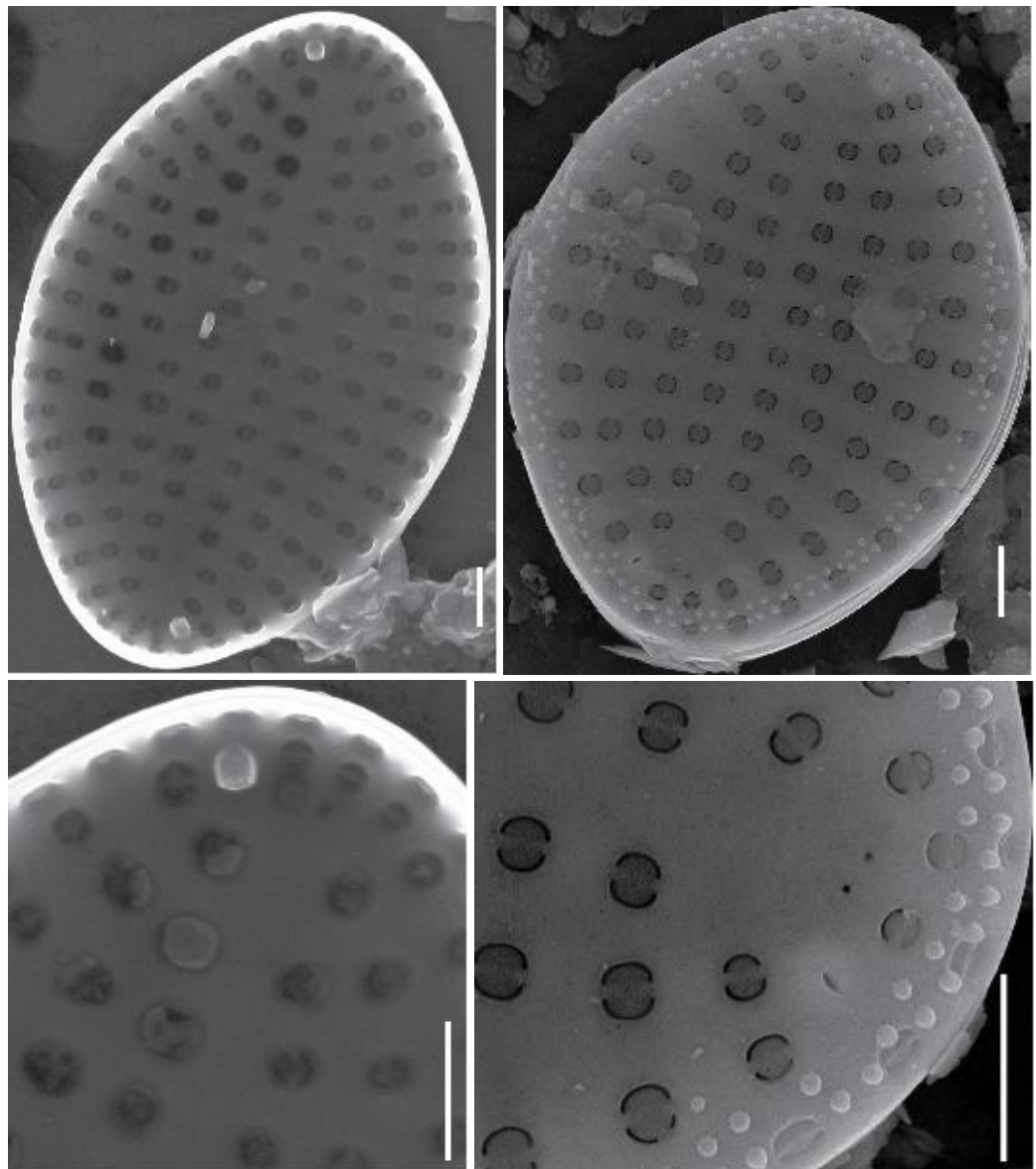
Lit.: Simonsen 1987, p. 252

Basionym: *Rhaphoneis* (Raphoneis) *minutissima* Hustedt 1939

- Figs 1,18,20: Sample BBDC00080, Barnegat Bay, NJ.
Figs 2-4,12,15: Sample BBDC00044, Barnegat Bay, NJ.
Fig. 5: Sample BB0075, Barnegat Bay, NJ.
Fig. 6: Sample BB0064, Barnegat Bay, NJ.
Figs 7-8: Sample BBDC00074, Barnegat Bay, NJ.
Fig. 9: Sample BB0066, Barnegat Bay, NJ.
Fig. 10: Sample BB0074, Barnegat Bay, NJ.
Fig. 11: Sample BB0092, Tuckerton Bay, NJ.
Fig. 13: Sample BB0089, Tuckerton Bay, NJ.
Fig. 14: Sample BB0061, Barnegat Bay, NJ.
Fig. 16: Sample BB0070, Barnegat Bay, NJ.
Fig. 17: Sample BB0079, Tuckerton Bay, NJ.
Figs 19,21: Sample RUTG0811, Cape May Courthouse, NJ.



1 - 17



18 - 21

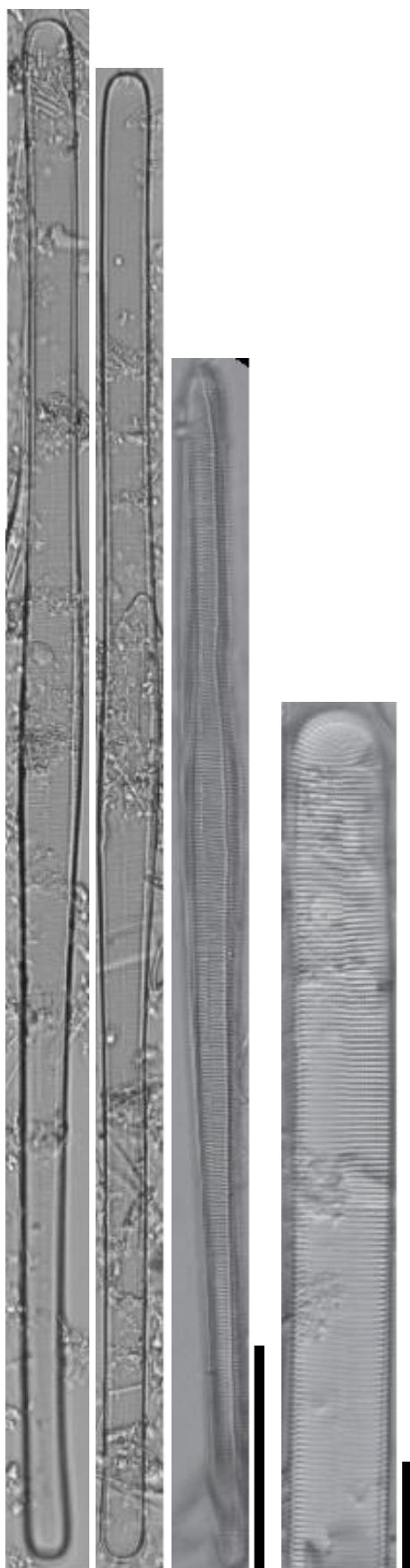
Ardissonaea robusta (Ralfs in Pritchard) De Notaris

Lit.: De Notaris & Baglietto 1871, p. 95

Basionym: *Synedra robusta* Ralfs in Pritchard 1861

Synonyms: *Synedra superba* var. *robusta* (Ralfs in Pritchard) Grunow 1862

Figs 1-5: Sample RUTG278, Rutgers Field Station, NJ.



1 - 4

***Thalassionema nitzschioides* (Grunow) Van Heurck**

Lit.: Van Heurck 1896, p. 319; plate caption for text-fig. 75

Basionym: *Synedra nitzschioides* Grunow 1862

Synonyms: *Thalassiothrix nitzschioides* (Grunow) Grunow in Van Heurck 1881

Thalassionema nitzschioides (Grunow) Mereschkowsky 1902

Fig. 1: Barnegat Bay, NJ.

Figs 2-3,7: Sample BBDC00045, Barnegat Bay, NJ.

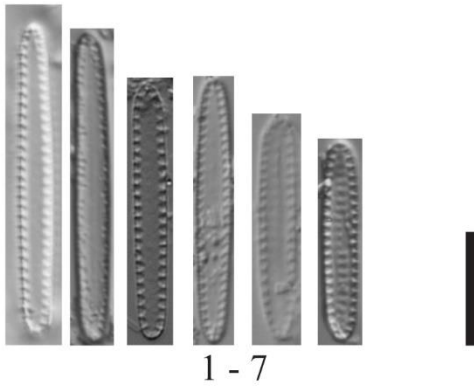
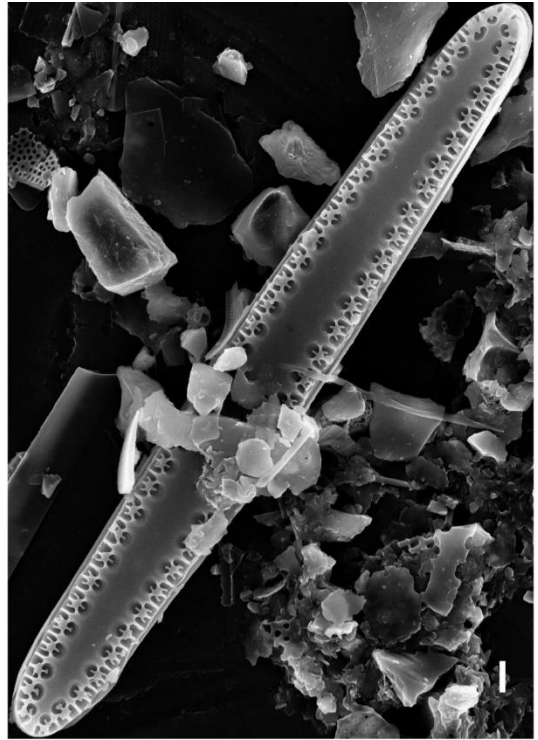
Fig. 4: Sample BBDC00012, Barnegat Bay, NJ.

Fig. 5: Sample BBDC00051, Barnegat Bay, NJ.

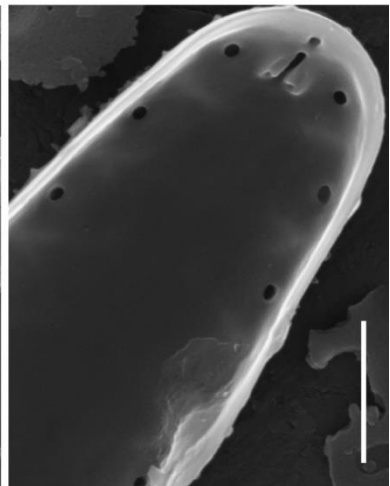
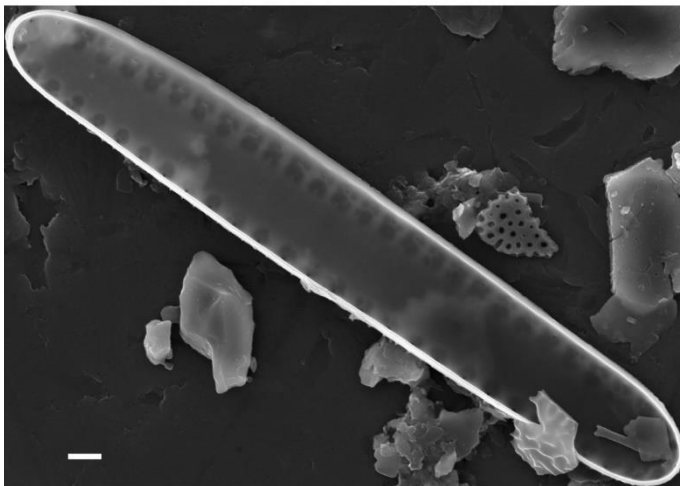
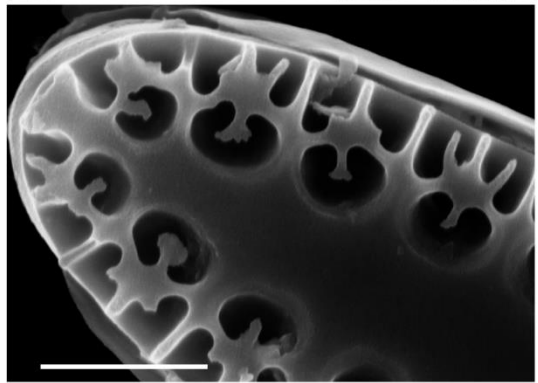
Fig. 6: Sample BBDC00072, Barnegat Bay, NJ.

Figs 8-9: Sample BBDC00030, Barnegat Bay, NJ.

Figs 10-11: Sample BBDC00080, Barnegat Bay, NJ.



1 - 7



8 - 11

***Rhabdonema adriaticum* Kützing**

Lit.: Kützing 1844, p. 126; pl. 18, fig. 7

Synonyms: *Tessella adriatica* (Kützing) Mann 1907

Fig. 1: Sample RUTG274, Barnegat Light House, NJ.

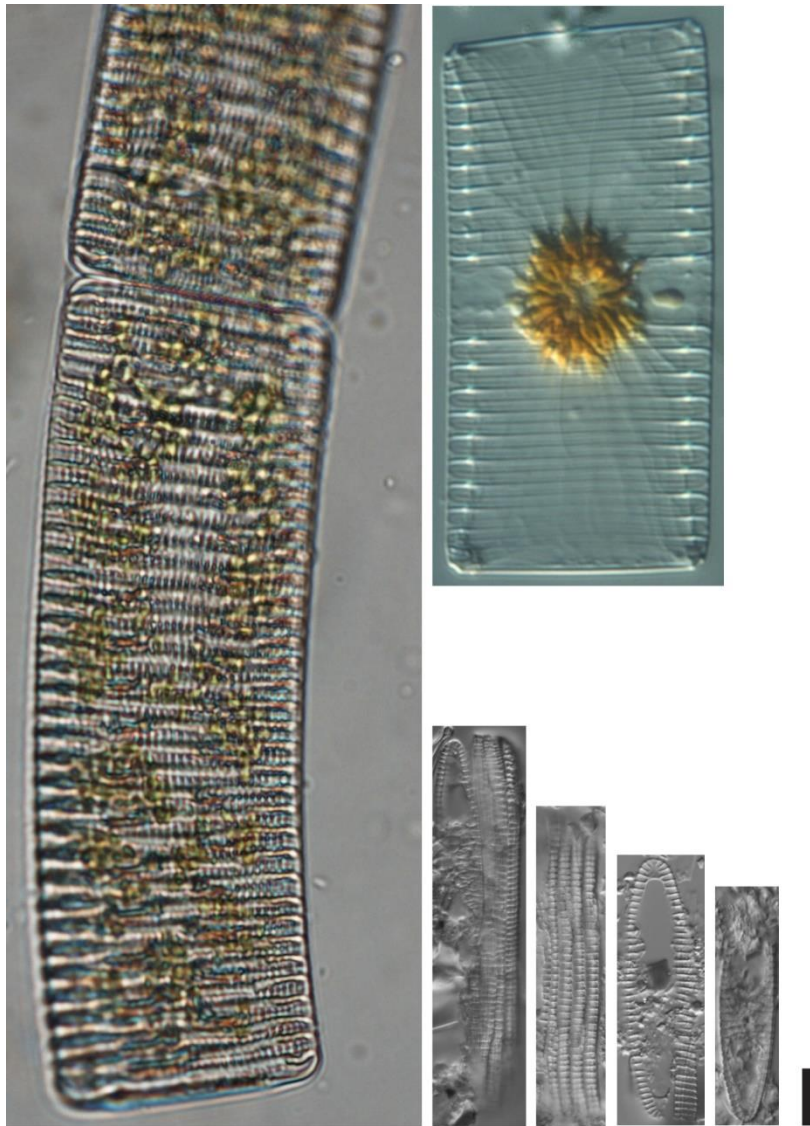
Fig. 2: Barnegat Bay, NJ.

Fig. 3: Sample BB0063, Barnegat Bay, NJ.

Fig. 4: Sample BB0064, Barnegat Bay, NJ.

Fig. 5: Sample BBDC00048, Barnegat Bay, NJ.

Fig. 6: Sample BB0076, Barnegat Bay, NJ.



1 - 6

Striatella unipunctata (Lyngbye) Agardh

Lit.: Agardh 1832, p. 61

Basionym: *Fragilaria unipunctata* Lyngbye 1819

Synonyms: *Achnanthes unipunctata* (Lyngbye) Carmichael ex Greville 1827

Echinella annulata Corda in Sturm 1829

Echinella unipunctata (Lyngbye) Corda apud Sturm 1798-1839

Tabellaria unipunctata (Lyngbye) Schütt 1896

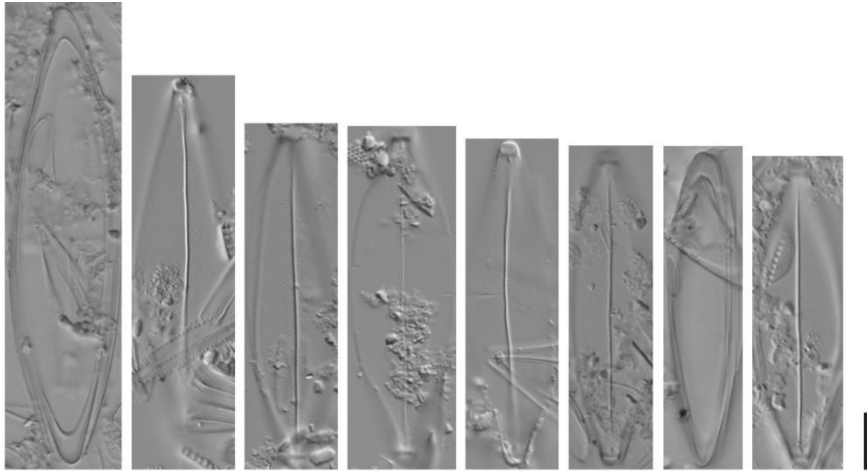
Thaumaleorhabdium unipunctatum (Lyngbye) Trevisan 1848

Diatoma unipunctatum (Lyngbye) Agardh 1824

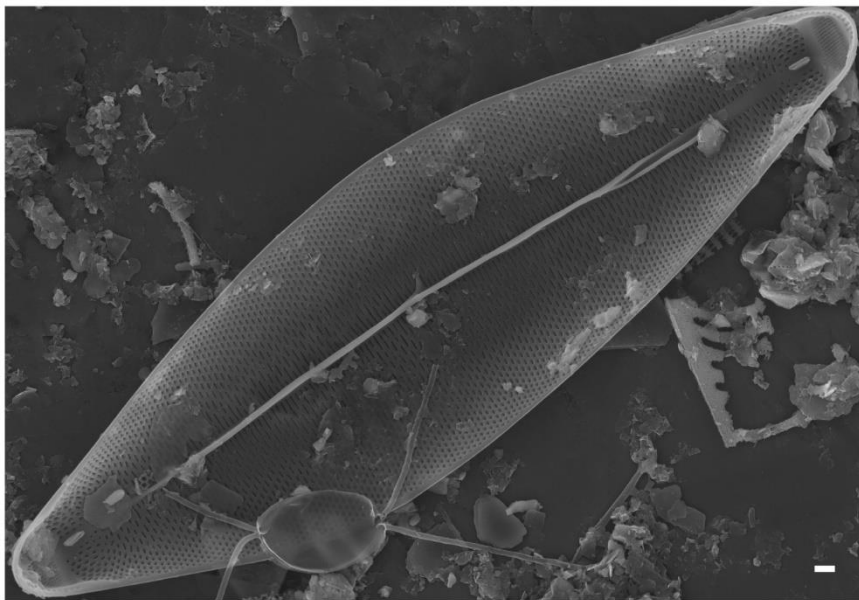
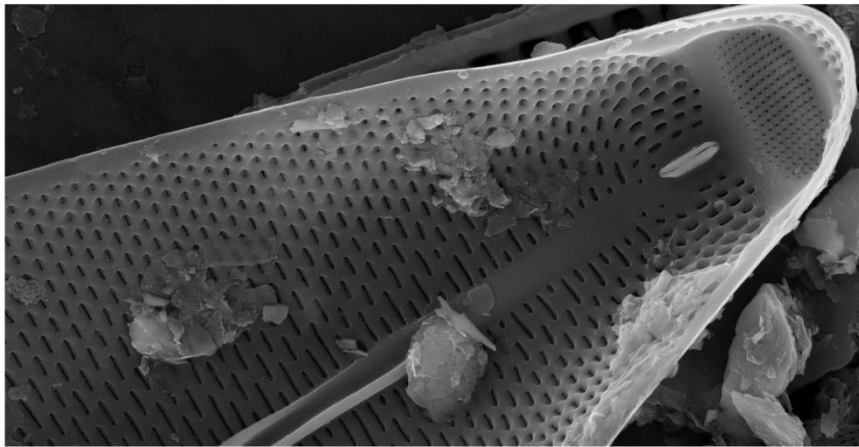
Candollella unipunctata (Lyngbye) Gaillon 1833

Figs 1-8: Sample RUTG278, Rutgers Field Station, NJ.

Fig. 9-10: Sample RUTG1007, Great Bay, NJ.



1 - 8



9 - 10

Plate 94

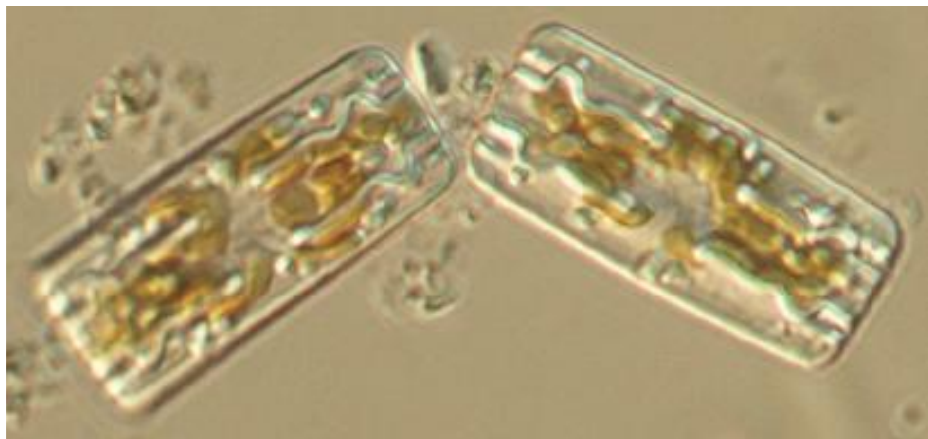
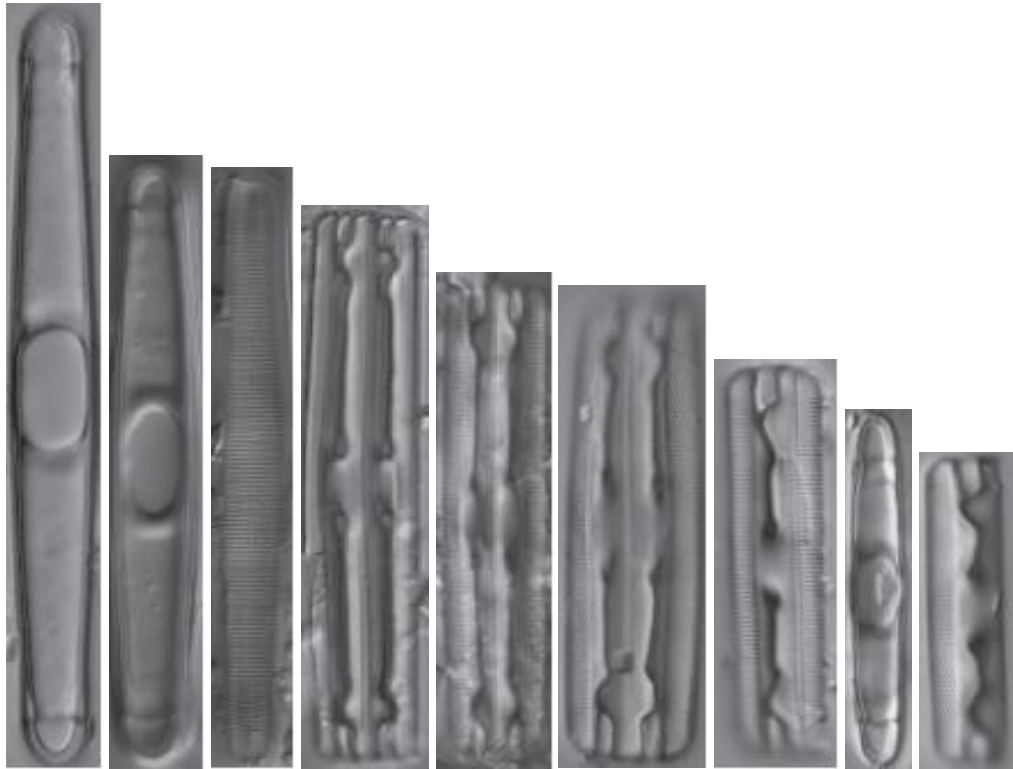
(Scale bar: Figs 1-19=10 µm)

Figs 1-10: ***Grammatophora oceanica*** Ehrenberg

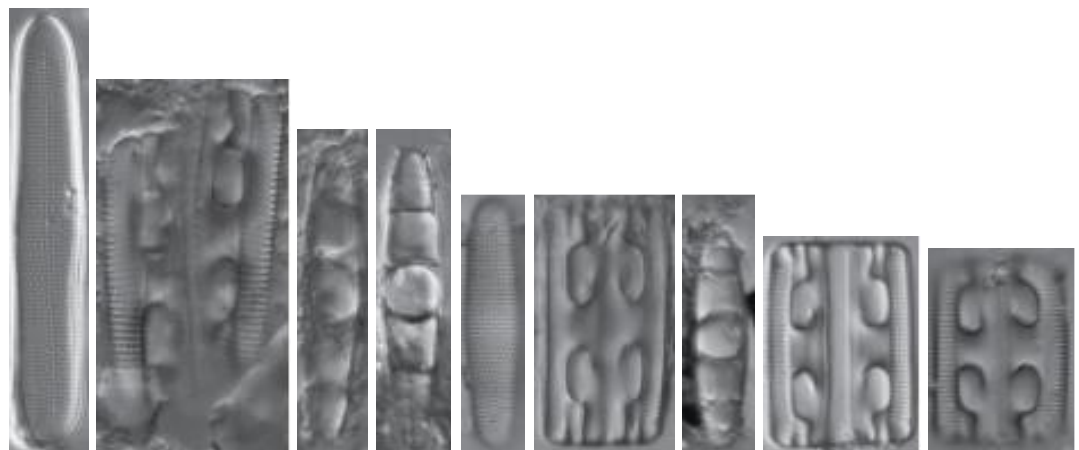
Lit.: Ehrenberg 1840, p. 161

Figs 11-19: ***Grammatophora angulosa*** Ehrenberg

Lit.: Ehrenberg 1840, p. 73 (153)



1 - 10



11 - 19

Figs 1-2: ***Eunotia myrmica*** Lange-Bertalot

Lit.: Lange-Bertalot, Bak & Witkowski 2011: 165, pl. 221: figs 10-11; pl. 222: figs 8-13.

Synonyms:

Eunotia formica sensu Hustedt 1924, fig.18:13, Hustedt 1932 partim, fig.775 (specimen right side)

Eunotia formica sensu Mölder & Tynni 1971 et sensu Patrick & Reimer 1966 (fig.10:7) et sensu auct. nonnull.

(?) *Eunotia formica* f. *stricta* A. Berg 1939, p.453, fig.4:148

(?) *Eunotia nodosa* A. Berg 1939, p.453, fig.4:149 (nec *Eunotia nodosa* Ehrenberg 1843)

Fig. 1: Sample BBDC0002, Barnegat Bay, NJ.

Fig. 2: Sample BBDC0009, Barnegat Bay, NJ.

Figs 3-4: ***Eunotia glacialis*** Meister

Lit.: Meister 1912, p. 85; pl. 10, fig. 2-3; Krammer & Lange-Bertalot 1991, p.207, fig.150:10; 2000 (2nd ed.), p.594, figs 151A:1,2; Lange-Bertalot, Bak & Witkowski 2011: 112, pl. 206: figs 1-13; pl. 207: figs 1-9.

Fig. 3: Sample BB0070, Barnegat Bay, NJ.

Fig. 4: Sample BB0069, Barnegat Bay, NJ.

Figs 5-6: ***Eunotia naegeli*** Migula

Lit.: Migula 1907, p. 203; Krammer & Lange-Bertalot 2000, p.182, figs 140:1-6; Lange-Bertalot, Bak & Witkowski 2011: 167, pl. 21: figs 1-23; pl. 22: figs 1-13.

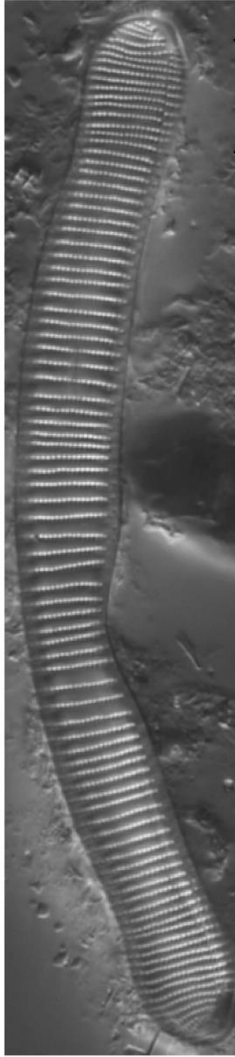
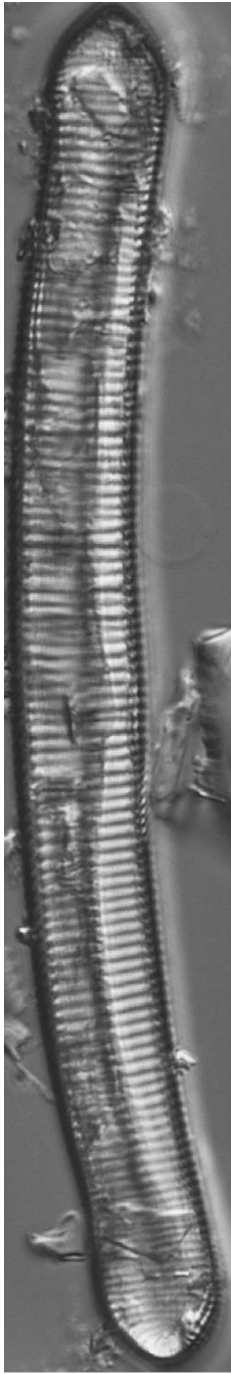
Synonyms:

Synedra alpina Nägeli ex Kützing 1849

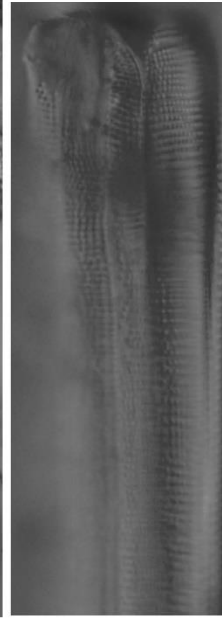
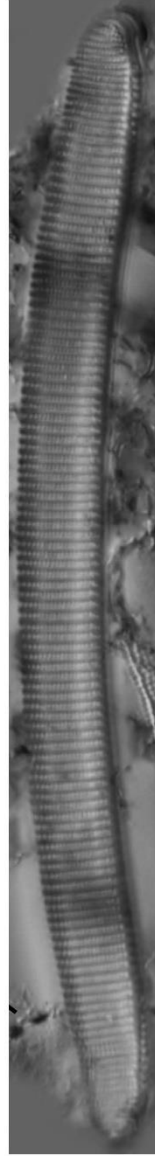
Eunotia lunaris var? *alpina* (Nägeli) Grunow in Van Heurck 1881

Fig. 5: Sample BBDC0026, Barnegat Bay, NJ.

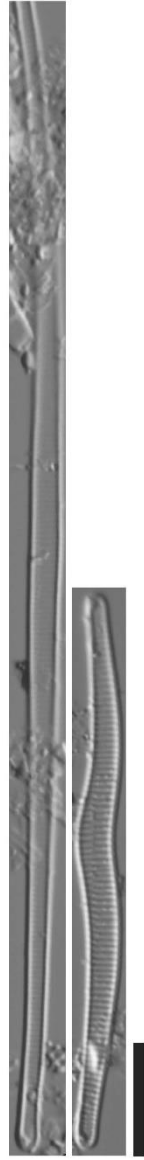
Fig. 6: Sample BBDC0029, Barnegat Bay, NJ.



1 - 2



3 - 4



5 - 6

Fig. 1: *Eunotia serra* Ehrenberg

Lit.: Ehrenberg 1837, p. 45; Lange-Bertalot, Bak & Witkowski 2011: 219, pl. 107: figs 1-15; pl. 108: figs 1-8.

Synonyms:

Eunotia robusta Ralfs in Pritchard 1861 partim.

Eunotia robusta var. *serra* (Ehrenberg) Meister 1912

Fig. 1: Sample BBDC0028, Barnegat Bay, NJ.

Figs 2-6: *Eunotia pectinalis* (Kützinger) Rabenhorst

Lit.: Rabenhorst 1864, p. 73; Kützinger 1844, p.39, fig.16:11; Tuji & William 2005, p.57-60; Lange-Bertalot, Bak & Witkowski 2011: 193, pl. 166: figs 1-13; pl. 170: figs 4-6.

Basionym: *Himantidium pectinale* Kützinger 1844

Synonyms:

Eunotia pectinalis var. *undulata* (Ralfs 1843) Rabenhorst 1864

Temachium pectinale (Dillwyn) Wallroth 1833

Fig. 2: Sample BBDC0006, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0008, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0050, Barnegat Bay, NJ.

Fig. 5: Sample BB0071, Barnegat Bay, NJ.

Fig. 6: Sample BB0069, Barnegat Bay, NJ.

Figs 7-10: *Eunotia minor* (Kützinger) Grunow

Lit.: Van Heurck 1881, pl. 33, fig. 20-21; Kützinger 1844, p.39, fig.16:10; Krammer & Lange-Bertalot 2000, p.196, figs 142:7-15; Lange-Bertalot, Bak & Witkowski 2011: 157, pl. 145: fig.24, pl. 158, figs 14-17, pl.159:1-27; 160:1-6; 161:1-5; 162:1-27; 163:1-28; 164:1-31; 226:6-18.

Basionym: *Himantidium minus* Kützinger 1844

Synonyms:

Himantidium pectinale var. *minus* (Kützinger) Grunow 1862

Eunotia pectinalis f. *minor* (Kützinger) A. Berg 1939

Eunotia pectinalis var. *minor* (Kützinger) Rabenhorst 1864

Eunotia pectinalis var. *minus* (Kützinger) Rabenhorst 1864

Figs 7-9: Sample RUTG0520, Cheesequake State Park, NJ.

Fig. 10: Sample BBDC0006, Barnegat Bay, NJ.

Fig. 11: *Eunotia bidentula* W. Smith

Lit.: W. Smith 1856, p.83; Van Heurck 1881, pl. 33, fig. 20-21; Krammer & Lange-Bertalot 1991, p.226, figs 161:21-25; Lange-Bertalot, Bak & Witkowski 2011:63, pl.56: figs 1-14.

Synonyms:

Eunotia tridentula var. *bidentula* (W. Smith) Heribaud 1893

Eunotia diodon f. *bidentula* (W. Smith) Å. Berg 1945

Fig. 11: Sample BBDC0033, Barnegat Bay, NJ.

Figs 12-15: *Eunotia sudetica* O. Müller

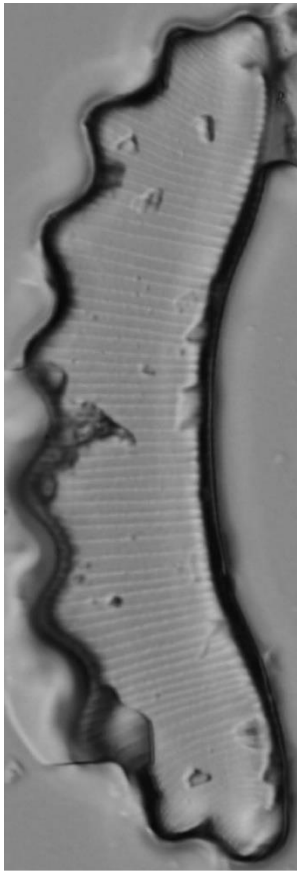
Lit.: Van Heurck 1881, pl. 33, fig. 20-21; O. Müller 1898, p.12, figs 3:25,26; Krammer & Lange-Bertalot 1991, p.224, figs 161:1-7; Lange-Bertalot, Bak & Witkowski 2011:227, pl.48: figs 1-28, 49:1-8.

Basionyms: *Himantidium sudetica* (Otto Müller) Schonfeldt 1907

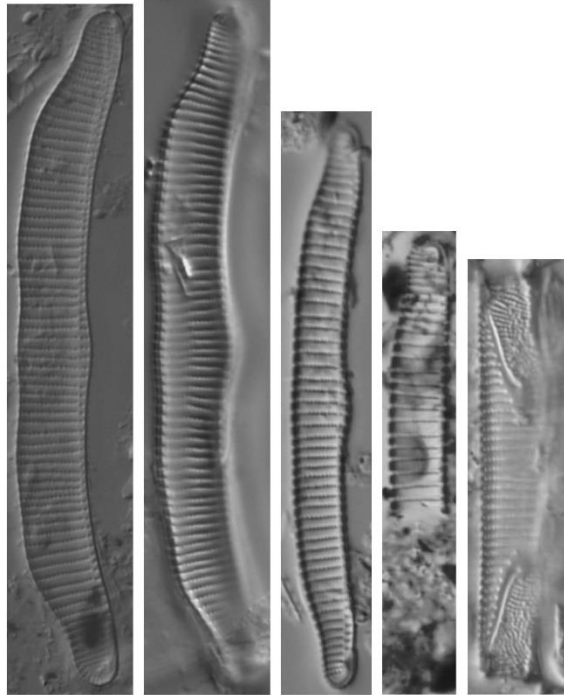
Figs 12-13: Sample BBDC0004, Barnegat Bay, NJ.

Fig. 14: Sample BBDC0008, Barnegat Bay, NJ.

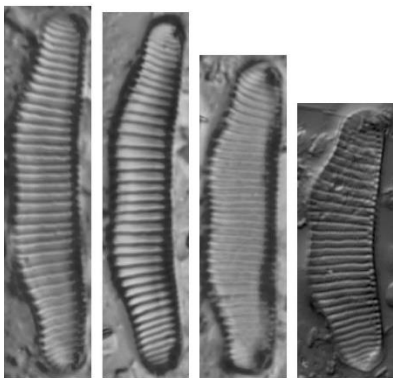
Fig. 15: Sample BB0071, Barnegat Bay, NJ.



1



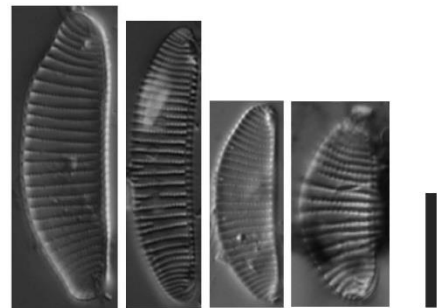
2 - 6



7 - 10



11



12 - 15

Plate 97 (Scale bars: Figs 1-35; 38=10 µm; Figs 36-37=1 µm)

Figs 1-11: *Eunotia nymanniana* Grunow

Lit.: Van Heurck 1881, pl. 34, fig. 8,10; Lange-Bertalot, Bak & Witkowski 2011: 182, pl. 120: 1-43, 121:1-26.

Synonyms: *Eunotia steineckii* J.B. Petersen 1950

Figs 1,3,5: Sample BB0035, Barnegat Bay, NJ.

Figs 2,6: Sample RUTG0240, Cape May Courthouse, NJ.

Fig. 4: Sample BB0060, Barnegat Bay, NJ.

Fig. 7: Sample BB0070, Barnegat Bay, NJ.

Fig. 8: Sample BB0069, Barnegat Bay, NJ.

Figs 9-10: Sample BB0071, Barnegat Bay, NJ.

Fig. 11: Sample BBDC0009, Barnegat Bay, NJ.

Figs 12-13: *Eunotia tenella* (Grunow) Hustedt

Lit.: Schmidt et al. 1913, pl. 287, fig. 20-25; Krammer & Lange-Bertalot 1991, p.202, figs 154:23-30; Lange-Bertalot, Bak & Witkowski 2011: 233, pl. 129: 1-66, 130:1-7.

Basionyms: *Himantidium arcus* var. *tenella* (Grunow in Van Heurck) Schonfeldt 1907

Synonyms: *Eunotia arcus* var. *tenella* Grunow in Van Heurck 1881

Eunotia exigua var. *tenella* (Grunow) Norpel et Alles in Alles, Norpel & Lange-Bertalot 1991

Fig. 12: Sample BBDC0005, Barnegat Bay, NJ.

Fig. 13: Sample COAST0087, Atlantic City, NJ.

Figs 14-15: *Eunotia latinasuta* Lange-Bertalot

Lit.: Lange-Bertalot, Bak & Witkowski 2011: 136, pl. 55: figs 18-31.

Synonyms: *Eunotia praerupta* var. *monodon* f. *polaris* (A. Berg) Symoens sensu Camburn & Charles 2000, p.20

Fig. 14: Sample RUTG0520, Cheesequake State Park, NJ.

Fig. 15: Sample BBDC0072, Barnegat Bay, NJ.

Figs 16-18: *Eunotia paludosa* Grunow

Lit.: Grunow 1862, p. 22 (336); pl. 3/6, fig. 10; Krammer & Lange-Bertalot 1991, p.203, figs 155:1-20,22-37; Lange-Bertalot, Bak & Witkowski 2011: 186, pl. 146: figs 1-31, 147:1-47; 149:20-22.

Basionyms: *Himantidium paludosum* (Grunow) Lagerstedt 1873

Synonyms: *Eunotia* (*exigua* Brébisson var.) *paludosa* Grunow in Van Heurck 1881, fig.34:9

Himantidium pludosum (Grunow) Lagerstedt 1873

Fig. 16: Sample BB0070, Barnegat Bay, NJ.

Fig. 17: Sample BBDC0009, Barnegat Bay, NJ.

Fig. 18: Sample BB0069, Barnegat Bay, NJ.

Figs 19-21: *Eunotia rhomboidea* Hustedt

Lit.: Hustedt 1950, p. 435; pl. 36, fig. 34-41; Krammer & Lange-Bertalot 1991, p.223, figs 164:12-20; Lange-Bertalot, Bak & Witkowski 2011: 207, pl. 41: figs 1-49, 42:1-8; 43:12-14.

Synonyms: *Eunotia incisa* var. *minor* Grunow in Cleve & Moller 1878 (no.56); *Eunotia tenella* sensu Hustedt 1932

Fig. 19: Sample BB0070, Barnegat Bay, NJ.

Fig. 20: Sample BB0035, Barnegat Bay, NJ.

Fig. 21: Sample BB0060, Barnegat Bay, NJ.

Figs 22-25: *Eunotia incisadistans* Lange-Bertalot & Sienkiewicz

Lit.: Lange-Bertalot & Sienkiewicz 2011: 122, pl. 38: figs 1-40; pl. 40: figs 6-8.

Fig. 22: Sample BBDC0005, Barnegat Bay, NJ.

Fig. 23: Sample BBDC0028, Barnegat Bay, NJ.

Fig. 24: Sample BBDC0004, Barnegat Bay, NJ.

Fig. 25: Sample BBDC0006, Barnegat Bay, NJ.

Figs 26-35: *Eunotia incisa* Gregory

Lit.: Gregory 1854, p. 96; pl. 4, fig. 4; Lange-Bertalot & Sienkiewicz 2011: 120, pl. 36: figs 1-35;37:1-7, 38:41, 231:34-38.

Fig. 26: Sample BB0052, Barnegat Bay, NJ.

Fig. 27: Sample BBDC0028, Barnegat Bay, NJ.

Fig. 28: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 29: Sample BB0060, Barnegat Bay, NJ.

Fig. 30,33: Sample BB0071, Barnegat Bay, NJ.

Fig. 31: Sample BBDC0067, Barnegat Bay, NJ.

Fig. 32: Sample BBDC0006, Barnegat Bay, NJ.

Fig. 34: Sample BB0054, Barnegat Bay, NJ.

Fig. 35: Sample BBDC0008, Barnegat Bay, NJ.

Figs 36-38: *Eunotia bilunaris* (Ehrenberg) Schaarschmidt

Lit.: Ehrenberg 1838,p.213:17:4,5; Lange-Bertalot & Sienkiewicz 2011:67,pl.30:1-27,31:1-14,32:1-16,33:1-7.

Basynonyms: *Synedra bilunaris* Ehrenberg 1832

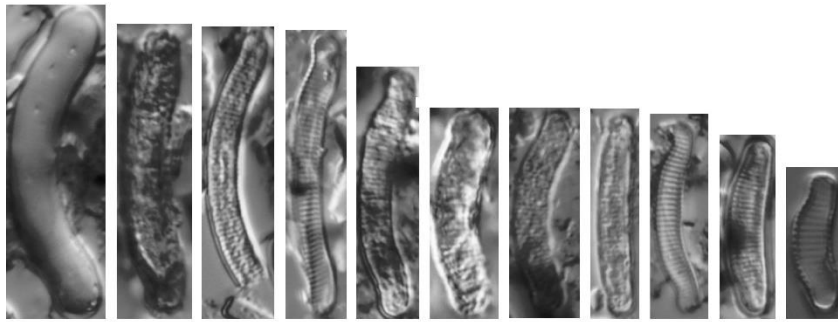
Synonyms: *Ceratoneis lunaris* var. *bilunaris* (Ehrenberg) Grunow in Rabenhorst 1865; *Pseudo-eunotia lunaris* var.

bilunaris (Ehrenberg; Ehrenberg) De Toni 1892; *Synedra ulna* var. *bilunaris* (Ehrenberg; Ehrenberg) Brun 1880; *Eunotia*

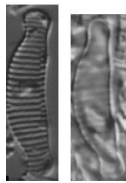
curvata var. *bilunaris* (Ehrenberg) Woodhead & Tweed 1954

Fig. 36: Sample BB0052, Barnegat Bay, NJ.

Figs 37-38: Sample BBDC0028, Barnegat Bay, NJ.



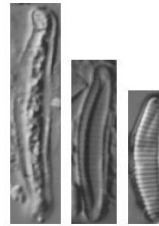
1 - 11



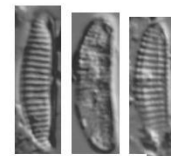
12 - 13



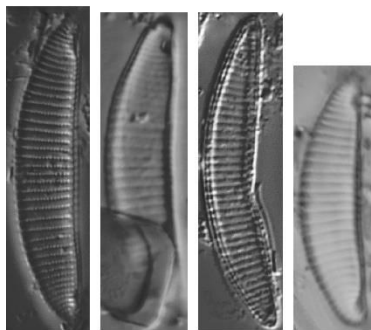
14 - 15



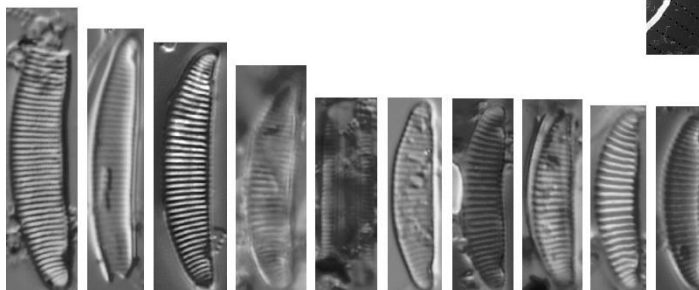
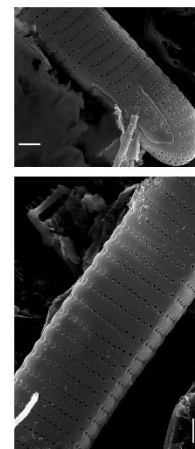
16 - 18



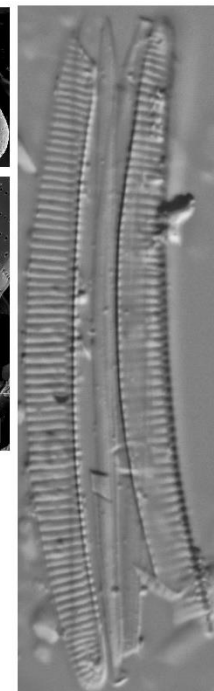
19 - 21



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36 - 38

Fig. 1: *Lyrella amphoroides* Mann

Lit: Mann & Stickle 1997, p. 62-63; fig. 1-20

Fig. 1: Sample BBDC0095, Barnegat Bay, NJ.

Fig. 2: *Lyrella implana* (Hustedt) Moreno

Lit: Moreno, Licea & Santoyo 1996, p. 86-87; pl. 23, fig. 11

Synonyms:

Navicula implana Hustedt 1964

Fig. 2: Sample BB0071, Barnegat Bay, NJ.

Figs 3-7: *Lyrella clavata* (Gregory) Mann

Lit: Round, Crawford & Mann 1990, p. 672

Synonyms:

Navicula clavata Gregory 1856

Navicula hennedyi (*hennedii*) var. *clavata* (Gregory) Van Heurck 1885

Clevia clavata (Gregory) Mereschkowsky 1902

Schizonema clavatum (Gregory) Kuntze 1898

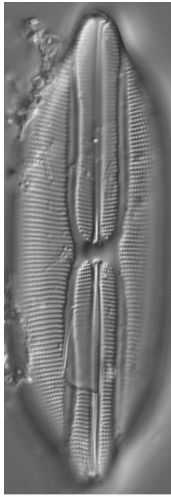
Fig. 3: Sample BBDC0071, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0088, Barnegat Bay, NJ.

Fig. 5: Sample BBDC0054, Barnegat Bay, NJ.

Fig. 6: Sample BBDC0050, Barnegat Bay, NJ.

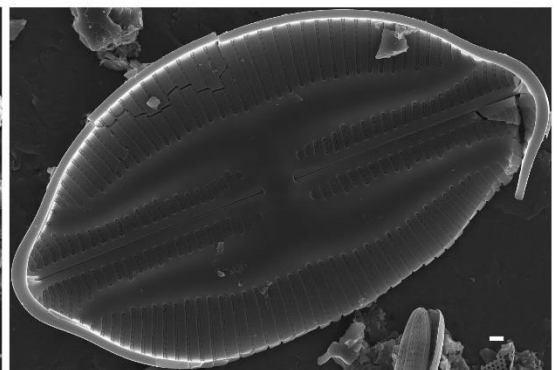
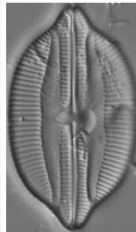
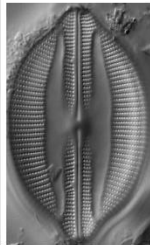
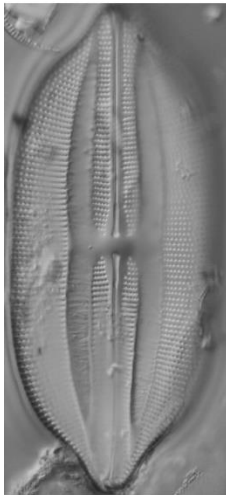
Fig. 7: Sample COAST003, Peconic Bay, NY.



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3 - 7

Figs 1-5: *Petroneis granulata* (Bailey) Mann

Lit.: Round, Crawford & Mann 1990, p. 675

Nomenclatural synonyms:

Clevia granulata (Bailey) Mereschowsky 1902

Navicula baileyana Grunow in Schmidt 1874

Navicula granulata J.W. Bailey 1854

Navicula baileyi Cholnoky 1968

Schizonema granulatum Kuntze 1898

Figs 1-2: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0012, Barnegat Bay, NJ.

Fig. 5: Sample BBDC0009, Barnegat Bay, NJ.

Figs 6-7: *Petroneis marina* (Ralfs in Pritchard) Mann

Lit.: Round, Crawford & Mann 1990, p. 675

Nomenclatural synonyms:

Navicula marina Ralfs in Pritchard 1861

Fig. 6: Sample BBDC0003, Barnegat Bay, NJ.

Fig. 7: Sample BBDC0046, Barnegat Bay, NJ.

Figs 8: *Petroneis humerosa* (Brebisson ex Wm. Smith) Stickle & Mann

Lit.: Round, Crawford & Mann 1990, p. 675

Nomenclatural synonyms:

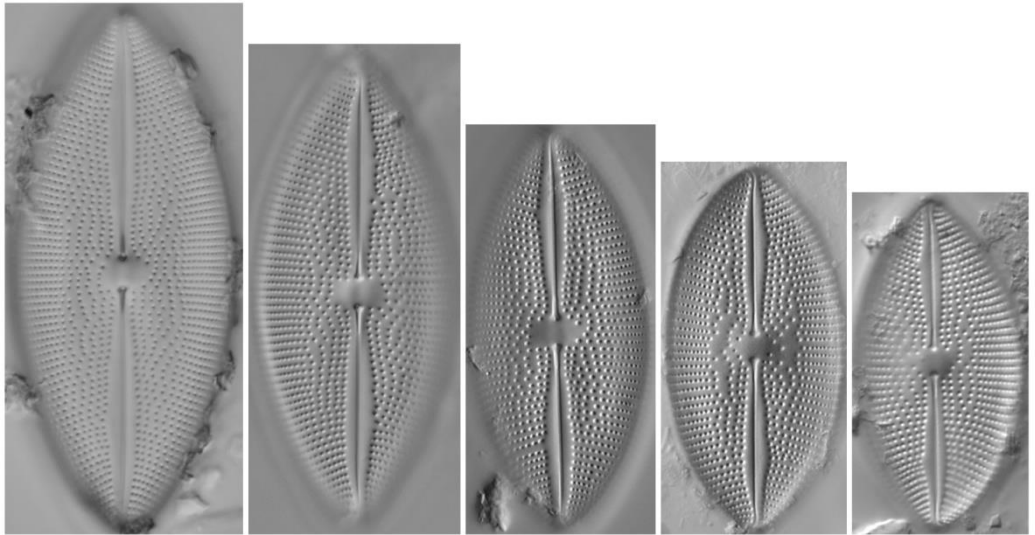
Clevia humerosa (Brebisson ex Wm. Smith) Mereschowsky 1902

Navicula humerosa Brébisson ex W. Smith 1856

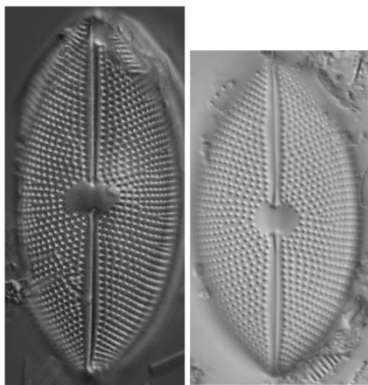
Navicula granulata var. *humerosa* (Brebisson) Carruthers 1864

Schizonema humerosum (Brébisson [ex W. Smith]) Kuntze 1898

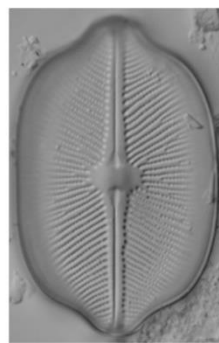
Fig. 8: Sample BBDC0044, Barnegat Bay, NJ.



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Figs 1-11: ***Mastogloia pumila*** (Cleve & Moller; Grunow in Van Heurck) Cleve

Lit.: Cleve 1895, p. 157

Basionyms: *Mastogloia braunii* (*brauni*) var. *pumila* Grunow 1953

Figs 12-17: ***Mastogloia pusilla*** Grunow

Lit.: Grunow 1878, p. 111; pl. 3, fig. 10

Figs 18: ***Mastogloia linearis*** Simonsen

Lit.: Simonsen 1959, p. 77; pl. 11, fig. 2

Figs 19-20: ***Mastogloia lanceolata*** Thwaites

Lit.: Thwaites & Smith 1856, p. 64; pl. 54, fig. 340

Figs 21-22: ***Mastogloia erythraea*** Grunow

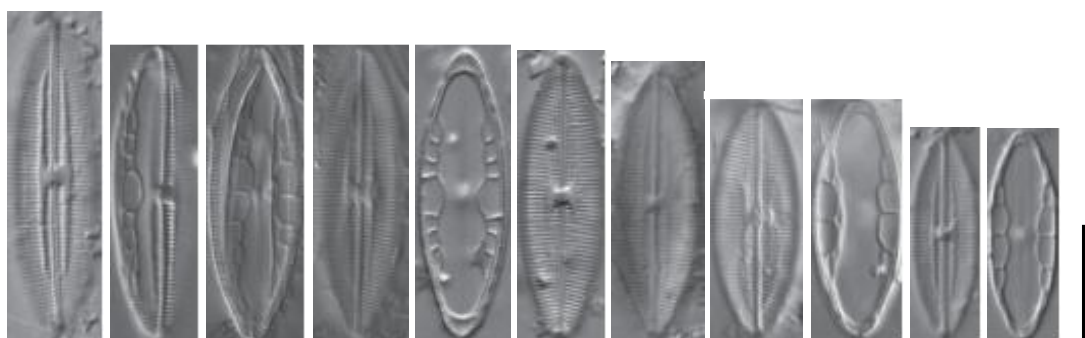
Lit.: Grunow 1860, p. 577; pl. 5, fig. 4 (pl. 7, fig. 4)

Figs 23: ***Mastogloia braunii*** Grunow

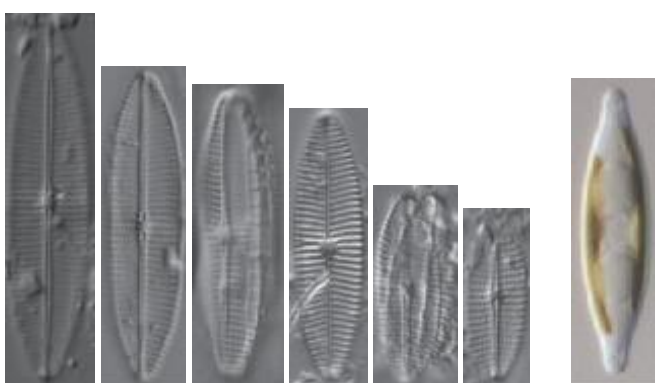
Lit.: Grunow 1863, p. 156; pl. 13, fig. 2

Figs 24-27: ***Mastogloia smithii*** Thwaites

Lit.: Thwaites & Smith 1856, p. 65; pl. 54, fig. 341

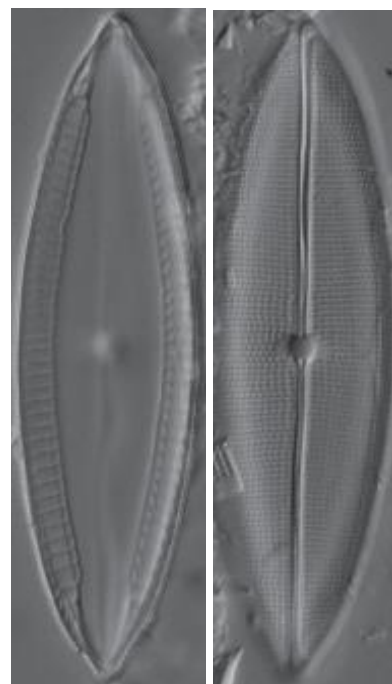


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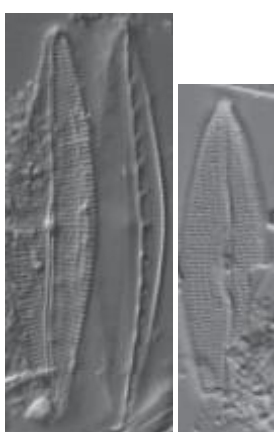


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18



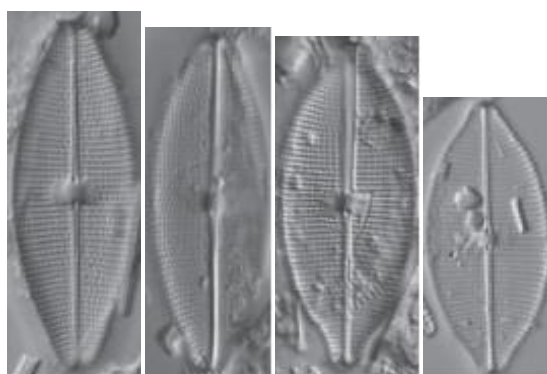
19 - 20



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24 - 27

Figs 1-3: ***Gomphonemopsis* sp. 2**

Figs 4-5: ***Gomphonemopsis* sp. 3**

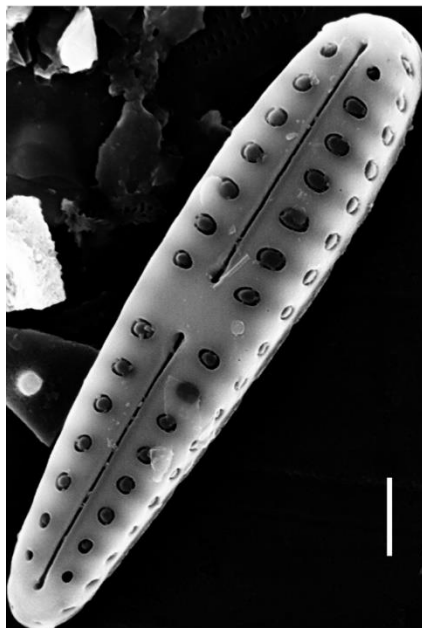
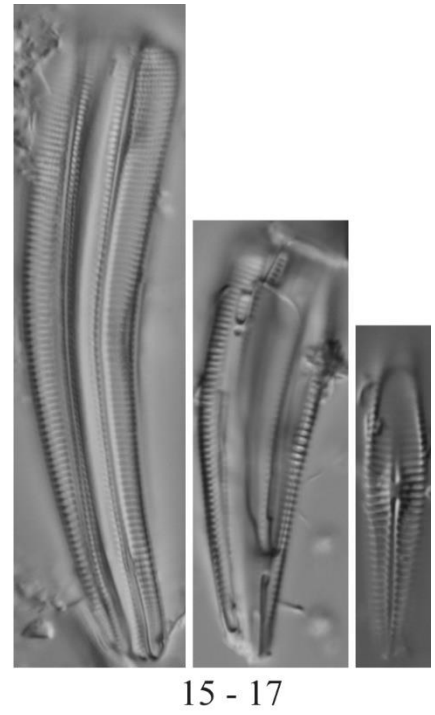
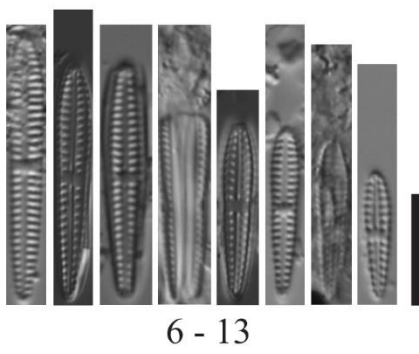
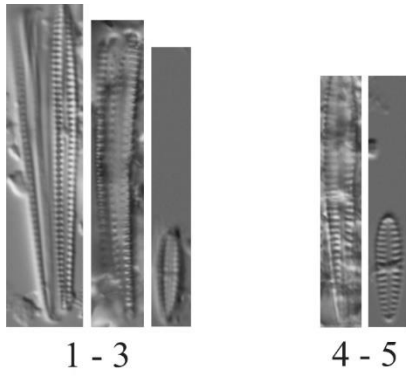
Figs 6-14: ***Gomphonemopsis pseudexigua* (Simonsen) Medlin**

Lit.: Medlin & Round 1986, p. 208; fig. 8-11

Basionyms: *Gomphonema pseudoexiguum* Simonsen 1959

Figs 15-17: ***Rhoicosphenia abbreviata* (Agardh) Lange-Bertalot**

Lit.: Lange-Bertalot 1980, p. 586; fig. 1A, 3C-D, 5A



***Adlafia* sp. 3**

Figs 1-4: Sample RUTG0131, Cheesequake State Park, NJ.

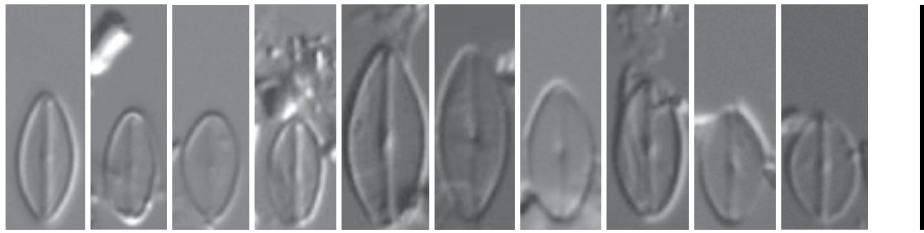
Figs 5,8-10: Sample BBDC0036, Barnegat Bay, NJ.

Fig. 6: Sample BBDC0051, Barnegat Bay, NJ.

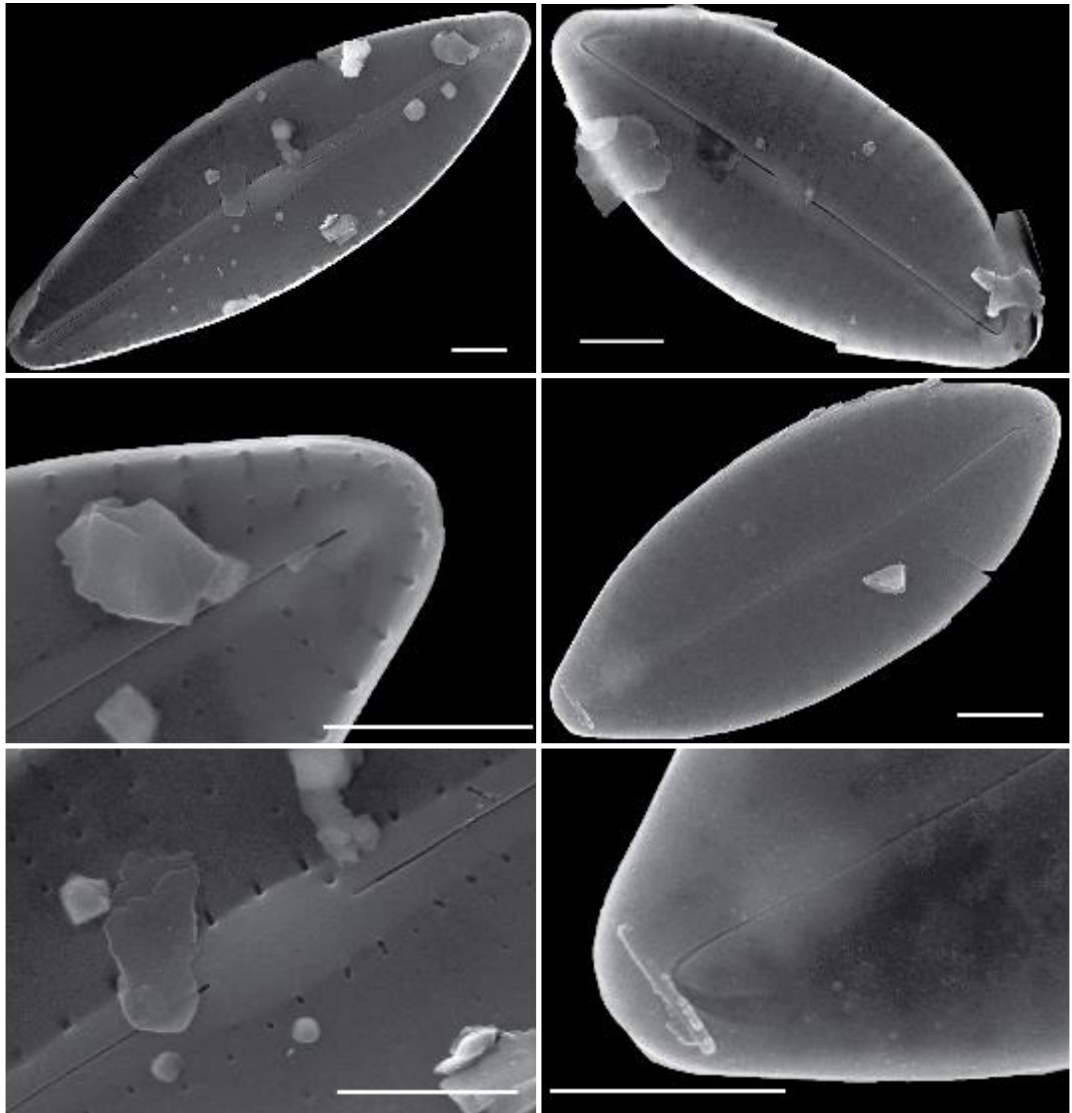
Fig. 7: Sample BBDC0052, Barnegat Bay, NJ.

Figs 11-13: Sample BBDC0054, Barnegat Bay, NJ.

Figs 14-16: Sample BBDC0003, Barnegat Bay, NJ.



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11 - 16

***Adlafia* sp. 4**

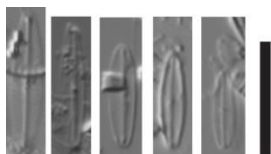
Fig. 1: Sample BBDC0036, Barnegat Bay, NJ.

Fig. 2: Sample BBDC0041, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0052, Barnegat Bay, NJ.

Fig. 4: Sample COAST052, Barnegat Bay, NJ.

Fig. 5: Sample BBDC0053, Barnegat Bay, NJ.



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Brebissonia lanceolata (Agardh) Mahoney & Reimer

Lit: Mahoney & Reimer 1986, p. 184; fig. 1-18

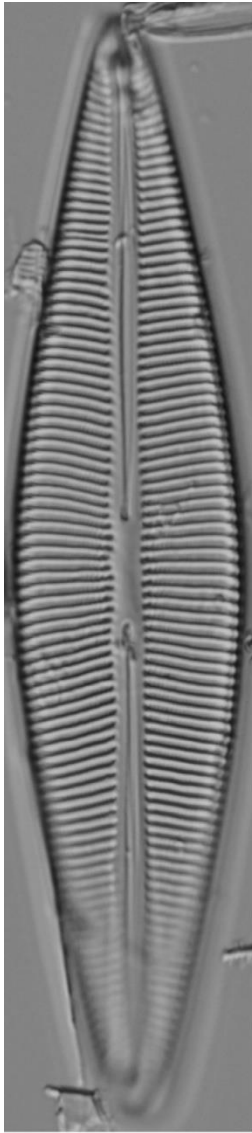
Basionym: *Gomphonema lanceolatum* Agardh 1831

Synonyms: *Cocconema lanceolatum* (Agardh) Ehrenberg 1838

Cymbella lanceolata (Agardh) Van Heurck 1881

Cymbella lanceolata (Agardh) Kirchner 1878

Fig. 1: Sample BBDC0028, Barnegat Bay, NJ.



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***Achnanthes brevipes* Agardh**

Lit.: Agardh 1824, p. 1

Synonyms: *Achnanthidium brevipes* (Agardh) Cleve 1895

Achnantella brevipes (Agardh) Gaillon 1833

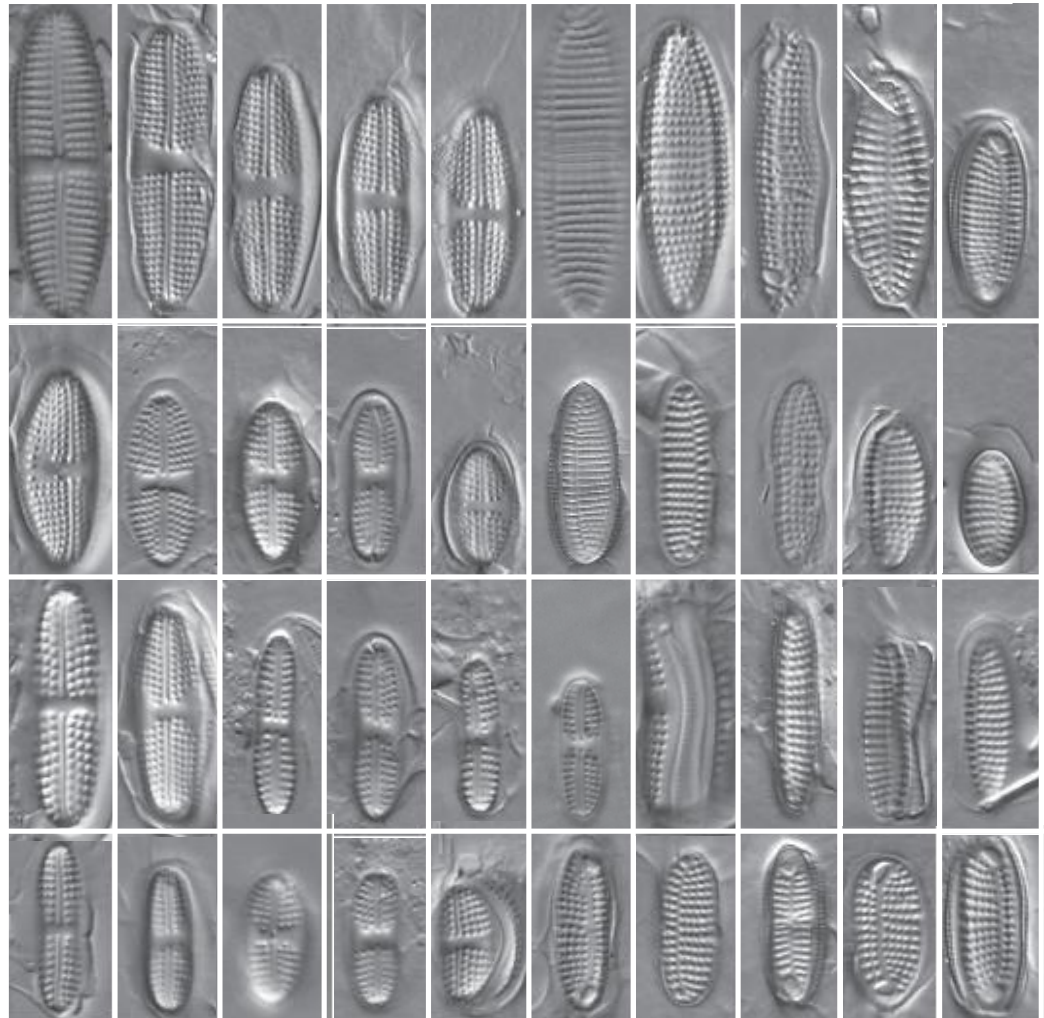
Achnanthidium brevipes (Agardh) Heiberg 1863

Figs 1,6: Sample BBDC0071, Barnegat Bay, NJ.

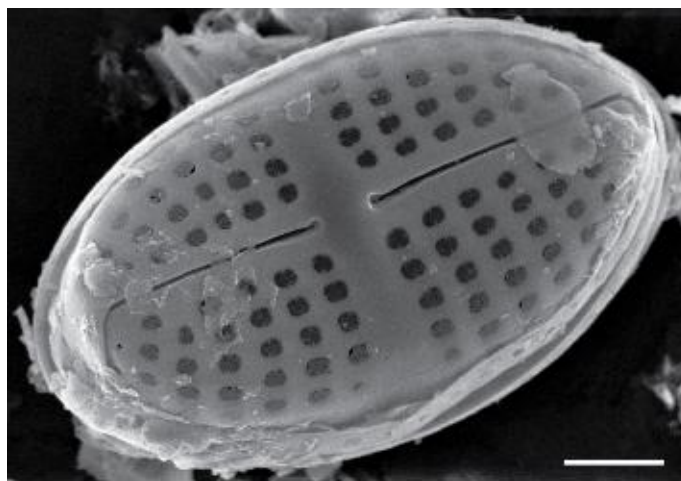
Figs 2-5,7-40: Sample RUTG272, Barnegat Light House, NJ.

Fig. 41: Sample RUTG0001, Cape May Courthouse, NJ.

Fig. 42: Sample RUTG0807, Cape May Courthouse, NJ.



1 - 40



41 - 42

Figs 1-4: ***Achnanthes curvirostrum*** Brun

Lit.: Brun 1895, pl. 16, fig. 84, 85

Figs 1-2: Sample BBDC0007, Barnegat Bay, NJ.

Figs 3-4: Sample BBDC0033, Barnegat Bay, NJ.

Figs 5-8: ***Achnanthes danica*** (Flögel) Grunow

Lit.: Cleve & Grunow 1880, p. 21

Basionym: *Cocconeis danica* Flögel 1873Synonyms: *Actinoneis danica* (Flögel) Cleve 1895

Fig. 5: Sample BBDC0054, Barnegat Bay, NJ.

Fig. 6: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 7: Sample COAST010, Great South Bay, NY.

Fig. 8: Sample COAST028, Great South Bay, NY.

Figs 9-10: ***Achnanthidium minutissimum*** (Kützing) Czarnecki

Lit.: Czarnecki 1994, p. 157

Basionym: *Achnanthes minutissima* Kützing 1833Synonyms: *Cocconeis minutissima* (Kützing) Schonfeldt 1907*Microneis minutissima* (Kützing) Cleve 1895*Achnanthidium lanceolatum* f. *minutissima* (Kützing) Tömösváry 1879*Microneis minutissima* (Kützing) Meister 1912

Figs 9-10: Sample BBDC0028, Barnegat Bay, NJ.

Figs 9-11: ***Achnanthes radiatus*** Hohn & Hellerman

Lit.: Hohn & Hellerman 1966, p. 115; pl. I, fig. 11-12

Figs 9-10: Sample BBDC0016, Barnegat Bay, NJ.

Figs 11-12: Sample BBEDC0099, Cattus Island, NJ.

Figs 13-15: ***Achnanthes pseudobliqua*** Simonsen

Lit.: Simonsen 1960, p. 127; pl. 1, fig. 5-7

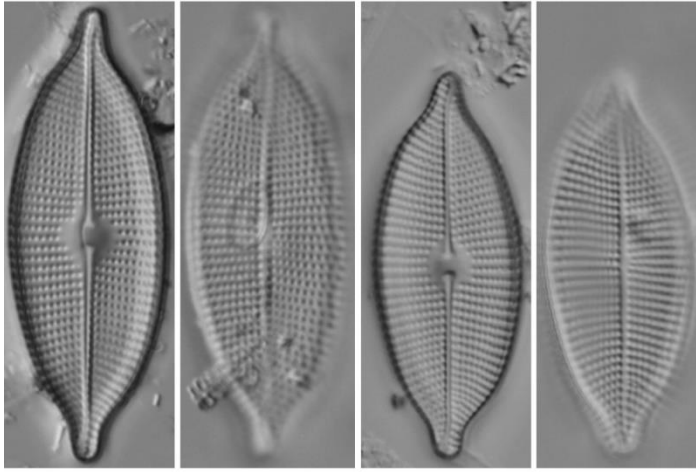
Fig. 13: Sample COAST009, Great South Bay, NY.

Figs 14-15: Sample COAST043, Barnegat Bay, NJ.

Figs 16-17: ***Achnanthes leonardii*** Witkowski & Lange-Bertalot

Lit.: Witkowski, Lange-Bertalot & MetzeltLit.:2000, p. 92, 420; pl. 50, fig. 1-12

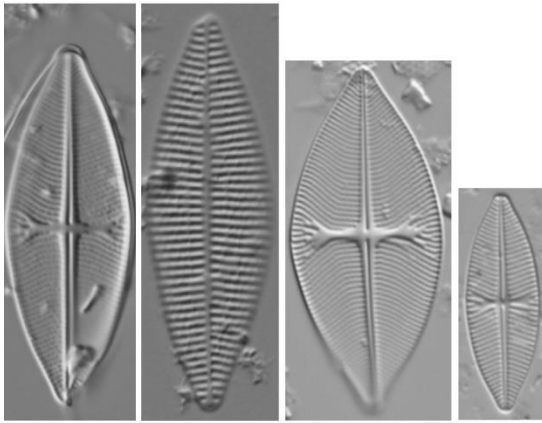
Figs 16-17: Sample BBDC0038, Barnegat Bay, NJ.



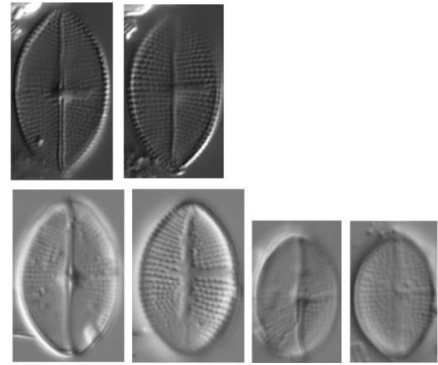
1 - 4



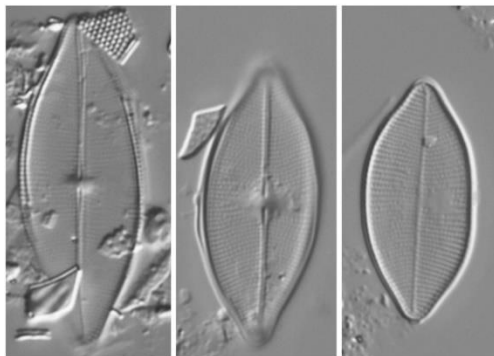
9 - 10



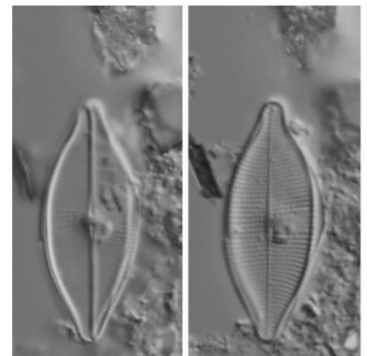
5 - 8



9 - 12



13 - 15



16 - 17

Cocconeis neothumensis* var. *marina De Stefano, Marino & Mazzella

Lit.: De Stefano, Marino & Mazzella 2000, p. 233; figs. 53-65

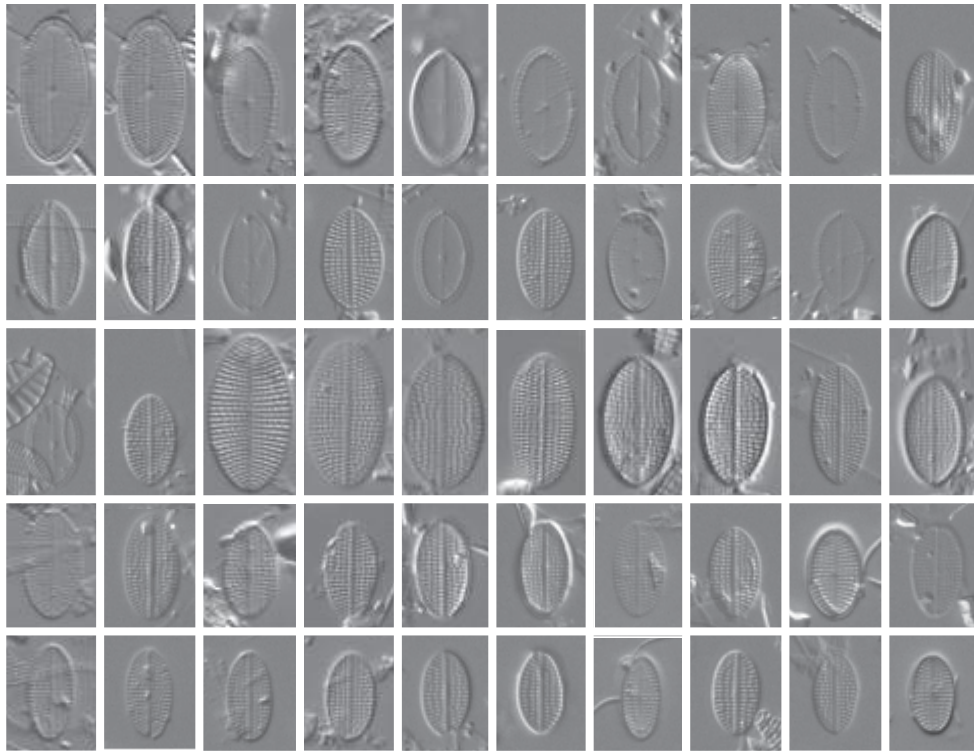
Figs 1-50: Sample BBDC0024, Barnegat Bay, NJ.

Fig. 51: Sample COAST062, Great Bay, NJ.

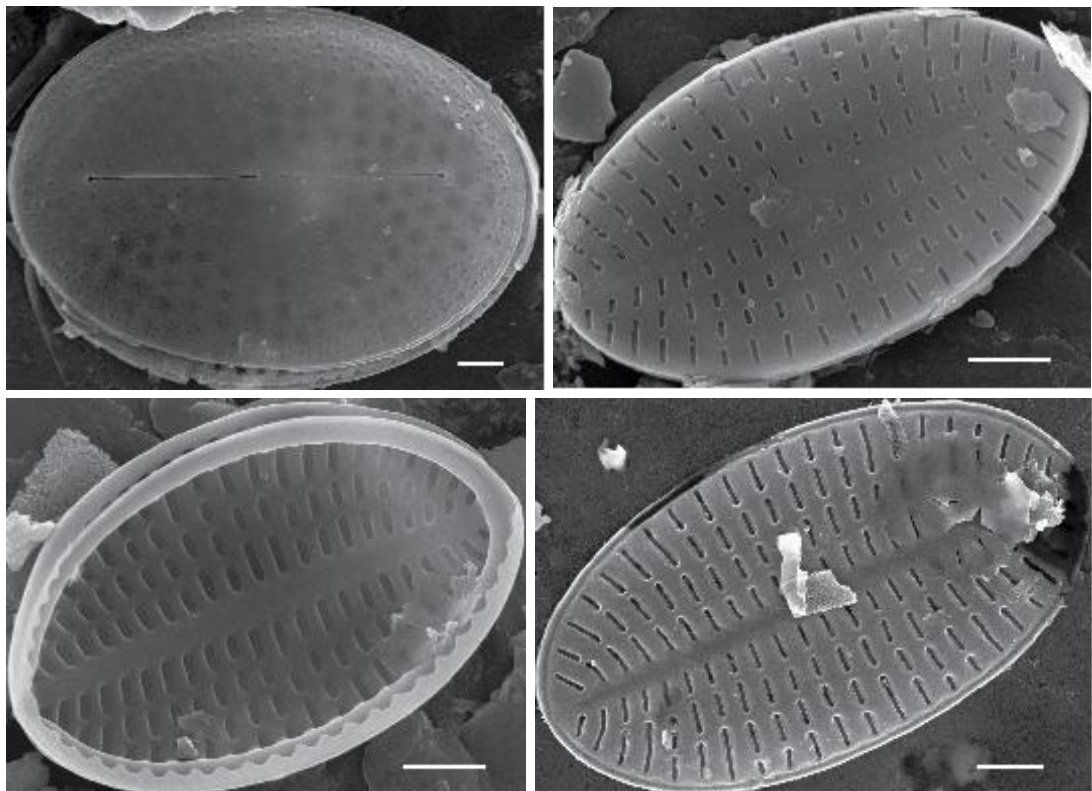
Fig. 52: Sample COAST096, Cape May Peninsula, NJ.

Fig. 53: Sample BBDC0045, Barnegat Bay, NJ.

Fig. 54: Sample BBDC0015, Barnegat Bay, NJ.



1 - 50



51 - 54

Plate 108 (Scale bars: Figs 1-10; 13-20=10 µm; Figs 11-12; 23-24=1 µm)

Figs 1-12: ***Cocconeis peltoides*** Hustedt

Lit.: Hustedt 1939, p. 606; fig. 23-27

- Fig. 1: Sample BBDC0045, Barnegat Bay, NJ.
- Fig. 2: Sample COAST009, Great South Bay, NY.
- Fig. 3: Sample COAST014, Great South Bay, NY.
- Fig. 4: Sample COAST010, Great South Bay, NY.
- Figs 5-7,9-10: Sample BBDC0041, Barnegat Bay, NJ.
- Fig. 8: Sample BBDC0047, Barnegat Bay, NJ.
- Figs 11-12: Sample BBDC0054, Barnegat Bay, NJ.

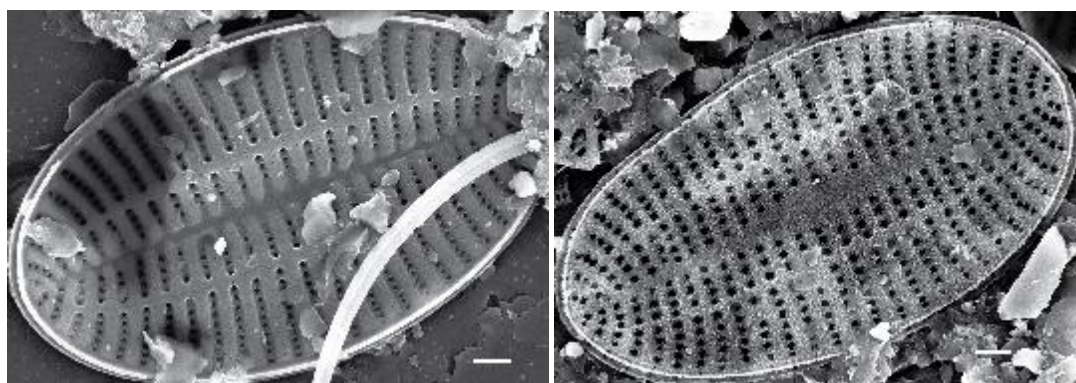
Figs 13-24: ***Cocconeis sigillata*** Riaux-Gobin & Al-Handal

Lit.: Riaux-Gobin et al. 2011: 332, figs 37-45

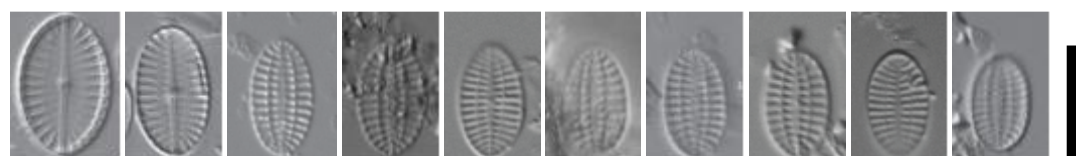
- Figs 13,15: Sample COAST004, Peconic Bay, NY.
- Fig. 14: Sample COAST016, Great South Bay, NY.
- Fig. 16: Sample BB0069, Barnegat Bay, NJ.
- Fig. 17: Sample BB0056, Barnegat Bay, NJ.
- Figs 18,21: Sample BBDC0041, Barnegat Bay, NJ.
- Fig. 19: Sample COAST003, Peconic Bay, NY.
- Fig. 20: Sample BBDC0054, Barnegat Bay, NJ.
- Figs 22-23: Sample BBDC0045, Barnegat Bay, NJ.
- Fig. 24: Sample COAST022, Great South Bay, NY.



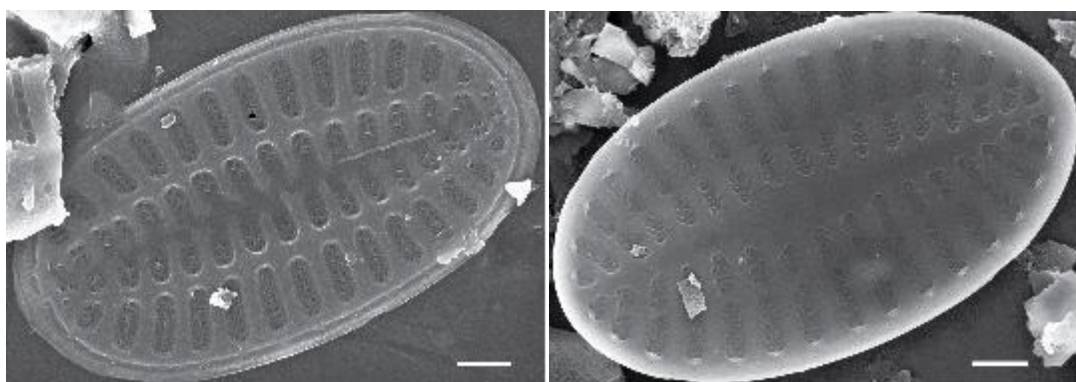
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11 - 12



13 - 22



23 - 24

Plate 109

(Scale bars: Figs 1-10=10 µm; Figs 11-13=1 µm)

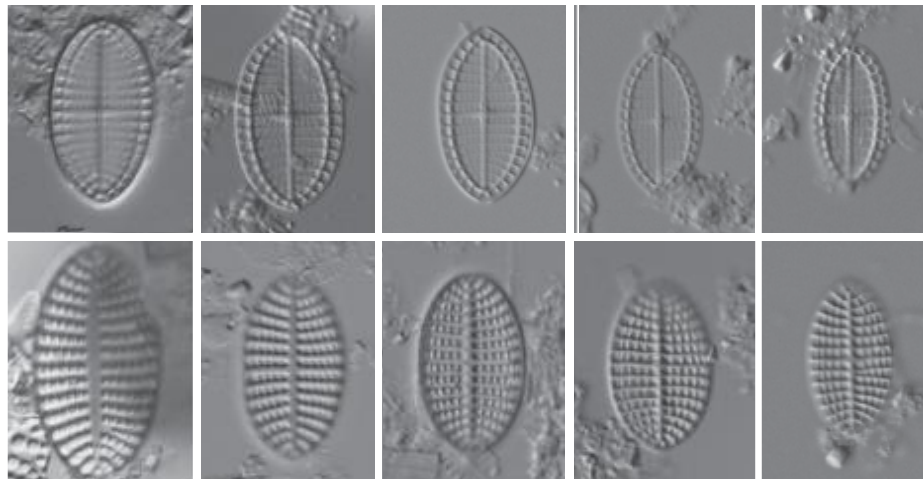
Cocconeis stauroneiformis (Smith; Rabenhorst) Okuno

Lit.: Okuno 1957, p. 217; fig. 2, pl. 6/2

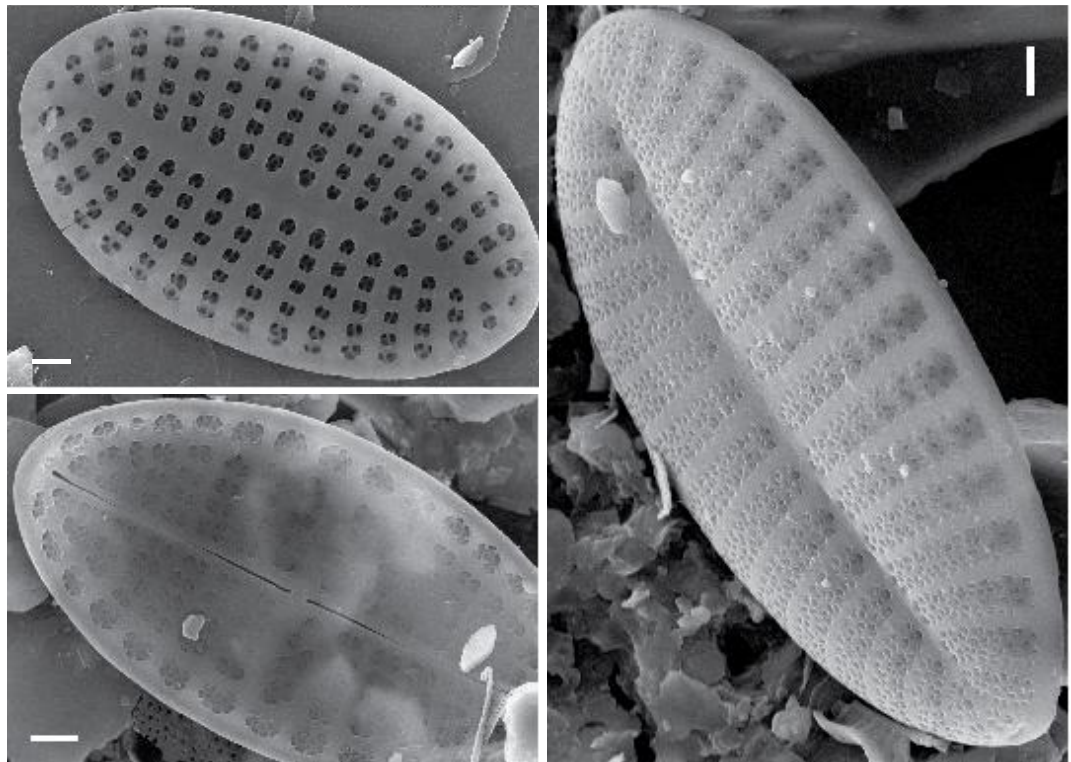
Basionym: *Cocconeis scutellum* var. *stauroneiformis* Rabenhorst 1864

Figs 1,8-9: Sample BBDC0044, Barnegat Bay, NJ.

Figs 2-7,10-13: Sample BBDC0051, Barnegat Bay, NJ.



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11 - 13

Plate 110 (Scale bars: Figs 1-10; 12-21=10 µm; Fig. 11=1 µm)

Figs 1-11: ***Cocconeis cf. scutellum***

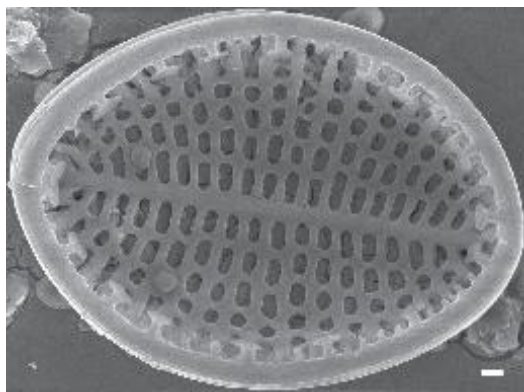
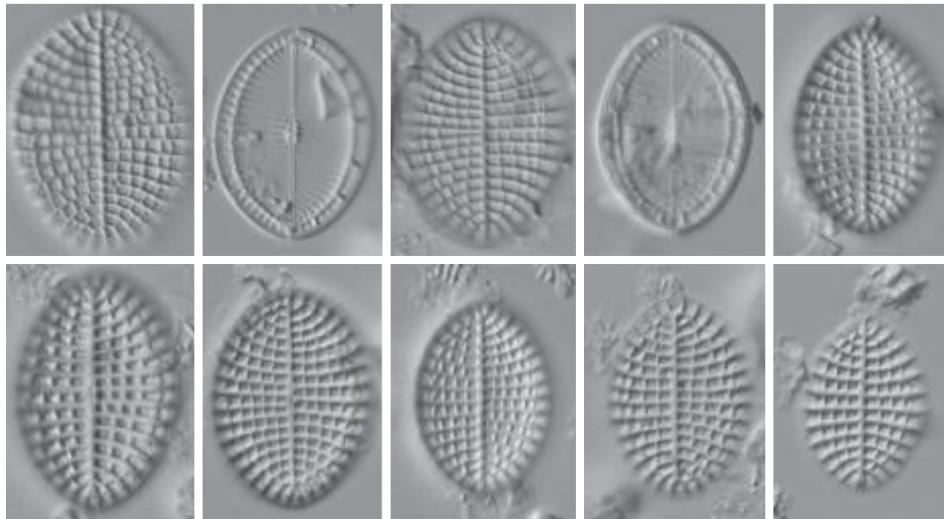
Figs 1,4-6,9: Sample BBDC0051, Barnegat Bay, NJ.

Figs 2-3,7-8,10: Sample BBDC0044, Barnegat Bay, NJ.

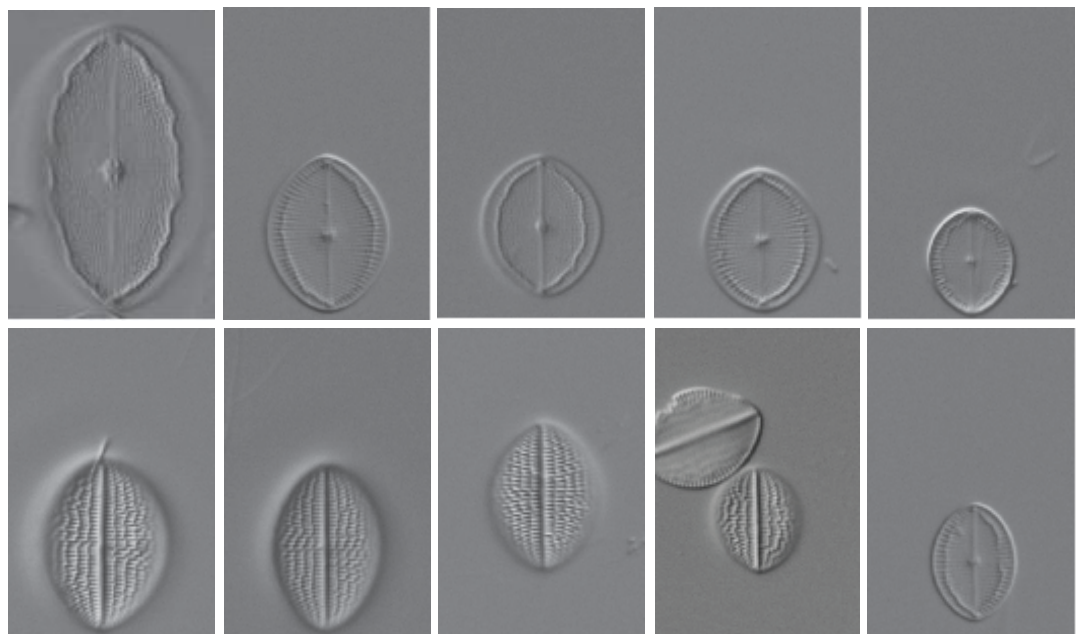
Fig. 11: Sample BBDC0050, Barnegat Bay, NJ.

Figs 12-21: ***Cocconeis sp. 5***

Figs 12-21: Sample RUTG0791, Tuckerton Bay, NJ.



1 - 11



12 - 21

Amphicocconeis disculoides (Hustedt) De Stefano & Marino

Lit.: De Stefano & Marino 2002, p. 262

Basionym: *Cocconeis disculoides* Hustedt 1955

Figs 1-2,5,8,10-13,15-17,19-21,23-25,28: Sample BBDC0041, Barnegat Bay, NJ.

Figs 3-4,14,18,26-27,29: Sample BBDC0044, Barnegat Bay, NJ.

Figs 6-7: Sample BBDC0084, Barnegat Bay, NJ.

Fig. 9: Sample BBDC0062, Barnegat Bay, NJ.

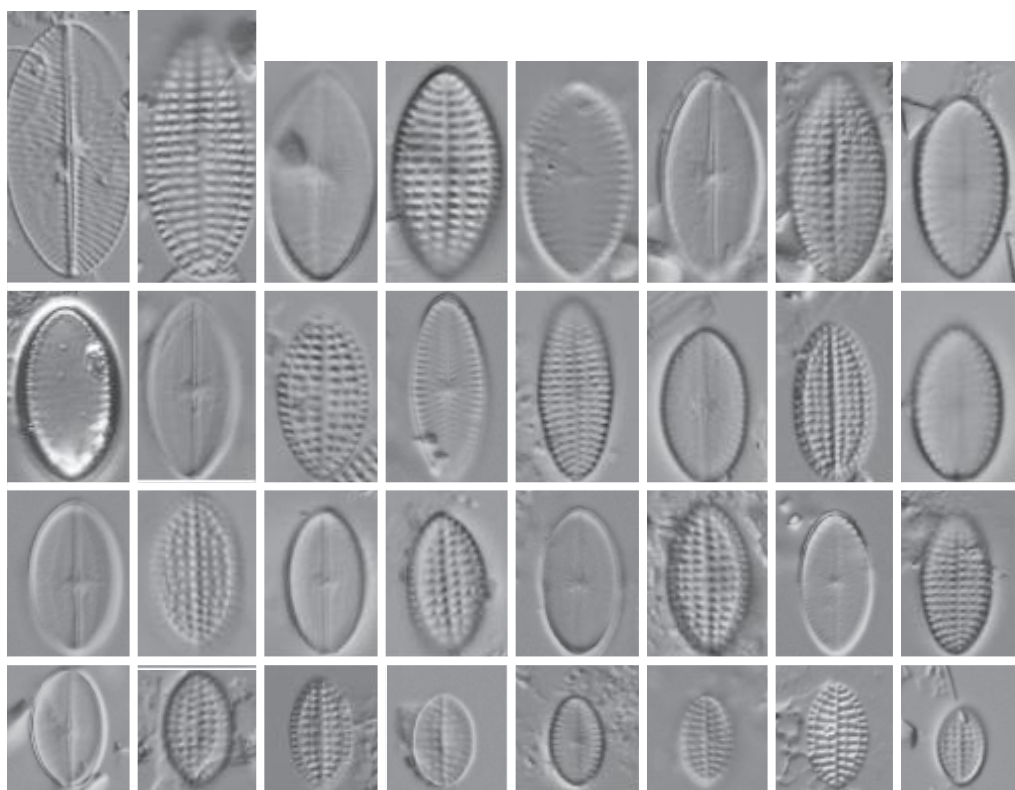
Fig. 22: Sample BBDC0066, Barnegat Bay, NJ.

Fig. 31: Sample BBDC0068, Barnegat Bay, NJ.

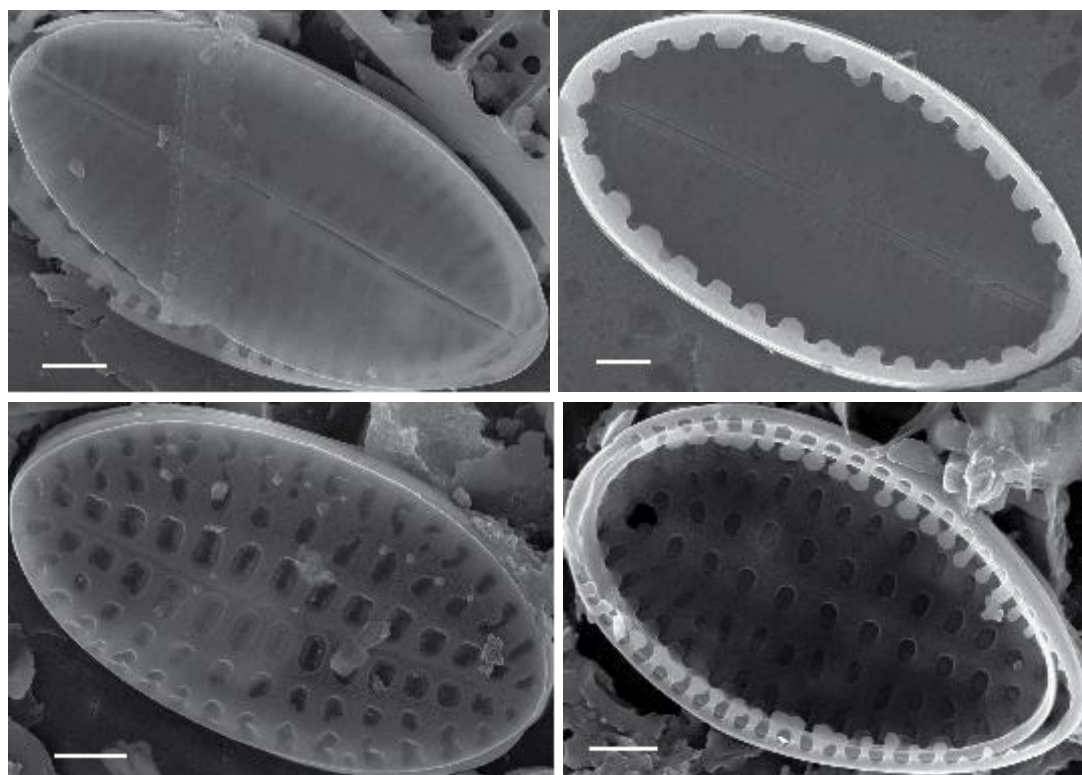
Fig. 32: Sample BBDC0052, Barnegat Bay, NJ.

Figs 33,35-36: Sample BBDC0054, Barnegat Bay, NJ.

Fig. 34: Sample BBDC0038, Barnegat Bay, NJ.



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33 - 36

Figs 1-14: ***Cocconeopsis breviata*** (Hustedt) Witkowski, Lange-Bertalot & Metzeltin

Lit.: Witkowski, Lange-Bertalot & Metzeltin: 2000, p. 172

Basionym: *Navicula breviata* Hustedt 1964

Fig. 1: Sample BB0055, Barnegat Bay, NJ.

Fig. 2: COAST009, Great South Bay, NY.

Fig. 3: Sample BBDC0016, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0003, Barnegat Bay, NJ.

Fig. 5: Sample BBDC0054, Barnegat Bay, NJ.

Figs 6,11: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 7: Sample BBDC0041, Barnegat Bay, NJ.

Fig. 8: Sample BBDC0048, Barnegat Bay, NJ.

Figs 9-10: Sample COAST054, Barnegat Bay, NJ.

Fig. 12: Sample BB0052, Barnegat Bay, NJ.

Fig. 13: Sample BBDC0038, Barnegat Bay, NJ.

Fig. 14: Sample COAST030, Western Bay, NY.

Figs 15-21: ***Cocconeopsis fraudulenta*** (Schmidt) Witkowski, Lange-Bertalot & Metzeltin

Lit.: Witkowski, Lange-Bertalot & Metzeltin: 2000, p. 173

Basionym: *Navicula fraudulenta* Schmidt in Schmidt et al. 1881Synonym: *Schizonema fraudulentum* (Schmidt) Kuntze 1898

Fig. 15: Sample BB0054, Barnegat Bay, NJ.

Fig. 16: Sample BBDC0032, Barnegat Bay, NJ.

Fig. 17: COAST002, Peconic Bay, NY.

Figs 18-20: COAST004, Peconic Bay, NY.

Fig. 21: Sample BBDC0018, Barnegat Bay, NJ.

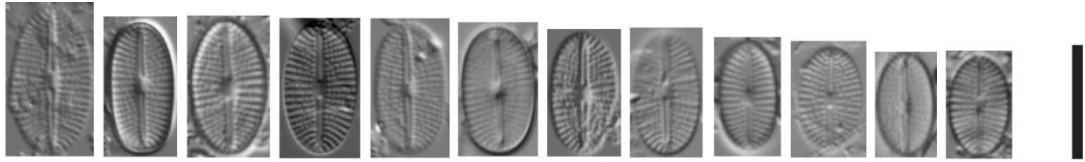
Fig. 22: ***Cocconeopsis* sp. 1**

Fig. 22: COAST025, Great South Bay, NY.

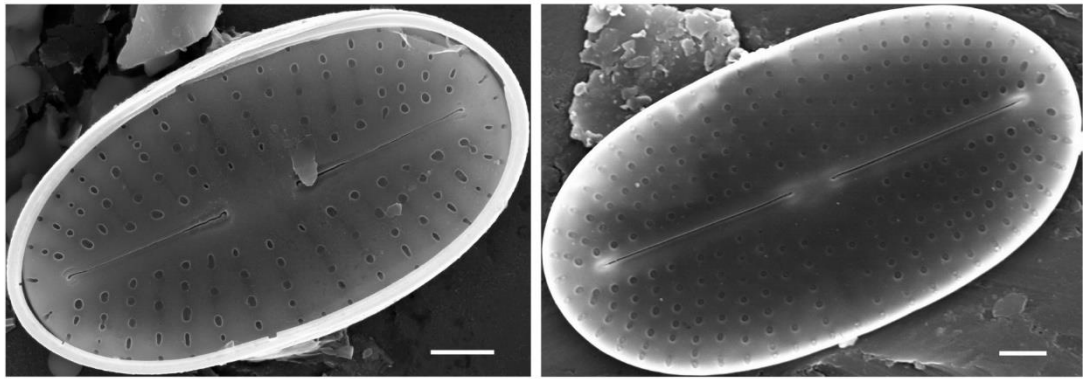
Figs 23-24: ***Cocconeopsis* sp. 2**

Fig. 23: COAST002, Peconic Bay, NY.

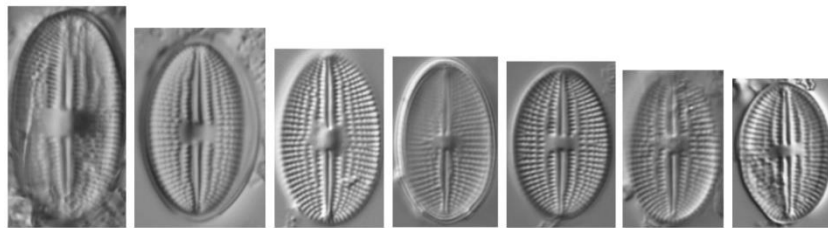
Fig. 24: Sample BBDC0044, Barnegat Bay, NJ.



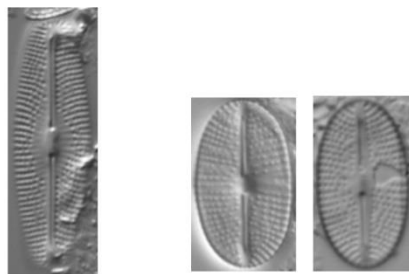
1 - 12



13 - 14



15 - 21



22

23 - 24

Astartiella bahusiensis (Grunow Lit.:Van Heurck) Witkowski, Lange-Bertalot & Metzeltin

Lit.: Moser, Lange-Bertalot & Metzelt Lit.: 1998, p. 359

Basionym: *Navicula minuscula* var. *bahusiensis* Grunow in Van Heurck 1880

Synonym: *Achnanthes bahusiensis* (Grunow) Lange-Bertalot in Lange-Bertalot & Krammer 1989

Navicula bahusiensis (Grunow) Cleve 1895

Schizonema bahusiense (Grunow) Kuntze 1898

Fig. 1: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 2: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0008, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0046, Barnegat Bay, NJ.

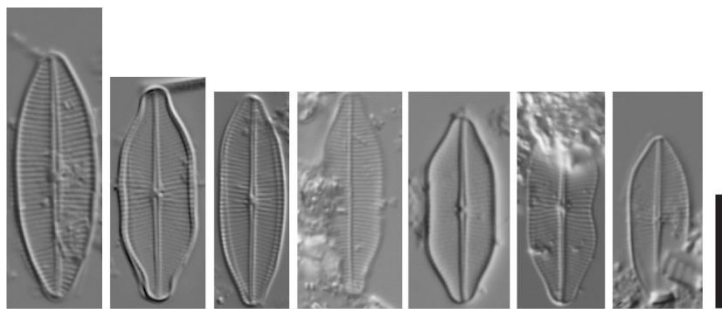
Fig. 5: Sample BBDC0041, Barnegat Bay, NJ.

Fig. 6: Sample BBDC0049, Barnegat Bay, NJ.

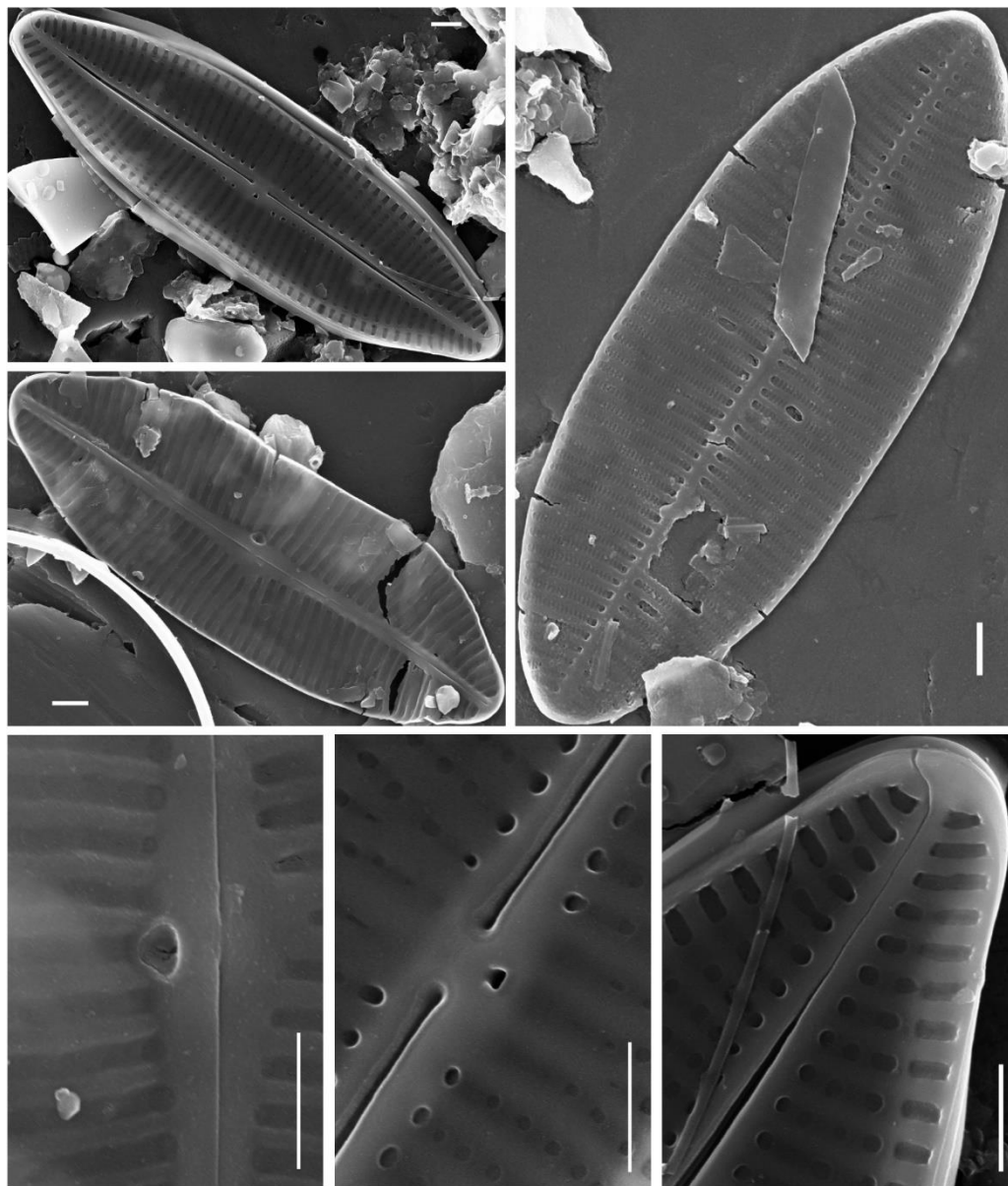
Figs 7,9,11: Sample BBDC0051, Barnegat Bay, NJ.

Figs 8,12-13: Sample BBDC0080, Barnegat Bay, NJ.

Fig. 10: Sample BBDC0050, Barnegat Bay, NJ.



1 - 7



8 - 13

Planothidium delicatulum (Kützing) Round & Bukhtiyarova

Lit.:Round et Bukhtiyarova 1996, p. 353

Basionym: *Achnanthidium delicatulum* Kützing 1844

Synonym: *Achnanthes delicatula* (Kützing) Brun 1880

Achnanthes delicatula (Kützing) Grunow in Cleve & Grunow 1880

Microneis delicatula (Kützing) Cleve 1895

Falcatella delicatula (Kützing) Rabenhorst 1853

Achnantheiopsis delicatula (Kützing) Lange-Bertalot 1997

Figs 1-2: Sample RUTG0001, Cape May Courthouse, NJ.

Figs 3-4: Sample BBDC0044, Barnegat Bay, NJ.

Figs 5-6,9,11-12: Sample BBDC0036, Barnegat Bay, NJ.

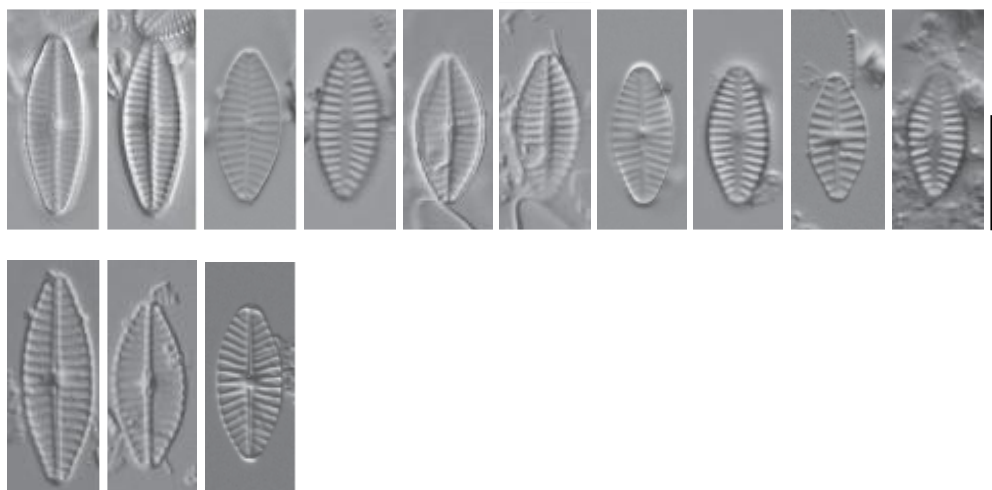
Figs 7-8: Sample BBDC0052, Barnegat Bay, NJ.

Fig. 10: Sample BB0066, Barnegat Bay, NJ.

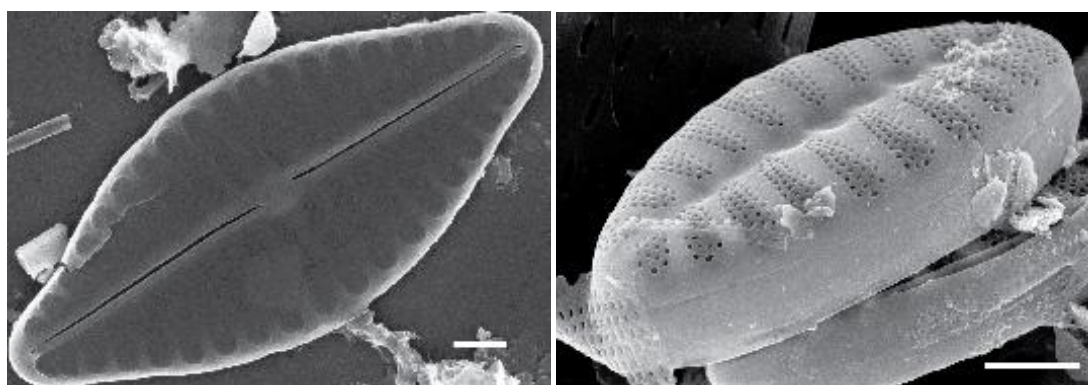
Fig. 13: Sample BB0054, Barnegat Bay, NJ.

Fig. 14: Sample BBDC0037, Barnegat Bay, NJ.

Fig. 15: Sample BBDC0106, Great Bay, NJ.



1 - 13



14 - 15

Plate 115

(Scale bars: Figs 1-10=10 μm ; Figs 11-13=1 μm)

***Planothidium* sp. 11**

Figs 1,9: COAST001, Peconic Bay, NY.

Figs 2-4: COAST002, Peconic Bay, NY.

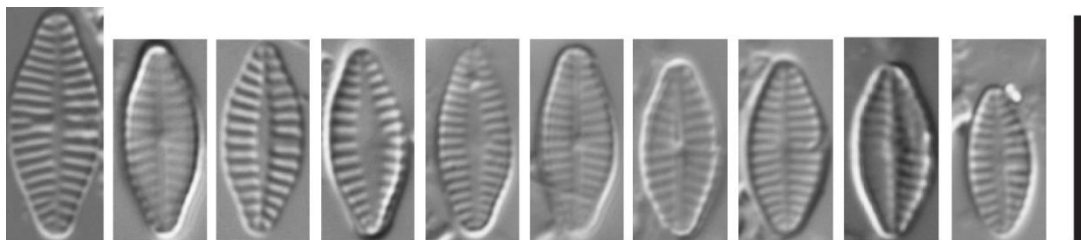
Figs 5-6,10: COAST004, Peconic Bay, NY.

Figs 7-8: COAST010, Great South Bay, NY.

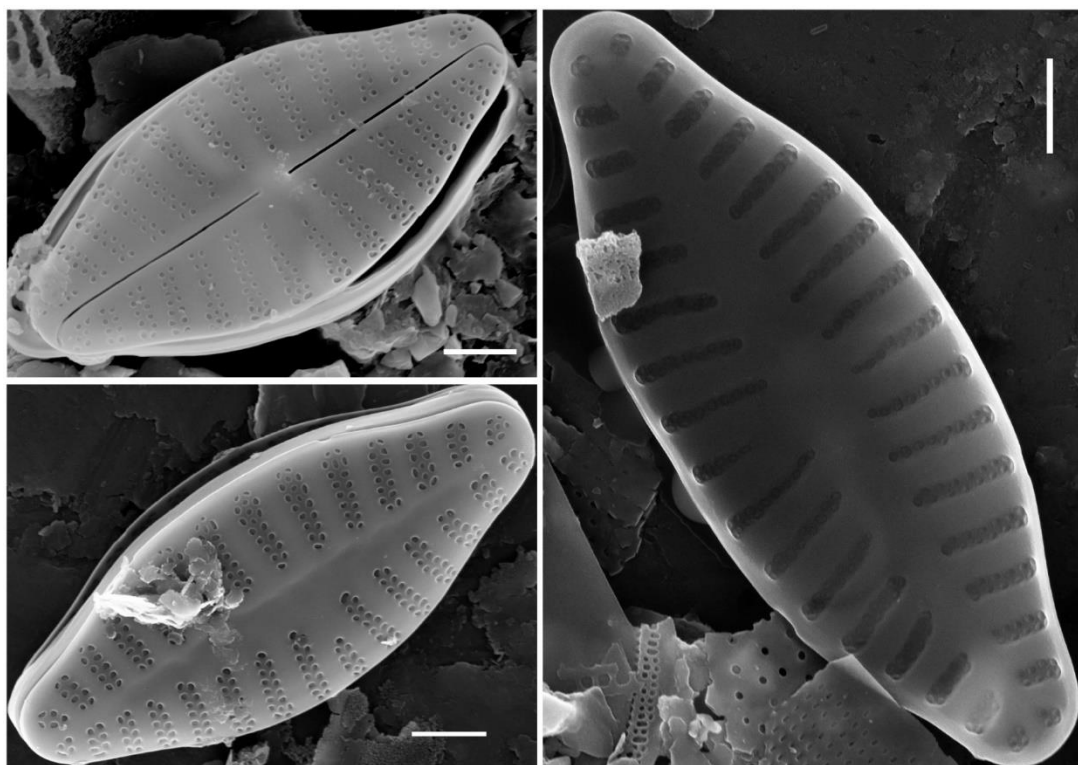
Fig. 11: Sample BBDC0095, Great Bay, NJ.

Fig. 12: COAST003, Peconic Bay, NY.

Fig. 13: Sample BBDC0030, Barnegat Bay, NJ.



1 - 10



11 - 13

Planothidium rodriguense Riaux-Gobin & Compère

Lit.: Riaux-Gobin et al. 2012: 297, figs 1, 13-25

Figs 1-5: COAST0014, Great South Bay, NY.

Fig. 6: COAST009, Great South Bay, NY.

Figs 7-8: COAST010, Great South Bay, NY.

Figs 9-10: COAST003, Peconic Bay, NY.

Fig. 11: Sample BB0055, Barnegat Bay, NJ.

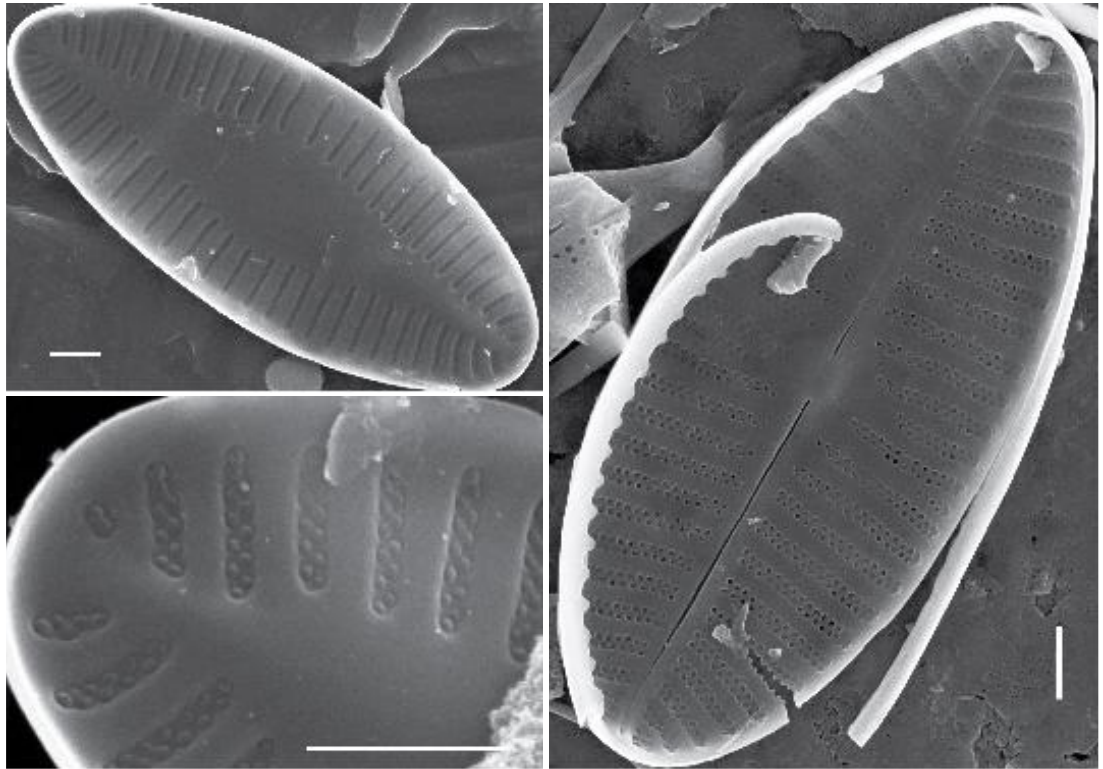
Figs 12-13: Sample BBDC0095, Great Bay, NJ.

Fig. 14: COAST013, Great South Bay, NY.

Figs 15-16: COAST022, Great South Bay, NY.



1 - 13



14 - 16

Plate 117

(Scale bars: Figs 1-16=10 µm; Figs 17-19=1 µm)

Planothidium cf. frequentissimum

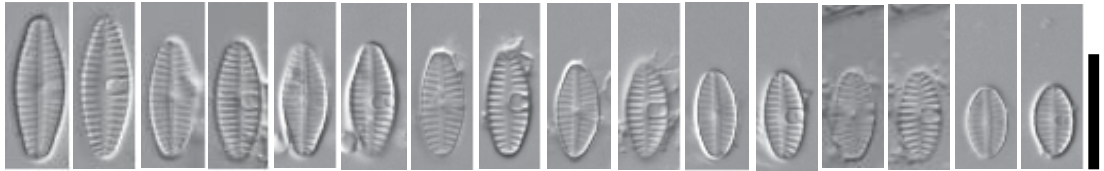
Figs 1-2,5-12,15-16: Sample RUTG0001, Cape May Courthouse, NJ.

Figs 3-4: Sample BBDC0049, Barnegat Bay, NJ.

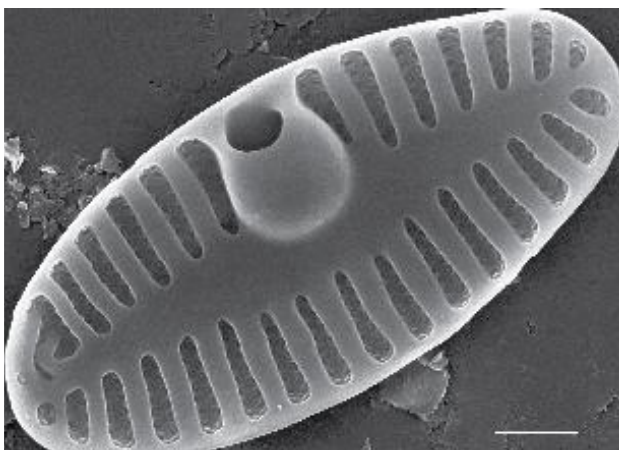
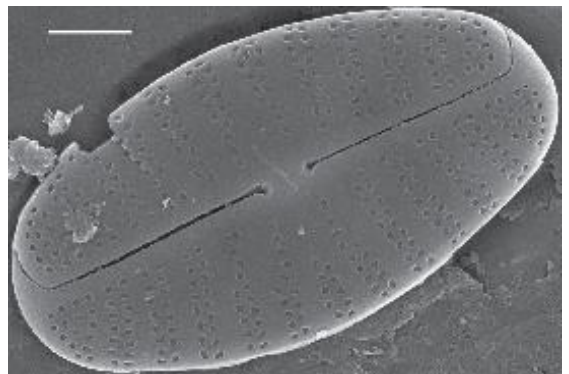
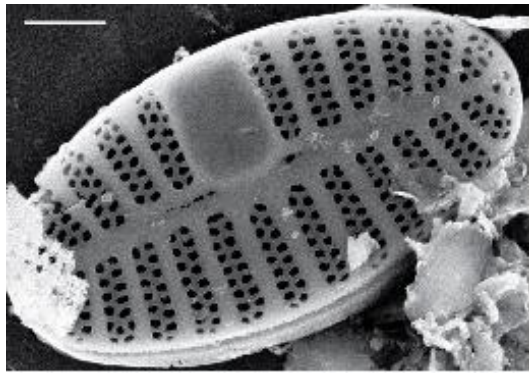
Figs 13-14: Sample BBDC0071, Barnegat Bay, NJ.

Fig. 17: Sample BBDC0040, Barnegat Bay, NJ.

Figs 18-19: Sample BBDC0037, Barnegat Bay, NJ.



1 - 16



17 - 19

Plate 118

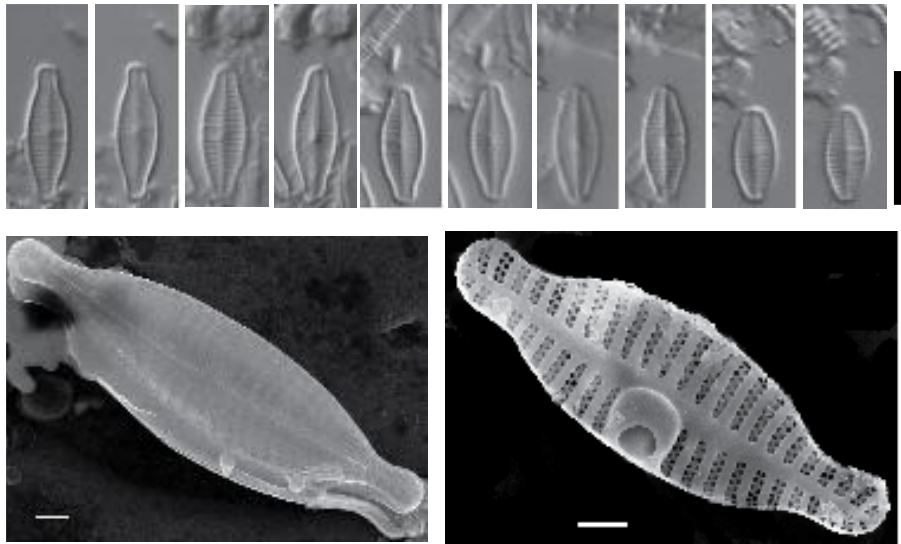
(Scale bars: Figs 1-10=10 μm ; Figs 11-12=1 μm)

***Planothidium cf. frequentissimum* morphotype 2**

Figs 1-11: Sample RUTG0852, Bass River, NJ.

Fig. 12: Sample BBDC0038, Barnegat Bay, NJ.

Fig. 13: Sample BB0003, Barnegat Bay, NJ.



1 - 12

Planothidium deperditum (Giffen) Witkowski, Lange-Bertalot & Metzeltin

Lit.:Witkowski, Lange-Bertalot & MetzeltLit.:2000, p. 119

Basionym: *Cocconeis deperdita* Giffen 1975

Figs 1,4-5: COAST0021, Great South Bay, NY.

Fig. 2: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 3: COAST010, Great South Bay, NY.

Fig. 6: Sample BBEDC058, Cattus Island, NJ.

Fig. 7: COAST002, Peconic Bay, NY.

Figs 8,10: COAST0051, Barnegat Bay, NJ.

Fig. 9: COAST0052, Barnegat Bay, NJ.

Fig. 11: Sample BB079, Barnegat Bay, NJ.

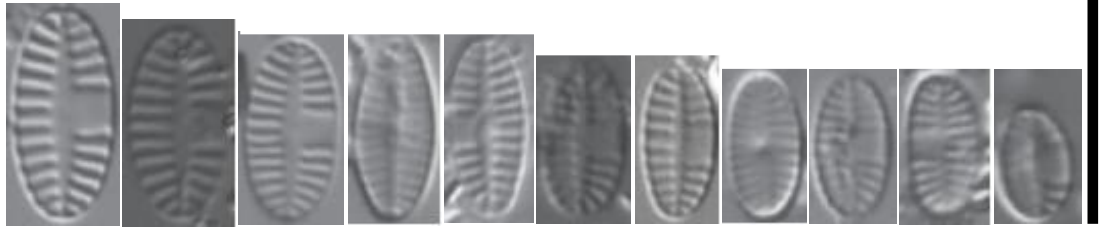
Fig. 12: COAST0054, Barnegat Bay, NJ.

Figs 13,15: Sample BBDC0047, Barnegat Bay, NJ.

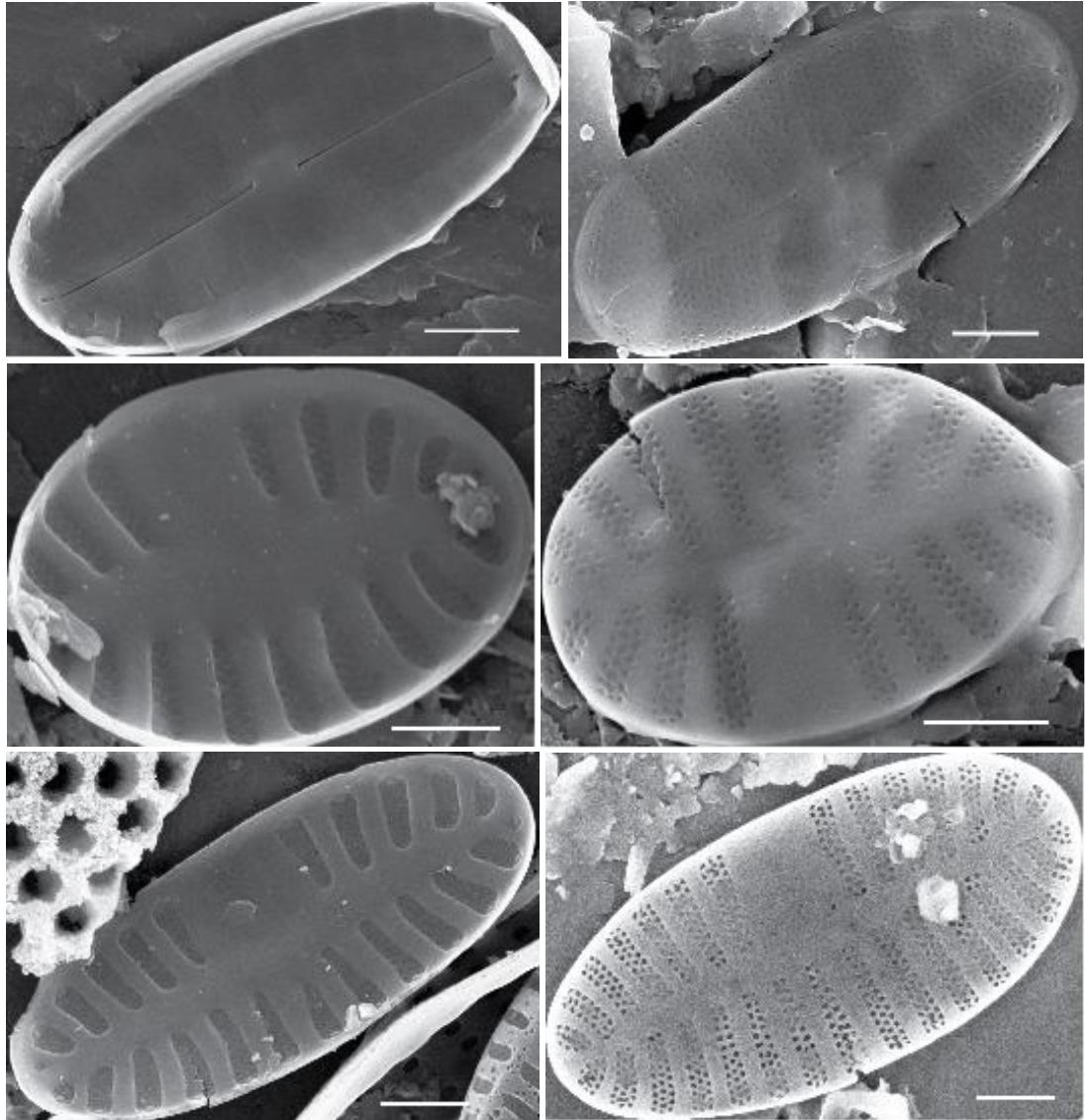
Fig. 14: COAST0068, North East Jersey shore, NJ.

Fig. 16: COAST0022, Great South Bay, NY.

Fig. 17: Sample BBDC0054, Barnegat Bay, NJ.



1 - 11



12 - 17

Planothidium lemmermannii (Hustedt) Morales

Lit.: Morales 2006, p. 336

Basionym: *Achnanthes lemmermannii* Hustedt 1933

Figs 1-8,10-12: COAST0052, Barnegat Bay, NJ.

Fig. 9: Sample BBDC0002, Barnegat Bay, NJ.

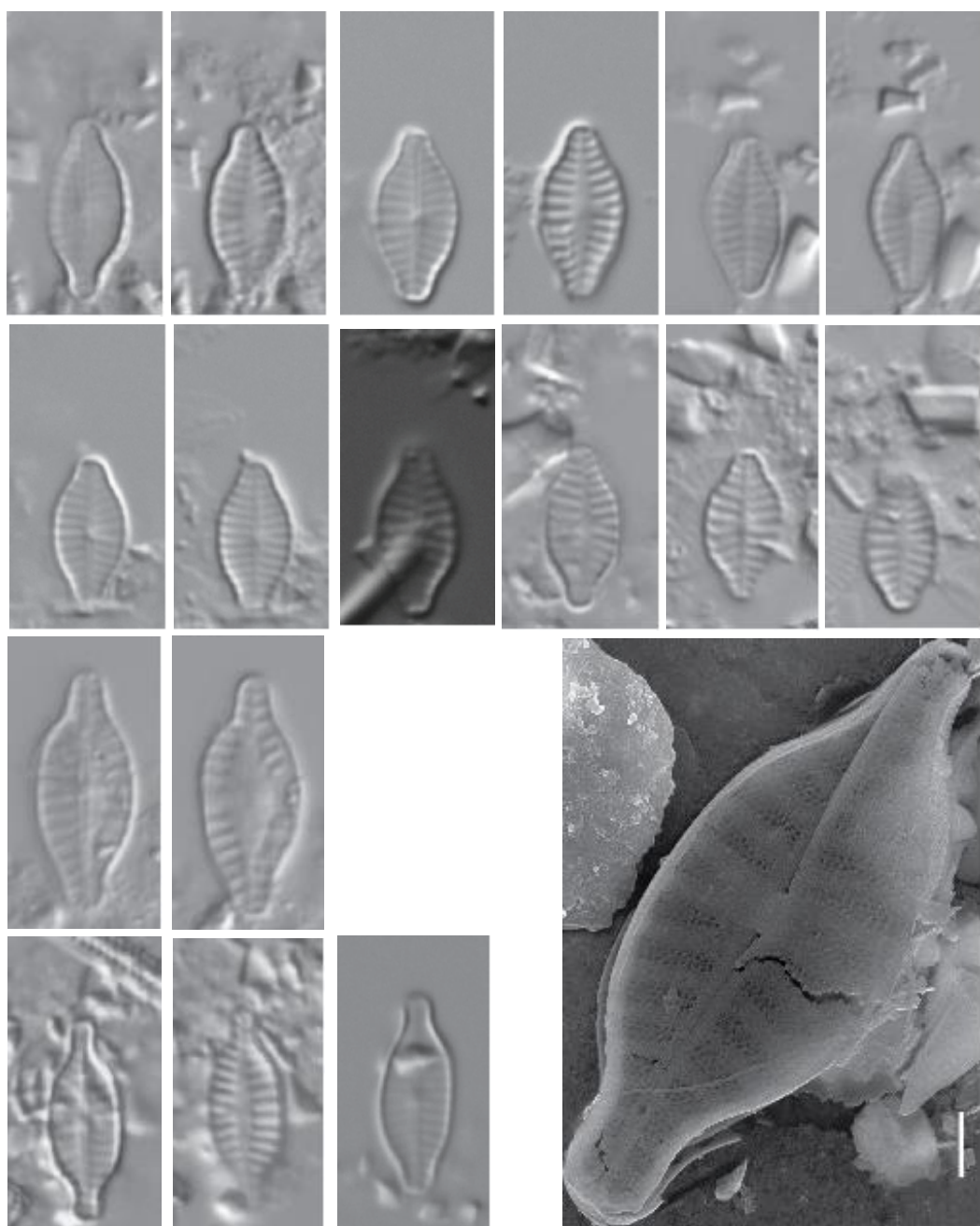
Figs 13-14: COAST002, Peconic Bay, NY.

Fig. 14: COAST0068, North East Jersey shore, NJ.

Figs 15-16: COAST0051, Barnegat Bay, NJ.

Fig. 17: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 18: Sample BBDC0003, Barnegat Bay, NJ.



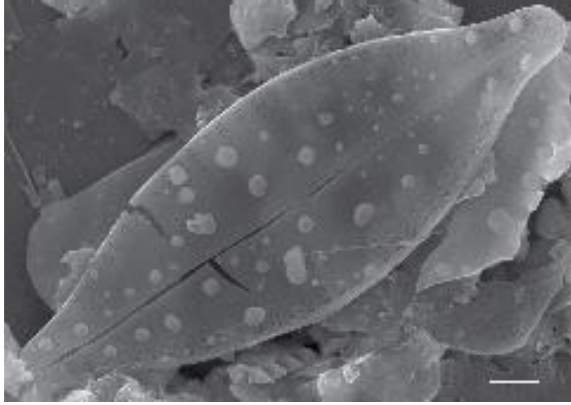
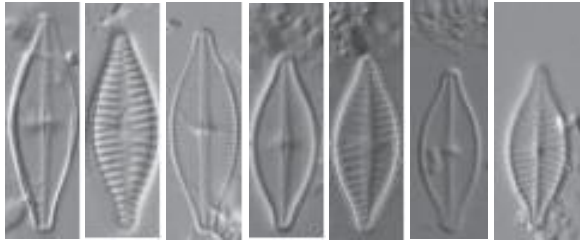
1 - 18

Planothidium oculatum (Hustedt) Witkowski, Lange-Bertalot & Metzeltin

Lit.: Witkowski, Lange-Bertalot & Metzeltin, 2000, p. 122

Basionym: *Achnanthes oculata* Hustedt 1952

- Fig. 1: Sample BBDC0063, Barnegat Bay, NJ.
Figs 2-3: COAST0027, Great South Bay, NY.
Figs 4-5: Sample BBDC0068, Barnegat Bay, NJ.
Fig. 6: Sample BBDC0055, Barnegat Bay, NJ.
Fig. 7: Sample BBDC0059, Barnegat Bay, NJ.



1 - 8

Plate 122 (Scale bars: Figs 1-10; 16-21=10 µm; Figs 11-15=1 µm)

Figs 1-15: ***Karayevia submarina*** (Hustedt) Bukhtiyarova

Lit.:Bukhtiyarova 2006, p. 91

Basionym: *Achnanthes submarina* Hustedt 1956

Figs 1-2,7: Sample BBDC0065, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0069, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0007, Barnegat Bay, NJ.

Figs 5-6: Sample BBDC0001, Barnegat Bay, NJ.

Figs 8-9: Sample BBDC0046, Barnegat Bay, NJ.

Fig. 10: Sample BBDC0071, Barnegat Bay, NJ.

Figs 11-14: Sample BBDC0038, Barnegat Bay, NJ.

Fig. 15: Sample BBDC0016, Barnegat Bay, NJ.

Figs 16-21: ***Karayevia amoena*** (Hustedt) Bukhtiyarova

Lit.:Bukhtiyarova 2006, p. 94

Basionym: *Achnanthes amoena* Hustedt 1952

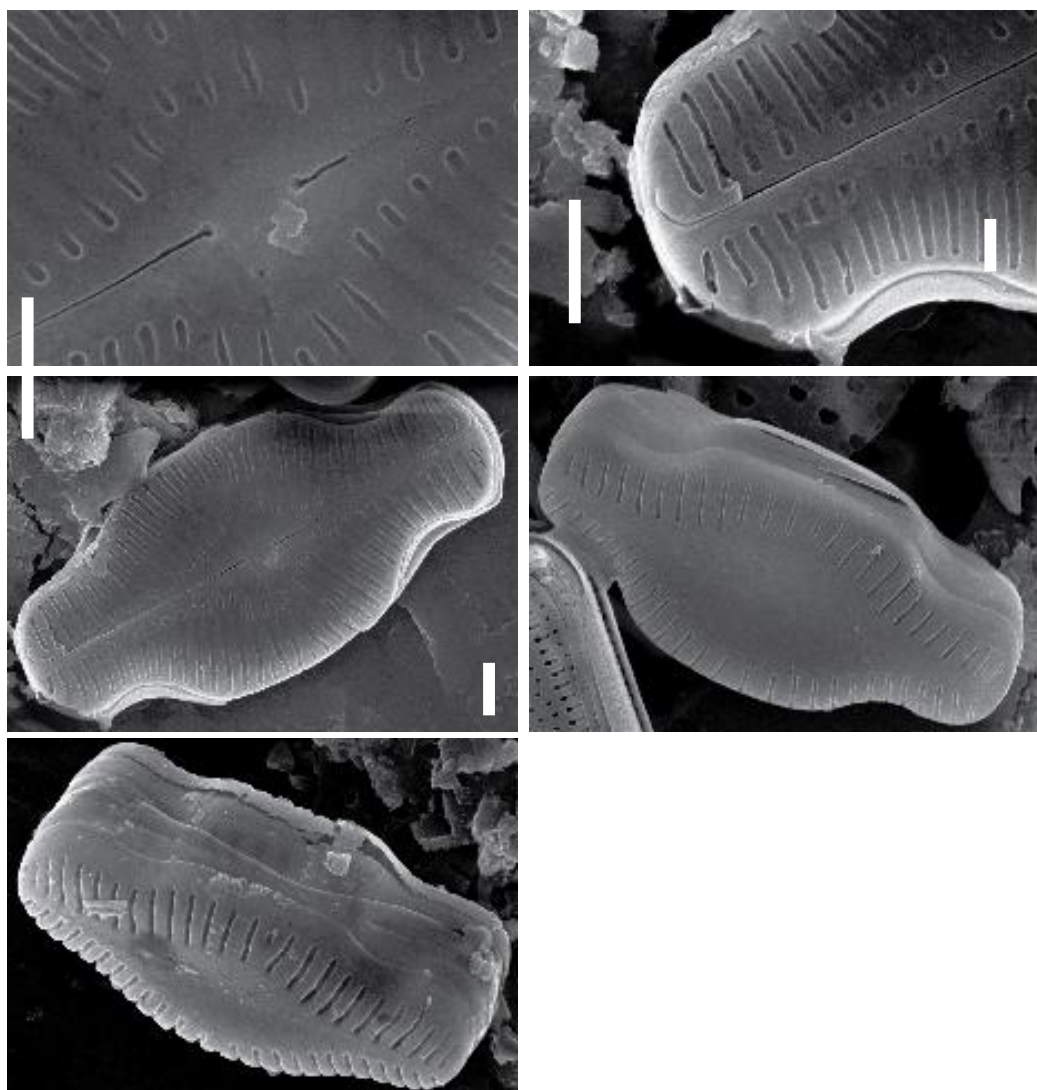
Figs 16-17: COAST0053, Barnegat Bay, NJ.

Figs 18-19: Sample BBDC0037, Barnegat Bay, NJ.

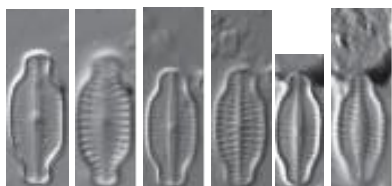
Figs 20-21: Sample BB0001, Barnegat Bay, NJ.



1 - 10



11 - 15



16 - 21

Plate 123

(Scale bars: Figs 1-31=10 µm; Figs 32-33=1 µm)

Madinithidium capitatum Desrosiers, Witkowski & Riaux-Gobin

Lit.: Desrosiers, Witkowski, Riaux-Gobin, Zglobicka, Kurzydłowski, Eulin, Leflaive, & Ten-Hage. 2014. p.583-592, figs 1-22.

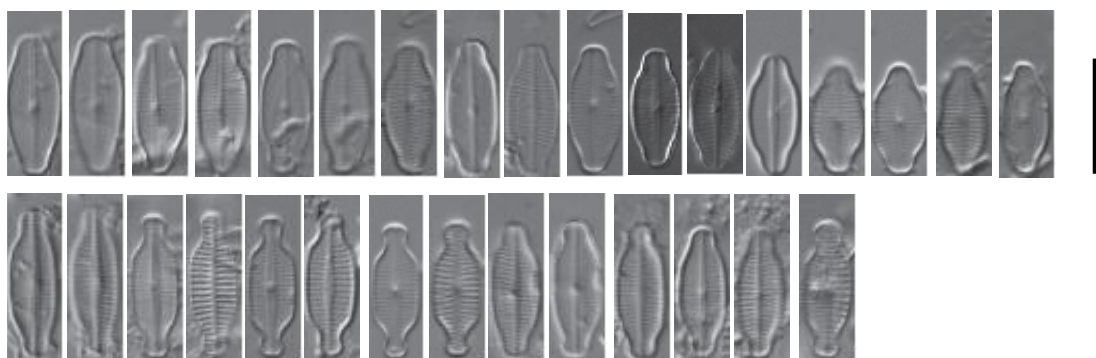
Figs 1-10,13-17,20-31: Sample BBDC0037, Barnegat Bay, NJ.

Fig. 11: Sample BBDC0001, Barnegat Bay, NJ.

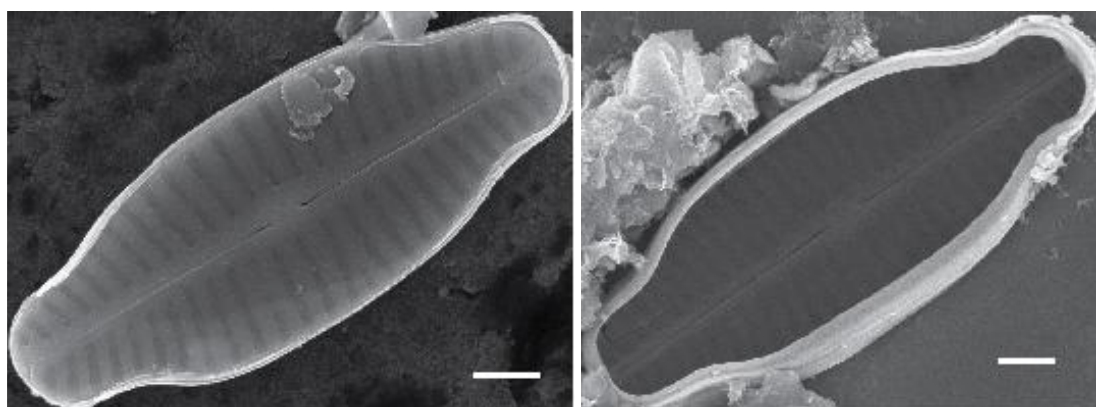
Fig. 12: Sample BBDC0005, Barnegat Bay, NJ.

Figs 18-19: Sample BBDC0075, Barnegat Bay, NJ.

Figs 32-33: Sample BBDC0003, Barnegat Bay, NJ.



1 - 31



32 - 33

Plate 124

(Scale bars: Figs 1-24=10 µm; Figs 25-30=1 µm)

Madinithidium flexuistriatum Desrosiers, Witkowski & Riaux-Gobin

Lit.: Desrosiers, Witkowski, Riaux-Gobin, Zglobicka, Kurzydłowski, Eulin, Leflaive, & Ten-Hage. 2014. p.583-592, figs 1-22.

Basionym: *Achnanthidium flexuistriatum* Riaux-Gobin, Compère & Witkowski 2010

Fig. 1: COAST0002, Peconic Bay, NY.

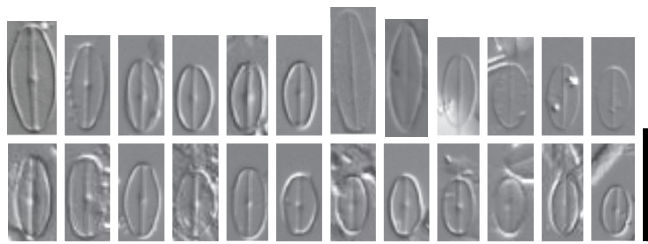
Figs 2-6,9-14,16-24: COAST0015, Great South Bay, NY.

Fig. 7: COAST0013, Great South Bay, NY.

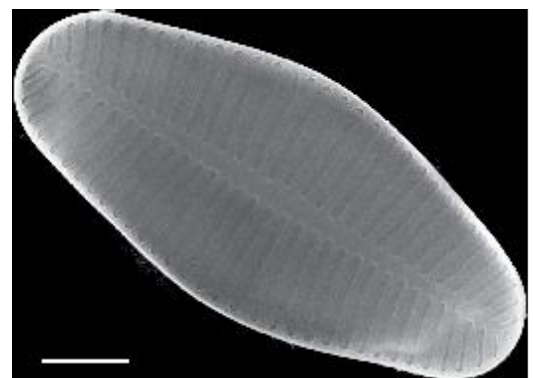
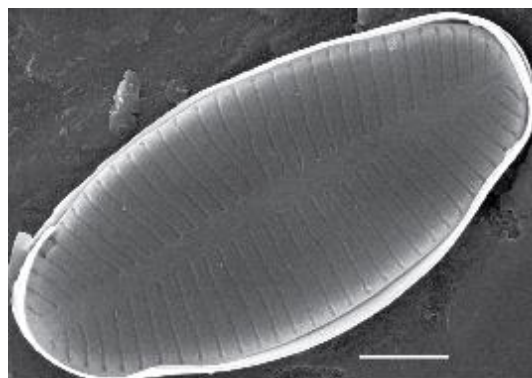
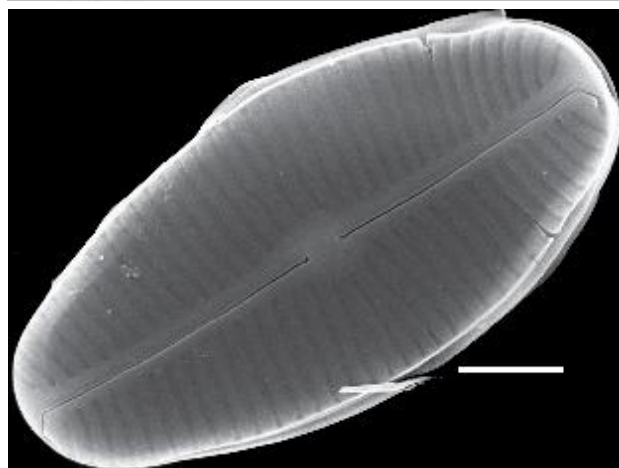
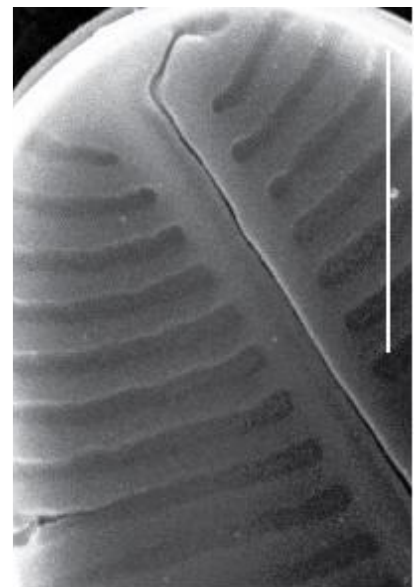
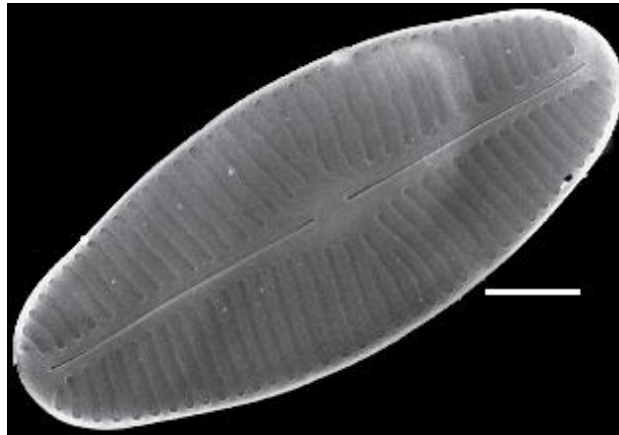
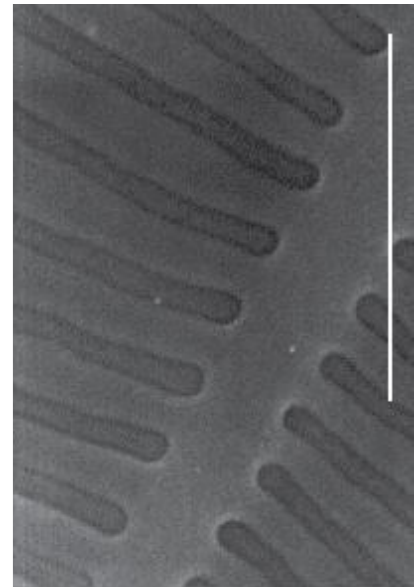
Fig. 8: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 15: COAST0004, Peconic Bay, NY.

Figs 25-30: COAST0003, Peconic Bay, NY.



1 - 24



25 - 30

Figs 1-2: ***Parlibellus crucicula*** (Smith) Witkowski, Lange-Bertalot & Metzeltin
Lit.: Witkowski, Lange-Bertalot & Metzeltin 2000, p. 321

Basionym: *Stauroneis crucicula* Smith 1853

Synonyms: *Navicula crucicula* (Smith) Donkin 1871

Schizonema crucicula (Smith) Kuntze 1898

Fig. 1: Sample BBDC0049, Barnegat Bay, NJ.

Fig. 2: Sample BB0064, Barnegat Bay, NJ.

Fig. 3: ***Parlibellus grevilleoides*** (Hustedt) Cox

Lit.: Cox 1988, p. 23

Basionym: *Navicula grevilleoides* Hustedt 1962

Fig. 3: Sample RUTG0863, Pilot Drive, NJ.

Figs 4-5: ***Parlibellus* sp. 1**

Fig. 4: Sample RUTG0870, Eugene Furey, NJ.

Fig. 5: Sample BBDC0108, Great Bay, NJ.

Figs 6-7: ***Parlibellus plicatus*** (Donkin) Cox

Lit.: Cox 1988, p. 25; fig. 28, 31, 32, 39

Basionym: *Navicula plicata* Donkin

Fig. 6: Sample BB0076, Barnegat Bay, NJ.

Fig. 7: Sample BB0064, Barnegat Bay, NJ.

Figs 8-9: ***Parlibellus* sp. 8**

Figs 8-9: Sample BBDC0009, Barnegat Bay, NJ.

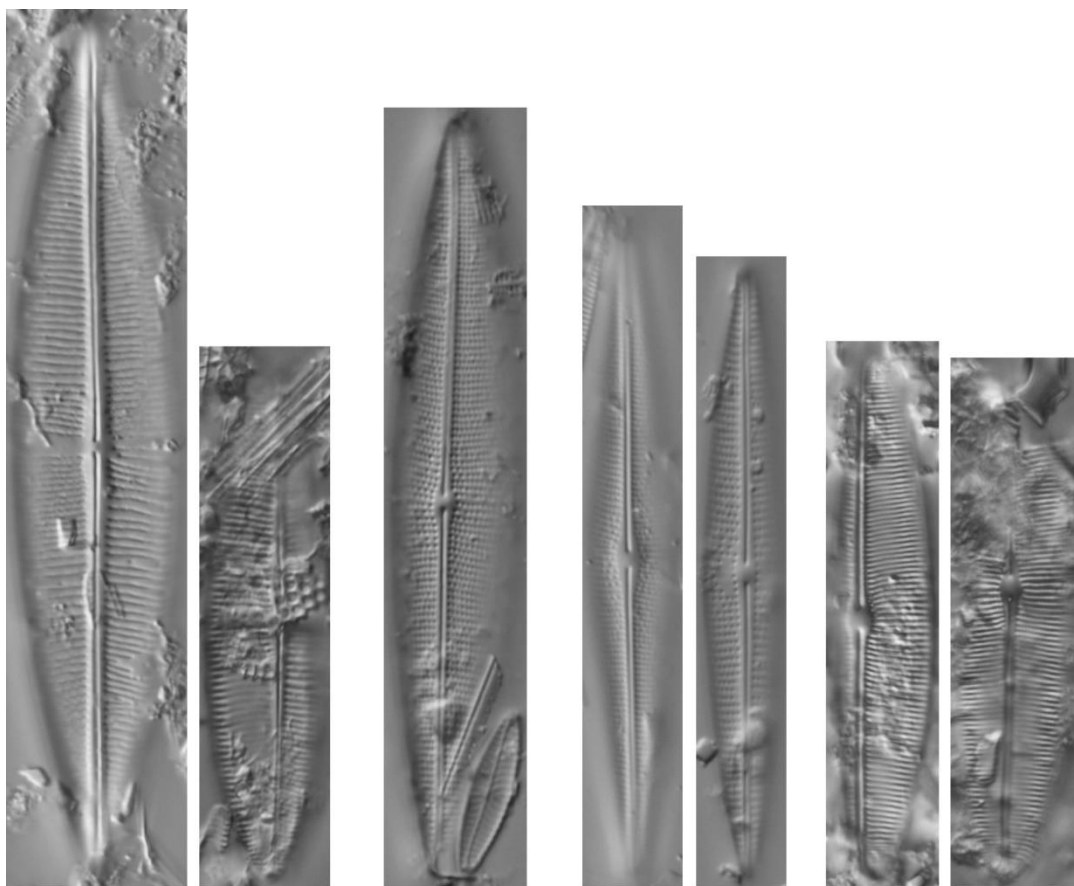
Figs 10-13: ***Parlibellus* sp. 9**

Fig. 10: Sample BBDC0002, Barnegat Bay, NJ.

Fig. 11: Sample BBDC0058, Barnegat Bay, NJ.

Fig. 12: Sample GB023, Great Bay, NJ.

Fig. 13: Sample BB0067, Barnegat Bay, NJ.

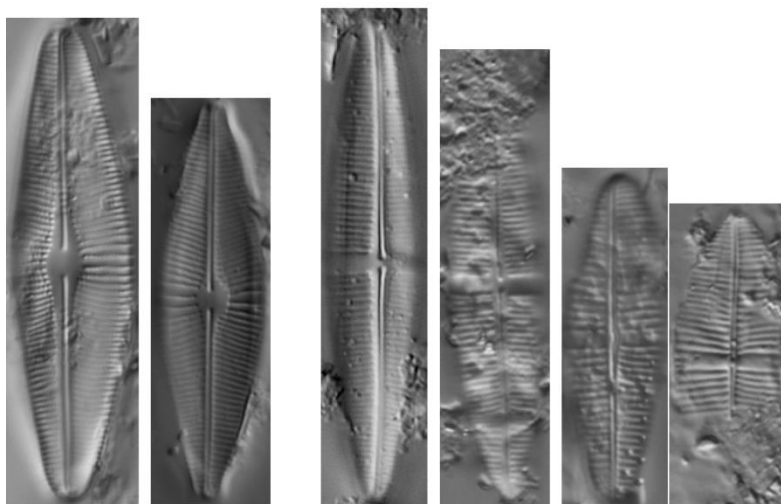


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4 - 5

6 - 7



8 - 9

10 - 13

Figs 1-9: ***Parlibellus cf. crucicula***

Figs 1-8: Sample RUTG0863, Pilot Drive, NJ.

Fig. 9: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 10: ***Parlibellus sp. 3***

Fig. 10: Sample BBDC0022, Barnegat Bay, NJ.

Fig. 11: ***Parlibellus sp. 6***

Fig. 11: Sample BB0065, Barnegat Bay, NJ.

Fig. 12: ***Parlibellus sp. 7***

Fig. 12: Sample BBDC0065, Barnegat Bay, NJ.

Fig. 13: ***Parlibellus sp. 10***

Fig. 13: Sample BBDC0016, Barnegat Bay, NJ.

Fig. 14: ***Parlibellus sp. 11***

Fig. 13: Sample GB001, Great Bay, NJ.

Fig. 15: ***Parlibellus sp. 12***

Fig. 15: Sample RUTG0277, Rutgers Field Station, NJ.

Fig. 16: ***Parlibellus sp. 13***

Fig. 16: Sample COAST043, Barnegat Bay, NJ.

Fig. 17-18: ***Parlibellus protracta*** (Grunow) Witkowski, Lange-Bertalot & Metzeltin

Lit.: Witkowski, Lange-Bertalot & Metzeltin 2000, p. 324

Basionym: *Navicula protracta* Grunow 1880Synonym: *Schizonema protractum* (Grunow) Kuntze 1898

Fig. 17: Sample BBDC0008, Barnegat Bay, NJ.

Fig. 18: Sample BBDC0004, Barnegat Bay, NJ.

Fig. 19-21: ***Parlibellus sp. 5***

Fig. 19: Sample BBDC0026, Barnegat Bay, NJ.

Fig. 20: Sample BBDC0108, Great Bay, NJ.

Fig. 21: Sample BBDC0003, Barnegat Bay, NJ.

Fig. 22: ***Parlibellus sp. 14***

Fig. 22: Sample COAST043, Barnegat Bay, NJ.

Fig. 23: ***Parlibellus sp. 15***

Fig. 22: Sample COAST056, Barnegat Bay, NJ.

Fig. 24: ***Parlibellus sp. 2***

Fig. 24: Sample BBDC0107, Great Bay, NJ.

Figs 25-36: ***Parlibellus sp. 4***

Fig. 25: Sample COAST011, Great South Bay, NY.

Fig. 26: Sample BBDC0029, Barnegat Bay, NJ.

Figs 27-30,33-36: Sample RUTG0277, Rutgers Field Station, NJ.

Fig. 31: Sample BBEDC0059, Cattus Island, NJ.

Fig. 32: Sample COAST043, Barnegat Bay, NJ.

Figs 37 - 40: ***Parlibellus hendeyi*** Witkowski, Lange-Bertalot & Metzeltin

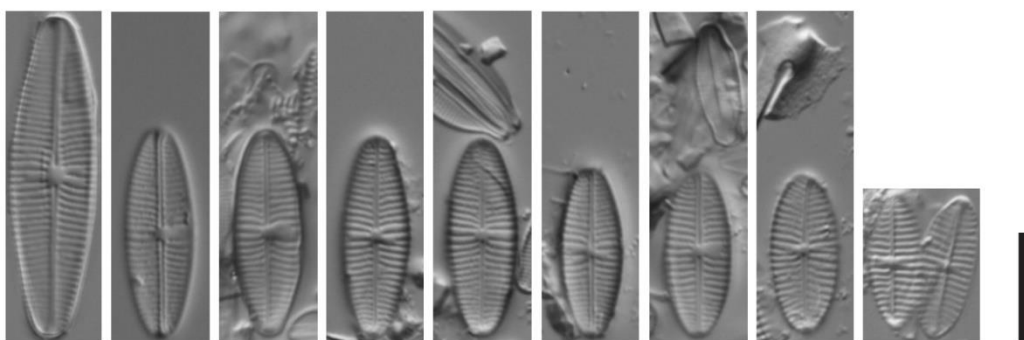
Lit.: Witkowski, Lange-Bertalot & Metzeltin 2000, p. 323, 438; pl. 104, fig. 21-23

Fig. 37: Sample BB0006, Barnegat Bay, NJ.

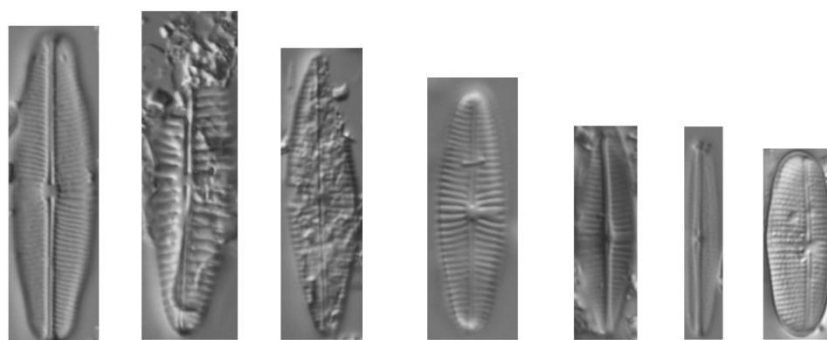
Fig. 38: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 39: Sample BB0066, Barnegat Bay, NJ.

Fig. 40: Sample BBDC0062, Barnegat Bay, NJ.



1 - 9



10

11

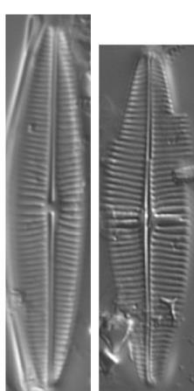
12

13

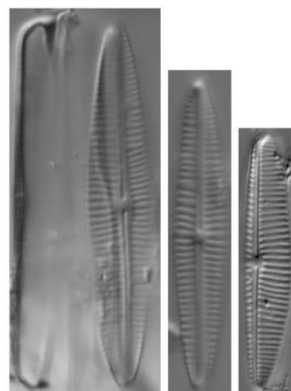
14

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17 - 18



19 - 21



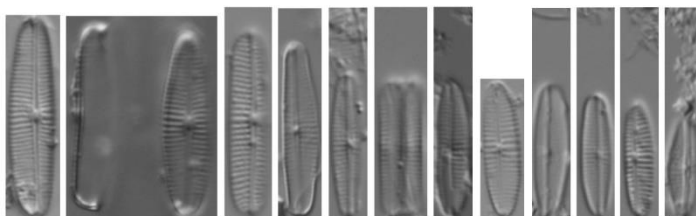
22



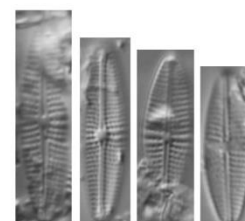
23



24



25 - 36



37 - 40

Plate 127

(Scale bars: Figs 1-12=10 µm; Figs 13-17=1 µm)

Berkeleya rutilans (Trentepohl ex Roth) Grunow

Lit.: Grunow 1880, p. 1587

Basionym: *Conferva rutilans* Trentepohl ex Roth 1806

Synonyms: *Bangia rutilans* (Roth) Lyngbye 1819

Amphipleura rutilans (Trentepohl ex Roth) Cleve 1894

Hydrolinum rutilans (Trentepohl ex Roth) Link 1820

Monema rutilans (Trentepohl ex Roth) Meneghini 1845

Schizonema rutilans (Trentepohl ex Roth) Agardh 1824

Berkeleya dillwynii var. *rutilans* (Trentepohl ex Roth) Eiben 1871

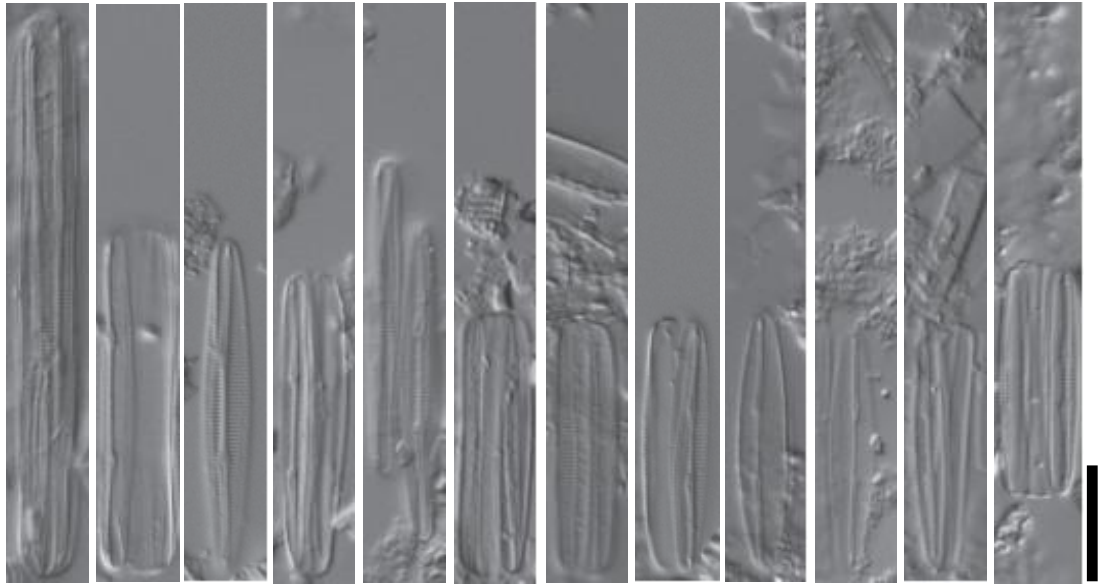
Carrodoria rutilans (Roth) Kuntze 1898

Girodella rutilans (Roth) Gaillon 1833

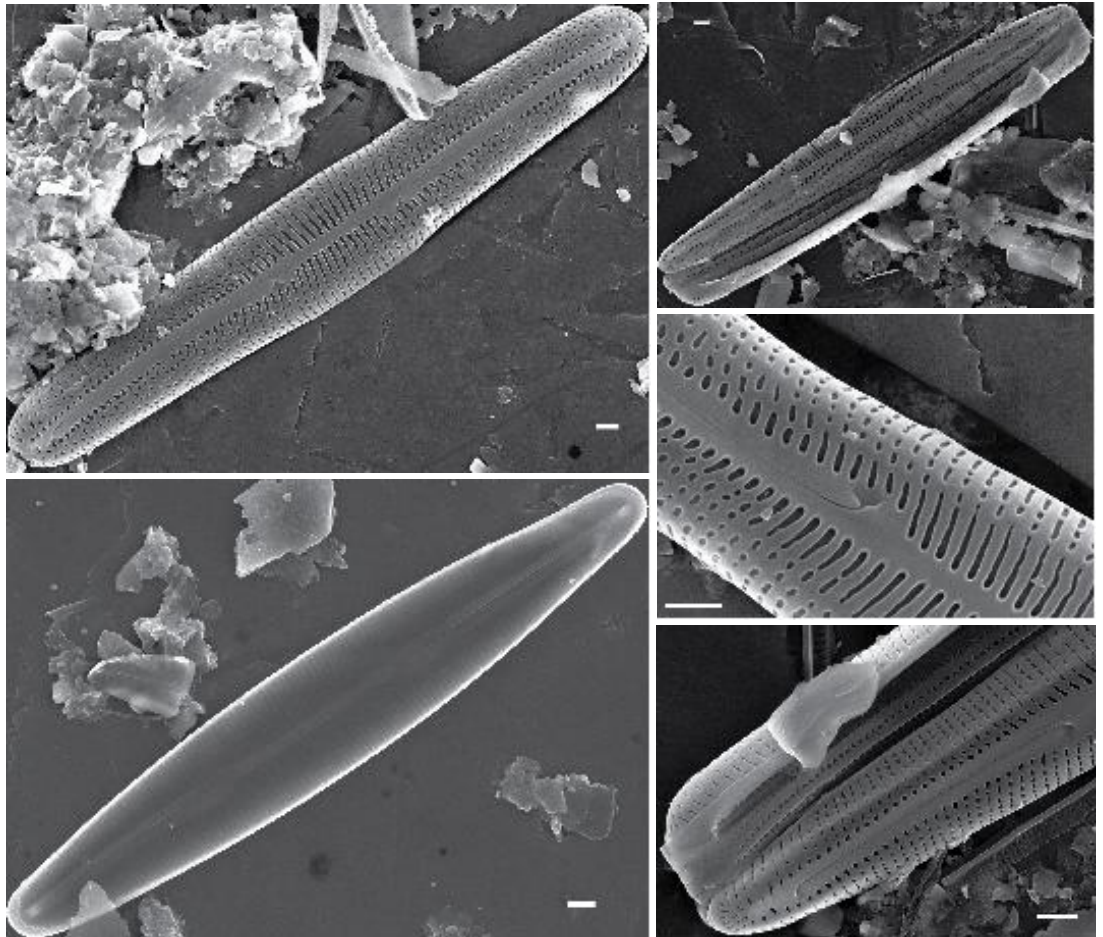
Figs 1-12: Sample BB0080, Tuckerton Bay, NJ.

Figs 13,15-16: Sample BBDC0045, Barnegat Bay, NJ.

Figs 14,17: Sample BBDC0080, Barnegat Bay, NJ.



1 - 12



13 - 17

Cosmioneis pusilla (Smith) Mann & Stickle Lit.:Round, Crawford & Mann
Lit.:Round, Crawford & Mann 1990, p. 666

Basionym: *Navicula pusilla* Smith 1853

Synonym: *Schizonema pusillum* (Smith) Kuntze 1898

Fig. 1: Sample BBDC0046, Barnegat Bay, NJ.

Fig. 2: Sample BB0059, Barnegat Bay, NJ.

Fig. 3: Sample BB0069, Barnegat Bay, NJ.

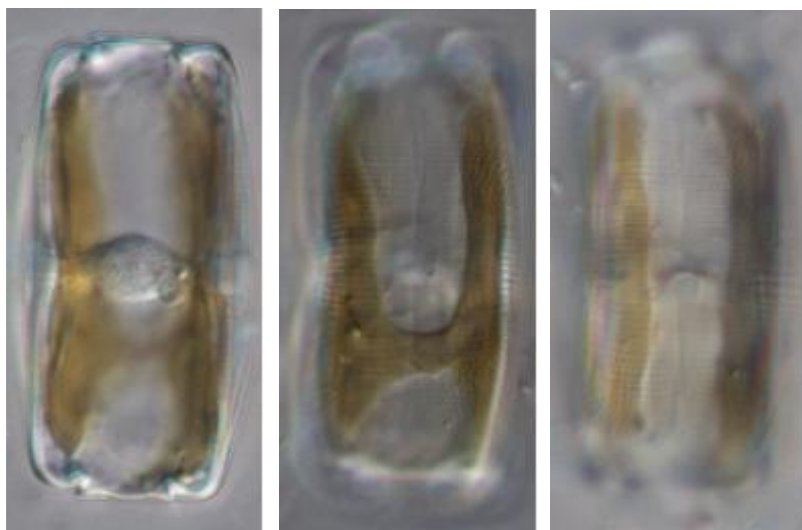
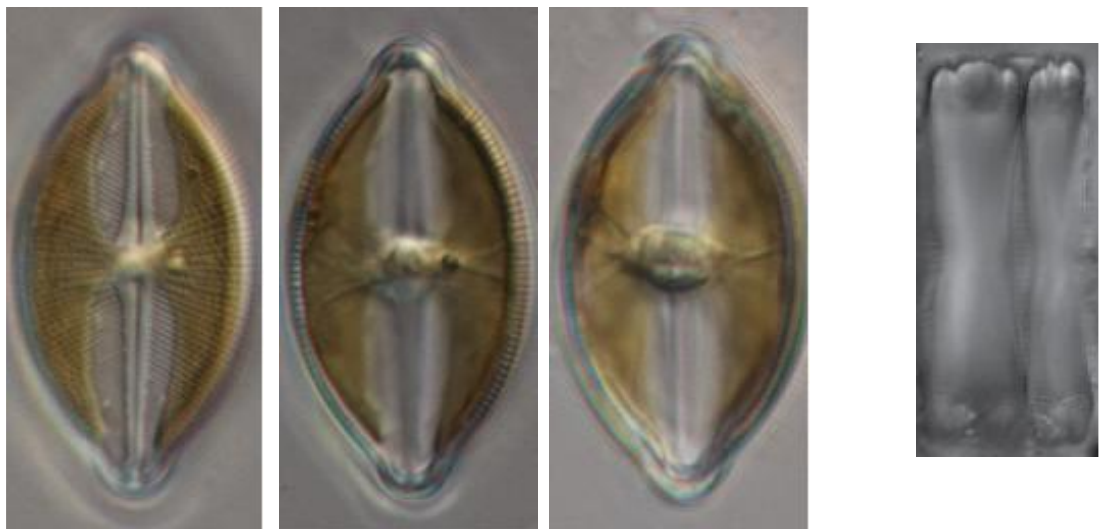
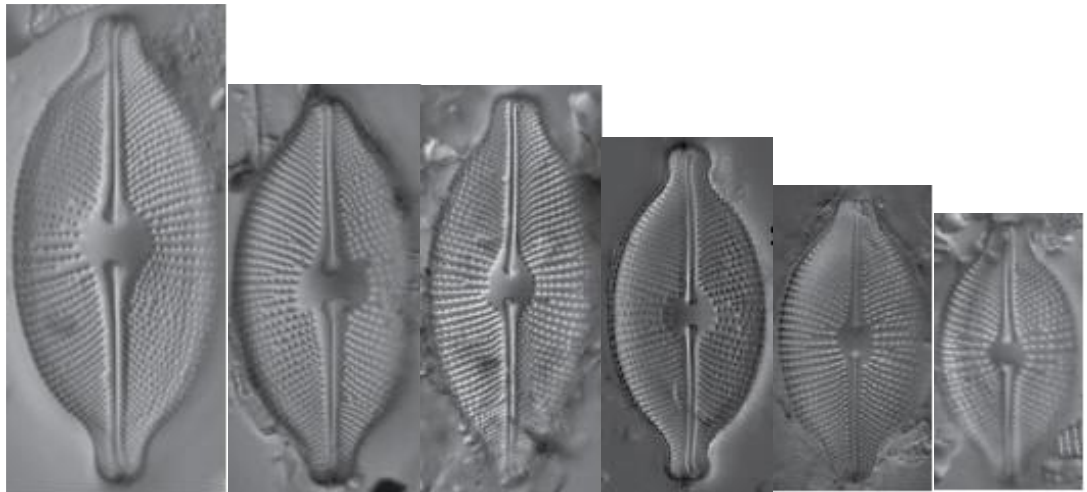
Fig. 4: Sample BBDC0007, Barnegat Bay, NJ.

Fig. 5: Sample BBDC0006, Barnegat Bay, NJ.

Fig. 6: Sample BB0058, Barnegat Bay, NJ.

Figs 7-9,11-13: Sample RUTG0818, Cape May Courthouse, NJ.

Fig. 10: Sample BB0070, Barnegat Bay, NJ.



1 - 13

Plate 129

(Scale bar: Figs 1-6=10 µm)

Figs 1-5: ***Scolioneis tumida*** (Brébisson ex Kützing) Mann

Lit.: Round, Crawford & Mann 1990, p. 676

Basionym: *Navicula tumida* Brébisson in Kützing 1849

Synonyms: *Scoliopleura tumida* (Brébisson in Kützing) Rabenhorst 1864

Microstigma tumida (Brébisson) Meister 1919

Scoliotropis tumida (Brébisson ex Kützing) Patrick & Freese 1961

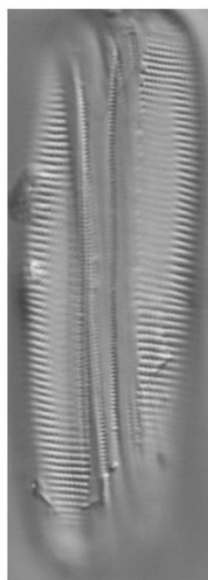
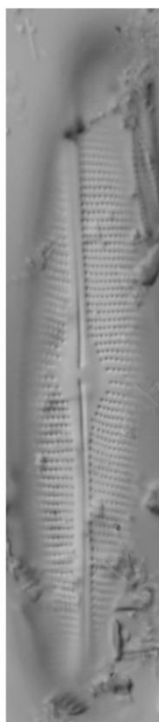
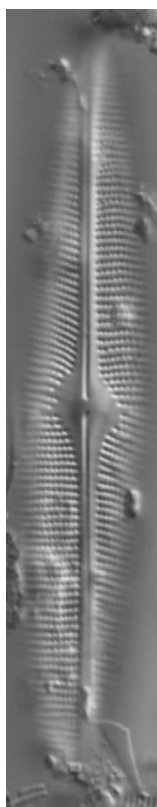
Figs 1,5: Sample BBDC0058, Barnegat Bay, NJ.

Fig. 2: Sample BBDC0071, Barnegat Bay, NJ.

Figs 3-4: Sample GB0001, Great Bay, NJ.

Fig. 6: ***Scolioneis* sp. 1**

Fig. 6: Sample BB0074, Barnegat Bay, NJ.



1 - 5

6

***Luticola mutica* (Kützing) Mann**

Lit.: Round, Crawford & Mann 1990, p. 670

Basionym: *Navicula mutica* Kützing 1844

Synonyms: *Navicula mutica* (Kützing) Frenguelli 1924

Placoneis mutica (Kützing) Mereschkowsky 1903

Schizonema muticum (Kützing) Kuntze 1898

Figs 1,16: Sample BBDC0071, Barnegat Bay, NJ.

Figs 2,5,8,13,20: Sample BB0052, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0009, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0005, Barnegat Bay, NJ.

Figs 6-7,14,17-19: Sample BBDC0046, Barnegat Bay, NJ.

Fig. 9: Sample BBDC0065, Barnegat Bay, NJ.

Figs 10-11: Sample BBDC0007, Barnegat Bay, NJ.

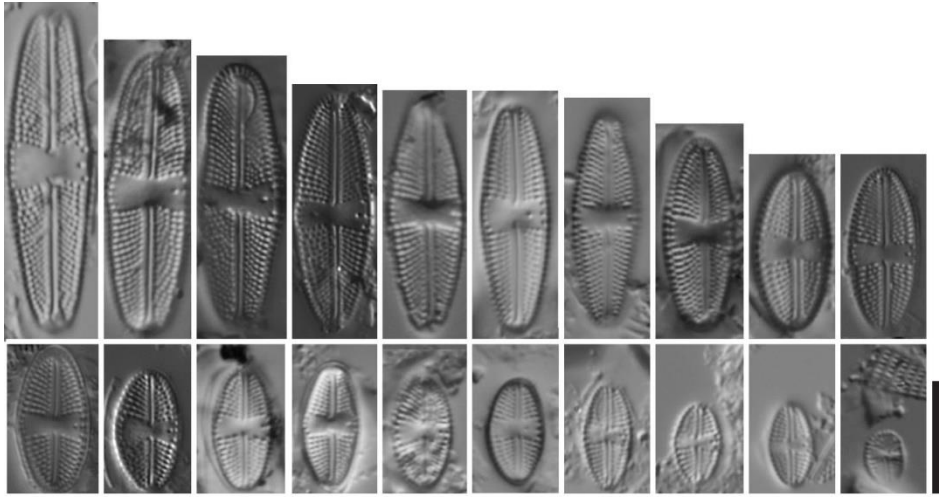
Fig. 12: Sample BBDC0004, Barnegat Bay, NJ.

Fig. 15: Sample BB0076, Barnegat Bay, NJ.

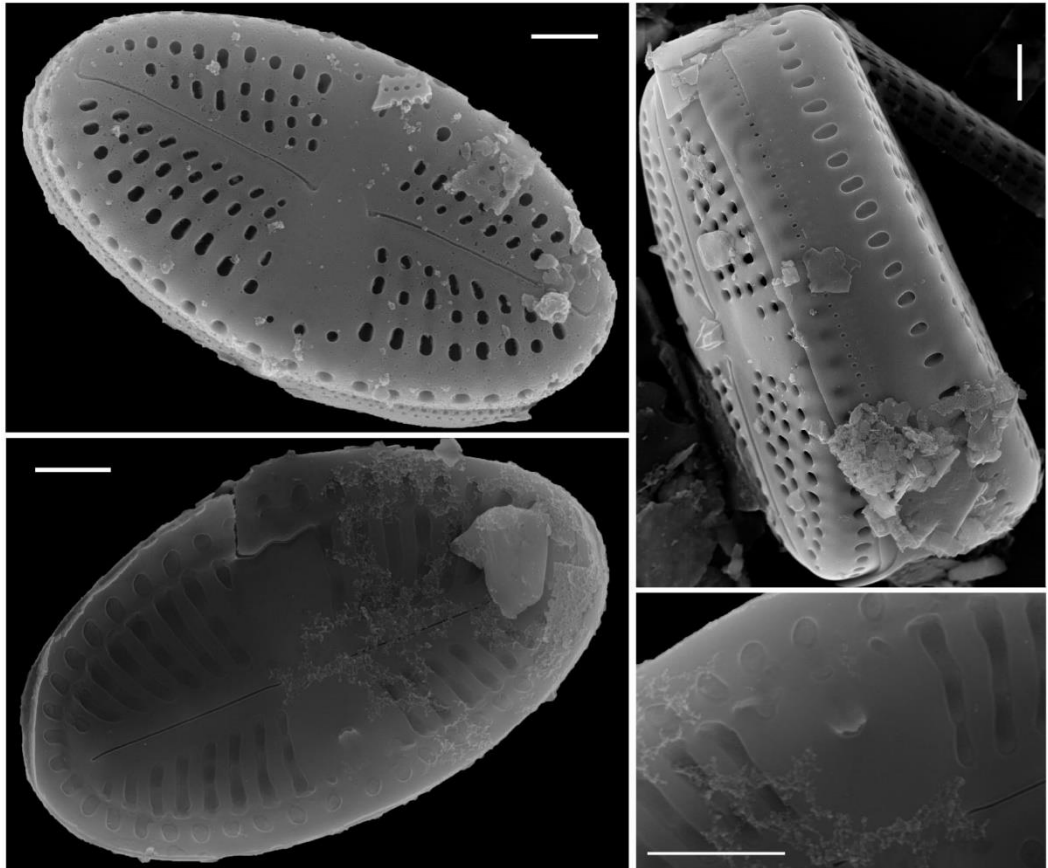
Fig. 21: Sample BBDC0028, Barnegat Bay, NJ.

Fig. 22: Sample RUTG0800, Sluice Creek, NJ.

Figs 23-24: Sample BBDC0038, Barnegat Bay, NJ.



1 - 20



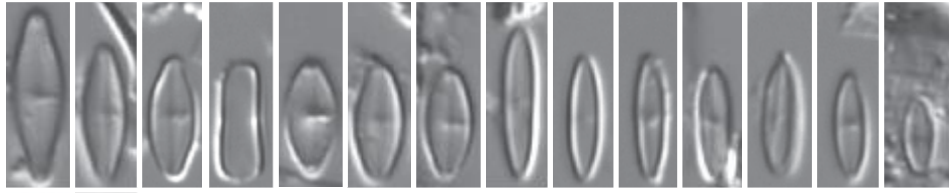
21 - 24

Plate 131 (Scale bars: Figs 1-14=10 μm ; Figs 15-24=1 μm)

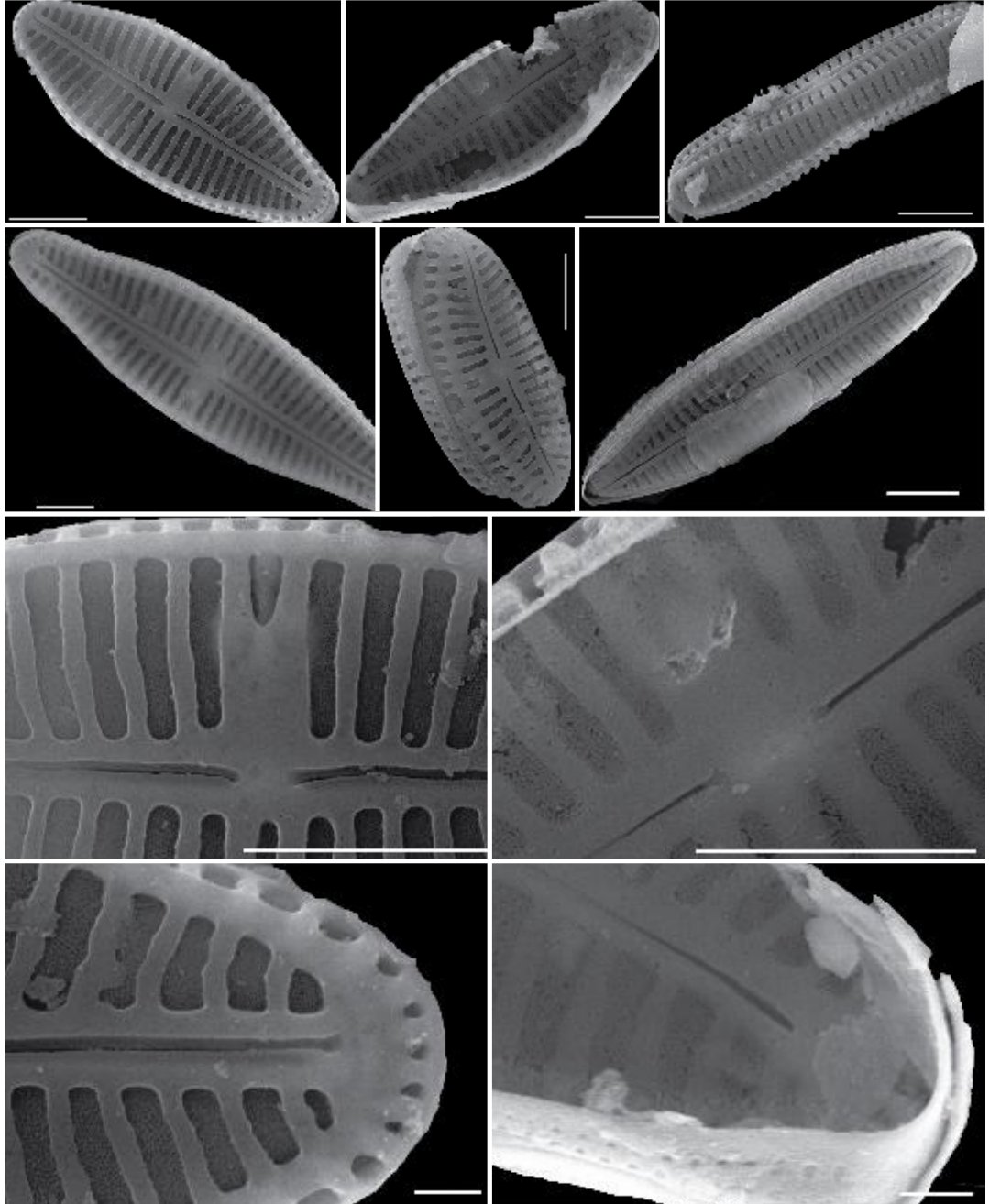
***Olifantiella* sp. 1**

Figs 1-14: Sample RUTG0381, Cheesequake State Park, NJ.

Figs 15-24: Sample RUTG0598, Fortescue, NJ.



1 - 14



15 - 24

Halamphora acutiuscula (Kützing) Levkov

Lit.: Levkov 2009, p. 167

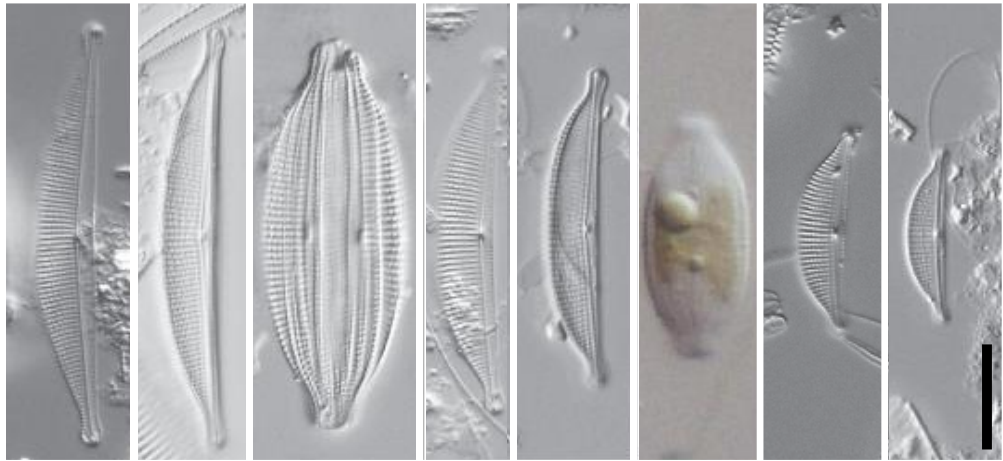
Basionym: *Amphora acutiuscula* Kützing 1844

Synonyms: *Amphora coffeaeformis* var. *acutiuscula* (Kützing) Hustedt 1930

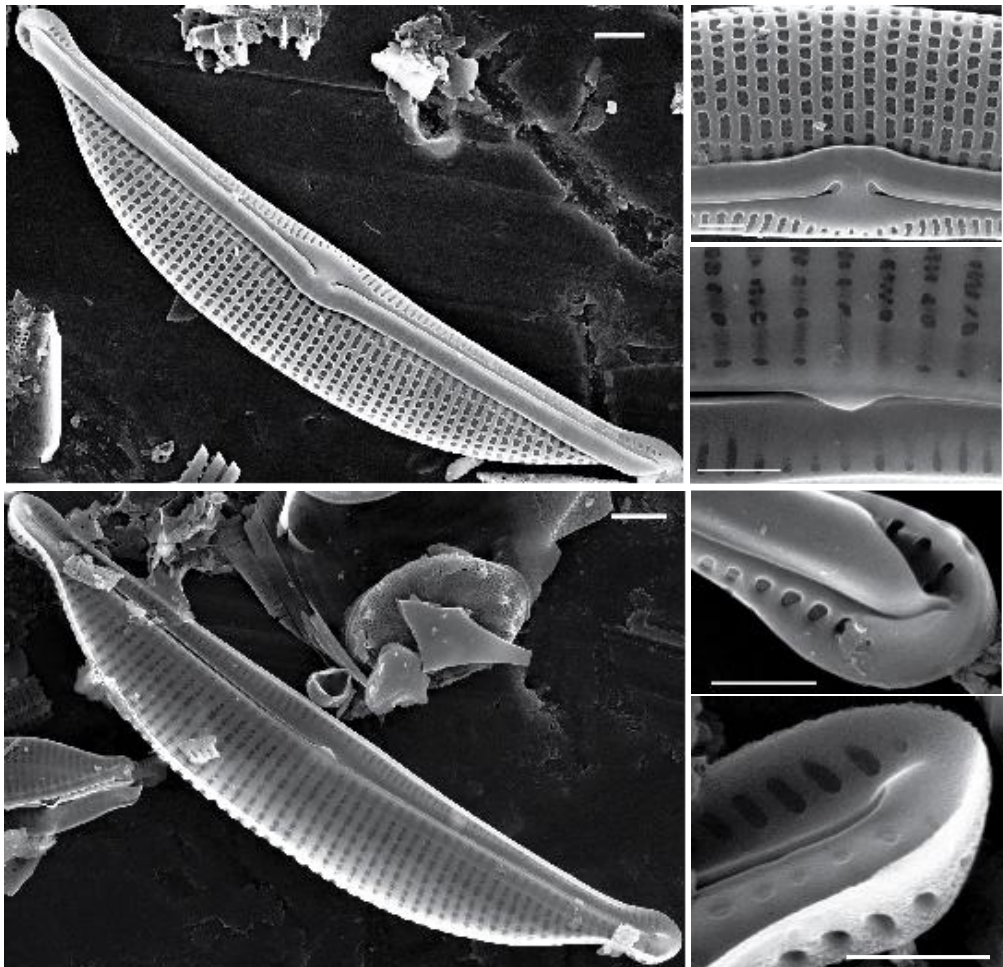
Amphora coffeaeformis var. *acutiuscula* (Kützing) Rabenhorst 1864

Figs 1-5,7-8,9-14: Sample BBDC0031, Barnegat Bay, NJ.

Fig. 6: Great Bay, NJ.



1 - 8



9 - 14

Plate 133

(Scale bars: Figs 1-8=10 µm; Figs 9-20=1 µm)

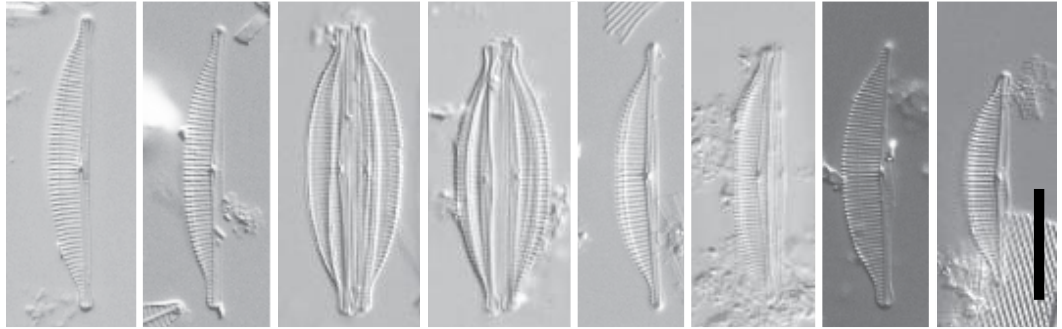
Halamphora aponina (Kützing) Levkov

Lit.: Levkov 2009, p. 170

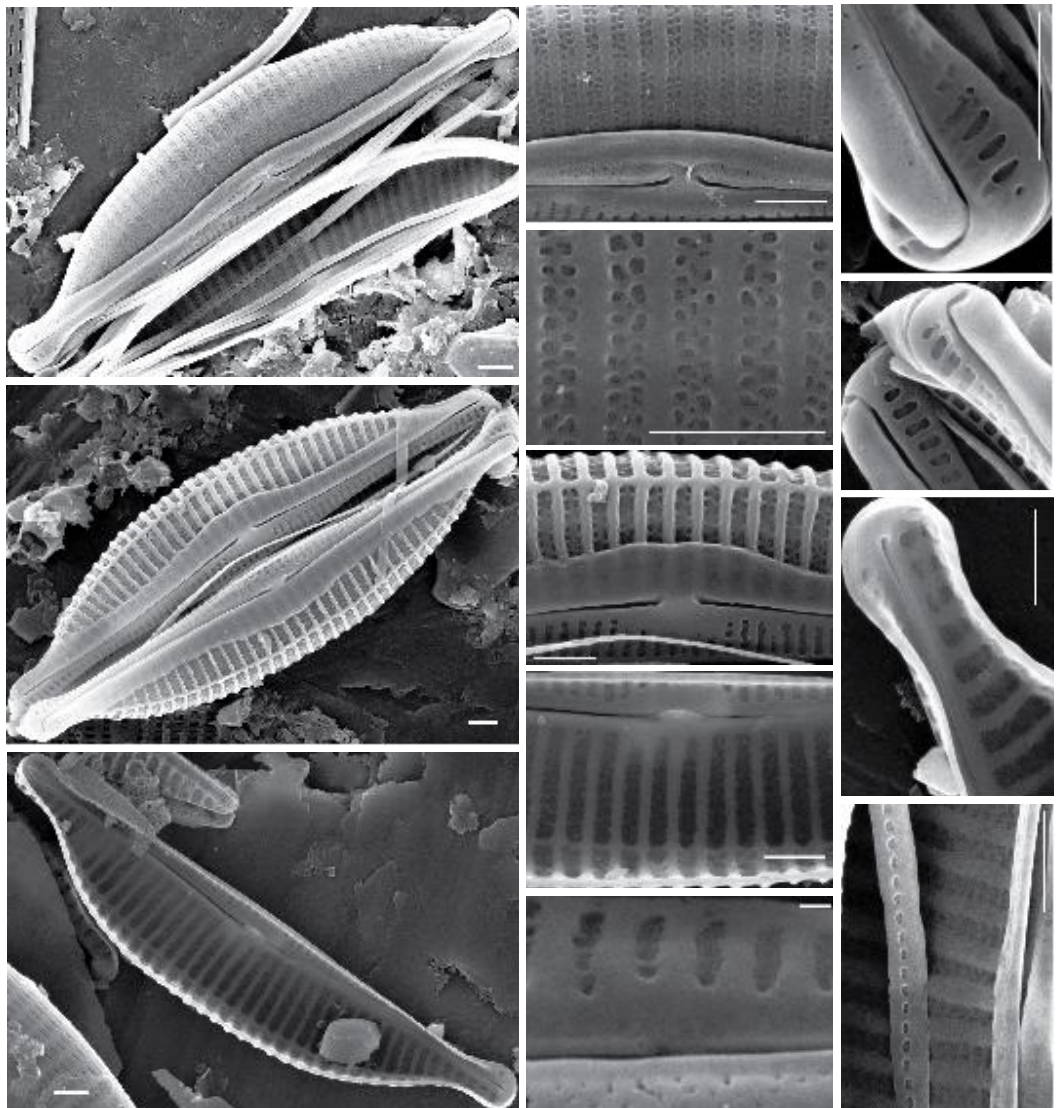
Basionym: *Amphora aponina* Kützing 1844

Synonym: *Amphora coffeaeformis* var. *aponina* (Kützing) Archibald & Schoeman 1984

Figs 1-20: Sample BBDC0031, Barnegat Bay, NJ.



1 - 8

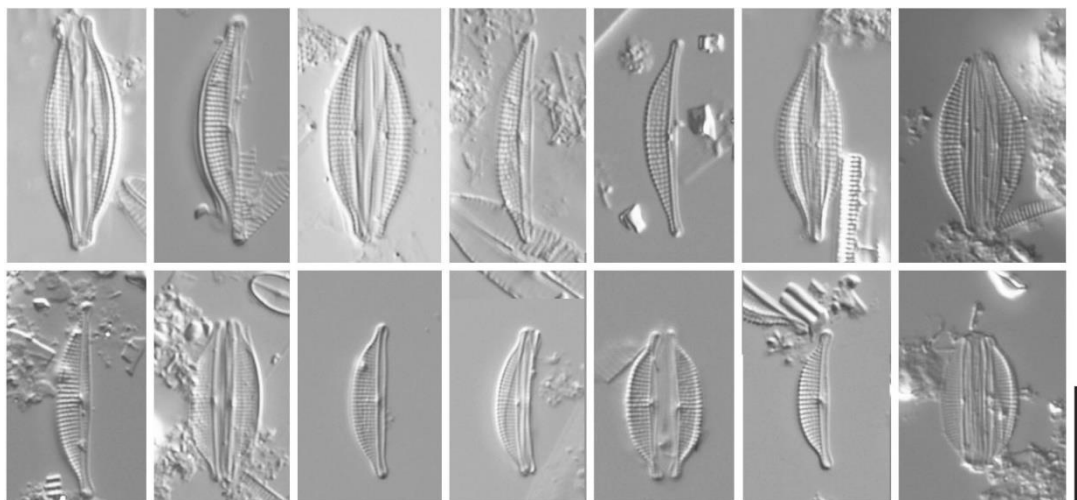


9 - 20

Halamphora crenulatoides Stepanek & Kociolek

Lit.: Stepanek & Kociolek 2018, p. 67, Plate 62, figs 11-18; Plate 65, figs 4-6.

Figs 1-14: Sample BBDC0031, Barnegat Bay, NJ.



1 - 14

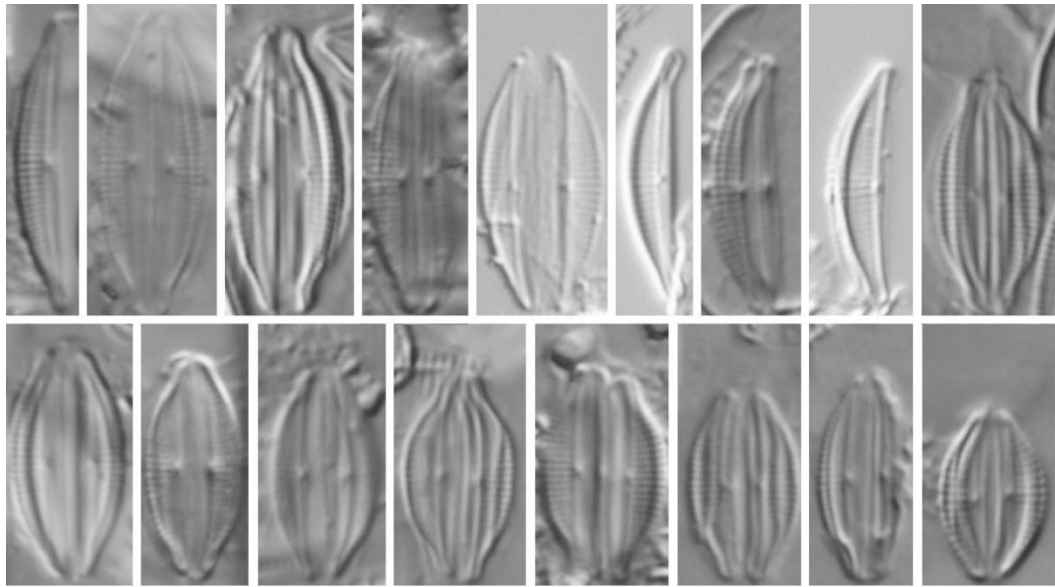
Halamphora tenerrima (Aleem & Hustedt) Levkov

Lit.:Levkov 2009, p. 235

Basionym: *Amphora tenerrima* Aleem & Hustedt 1951

Figs 1-4,7,9-17: Sample RUTG284, Drexel Field Station, NJ.

Figs 5-6,8: Sample BBDC0031, Barnegat Bay, NJ.



1 - 17

Plate 136

(Scale bars: Figs 1-6=10 µm; Figs 7-12=1 µm)

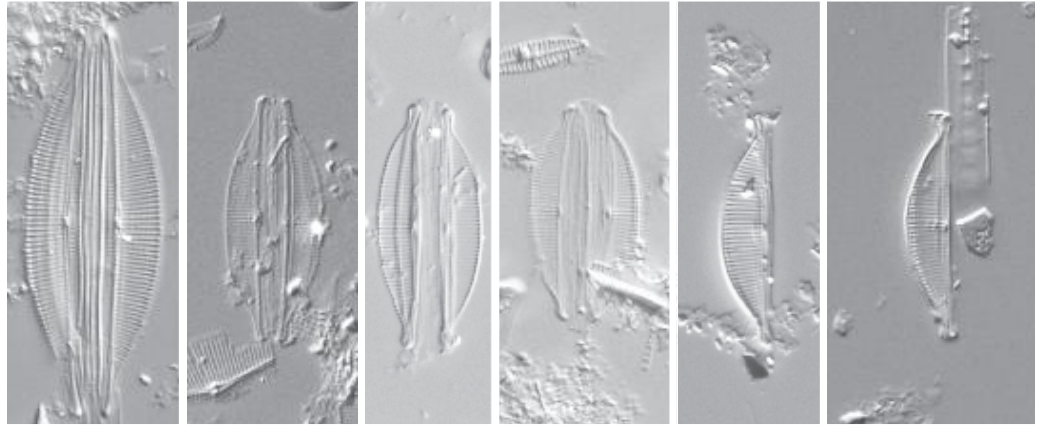
Halamphora coffeaeformis (Agardh) Levkov

Lit.:Levkov 2009, p. 179

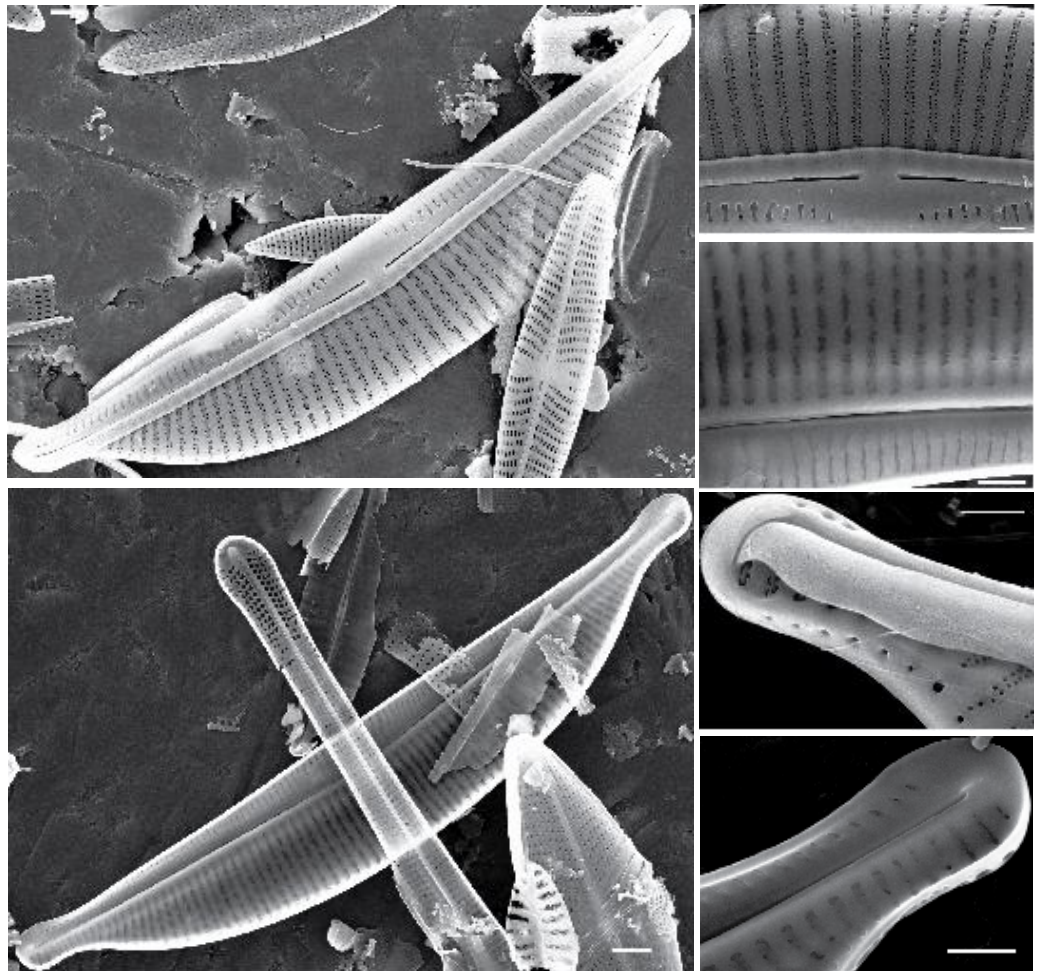
Basionym: *Frustulia coffeaeformis* Agardh 1827

Synonym: *Amphora coffeaeformis* (Agardh) Kützing 1844

Figs 1-12: Sample BBDC0031, Barnegat Bay, NJ.



1 - 6



7 - 12

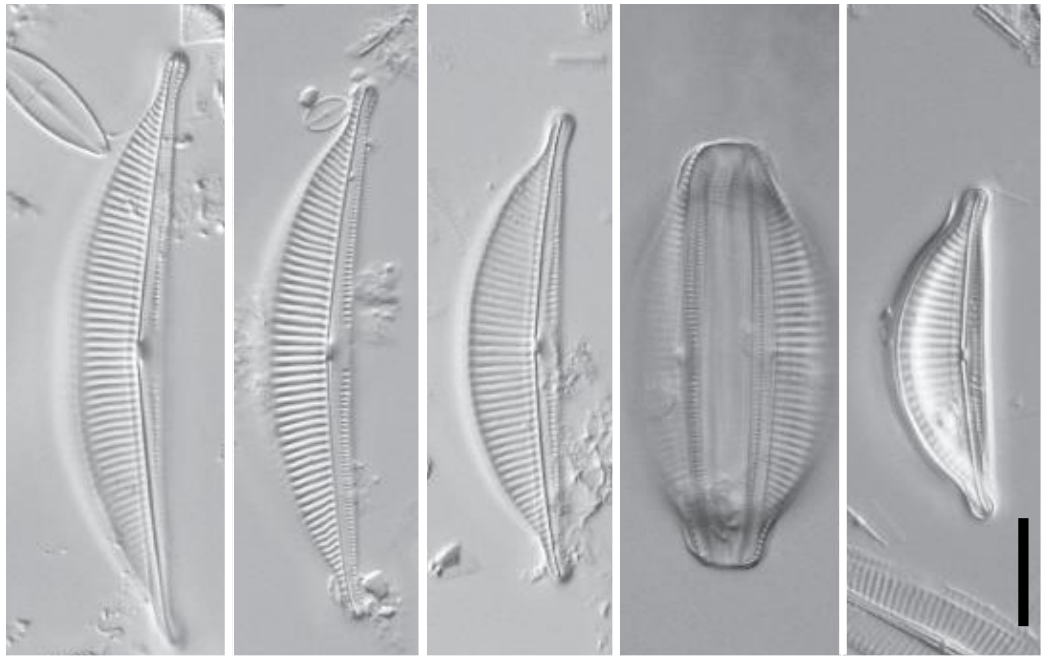
Halamphora cymbifera (Gregory) Levkov

Lit.: Levkov 2009, p. 183

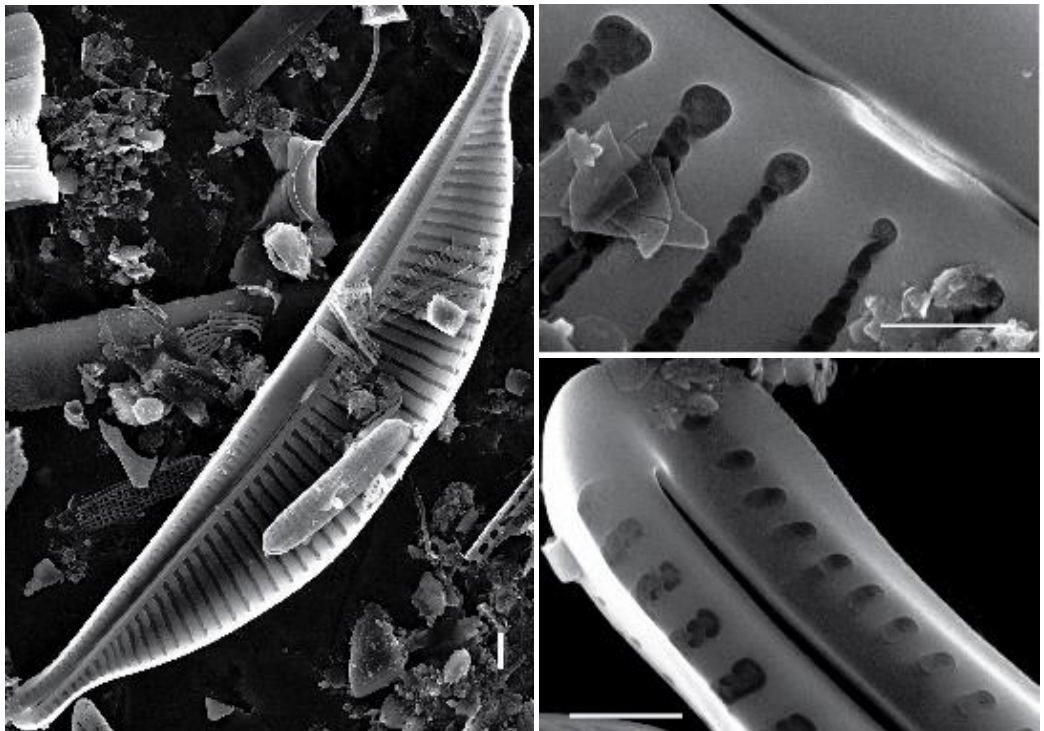
Basionym: *Amphora cymbifera* Gregory 1857

Synonym: *Amphora erebi* f. *cymbifera* (Gregory) Zimmermann 1918

Figs 1-8: Sample BBDC0031, Barnegat Bay, NJ.



1 - 5



6 - 8

Halamphora lineata (Gregory) Levkov

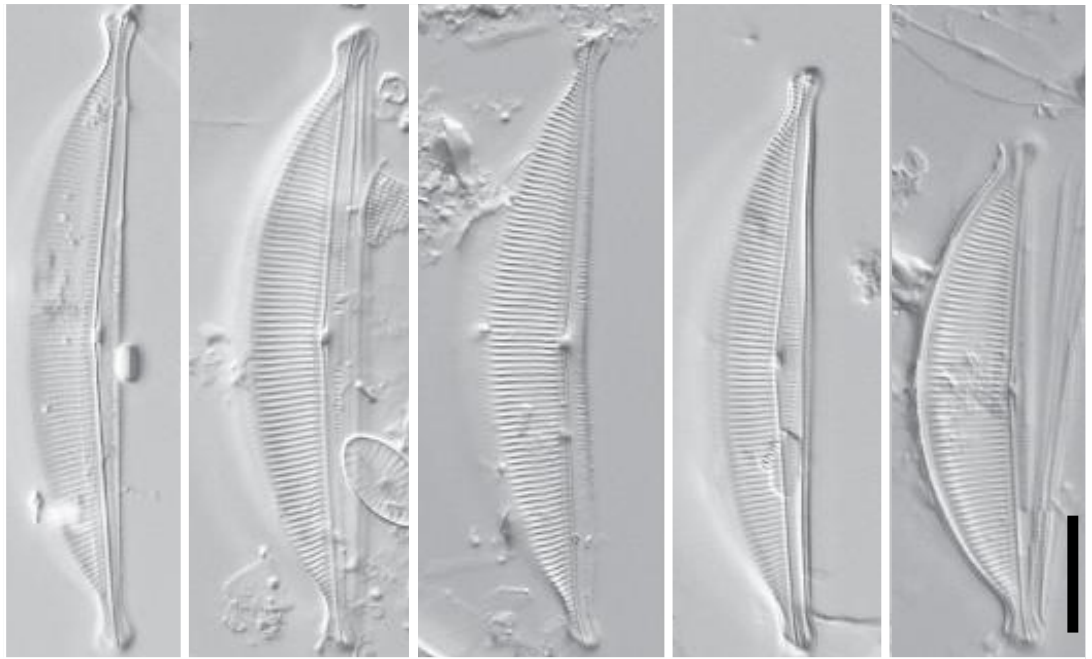
Lit.: Levkov 2009, p. 202

Basionym: *Amphora lineata* Gregory 1857

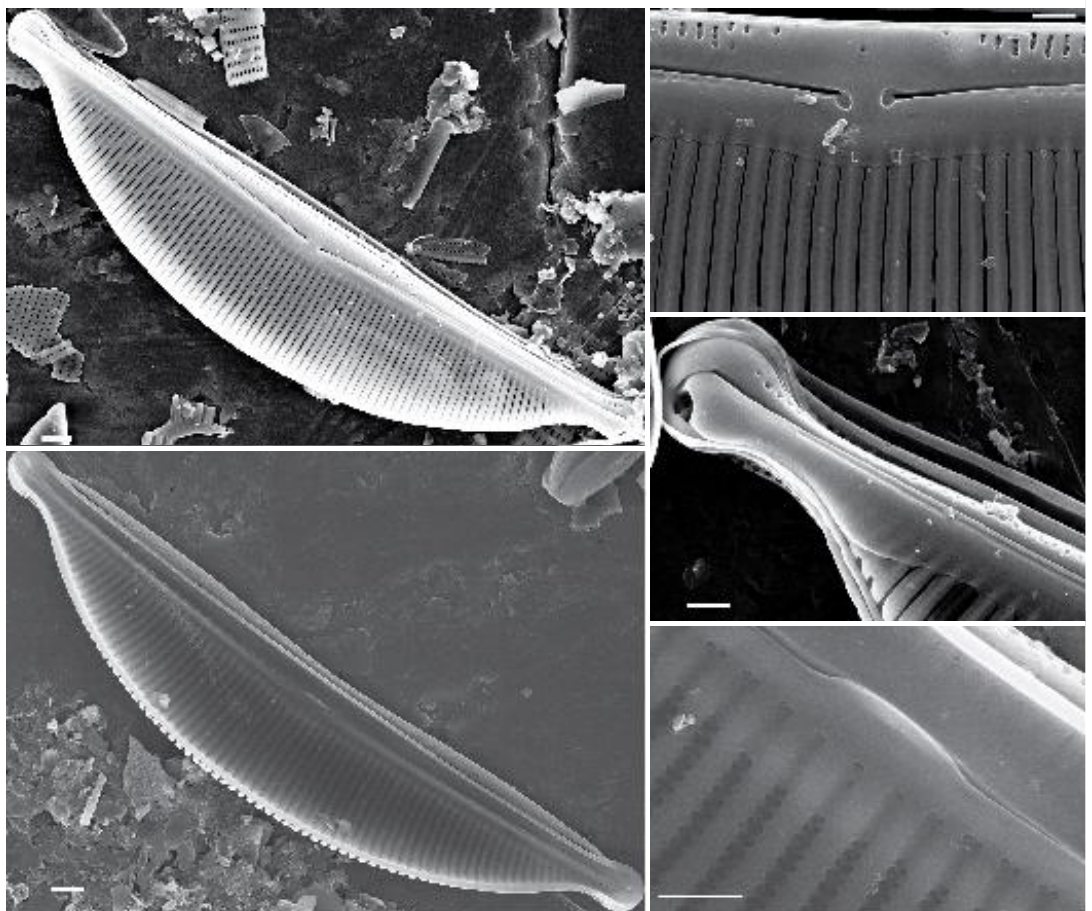
Synonym: *Amphora coffeaeformis* var. *lineata* (Gregory) Rabenhorst 1864

Figs 1-8: Sample BBDC0031, Barnegat Bay, NJ.

Figs 9-10: Sample COAST003, Peconic Bay, NY.



1 - 5



6 - 10

Plate 139

(Scale bars: Figs 1-10=10 µm; Figs 11-14=1 µm)

Halamphora mosensis Stepanek & Kociolek

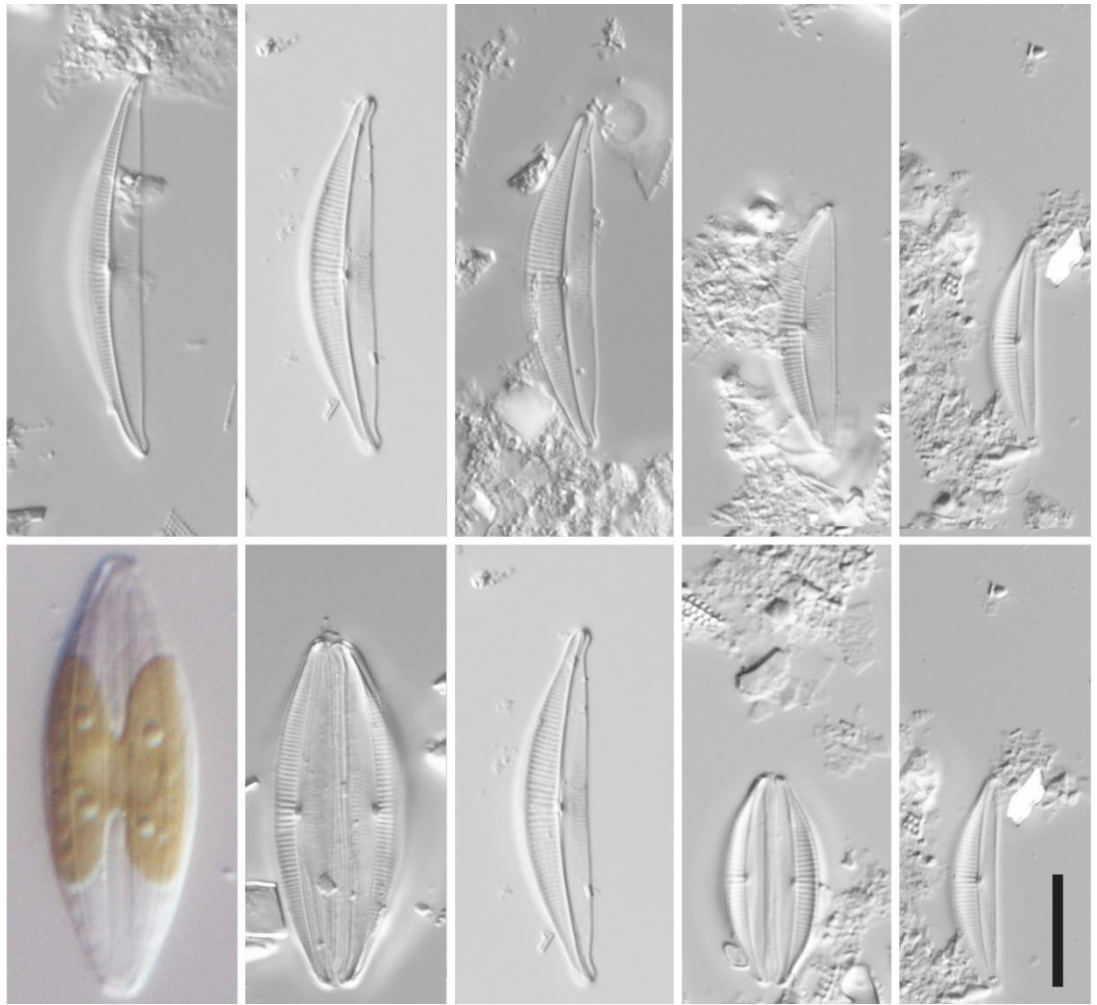
Lit.:Stepanek & Kociolek, 2018 p. 63-64; Plate 61, figs 9-12; Plate 64, figs 1-3.

Figs 1-5,7-10,13: Sample BBDC0064, Barnegat Bay, NJ.

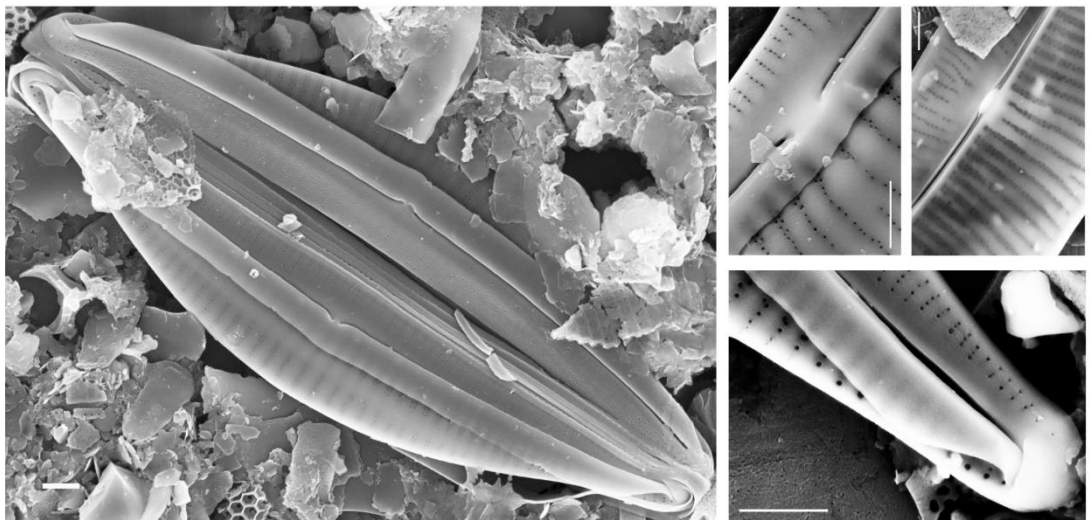
Fig. 6: Great Bay, NJ.

Figs 11-10: Sample COAST031, Western Bay, NY.

Figs 12,14: Sample BBEDC0064, Tuckerton Bay, NJ.



1 - 10



11 - 14

Plate 140

(Scale bars: Figs 1-6=10 µm; Figs 7-10=1 µm)

Amphora polita Krasske

Lit.: Krasske 1939, p. 401; pl. 12, fig. 24, 25; Desianti, Potapova & Beals 2015, Figs 105-112

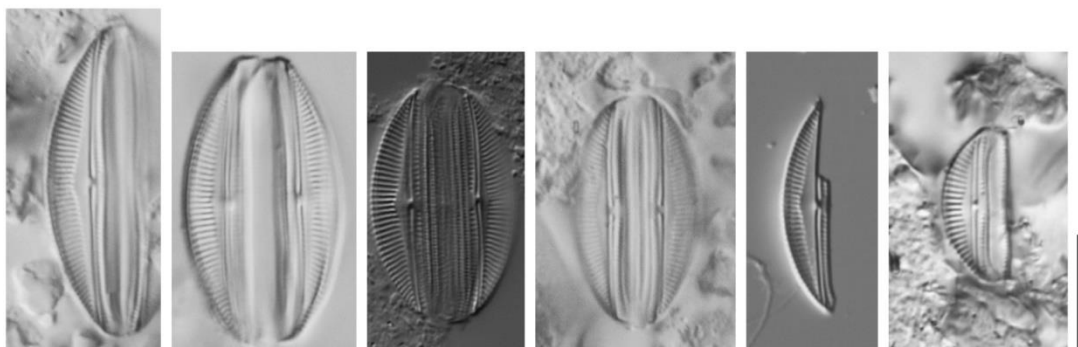
Synonyms: *Amphora australiensis* John 1981

Amphora pleniluna Hohn & Hellerman 1966

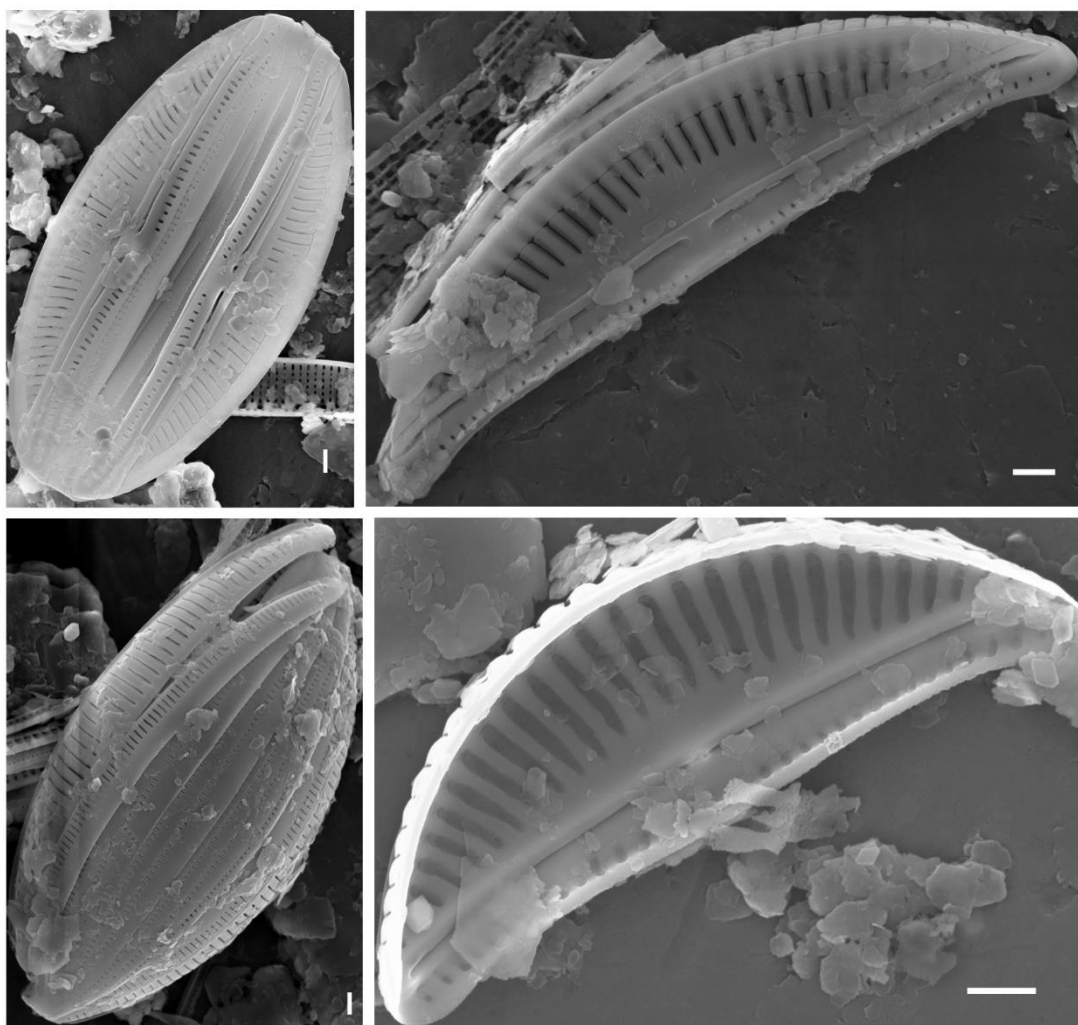
Figs 1-2,4,6-10: Sample GC44902, Nabbs Creek, MD.

Fig. 3: Sample BBDC0088, Great Bay, NJ.

Fig. 5: Sample BBDC0029, Barnegat Bay, NJ.



1 - 6



7 - 10

Halamphora staurophora (Juhlin-Dannfelt) Álvarez-Blanco & Blanco

Lit.: Álvarez-Blanco & Blanco, 2014 fig., 3 tables, 91 pls.

Basionym: *Amphora staurophora* Juhlin-Dannfelt 1882

Synonym: *Amphora dannfeltii* Berg 1952

Fig. 1: Sample BBDC0046, Barnegat Bay, NJ.

Fig. 2: Sample BB0029, Barnegat Bay, NJ.

Figs 3,6: Sample COAST031, Great South Bay, NY.

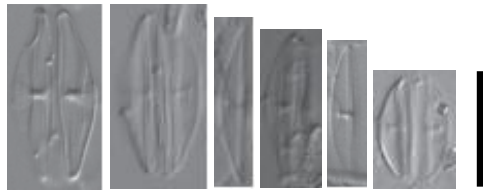
Fig. 4: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 5: Sample COAST015, Great South Bay, NY.

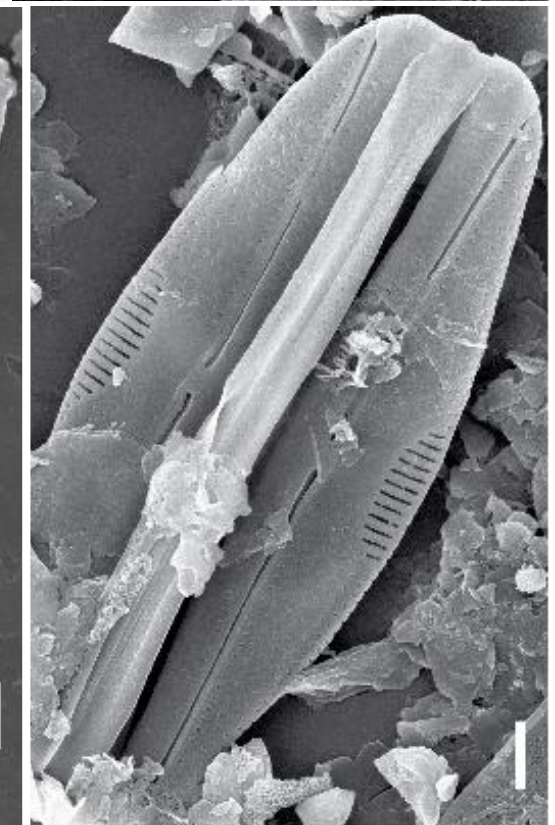
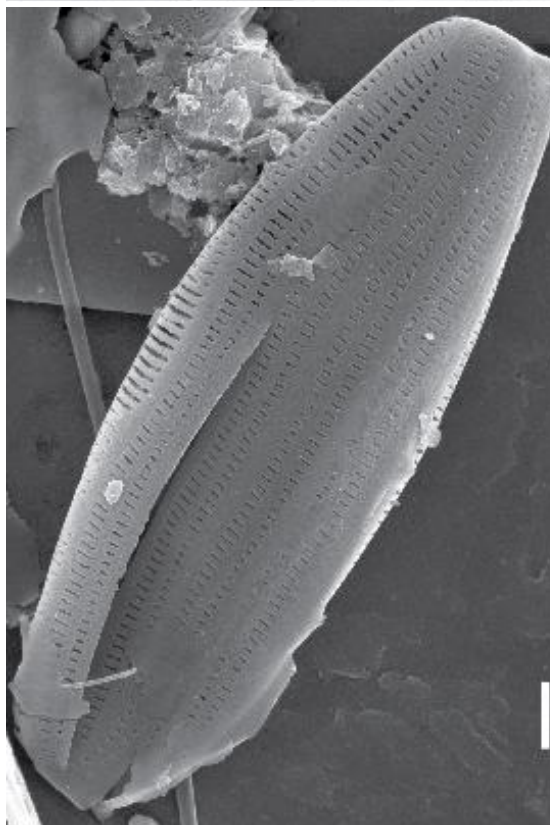
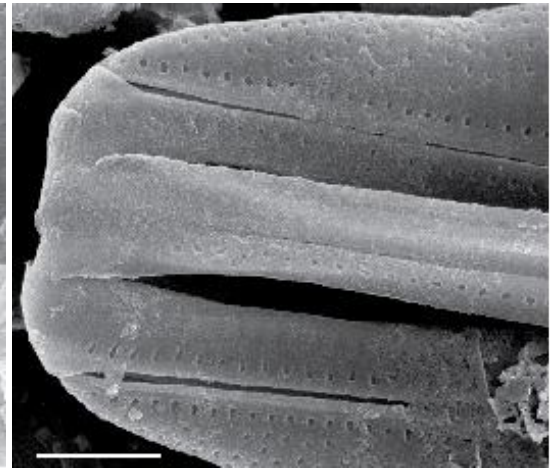
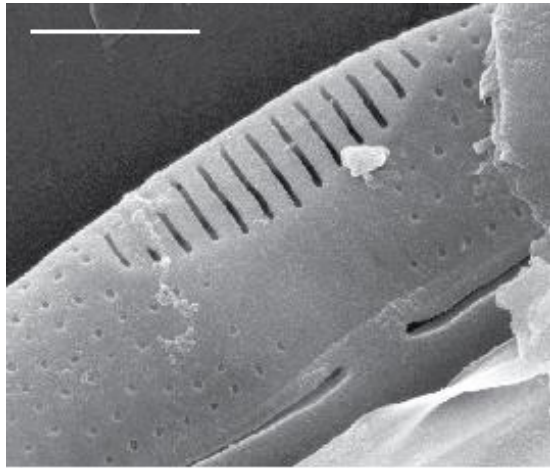
Figs 7-8,11: Sample BBDC0029, Barnegat Bay, NJ.

Figs 9,12: Sample COAST003, Peconic Bay, NY.

Fig. 10: Sample BBDC0015, Barnegat Bay, NJ.



1 - 6



7 - 10

Fig.1: ***Amphora laevis*** Gregory

Lit.:Gregory 1857, p. 514; pl. 12, fig. 74 a-c

Figs 2-7: ***Amphora abludens*** Simonsen

Lit.:Simonsen 1960, p. 129; pl. 2, fig. 10-12

Figs 8-9: ***Amphora sublaevis*** Hustedt

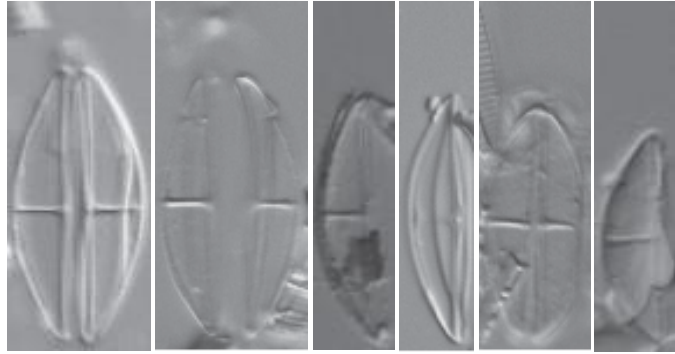
Lit.:Hustedt 1955, p. 41; pl. 13, fig. 3, 12-15

Figs 10-19: *Amphora cf. laevissima* Gregory

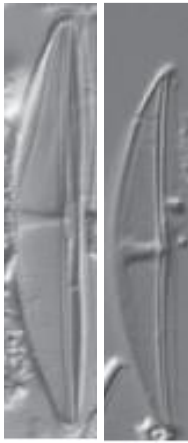
Lit.:Hustedt 1955, p. 41; pl. 13, fig. 3, 12-15



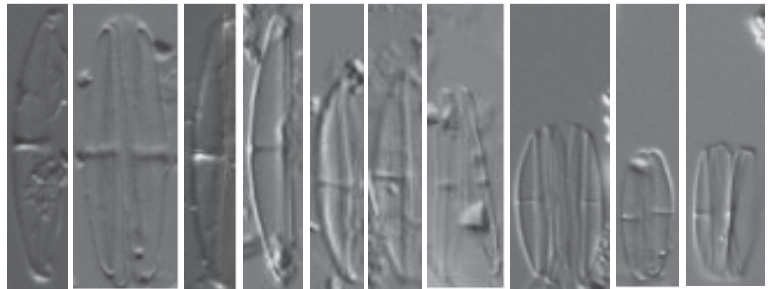
1



2 - 7



8 - 9



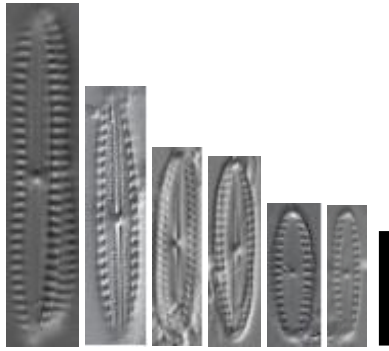
10 - 19

Plate 143

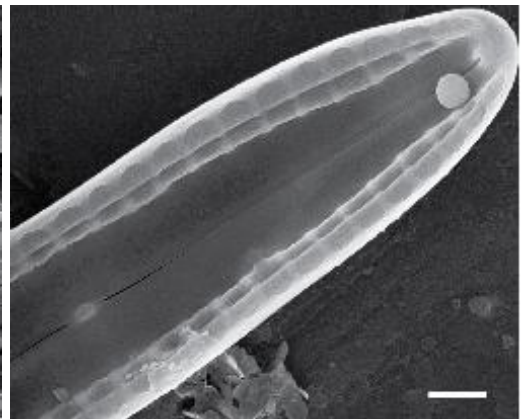
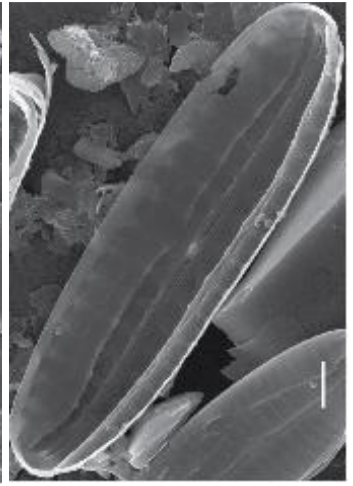
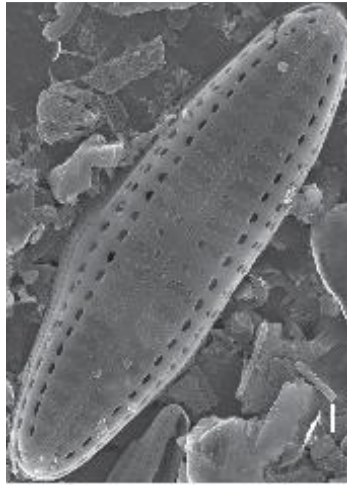
(Scale bars: Figs 1-6=10 µm; Figs 7-10=1 µm)

Biremis lucens (Hustedt) Sabbe, Witkowski & Vyverman

Lit.: Sabbe, Witkowski & Vyverman 1995, p. 380; fig. 4-19, 20-24, 27-29, 36-37



1 - 6



7 - 10

***Fallacia pygmaea* (Kützing) Stickle & Mann**

Lit.: Round, Crawford & Mann 1990, p. 668; Hustedt 1961-1966, p.537, fig.1574 (as *Navicula pygmaea*); Simonsen 1975, p.168-178, fig.1-32; Krammer & Lange-Bertalot 1986, p.171, fig.65:1-6 (as *Navicula pygmaea*); Round et al. 1990, p.544; Witkowski, Lange-Bertalot, Metzeltin 2000, p.211, pl.72:28-30

Basionym: *Navicula pygmaea* Kützing

Synonyms:

Navicula minutula W. Smith 1853

Navicula rotundata Hantzsch fide Grunow in Van Heurck 1880

Navicula hudsonis Grunow in Cleve 1892

Fallacia hudsonis (Grunow ex Cleve) Stickle & Mann in Round, Crawford & Mann 1990

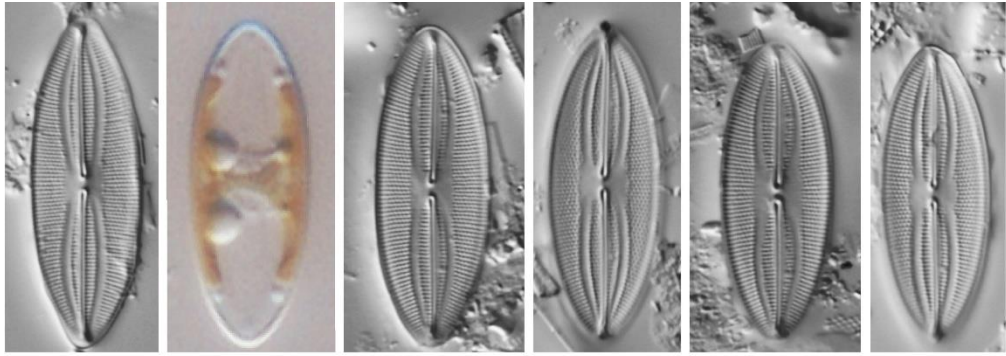
Diploneis hudsonis (Grunow in Cleve) Cleve 1894

Schizonema hudsonis (Grunow) Kuntze 1898

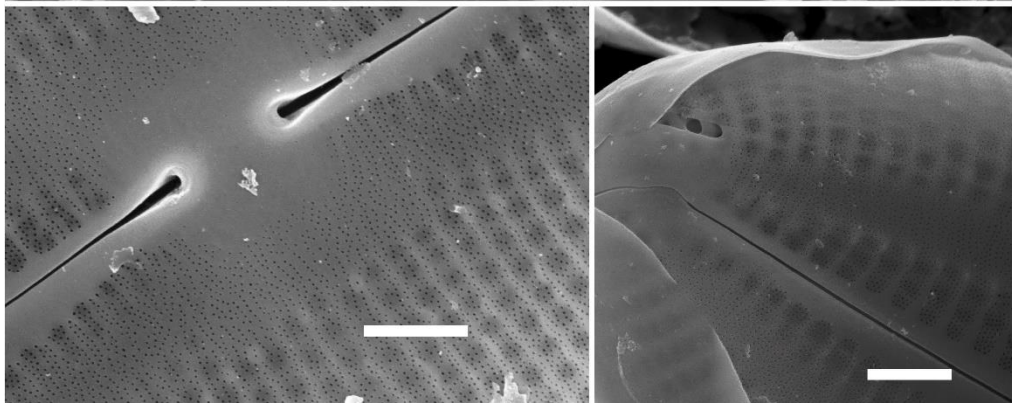
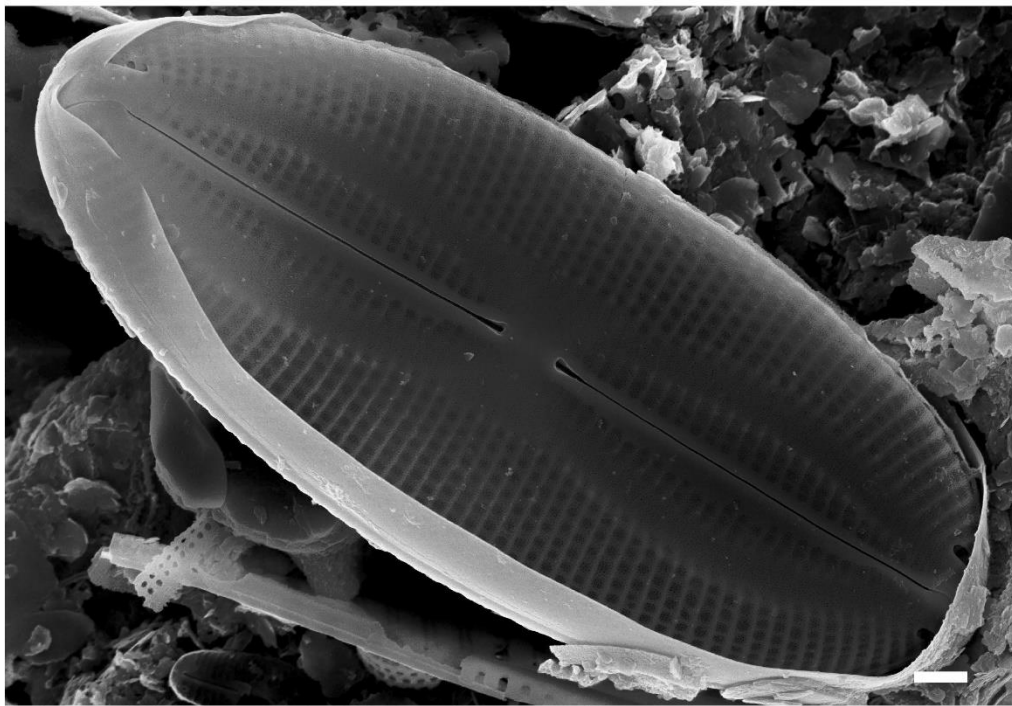
Figs 1,3-6: Sample BBDC0046, Barnegat Bay, NJ.

Fig. 2: Great Bay, NJ.

Figs 7-9: Sample BBDC0038, Barnegat Bay, NJ.



1 - 6



7 - 9

Plate 144 (Scale bars: Figs 1-17; 19-23=10 µm; Figs 18; 24=1 µm)

Figs 1-5: ***Fallacia pseudolitoricola*** (Håkansson) Håkansson

Lit.: Håkansson 1982, p. 90-91; pl. 1, fig. 4-7, pl. 2, fig. 8-12; Snoeijs & Vilbaste 1994, v. 16b: p. 45

Basionym: *Navicula pseudolitoricola* Håkansson

Fig. 1: Sample BBDC0080, Barnegat Bay, NJ.

Fig. 2: Sample BBEDC058, Cattus Island, NJ.

Fig. 3: Sample BB0002, Barnegat Bay, NJ.

Fig. 4: Sample RUTG0870, Eugene Furey, NJ.

Fig. 5: Sample BBDC0001, Barnegat Bay, NJ.

Figs 6-8: ***Fallacia* sp. 8**

Fig. 6: Sample RUTG0131, Cape May Courthouse, NJ.

Fig. 7: Sample RUTG0857, Pilot Drive, NJ.

Fig. 8: Sample BBDC0065, Barnegat Bay, NJ.

Figs 9-18: ***Fallacia litoricola*** (Hustedt) Mann

Lit.: Husted 1955, p.23, pl.8, figs 13-14; Simonsen 1987, p.409, fig.612:1-4; Round, Crawford & Mann 1990, p.668; Witkowski, Lange-Bertalot, Metzeltin 2000, p.206, pl.71(?7,8), pl.72:31-34.

Basionym: *Navicula litoricola* Hustedt

Figs 9-10: Sample BBDC0045, Barnegat Bay, NJ.

Fig. 11: Sample COAST008, Peconic Bay, NY.

Fig. 12: Sample COAST052, Barnegat Bay, NJ.

Fig. 13: Sample BBDC0003, Barnegat Bay, NJ.

Fig. 14: Sample BBDC0009, Barnegat Bay, NJ.

Figs 15-17: Sample COAST025, Great South Bay, NY.

Fig. 18: Sample BBDC0051, Barnegat Bay, NJ.

Figs 19-24: ***Fallacia* sp. 7**

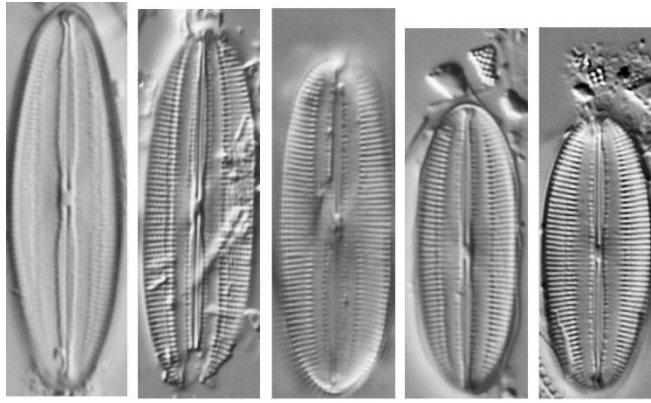
Fig. 19: Sample BBDC0007, Barnegat Bay, NJ.

Figs 20,22: Sample BBDC0051, Barnegat Bay, NJ.

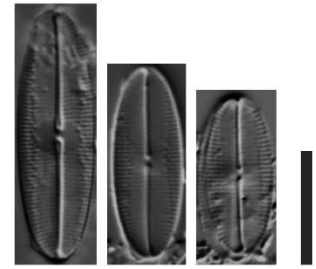
Fig. 21: Sample BBDC0008, Barnegat Bay, NJ.

Fig. 23: Sample BBDC0003, Barnegat Bay, NJ.

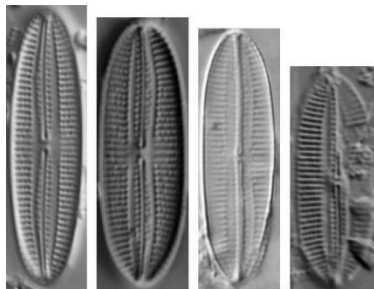
Fig. 24: Sample COAST003, Peconic Bay, NY.



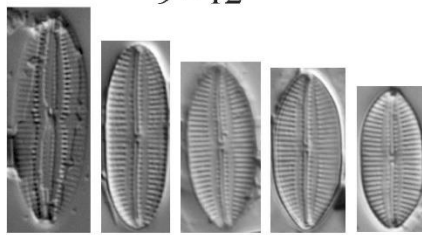
1 - 5



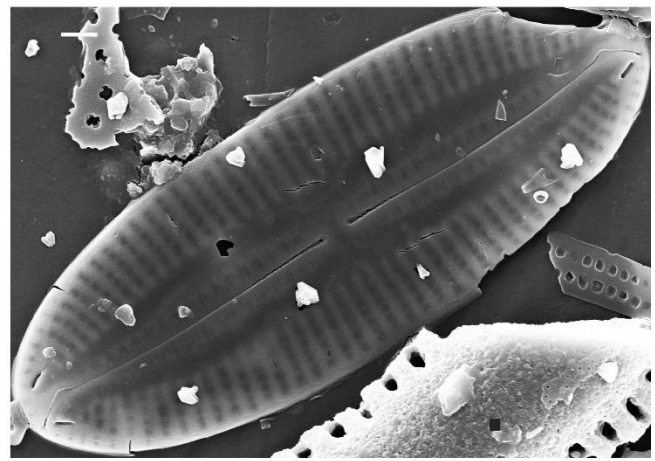
6 - 8



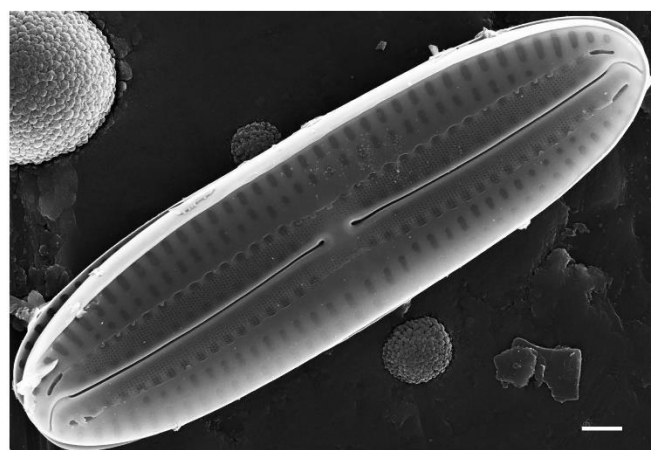
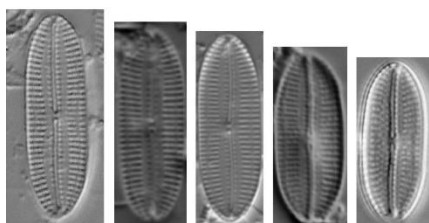
9 - 12



13 - 17



18



19 - 24

Plate 145 (Scale bars: Figs 1-5, 7-9, 11-16, 18-20=10 µm; Figs 6, 10, 17, 21=1 µm)

Figs 1-6: *Fallacia forcipata* (Greville) Stickle & Mann

Lit.: Hustedt 1961-1966, p.531, fig.1568, Krammer & Lange-Bertalot 1986, p.172, fig.65:12,13; Round, Crawford & Mann 1990, p.668; Witkowski, Lange-Bertalot, Metzeltin 2000, p.205, pl.72:2-9.

Basionym: *Navicula forcipata* Greville 1859

Synonyms:

Navicula lyra var. *forcipata* (Greville) O'Meara 1875

Schizonema forcipatum (Greville) Kuntze 1898

- Fig. 1: Sample BBDC0012, Barnegat Bay, NJ.
- Fig. 2: Sample BBDC0009, Barnegat Bay, NJ.
- Fig. 3: Sample COAST052, Barnegat Bay, NJ.
- Fig. 4: Sample BBDC0046, Barnegat Bay, NJ.
- Fig. 5: Sample BBDC0003, Barnegat Bay, NJ.
- Fig. 6: Sample COAST096, Cape May Peninsula, NJ.

Figs 7-10: *Fallacia scaldensis* Sabbe & Muylaert

Lit.: Sabbe, Vyverman & Muylaert 1999, p. 18; fig. 52-58, 71; Witkowski, Lange-Bertalot, Metzeltin 2000, p.212, pl.70:35-36.

- Fig. 7: Sample COAST005, Peconic Bay, NY.
- Fig. 8: Sample BBDC0012, Barnegat Bay, NJ.
- Fig. 9: Sample BBDC0018, Barnegat Bay, NJ.
- Fig. 10: Sample COAST022, Great South Bay, NY.

Figs 11-17: *Fallacia* sp. 14

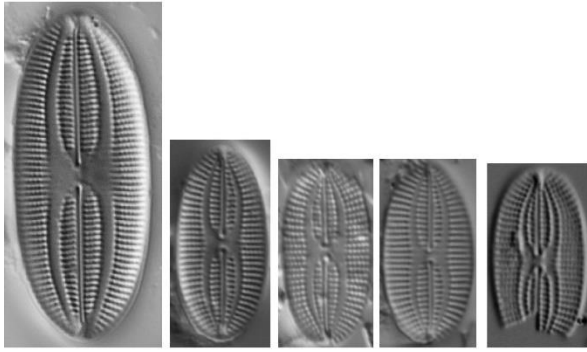
- Fig. 11: Sample BBDC0003, Barnegat Bay, NJ.
- Fig. 12: Sample BBDC0017, Barnegat Bay, NJ.
- Fig. 13: Sample BBDC0041, Barnegat Bay, NJ.
- Fig. 14: Sample BBDC0005, Barnegat Bay, NJ.
- Fig. 15: Sample COAST025, Great South Bay, NY.
- Fig. 16: Sample BBDC0002, Barnegat Bay, NJ.
- Fig. 17: Sample BBDC0106, Great Bay, NJ.

Figs 18-21: *Fallacia veterana* (Hustedt ex Simonsen) Mann

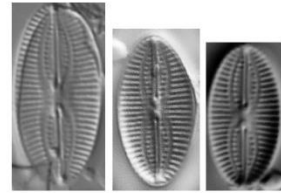
Lit.: Round, Crawford & Mann 1990, p. 669; Simonsen 1987, p.491, pl.751, figs 8-12

Basionym: *Navicula veterana* Hustedt 1964

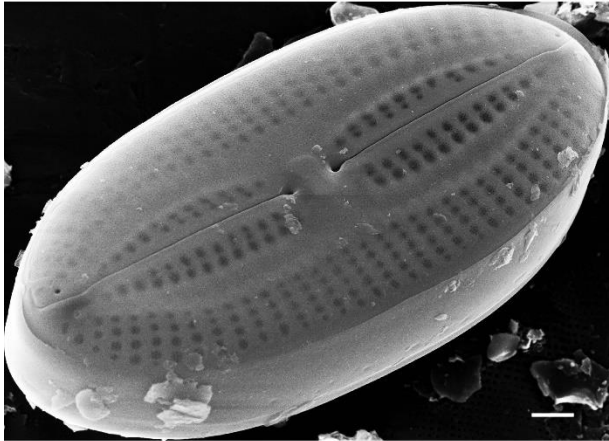
- Fig. 18: Sample COAST002, Peconic Bay, NY.
- Fig. 19: Sample BBDC0009, Barnegat Bay, NJ.
- Fig. 20: Sample BBDC0108, Great Bay, NJ.
- Fig. 21: Sample BBDC0047, Barnegat Bay, NJ.



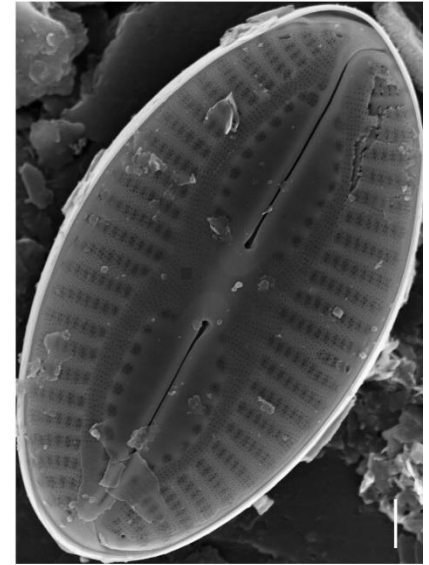
1 - 5



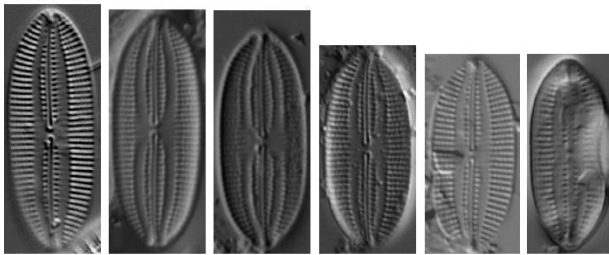
7 - 9



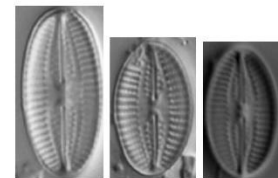
6



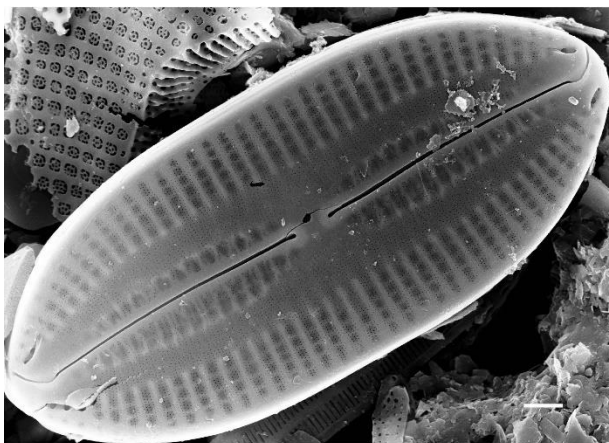
10



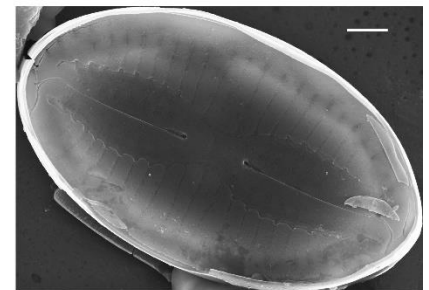
11 - 16



18 - 20



17



21

Plate 146 (Scale bars: Figs 1-11, 15-25=10 µm; Figs 12-14, 26-27=1 µm)

Figs 1-14: ***Fallacia nyella*** (Hustedt ex Simonsen) Mann

Lit.: Hustedt 1961-1966, p.660, fig.1571; Simonsen 1987, p.490,fig.751; Round, Crawford & Mann 1990, p. 669; Witkowski, Lange-Bertalot, Metzeltin 2000, p.209, pl.70:1-7.

Basionym: *Navicula nyella* Hustedt 1964

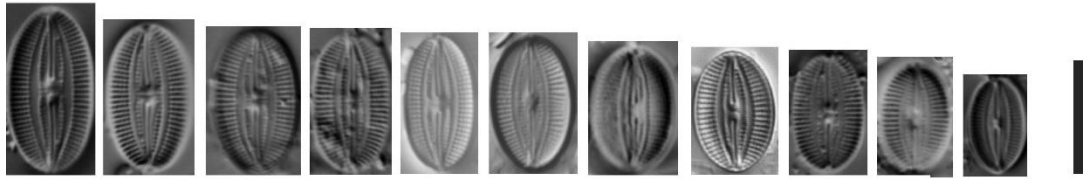
- Figs 1,9,11: Sample BBDC0041, Barnegat Bay, NJ.
- Fig. 2: Sample BBDC0049, Barnegat Bay, NJ.
- Figs 3,14: Sample BBDC0047, Barnegat Bay, NJ.
- Fig. 4: Sample BB0057, Barnegat Bay, NJ.
- Fig. 5: Sample COAST002, Peconic Bay, NY.
- Fig. 6: Sample COAST010, Great South Bay, NY.
- Fig. 7: Sample BB0004, Barnegat Bay, NJ.
- Fig. 8: Sample BBDC0012, Barnegat Bay, NJ.
- Fig. 9: Sample BB0004, Barnegat Bay, NJ.
- Fig. 12: Sample BBDC0054, Barnegat Bay, NJ.
- Fig. 13: Sample COAST054, Barnegat Bay, NJ.

Figs 15-27: ***Fallacia florinae*** (Moeller) Witkowski

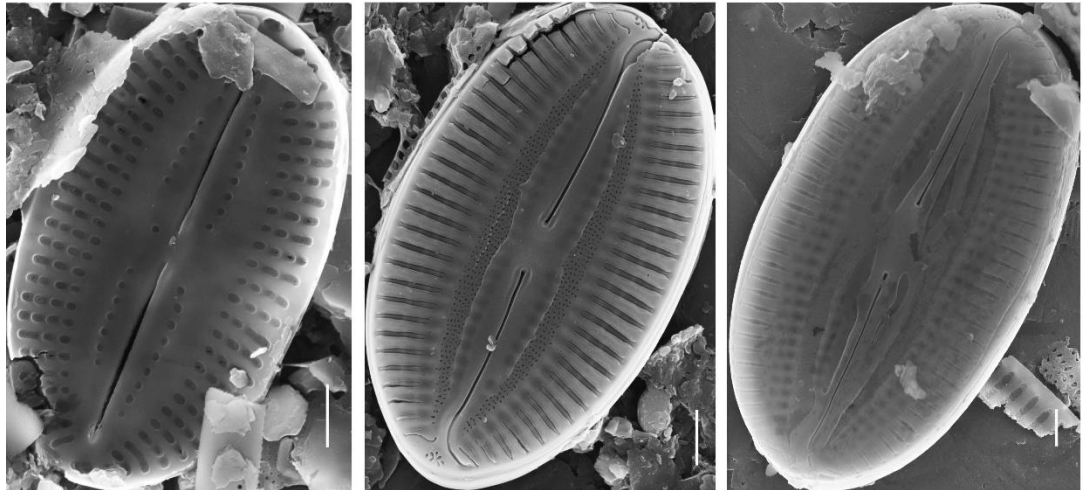
Lit.: Moller 1950, p. 204; fig. 9; Hustedt 1961-1966, p.660, fig.1660; Witkowski 1993, p. 215-219; Witkowski, Lange-Bertalot, Metzeltin 2000, p.204, pl.71:45-49.

Basionym: *Navicula florinae* Moller 1950

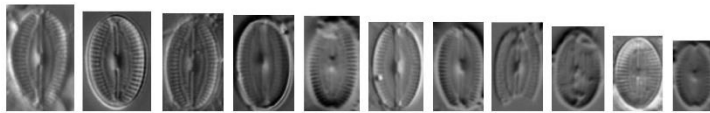
- Fig. 15: Sample BBDC0008, Barnegat Bay, NJ.
- Fig. 16: Sample BBDC0003, Barnegat Bay, NJ.
- Fig. 17: Sample BBDC0007, Barnegat Bay, NJ.
- Fig. 18: Sample BBDC0028, Barnegat Bay, NJ.
- Figs 19,21: Sample BBDC0018, Barnegat Bay, NJ.
- Fig. 20,24: Sample COAST052, Barnegat Bay, NJ.
- Fig. 22: Sample BBDC0036, Barnegat Bay, NJ.
- Fig. 23: Sample BB0055, Barnegat Bay, NJ.
- Fig. 25: Sample BB0057, Barnegat Bay, NJ.
- Figs 26-27: Sample COAST054, Barnegat Bay, NJ.



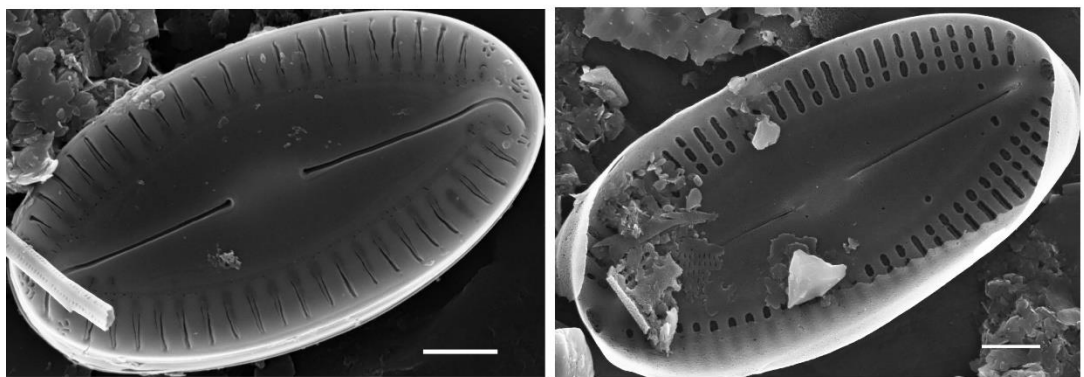
1 - 11



12 - 14



15 - 25



26 - 27

Plate 147 (Scale bars: Figs 1-15, 18-30=10 µm; Figs 16-17, 31=33 µm)

Figs 1-17: ***Fallacia cryptolyra*** (Brockmann) Stickle & Mann

Lit.: Brockmann 1950, p. 19; pl. 3, fig. 22, 23; Round, Crawford & Mann 1990, p. 668; Krammer & Lange-Bertalot 1986, p.172, fig.65:7-9; Round, Crawford & Mann 1990, p. 668; Witkowski, Lange-Bertalot, Metzeltin 2000, p.203, pl.70:42-45.

Basionym: *Navicula cryptolyra* Brockmann 1950

Synonyms:

Navicula inattigens Simonsen 1959

Fallacia inattigens (Simonsen) Mann 1990

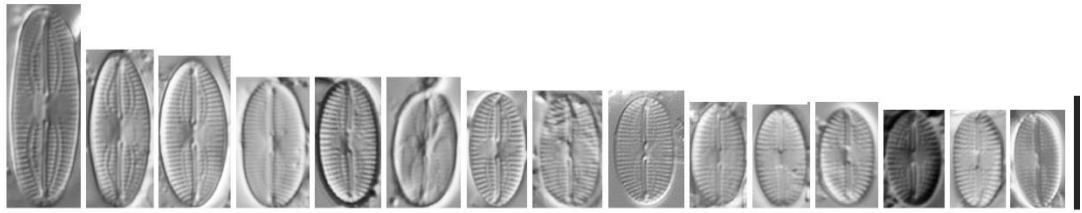
- Figs 1,8,10: Sample BBDC0009, Barnegat Bay, NJ.
- Fig. 2: Sample COAST054, Barnegat Bay, NJ.
- Figs 3,10: Sample COAST025, Great South Bay, NY.
- Fig. 4: Sample BBDC0046, Barnegat Bay, NJ.
- Figs 5-6,9: Sample BBDC0001, Barnegat Bay, NJ.
- Fig. 7: Sample COAST031, Western Bay, NY.
- Fig. 8: Sample BB0067, Barnegat Bay, NJ.
- Fig. 11: Sample COAST029, Western Bay, NY.
- Fig. 12: Sample BBDC0095, Great Bay, NJ.
- Fig. 13: Sample BB0054, Barnegat Bay, NJ.
- Fig. 14: Sample COAST028, Great South Bay, NY.
- Fig. 15: Sample COAST003, Peconic Bay, NY.
- Fig. 16: Sample BBDC0016, Barnegat Bay, NJ.
- Fig. 17: Sample BBDC0047, Barnegat Bay, NJ.

Figs 18-33: ***Fallacia melanocephala*** (Giffen) Witkowski, Lange-Bertalot & Metzeltin

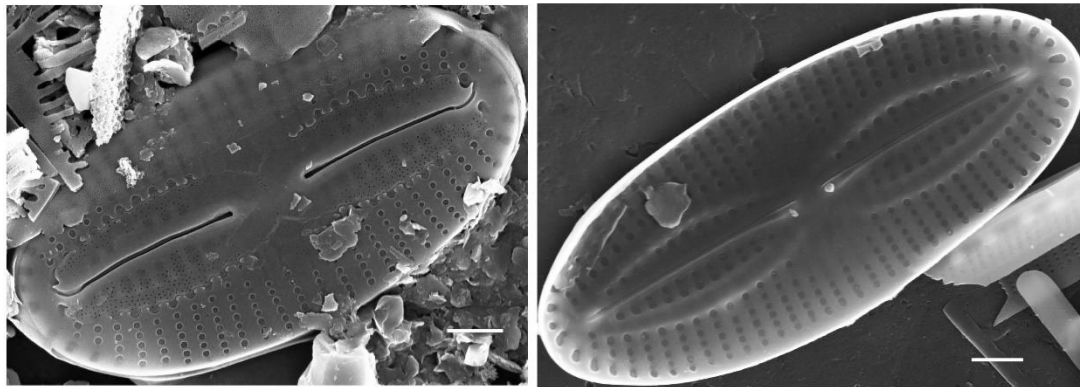
Lit.: Giffen 1975, p. 84; fig. 78-80; Witkowski 1993, p. 215-219; Witkowski, Lange-Bertalot, Metzeltin 2000, p.208, pl.71:5.

Basionym: *Navicula melanocephala* Giffen 1975

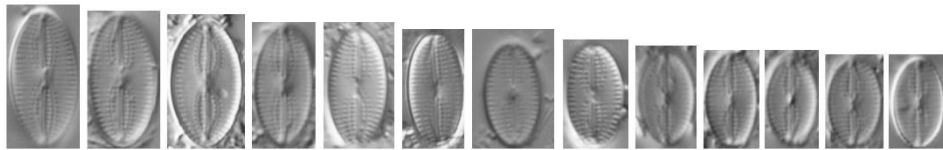
- Figs 18-22,26-30: Sample COAST025, Great South Bay, NY.
- Fig. 23: Sample COAST004, Peconic Bay, NY.
- Fig. 24: Sample BBDC0045, Barnegat Bay, NJ.
- Fig. 25: Sample COAST002, Peconic Bay, NY.
- Figs 31,33: Sample BBDC0054, Barnegat Bay, NJ.
- Fig. 32: Sample COAST022, Great South Bay, NY.



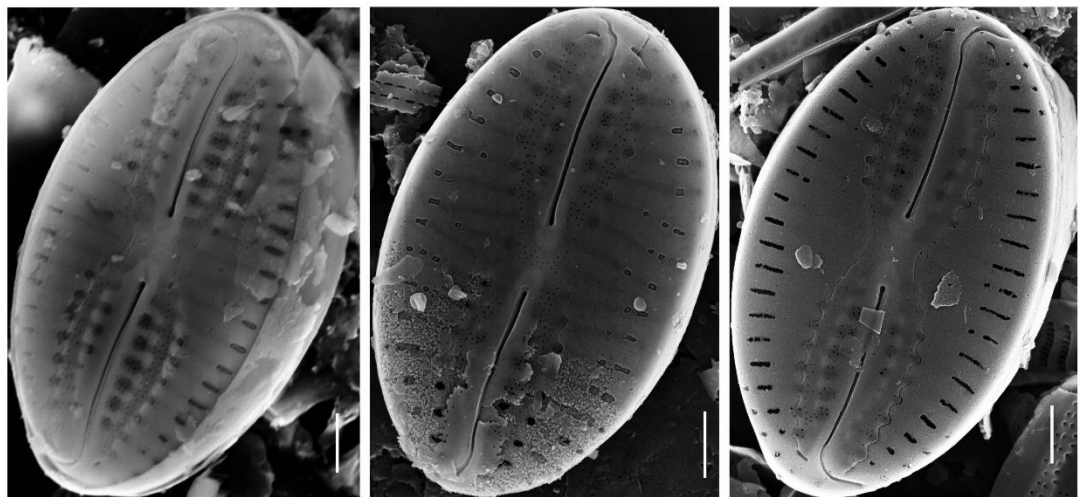
1 - 15



16 - 17



18 - 30



31 - 33

Plate 148 (Scale bars: Figs 1-15, 18-27=10 µm; Figs 16-17, 28-30=1 µm)

Figs 1-17: ***Fallacia amphipleuroides*** (Hustedt) Mann

Lit.: Hustedt 1955, p.30, pl.5, figs 33-34; Håkansson & Stabell 1977, p.478, fig.1A; Simonsen 1987, p.415, pl.619, figs 20-26; Sabbe et al. 1999, p.11, figs 22-25; Round, Crawford & Mann 1990, p. 668; Witkowski, Lange-Bertalot, Metzeltin 2000, p.200, pl.71:43,44.

Basionym: *Navicula amphipleuroides* Hustedt 1955

Synonyms: *Navicula margin-ornata* (*marginornata*) Salah 1955

Maybe conspecific with *Navicula fenestrella* Hustedt

Figs 1,12: Sample COAST002, Peconic Bay, NY.

Figs 2,10-11,16-17: Sample BBDC0003, Barnegat Bay, NJ.

Fig. 3: Sample BB0174, Tuckerton Bay, NJ.

Figs 4,7: Sample BBDC0054, Barnegat Bay, NJ.

Fig. 5: Sample COAST005, Peconic Bay, NY.

Fig. 6,13,15: Sample COAST001, Peconic Bay, NY.

Fig. 8: Sample BBDC0012, Barnegat Bay, NJ.

Fig. 9: Sample BBDC0095, Great Bay, NJ.

Fig. 14: Sample BBDC0009, Barnegat Bay, NJ.

Figs 18-30: ***Fallacia margino-punctata*** Sabbe & Vyverman

Lit.: Sabbe, Vyverman & Muylaert 1999, p. 15, 17; fig. 19-21, 28-33, 62-65; Witkowski, Lange-Bertalot, Metzeltin 2000, p.207, pl.71:18-20

Fig. 17: Sample COAST062, Great Bay, NJ.

Figs 18,22: Sample COAST002, Peconic Bay, NY.

Fig. 19: Sample BBDC0048, Barnegat Bay, NJ.

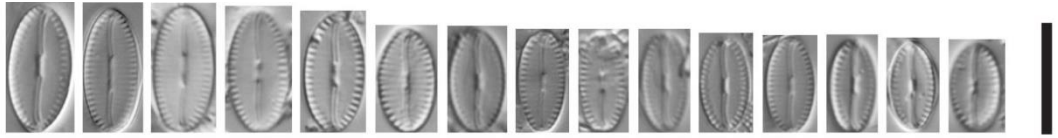
Figs 20,24,28: Sample BBDC0095, Great Bay, NJ.

Fig. 21: Sample COAST001, Peconic Bay, NY.

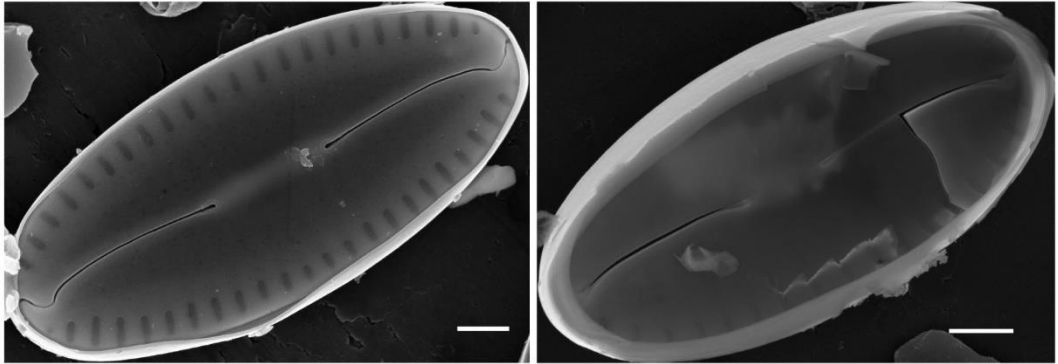
Figs 23,25: Sample COAST025, Great South Bay, NY.

Fig. 26: Sample COAST053, Barnegat Bay, NJ.

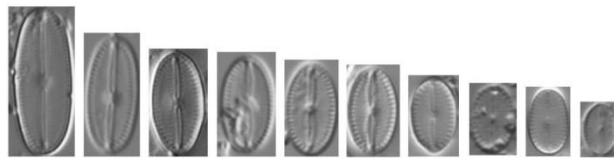
Figs 27,29: Sample COAST022, Great South Bay, NY.



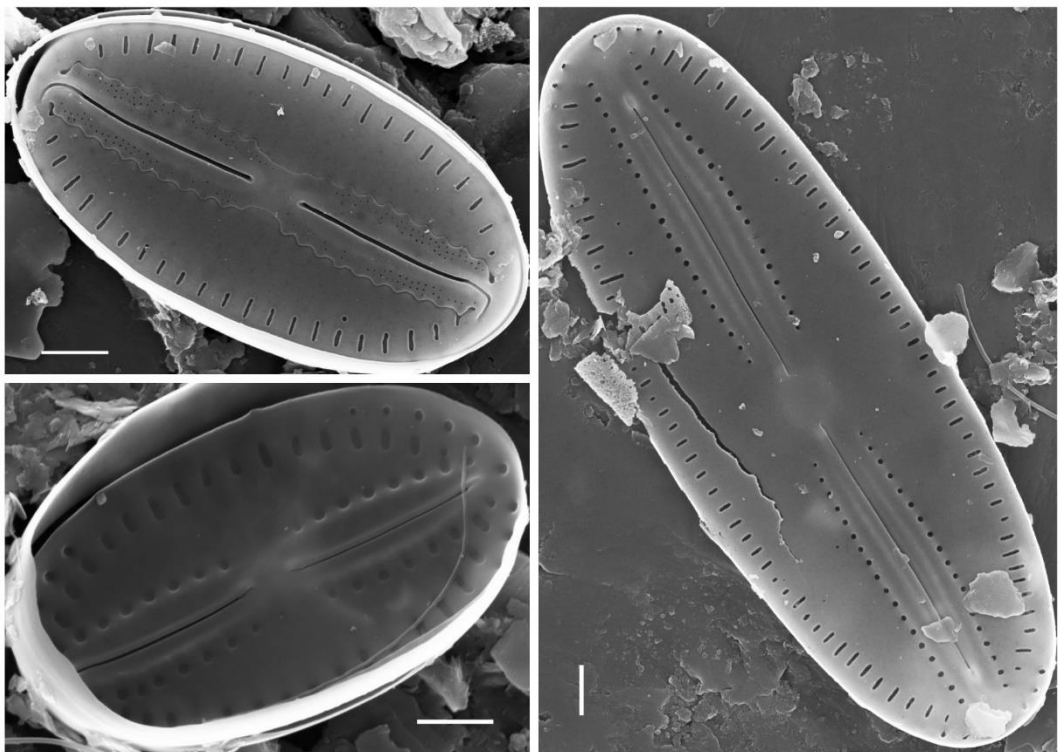
1 - 15



16 - 17



18 - 27



28- 30

Figs 1-9: ***Fallacia* sp. 1 (*F. wuestii* sensu Witkowski)**

- Fig. 1: Sample BBDC0044, Barnegat Bay, NJ.
Figs 2,3,8: Sample COAST052, Barnegat Bay, NJ.
Figs 4,5: Sample BBDC0051, Barnegat Bay, NJ.
Fig. 6: Sample BBDC0001, Barnegat Bay, NJ.
Fig. 7: Sample BBDC0012, Barnegat Bay, NJ.
Fig. 9: Sample BBDC0080, Barnegat Bay, NJ.

Figs 10-13: ***Fallacia* cf. *tenera*** sensu Sabbe, Vyverman, Muylaert; sensu Snoeijjs

Lit.: Sabbe et al. 1999, p.18, figs 1-4,75,78,82; Snoeijjs & Vilbaste 1994, v. 3: p. 54

- Fig. 10: Sample BBDC0003, Barnegat Bay, NJ.
Fig. 11: Sample COAST051, Barnegat Bay, NJ.
Figs 12: Sample BB0063, Barnegat Bay, NJ.
Figs 13: Sample BB0058, Barnegat Bay, NJ.

Fig. 14: ***Fallacia tenera*** Hustedt

Lit.: Schmidt et al. 1936, pl. 405, footnote; Simonsen 1987, p.162, pl.255, figs 6-10; Round, Crawford & Mann 1990, p. 668

Basionym: *Navicula tenera* Hustedt in Schmidt et al. 1936

- Fig. 14: Sample BBDC0046, Barnegat Bay, NJ.

Figs 15-21: ***Fallacia* cf. *teneroides*** sensu Sabbe, Vyverman, Muylaert

Lit.: Sabbe et al. 1999, p.10, figs 5,6.

- Figs 15-16,18: Sample COAST002, Peconic Bay, NY.
Fig. 17: Sample COAST001, Peconic Bay, NY.
Fig. 19: Sample BB0055, Barnegat Bay, NJ.
Fig. 20: Sample COAST003, Peconic Bay, NY.
Fig. 21: Sample COAST054, Barnegat Bay, NJ.

Fig. 22: ***Fallacia teneroides*** (Hustedt) Mann

Lit.: Hustedt 1956, p. 117; fig. 42-43; Simonsen 1987, p.162, pl.654, figs 1-9; Round, Crawford & Mann 1990, p. 669

Basionym: *Navicula tenera* Hustedt 1956

- Fig. 22: Sample BBDC0006, Barnegat Bay, NJ.

Figs 23-30: ***Fallacia auriculata*** (Hustedt) Mann

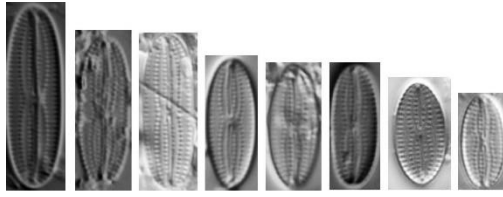
Lit.: Hustedt 1944, p. 273; fig. 4; Simonsen 1987, p.314, pl.472, figs 10-12, p.194 pl.303, figs 30-35 as *Navicula dissipata*.

Basionym: *Navicula auriculata* Hustedt 1944

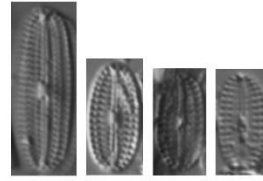
- Fig. 23: Sample BB0061, Barnegat Bay, NJ.
Fig. 24: Sample BBDC0048, Barnegat Bay, NJ.
Fig. 25: Sample BBDC0002, Barnegat Bay, NJ.
Fig. 26: Sample BBDC0004, Barnegat Bay, NJ.
Fig. 27: Sample BBDC0007, Barnegat Bay, NJ.
Fig. 28: Sample BBDC0005, Barnegat Bay, NJ.
Fig. 29: Sample COAST052, Barnegat Bay, NJ.
Fig. 30: Sample BBDC0051, Barnegat Bay, NJ.

Figs 31-37: ***Fallacia* sp. 12**

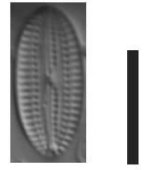
- Fig. 31: Sample BBDC0005, Barnegat Bay, NJ.
Fig. 32: Sample BBDC0006, Barnegat Bay, NJ.
Fig. 33: Sample BBDC0028, Barnegat Bay, NJ.
Fig. 34: Sample BBDC0009, Barnegat Bay, NJ.
Fig. 35: Sample BB0006, Barnegat Bay, NJ.
Figs 36,37: Sample BBDC0008, Barnegat Bay, NJ.



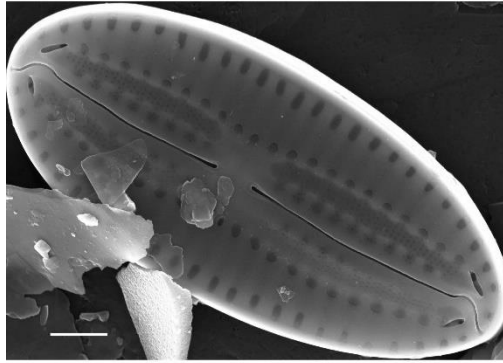
1 - 8



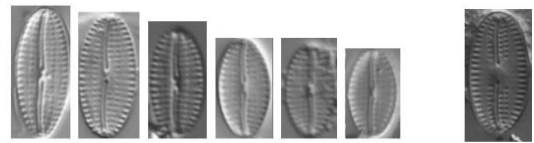
10 - 13



14

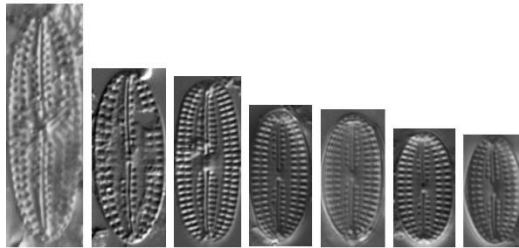


9

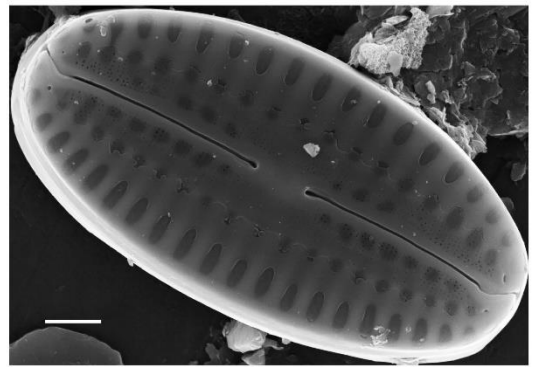


15 - 20

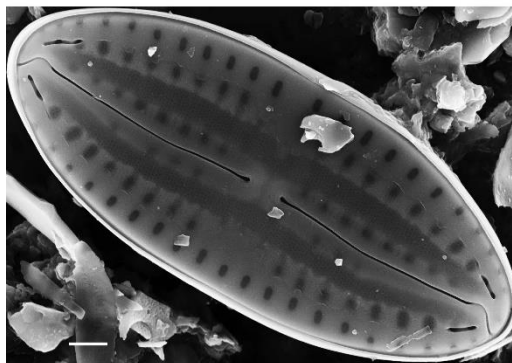
22



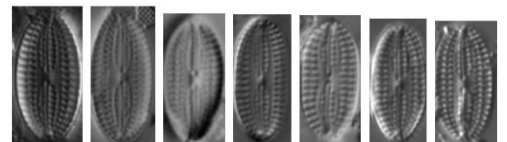
23 - 29



21



30



31 - 37

Plate 150 (Scale bars: Figs 1-14, 16-37=10 µm; Figs 15, 38-39=1 µm)

Figs 1-3: *Fallacia* sp. 9

- Fig. 1: Sample BB0076, Barnegat Bay, NJ.
Fig. 2: Sample COAST029, Western Bay, NY.
Fig. 3: Sample BBDC0051, Barnegat Bay, NJ.

Figs 4-5: *Fallacia wuestii* (Simonsen) Sabbe & Muylaert

- Lit.: Simonsen 1959, p. 77; pl. 11, fig. 16-18; Sabbe, Vyverman & Muylaert 1999, p. 19, figs. 34-36.
Fig. 4: Sample BBDC0044, Barnegat Bay, NJ.
Fig. 5: Sample COAST051, Barnegat Bay, NJ.

Fig. 6: *Fallacia* sp. 11

- Fig. 6: Sample BBDC0004, Barnegat Bay, NJ.

Fig. 7: *Fallacia* sp. 16

- Fig. 7: COAST044, Barnegat Bay, NJ.

Fig. 8: *Fallacia* sp. 3

- Fig. 8: Sample BBDC0062, Barnegat Bay, NJ.

Figs 9-12: *Fallacia fracta* (Hustedt ex Simonsen) Mann

- Lit.: Hustedt 1961, p. 127; fig. 1259; Crawford & Mann 1990, p. 668
Basionym: *Navicula fracta* Hustedt 1961

- Fig. 9: Sample BB0009, Barnegat Bay, NJ.
Figs 10-12: Sample RUTG0867, Pilot Drive, NJ.

Figs 13-15: *Fallacia pulchella* Hustedt

- Lit.: Sabbe, Vyverman & Muylaert 1999, p. 17; fig. 46, 47, 66-68, 72, 74; Witkowski, Lange-Bertalot, Metzeltin 2000, p.211, pl.71:50,51
Fig. 13: Sample BBDC0008, Barnegat Bay, NJ.
Fig. 14: Sample BB0052, Barnegat Bay, NJ.
Fig. 15: Sample BBDC0054, Barnegat Bay, NJ.

Fig. 16: *Fallacia* sp. 2

- Fig. 12: Sample BBDC0062, Barnegat Bay, NJ.

Figs 17-19: *Fallacia* sp. 10

- Fig. 17: Sample RUTG0004, Cape May Courthouse, NJ.
Figs 18-19: Sample RUTG0860, Pilot Drive, NJ.

Figs 20-39: *Fallacia aequorea* (Hustedt) Mann

- Lit.: Hustedt 1939, p. 621; fig. 57-60; Simonsen 1987, p.256, pl.379, figs 8-14; Witkowski, Lange-Bertalot, Metzeltin 2000, p.200, pl.71:35,36
Basionym: *Navicula aequorea* Hustedt 1939

- Figs 20-21,27,29: Sample COAST025, Great South Bay, NY.
Fig. 22: Sample BBDC0012, Barnegat Bay, NJ.
Fig. 23: Sample BBDC0053, Barnegat Bay, NJ.
Fig. 24: Sample COAST054, Barnegat Bay, NJ.
Fig. 25: Sample BB0064, Barnegat Bay, NJ.
Fig. 26: Sample COAST003, Peconic Bay, NY.
Fig. 28: Sample BBDC0047, Barnegat Bay, NJ.
Fig. 30,32: Sample COAST052, Barnegat Bay, NJ.
Fig. 31,36: Sample BBDC0002, Barnegat Bay, NJ.
Fig. 33: Sample BB0063, Barnegat Bay, NJ.
Fig. 34: Sample BB0057, Barnegat Bay, NJ.
Fig. 35: Sample BBDC0018, Barnegat Bay, NJ.
Fig. 37: Sample BBDC0041, Barnegat Bay, NJ.
Fig. 38: Sample BBDC0080, Barnegat Bay, NJ.
Fig. 39: Sample BBDC0045, Barnegat Bay, NJ.

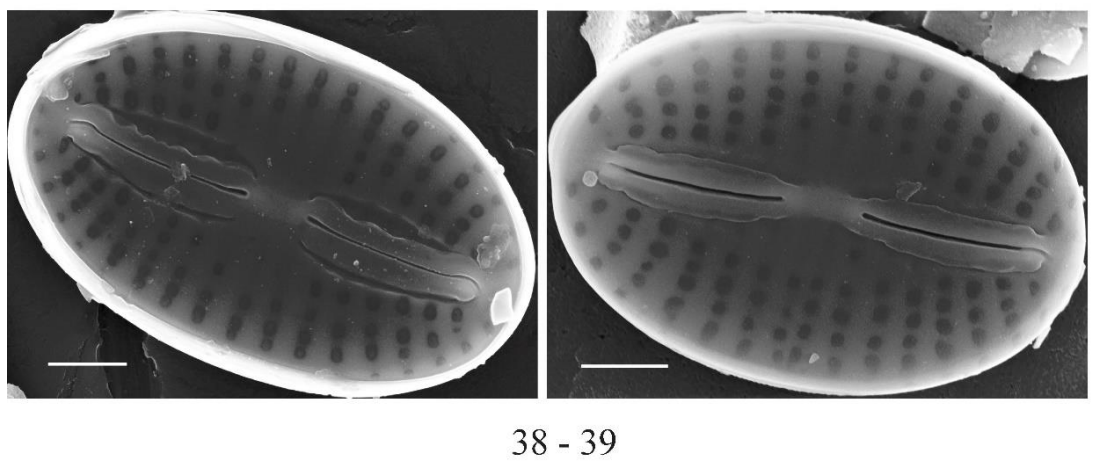
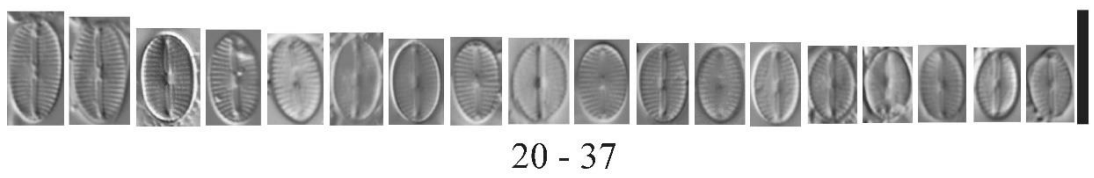
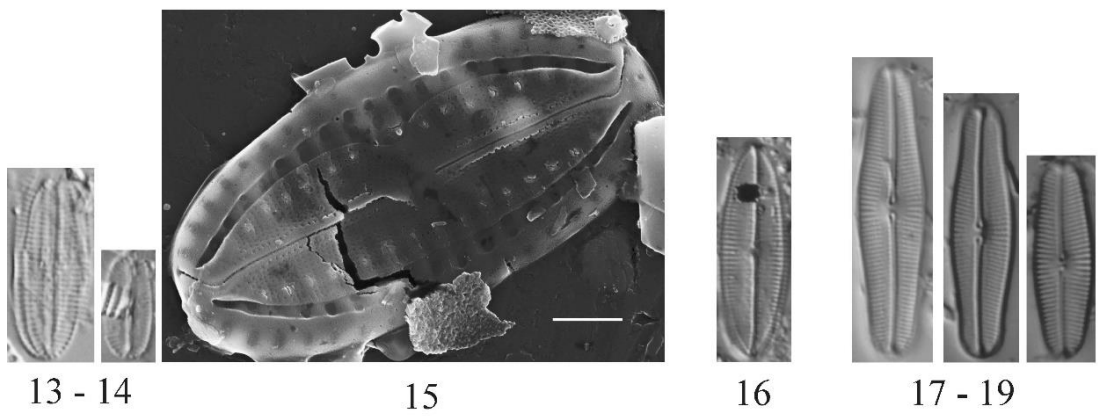
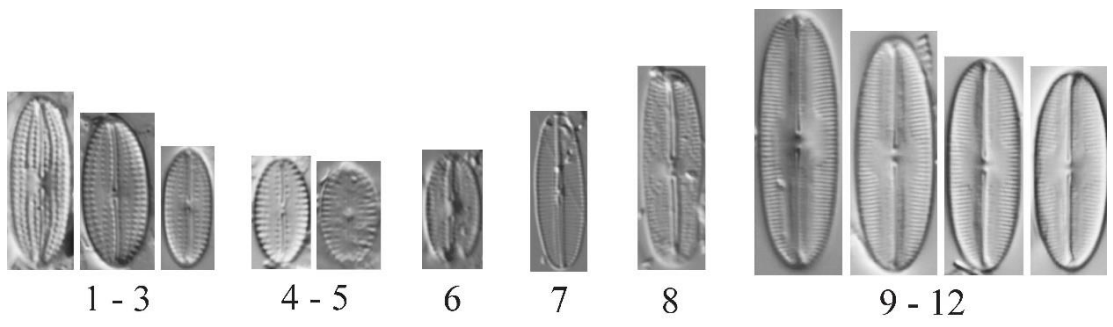


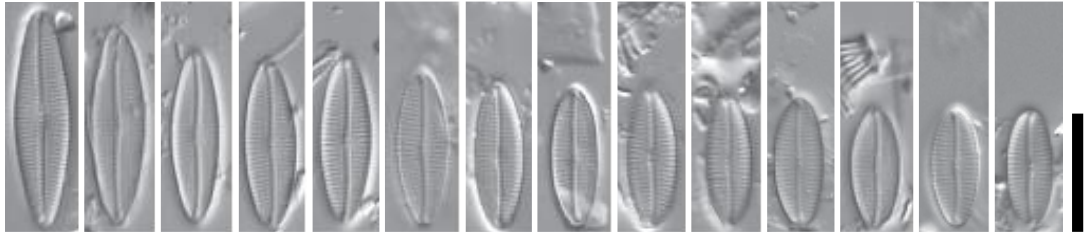
Plate 151

(Scale bars: Figs 1-14=10 µm; Figs 15-19=1 µm)

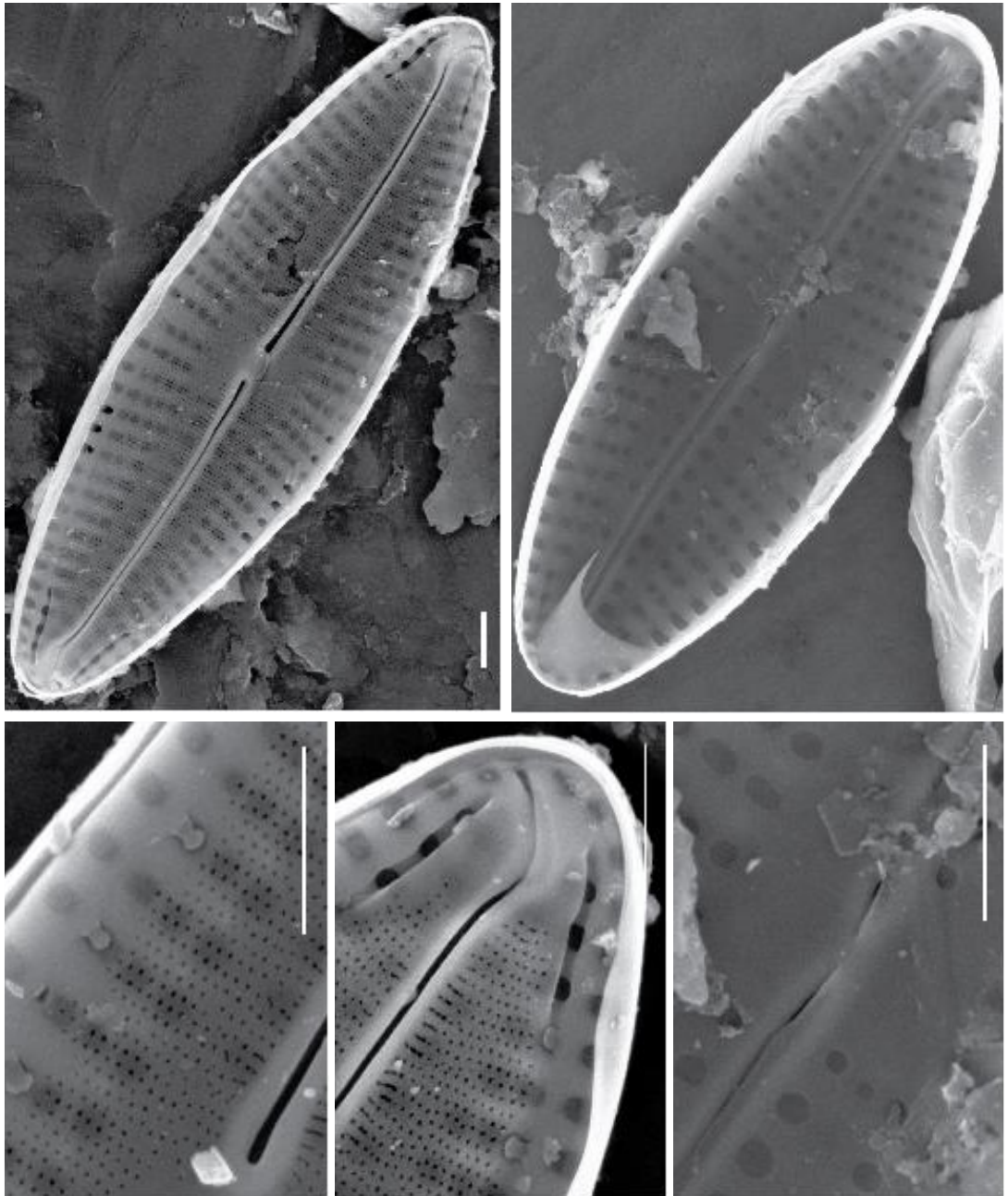
Fallacia gemmifera (Simonsen) Mann

Lit.: Simonsen 1960, p. 128; pl. 1, fig. 11-12; Round, Crawford & Mann 1990, p. 668; Witkowski, Lange-Bertalot, Metzeltin 2000, p.279, pl791:13-18.

Basionym: *Navicula gemmifera* Simonsen 1960



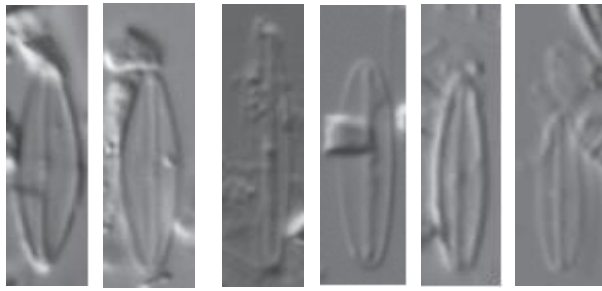
1 - 14



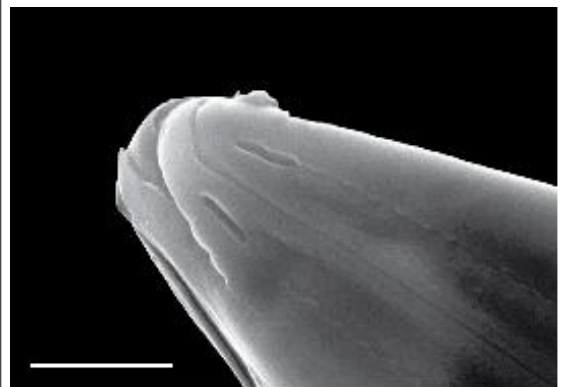
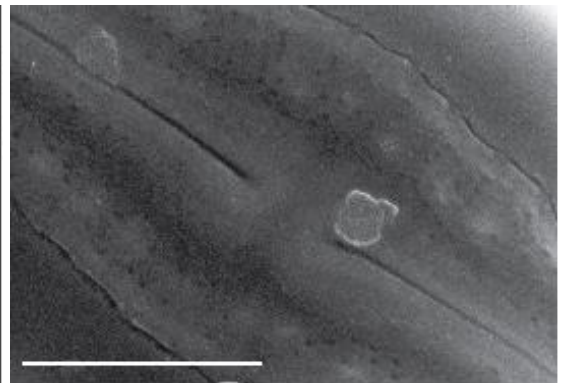
15 - 19

Fallacia cf. fossulae

Figs 1-2: Sample BBDC0056, Barnegat Bay, NJ.
Fig. 3: Sample BBDC0041, Barnegat Bay, NJ.
Fig. 4: Sample BBDC0052, Barnegat Bay, NJ.
Fig. 5: Sample COAST052, Barnegat Bay, NJ.
Fig. 6: Sample BBDC0053, Barnegat Bay, NJ.
Figs 7-9: Sample BBDC0080, Barnegat Bay, NJ.



1 - 6

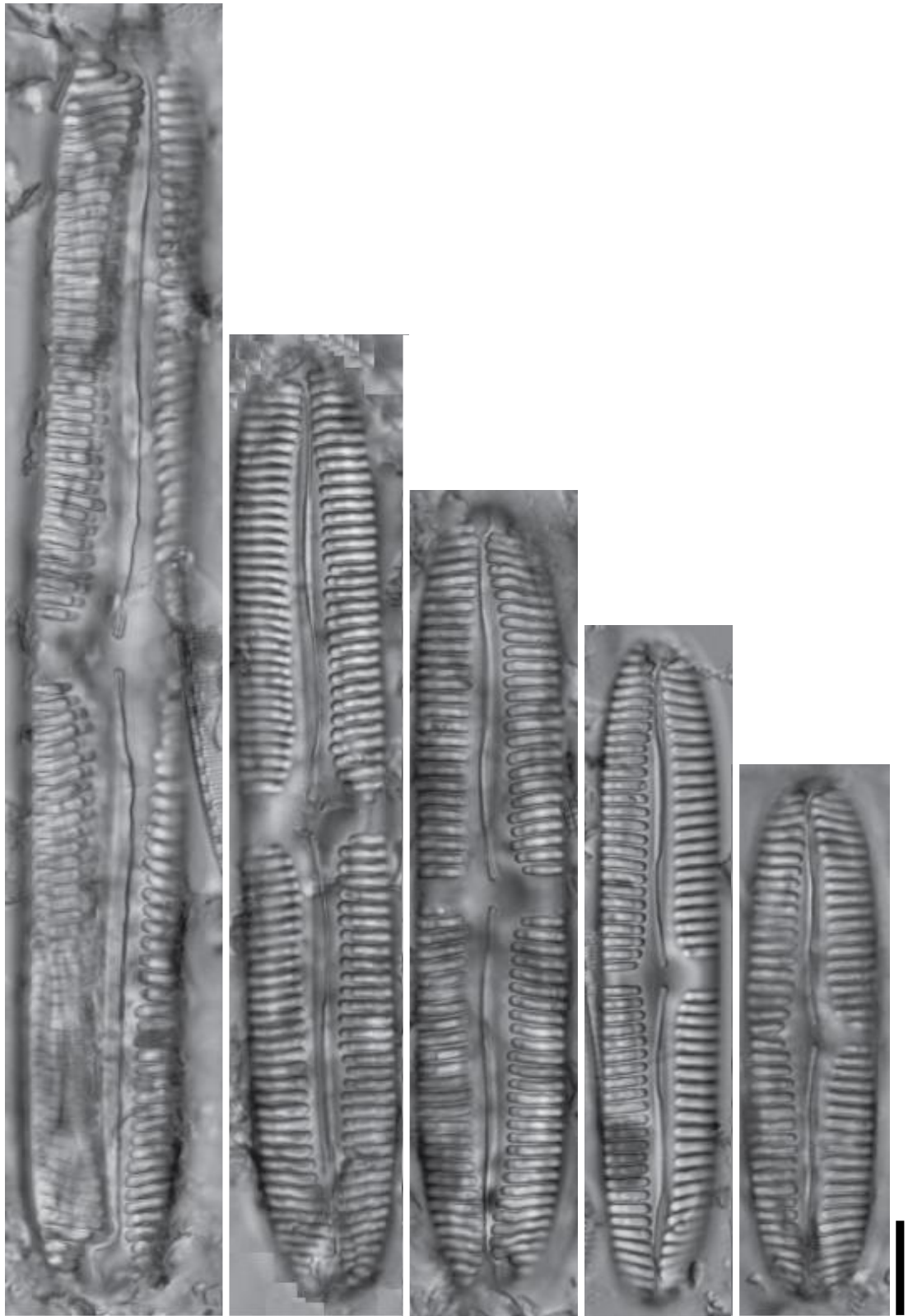


7 - 9

Pinnularia aestuarii Cleve

Lit.:Cleve 1895, p. 93; pl. 1, fig. 16

Figs 1-5: Sample RUTG0340, Cheesequake State Park, NJ.

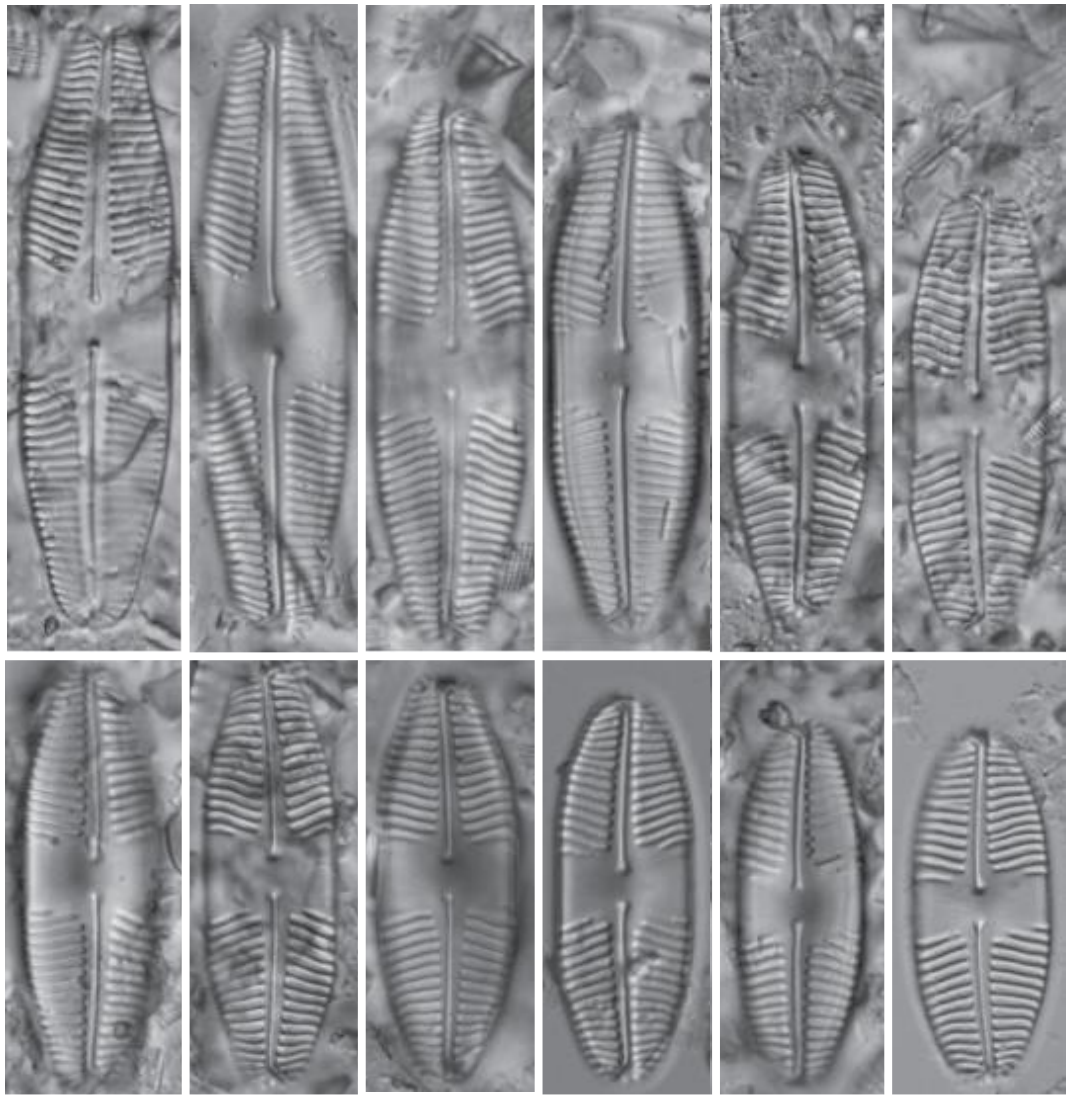


1 - 5

Pinnularia birnirkiana Patrick & Freese

Lit.: Patrick & Freese 1961, p. 235; pl. 3, fig. 14

Figs 1-12: Sample RUTG0340, Cheesquake State Park, NJ.



1 - 12

Figs 1-12: ***Pinnularia cf. brebissonii var. minuta***

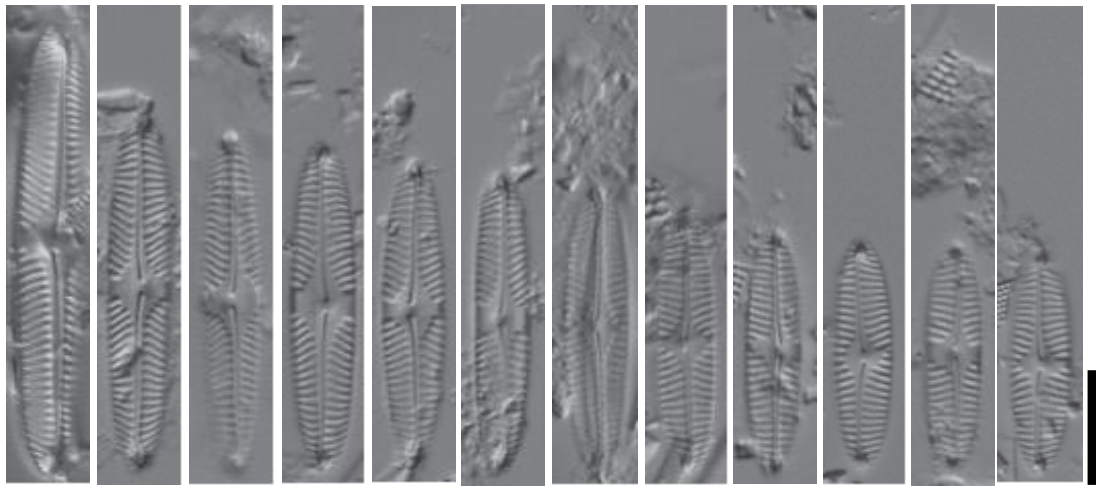
Fig.1: Sample BB0010, Barnegat Bay, NJ.

Figs 2-12: Sample BB0085, Tuckerton Bay, NJ.

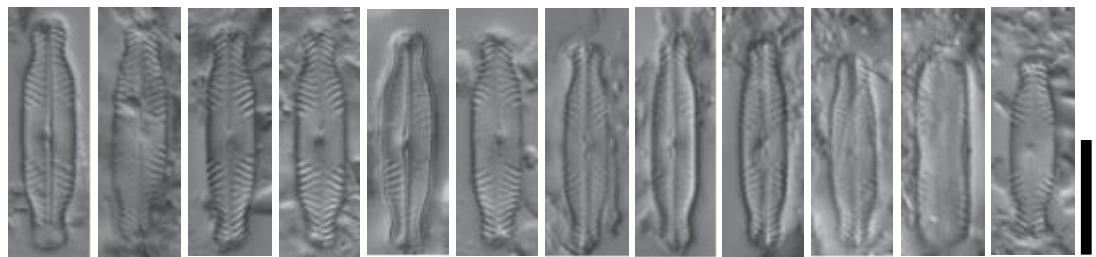
Figs 13-24: ***Pinnularia cf. divergentissima***

Figs 25-32: ***Pinnularia quadratera var. quadratera*** (Schmidt) Cleve

Lit.:Cleve 1895, p. 95



1 - 12



13 - 24

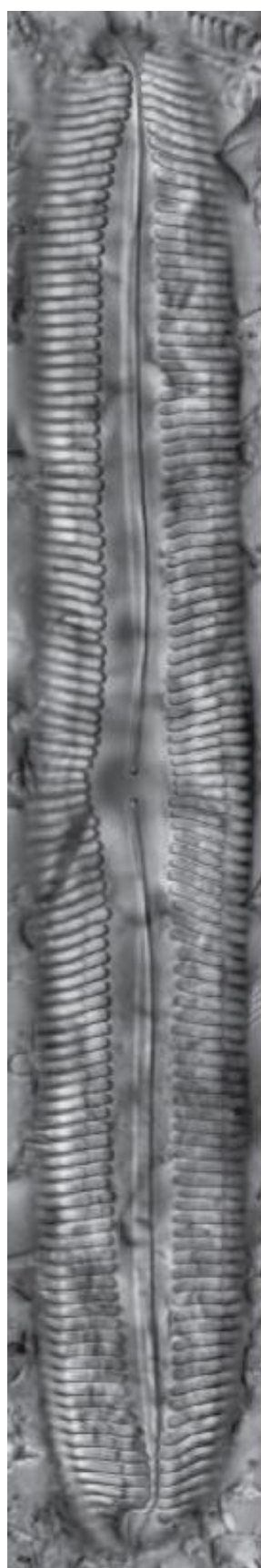


25 - 32

Pinnularia viridiformis Krammer

Lit.:Krammer 1992, p. 160-161; pl. 1, fig. 4, pl. 4, fig. 1-4, pl. 68, fig. 1-4, pl. 69, fig. 1-5

Figs 1-2: Sample BBDC0056, Barnegat Bay, NJ.



Pinnularia viridis Ehrenberg

Lit.:Ehrenberg 1845, p. 62, 64

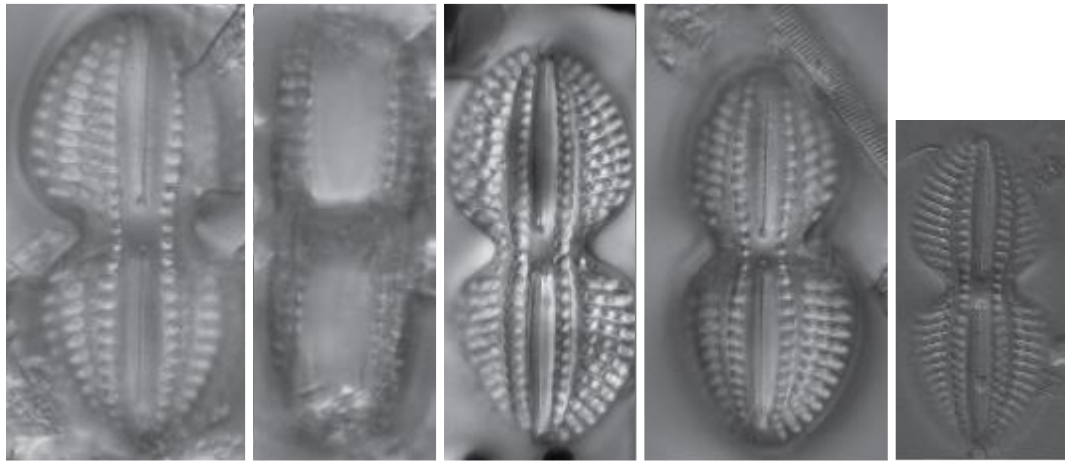


Figs 1-5: *Diploneis bombus* Cleve-Euler

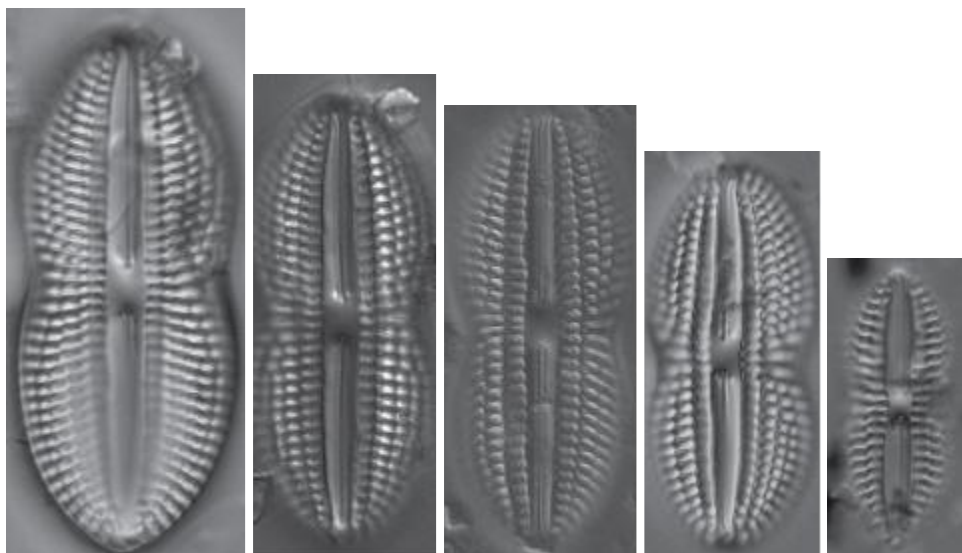
Lit.:Backman & Cleve-Euler 1922, p. 68; fig. 30

Figs 6-10: *Diploneis didyma* (Schmidt Lit.:Schmidt et al.) Mills

Lit.:Mills 1934, p. 613



1 - 5



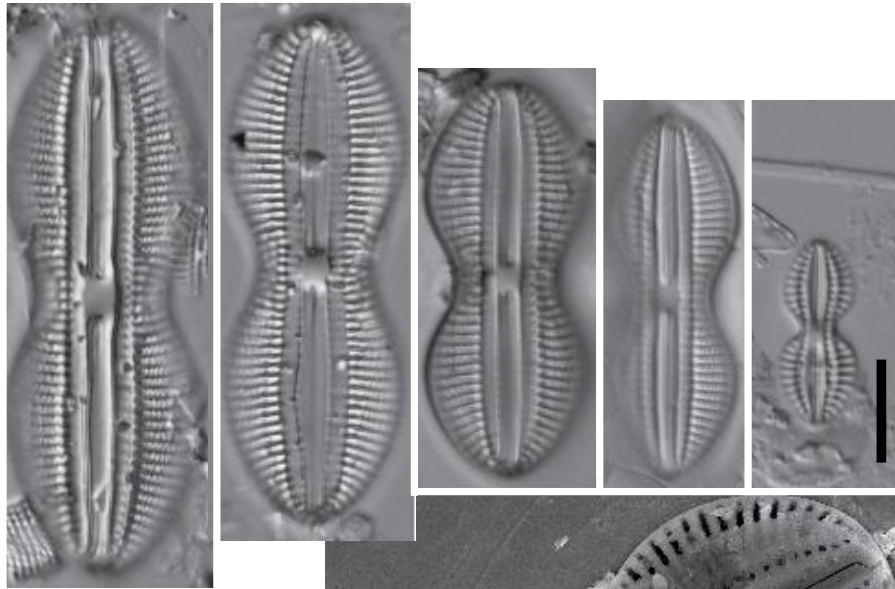
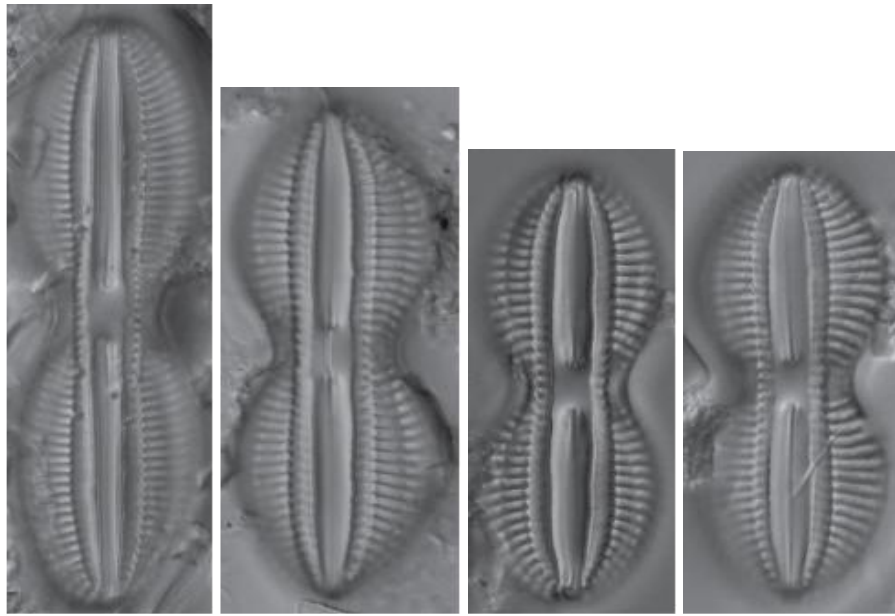
6 - 10

Plate 159

(Scale bars: Figs 1-9=10 μm ; Fig. 10=1 μm)

Diploneis stroemi Hustedt

Lit.:Hustedt 1937, p. 608; fig. 1022



1 - 9

10

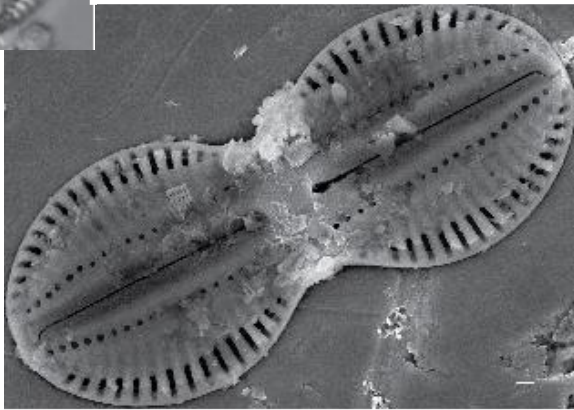
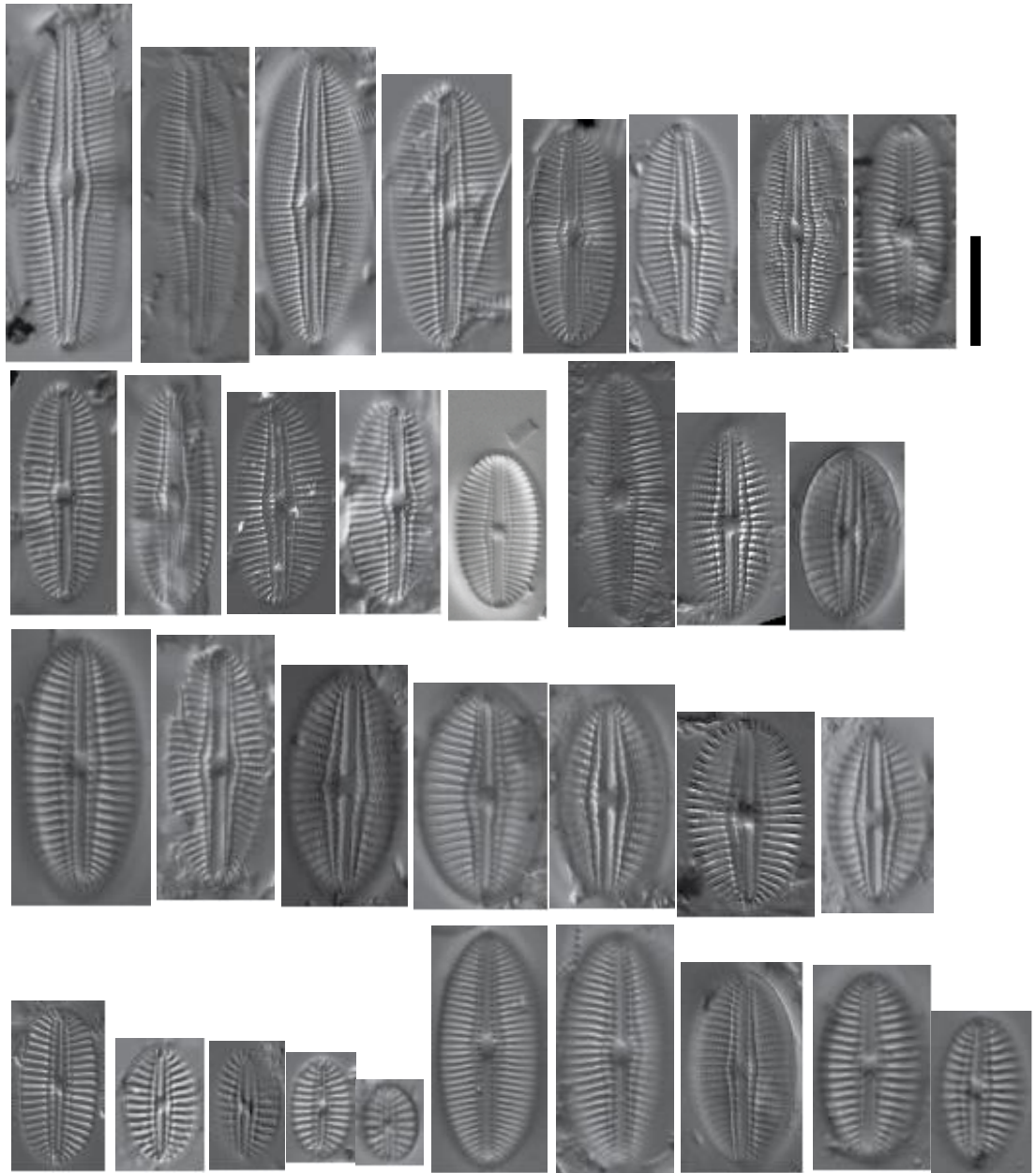


Plate 160

(Scale bar: Figs 1-33=10 µm)

Diploneis cf. litoralis

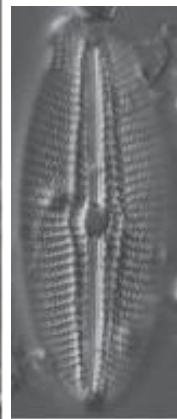
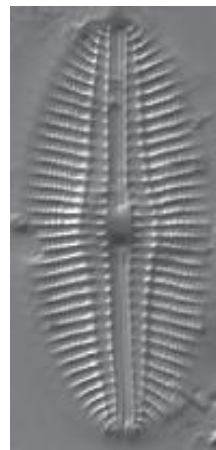
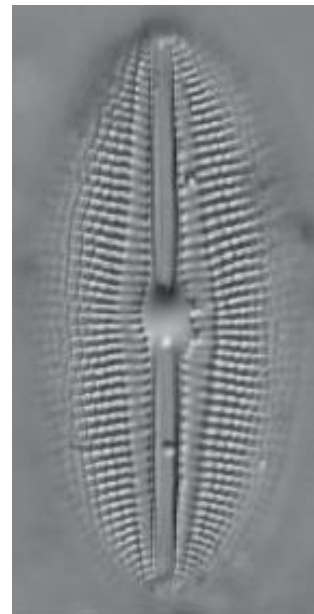
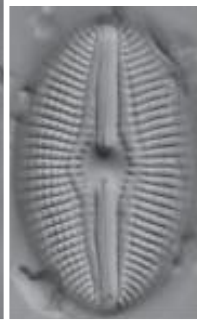
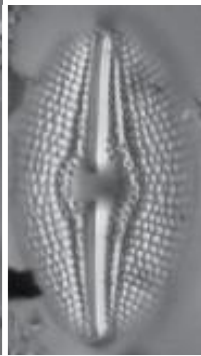
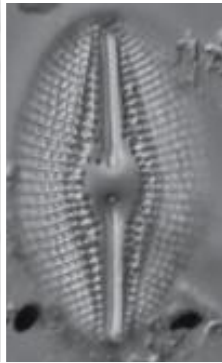
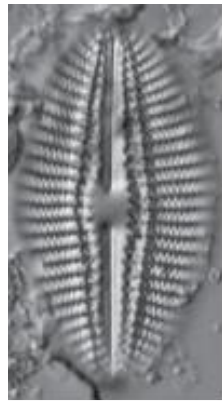
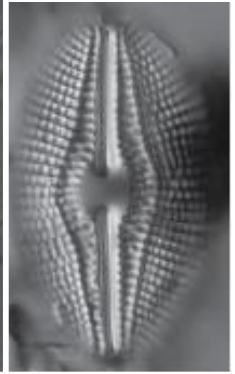
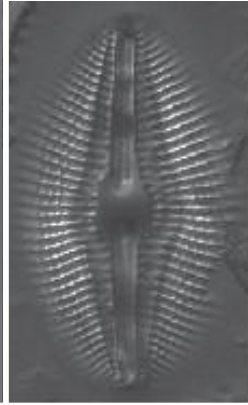
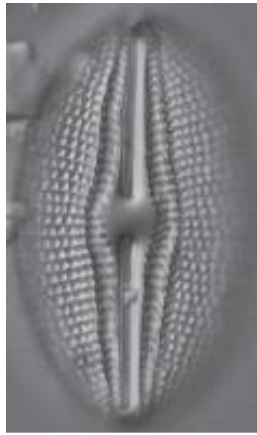
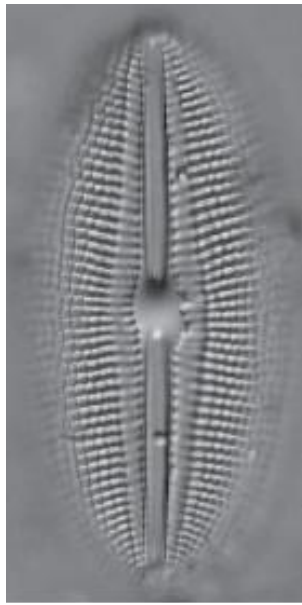


1 - 33

Plate 161

(Scale bar: Figs 1-13=10 µm)

Diploneis* cf. *smithii



1 - 13

Diploneis* cf. *sejuncta



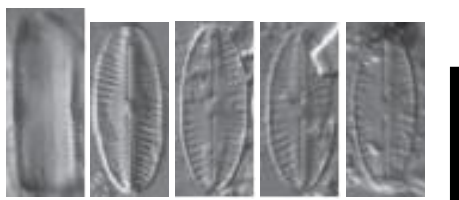
1 - 3

Mayamaea fossalis var. *obsialis* (Hustedt) Lange-Bertalot

Lit.: Lange-Bertalot 1997, p. 72

Basionym: *Navicula obsidialis* Hustedt 1942

Synonym: *Navicula fossalis* var. *obsidialis* (Hustedt) Lange-Bertalot in Krammer & Lange-Bertalot 1985



1 - 5

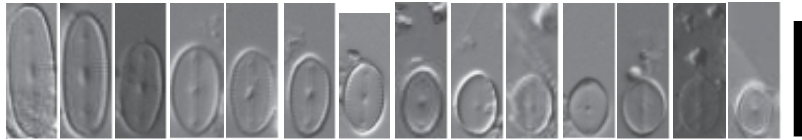
Plate 164

(Scale bars: Figs 1-14=10 µm, 15-16=1 µm)

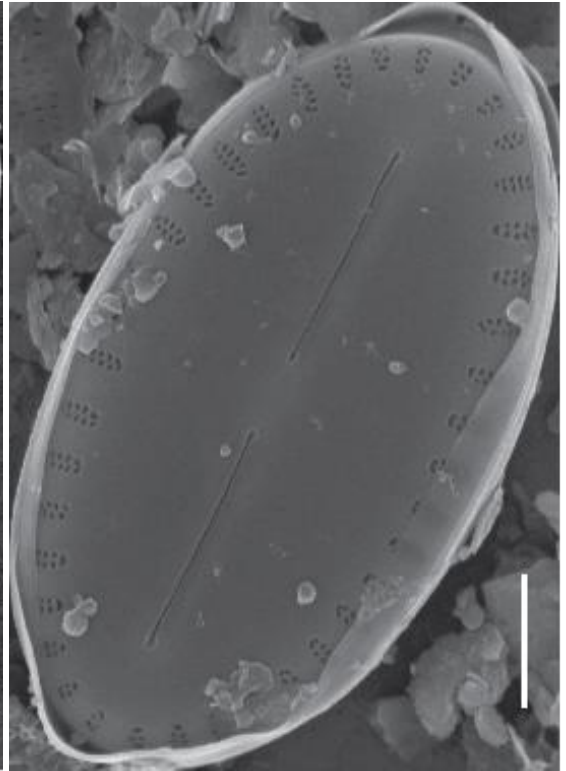
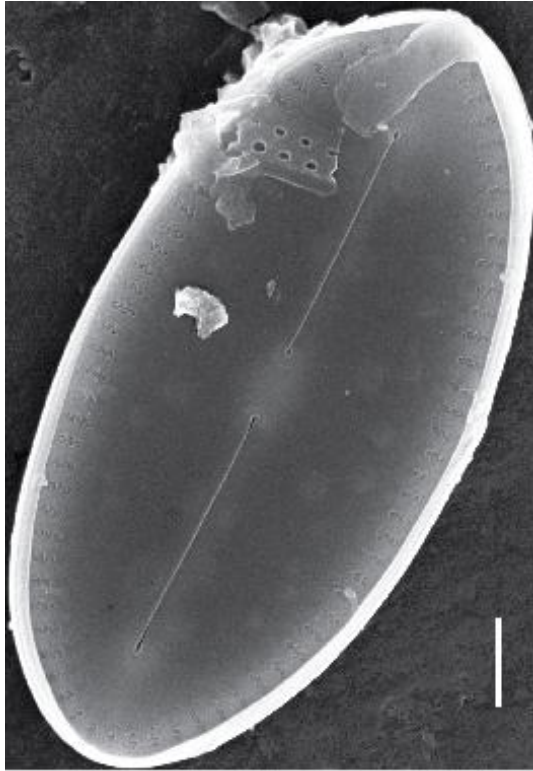
Amicula specululum (Witkowski) Witkowski

Lit.: Witkowski, Lange-Bertalot & Metzeltin 2000, p. 127

Basionym: *Navicula specululum* Witkowski 1994



1 - 14



15 - 16

Plate 165 (Scale bars: Figs 1-8; 12-27; 29-40; 43-47; 48-51=10 μm ; Figs 9-11; 28; 41-42; 47; 52=1 μm)

Figs 1-11: *Chamaepinnularia* aff. *begeri*

Figs 12-19: *Chamaepinnularia* sp. 7

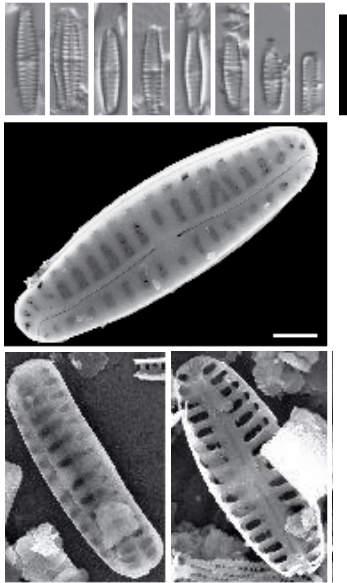
Figs 20-28: *Chamaepinnularia* sp. 12

Figs 29-32: *Chamaepinnularia* sp. 14

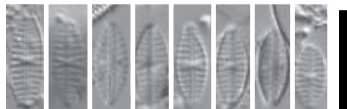
Figs 33-42: *Chamaepinnularia* sp. 8

Figs 43-47: *Chamaepinnularia* sp

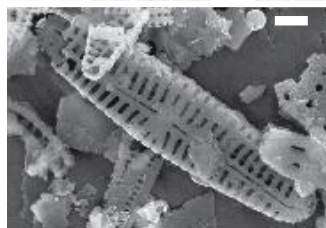
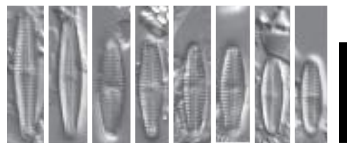
Figs 48-52: *Chamaepinnularia wiktoriae*



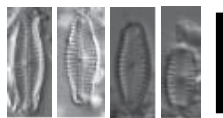
1 - 11



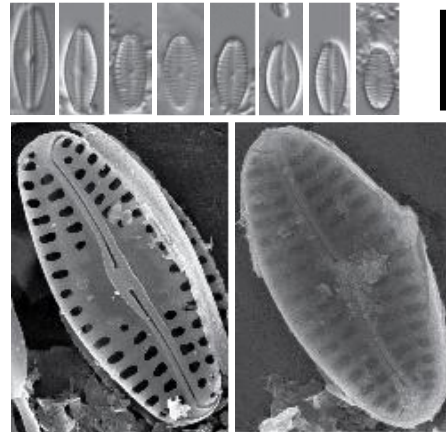
12 - 19



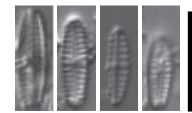
20 - 28



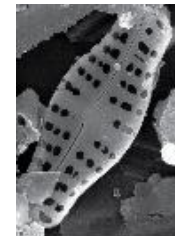
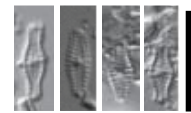
29 - 32



33 - 42



43 - 47



48 - 52

Navicula palpebralis Brébisson

Lit.: Wm. Smith 1853, p. 50; pl. 31, fig. 273; Brockmann 1950, fig 3:14,16; Hendey 1964, p.216, fig.XXXIV: 13-19; Witkowski, Lange-Bertalot, Metzeltin 2000, p.294, pl.139:9, pl.140:1-3.

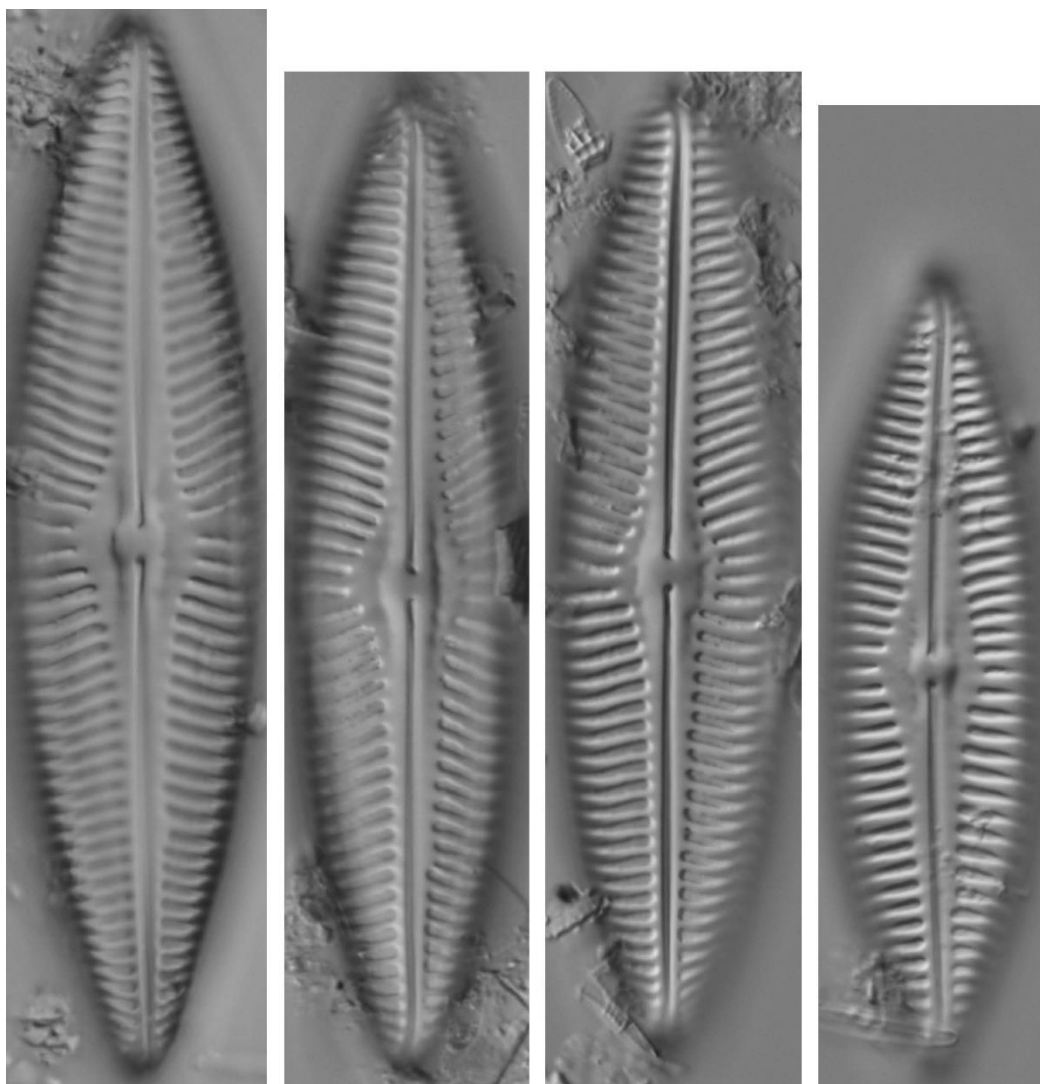
Synonyms: *Schizonema palpebrale* (Brébisson ex W. Smith) Kuntze 1898

Fig. 1: Sample BBDC0037, Barnegat Bay, NJ.

Fig. 2: Sample BB0002, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0106, Great Bay, NJ.

Fig. 4: Sample BBDC0034, Barnegat Bay, NJ.



1 - 4

Navicula palpebralis Brébisson

Lit.: Wm. Smith 1853, p. 50; pl. 31, fig. 273; Brockmann 1950, fig 3:14,16; Hendey 1964, p.216, fig.XXXIV: 13-19; Witkowski, Lange-Bertalot, Metzeltin 2000, p.294, pl.139:9, pl.140:1-3.

Synonyms: *Schizonema palpebrale* (Brébisson ex W. Smith) Kuntze 1898

Figs 1-2: Barnegat Bay, NJ.

Fig. 3: Sample BBDC0037, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0022, Barnegat Bay, NJ.

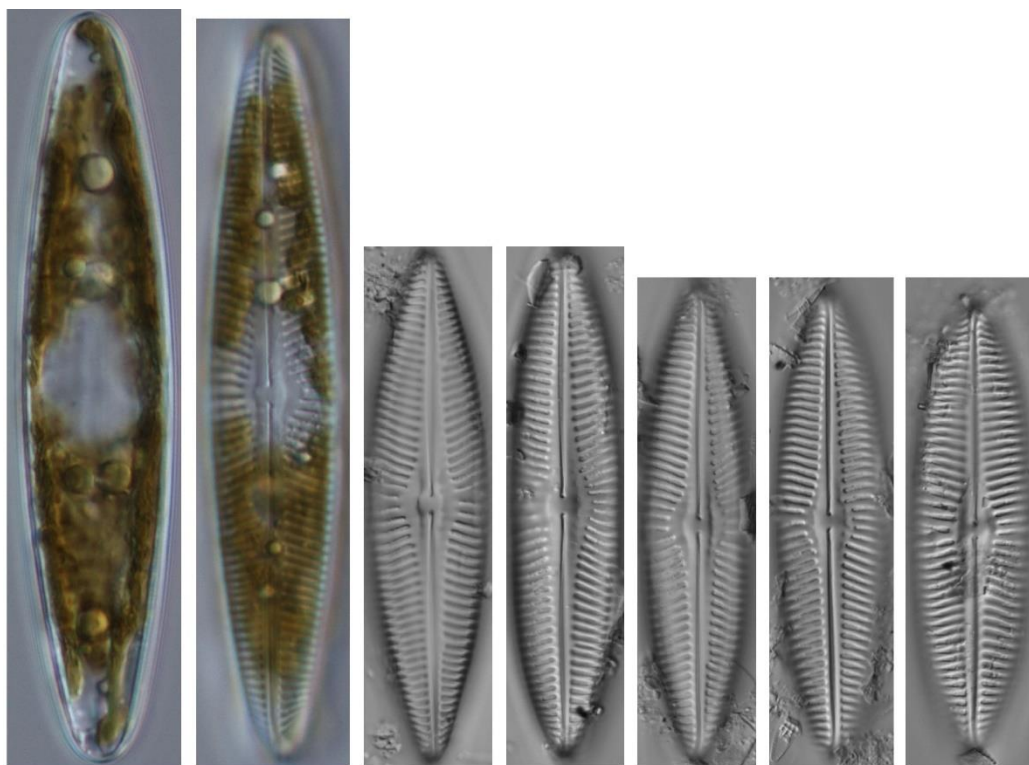
Fig. 5: Sample BB0002, Barnegat Bay, NJ.

Fig. 6: Sample BBDC0106, Great Bay, NJ.

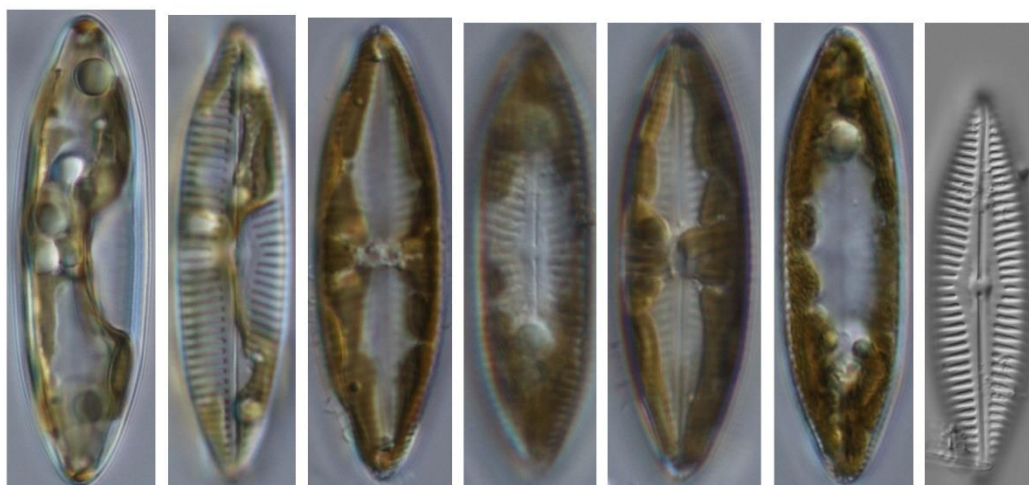
Fig. 7: Sample BBDC0016, Barnegat Bay, NJ.

Figs 8-13: Barnegat Bay, NJ.

Fig. 14: Sample BBDC0034, Barnegat Bay, NJ.



1 - 7



8 - 14

***Navicula digitoradiata* (Gregory) Ralfs**

Lit.: Pritchard 1861, p. 904; Hendey 1964, p.216, fig.XXIX: 8,9.; Hustedt 1930, p.301, fig.518; Krammer & Lange-Bertalot 1986, p. 108, fig.34:1-9; Witkowski, Lange-Bertalot, Metzeltin 2000, p.274, pl.114:1-6

Basionym: *Pinnularia digitoradiata* (*digito-radiata*) Gregory 1856

Synonyms:

Navicula cyprinus sensu Boyer 1916, p.95, pl.26, fig.21; Boyer 1927, p.395, non (Ehrenberg) Kützing; Hendey 1951, p.47, pl.9, fig.9

Navicula cyprinus sensu Grunow in Van Heurck (Type de Synopsis 137)

Pinnularia cyprinus sensu W. Smith 1853, p.57, pl.18, fig.176, non Ehrenberg.

Figs 1,4,9: Sample BBDC0007, Barnegat Bay, NJ.

Fig. 2: Sample BBDC0055, Barnegat Bay, NJ.

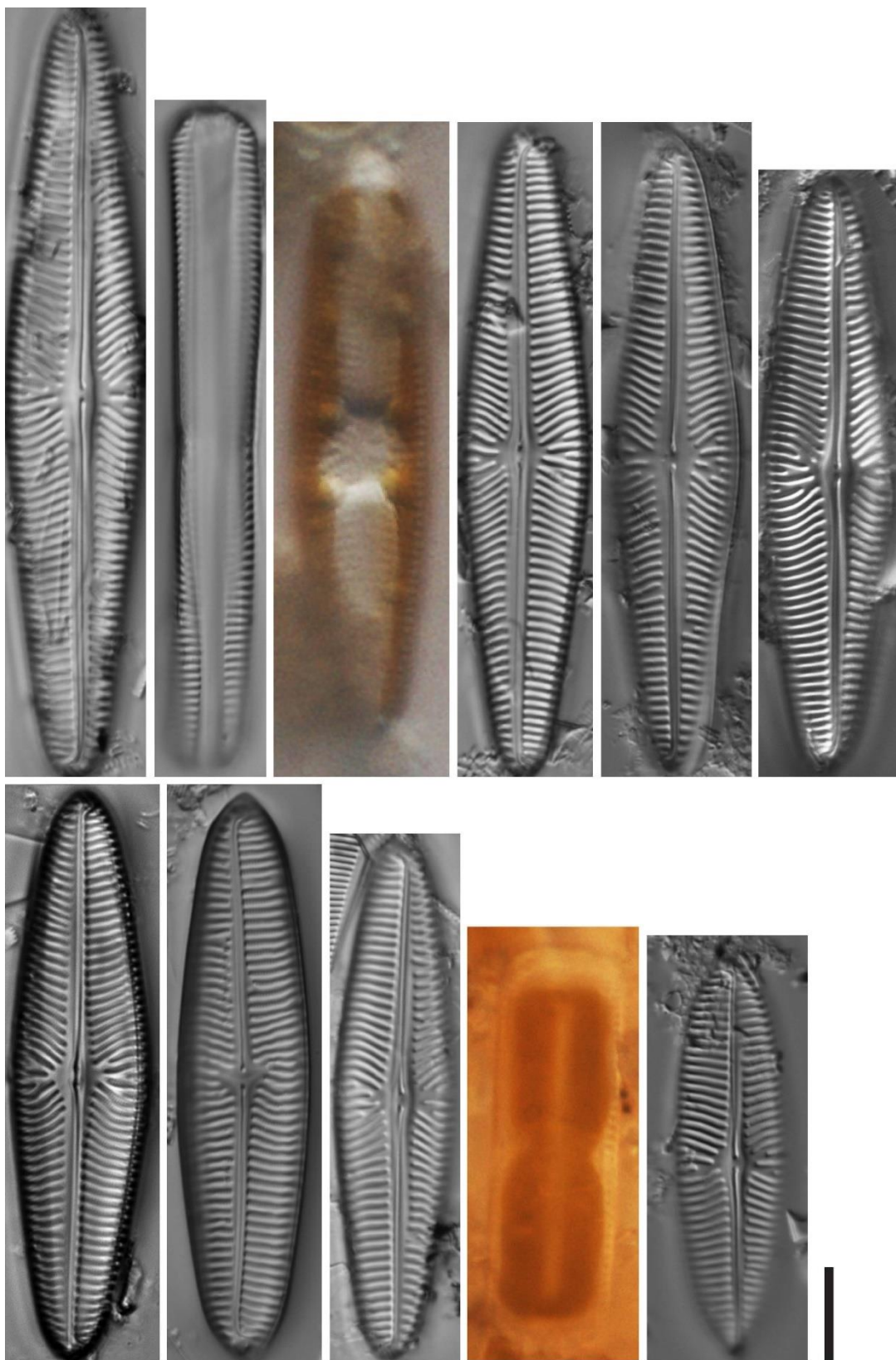
Fig. 3,10: Barnegat Bay, NJ.

Fig. 5: Sample BBDC0009, Barnegat Bay, NJ.

Fig. 6: Sample BBDC0004, Barnegat Bay, NJ.

Fig. 7: Sample BBDC0001, Barnegat Bay, NJ.

Figs 8, 11: Sample BBDC0058, Barnegat Bay, NJ.



1 - 11

Navicula peregrina (Ehrenberg) Kützing

Lit.: Kützing 1844, p. 97; pl. 28, fig. 52 c; Hendey 1951, p.52, pl.16, fig.5, pl.17, fig.12; Hendey 1964 pl. XXX, figs 12,13; Krammer & Lange-Bertalot 1986, p. 100, fig.30:1; Witkowski, Lange-Bertalot, Metzeltin 2000, p.297, pl.111:1-4.

Basionym: *Pinnularia peregrina* Ehrenberg 1843

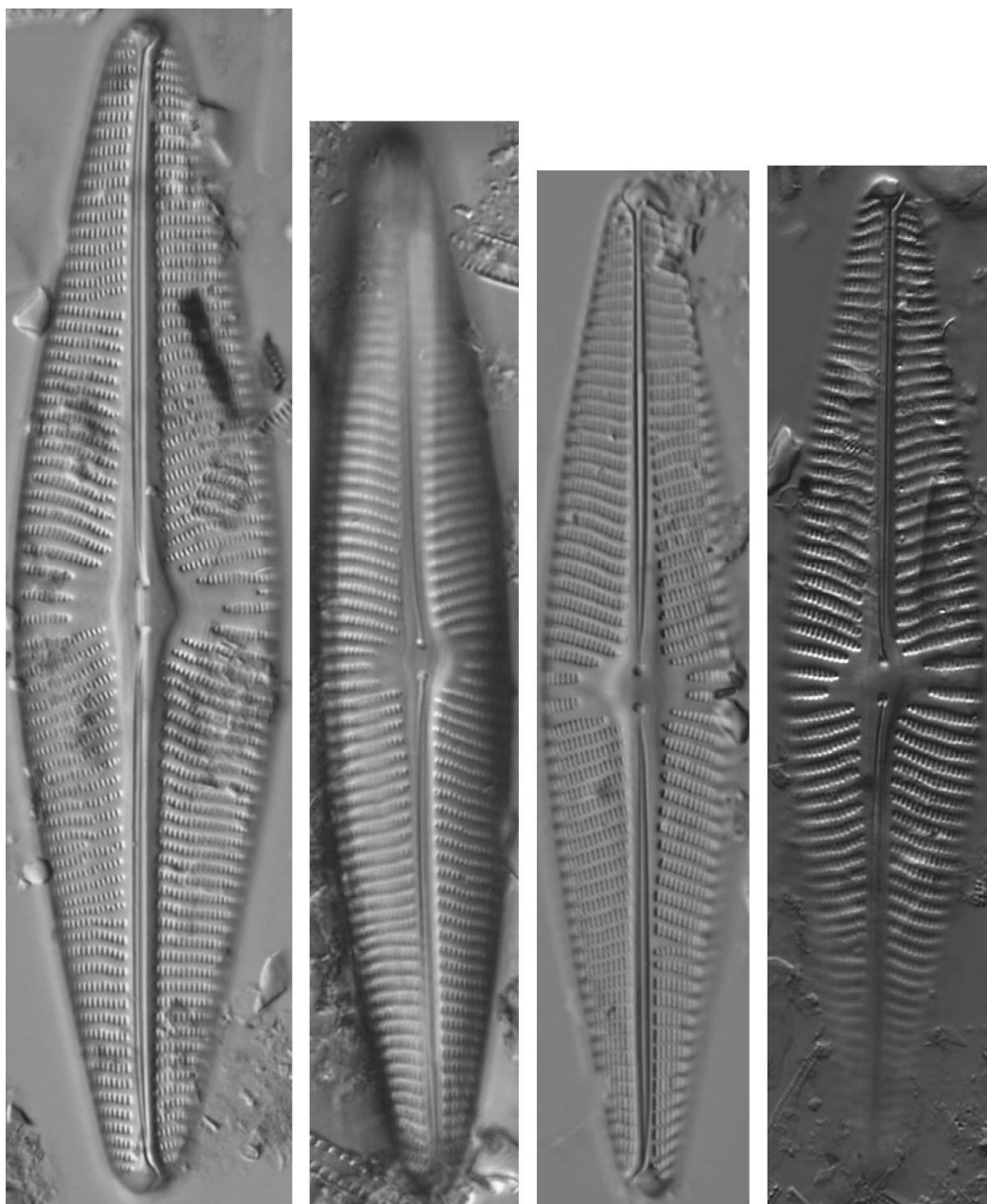
Synonyms: *Schizonema peregrinum* (Ehrenberg) Kuntze 1898

Fig. 1: Sample RUTG0080, Cape May Courthouse, NJ.

Fig. 2: Sample BB0036, Barnegat Bay, NJ.

Fig. 3: Sample RUTG0461, Cape May Courthouse, NJ.

Fig. 4: Sample BBDC0005, Barnegat Bay, NJ.



1 - 4

Navicula peregrinopsis Lange-Bertalot & Witkowski

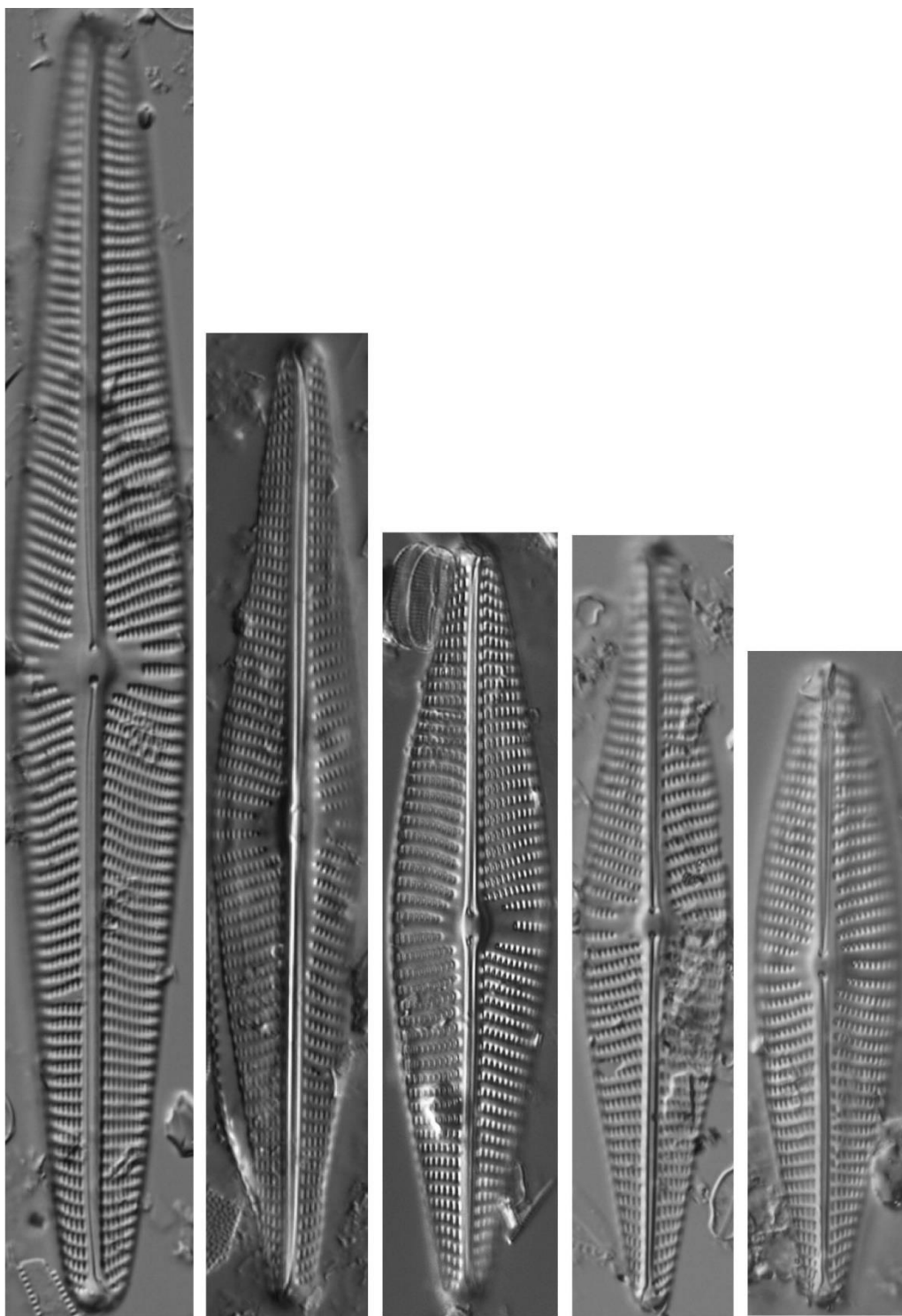
Lit: Witkowski, Metzeltin & Lange-Bertalot 2000, p. 297, 435; pl. 112, fig. 5-7

Figs 1,4: Sample BBDC0007, Barnegat Bay, NJ.

Fig. 2: Sample BBDC0008, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0004, Barnegat Bay, NJ.

Fig. 5: Sample BB0059, Barnegat Bay, NJ.



1 - 5

***Navicula kefvingensis* (Ehrenberg) Kützing**

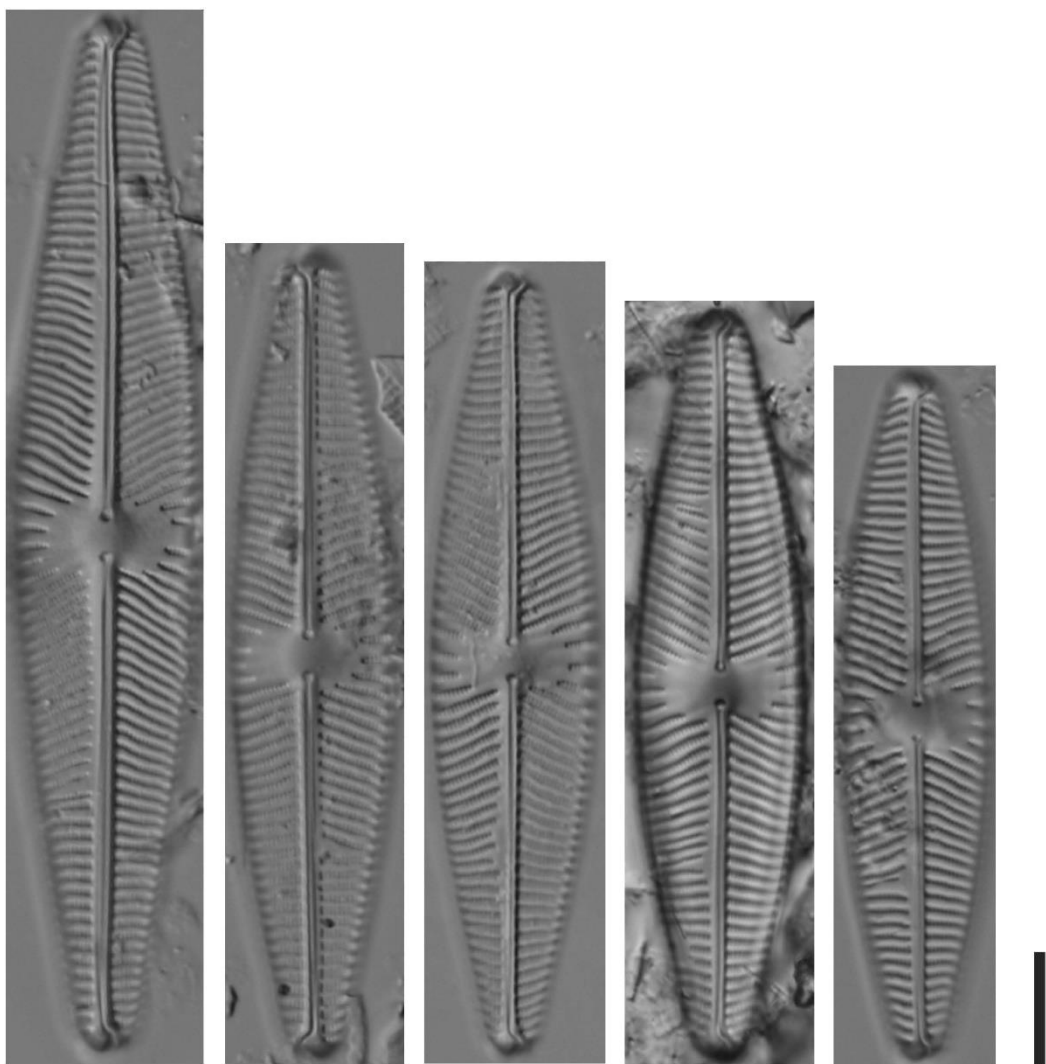
Lit.: Kützing 1844, p. 97; Lange-Bertalot 1993, p.117, figs 65:4,5; Witkowski, Metzeltin & Lange-Bertalot 2000, p. 286; pl. 117, fig. 1-6.

Basionym: *Pinnularia kefvingensis* Ehrenberg 1840

Synonyms: *Navicula peregrina* var. *kefvingensis* (Ehrenberg) Cleve 1895

Figs 1-3,5: Sample RUTG0461, Cape May Courthouse, NJ.

Fig. 4: Sample RUTG0340, Cheesequake State Park, NJ.



1 - 5

Navicula hanseatica Lange-Bertalot & Stachura

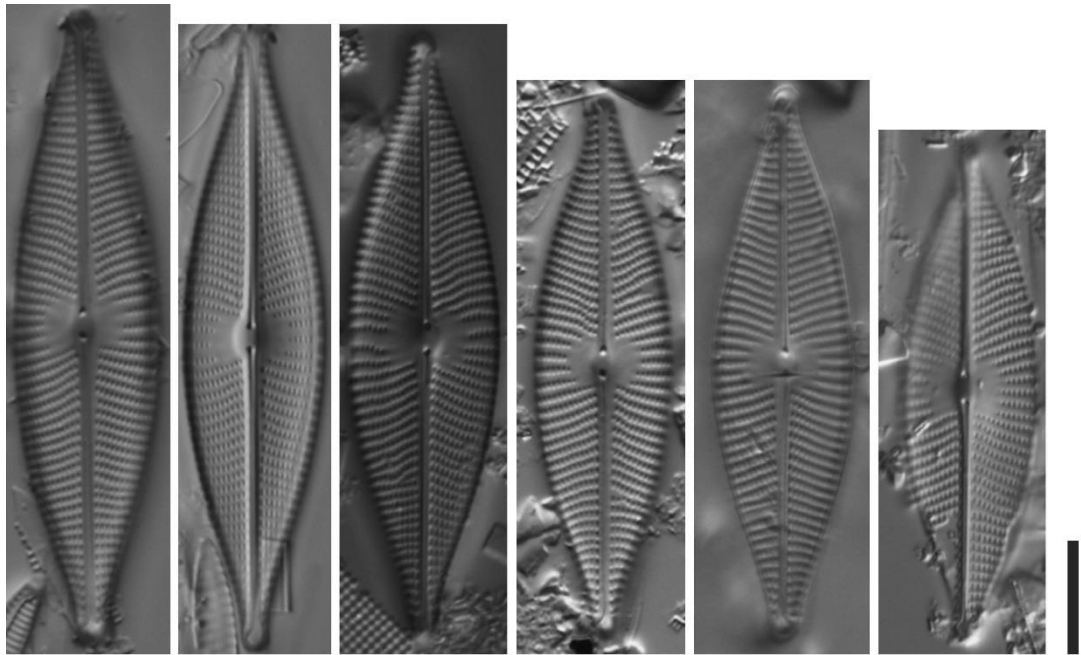
Lit.: Witkowski, Lange-Bertalot & Stachura 1998, p. 87-88; fig. 23-27; Witkowski, Metzeltin & Lange-Bertalot 2000, p. 282; pl. 120, figs 7-10.

Figs 1-2: Sample RUTG0860, Pilot Drive, NJ.

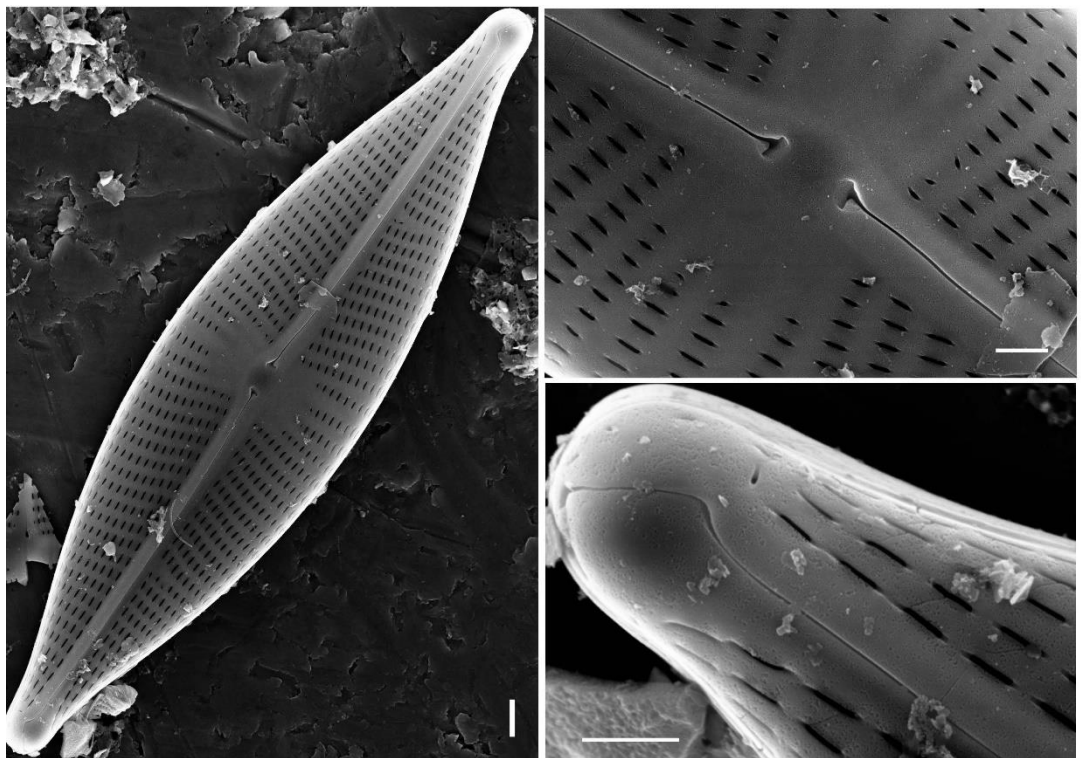
Figs 3-5: Sample BB0001, Barnegat Bay, NJ.

Fig. 6: Sample BB0002, Barnegat Bay, NJ.

Figs 7-9: Sample RUTG0001, Cape May Courthouse, NJ.



1 - 6



7 - 9

Figs 1-12: *Navicula sieminskiae* Lange-Bertalot & Witkowski

Lit.: Lange-Bertalot 2001, p. 67, 228; pl. 15, fig. 8-13; Witkowski, Metzeltin & Lange-Bertalot 2000, p. 305; pl. 119:7-12.

Synonyms: *Navicula meniscus* auct. partim non Schumann.

- Figs 1,9: Sample RUTG0860, Pilot Drive, NJ.
- Fig. 2: Sample BBDC0007, Barnegat Bay, NJ.
- Figs 3,11: Sample RUTG0843, Leeds Point, NJ.
- Fig. 4: Sample BBDC0009, Barnegat Bay, NJ.
- Fig. 5: Sample RUTG0857, Pilot Drive, NJ.
- Figs 6-7: Sample RUTG0822, Cape May Courthouse, NJ.
- Fig. 8: Sample BB0011, Barnegat Bay, NJ.
- Fig. 10: Sample RUTG0816, Cape May Courthouse, NJ.
- Fig. 12: Sample BB002, Barnegat Bay, NJ.

Figs 13-15: *Navicula vaneii* Lange-Bertalot

Lit.: Witkowski, Lange-Bertalot & Stachura 1998, p. 89; fig. 28-32; Witkowski, Metzeltin & Lange-Bertalot 2000, p. 313; pl. 111:6-10.

- Fig. 13: Sample BBDC0002, Barnegat Bay, NJ.
- Fig. 14: Sample BB0054, Barnegat Bay, NJ.
- Fig. 15: Sample BB0007, Barnegat Bay, NJ.

Figs 16-18: *Navicula lindae* Sullivan & Reimer

Lit.: Sullivan & Reimer 1975, v. 17: p. 119; pl. 1 & 2, fig. 2

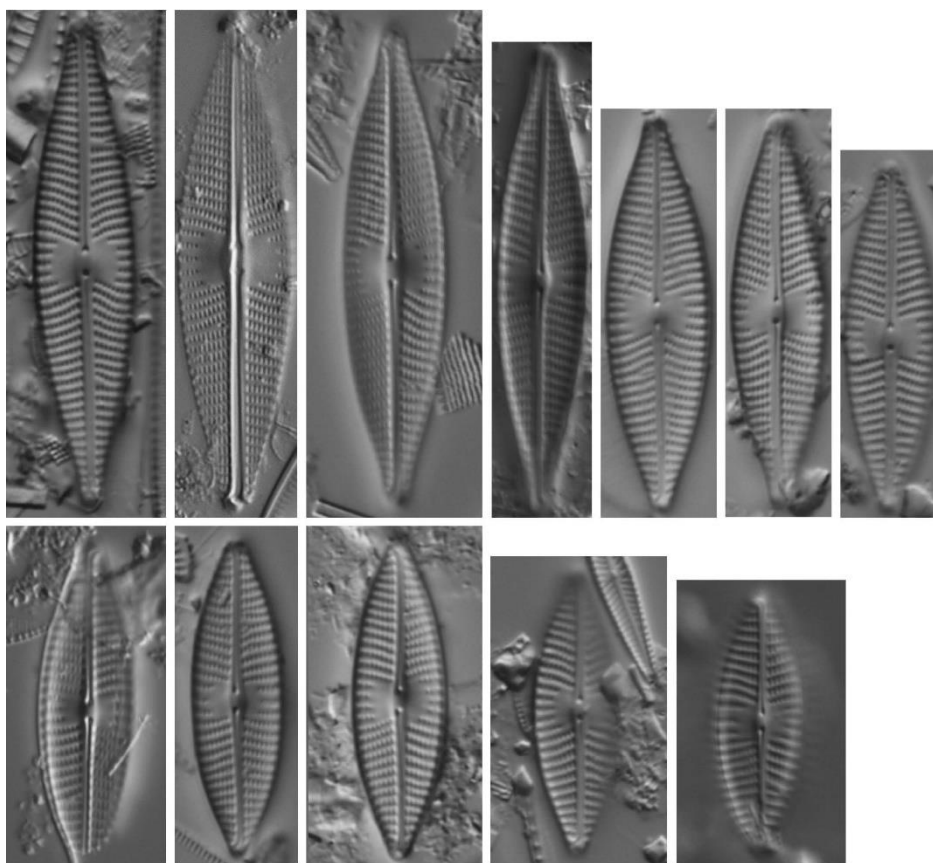
- Fig. 16: Sample BBDC0072, Barnegat Bay, NJ.
- Fig. 17: Sample BBDC0064, Barnegat Bay, NJ.
- Fig. 18: Sample BB0073, Barnegat Bay, NJ.

Fig. 19: *Navicula cf. valida var. minuta*

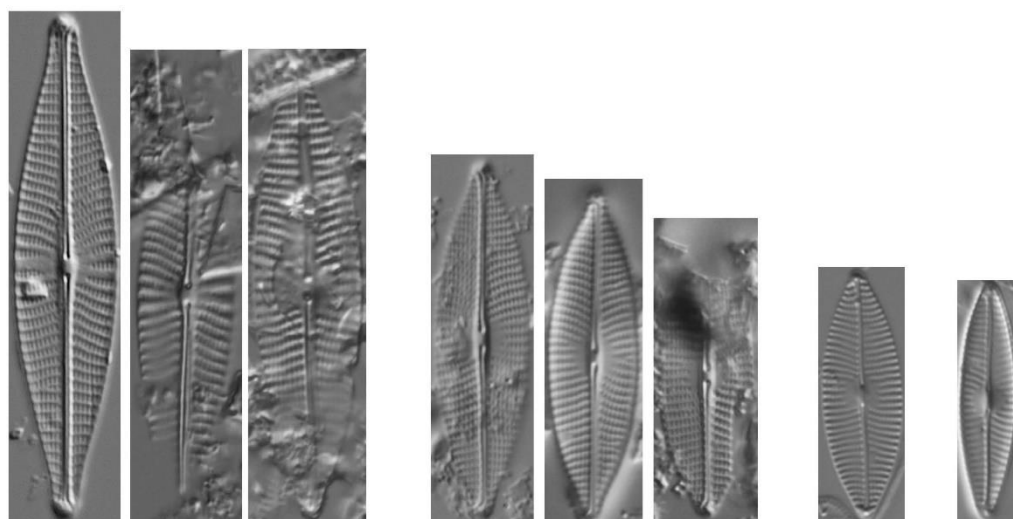
Fig. 19: Sample COAST013, Great South Bay, NY.

Fig. 20: *Navicula* sp. 104

Fig. 20: Sample COAST003, Peconic Bay, NY.



1 - 12



13 - 15

16 - 18

19

20

Plate 174

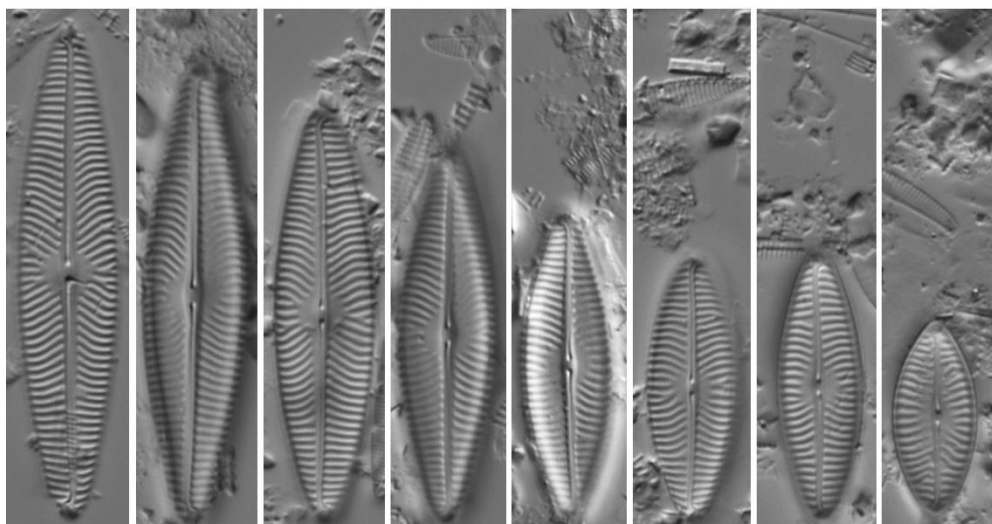
(Scale bars: Figs 1-8=10 μm ; Figs 9-15=1 μm)

***Navicula* sp. 52**

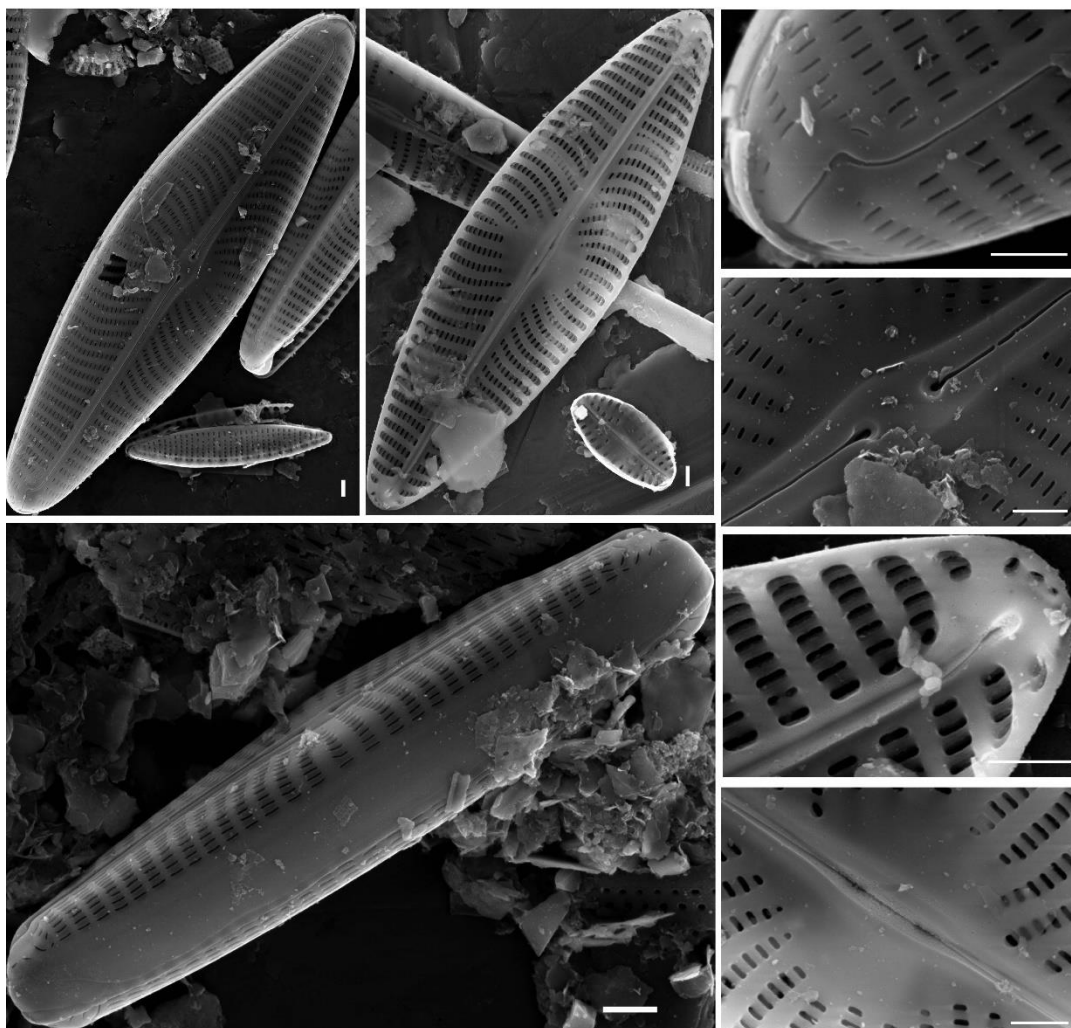
Fig. 1: Sample RUTG0027, Cape May Courthouse, NJ.

Figs 2-8: Sample RUTG0003, Cape May Courthouse, NJ.

Figs 9-15: Sample RUTG0001, Cape May Courthouse, NJ.



1 - 8



9 - 15

Figs 1-9: *Navicula digitoconvergens* Lange-Bertalot

Lit.: Lange-Bertalot & Genkal 1999, p. 64 [ed. 2: 65]; pl. 15, figs. 1-9; pl. 16, figs. 4, 5; Witkowski, Metzeltin & Lange-Bertalot 2000, p.274; pl.114:7-14.

Synonyms:

Navicula digitoradiata auct. partim non (Gregory) Ralfs.

(?) *Navicula digitoradiata* var. *elliptica* auct. non Hustedt 1911

(?) *Navicula digitoradiata* fo. *minor* Foged 1953 non Cleve-Euler 1934

Fig. 1: Sample BB0049, Barnegat Bay, NJ.

Fig. 2: Sample BB0006, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0062, Barnegat Bay, NJ.

Figs 4,6-7: Sample RUTG0080, Cape May Courthouse, NJ.

Fig. 5: Sample RUTG0027, Cape May Courthouse, NJ.

Fig. 8: Sample RUTG0150, Cape May Courthouse, NJ.

Fig. 9: Sample RUTG0210, Cape May Courthouse, NJ.

Figs 10-18: *Navicula cf. digitoconvergens*

Figs 10,13: Sample RUTG0210, Cape May Courthouse, NJ.

Figs 11-12,14-15: Sample RUTG0150, Cape May Courthouse, NJ.

Fig. 16: Sample RUTG0190, Cape May Courthouse, NJ.

Fig. 17: Sample RUTG0159, Cape May Courthouse, NJ.

Fig. 18: Sample RUTG0070, Cape May Courthouse, NJ.

Figs 19-21: *Navicula normalis* Hustedt

Lit.: Hustedt 1955, p. 29; pl. 9, fig. 3; Simonsen 1987, p.414, fig.617:14; Witkowski, Metzeltin & Lange-Bertalot 2000, p.292; pl.121:15, pl.145:30.

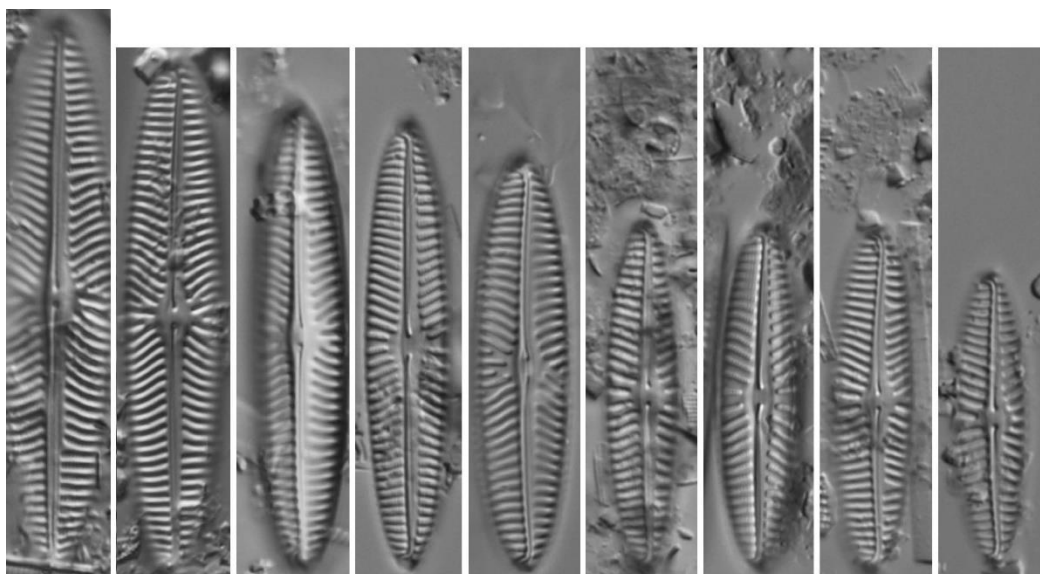
Fig. 19: Sample RUTG0860, Pilot Drive, NJ.

Fig. 20: Sample BBDC0045, Barnegat Bay, NJ.

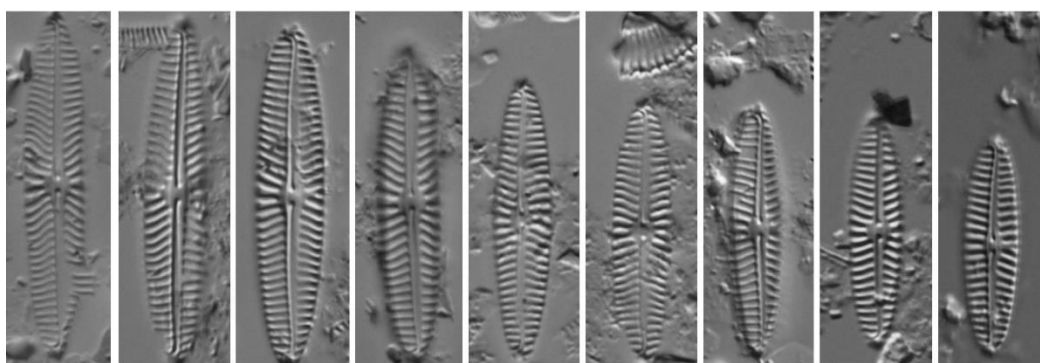
Fig. 21: Sample BBDC0003, Barnegat Bay, NJ.

Figs 22-26: *Navicula cf. normalis*

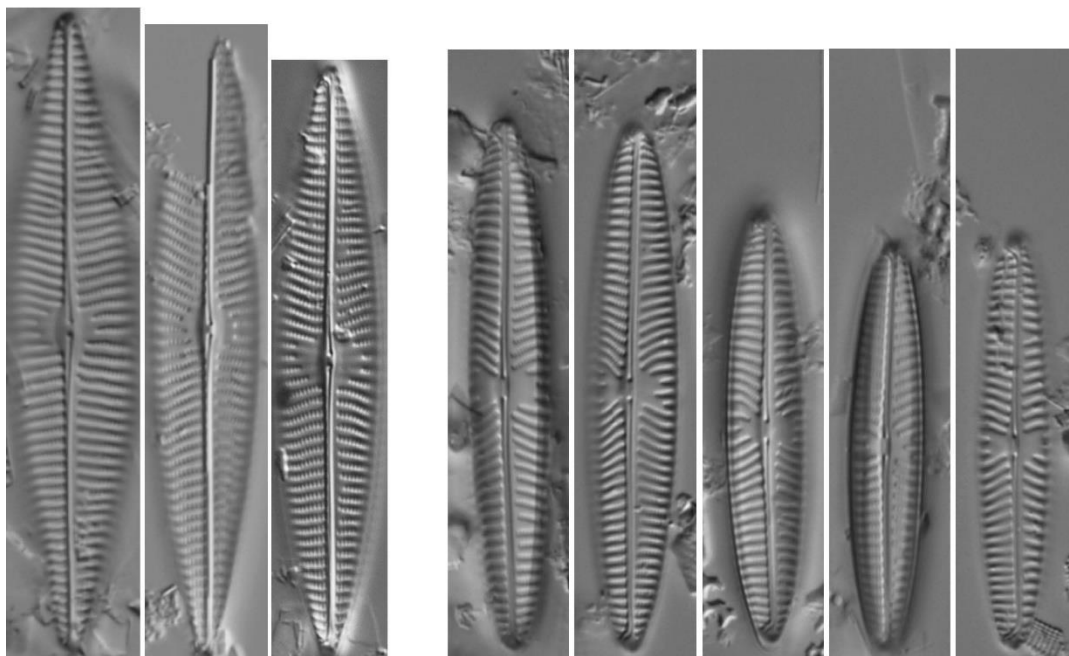
Figs 22-26: Sample RUTG0027, Cape May Courthouse, NJ.



1 - 9



10 - 18



19 - 21

22 - 26

Plate 176

(Scale bars: Figs 1-24=10 µm; Fig. 25=1 µm)

Figs 1-10: *Navicula microdigitoradiata* Lange-Bertalot

Lit.: Lange-Bertalot 1993, p. 122-123; pl. 58, fig. 9-15, Bacill. 2/4, fig. 59: 23-24; Krammer & Lange-Bertalot 1986, pl.28, fig. 16; Krammer & Lange-Bertalot 1991, pl.59, figs 23,24; Witkowski, Metzeltin & Lange-Bertalot 2000, p.290; pl.126:1-7.

Synonyms:

Navicula cincta f. *minuta* Van Heurck

Navicula digitoradiata var. *minor* Krasske (partim)

Fig. 1,8,11: Sample BB0049, Barnegat Bay, NJ.

Fig. 2: Sample BB0072, Barnegat Bay, NJ.

Figs 3-7,9-10,12-13: Sample RUTG0029, Cape May Courthouse, NJ.

Figs 14-25: *Navicula cincta* (Ehrenberg) Ralfs

Lit.: Pritchard 1861, p. 901

Synonyms:

Pinnularia cincta Ehrenberg 1854

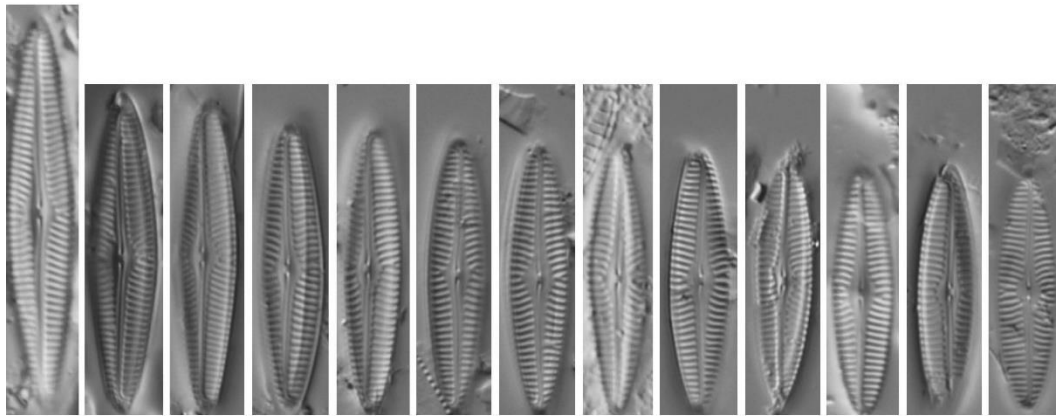
Schizonema cinctum (Ehrenberg) Kuntze 1898

Figs 13-21,23: Sample BBDC0052, Barnegat Bay, NJ.

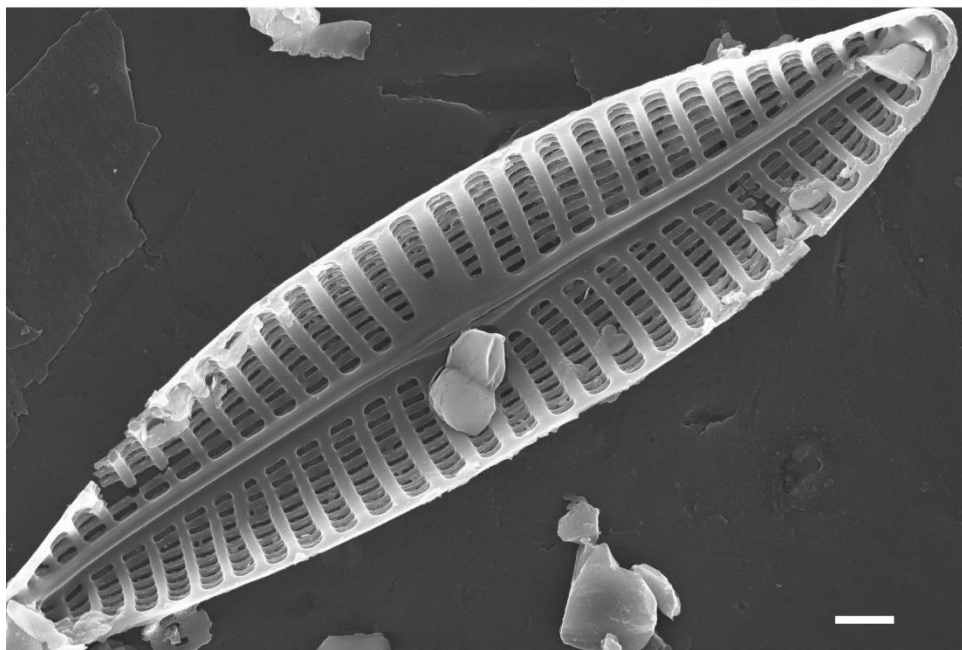
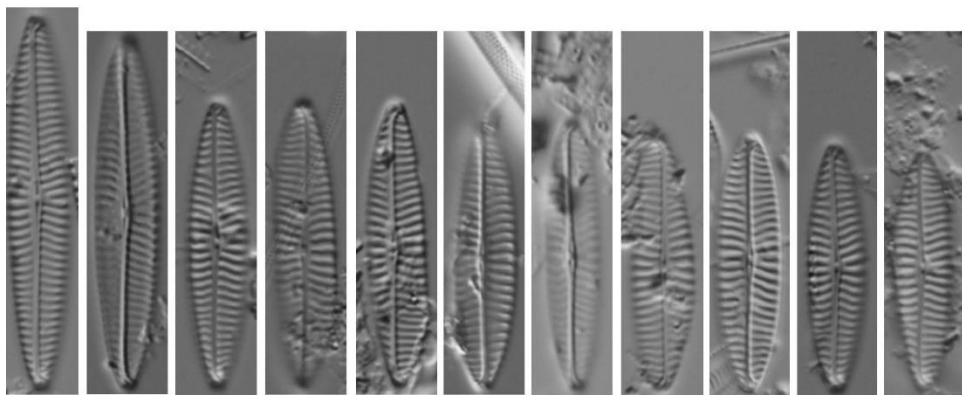
Fig. 22: Sample BBDC0084, Barnegat Bay, NJ.

Fig. 24: Sample BBDC0071, Barnegat Bay, NJ.

Fig. 25: Sample BBDC0045, Barnegat Bay, NJ.



1 - 13



14 - 25

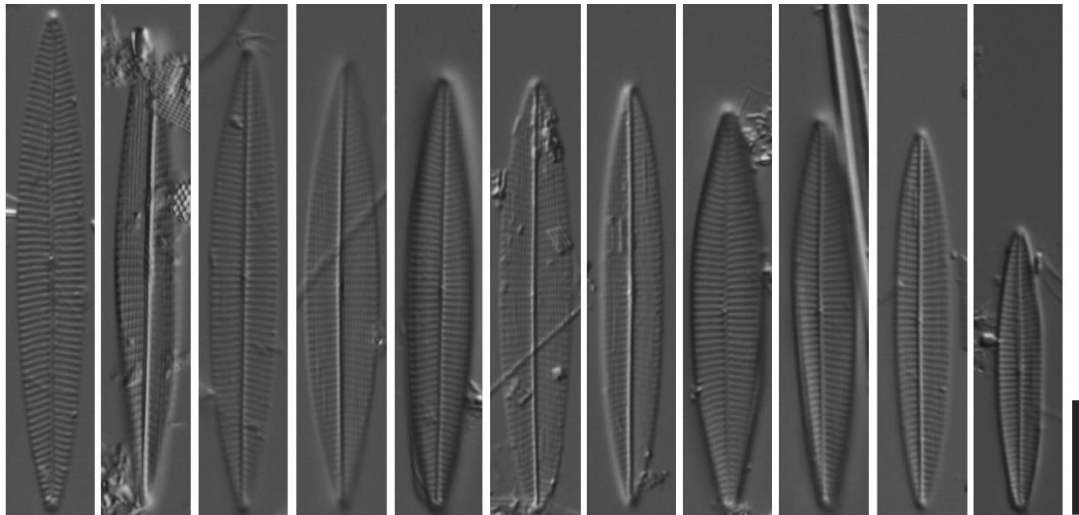
Navicula halinae Witkowski, Lange-Bertalot & Metzeltin

Lit.: Witkowski, Lange-Bertalot & Metzeltin 2000, p. 281, 432; pl. 130, fig. 1-4

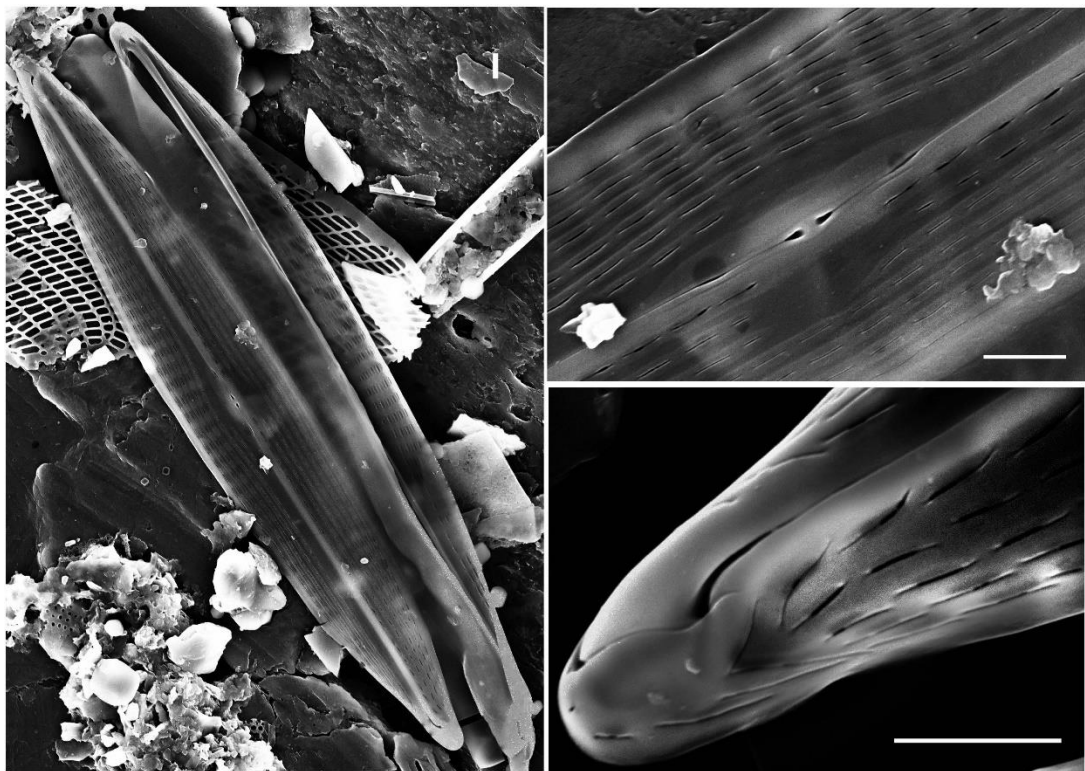
Figs 1, 3-11: Sample RUTG0790, Tuckerton Bay,

NJ. Fig. 2: Sample BBDC0091, Barnegat Bay, NJ.

Figs 12-14: Sample BBDC0080, Barnegat Bay, NJ.



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12 - 14

Navicula directa (Smith) Ralfs

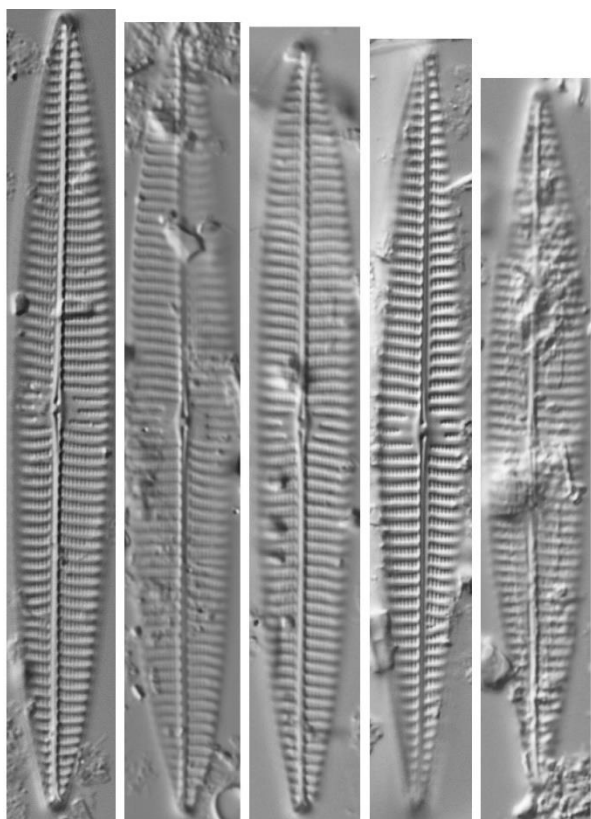
Lit.: Pritchard 1861, p. 906

Figs 1,3: Sample BBDC0002, Barnegat Bay, NJ.

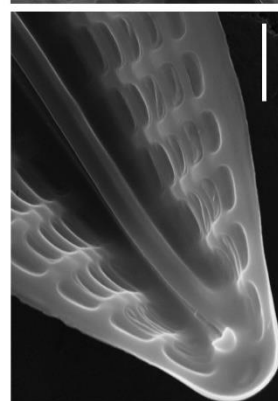
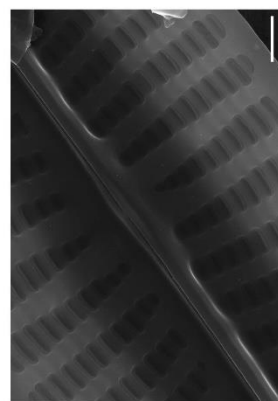
Fig. 2,5: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0009, Barnegat Bay, NJ.

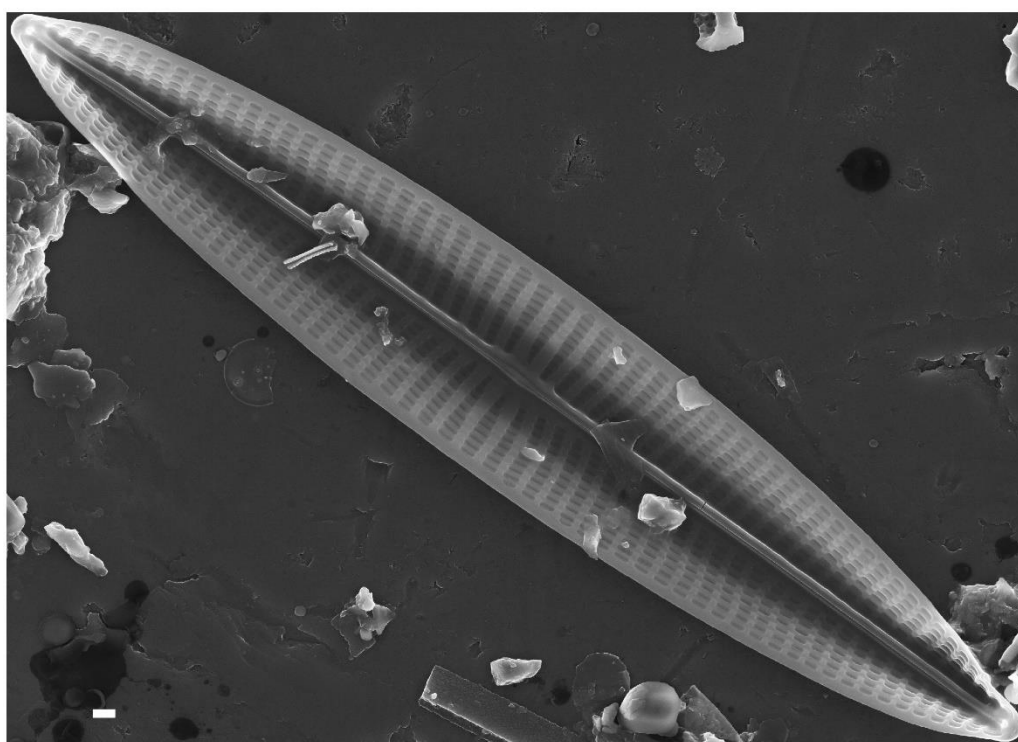
Figs 6-8: Sample BBDC0080, Barnegat Bay, NJ.



1 - 5



6 - 7



8

Plate 179

(Scale bars: Figs 1-14=10 µm; Figs 15-20=1 µm)

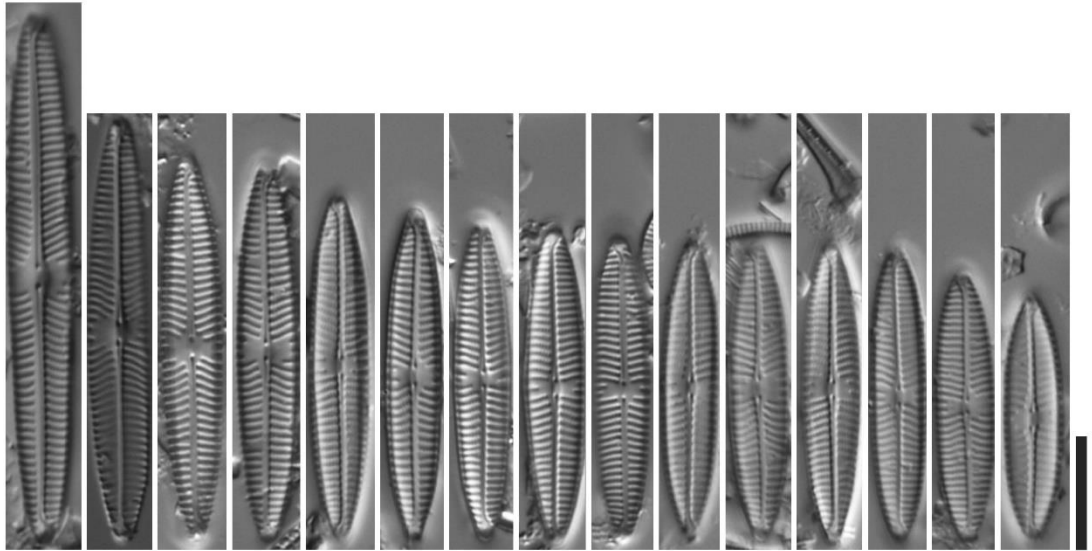
Navicula antverpiensis Van De Vijver & Lange-Bertalot

Lit.: Van De Vijver & Lange-Bertalot 2009, p. 416; fig. 1-17

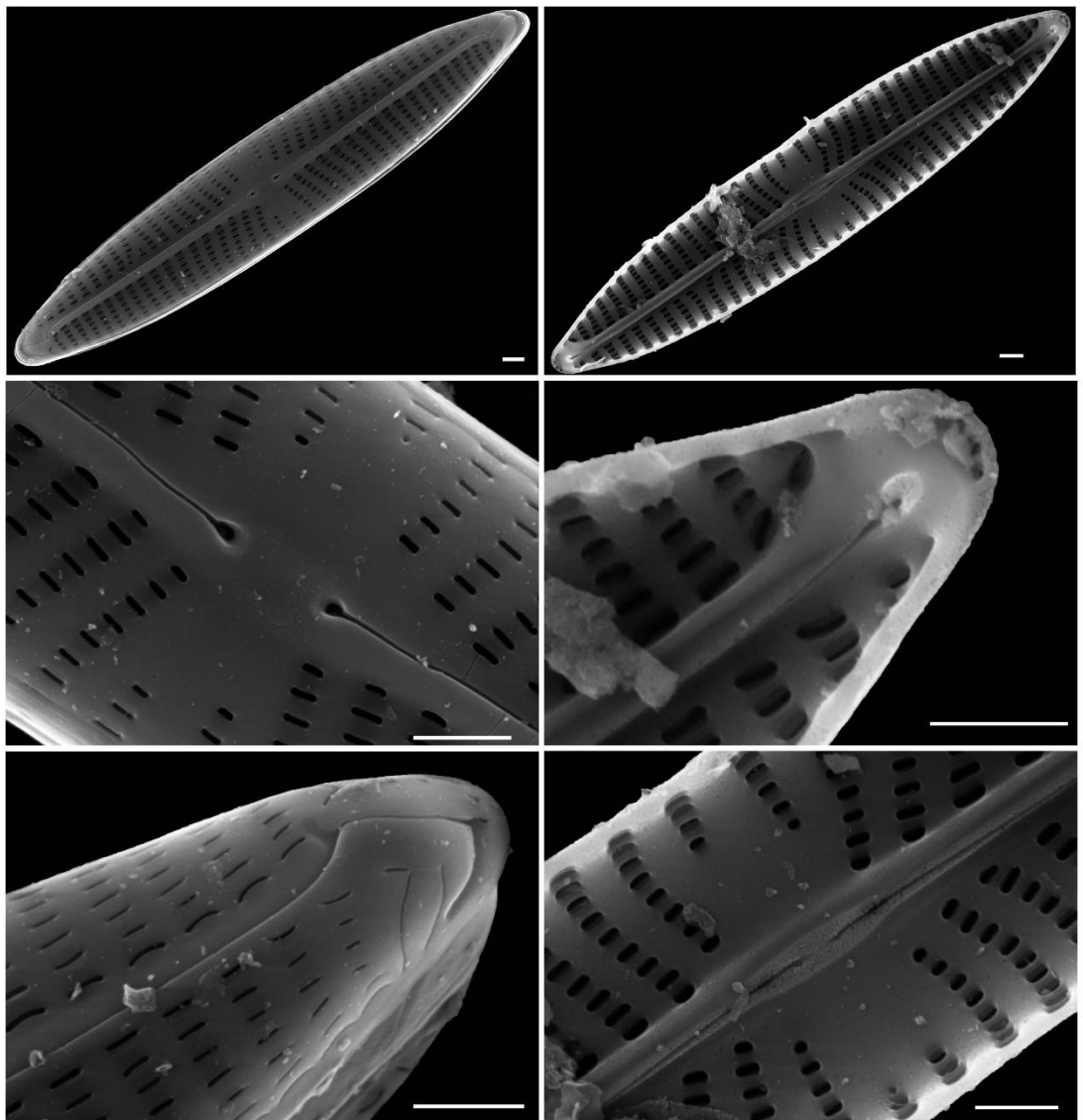
Fig. 1: Sample RUTG0860, Pilot Drive, NJ.

Fig. 2: Sample BB0066, Barnegat Bay, NJ.

Figs 3-20: Sample RUTG0001, Cape May Courthouse, NJ.



1 - 14



15 - 20

Figs 1-8: *Navicula cf. geronimensis*

Figs 1-4: Sample RUTG0210, Cape May Courthouse, NJ.

Figs 5-8: Sample RUTG0027, Cape May Courthouse, NJ.

Figs 9-12: *Navicula agnita* Hustedt

Lit.: Hustedt 1955, p. 27; pl. 9, fig. 13-16

Fig. 1: Sample BBDC0012, Barnegat Bay, NJ.

Fig. 2: Sample BBDC0056, Barnegat Bay, NJ.

Fig. 3: Sample BB0049, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0064, Barnegat Bay, NJ.

Figs 13-14: *Navicula cf. directa*

Fig. 13: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 14: Sample GB023, Great Bay, NJ.

Figs 15-16: *Navicula sp. 62*

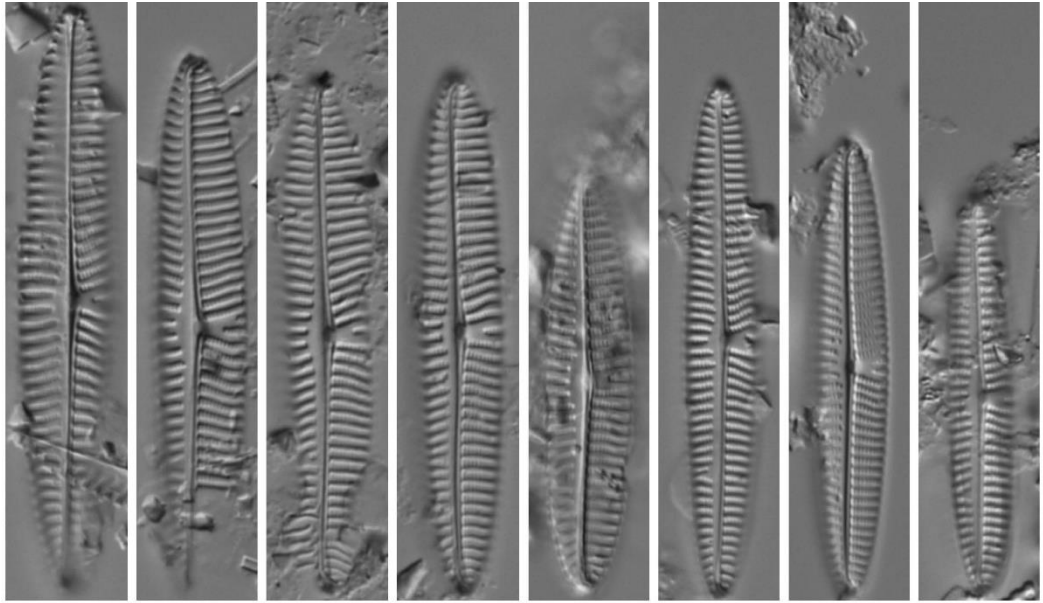
Figs 15-16: Sample BB0001, Barnegat Bay, NJ.

Fig. 17: *Navicula sp. 27*

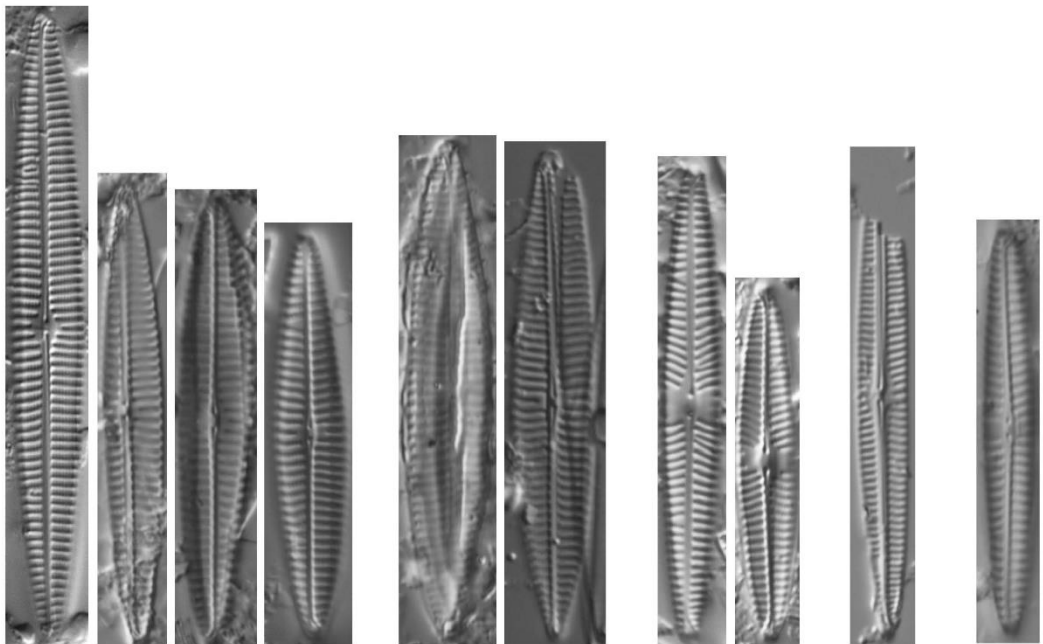
Fig. 17: Sample BBDC0053, Barnegat Bay, NJ.

Fig. 18: *Navicula cf. agnita*

Fig. 18: Sample BBDC0053, Barnegat Bay, NJ.



1 - 8



9 - 12

13 - 14

15 - 16

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18

Plate 181 (Scale bar: Figs 1-7, Figs 9-23=10 µm; Fig. 8=1 µm)

Figs 1-7: *Navicula salinarum* Grunow

Lit.: Grunow 1880, p. 33; pl. 2, fig. 34

Figs 1-2: Sample BBDC0071, Barnegat Bay, NJ.

Fig. 3: Sample BBEDC048, Tuckerton Bay, NJ.

Fig. 4: Sample GB001, Great Bay, NJ.

Figs 5-6: Sample BBDC0046, Barnegat Bay, NJ.

Fig. 7: Sample BBDC0016, Barnegat Bay, NJ.

Fig. 8: Sample RUTG0814, Cape May Courthouse, NJ.

Figs 9-13: *Navicula salinarum* var. *minima* Kolbe

Lit.: Kolbe 1927, p. 74; pl. 1, fig. 16

Fig. 9: Sample BBEDC058, Cattus Island, NJ.

Fig. 10: Sample BBDC0008, Barnegat Bay, NJ.

Fig. 11: Sample BBEDC098, Cattus Island, NJ.

Figs 12-13: Sample BBDC0001, Barnegat Bay, NJ.

Figs 14-23: *Navicula salinarum* var. *rostrata* (Hustedt) Lange-Bertalot

Lit.: Lange-Bertalot 2001, p. 65

Figs 14: Sample BBEDC079, Cattus Island, NJ.

Fig. 15: Sample BB0059, Barnegat Bay, NJ.

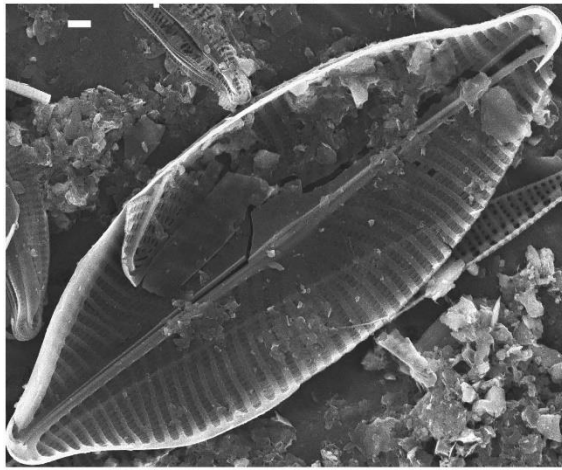
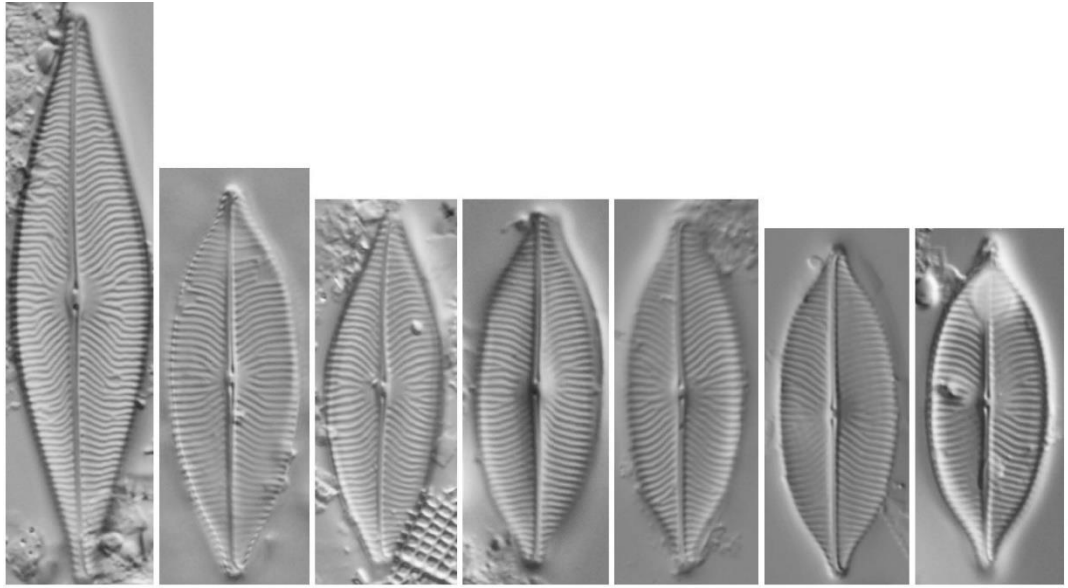
Figs 16-18: Sample BBEDC079, Cattus Island, NJ.

Figs 19-20: Sample BBDC0016, Barnegat Bay, NJ.

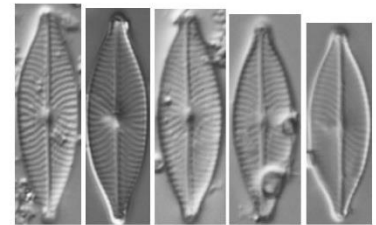
Fig. 21: Sample BBEDC058, Cattus Island, NJ.

Fig. 22: Sample BBDC0005, Barnegat Bay, NJ.

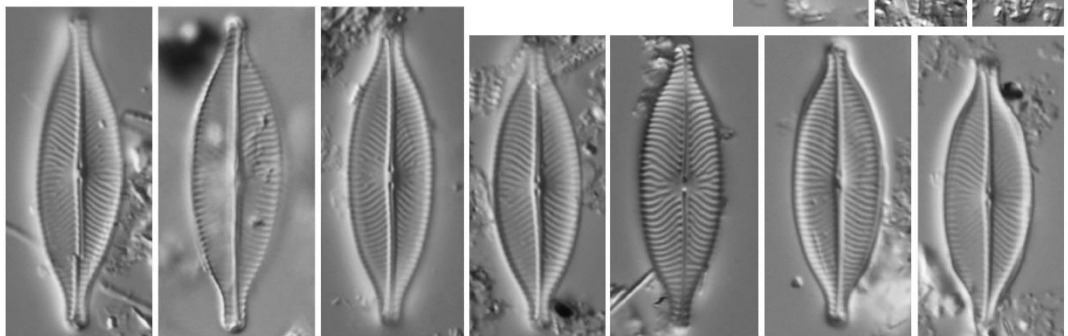
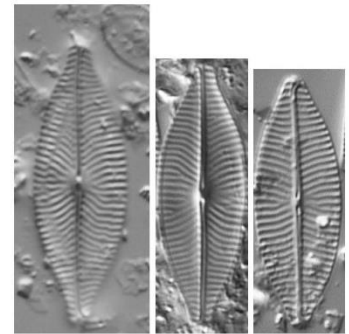
Fig. 23: Sample BBDC0004, Barnegat Bay, NJ.



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14 - 23

Plate 182 (Scale bars: Figs 1-11=10 µm; Figs 12-17=1 µm)

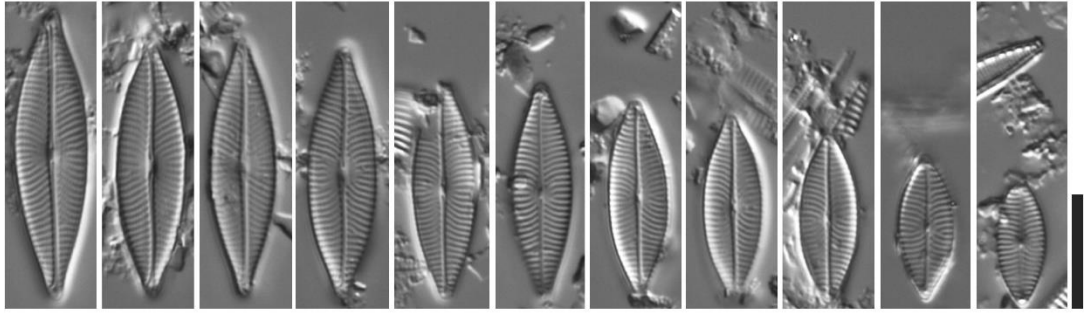
***Navicula jonssonii* Østrup**

in Østrup 1918, p. 26; pl. 3, fig. 37

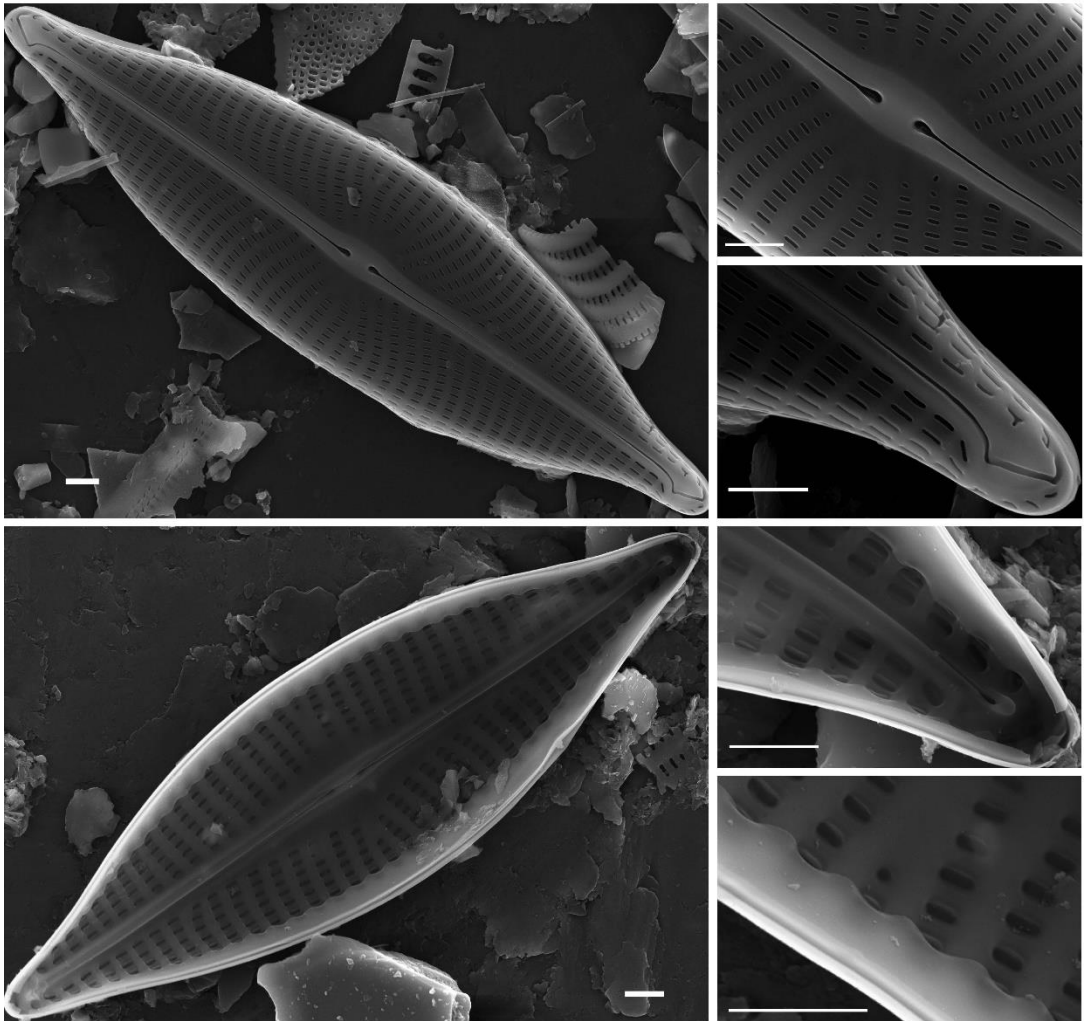
Figs 1-11: Sample RUTG0001, Cape May Courthouse, NJ.

Figs 12-14: Sample BBDC0080, Barnegat Bay, NJ.

Figs 15-17: Sample RUTG0001, Cape May Courthouse, NJ.



1 - 11



12 - 17

Plate 183 (Scale bars: Figs 1-17; 21-51=10 µm; Figs 18-20=1 µm)

Figs 1-20: ***Navicula willisiae*** Seddon & Witkowski

in Seddon et al. 2011, p. 874-875; fig. 8, a-m

Fig. 1: Sample BBDC0071, Barnegat Bay, NJ.

Figs 2-3,5-6,8-9,11-12: Sample BBDC0083, Barnegat Bay, NJ.

Figs 4,7,10,13-16: Sample BBEDC043, Tuckerton Bay, NJ.

Fig. 17: Sample RUTG0845, Bass River, NJ.

Figs 18-20: Sample RUTG0001, Cape May Courthouse, NJ.

Figs 21-24: ***Navicula* sp. 29**

Fig. 21: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 22: Sample BBDC0018, Barnegat Bay, NJ.

Fig. 23: Sample BBDC0021, Barnegat Bay, NJ.

Fig. 24: Sample BBDC0036, Barnegat Bay, NJ.

Figs 25-34: ***Navicula* sp. 66**

Figs 25-26: Sample BBDC0012, Barnegat Bay, NJ.

Fig. 27: Sample BBDC0021, Barnegat Bay, NJ.

Figs 28,33-34: Sample BBDC0018, Barnegat Bay, NJ.

Fig. 29: Sample BBDC0017, Barnegat Bay, NJ.

Figs 30,32: Sample COAST053, Barnegat Bay, NJ.

Fig. 31: Sample BBDC0029, Barnegat Bay, NJ.

Figs 35-36: ***Navicula* sp. 58**

Fig. 24: Sample BBDC0017, Barnegat Bay, NJ.

Fig. 25: Sample BBDC0018, Barnegat Bay, NJ.

Figs 37-39: ***Navicula* sp. 18**

Fig. 37: Sample COAST012, Great South Bay, NY

Figs 38-39: Sample BBDC0009, Barnegat Bay, NJ.

Figs 40-45: ***Navicula* cf. *agatkae***

Fig. 40: Sample GB055, Great Bay, NJ.

Fig. 41: Sample BBDC0018, Barnegat Bay, NJ.

Fig. 42: Sample BBEDC0105, Cattus Island, NJ.

Fig. 43-44: Sample BBDC0037, Barnegat Bay, NJ.

Fig. 45: Sample BBEDC0058, Cattus Island, NJ.

Figs 46-49: ***Navicula* sp. 42**

Figs 46-47: Sample BBDC0002, Barnegat Bay, NJ.

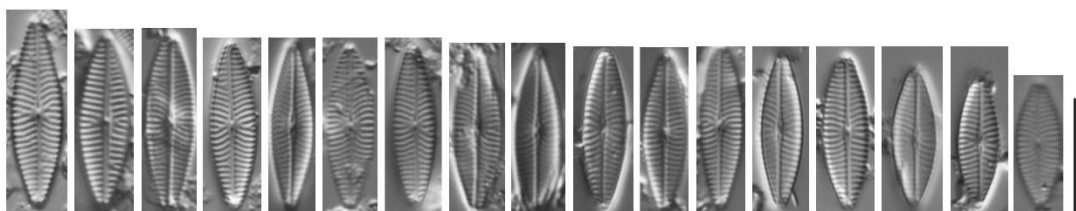
Fig. 48: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 49: Sample BBDC0017, Barnegat Bay, NJ.

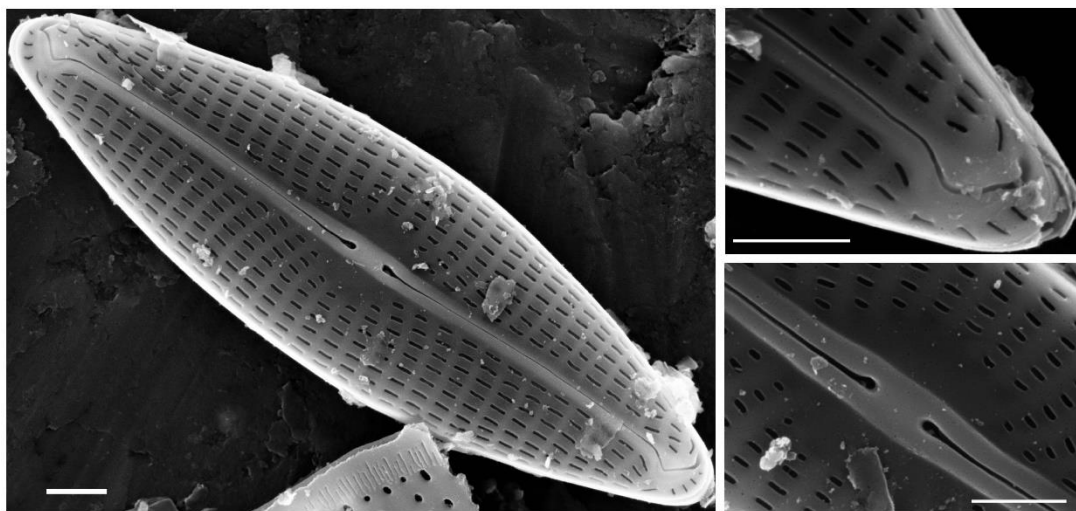
Figs 50-51: ***Navicula* sp. 108**

Fig. 50: Sample BBDC0020, Barnegat Bay, NJ.

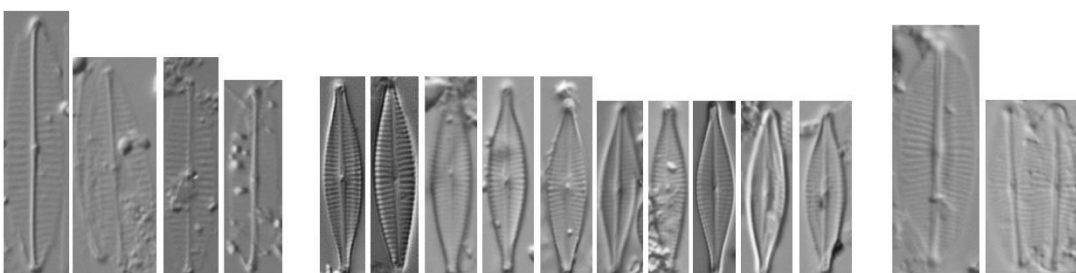
Fig. 51: Sample BBDC0017, Barnegat Bay, NJ.



1 - 17



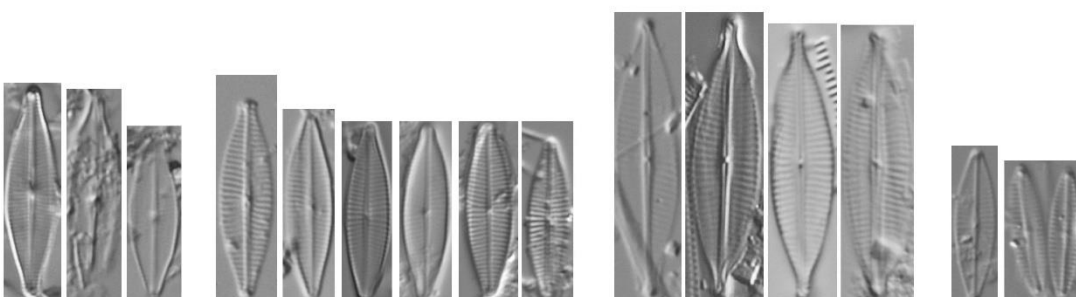
18 - 20



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37 - 39

40 - 45

46 - 49

50 - 51

Plate 184

(Scale bars: Figs 1-12=10 µm; Figs 13-16=1 µm)

***Navicula consentanea* Hustedt**

Lit.: Hustedt 1939, p. 625; fig. 98-100

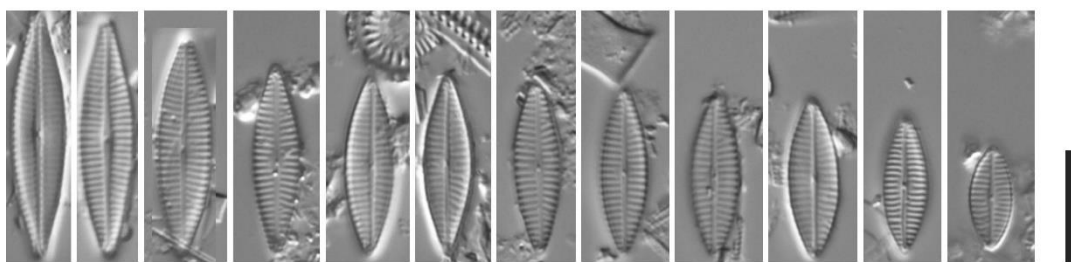
Fig. 1,4-12: Sample RUTG0001, Cape May Courthouse, NJ.

Fig. 2: Sample BBDC0016, Barnegat Bay, NJ.

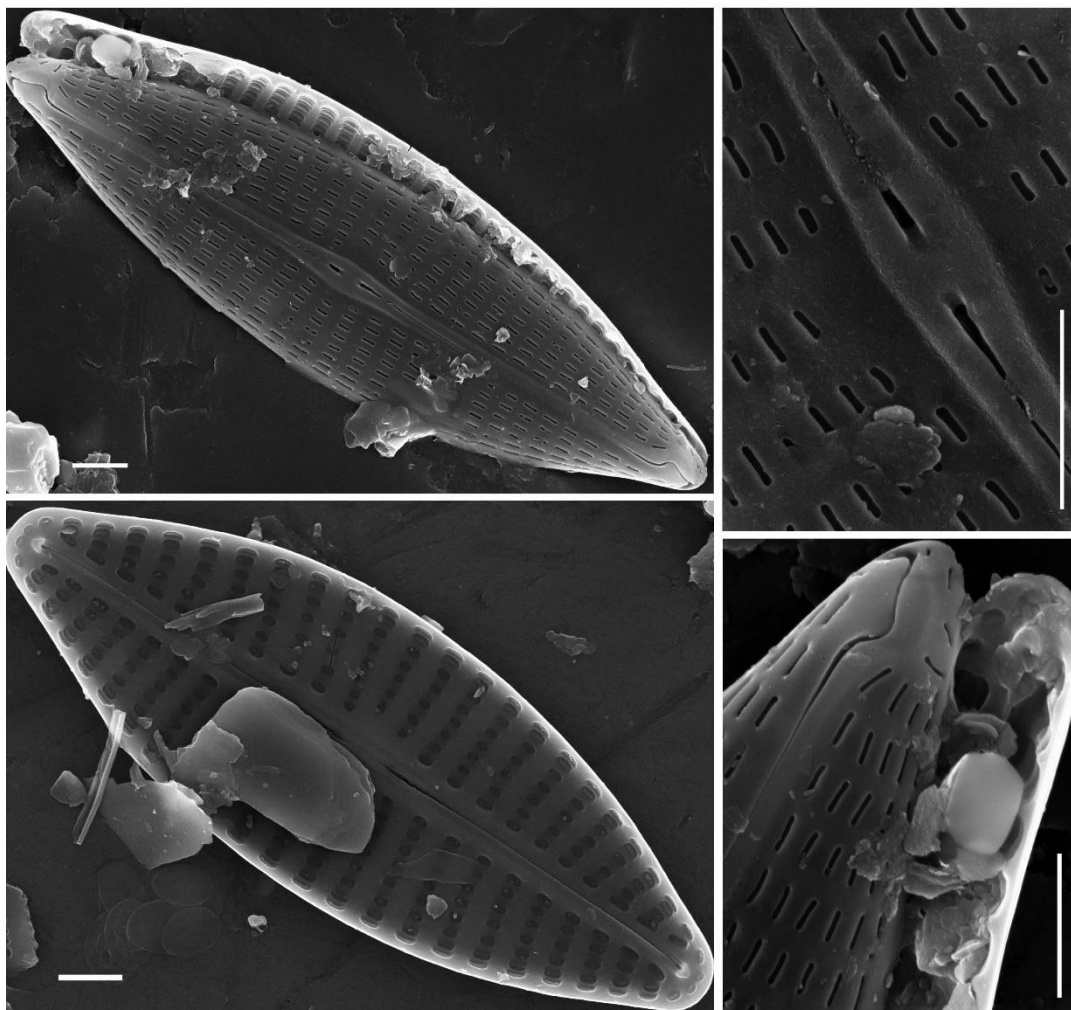
Fig. 3: Sample BBDC0037, Barnegat Bay, NJ.

Figs 13-14: Sample BBDC0037, Barnegat Bay, NJ.

Figs 15-16: Sample BBDC0051, Barnegat Bay, NJ.



1 - 12



13 - 16

Plate 185

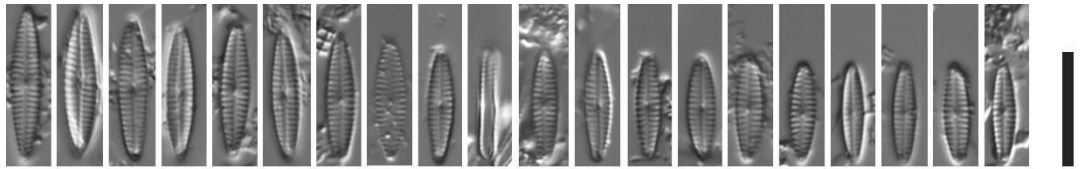
(Scale bars: Figs 1-20=10 μm ; Figs 21-22=1 μm)

Navicula salinicola Hustedt

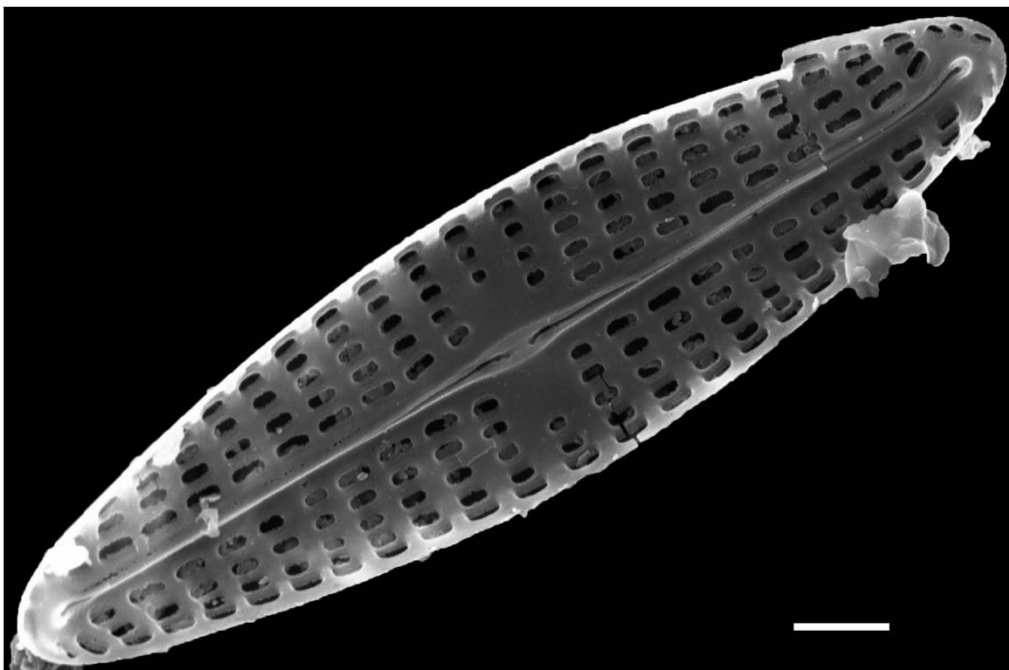
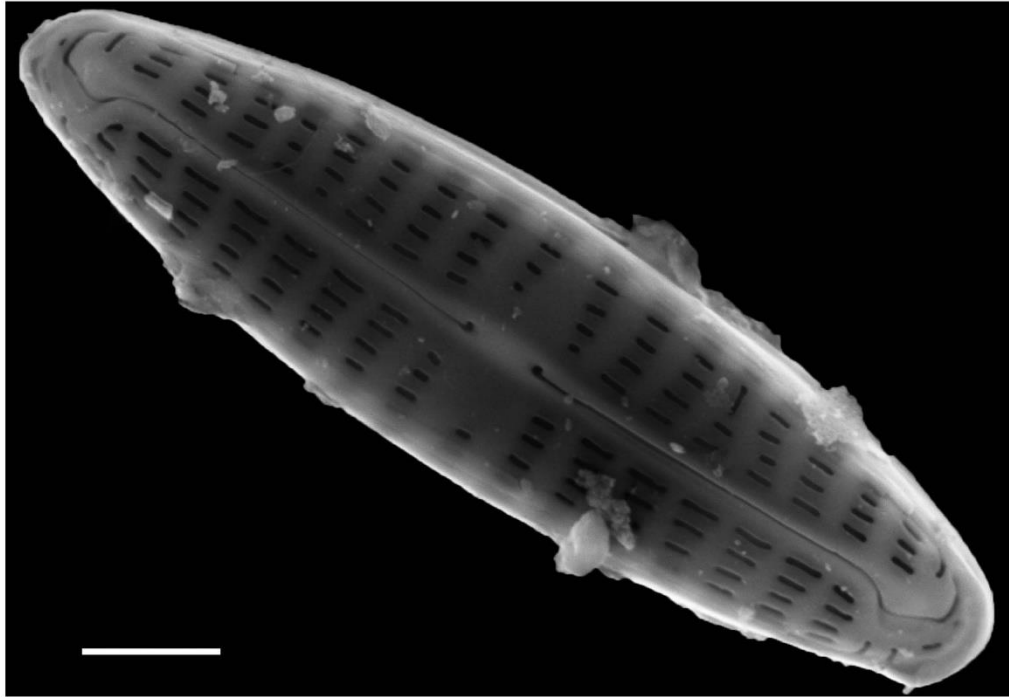
Lit.: Hustedt 1939, p. 638; fig. 61-69

Fig. 1-21: Sample RUTG0001, Cape May Courthouse, NJ.

Fig. 22: Sample BB0056, Barnegat Bay, NJ.



1 - 20



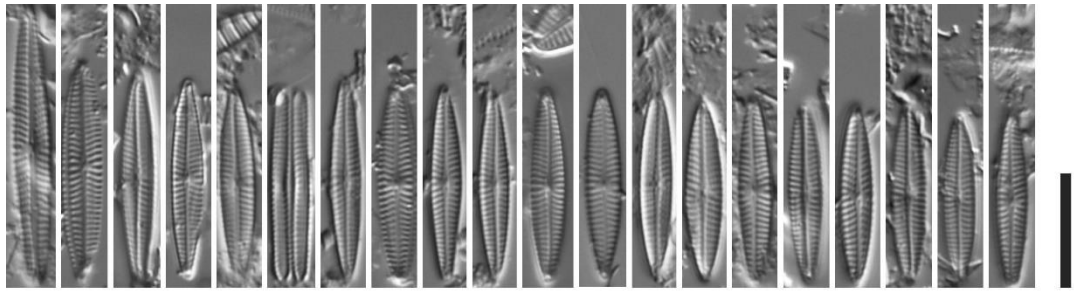
21 - 22

Plate 186

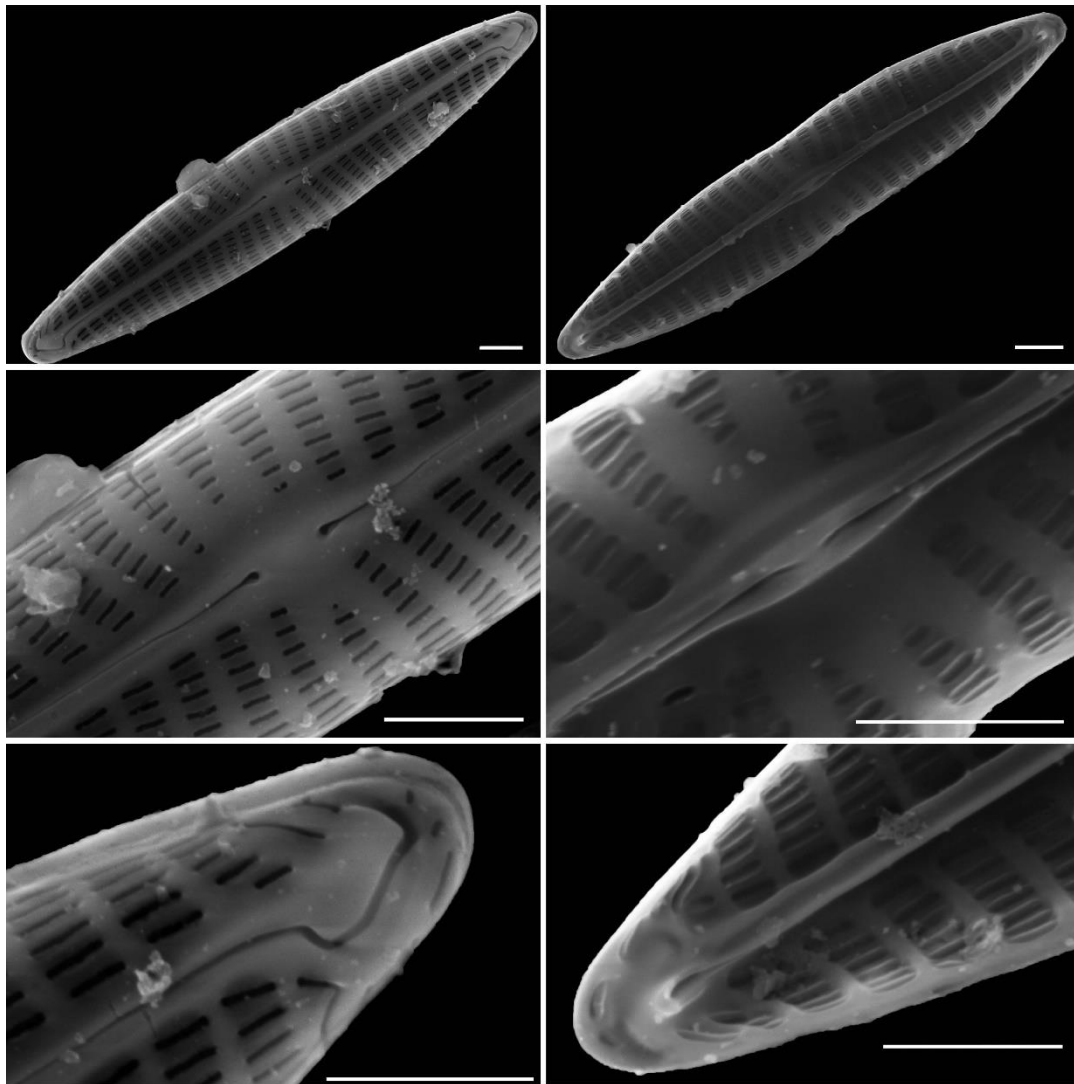
(Scale bars: Figs 1-20=10 μm ; Figs 21-26=1 μm)

***Navicula* sp. 63**

Fig. 1-26: Sample RUTG0001, Cape May Courthouse, NJ.



1 - 20



21 - 26

Figs 1-10: *Navicula flantica* Grunow

Lit.: Grunow 1860, p. 527; pl. 1, fig. 9 (pl. 3, fig. 9)

Figs 1, 8: Sample BBDC0072, Barnegat Bay, NJ.

Fig. 2: Sample BBDC0006, Barnegat Bay, NJ.

Figs 3, 10: Sample BBDC0002, Barnegat Bay, NJ.

Figs 4,6-7,9: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 5: Sample BBDC0009, Barnegat Bay, NJ.

Figs 11-14: *Navicula spartinetensis* Sullivan & Reimer

Lit.: Sullivan & Reimer 1975, v. 18: p. 119; pl. 1 & 2, fig. 3

Figs 11,14: Sample BBDC0072, Barnegat Bay, NJ.

Fig. 12: Sample BBDC0009, Barnegat Bay, NJ.

Fig. 13: Sample BBDC0088, Barnegat Bay, NJ.

Fig. 15: Sample BBDC0012, Barnegat Bay, NJ.

Figs 16-19: *Navicula cf. spartinetensis*

Fig. 16: Sample GB055, Great Bay, NJ.

Fig. 17: Sample BBDC0065, Barnegat Bay, NJ.

Fig. 18: Sample COAST084, Atlantic City, NJ.

Fig. 19: Sample BBEDC048, Tuckerton Bay, NJ.

Fig. 20-21: *Navicula flagellifera* Hustedt

Lit: Hustedt 1939, p. 628; fig. 94, 95

Fig. 20: Sample COAST023, Great South Bay, NY.

Fig. 21: Sample BBDC0005, Barnegat Bay, NJ.

Fig. 22: *Navicula cf. flagellifera*

Fig. 22: Sample BBDC0053, Barnegat Bay, NJ.

Figs 23-24: *Navicula cf. longa var. irregularis*

Figs 23-24: Sample BBDC0021, Barnegat Bay, NJ.

Fig. 25: *Navicula escambia* (Patrick) Metzeltin & Lange-Bertalot

Lit: Metzeltin & Lange-Bertalot 2007, p. 162

Fig. 25: Sample BB0054, Barnegat Bay, NJ.

Figs 26: *Navicula arenaria* Donkin

Lit: Donkin 1861, p. 10; pl. 1, fig. 8, 9

Fig. 26: Sample BBDC0046, Barnegat Bay, NJ.

Fig. 27: *Navicula cf. transistantioides*

Fig. 5: Sample BB0001, Barnegat Bay, NJ.

Figs 28-32: *Navicula agatkae* Witkowski, Metzeltin & Lange-Bertalot

Lit: Witkowski, Metzeltin & Lange-Bertalot 2000, p. 265, 431; pl. 146, fig. 1-8

Fig. 28: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 29: Sample BBDC0054, Barnegat Bay, NJ.

Fig. 30: Sample COAST021, Great South Bay, NY

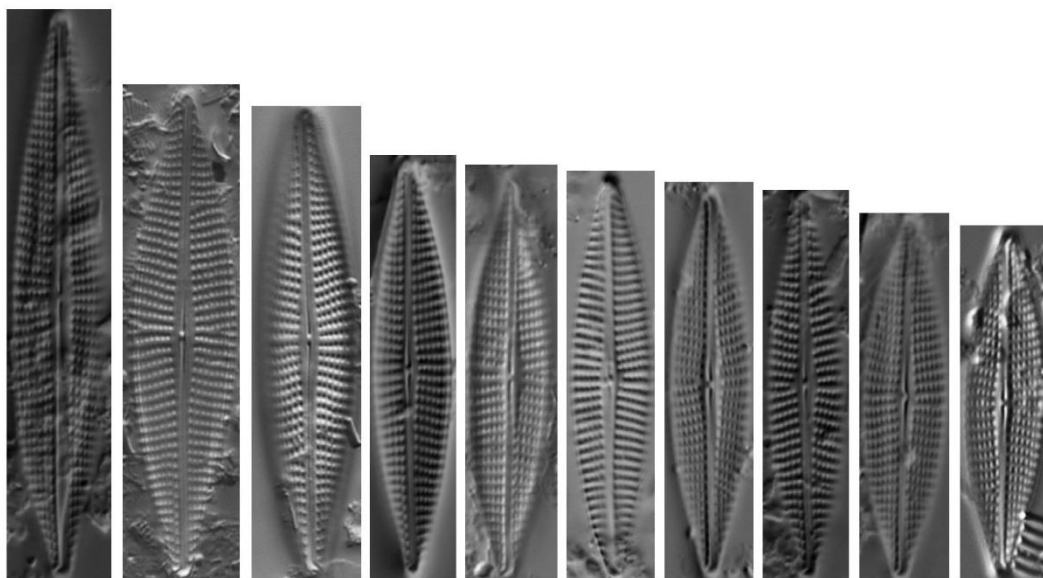
Fig. 31: Sample BBDC0059, Barnegat Bay, NJ.

Fig. 32: Sample BBDC0044, Barnegat Bay, NJ.

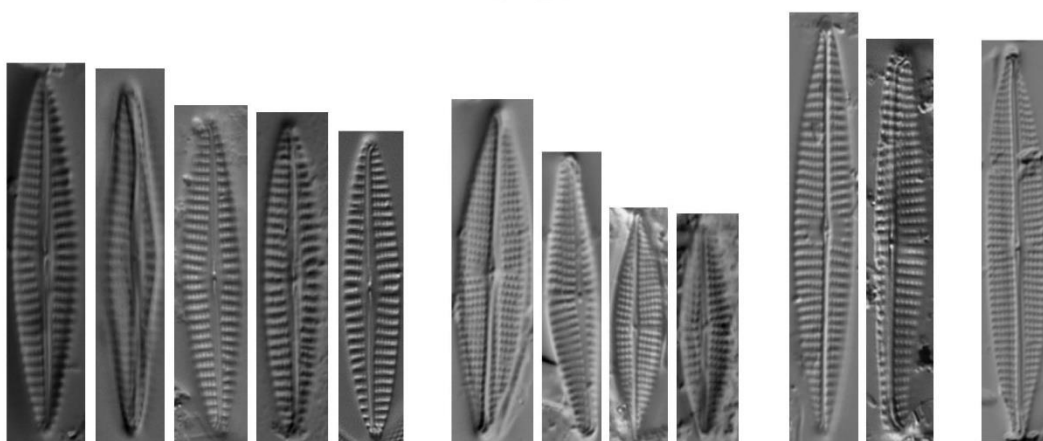
Fig. 33: *Navicula normaloides* Cholnoky

Lit.: Cholnoky 1968, p. 55; fig. 76-86

Fig. 21: Sample BBDC0001, Barnegat Bay, NJ.



1 - 10

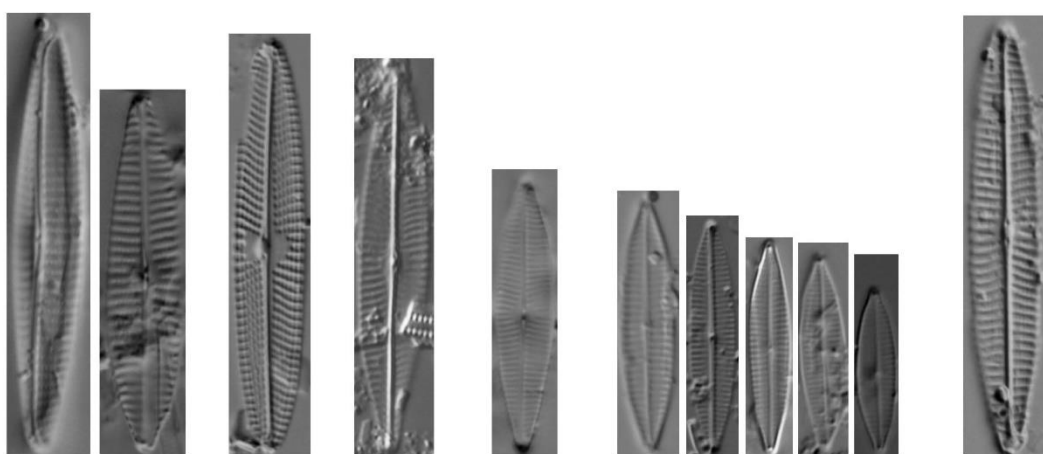


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Plate 188 (Scale bars: Figs 1-13; 16-30 =10 µm; Figs 14-15 = 1 µm)

Figs 1-15: *Navicula gregaria* Donkin

Lit.: Donkin 1861, p. 10; pl. 1, fig. 10

Figs 1,4,8,15: Sample RUTG0001, Cape May Courthouse, NJ.

Fig. 2: Sample BBDC0029, Barnegat Bay, NJ.

Fig. 3: Sample RUTG0843, Leeds Point, NJ.

Fig. 5: Sample BBDC0009, Barnegat Bay, NJ.

Fig. 6: Sample BBEDC079, Cattus Island, NJ.

Fig. 7: Sample BBDC0007, Barnegat Bay, NJ.

Fig. 9: Sample BB0069, Barnegat Bay, NJ.

Figs 10,13: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 11: Sample BB0059, Barnegat Bay, NJ.

Fig. 12: Sample BBDC0005, Barnegat Bay, NJ.

Fig. 14: Sample RUTG0811, Cape May Courthouse, NJ.

Figs 16-30: *Navicula* sp. 34 (? *Navicula namibica* Lange-Bertalot & Rumrich)

Fig. 16: Sample BBDC0007, Barnegat Bay, NJ.

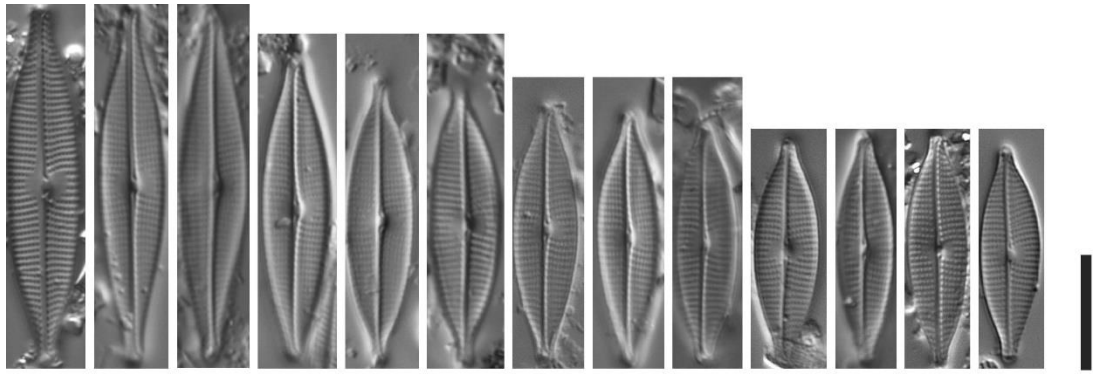
Fig. 17: Sample BBEDC099, Cattus Island, NJ.

Fig. 18: Sample BBDC0028, Barnegat Bay, NJ.

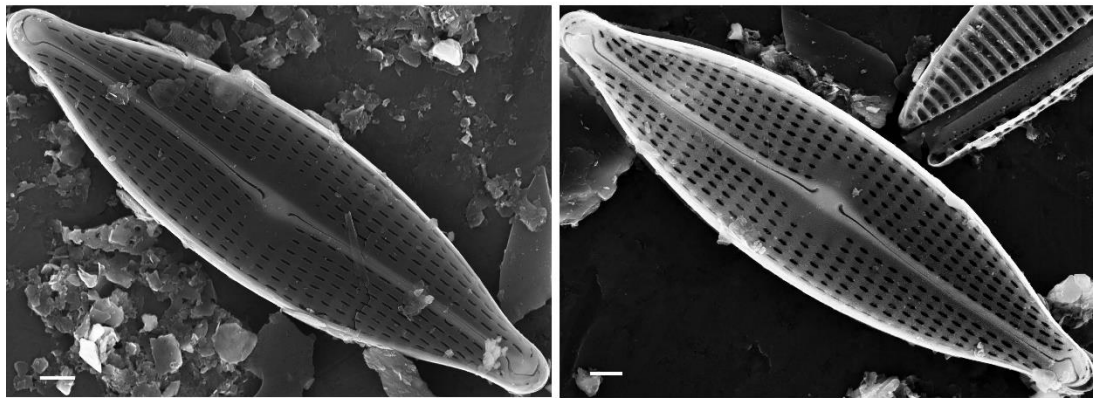
Figs 19,22,24,26,28,30: Sample BBEDC079, Cattus Island, NJ.

Figs 20-21,23,29: Sample BB0001, Barnegat Bay, NJ.

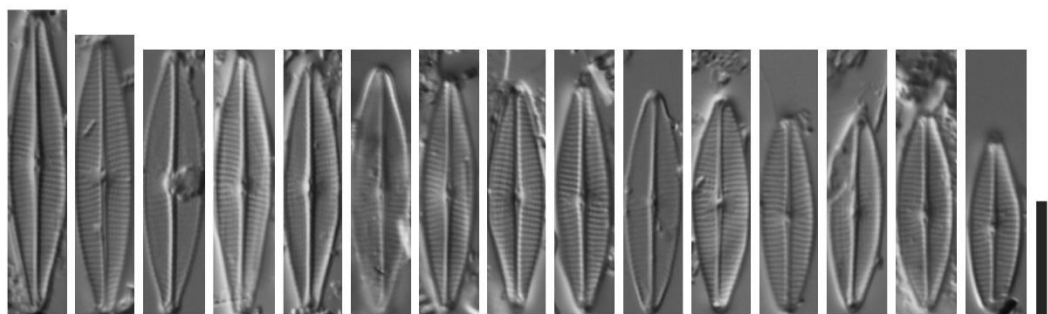
Figs 25,27: Sample BBEDC099, Cattus Island, NJ.



1 - 13



14 - 15



16 - 30

Figs 1-11: *Navicula ammophila* Grunow

Lit.: Grunow 1882, p. 149; pl. 30, fig. 66-69

- Figs 1,3,5: Sample BB0001, Barnegat Bay, NJ.
- Fig. 2: Sample COAST004, Peconic Bay, NY.
- Fig. 4: Sample BBDC0001, Barnegat Bay, NJ.
- Fig. 6: Sample GB008, Great Bay, NJ.
- Fig. 7: Sample BBEDC010, Tuckerton Bay, NJ.
- Fig. 8: Sample BBDC0046, Barnegat Bay, NJ.
- Fig. 9: Sample BBDC0065, Barnegat Bay, NJ.
- Figs 10-11: Sample RUTG1019, Tuckerton Bay, NJ.

Figs 12-19: *Navicula* sp. 111 (*Navicula* cf. *abscondita*)

- Fig. 12: Sample BBDC0018, Barnegat Bay, NJ.
- Fig. 13: Sample RUTG0280, Rutgers Field Station, NJ.
- Figs 14-15: Sample BBEDC010, Tuckerton Bay, NJ.
- Fig. 16: Sample COAST003, Peconic Bay, NY.
- Fig. 17: Sample BBEDC099, Cattus Island, NJ.
- Fig. 18: Sample BBEDC058, Cattus Island, NJ.
- Fig. 19: Sample BBDC0088, Barnegat Bay, NJ.

Figs 20-22: *Navicula apta* Hustedt

Lit: Hustedt 1955, p. 28; pl. 9, fig. 17-18

- Fig. 20: Sample BBDC0045, Barnegat Bay, NJ.
- Figs 21-22: Sample COAST033, Western Bay, NY.

Figs 23-27: *Navicula hamiltonii* Witkowski, Lange-Bertalot & Metzeltin

Lit: Witkowski, Metzeltin & Lange-Bertalot 2000, p. 282, 433; pl. 130, fig. 5-11

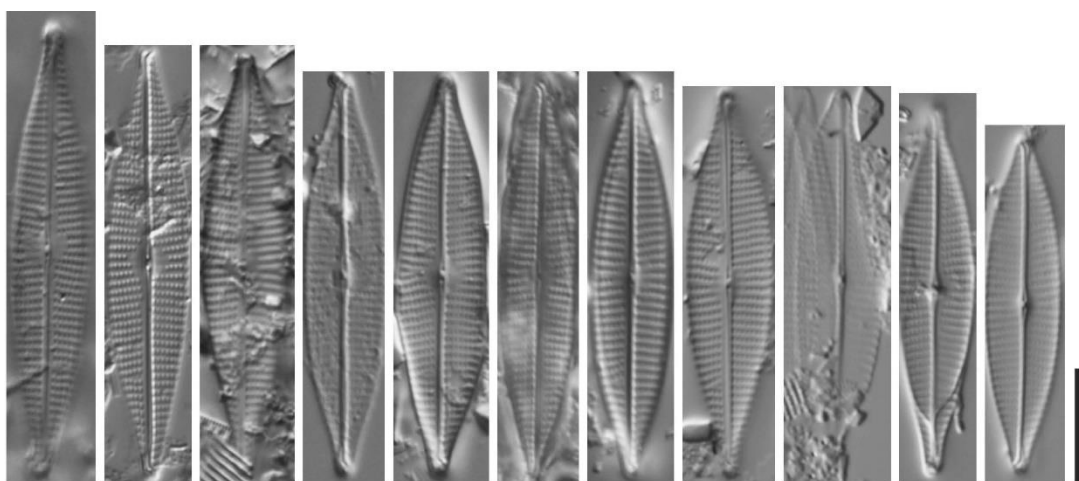
- Fig. 23: Sample RUTG1019, Tuckerton Bay, NJ.
- Figs 24-25: Sample BBEDC010, Tuckerton Bay, NJ.
- Fig. 26: Sample GB055, Tuckerton Bay, NJ.
- Fig. 27: Sample BBDC0008, Barnegat Bay, NJ.

Figs 28-31: *Navicula* sp. 17

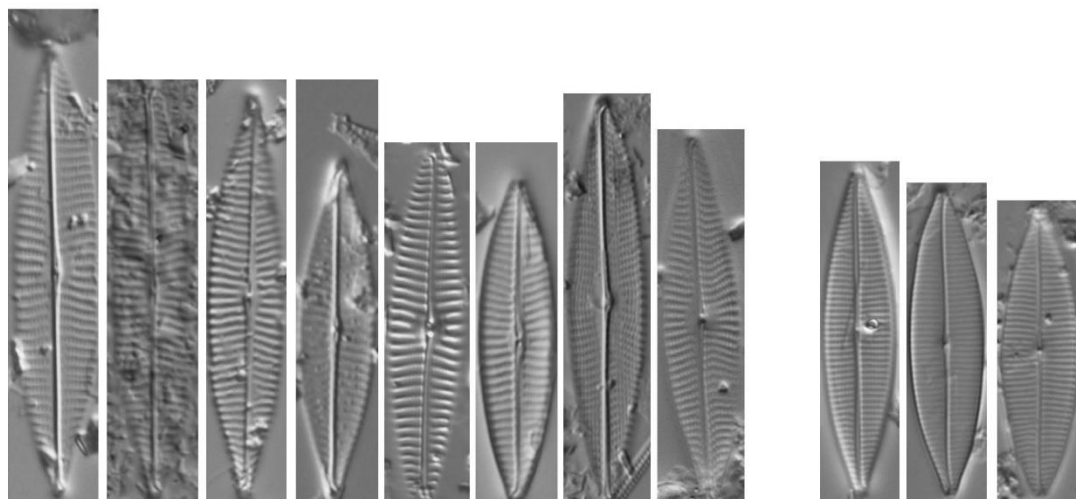
- Fig. 28: Sample GB009, Great Bay, NJ.
- Fig. 29: Sample RUTG0001, Cape May Courthouse, NJ.
- Fig. 30: Sample GB002, Great Bay, NJ.
- Fig. 31: Sample BBEDC058, Cattus Island, NJ.

Figs 32-33: *Navicula* sp. 112

- Fig. 32: Sample BBDC0016, Barnegat Bay, NJ.
- Fig. 33: Sample BBDC0031, Barnegat Bay, NJ.

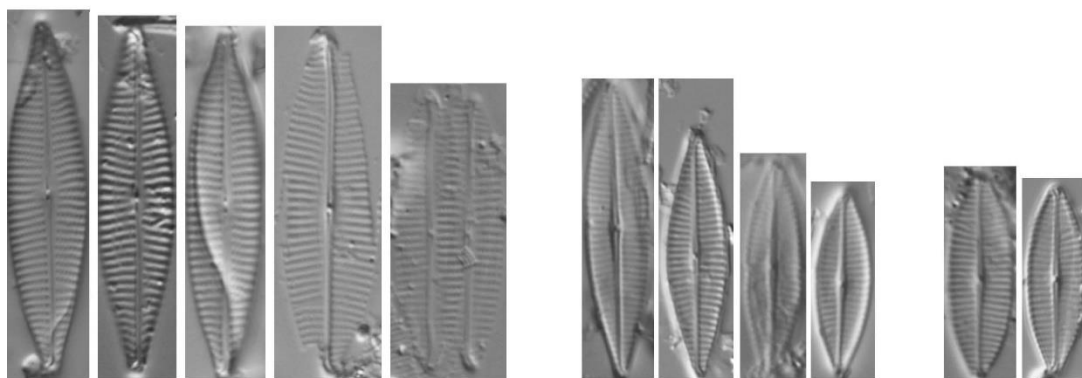


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12 - 19

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23 - 27

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32 - 33

Figs 1-12: *Navicula cf. cryptocephala*

Lit: Schoeman & Archibald 1987, p. 482-483; fig. 1-14, 34-36

Fig. 1: Sample BB0079, Tuckerton Bay, NJ.

Figs 2-4,6-12: Sample BBEDC010, Tuckerton Bay, NJ.

Fig. 5: Sample RUTG1019, Tuckerton Bay, NJ.

Fig. 13: *Navicula cf. phyllepta* Lange-Bertalot

Lit.: Krammer & Lange-Bertalot 1985, v. 9: p. 91; pl. 29, fig. 5, 6

Fig. 25: Sample BBDC0016, Barnegat Bay, NJ.

Fig. 14: *Navicula transitans var. derasa* Grunow

Lit: Cleve 1883, p. 467; pl. 36, fig. 32

Fig. 13: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 15: *Navicula sp. 114*

Fig. 15: Sample COAST004, Peconic Bay, NY.

Figs 16-20: *Navicula cf. salinicola*

Fig. 16: Sample BBDC0051, Barnegat Bay, NJ.

Fig. 17: Sample BBDC0053, Barnegat Bay, NJ.

Figs 18-19: Sample BBDC0058, Barnegat Bay, NJ.

Fig. 20: Sample COAST011, Great South Bay, NY.

Figs 21-26: *Navicula pseudosalinarioides* Giffen

Lit: Giffen 1975, p. 87; fig. 94-96

Fig. 21: Sample COAST001, Peconic Bay, NY.

Fig. 22: Sample COAST019, Great South Bay, NY.

Fig. 23: Sample COAST004, Peconic Bay, NY.

Fig. 24: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 25: Sample COAST003, Peconic Bay, NY.

Fig. 26: Sample COAST068, North East shore, NJ.

Figs 27-35: *Navicula biskanterae* Hustedt

Lit: Hustedt 1939, p. 623; fig. 80-85

Fig. 27,32: Sample COAST053, Barnegat Bay, NJ.

Fig. 28: Sample BBDC0062, Barnegat Bay, NJ.

Fig. 29: Sample COAST002, Peconic Bay, NY.

Fig. 30: Sample BBDC0047, Barnegat Bay, NJ.

Fig. 31,33: Sample BBDC0036, Barnegat Bay, NJ.

Fig. 53: Sample BBDC0053, Barnegat Bay, NJ.

Fig. 54: Sample BBDC0003, Barnegat Bay, NJ.

Figs 36-43: *Navicula dilucida* Hustedt

Lit: Hustedt 1939, p. 627; fig. 104 (?), 105, 106, 107

Fig. 36: Sample BBDC0009, Barnegat Bay, NJ.

Fig. 37,39: Sample BBDC0059, Barnegat Bay, NJ.

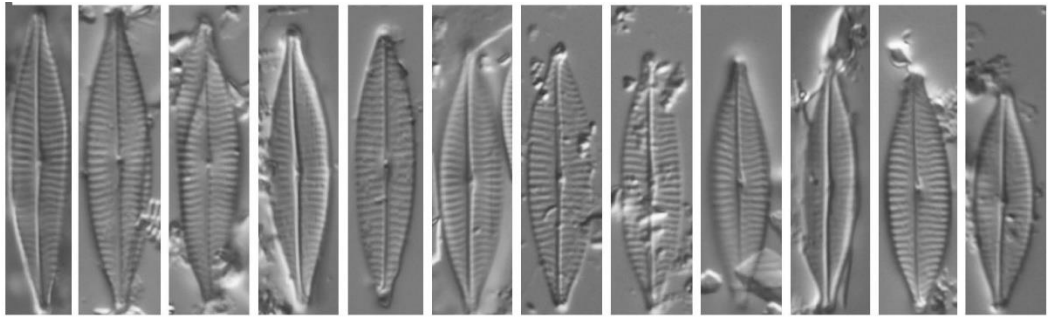
Fig. 38: Sample BBDC0038, Barnegat Bay, NJ.

Fig. 40: Sample BBDC0072, Barnegat Bay, NJ.

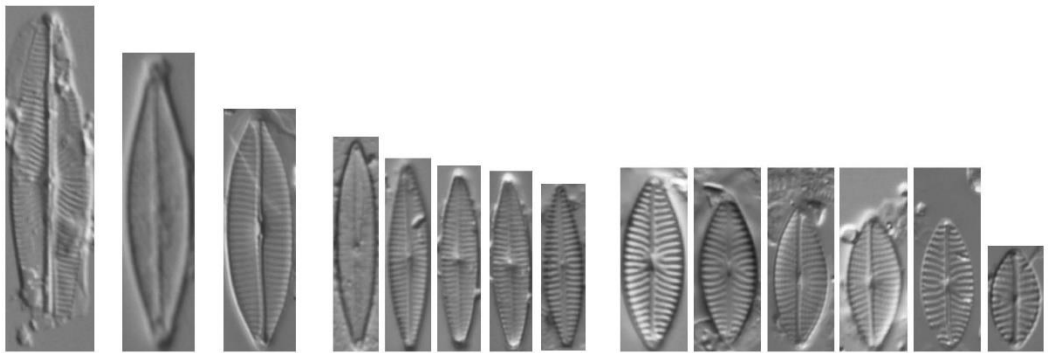
Fig. 41: Sample BBDC0051, Barnegat Bay, NJ.

Fig. 42: Sample COAST008, Peconic Bay, NY.

Fig. 43: Sample COAST015, Peconic Bay, NY.



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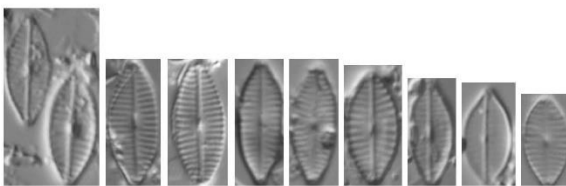
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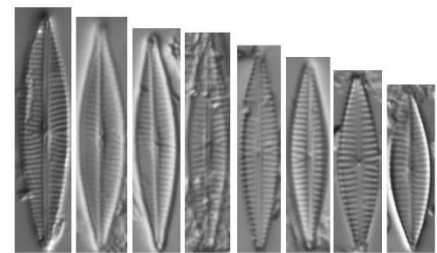
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16 - 20

21 - 26



27 - 35



36 - 43

Plate 191 (Scale bars: Figs 1-3; 5-22=10 µm; Figs 4; 23-25=1 µm)

Fig. 1: *Navicula cf. gregaria*

Fig. 1: Sample BBDC0107, Great Bay, NJ.

Figs 2-4: *Navicula vandamii* var. *mertensiae* Lange-Bertalot

Lit: Schoeman & Archibald 1987, p. 482-483; fig. 1-14, 34-36

Fig. 2: Sample BBDC0008, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0015, Barnegat Bay, NJ.

Fig. 4: Sample RUTG0811, Cape May Courthouse, NJ.

Fig. 5: *Navicula* sp. 22

Fig. 5: Sample BBDC0046, Barnegat Bay, NJ.

Fig. 6: *Navicula* sp. 31

Fig. 6: Sample COAST023, Great South Bay, NY.

Fig. 7: *Navicula* sp. 5

Fig. 7: Sample GB008, Great Bay, NJ.

Fig. 8: *Navicula* sp. 14

Fig. 8: Sample BB0008, Barnegat Bay, NJ.

Figs 9-25: *Navicula* sp. 37

Figs 9-10,14: Sample BBDC0044, Barnegat Bay, NJ.

Figs 11-12,15-16,20: Sample BBDC0063, Barnegat Bay, NJ.

Fig. 13: Sample BBDC0059, Barnegat Bay, NJ.

Fig. 17: Sample BBEDC058, Cattus Island, NJ.

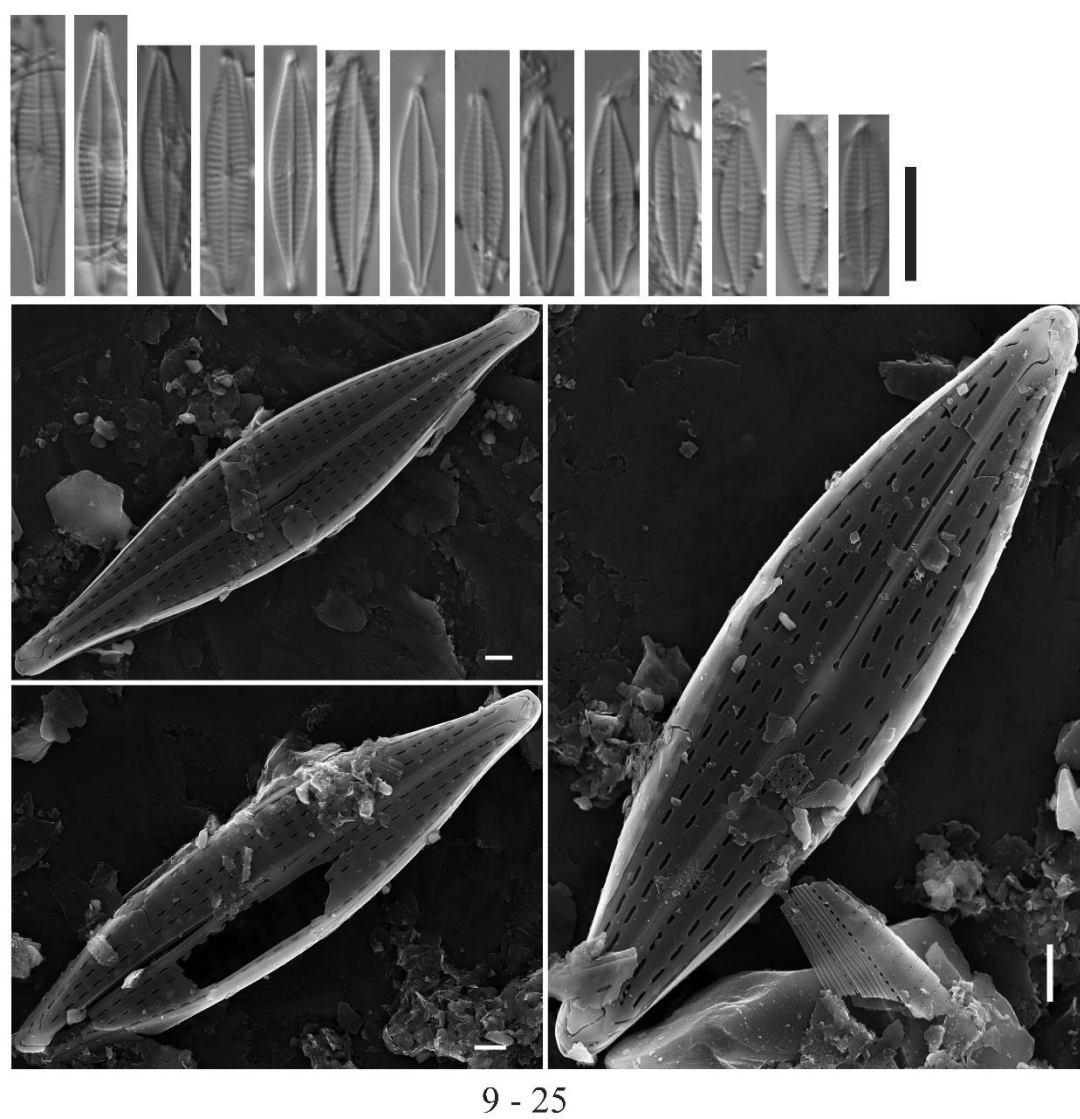
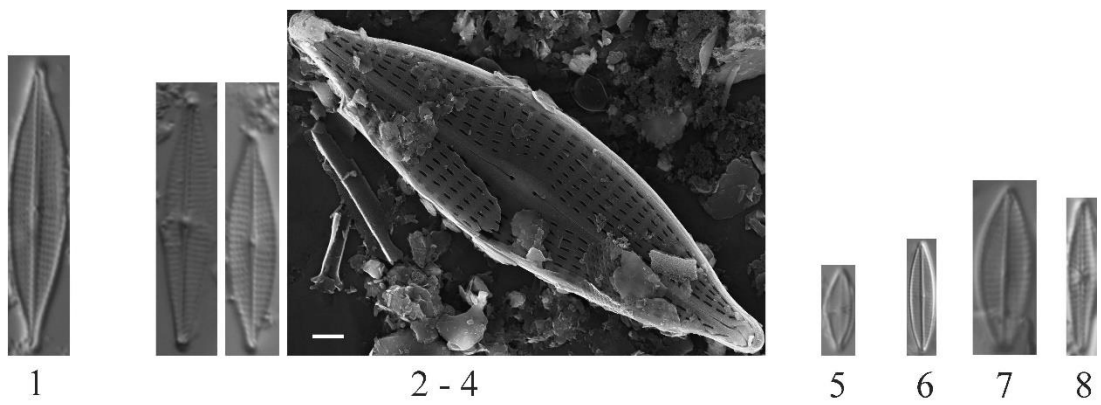
Fig. 18: Sample BBDC0015, Barnegat Bay, NJ.

Fig. 19: Sample BB0079, Barnegat Bay, NJ.

Fig. 21: Sample BBEDC059, Cattus Island, NJ.

Fig. 22: Sample BBDC0017, Barnegat Bay, NJ.

Figs 23-25: Sample RUTG0811, Cape May Courthouse, NJ.



Figs 1-11: *Navicula* sp. 101

- Fig. 1: Sample COAST004, Peconic Bay, NY.
- Fig. 2: Sample BBDC0017, Barnegat Bay, NJ.
- Fig. 3: Sample BBEDC011, Tuckerton Bay, NJ.
- Fig. 4: Sample COAST007, Peconic Bay, NY.
- Fig. 5: Sample BBDC0071, Barnegat Bay, NJ.
- Figs 6,10: Sample BBEDC079, Cattus Island, NJ.
- Fig. 7: Sample BB0069, Barnegat Bay, NJ.
- Fig. 8: Sample BBEDC058, Cattus Island, NJ.
- Fig. 9: Sample BBEDC018, Tuckerton Bay, NJ.
- Fig. 11: Sample BBDC0044, Barnegat Bay, NJ.

Figs 12-13: *Navicula* sp. 4

- Fig. 12: Sample BBDC0001, Barnegat Bay, NJ.
- Fig. 13: Sample BBDC0052, Barnegat Bay, NJ.

Figs 14-15: *Navicula* sp. 55

- Fig. 14: Sample BBEDC064, Cattus Island, NJ.
- Fig. 15: Sample BBDC0058, Barnegat Bay, NJ.

Figs 16-21: *Navicula diserta* Hustedt

Lit: Hustedt 1939, p. 627; fig. 78-79

- Fig. 16: Sample BBDC0001, Barnegat Bay, NJ.
- Figs 17-18: Sample BBDC0052, Barnegat Bay, NJ.
- Fig. 19: Sample COAST003, Peconic Bay, NY.
- Fig. 20: Sample COAST002, Peconic Bay, NY.
- Fig. 21: Sample COAST001, Peconic Bay, NY.

Figs 22-34: *Navicula* sp. 51 (*N. incertata?*)

- Figs 22,29,32-33: Sample BBDC0084, Barnegat Bay, NJ.
- Figs 23-25,34: Sample BBEDC043, Tuckerton Bay, NJ
- Fig. 26: Sample BBDC0043, Barnegat Bay, NJ.
- Fig. 27: Sample BBDC0027, Barnegat Bay, NJ.
- Fig. 28: Sample BBDC0071, Barnegat Bay, NJ.
- Figs 30: Sample BBDC0052, Barnegat Bay, NJ.
- Fig. 31: Sample GB002, Great Bay, NJ.

Figs 35-37: *Navicula vekhovii* Lange-Bertalot & Genkal

Lit: Lange-Bertalot & Genkal 1999, p. 71; pl. 14, figs. 1-7

- Fig. 35: Sample BBDC0006, Barnegat Bay, NJ.
- Fig. 36: Sample BBDC0084, Barnegat Bay, NJ.
- Fig. 37: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 38: *Navicula* sp. 9

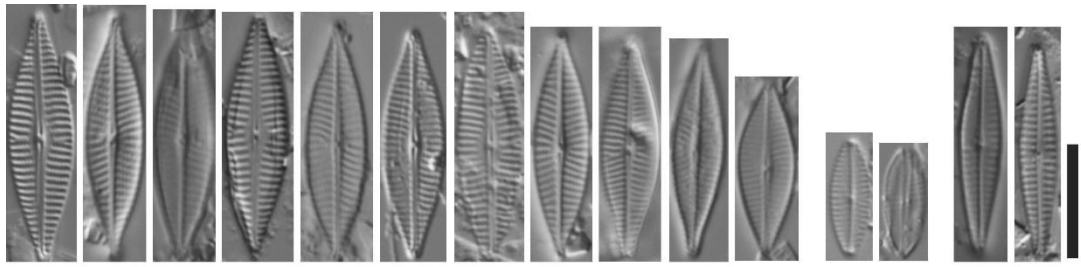
- Fig. 38: Sample RUTG0811, Cape May Courthouse, NJ.

Fig. 39: *Navicula* sp. 15

- Fig. 39: Sample BBDC0052, Barnegat Bay, NJ.

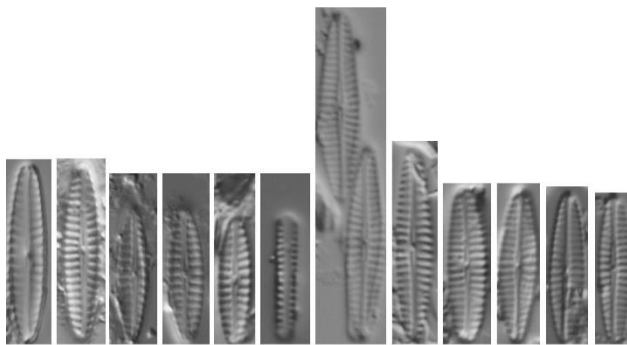
Fig. 40: *Navicula* sp. 33

- Fig. 40: Sample BBDC0055, Barnegat Bay, NJ.

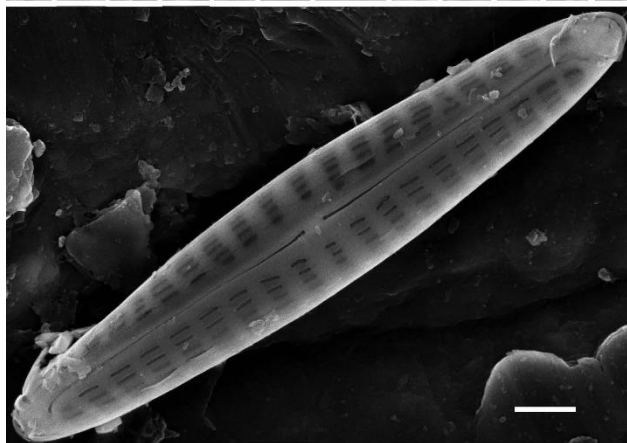


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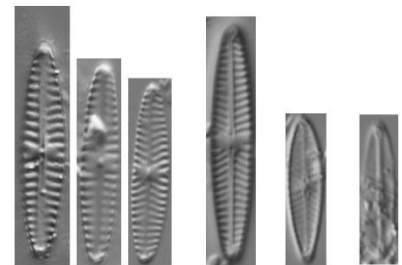
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16 - 21



22 - 34



35 - 37

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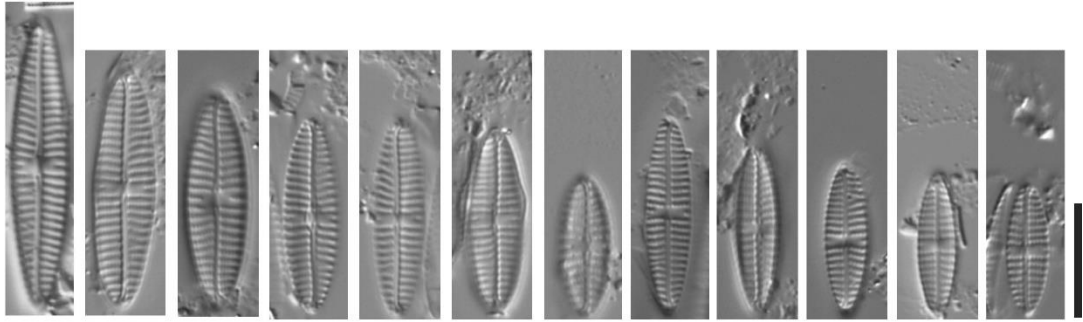
Plate 193

(Scale bars: Figs 1-12=10 μm ; Figs 13-17=1 μm)

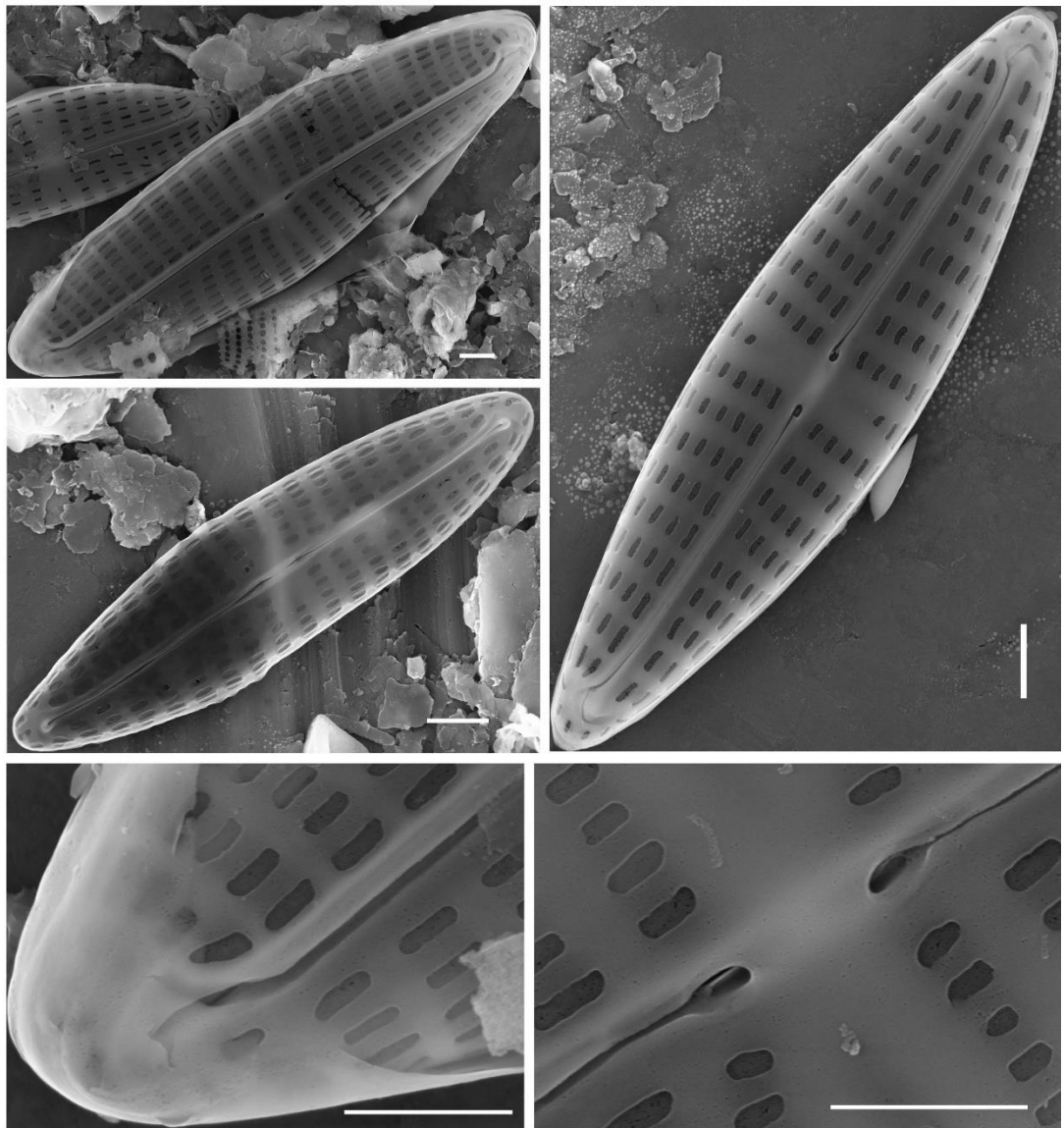
***Navicula* sp. 1**

Fig. 1: Sample BBEDC079, Cattus Island, NJ.

Figs 2-17: Sample BBDC0001, Barnegat Bay, NJ.



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13 - 17

Plate 194 (Scale bars: Figs 1-20; 25-28=10 µm; Figs 21-24; 29-31=1 µm)

Figs 1-24: *Navicula perminuta* Østrup

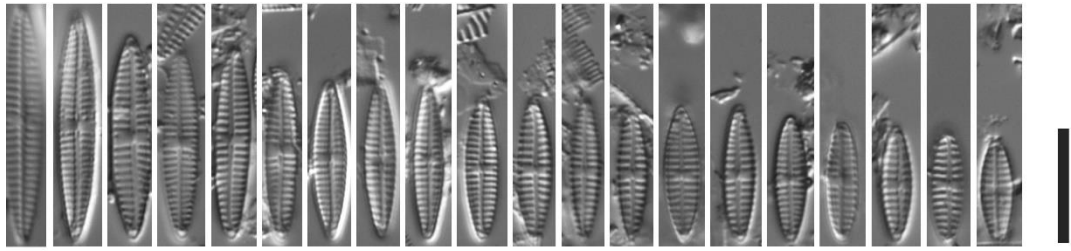
Lit.: Østrup 1913, p. 5; pl. 1, fig. 2

Fig. 1: Sample BBDC0064, Barnegat Bay, NJ.

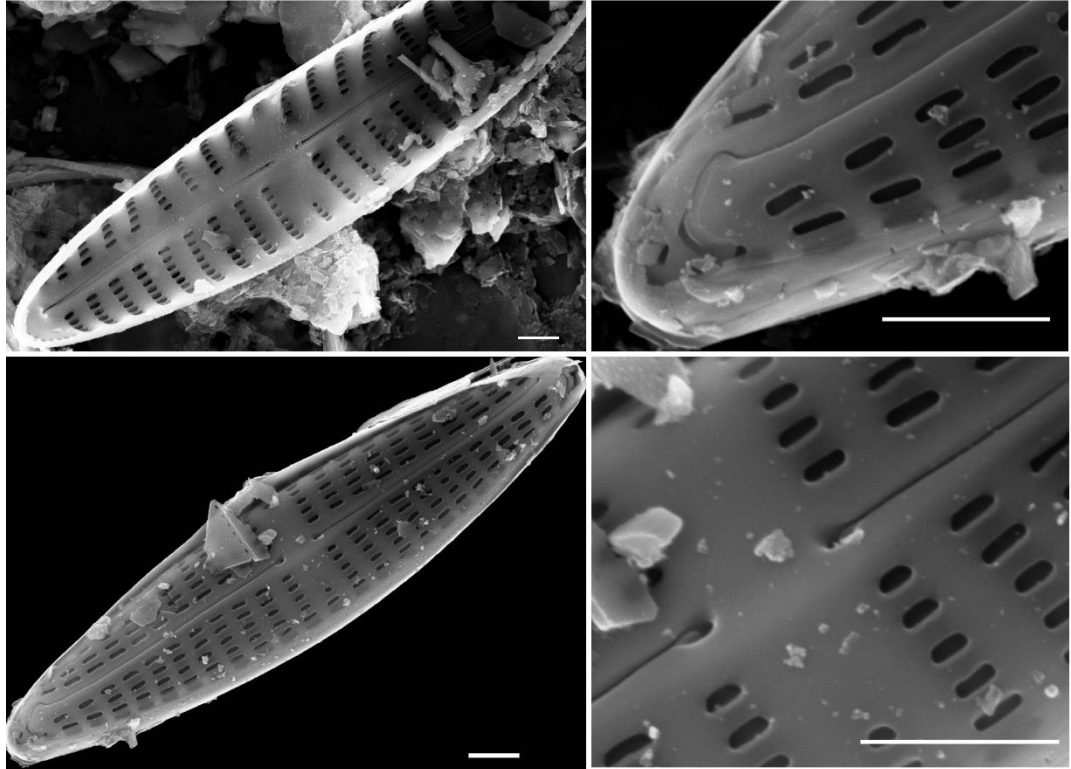
Figs 2-24: Sample RUTG0001, Cape May Courthouse, NJ.

Figs 25-31: *Navicula* sp. 23

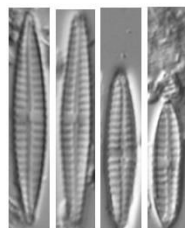
Figs 25-31: Sample RUTG0001, Cape May Courthouse, NJ.



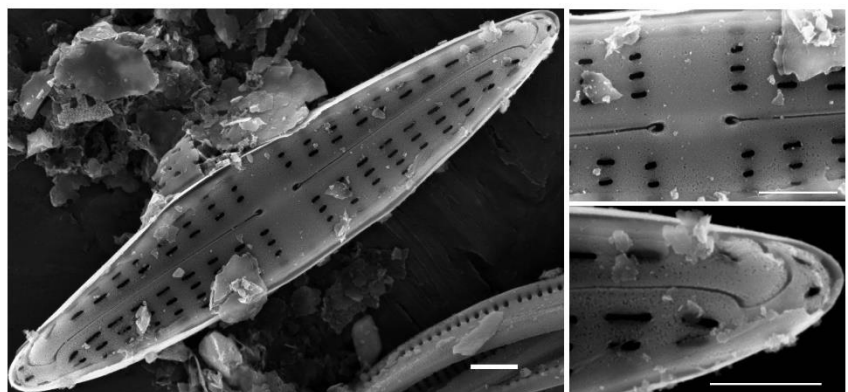
1 - 20



21 - 24



25 - 28



29 - 31

Plate 195 (Scale bar: Figs 1-16, 6-22=10 µm; Fig. 17=1 µm)

Figs 1-17: ***Navicula microcari*** Lange-Bertalot

Lit.: Lange-Bertalot 1993, v. 27: p. 121-122; pl. 58, fig. 1-5, Bacill. 2/4, fig. 59: 4-7

Figs 1-8,11-17: Sample RUTG0001, Cape May Courthouse, NJ.

Fig. 9: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 10: Sample BBDC0052, Barnegat Bay, NJ.

Figs 18-20: ***Navicula* sp. 53**

Lit.: Krammer & Lange-Bertalot 1985, v. 9: p. 91; pl. 29, fig. 5, 6

Figs 18,20: Sample RUTG0785, Rutgers Field Station, NJ.

Fig. 19: Sample BBDC0028, Barnegat Bay, NJ.

Figs 21-24: ***Navicula* cf. *libonensis***

Figs 21,23: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 22: Sample BBDC0006, Barnegat Bay, NJ.

Fig. 24: Sample BBEDC058, Cattus Island, NJ.

Figs 25-31: ***Navicula* cf. *microcari***

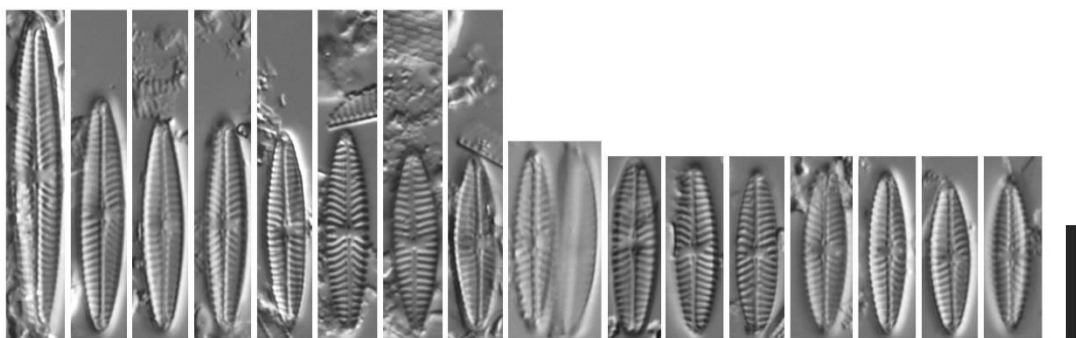
Figs 25-27: Sample RUTG0852, Bass River, NJ.

Fig. 28: Sample BBDC0007, Barnegat Bay, NJ.

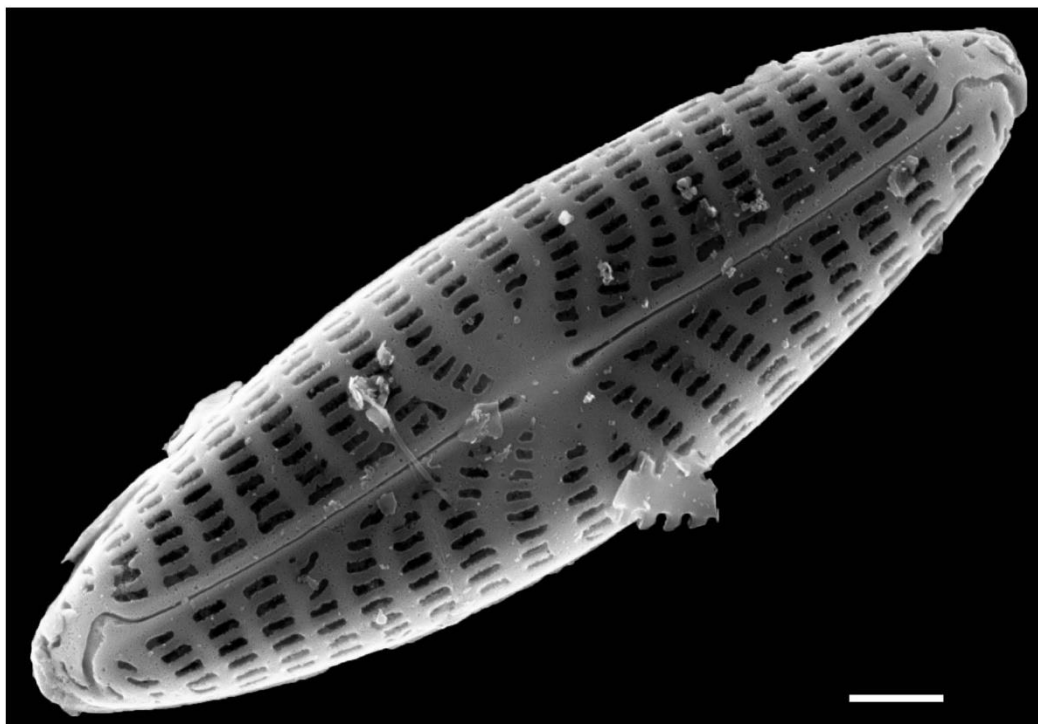
Fig. 29: Sample BBEDC058, Cattus Island, NJ.

Fig. 30: Sample BBDC0043, Barnegat Bay, NJ.

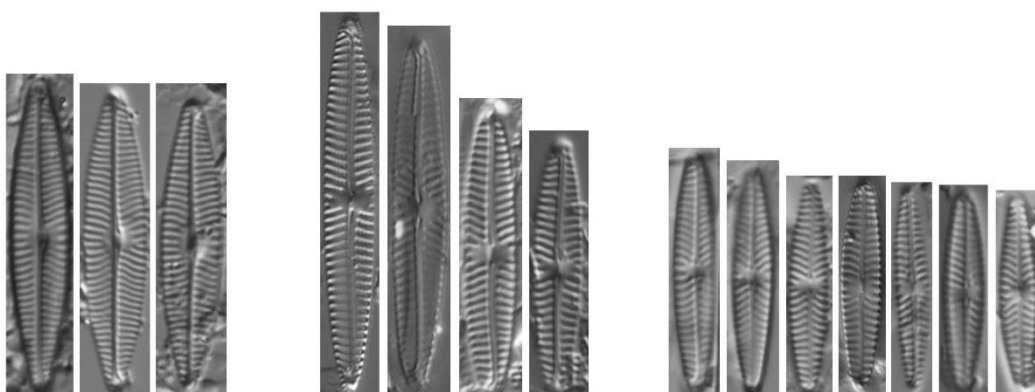
Fig. 31: Sample BBDC0001, Barnegat Bay, NJ.



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17



18 - 20

21 - 24

25 - 31

Plate 196 (Scale bars: Figs 1-10; 13-25=10 μm ; Fig 11-12; 26-28=1 μm)

Figs 1-12: *Navicula platyventris* Meister

Lit.: Meister 1935, p. 95; fig. 33

Fig. 1: Barnegat Bay, NJ.

Fig. 2: Sample BBDC0008, Barnegat Bay, NJ.

Figs 3-6,9-10,11-12: Sample LR14-3, Lewes-Rehoboth canal, DE.

Fig 7-8: Sample BBDC0046, Barnegat Bay, NJ.

Figs 13-24: *Navicula viminoides* Giffen

Lit.: Giffen 1975, p. 88; fig. 99-101

Fig. 13,21: Sample COAST001, Peconic Bay, NY.

Figs 14,19,22-23: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 15: Sample COAST004, Peconic Bay, NY.

Fig. 16: Sample COAST002, Peconic Bay, NY.

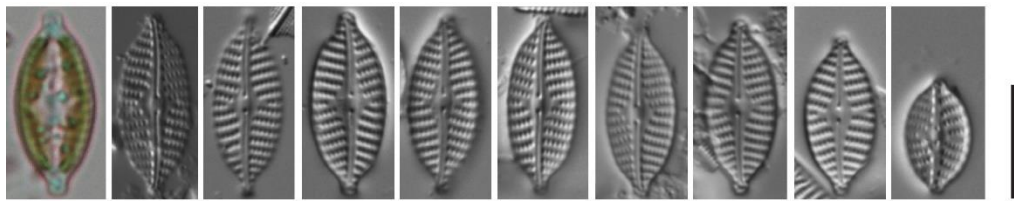
Fig. 17: Sample RUTG0861, Pilot Drive, NJ.

Fig. 18: Sample BBEDC059, Cattus Island, NJ.

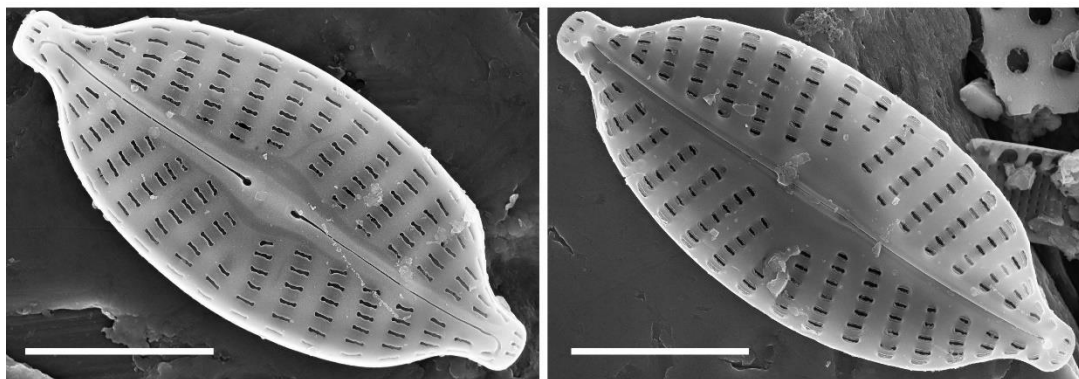
Fig. 20: Sample BBDC0032, Barnegat Bay, NJ.

Figs 24-25: Sample BBDC0052, Barnegat Bay, NJ.

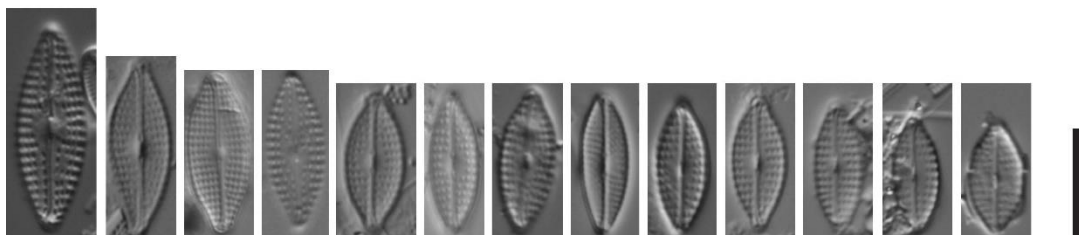
Figs 26-28: Sample BBDC0047, Barnegat Bay, NJ.



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11 - 12



13 - 25



26 - 28

Plate 197 (Scale bars: Figs 1-6; 11-14; 16-21=10 µm; Fig 7-10; 15=1 µm)

Figs 1-10: *Navicula binodulosa* Sullivan & Reimer

Lit.: Sullivan & Reimer 1975, p. 119; pl. 1, 2, fig. 4

Figs 1-10: Sample BB0072, Barnegat Bay, NJ.

Figs 11-15: *Navicula pargemina* Underwood & Yallop

Lit.: Underwood & Yallop 1994, p. 477; fig. 1-14

Fig. 11: Sample BBDC0051, Barnegat Bay, NJ.

Fig. 12: Sample COAST003, Peconic Bay, NY.

Fig. 13: Sample BBDC0064, Barnegat Bay, NJ.

Fig. 14: Sample BBEDC048, Tuckerton Bay, NJ.

Fig. 15: Sample BBDC0080, Barnegat Bay, NJ.

Figs 16-17: *Navicula cf. arenaria*

Fig. 16: Sample BBDC0030, Barnegat Bay, NJ.

Fig. 17: Sample BBDC0069, Barnegat Bay, NJ.

Fig. 18: *Navicula sp. 24*

Fig. 33: Sample COAST080, Great Bay, NJ.

Fig. 19: *Navicula sp. 60*

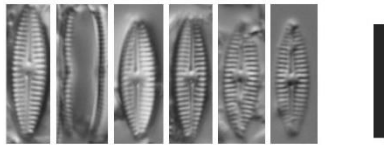
Fig. 19: Sample BB0053, Barnegat Bay, NJ.

Fig. 20: *Navicula sp. 12*

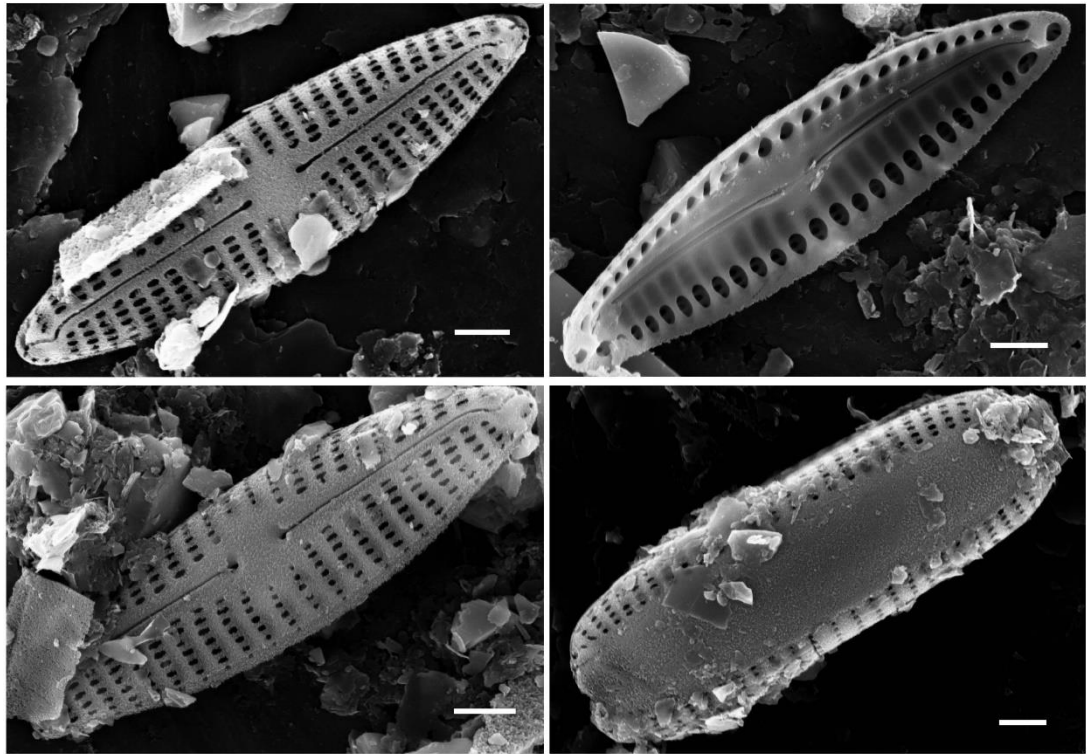
Fig. 20: Sample BBDC0052, Barnegat Bay, NJ.

Fig. 21: *Navicula sp. 57*

Fig. 21: Sample BBDC0069, Barnegat Bay, NJ.



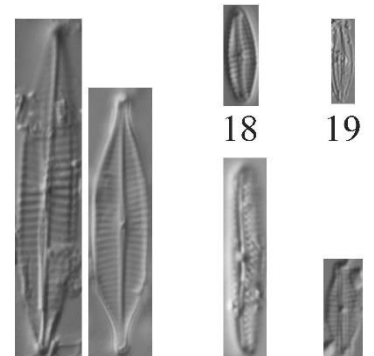
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16 - 17

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Figs 1-3: *Navicula bipustulata* Mann

Lit.: Mann 1925, p. 18 F; pl. 1, fig. 6

Fig. 1: Sample BBDC0037, Barnegat Bay, NJ.

Fig. 2: Sample BBDC0012, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0024, Cattus Island, NJ.

Fig. 4: *Navicula* sp. 69

Fig. 4: Sample BBDC0012, Barnegat Bay, NJ.

Figs 5-8: *Navicula cancellata* Donkin

Lit.: Donkin 1872, p. 55; pl. 8, fig. 4

Fig. 5,7: Sample BBDC0003, Barnegat Bay, NJ.

Fig. 6: Sample BBDC0045, Barnegat Bay, NJ.

Fig. 8: Sample BBDC0100, Great Bay, NJ.

Figs 9-14: *Navicula* sp. 47

Fig. 9: Sample BBDC0080, Barnegat Bay, NJ.

Fig. 10: Sample BBDC0048, Barnegat Bay, NJ.

Fig. 11: Sample COAST001, Peconic Bay, NY.

Fig. 12: Sample BBDC0091, Barnegat Bay, NJ.

Fig. 13: Sample BBDC0045, Barnegat Bay, NJ.

Fig. 14: Sample BBDC0064, Barnegat Bay, NJ.

Figs 15-18: *Navicula* sp. 7

Fig. 15: Sample BBDC0054, Barnegat Bay, NJ.

Fig. 16: Sample BBDC0091, Barnegat Bay, NJ.

Fig. 17: Sample BBDC0088, Barnegat Bay, NJ.

Fig. 18: Sample BBDC0051, Barnegat Bay, NJ.

Fig. 19: *Navicula* sp. 25

Fig. 15: Sample BBDC0059, Barnegat Bay, NJ.

Figs 20-24: *Navicula* cf. *duerrenbergiana*

Fig. 20: Sample BBDC0056, Barnegat Bay, NJ.

Fig. 21: Sample BBEDC047, Tuckerton Bay, NJ.

Fig. 22: Sample BBDC0063, Barnegat Bay, NJ.

Fig. 23: Sample BB0038, Barnegat Bay, NJ.

Fig. 24: Sample BBDEC063, Cattus Island, NJ.

Figs 25-26: *Navicula* cf. *formenterae*

Fig. 25: Sample BBDC0044, Barnegat Bay, NJ.

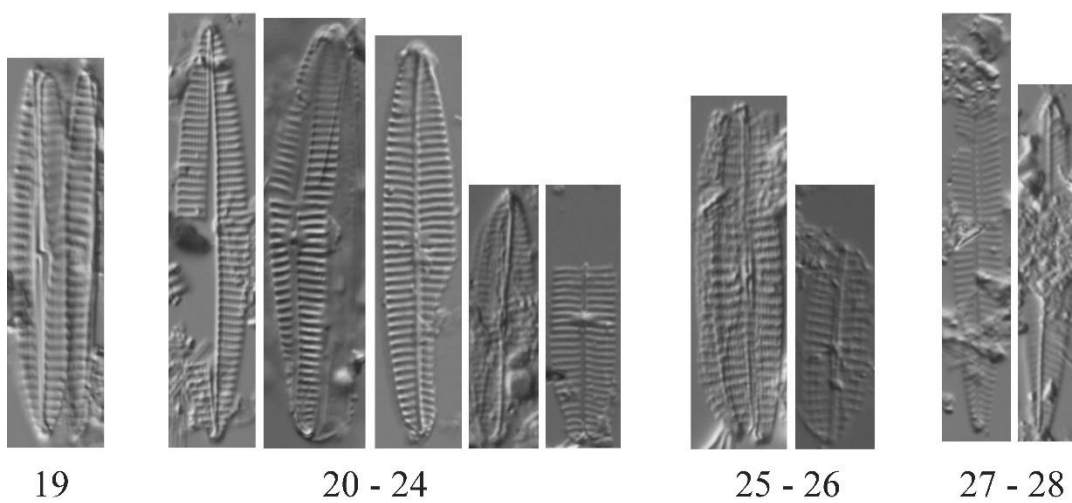
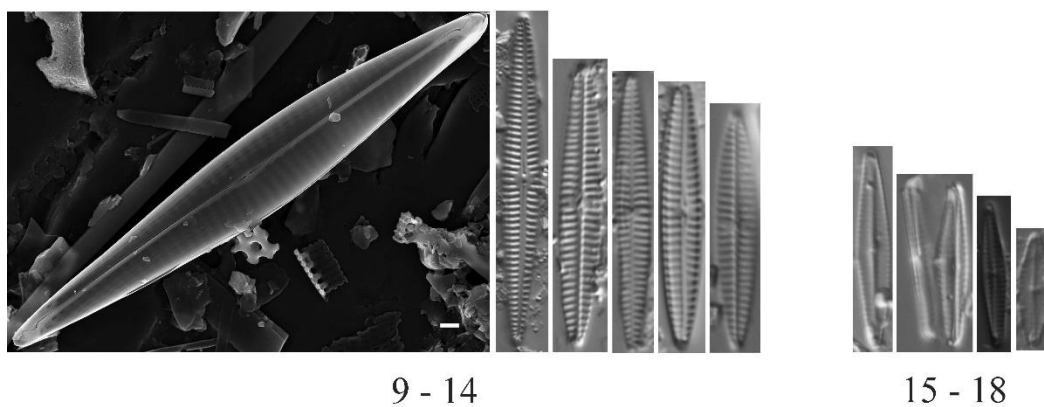
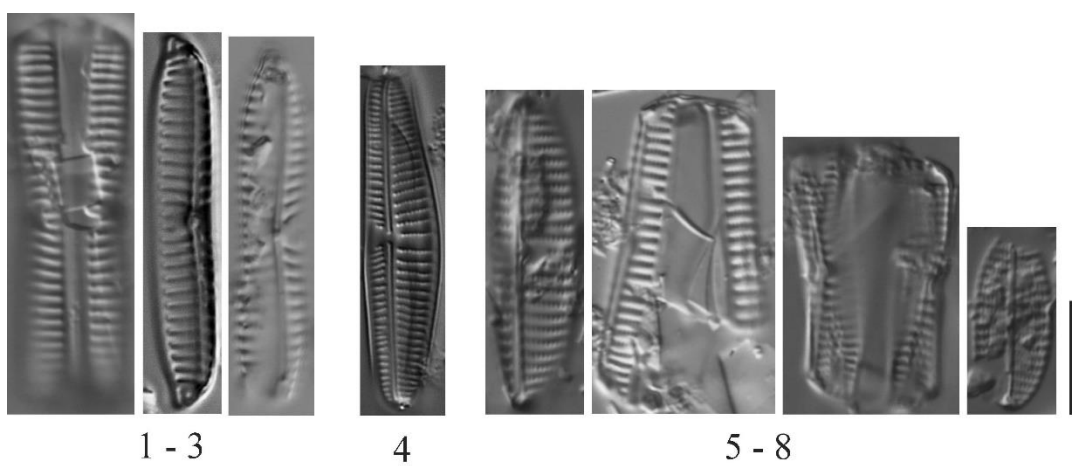
Fig. 26: Sample BBEDC002, Barnegat Bay, NJ.

Figs 27-28: *Navicula pavillardii* Hustedt

Lit.: Hustedt 1939, p. 635; fig. 86-90

Fig. 27: Sample BBDC0062, Barnegat Bay, NJ.

Fig. 28: Sample BBDC0056, Barnegat Bay, NJ.



Figs 1-6: *Navicula* sp. 13

- Fig. 1: Sample BBDC0071, Barnegat Bay, NJ.
Fig. 2,4-5: Sample BBDC0052, Barnegat Bay, NJ.
Fig. 3: Sample BBDC0009, Barnegat Bay, NJ.
Fig. 6: Sample BBDC0018, Barnegat Bay, NJ.

Figs 7-14: *Navicula* sp. 45

- Fig. 7: Sample BB0063, Barnegat Bay, NJ.
Fig. 8-14: Sample BBDC0052, Barnegat Bay, NJ.

Figs 15-17: *Navicula* sp. 120

- Figs 15-17: Sample BBDC0052, Barnegat Bay, NJ.

Figs 18-19: *Navicula* sp. 8

- Figs 18-19: Sample BBDC0052, Barnegat Bay, NJ.

Fig. 20: *Navicula* sp. 19

- Fig. 21: Sample RUTG0844, Leeds Point, NJ.

Figs 21-26: *Navicula* sp. 50

- Fig. 21: Sample BBDC0063, Barnegat Bay, NJ.
Fig. 22: Sample BBDC0051, Barnegat Bay, NJ.
Fig. 23: Sample BBDC0062, Barnegat Bay, NJ.
Fig. 24: Sample COAST004, Peconic Bay, NY.
Fig. 25: Sample BB0083, Tuckerton Bay, NJ.
Fig. 26: Sample BBDC0002, Barnegat Bay, NJ.

Fig. 27: *Navicula* sp. 20

- Fig. 27: Sample BBDC0049, Barnegat Bay, NJ.

Fig. 28: *Navicula lineola* var. *perlepida* (Grunow) Cleve

Lit.: Cleve 1894, p. 107

- Fig. 28: Sample BBDC0034, Barnegat Bay, NJ.

Figs 29-30: *Navicula* sp. 80

- Fig. 29: Sample BBDC0068, Barnegat Bay, NJ.
Fig. 30: Sample BBDC0051, Barnegat Bay, NJ.

Figs 31-33: *Navicula* sp. 48

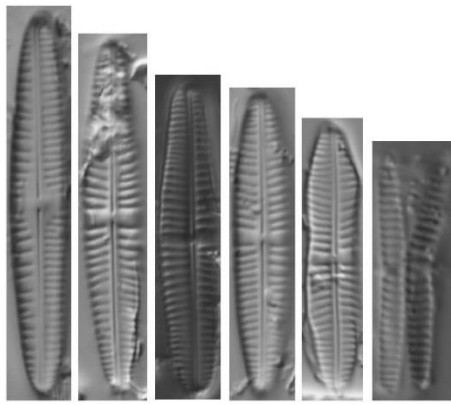
- Fig. 31,33: Sample BBDC0051, Barnegat Bay, NJ.
Fig. 32: Sample BBDC0059, Barnegat Bay, NJ.

Fig. 34: *Navicula* sp. 28

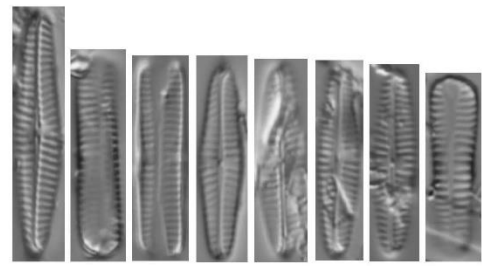
- Fig. 34: Sample BB0059, Barnegat Bay, NJ.

Figs 35-38: *Navicula* sp. 39

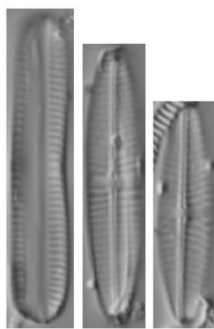
- Fig. 35: Sample COAST023, Great South Bay, NY.
Fig. 36: Sample BBDC0036, Barnegat Bay, NJ.
Fig. 37: Sample BBDC0008, Barnegat Bay, NJ.
Fig. 38: Sample BBDC0051, Barnegat Bay, NJ.



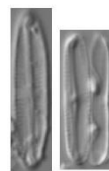
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7 - 14



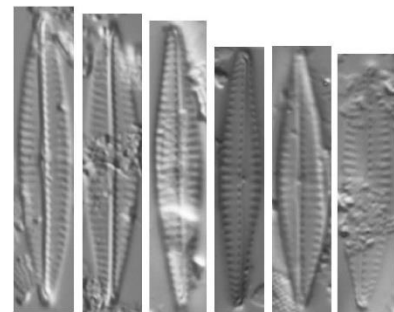
15 - 17



18 - 19



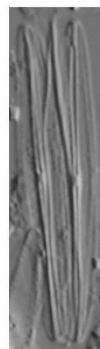
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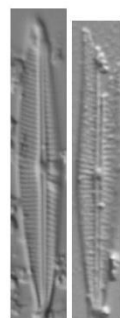
21 - 26



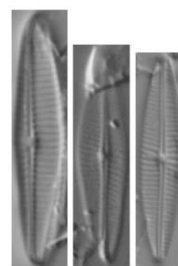
27



28



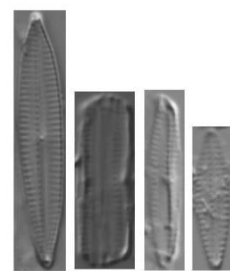
29 - 30



31 - 33



34



35 - 38

Plate 200 (Scale bars: Figs 1-3, 6, 8, 11-19; 21-27=10 µm; Figs 4, 7, 9, 10, 20=1 µm)

Figs 1-4: *Navicula* sp. 32

Figs 1-2: Sample BBDC0064, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0018, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0050, Barnegat Bay, NJ.

Figs 5-7: *Navicula* sp. 11

Fig. 5: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 6: Sample BBDC0052, Barnegat Bay, NJ.

Fig. 7: Sample BBDC0071, Barnegat Bay, NJ.

Figs 8-9: *Navicula* sp. 21

Fig. 8: Sample BBDC0071, Barnegat Bay, NJ.

Fig. 9: Sample BBDC0081, Barnegat Bay, NJ.

Figs 10-14: *Navicula* sp. 2

Fig. 10: Sample BBDC0080, Barnegat Bay, NJ.

Fig. 11: Sample BBEDC043, Tuckerton Bay, NJ.

Fig. 12: Sample COAST003, Peconic Bay, NY.

Fig. 13: Sample BBDC0052, Barnegat Bay, NJ.

Fig. 14: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 15: *Navicula* sp. 16

Fig. 15: Sample COAST023, Great South Bay, NY.

Fig. 16: *Navicula* sp. 116

Fig. 15: Sample COAST053, Barnegat Bay, NY.

Fig. 17: *Navicula* sp. 36

Fig. 17: Sample BBDC0046, Barnegat Bay, NJ.

Fig. 18: *Navicula* sp. 40

Fig. 18: Sample BBDC0063, Barnegat Bay, NJ.

Figs 19-20: *Navicula* sp. 44

Fig. 19: Sample BBDC0003, Barnegat Bay, NJ.

Fig. 20: Sample BBDC0050, Barnegat Bay, NJ.

Figs 21-23: *Navicula* sp. 43

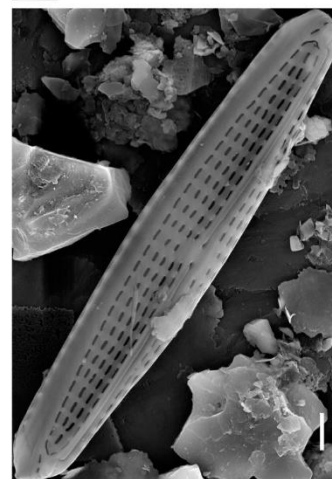
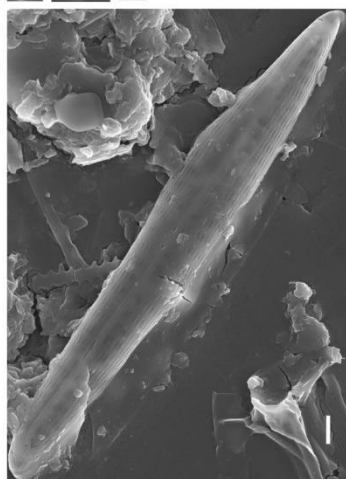
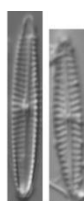
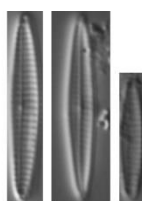
Figs 21-23: Sample BBDC0058, Barnegat Bay, NJ.

Figs 24-27: *Navicula* sp. 106

Fig. 24: Sample COAST003, Peconic Bay, NY.

Figs 25-26: Sample BBDC0053, Barnegat Bay, NY.

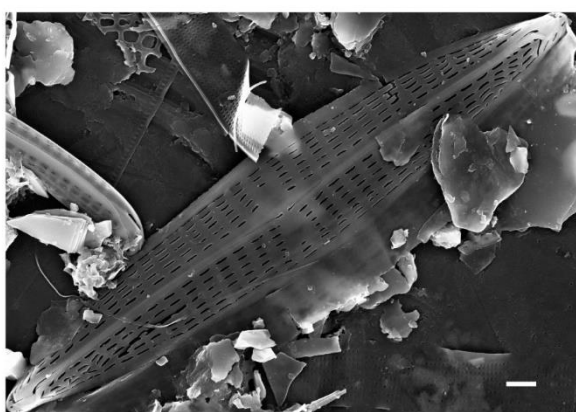
Fig. 27: Sample BBDC0058, Barnegat Bay, NY.



1 - 4

5 - 7

8 - 9

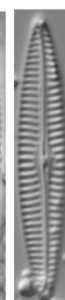
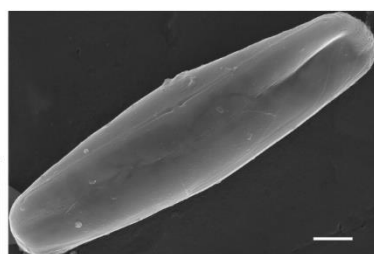


10 - 14

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19 - 20

21 - 23

24 - 27

Figs 1-8: *Navicula cf. veneta*

Fig. 1: Sample BBDC0052, Barnegat Bay, NJ.

Fig. 2: Sample BB0049, Barnegat Bay, NJ.

Figs 3-5,7-8: Sample RUTG0981, Marvel Saltmarsh Preserve, DE.

Fig. 6: Sample BB0050, Barnegat Bay, NJ.

Figs 9-10: *Navicula sp. 10*

Figs 9-10: Sample BBDC0052, Barnegat Bay, NJ.

Fig. 11: *Navicula sp. 49*

Fig. 8: Sample BBDC0095, Barnegat Bay, NJ.

Fig. 12: *Navicula sp. 46*

Fig. 12: Sample BB0010, Barnegat Bay, NJ.

Fig. 13: *Navicula sp. 56*

Fig. 13: Sample BBDC0088, Barnegat Bay, NJ.

Figs 14-20: *Navicula abunda* Hustedt

Lit: Hustedt 1955, p. 27; pl. 9, fig. 10-12

Fig. 14: Sample BBDC0027, Barnegat Bay, NJ.

Fig. 15: Sample COAST062, Great Bay, NJ.

Fig. 16: Sample BBEDC079, Cattus Island, NJ.

Fig. 17: Sample BBDC0088, Barnegat Bay, NJ.

Fig. 18: Sample COAST023, Great South Bay, NY.

Fig. 19: Sample BBDC0003, Barnegat Bay, NJ.

Fig. 20: Sample BB0067, Barnegat Bay, NJ.

Fig. 21: *Navicula sp. 59*

Fig. 31: Sample BBDC0058, Barnegat Bay, NY.

Fig. 22: *Navicula sp. 109*

Fig. 22: Sample COAST025, Great South Bay, NY.

Figs 23-25: *Navicula sp. 103*

Fig. 23: Sample COAST004, Peconic Bay, NY.

Fig. 24: Sample COAST016, Great South Bay, NY.

Fig. 25: Sample COAST011, Great South Bay, NY.

Figs 26-34: *Navicula sp. 57*

Fig. 26: Sample BBDC0015, Barnegat Bay, NJ.

Fig. 27,31-32,34: Sample BBEDC058, Cattus Island, NJ.

Fig. 28: Sample BBDC0013, Barnegat Bay, NJ.

Fig. 29: Sample BBDC0027, Barnegat Bay, NJ.

Fig. 30: Sample BBDC0061, Barnegat Bay, NJ.

Fig. 33: Sample BBDC0056, Barnegat Bay, NJ.

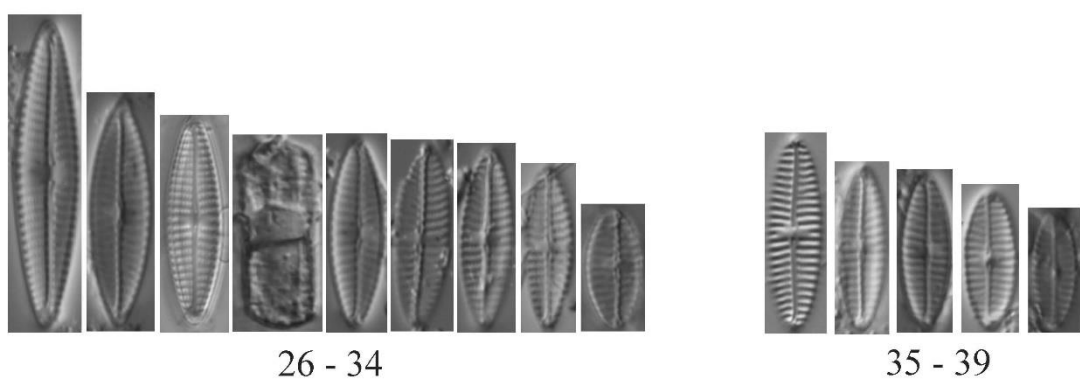
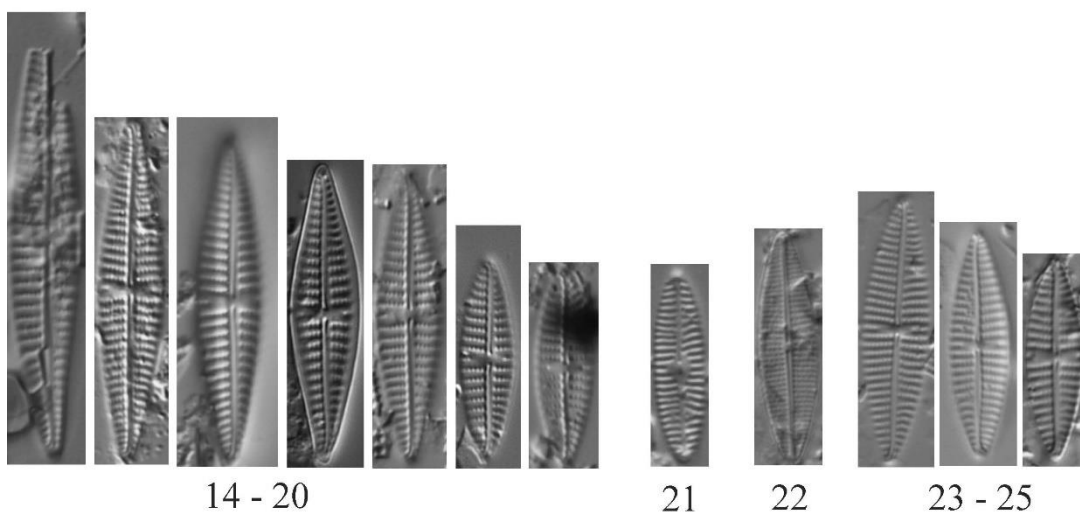
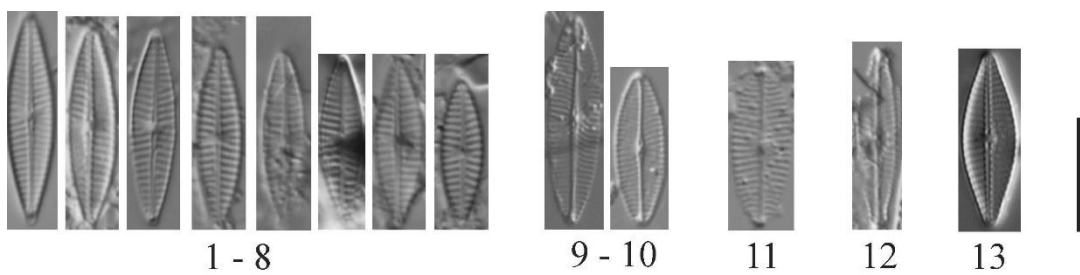
Figs 35-39: *Navicula sp. 41*

Fig. 35: Sample BBDC0018, Barnegat Bay, NY.

Figs 36-37: Sample BBDC0001, Barnegat Bay, NY.

Fig. 38: Sample BBDC0058, Barnegat Bay, NY.

Fig. 39: Sample BBDC0003, Barnegat Bay, NY.



Figs 1-15: *Navicula* sp. 54

- Figs 1-3,7,9-12: Sample RUTG0010, Cape May Courthouse, NJ.
Figs 4,13,15: Sample RUTG0001, Cape May Courthouse, NJ.
Fig. 5: Sample RUTG0004, Cape May Courthouse, NJ.
Fig. 6: Sample BB0022, Barnegat Bay, NJ.
Fig. 8: Sample BB0049, Barnegat Bay, NJ.
Fig. 14: Sample BBDC0103, Great Bay, NJ.

Figs 16-27: *Navicula diversistriata* Hustedt

Lit: Hustedt 1955, p. 28; pl. 9, fig. 6-9

- Figs 16-19,21-24: Sample BBDC0108, Great Bay, NJ.
Fig. 20: Sample BBDC0080, Barnegat Bay, NJ.
Fig. 25: Sample BBDC0095, Barnegat Bay, NJ.
Fig. 26: Sample COAST025, Great South Bay, NY.
Fig. 27: Sample BBDC0045, Barnegat Bay, NJ.

Figs 28-30: *Navicula* sp. 35

- Figs 28-29: Sample BBDC0001, Barnegat Bay, NJ.
Fig. 30: Sample BBDC0061, Barnegat Bay, NJ.

Figs 31-36: *Navicula* sp. 30

- Fig. 31: Sample BB0011, Barnegat Bay, NJ.
Fig. 32,34-35: Sample BBDC0001, Barnegat Bay, NJ.
Fig. 33: Sample BBDC0084, Barnegat Bay, NJ.
Fig. 36: Sample BBDC0002, Barnegat Bay, NJ.

Fig. 37: *Fogedia finmarchica* (Cleve & Grunow) Witkowski, Metzeltin & Lange-Bertalot

Lit: Witkowski, et al 1997, v. 65(1-4): p. 87; fig. 46-63

Basionym: *Stauroneis finmarchica* Cleve & Grunow 1880

Synonym: *Navicula finmarchica* (*finmarchica*) (Cleve & Grunow) Cleve 1895

Schizonema finmarchicum (Cleve & Grunow) Kuntze 1898

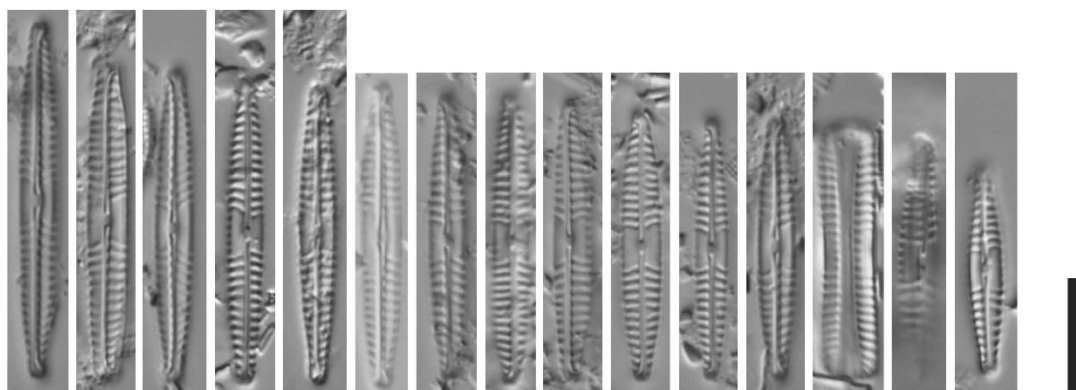
- Fig. 37: Sample BBDC0003, Barnegat Bay, NJ.

Figs 38 - 44: *Fogedia heterovalvata* (Simonsen) Witkowski, Lange-Bertalot & Metzeltin

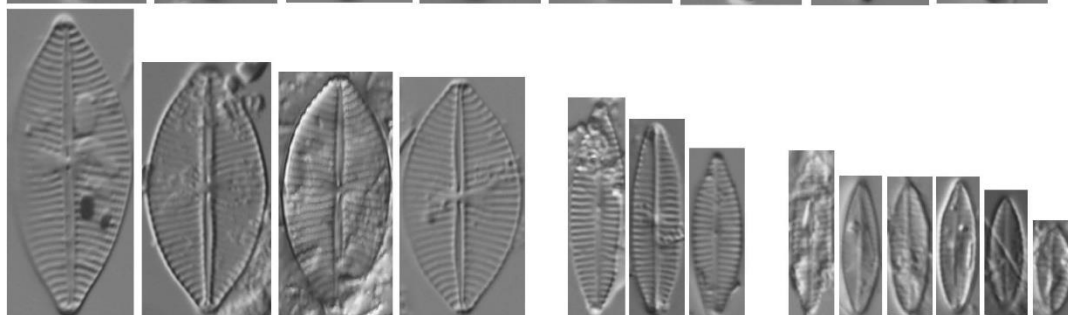
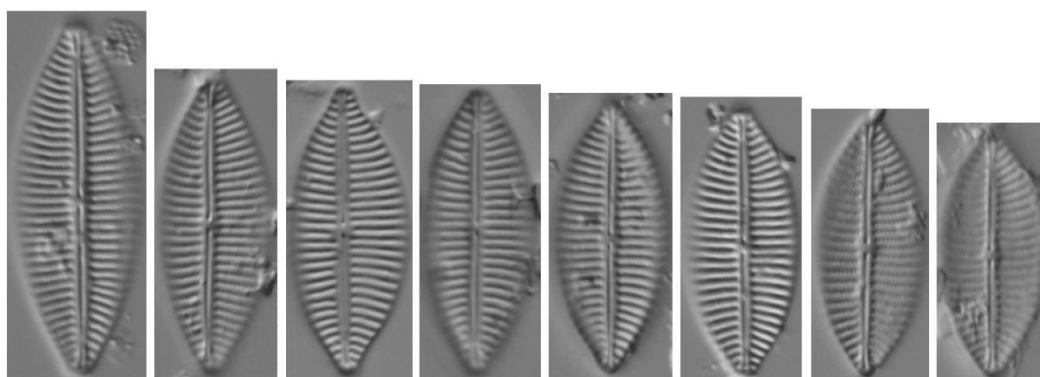
Lit: Witkowski, Lange-Bertalot & Metzeltin 2000, p. 219

Basionym: *Navicula heterovalvata* Simonsen 1959

- Figs 38-39: Sample BBDC0107, Great Bay, NJ.
Fig. 40: Sample COAST003, Peconic Bay, NY.
Fig. 41: Sample COAST003, Peconic Bay, NY.
Fig. 42: Sample BBDC0002, Barnegat Bay, NJ.
Fig. 43: Sample COAST021, Great South Bay, NY.
Fig. 44: Sample GB005, Great Bay, NJ.



1 - 15



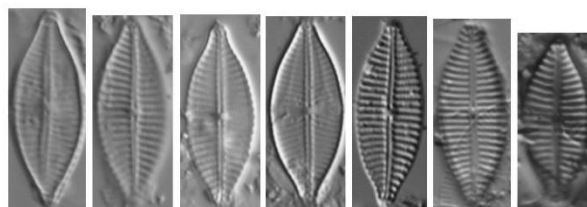
16 - 27

28 - 30

31 - 36



37



38 - 44

Plate 203 (Scale bar: Figs 1-6=10 µm)

Figs 1-3: ***Navicula* sp. 3**

Figs 1-2: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 3: Sample BB0052, Barnegat Bay, NJ.

Figs 4-6: ***Trachyneis aspera*** (Ehrenberg) Cleve

Lit: Cleve 1894, p. 191

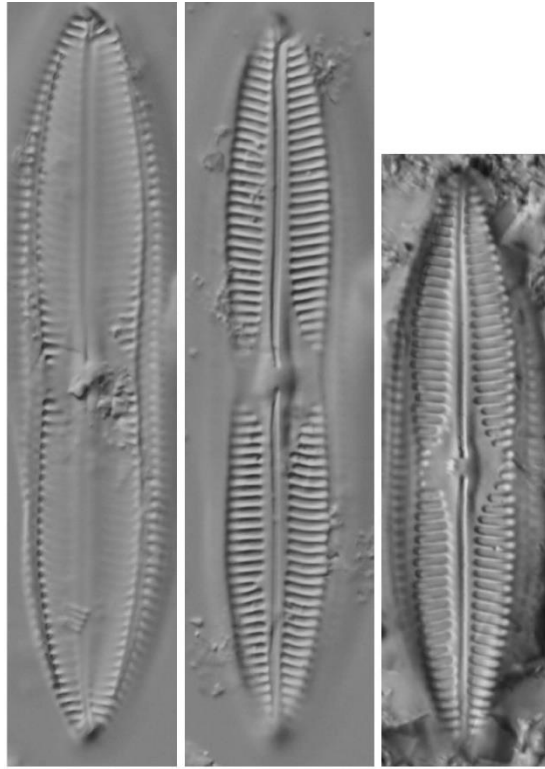
Basionym: *Navicula aspera* Ehrenberg 1840

Synonym: *Schizonema asperum* (Ehrenberg) Kuntze 1898

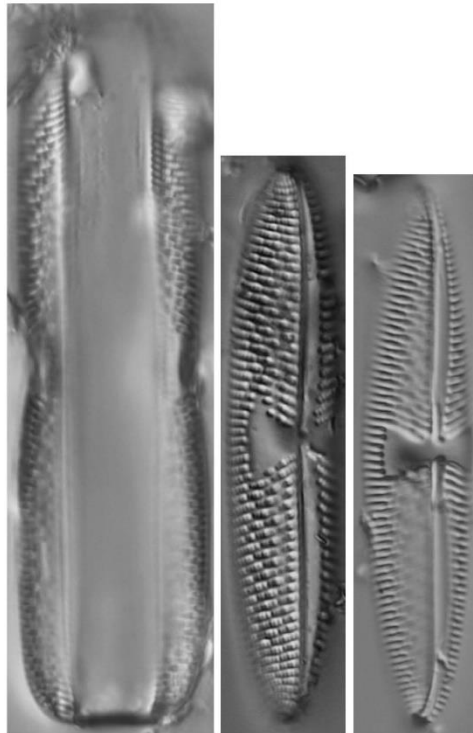
Fig. 4: Sample BBDC0066, Barnegat Bay, NJ.

Fig. 5: Sample BBDC0004, Barnegat Bay, NJ.

Fig. 6: Sample BBDC0041, Barnegat Bay, NJ.



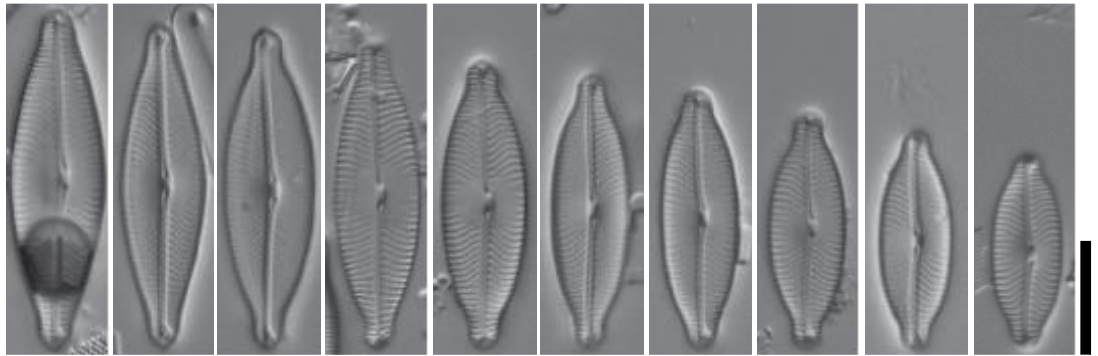
1 - 3



4 - 6

Pinnuavis genustriata (Hustedt) Lange-Bertalot & Krammer
in Lange-Bertalot & Genkal 1999, p. 81

Basionym: *Navicula genustriata* Hustedt 1942



1 - 10

Seminavis pusilla (Grunow) Cox & Re

Lit.: Cox & G. Re 2004, p. 60

Basionym: *Cymbella pusilla* Grunow in Schmidt et al. 1875

Synonyms: *Cocconema pusilla* (Grunow in Schmidt et al.) W. & G.S. West 1911

Navicella pusilla (Grunow) Krammer 1997

Figs 1,3-5: Sample BB0002, Barnegat Bay, NJ.

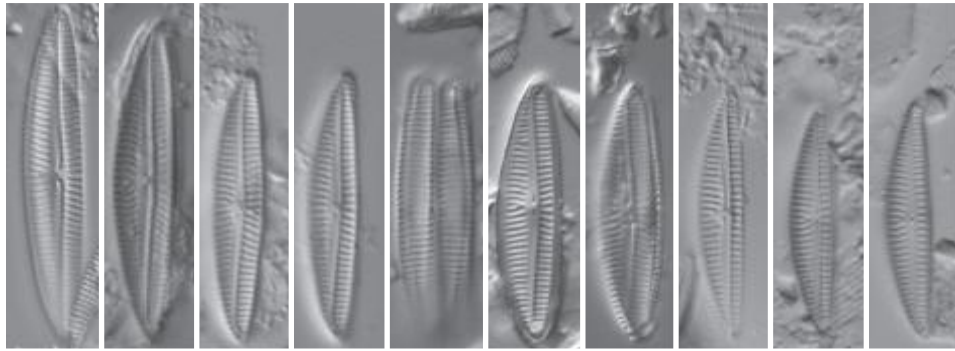
Fig. 2: Sample BB0072, Barnegat Bay, NJ.

Fig. 6: Sample BB0001, Barnegat Bay, NJ.

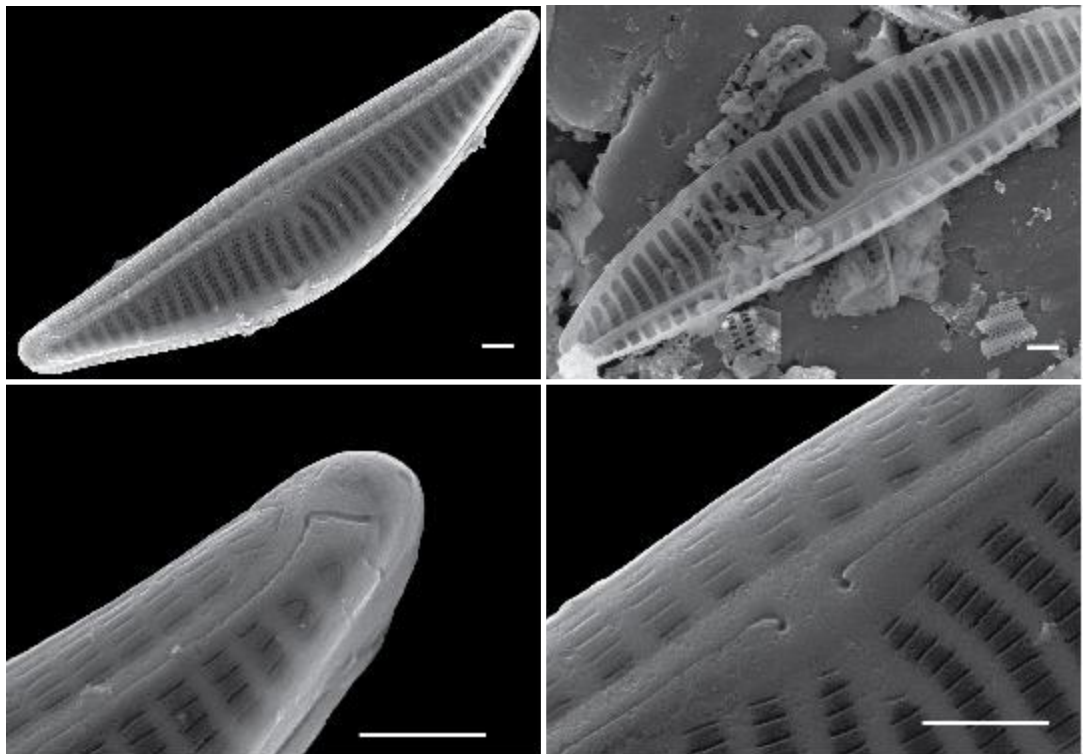
Fig. 7: Sample BBDC0064, Barnegat Bay, NJ.

Figs 8-11,13-14: Sample BBDC0071, Barnegat Bay, NJ.

Fig. 12: Sample BB0003, Barnegat Bay, NJ.



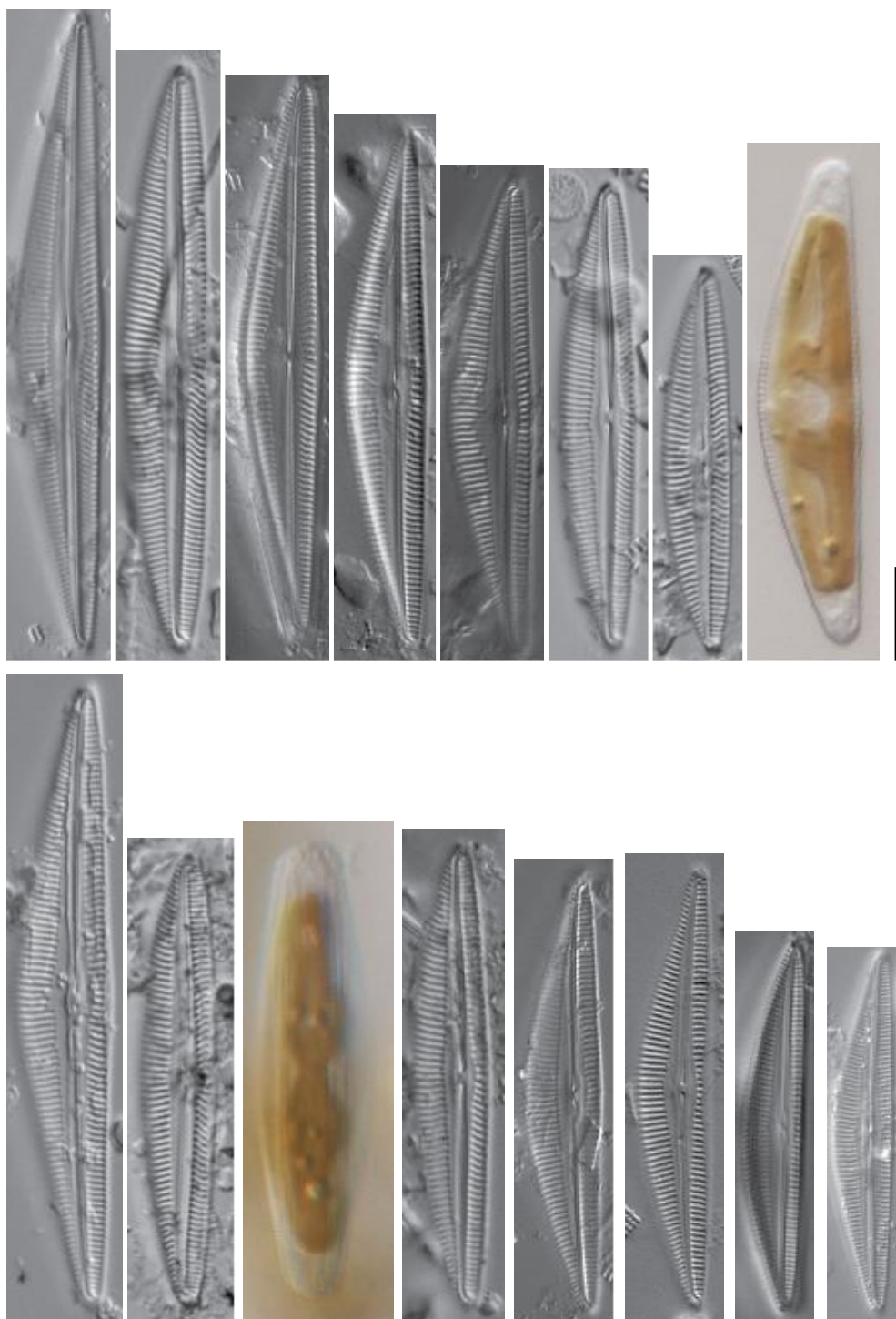
1 - 10



11 - 14

Seminavis robusta Danielis & Mann

Lit.: Danielis & Mann 2002: 440, figs 39-53



1 - 16

Pleurosigma gracile Hustedt

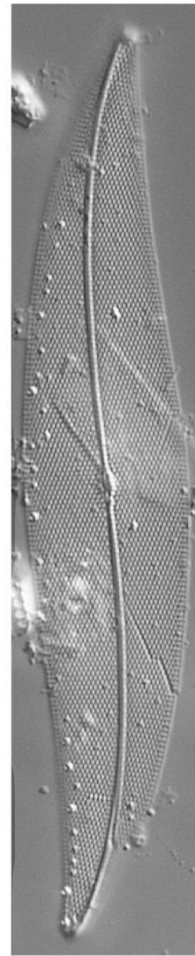
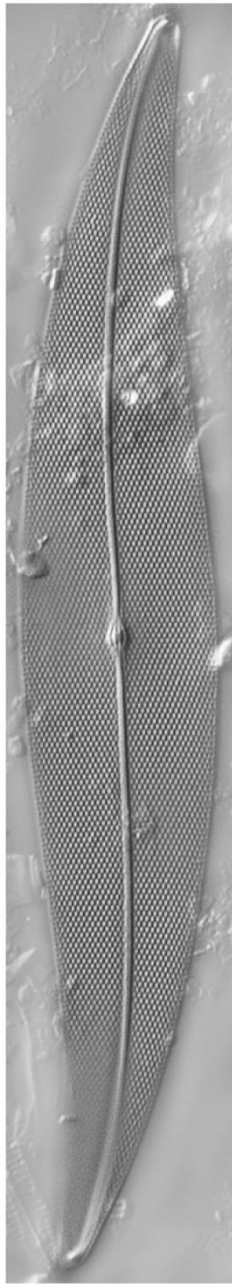
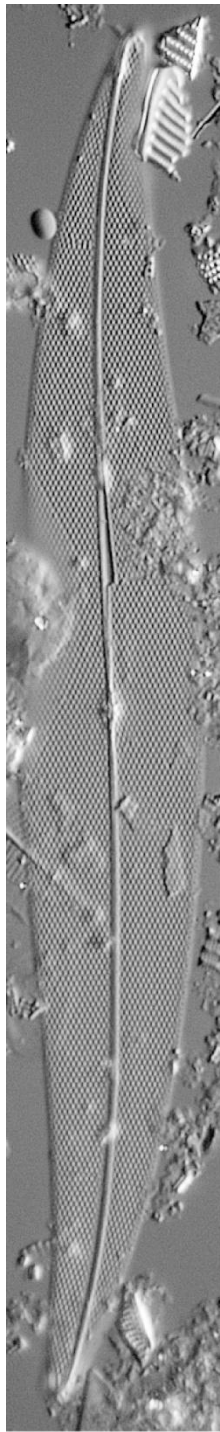
Lit.: Hustedt 1955, p. 35; pl. 10, fig. 11

Fig. 1: Sample BBDC0004, Barnegat Bay, NJ.

Fig. 2: Sample BBDC0012, Barnegat Bay, NJ.

Fig. 3: Sample BBDC0008, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0001, Barnegat Bay, NJ.



1 - 4

Figs 1-5: *Pleurosigma salinarum* (Grunow) Grunow in Cleve & Grunow

Lit.: Cleve & Grunow 1880, p. 54

Basionym: *Pleurosigma delicatulum* var. *salinarum* Grunow 1878

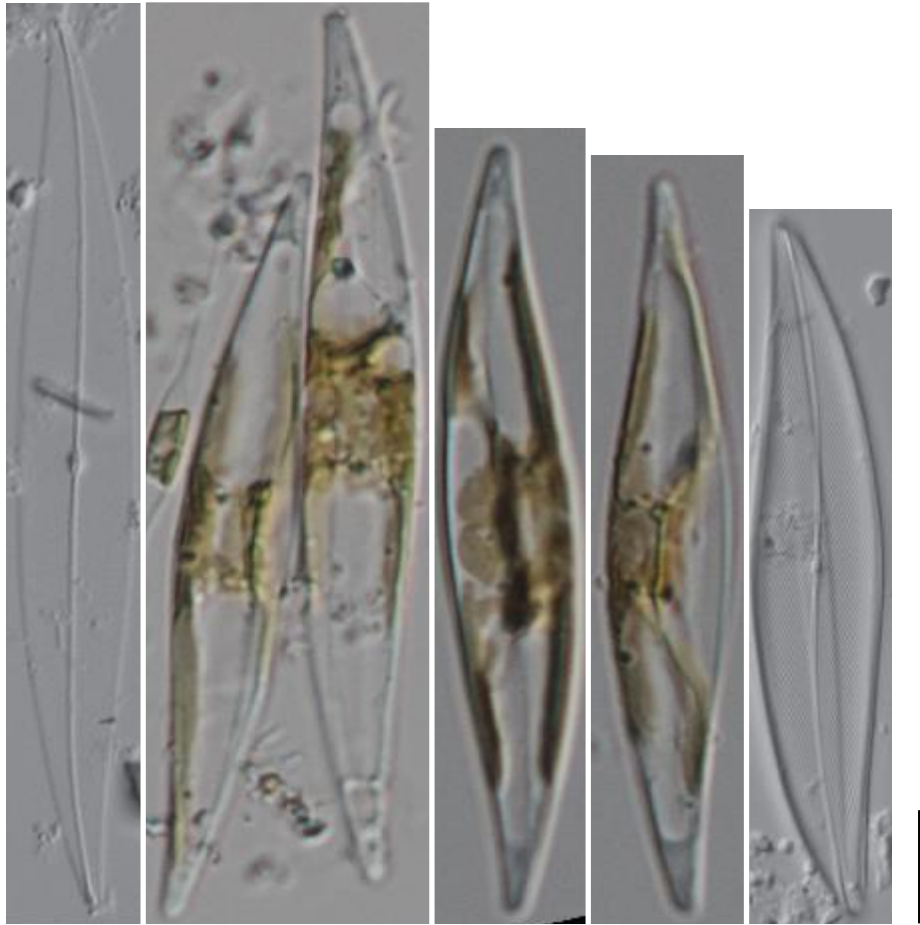
Synonyms: *Pleurosigma angulatum* f. *salinarum* (Grunow) De Toni 1891

Pleurosigma pusillum var. *salinarum* (Grunow) H. Peragallo 1891

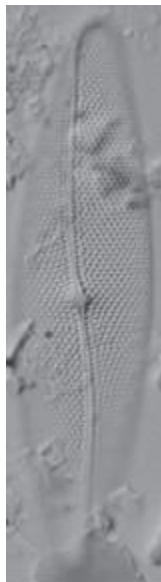
Scalprum (Scalptrum) salinarum (Grunow) Kuntze 1891

Fig. 6: *Pleurosigma distinguendum* Hustedt

Lit.: Hustedt 1955, p. 36; pl. 11, fig. 3-5



1 - 5



6

Fig. 1: *Pleurosigma indicum* Simonsen

Lit.: Simonsen 1974, p. 46; pl. 29, fig. 3

Fig. 2: *Gyrosigma parvulum* Hustedt

Lit.: Hustedt 1955, p. 34; pl. 10, fig. 6

Fig. 3: *Gyrosigma prolongatum* (W. Smith) Griffith & Henfrey

Lit.: Griffith & Henfrey 1856, p. 303; pl. 11, fig. 23

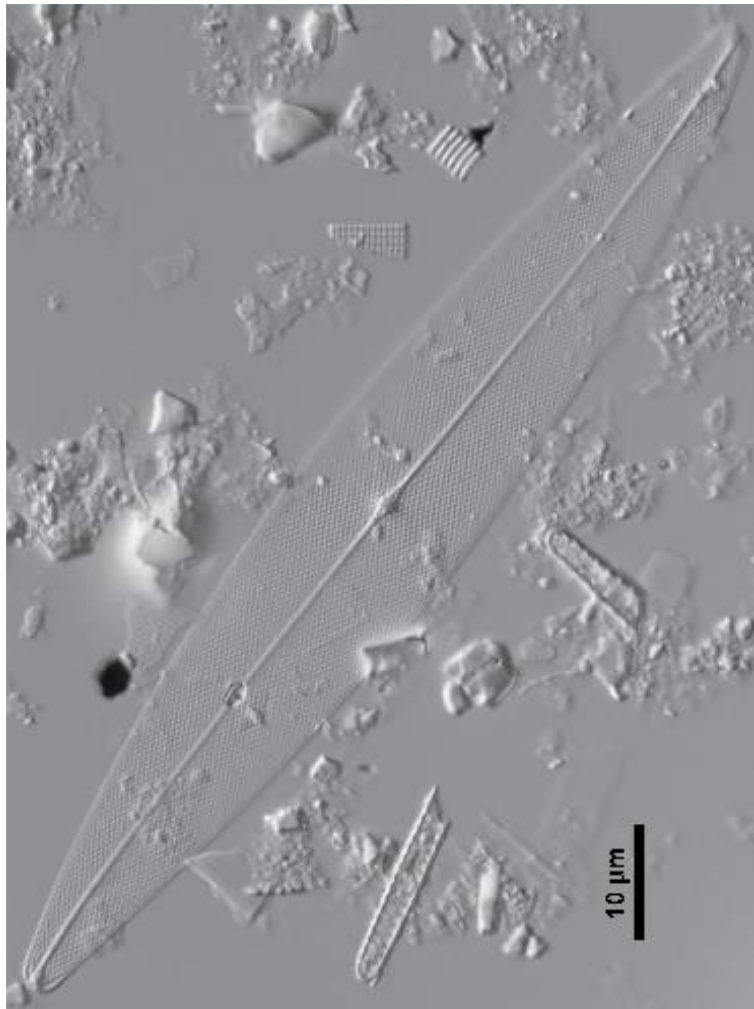
Basionym: *Pleurosigma prolongatum* Smith 1852

Synonyms: *Gyrosigma fasciola* (*fasciolum*) var. *prolongatum* (Smith) Proschkina-Lavrenko 1950

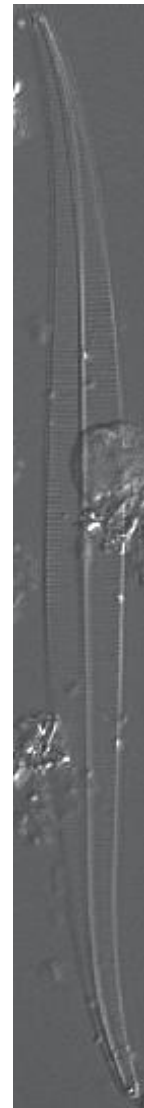
Pleurosigma fasciolum (*fasciola*) var. *prolongatum* (Smith) H. Peragallo 1891

Scalprum (*Scalptrum*) *prolongatum* (Smith) Kuntze 1891

Gyrosigma prolongatum (Smith) Cleve 1894



1



2



3

Gyrosigma fasciola (Ehrenberg) Griffith & Henfrey

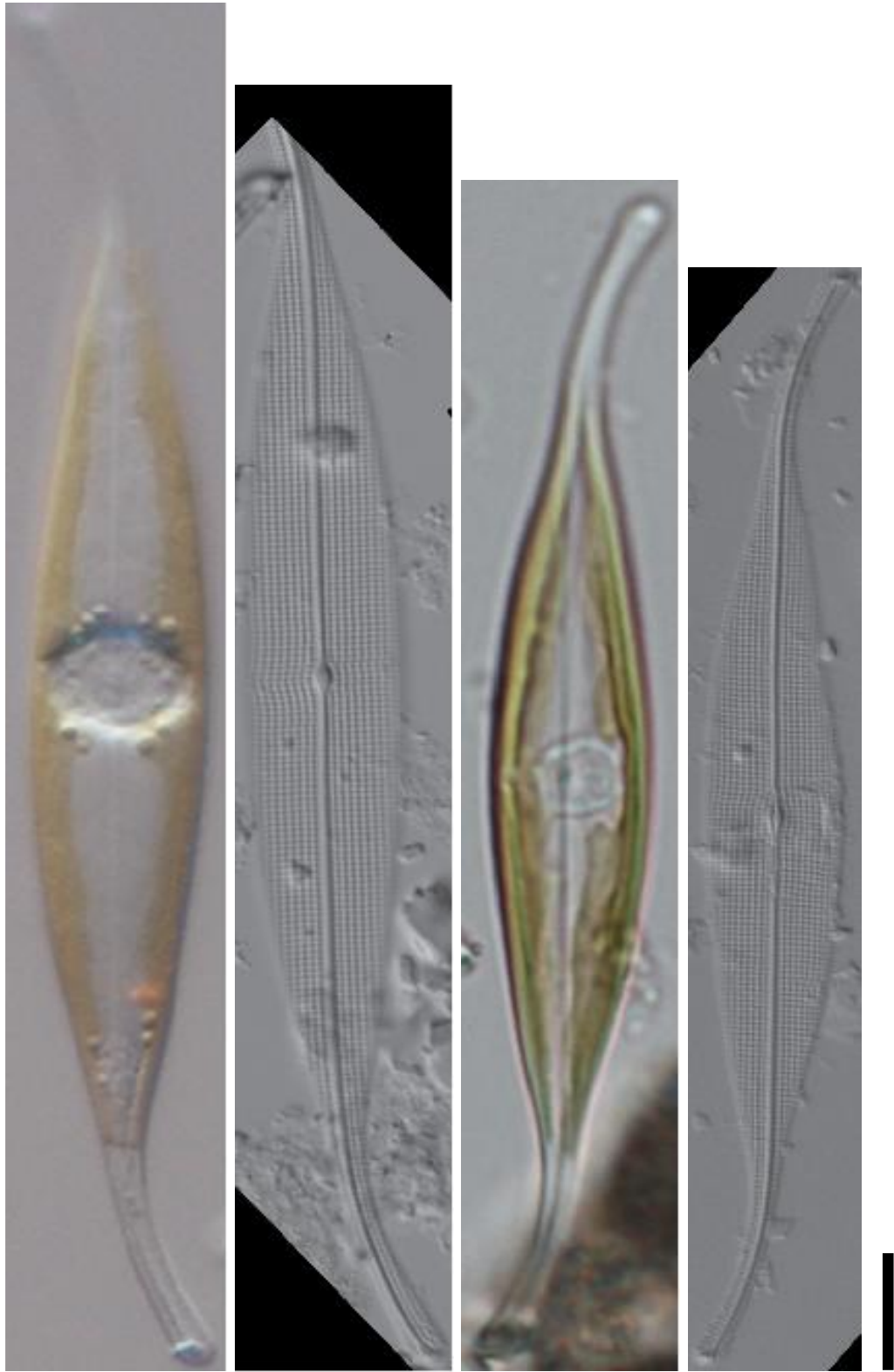
Lit.: Griffith & Henfrey 1856, p. 303; pl. 11, fig. 21

Basionym: *Ceratoneis fasciola* Ehrenberg 1839

Synonyms: *Pleurosigma fasciolum (fasciola)* (Ehrenberg) Smith 1852

Scalprum (Scalptrum) fasciolum (Ehrenberg) Kuntze 1891

Gyrosigma fasciola (Ehrenberg) Cleve 1894



1 - 4

Craticula Sp. 1

Figs 1-2,8: Sample BBDC0091, Great Bay, NJ.

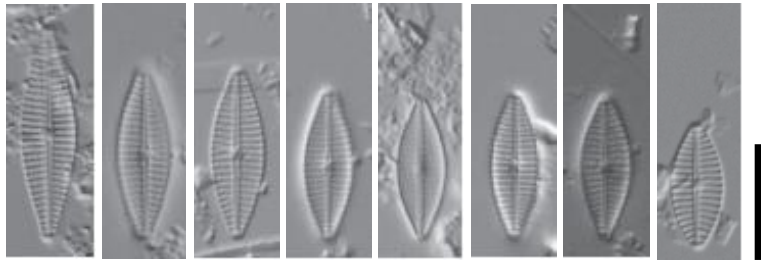
Fig. 3: Sample BBDC0053, Barnegat Bay, NJ.

Figs 4,6: Sample BBDC0018, Barnegat Bay, NJ.

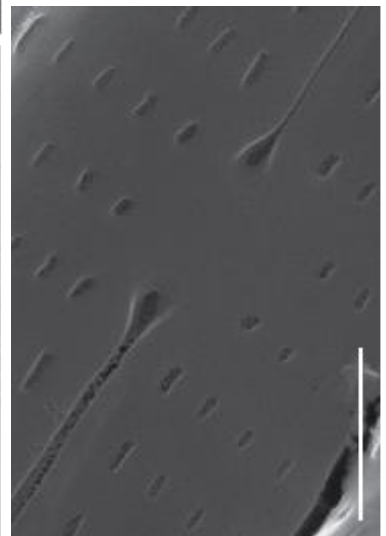
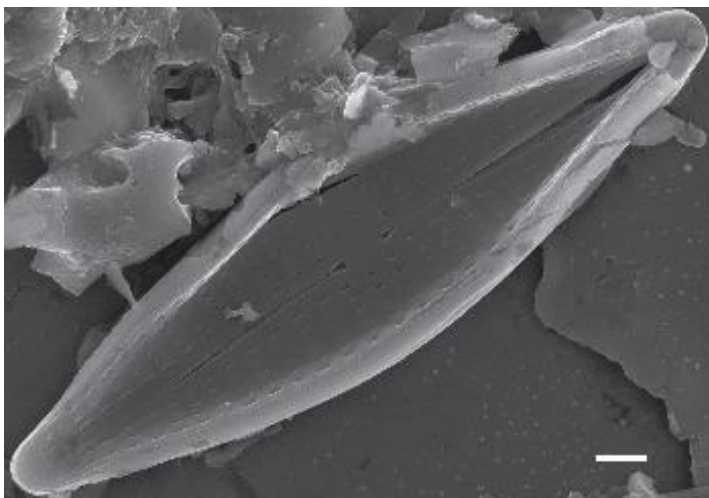
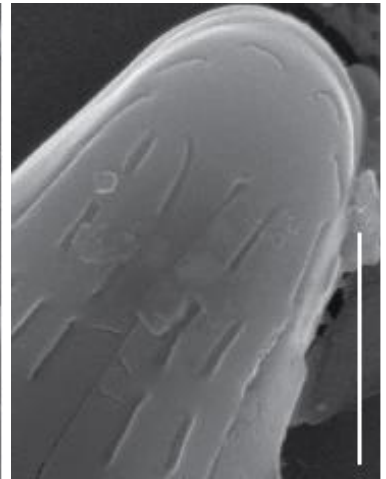
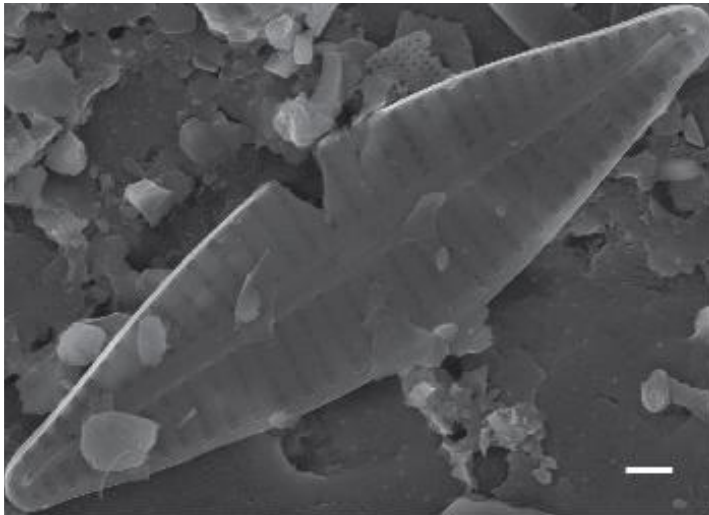
Fig. 5: Sample BBDC0068, Barnegat Bay, NJ.

Fig. 7: Sample BBEDC058, Cattus Island, NJ.

Figs 9-12: Sample BBDC0054, Barnegat Bay, NJ.



1 - 8



9 - 12

Catenula adhaerens Mereschkowsky

Lit.: Mereschkowsky 1902, p. 103, 114; pl. 3, fig. 9-15

Figs 1,10: Sample COAST052, Barnegat Bay, NY.

Fig. 2: Sample BBDC0044, Barnegat Bay, NJ.

Fig. 3: Sample BB0052, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0062, Barnegat Bay, NJ.

Fig. 5: Sample COAST001, Peconic Bay, NY.

Fig. 6: Sample BBDC0066, Barnegat Bay, NJ.

Fig. 7: Sample COAST051, Barnegat Bay, NY.

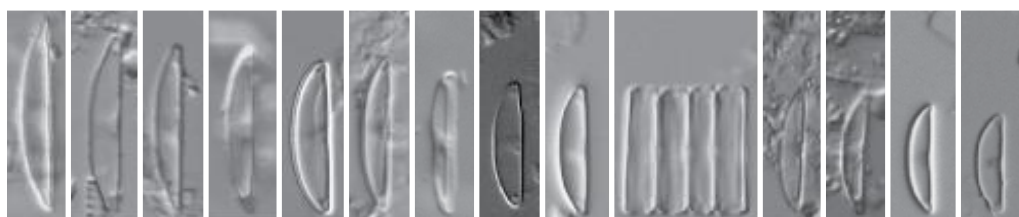
Figs 8-9: Sample BBDC0012, Barnegat Bay, NJ.

Fig. 11: Sample BB0069, Barnegat Bay, NJ.

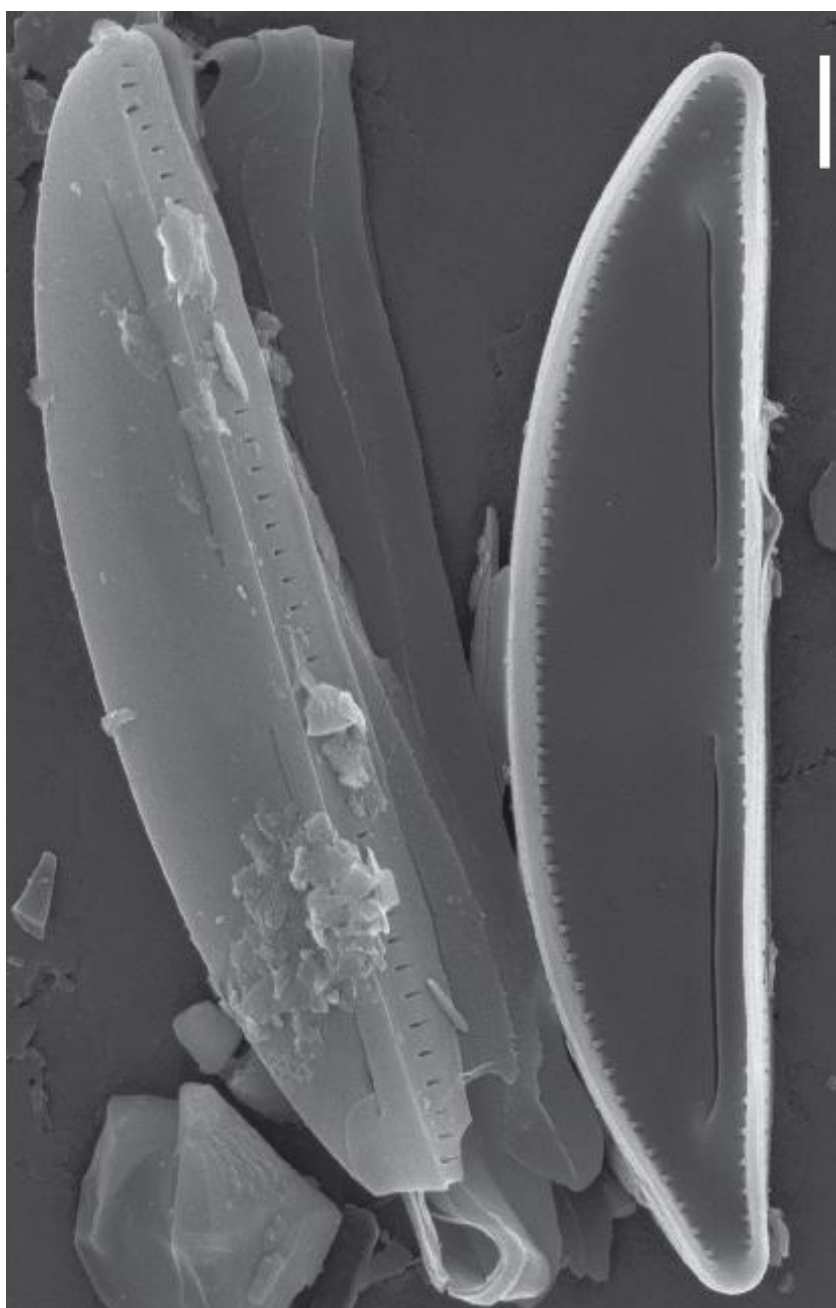
Fig. 12: Sample BBEDC058, Cattus Island, NJ.

Figs 13-14: Sample BBDC0041, Barnegat Bay, NJ.

Fig. 15: Sample COAST054, Barnegat Bay, NY.



1 - 14



15

Plate 213

(Scale bars: Figs 1-9=10 µm; Figs 10-15=1 µm)

Amphora micrometra Giffen emend. Ács, Kiss & Levkov

Lit.: Ács, Kiss & Levkov 2011, p.199-212, figs 1-39

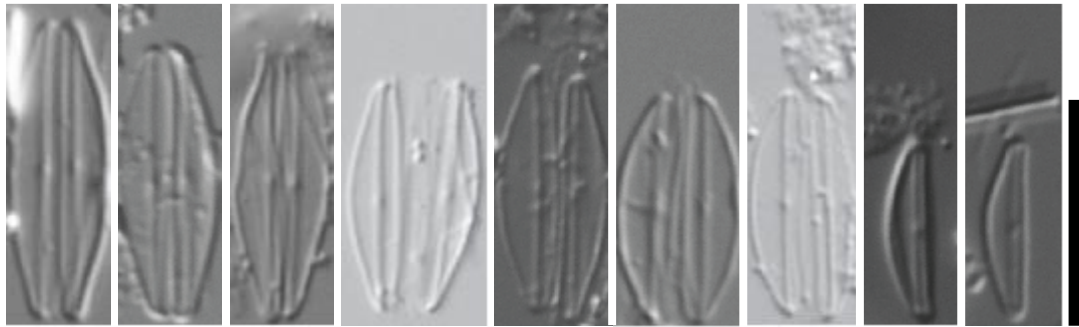
Figs 1-3,5-7,11: Sample BBDC0016, Barnegat Bay, NJ.

Figs 4: Sample BBDC0031, Barnegat Bay, NJ.

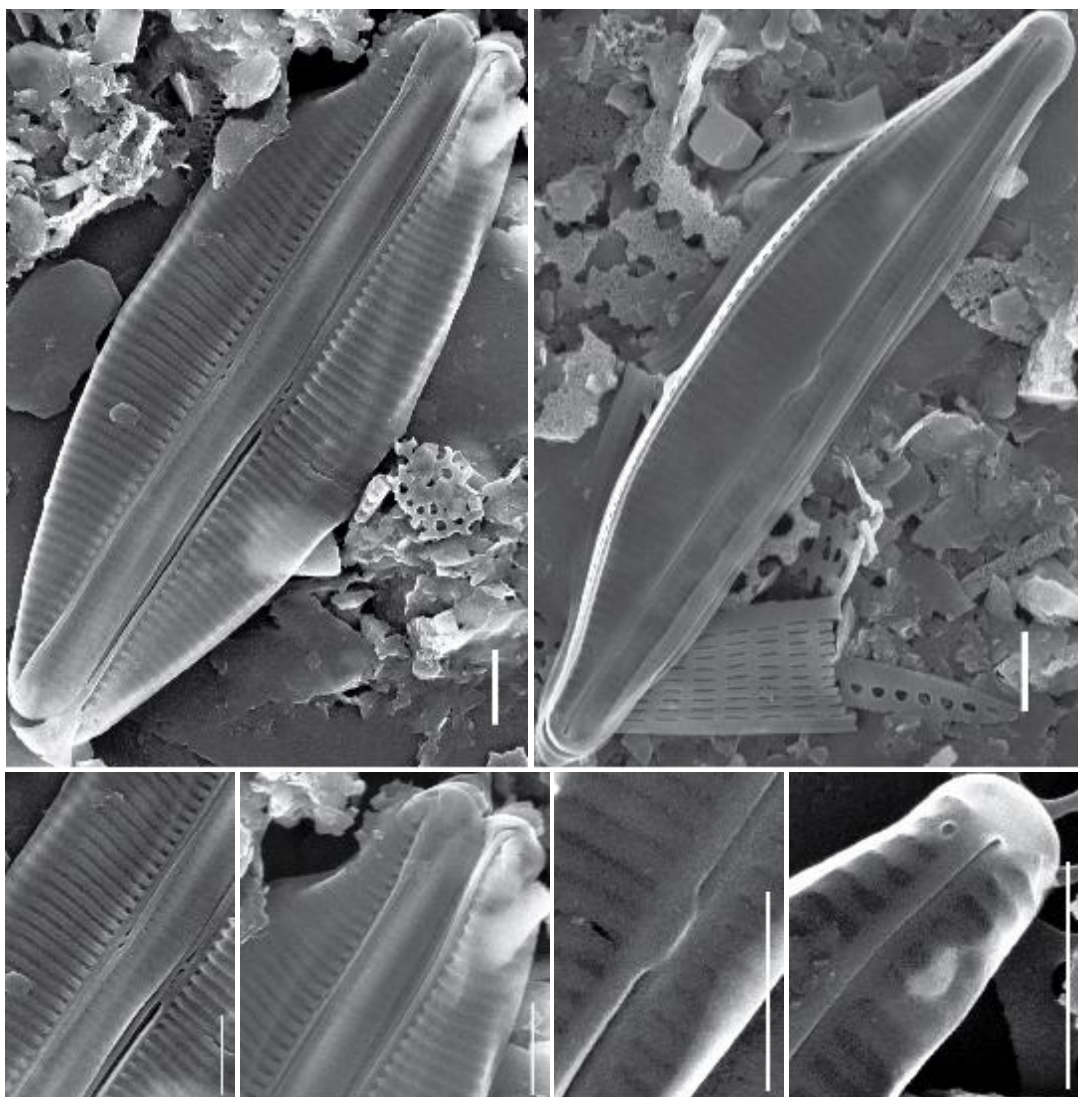
Figs 8-9: Sample GB001, Great Bay, NJ.

Figs 10,12-13: Sample BBDC0080, Barnegat Bay, NJ.

Figs 14-15: Sample BBDC0071, Barnegat Bay, NJ.



1 - 9



10- 15

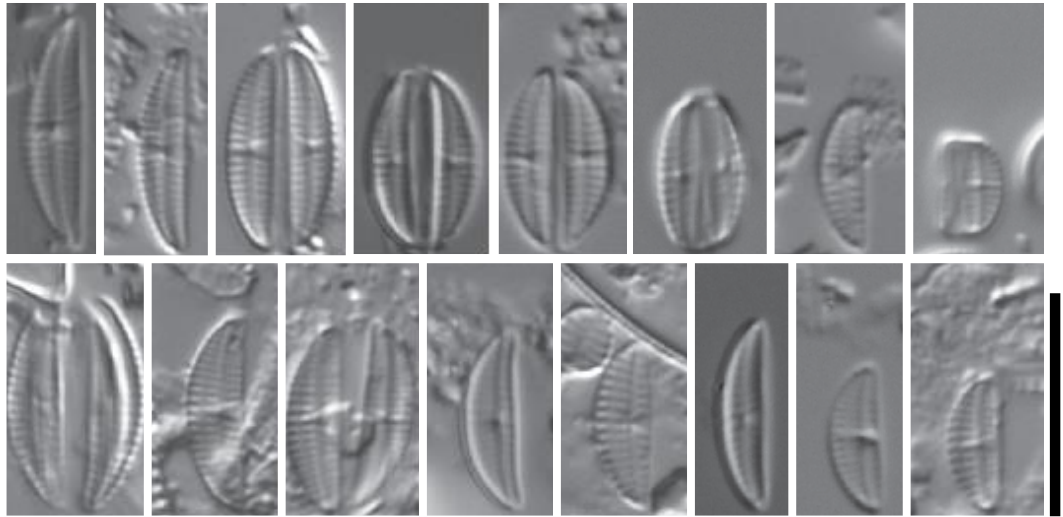
Amphora indistincta Levkov

Lit.: Levkov 2009, p. 69-70, 287; pl. 56, fig. 20-21; pl. 78, fig. 29-39; pl. 152, fig. 3; pl. 193, fig. 1-6; pl. 196, fig. 3

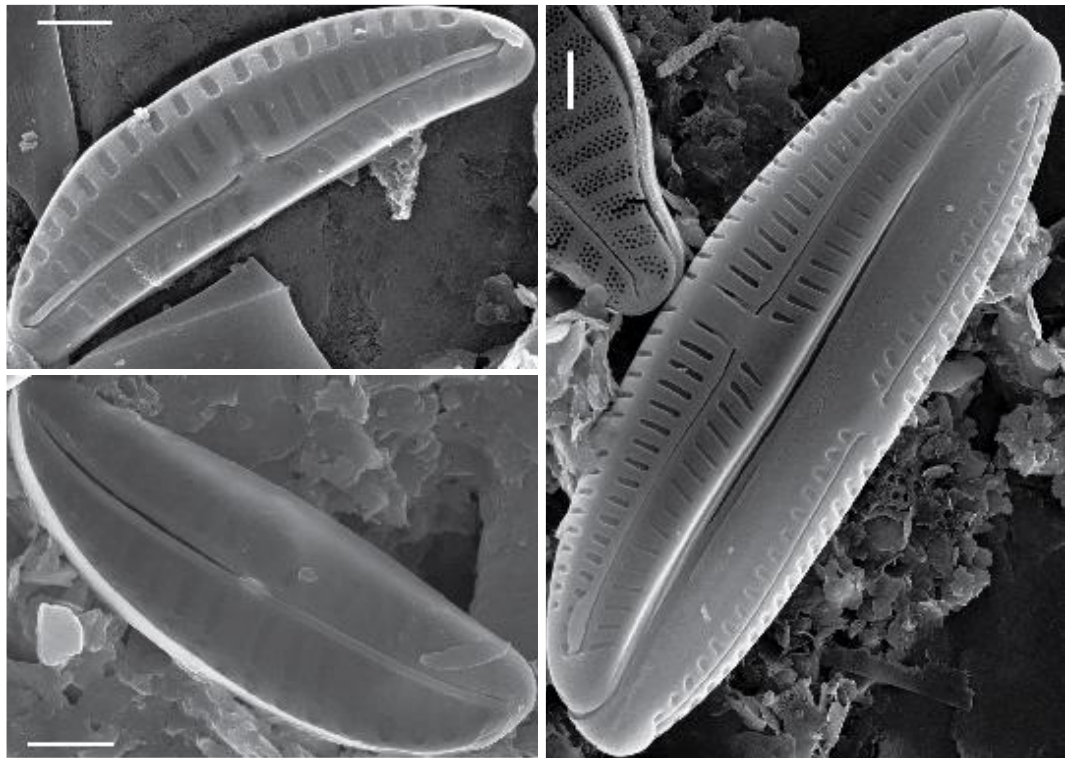
Figs 1,5,7,12,15-16: Sample BBDC0047, Barnegat Bay, NJ.

Figs 2-3,9-11,13: Sample COAST025, Great South Bay, NY.

Figs 4,6,8,14: Sample COAST001, Peconic Bay, NY.



1 - 16



17 - 19

Plate 215

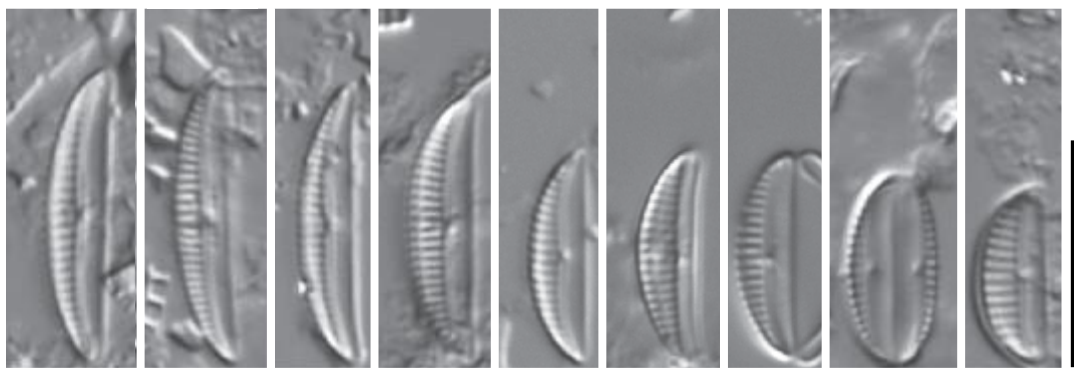
(Scale bars: Figs 1-9=10 μm ; Figs 10-15=1 μm)

Amphora sp. 2

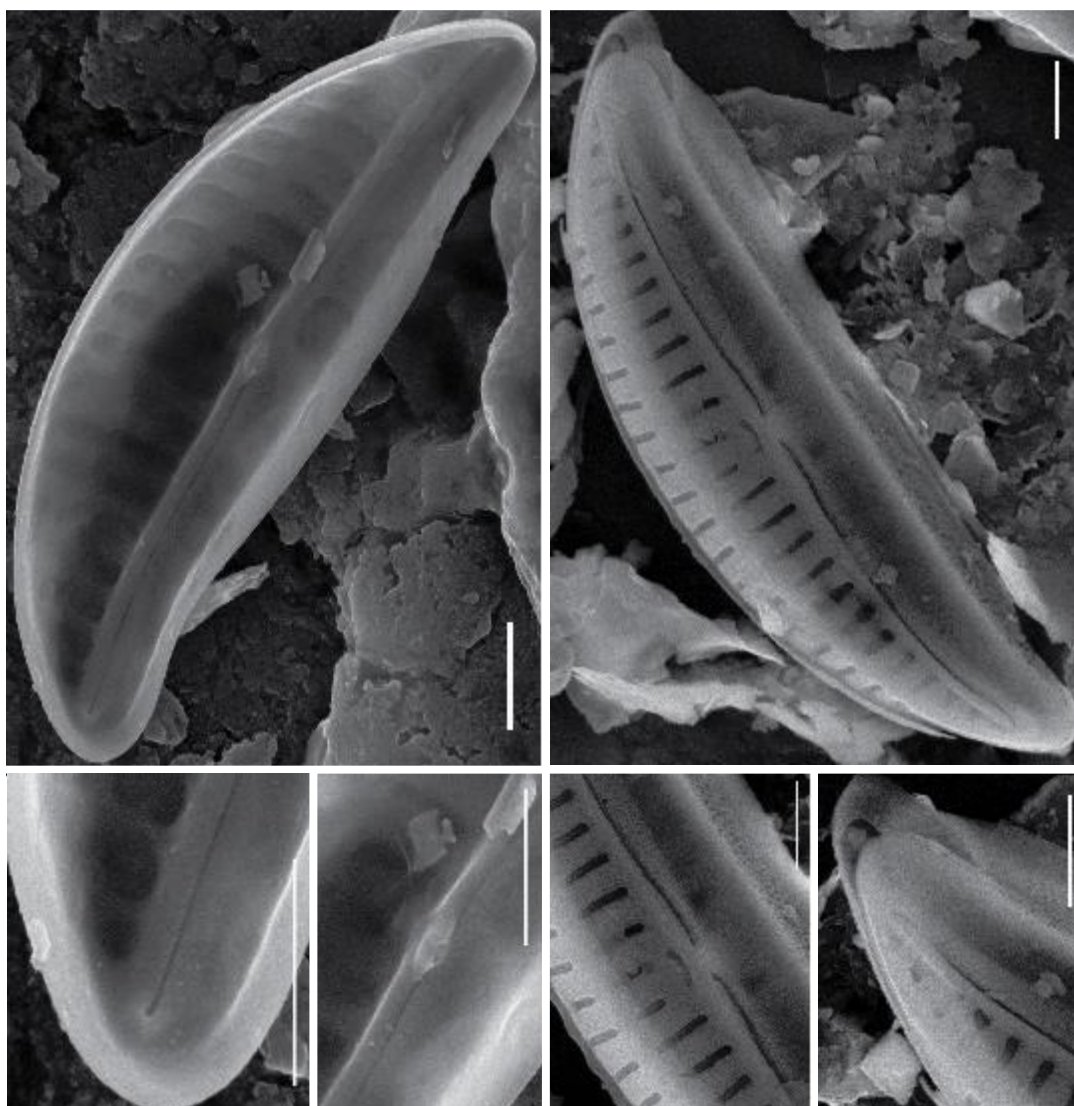
Figs 1-9: Sample COAST025, Great South Bay, NY.

Figs 10,12-13: Sample BBDC0003, Barnegat Bay, NJ.

Figs 11,14-15: Sample BBDC0054, Barnegat Bay, NJ.



1 - 9

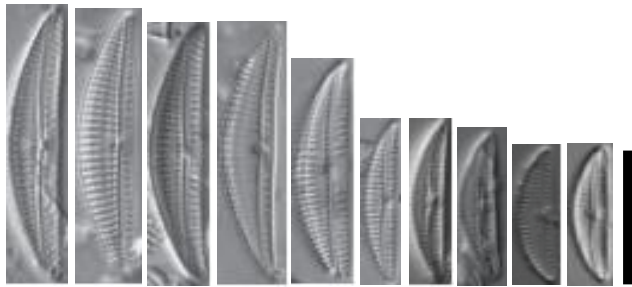


10 - 15

Amphora pusio Cleve

Lit.: Cleve 1895, p. 102; pl. 3, fig. 40

- Fig. 1: Sample COAST031, Western Bay, NY.
Figs 2-4: Sample COAST011, Great South Bay, NY.
Figs 5: Sample COAST010, Great South Bay, NY.
Figs 6: Sample COAST012, Great South Bay, NY.
Figs 7-8,10: Sample COAST001, Peconic Bay, NY.
Fig. 9: Sample BBDC0002, Barnegat Bay, NJ.



1 - 10

Plate 217

(Scale bars: Figs 1-11=10 μm ; Fig 12-13=1 μm)

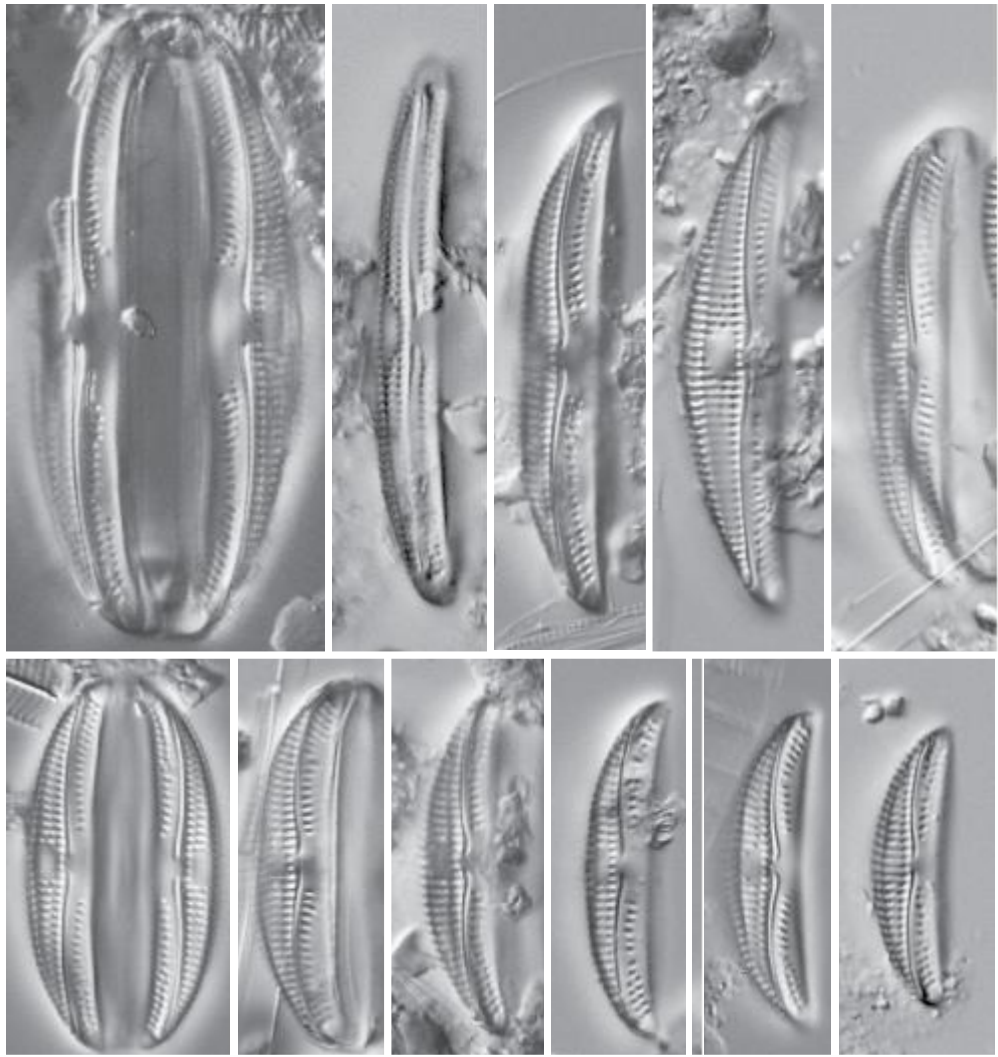
Amphora allanta Hohn & Hellerman

Lit.: Hohn & Hellerman 1966, p. 119; pl. 1, fig. 24

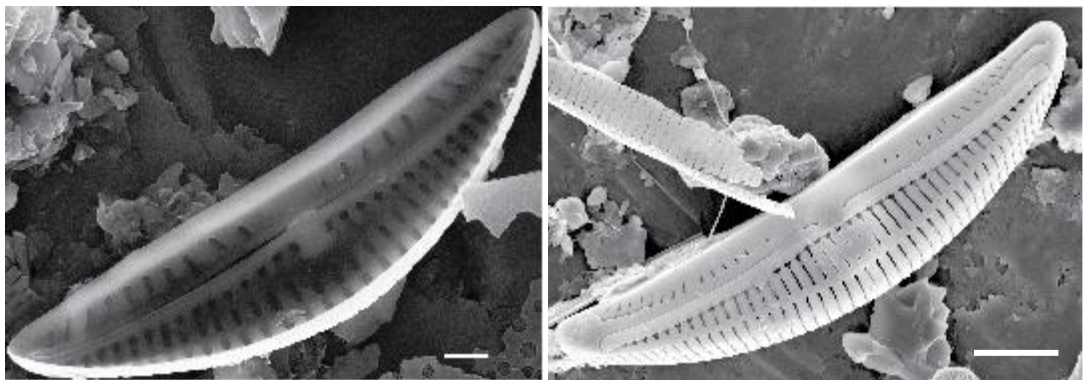
Figs 1,3-11: Sample GC44890, Middle River, MD.

Fig.2: Sample GC44890, Middle River, MD. Holotype specimen.

Fig. 12: Sample BBDC0051, Barnegat Bay, NJ.



1 - 11



12 - 13

***Amphora pediculus* (Kützinger) Grunow**

Lit.: Schmit et al. 1875, pl. 26, fig. 99

Basionym: *Cymbella pediculus* Kützinger 1844

Synonyms: *Amphora ovalis* var. *pediculus* (Kützinger) Van Heurck 1885

Cymbella caespitosum var. *pediculus* (Kützinger) Brun 1880

Clevamphora ovalis var. *pediculus* (Kützinger) Mereschkowsky 1906

Encyonema pediculus (Kützinger) H. Peragallo 1889

Amphora ovalis var. *pediculus* (Kützinger) Pero 1893

Fig. 1: Sample COAST011, Great South Bay, NY.

Fig. 2: Sample BBDC0047, Barnegat Bay, NJ.

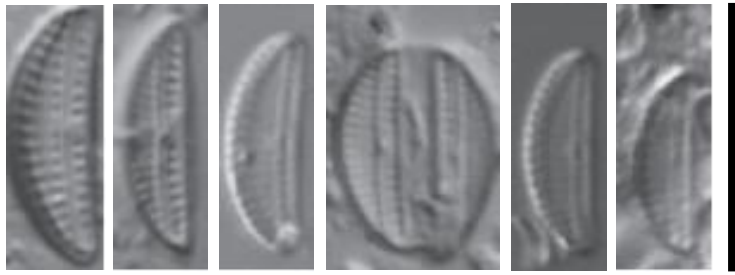
Fig. 3: Sample BB0055, Barnegat Bay, NJ.

Fig. 4: Sample BBDC0071, Barnegat Bay, NJ.

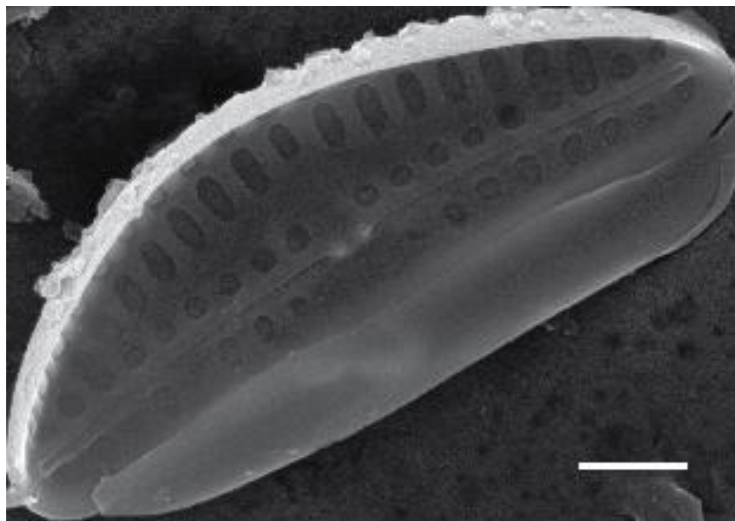
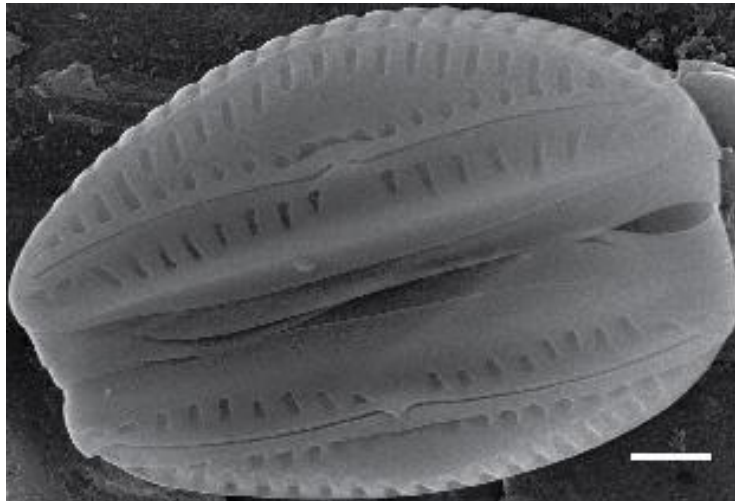
Fig. 5: Sample BBDC0001, Barnegat Bay, NJ.

Fig. 6: Sample BB0089, Tuckerton Bay, NJ.

Figs 7-8: Sample COAST003, Peconic Bay, NY.



1 - 6



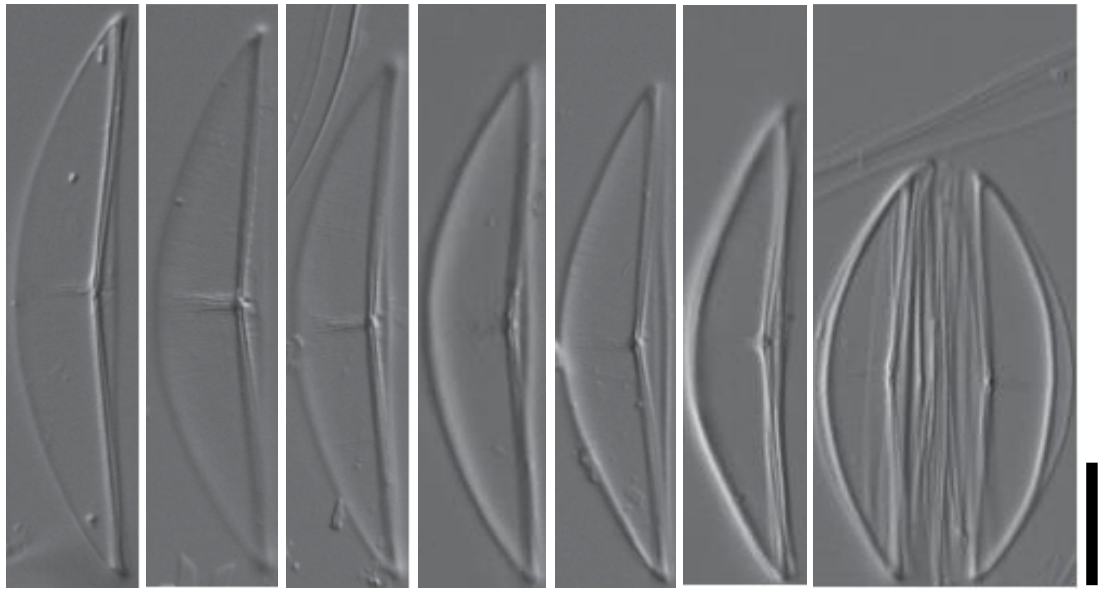
Figs 1-7: *Amphora pseudohyalina* Simonsen

Lit.: Simonsen 1960, p. 129; pl. 2, fig. 1-3

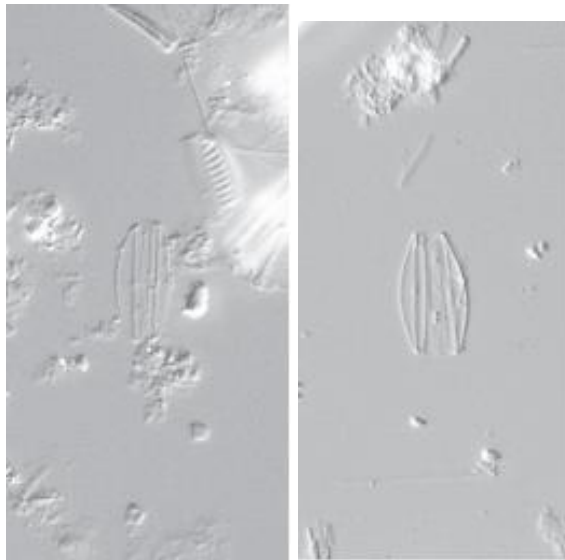
Figs 1-7: Sample RUTG0790, Tuckerton Bay, NJ.

Figs 8-9: *Amphora adumbrata* Hohn & Hellerman

Lit.: Hohn & Hellerman 1966, p. 119; pl. 1, fig. 20



1 - 7

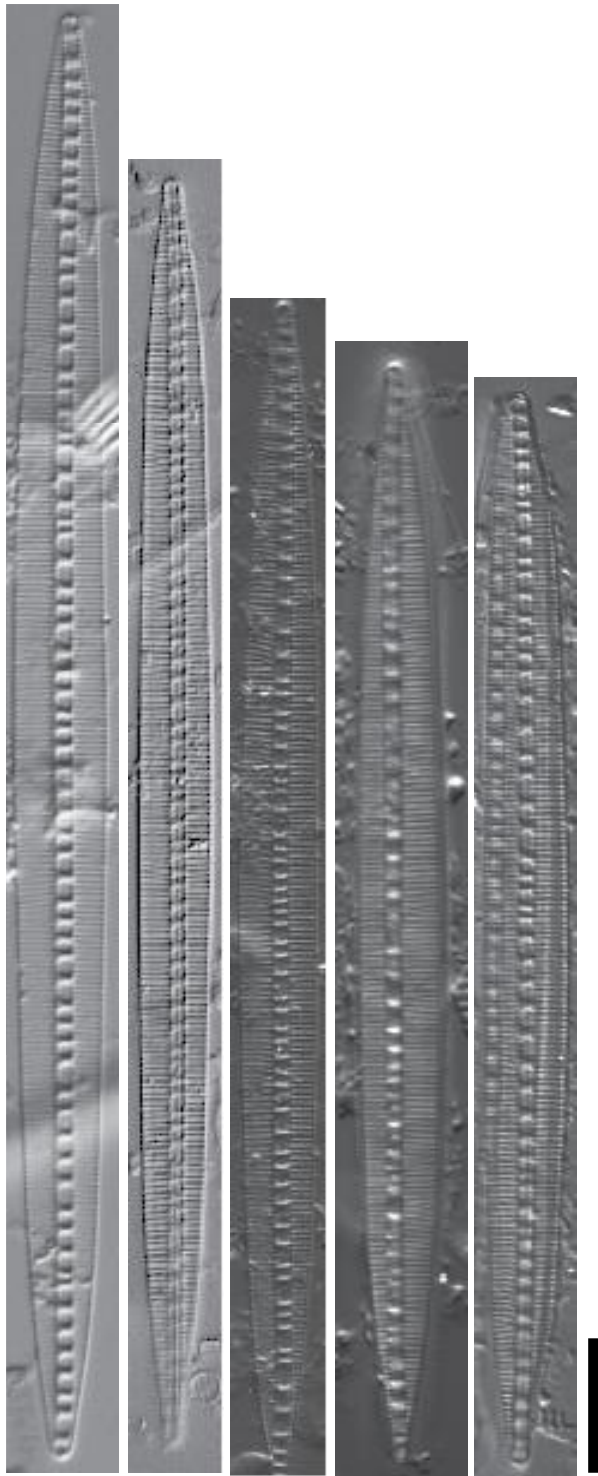


8 - 9

Bacillaria paradoxa Gmelin

Lit.: Linnaeus 1788, p. 3903

Synonym: *Nitzschia paradoxa* (Gmelin in Linnaeus) Grunow in Cleve & Grunow 1880



1-5

Plate 221

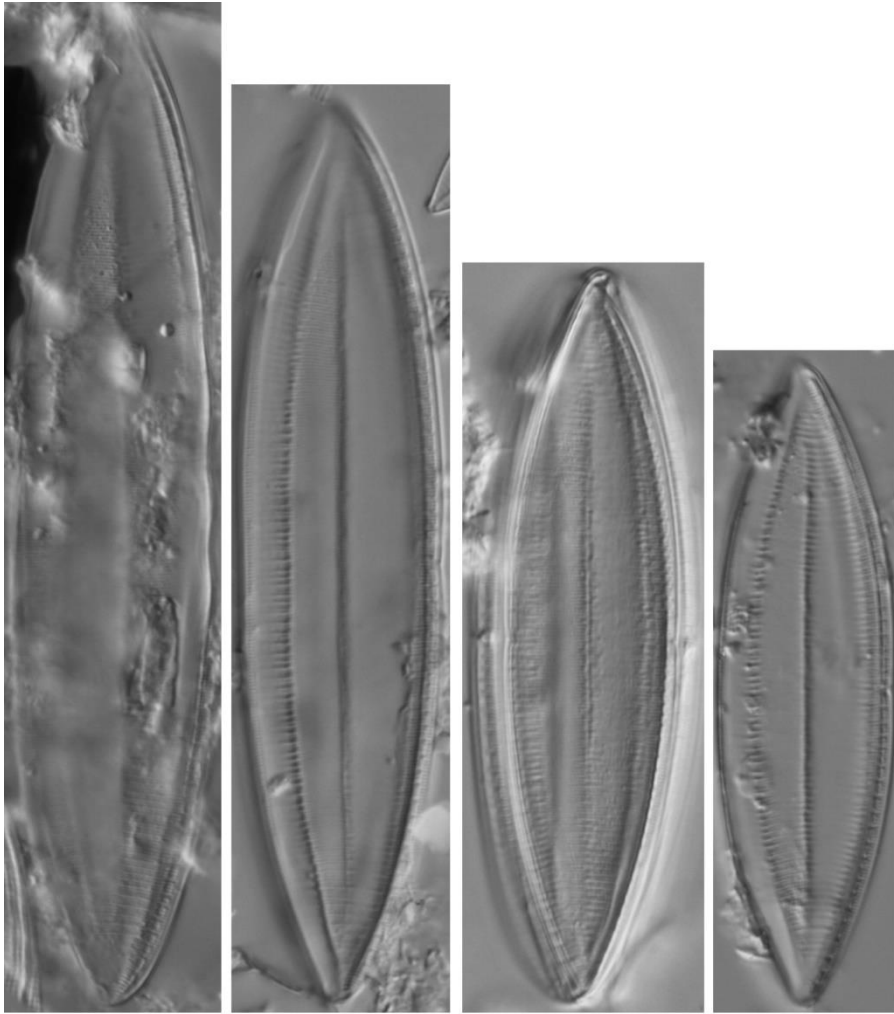
(Scale bars: Figs 1-4=10 µm; Figs 5-7=2 µm)

Tryblionella plana (Smith) Pelletan

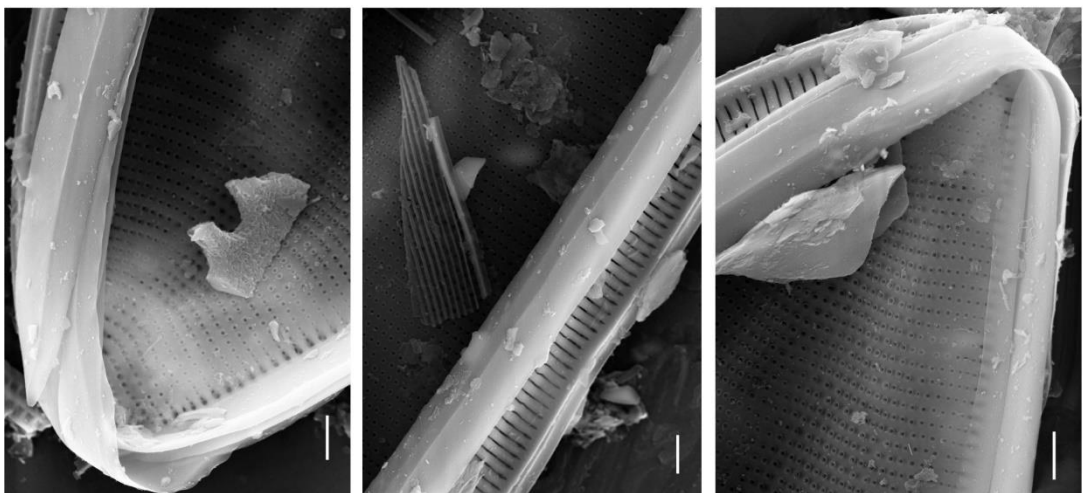
Lit.: Pelletan 1889, p. 30

Basionym: *Nitzschia plana* Smith 1853

Synonym: *Homoeocladia plana* (Smith) Kuntze 1898



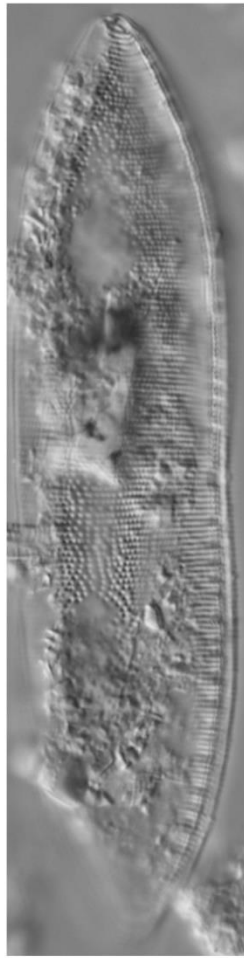
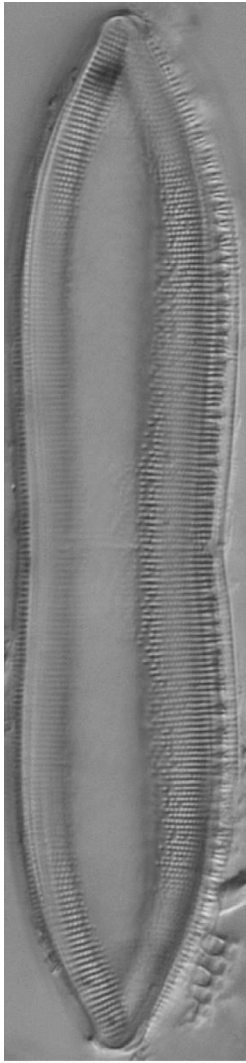
1 - 4



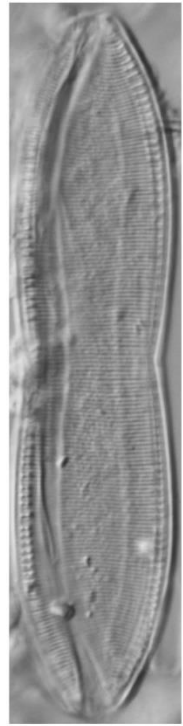
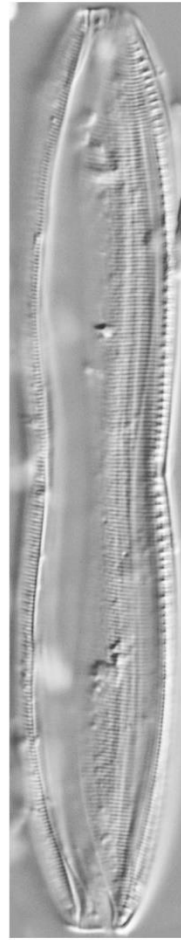
5 - 7

Figs 1-2: *Tryblionella* sp. 1

Figs 3-4: *Tryblionella* sp. 2



1 - 2



3 - 4

Tryblionella apiculata

Lit.: Gregory 1857, p. 79; pl. 1, fig. 43; Poulin, Berard-Therriault, Cardinal & Hamilton 1990, p. 96; fig. 107-108; Trobajo & Mann 2015, p.281-282.

Synonyms:

Nitzschia apiculata (Gregory) Grunow 1878

Homoeocladia apiculata (Gregory) Kuntze 1898

Synedra constricta Kützinger 1844

Nitzschia constricta (Kützinger) Ralfs in Pritchard 1861

Tryblionella constricta (Kützinger) Poulin in Poulin, Berard-Therriault, Cardinal & Hamilton 1990

Tryblionella kuetzingii Álvares-Blanco & Blanco 2014

Figs 1-2,4,6: Sample BB0173, Tuckerton Bay, NJ.

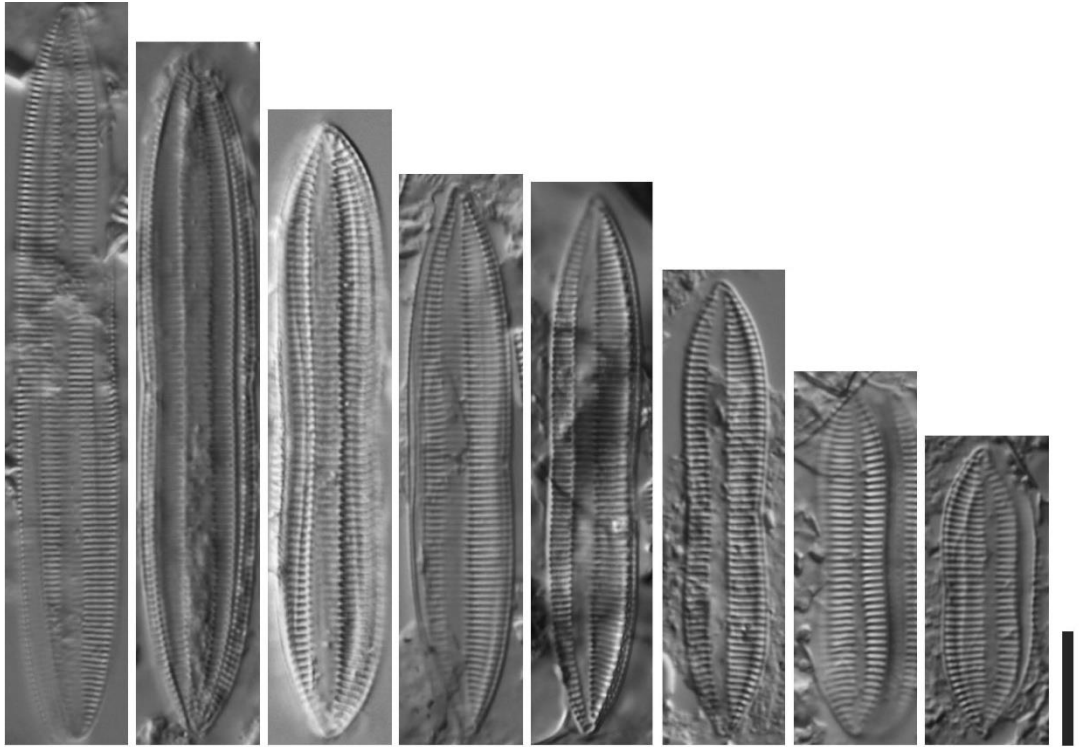
Fig. 3: Sample BB0054, Barnegat Bay, NJ.

Fig. 5: Sample BB0068, Barnegat Bay, NJ.

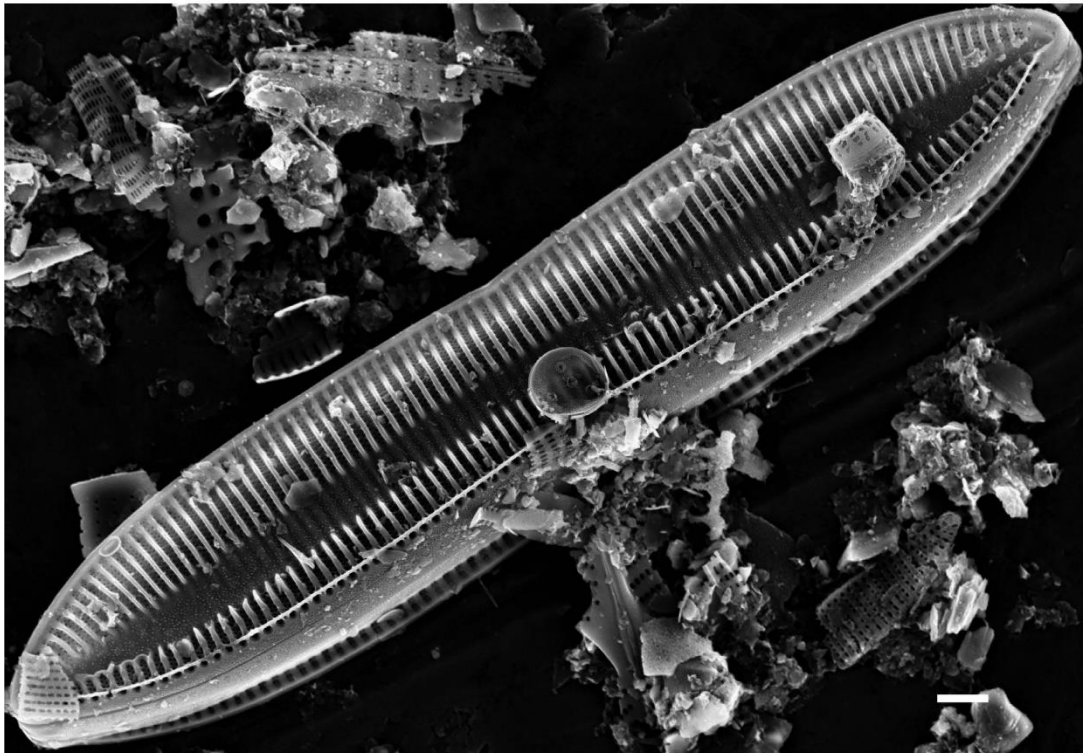
Fig. 7: Sample RUTG0833, Cheesapeake State Park, NJ.

Fig. 8: Sample BB0158, Tuckerton Bay, NJ.

Fig. 9: Sample RUTG0001, Cheesapeake State Park, NJ.



1 - 8



9

Tryblionella hungarica (Grunow) Frenguelli

Lit.: Frenguelli 1942, p. 178; pl. 8, fig. 12; Grunow 1862, p. 568; pl. 28/12, fig. 31; Witkowski, Lange-Bertalot, Metzeltin 2000, p.385, pl.188:10,11

Synonyms:

Homoeocladia hungarica (Grunow) Kuntze 1898

Nitzschia hungarica Grunow 1862

Nitzschia plicatula Hustedt 1953

Tryblionella hungarica (Grunow) Mann in Round, Crawford & Mann 1990

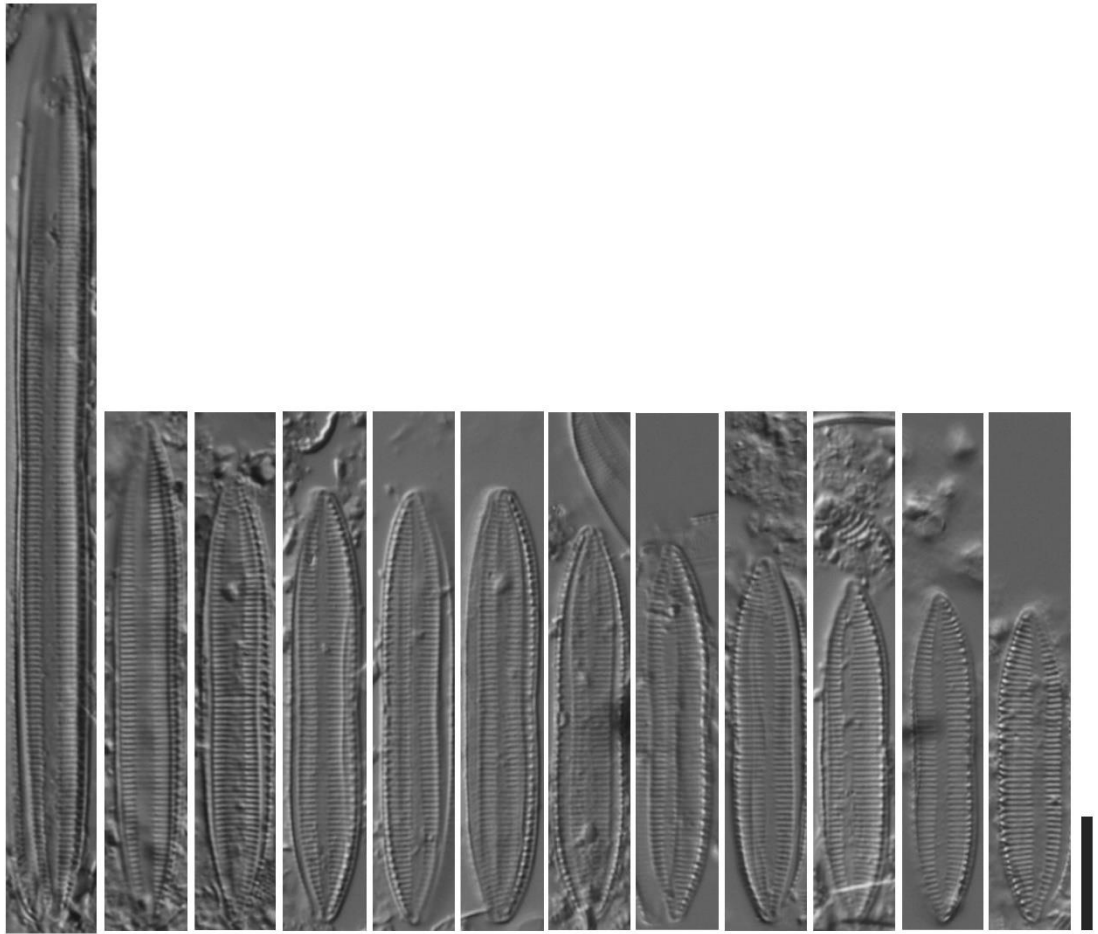
Tryblionella plicatula (Hustedt) Mann in Round, Crawford & Mann 1990

Fig. 1: Sample BBDC00100, Barnegat Bay, NJ.

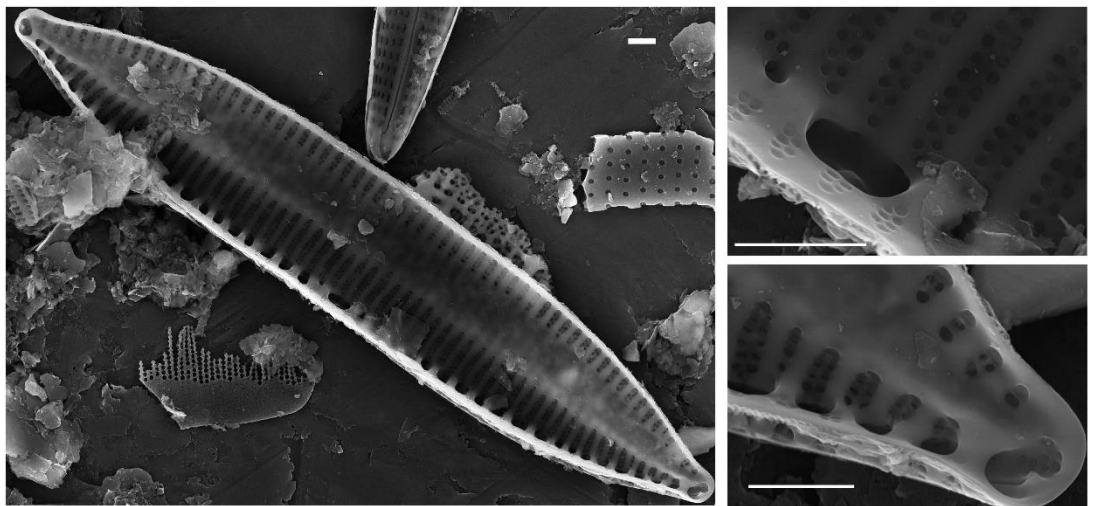
Figs 2-6,9,11: Sample BB0173, Tuckerton Bay, NJ.

Figs 7-8,10,12: Sample BB0174, Tuckerton Bay, NJ.

Figs 13-15: Sample RUTG0802, Sluice Creek at South Dennis, NJ.



1 - 12



13 - 15

Tryblionella debilis Arnott ex O'Meara

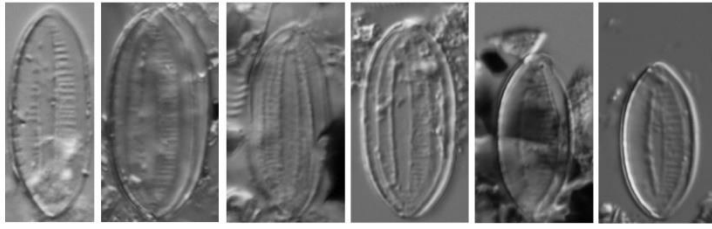
Lit.: Arnott ex O'Meara 1873, p. 310

Synonyms:

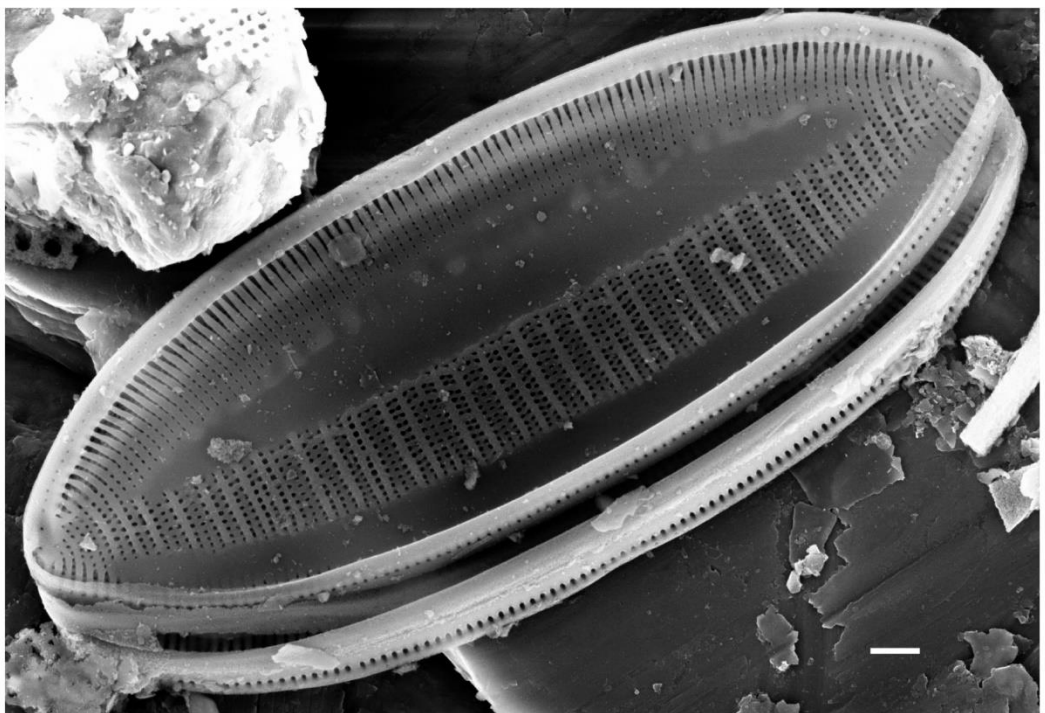
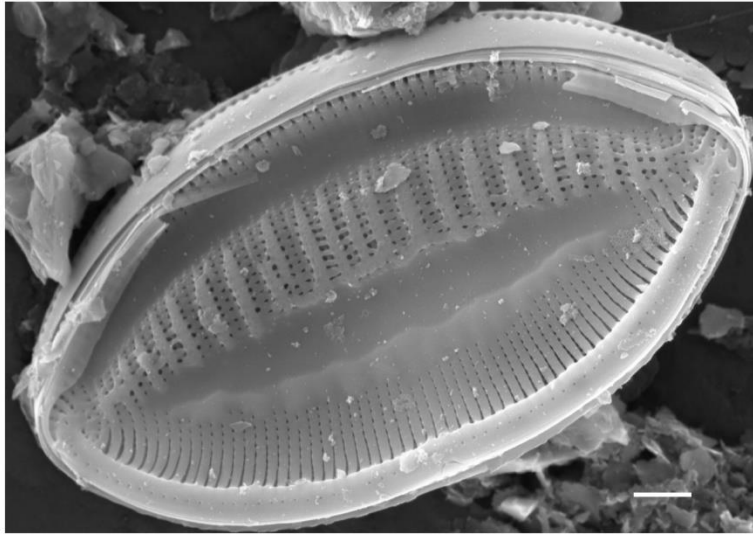
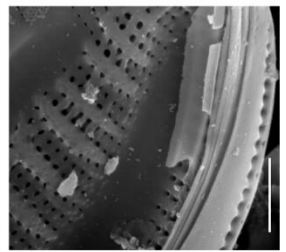
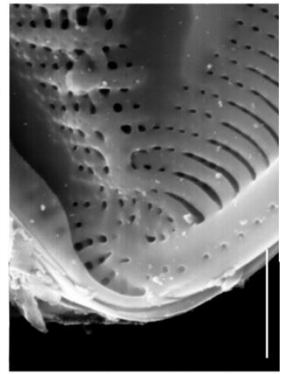
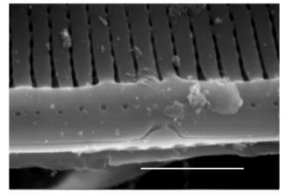
Nitzschia debilis (Arnott in O'Meara) Grunow in Cleve & Grunow 1880

Nitzschia tryblionella var. *debilis* (Arnott) Hustedt 1913

Homoeocladia debilis (Arnott in O'Meara) Kuntze 1898



1 - 6



7 - 11

Figs 1-5: ***Tryblionella levidensis*** Smith

Lit.: Smith 1856, p. 89

Synonyms:

Nitzschia levidensis (Smith) Grunow in Van Heurck 1881

Nitzschia tryblionella var. *levidensis* (Smith) Grunow in Cleve & Grunow 1880

Denticula levidensis (Smith) De Toni 1892

Tryblionella hantzschiana (*hantzschia*) var. *levidensis* (Smith) Frenguelli 1942

Tryblionella tryblionella var. *levidensis* (Smith) Prochazka 1923

Figs 6-8: ***Tryblionella* sp. 5**

Figs 9-15: ***Tryblionella* sp. 3**

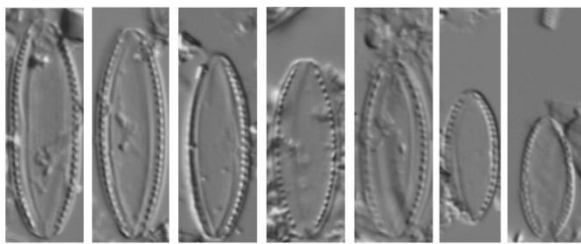
Figs 16-17: ***Tryblionella* sp. 6**

Figs 18-35: ***Tryblionella* sp. 2**

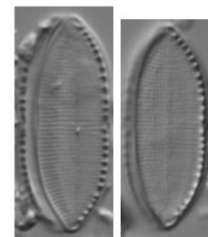


1 - 5

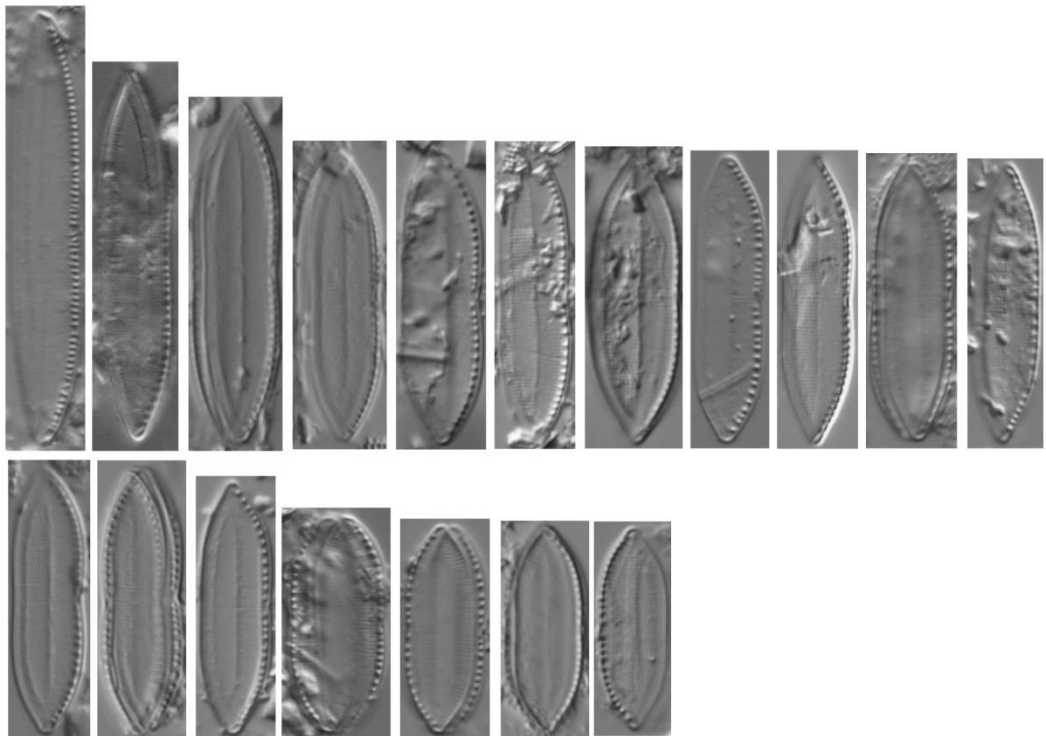
6 - 8



9 - 15

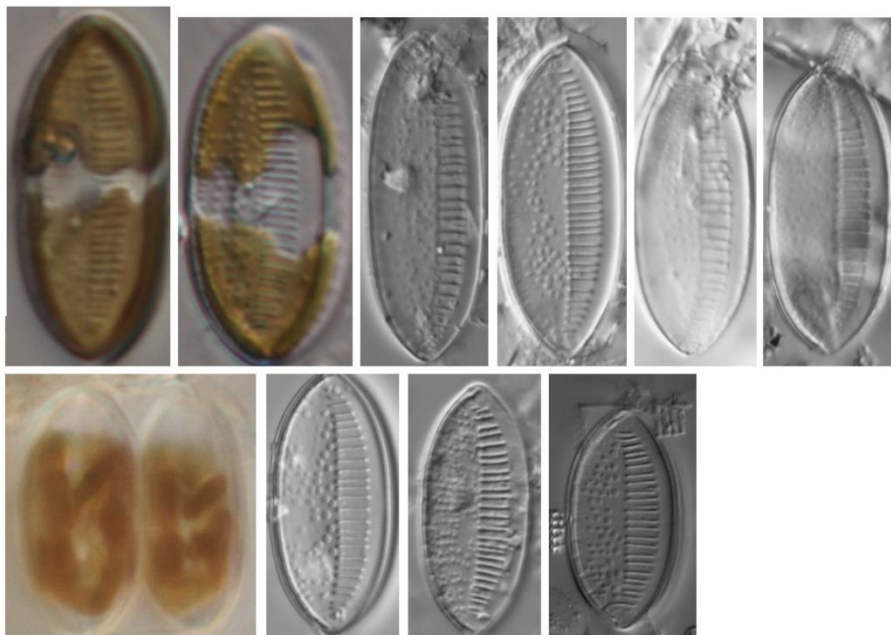


16 - 17

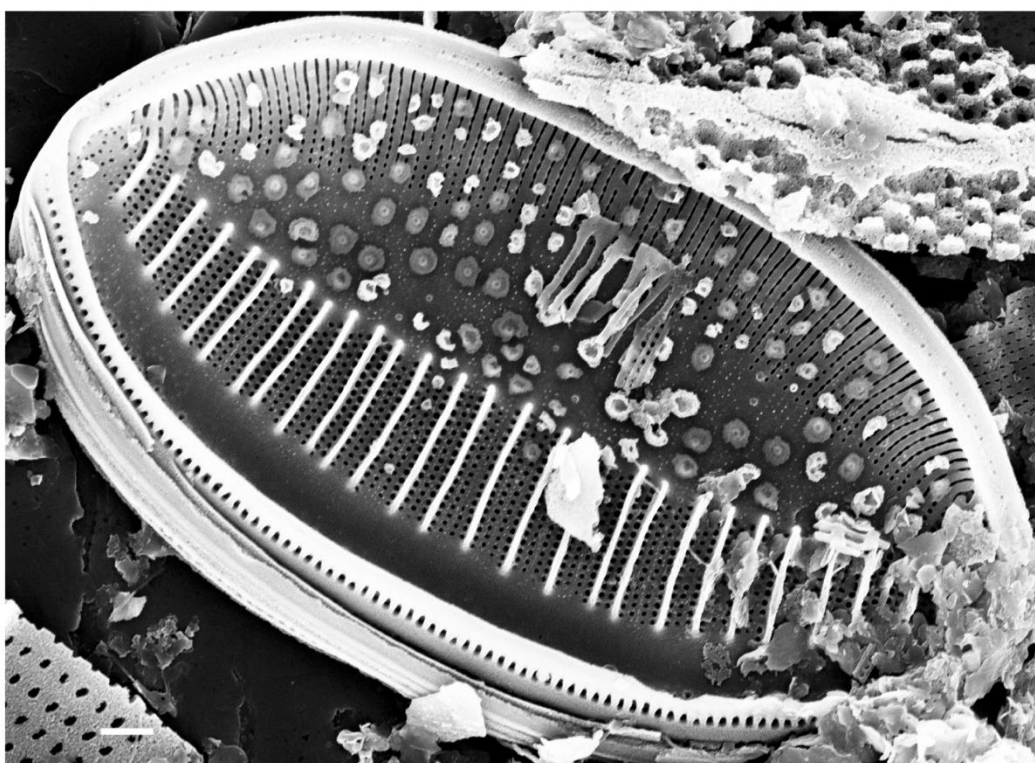


18 - 35

Nitzschia cf. perversa



1 - 10

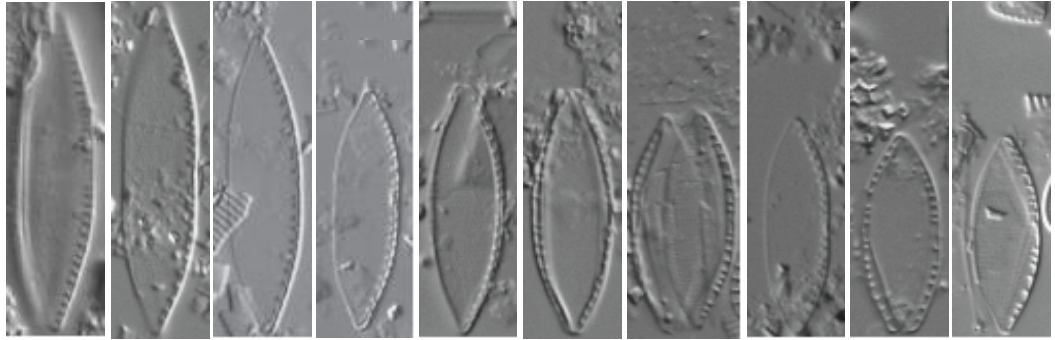


11

Nitzschia amabilis Suzuki

Lit.: Suzuki et al. 2010, p. 223

Synonym: *Nitzschia laevis* Hustedt 1939

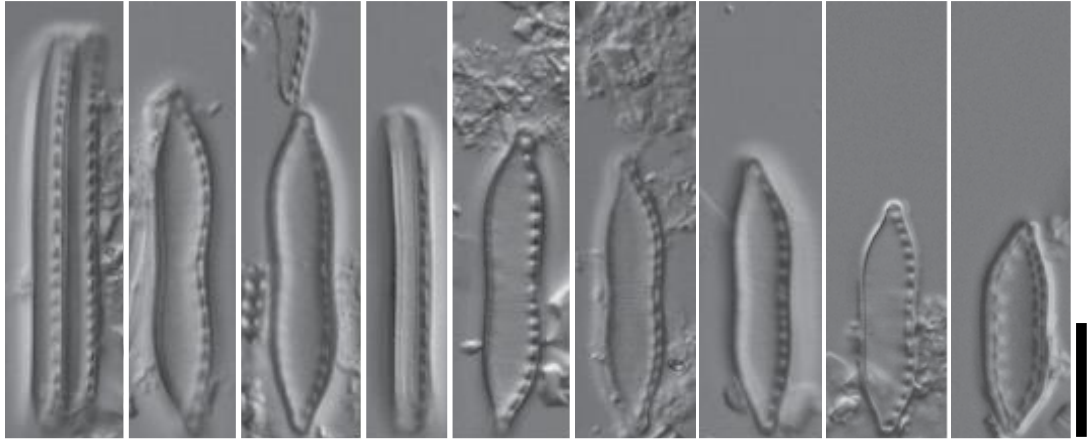


1 - 10

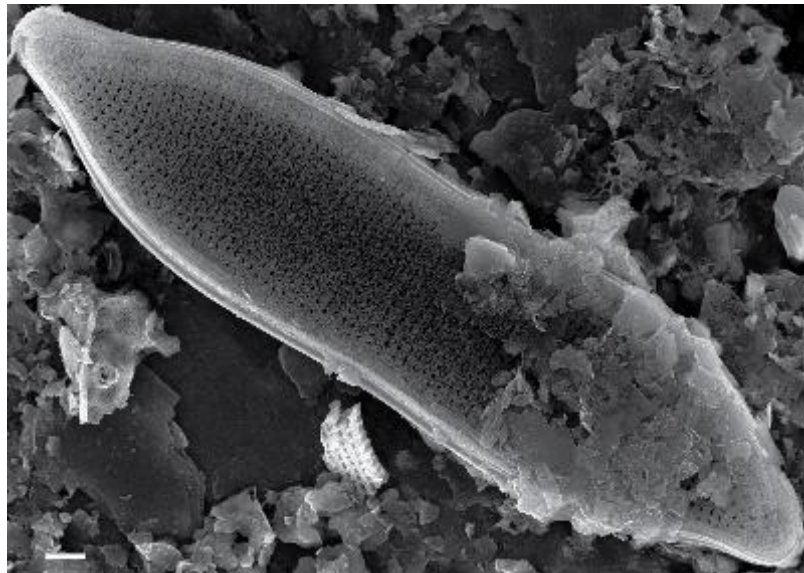
Plate 229

(Scale bars: Figs 1-9=10 µm; Fig. 10=1 µm)

Nitzschia brevissima Grunow in Van Heurck Lit.: Van
Heurck 1881, pl. 67, fig. 4



1 - 9

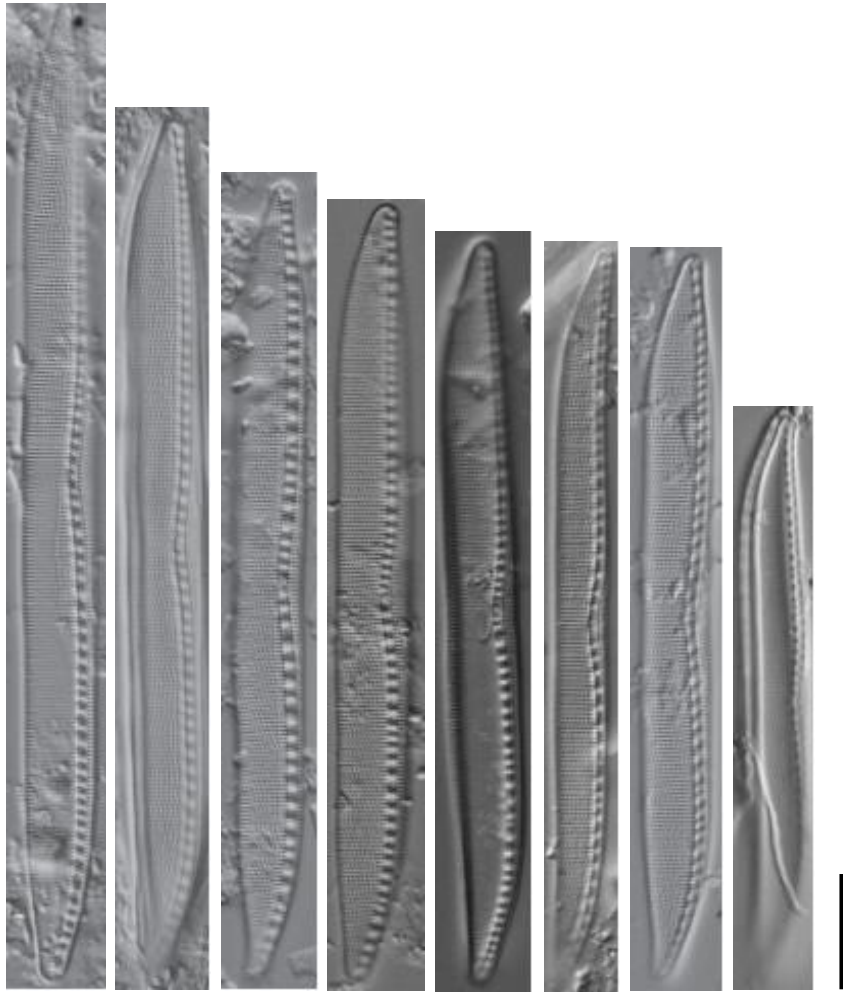


10

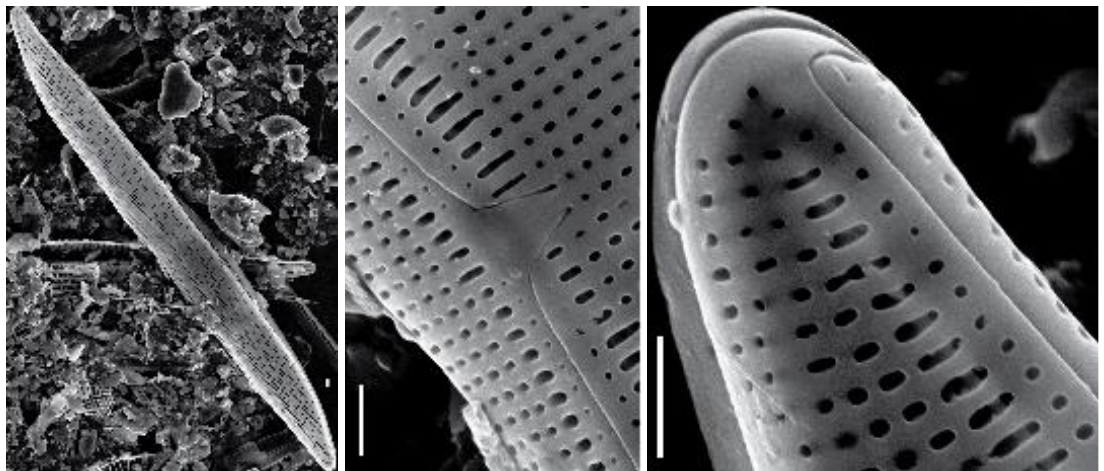
Nitzschia scalpelliformis Grunow

Lit.: Cleve & Grunow 1880, p. 92

Synonym: *Nitzschia obtusa* var. *scalpelliformis* (Grunow) Grunow in Van Heurck 1881



1 - 8



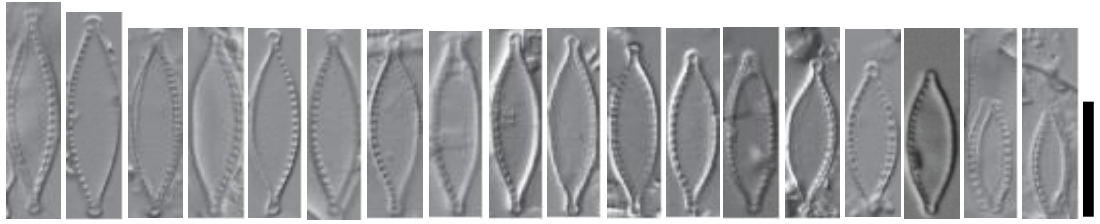
9 - 11

Plate 231

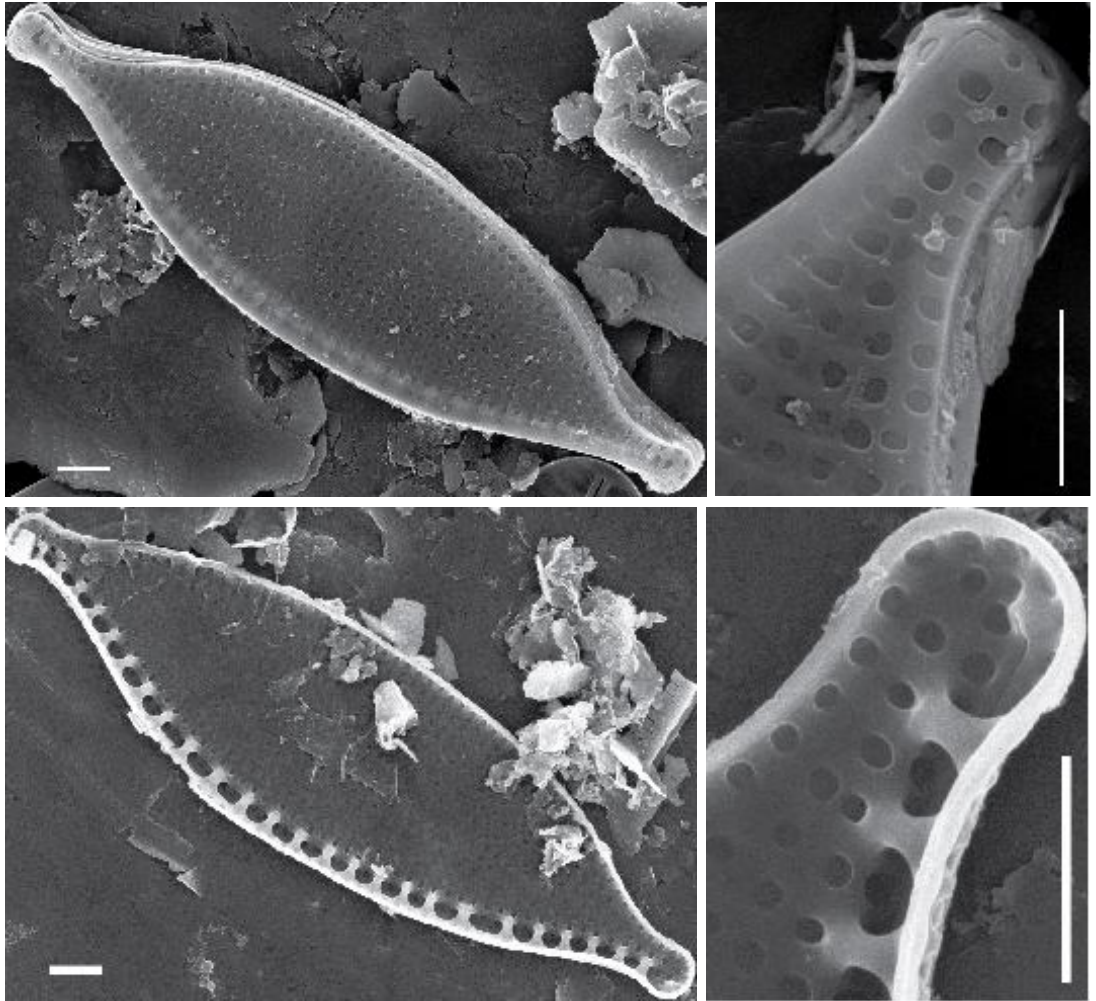
(Scale bars: Figs 1-18=10 µm; Figs 19-22=1 µm)

Nitzschia cf. *rosenstockii* Lange-Bertalot

Lit.: Lange-Bertalot 1980, p. 52-53; fig. 30-33, 133-136



1 - 18



19 - 22

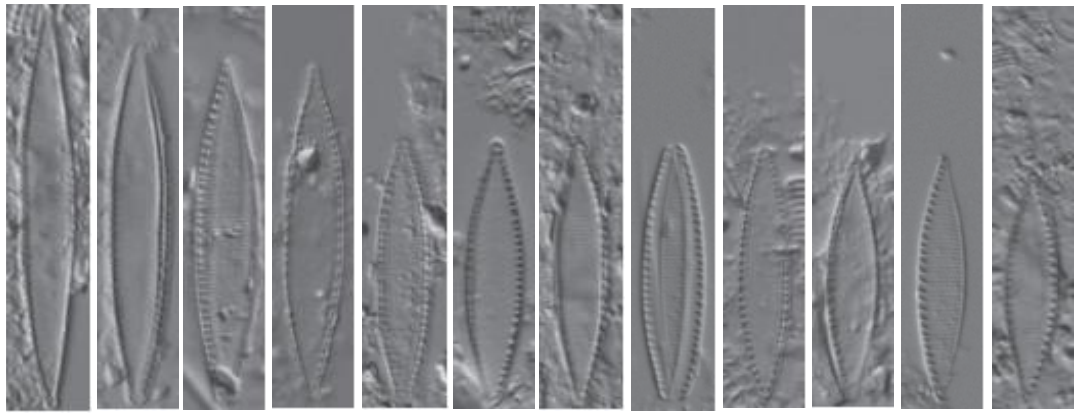
Figs 1-12: *Nitzschia calcicola* Aleem & Hustedt

Lit.: Aleem & Hustedt 1951, p. 18; fig. 4

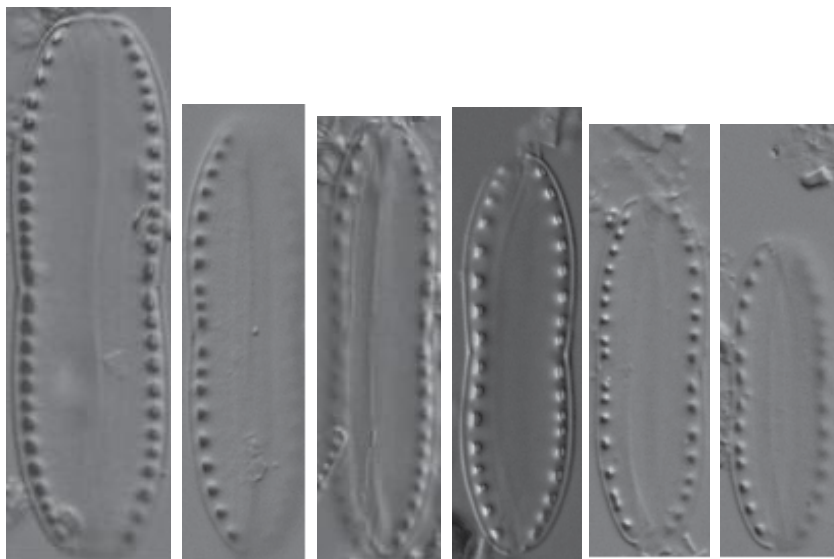
Figs 13-18: *Nitzschia* cf. *brevissima*

Figs 19-30: *Nitzschia vasta* Hustedt

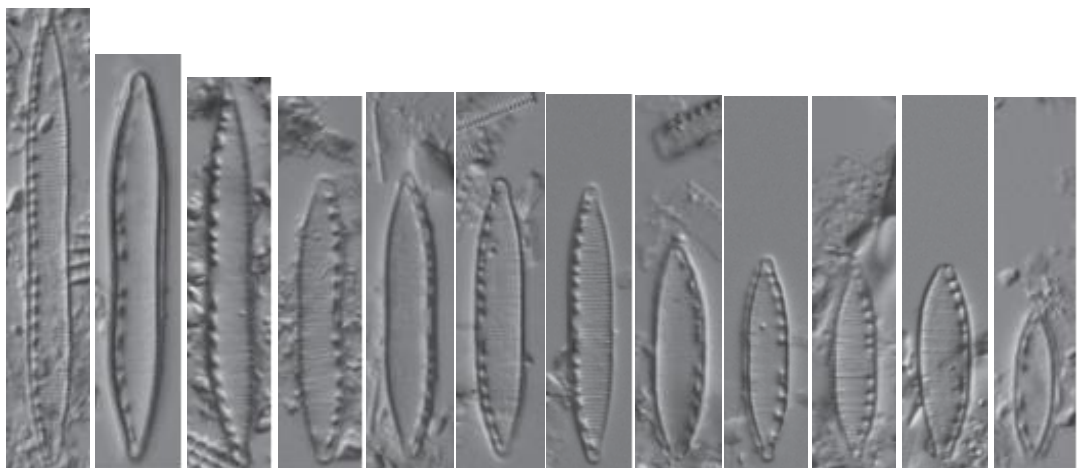
Lit.: Hustedt 1939, p. 660; fig. 119



1 - 12



13 - 18



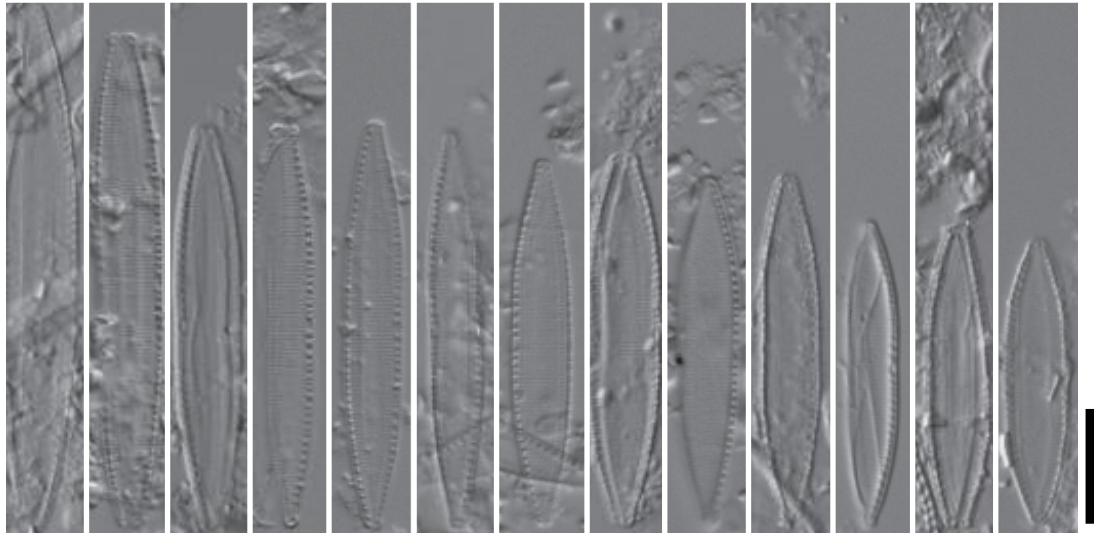
19 - 30

Plate 234

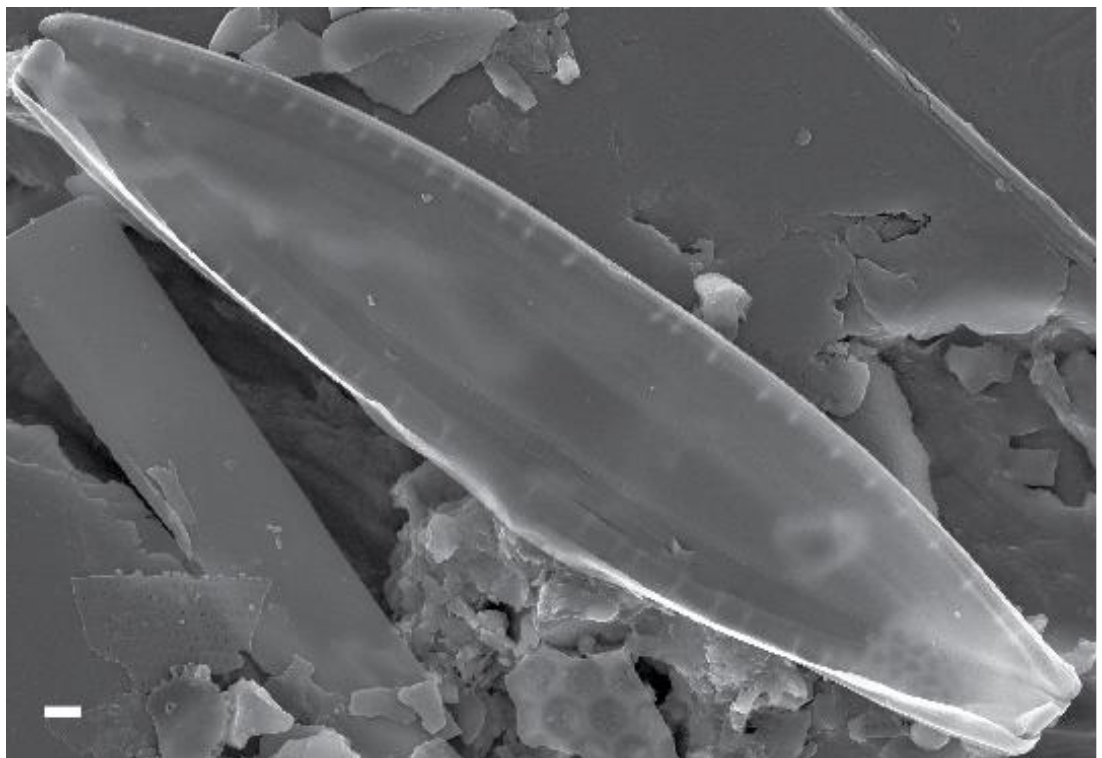
(Scale bars: Figs 1-13=10 μm ; Fig 14=1 μm)

Nitzschia frequens Hustedt

Lit.: Hustedt 1957, p. 348; fig. 52-54



1 - 13



14

Plate 235

(Scale bars: Figs 1-18; 21-26=10 µm; Figs 19-20=1 µm)

Figs 1-20: *Nitzschia frustulum* (Kützing) Grunow in Cleve & Grunow

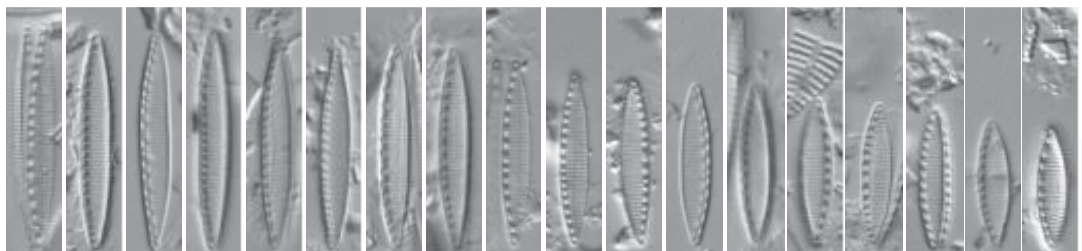
Lit.: Cleve & Grunow 1880, p. 98

Basionym: *Synedra frustulum* Kützing 1844

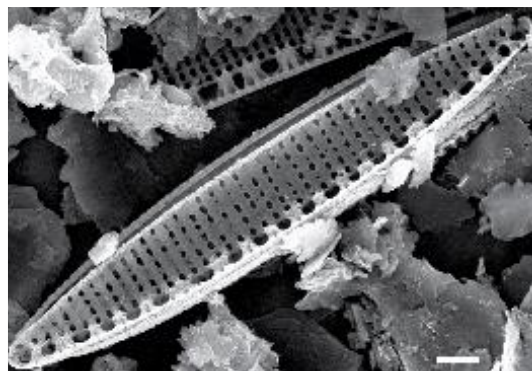
Synonym: *Homoeocladia frustulum* (Kützing) Kuntze 1898

Figs 21-26: *Nitzschia granulata* Grunow

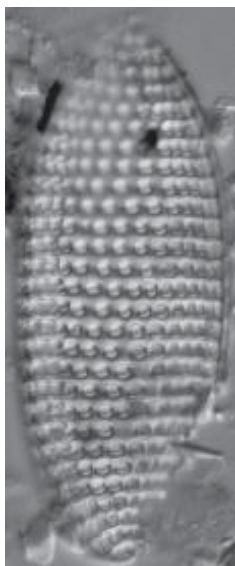
Lit.: Grunow 1880, p. 68



1 - 18



19 - 20



21- 26

Plate 236 (Scale bars: Figs 1-16; 18-44=10 µm; Fig. 17=1 µm)

Figs 1-17: *Nitzschia palea* (Kützing) Smith

Lit.: Smith 1856, p. 89

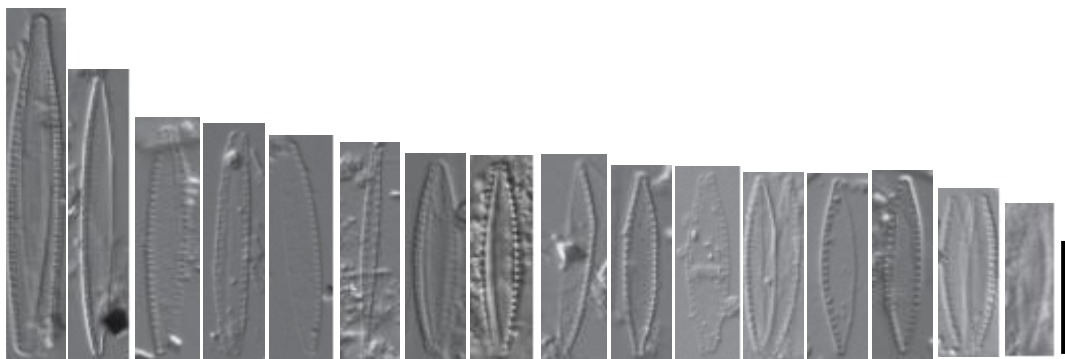
Basionym: *Synedra palea* Kützing 1844

Synonym: *Homoeocladia palea* (Kützing) Kuntze 1898

Figs 18-32: *Nitzschia pusilla* (Kützing) Lange-Bertalot

Lit.: Lange-Bertalot 1976, v. 28: p. 300; pl. 7, fig. 1-10

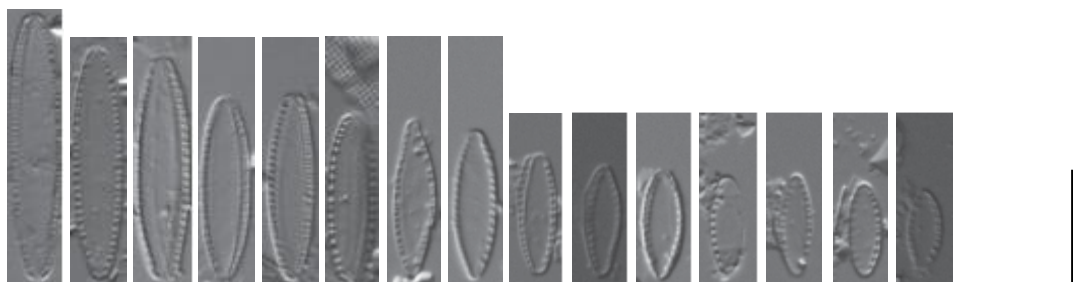
Figs 33-44: *Nitzschia* sp. 3



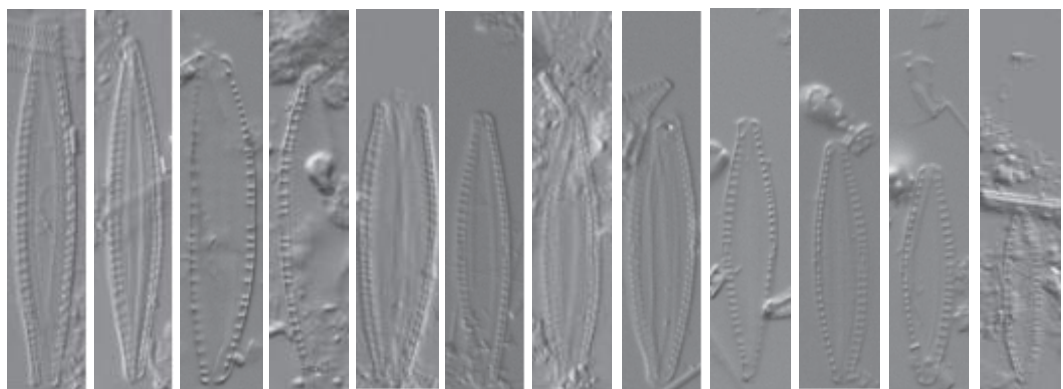
1 - 16



17



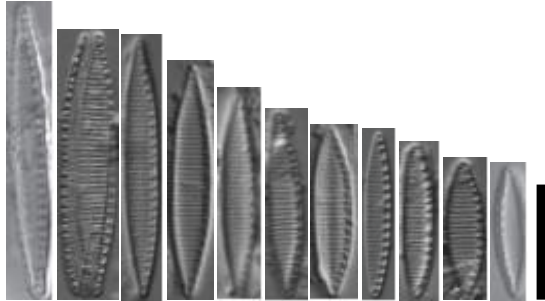
18 - 32



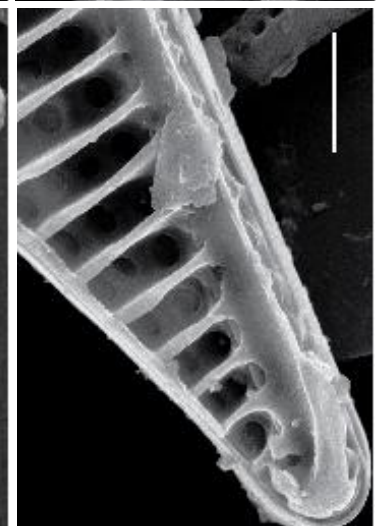
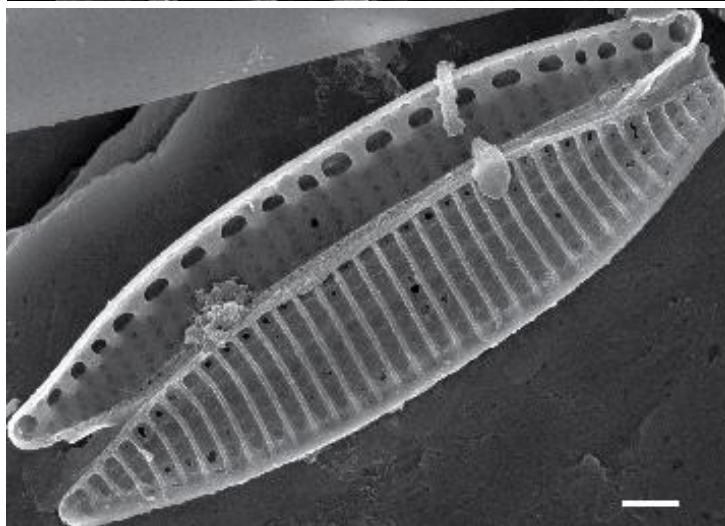
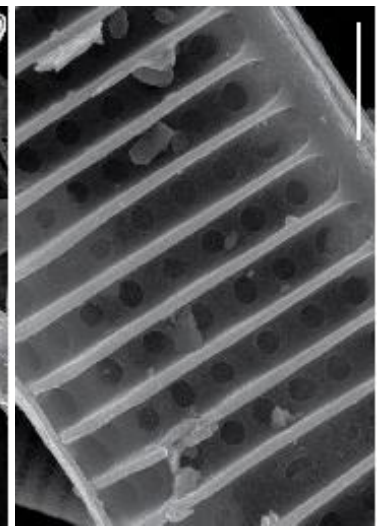
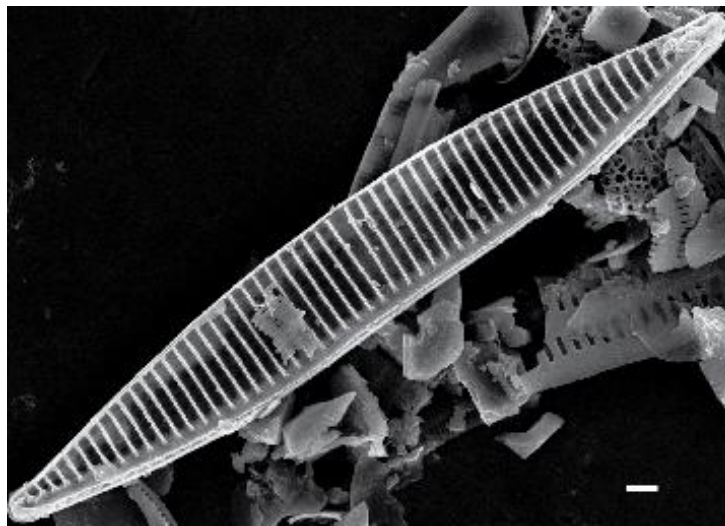
33 - 44

Plate 237 (Scale bars: Figs 1-11=10 μm ; Fig 12-15=1 μm)

Nitzschia sp. 1



1 - 11



12 - 15

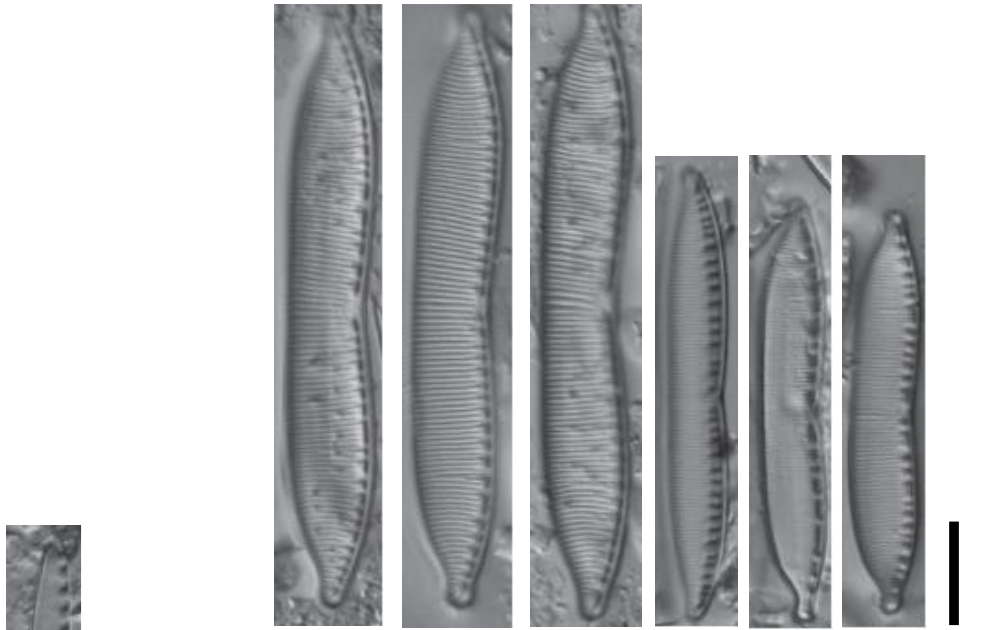
Figs 1-6: *Nitzschia communata* Grunow

Lit.: Grunow 1880, p. 79

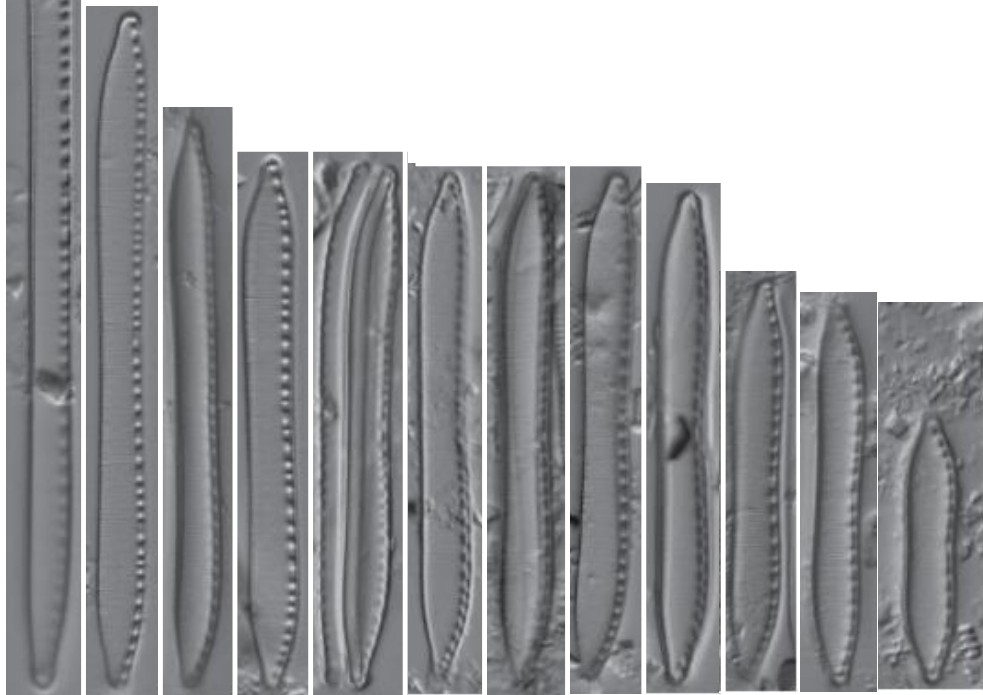
Figs 7-18: *Nitzschia terrestris* (Petersen) Hustedt

Lit.: Hustedt 1934, p. 396

Basionym: *Nitzschia vermicularis* var. *terrestris* Petersen 1928



1 - 6

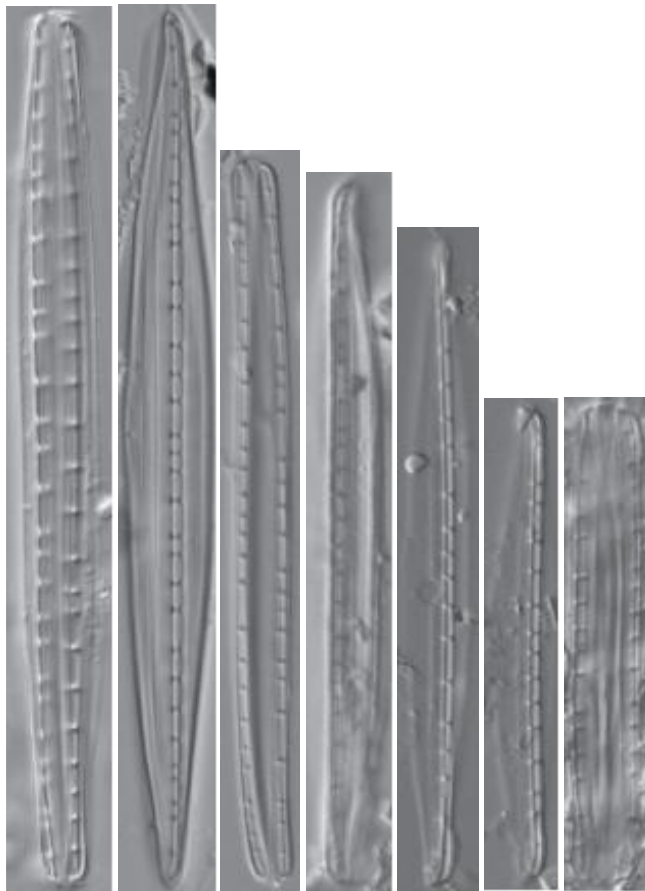
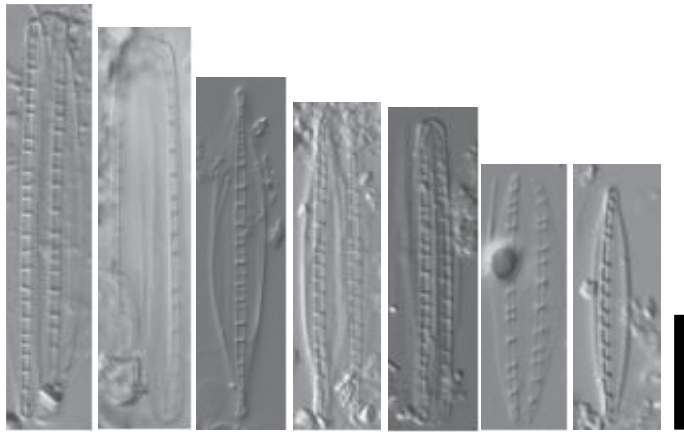


7 - 18

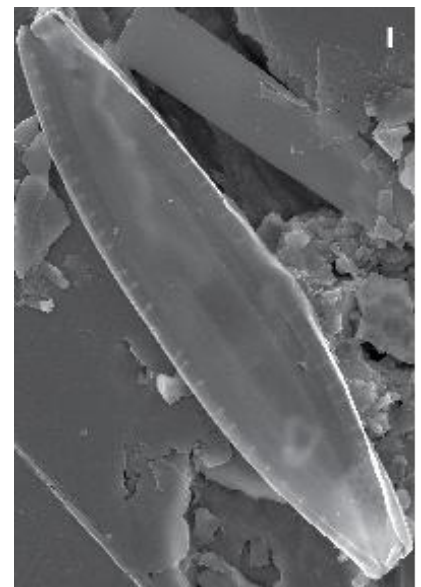
Nitzschia distans var. *distans* Gregory

Lit.: Gregory 1857, p. 58; pl. 6, fig. 103

Synonym: *Homoeocladia distans* (Gregory) Kuntze 1898



1 - 14



15

Plate 240

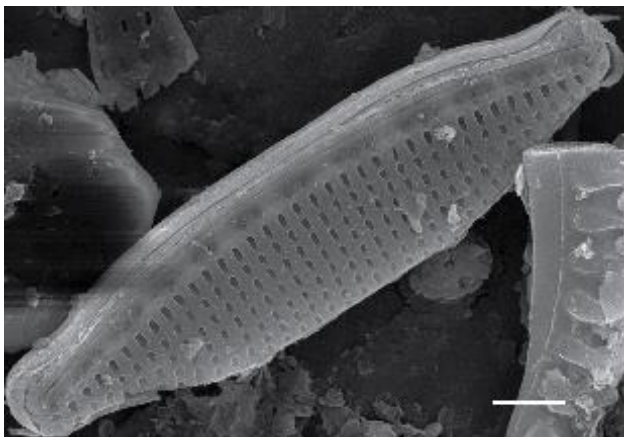
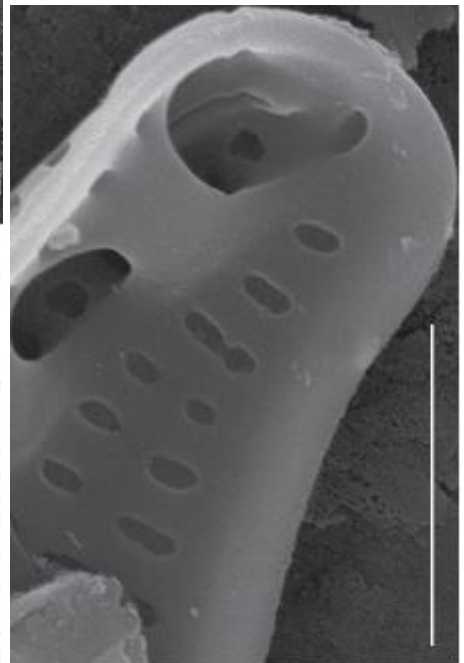
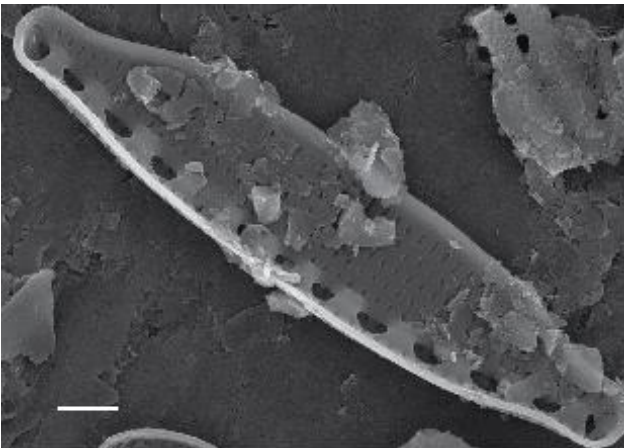
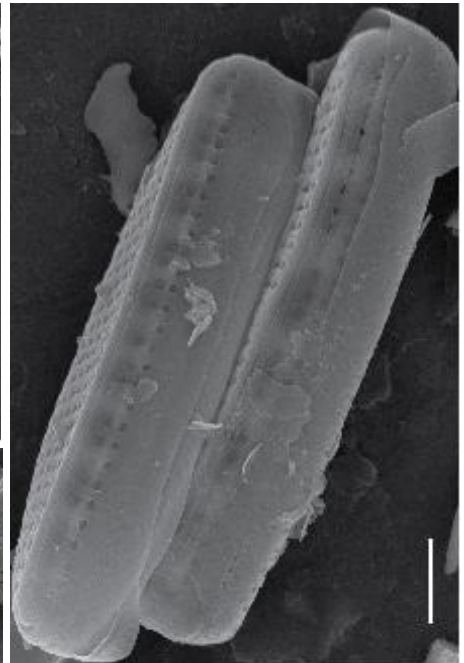
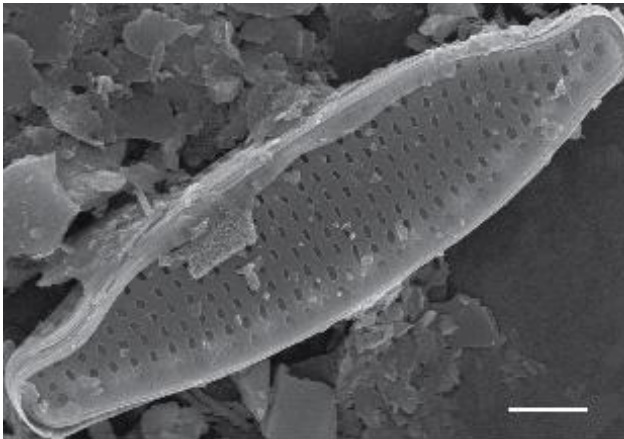
(Scale bars: Figs 1-19=10 µm; Figs 20-24=1 µm)

Nitzschia microcephala Grunow

Lit.: Grunow 1880, p. 96



1 - 19



20 - 24

Figs 1-3: *Tryblionella pararostrata* (Lange-Bertalot) Clavero & Hernández-Mariné

Lit.: Lange-Bertalot, Kulbs, Lauser, Norpel-Schempp & Willmann 1996, v. 3: p. 164; pl. 48, fig. 6;
Clavero 2009: 330 fig. 29

Basionym: *Nitzschia compressa* var. *pararostrata* Lange-Bertalot

Synonym: *Nitzschia pararostrata* (Lange-Bertalot) Lange-Bertalot 2000

Figs 4-5: *Nitzschia thermaloides* Hustedt

Lit.: Hustedt 1955, p. 44; pl. 15, ig. 13-15

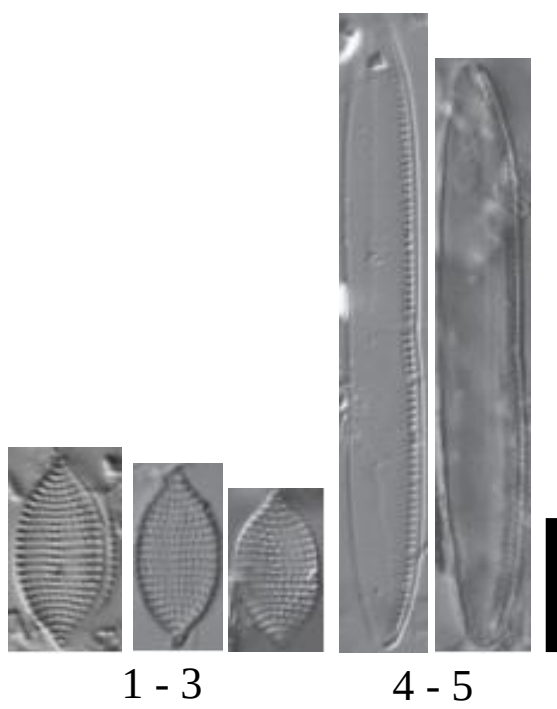
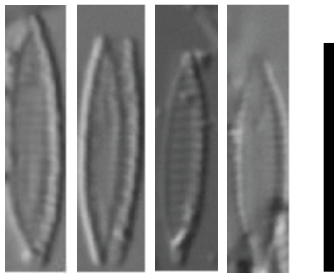


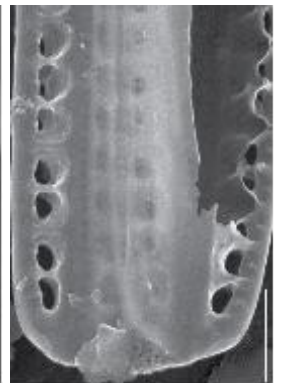
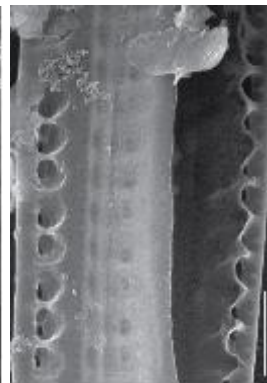
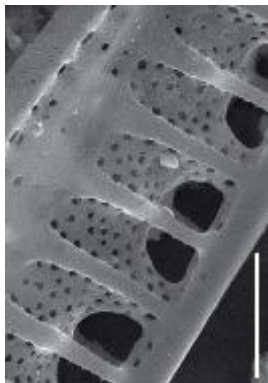
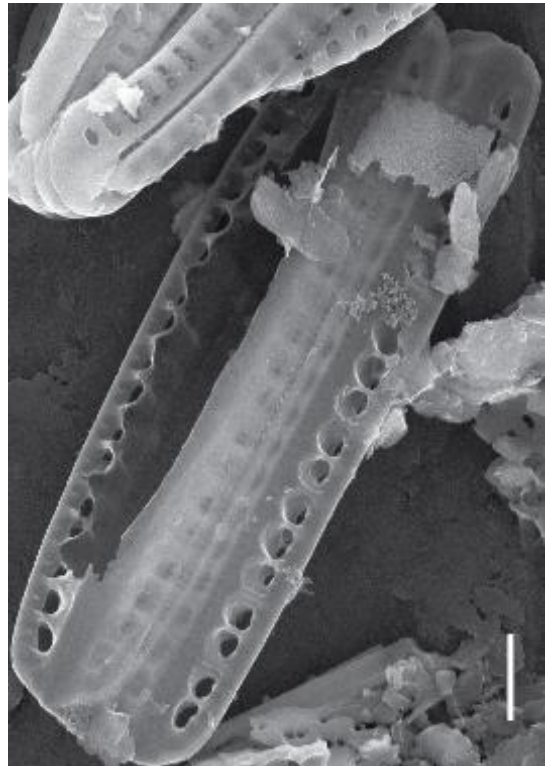
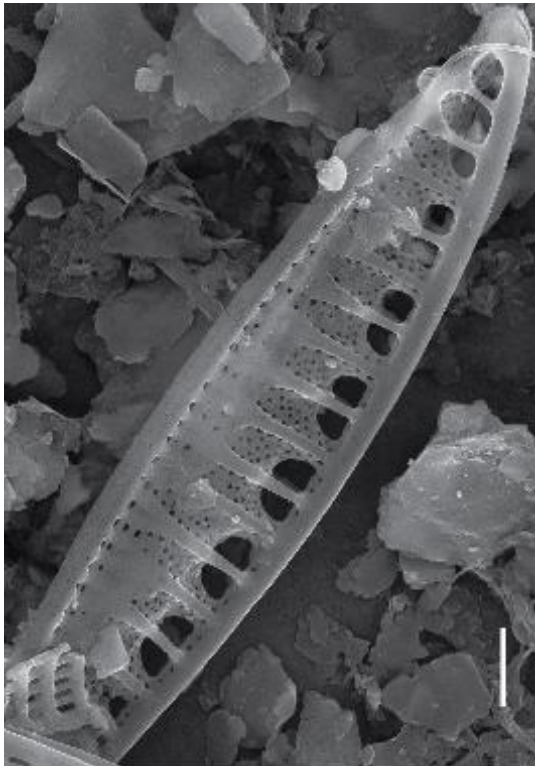
Plate 242

(Scale bars: Figs 1-4=10 μm ; Fig 5-10=1 μm)

Simonsenia Sp. 1



1 - 4



5 - 10

Plate 243

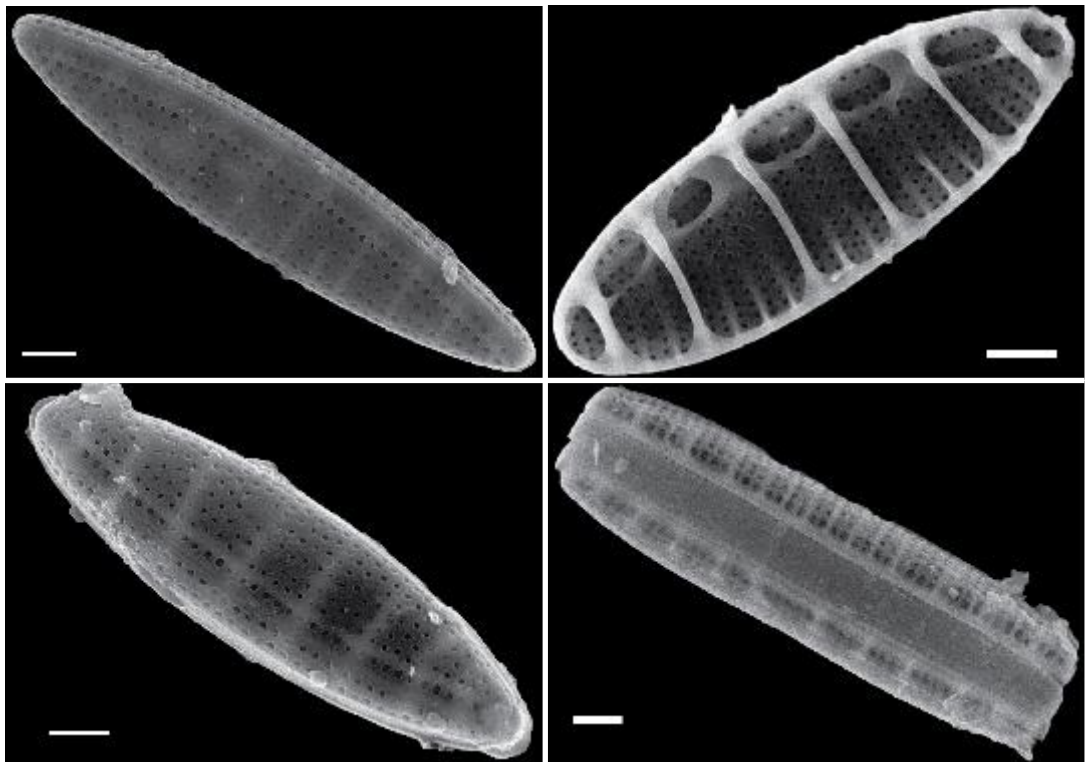
(Scale bars: Figs 1-12=10 µm; Fig 13-16=1 µm)

Denticula subtilis Grunow

Lit.: Grunow 1862, p. 547; pl. 28/12, fig. 36



1 - 12



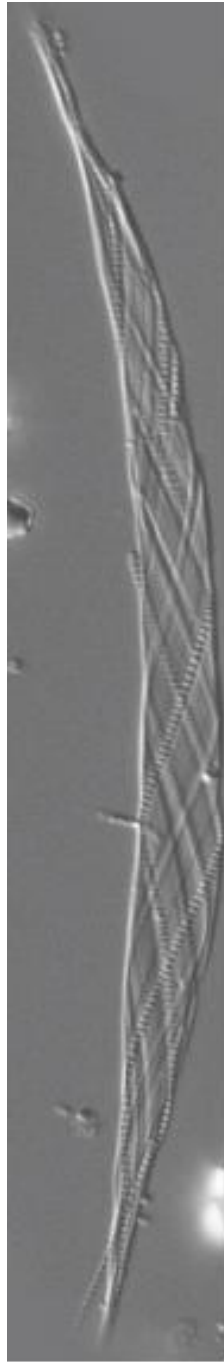
13 - 16

Cylindrotheca gracilis (Brebisson in Kützing) Grunow

Lit.: Van Heurck 1882, pl. 80, fig. 2

Basionym: *Ceratoneis gracilis* Brébisson ex Kützing 1849

Synonym: *Nitzschiella gracilis* (Brébisson in Kützing) Rabenhorst 1864



1 - 2

Rhopalodia musculus (Kützing) Müller

Lit.: Müller 1900, p. 278, 294

Basionym: *Epithemia musculus* Kützing 1844

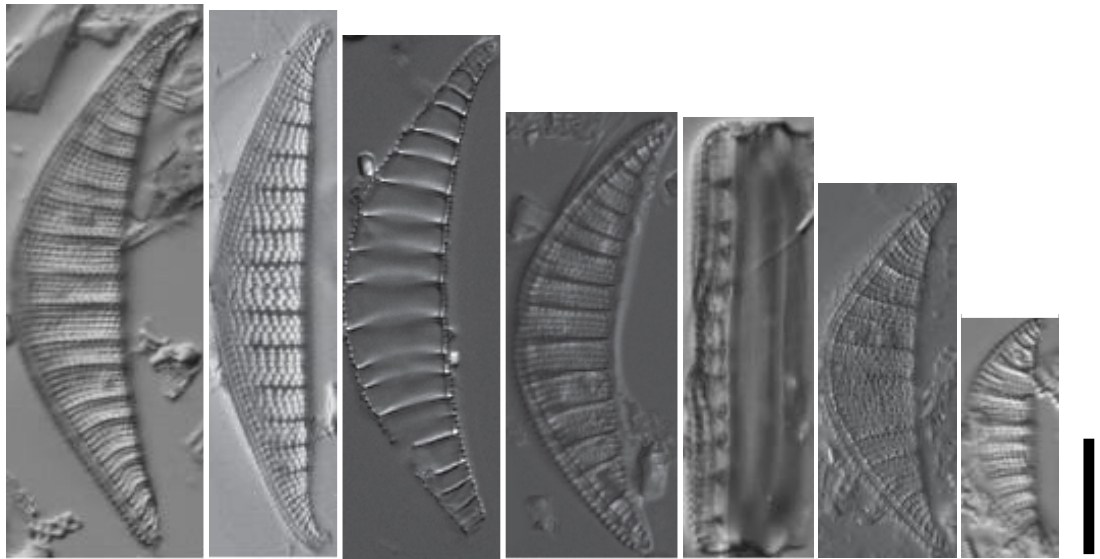
Synonyms: *Rhopalodia gibberula* var. *musculus* (Kützing) Muschler 1908

Cystopleura musculus (Kützing) Kuntze 1891

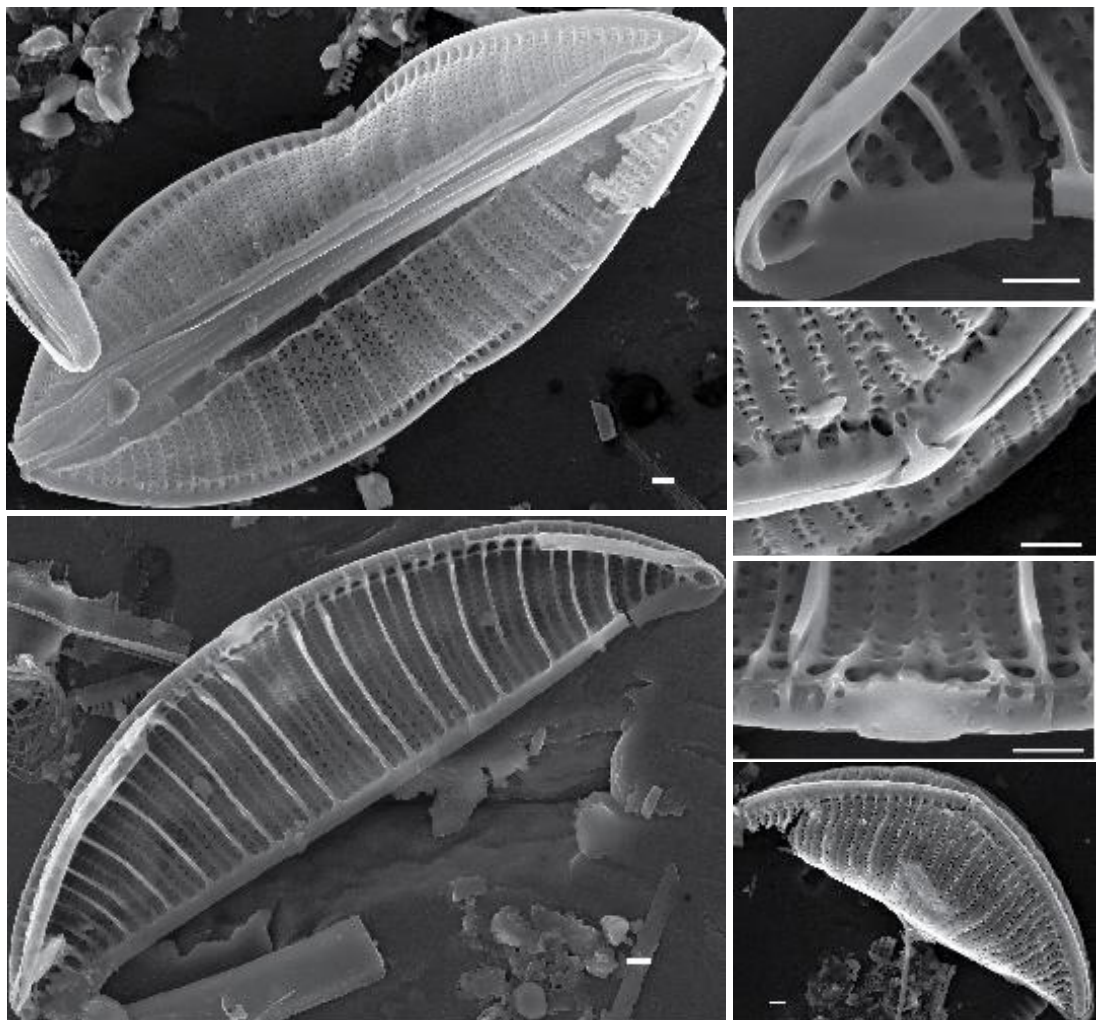
Epithemia musculus Kützing 1844

Eunotia westermanni var. *musculus* (Kützing) Rabenhorst 1847

Rhopalodia gibberula var. *musculus* (Kützing) Cleve-Euler 1952



1 - 7



8 - 13

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