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太白山一帶의 淡水藻類

鄭　濬
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A Study on the Freshwater Algae in the Mt. T'aebaek Area

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Abstract

The author has examined 152 taxa of the freshwater algae from Mt. T'aebaek area. They composed of 4 classes, 9 orders, 8 suborders, 18 families, 11 subfamilies, 45 genera, 113 species, 35 varieties and 4 formae.

By the criterion of adaptability of these taxa to organic pollution in water, the taxa could be classified as 7 of tolerant, 36 of indifferent, and 63 of intolerant taxa.

緖　論

本 研究는 韓國自然保存協會가 주관한 1986年度 綜合學術調査의 일환으로서 1986年 7月 21日부터 26일까지의 일주일 동안 太白山 일대의 淡水藻類를 採集 調査한 것이다.

太白山 일대의 淡水藻類는 아직 調査 報告된 바가 없으며, 따라서 이 지역의 淡水藻類를 調査하는 것은 뜻 있는 일이라고 생각된다. 그러나 조사 시기가 장마철 직후여서 採集이 如意치 못하였던 점도 없지 않아 이 점 송구스럽게 생각한다.

調査地域 및 方法

本 研究는 江原道에 位置하고 있는 太白山 일대의 河川 溪流, 池沼 등을 調査 對象으로 하였으며 그 資料

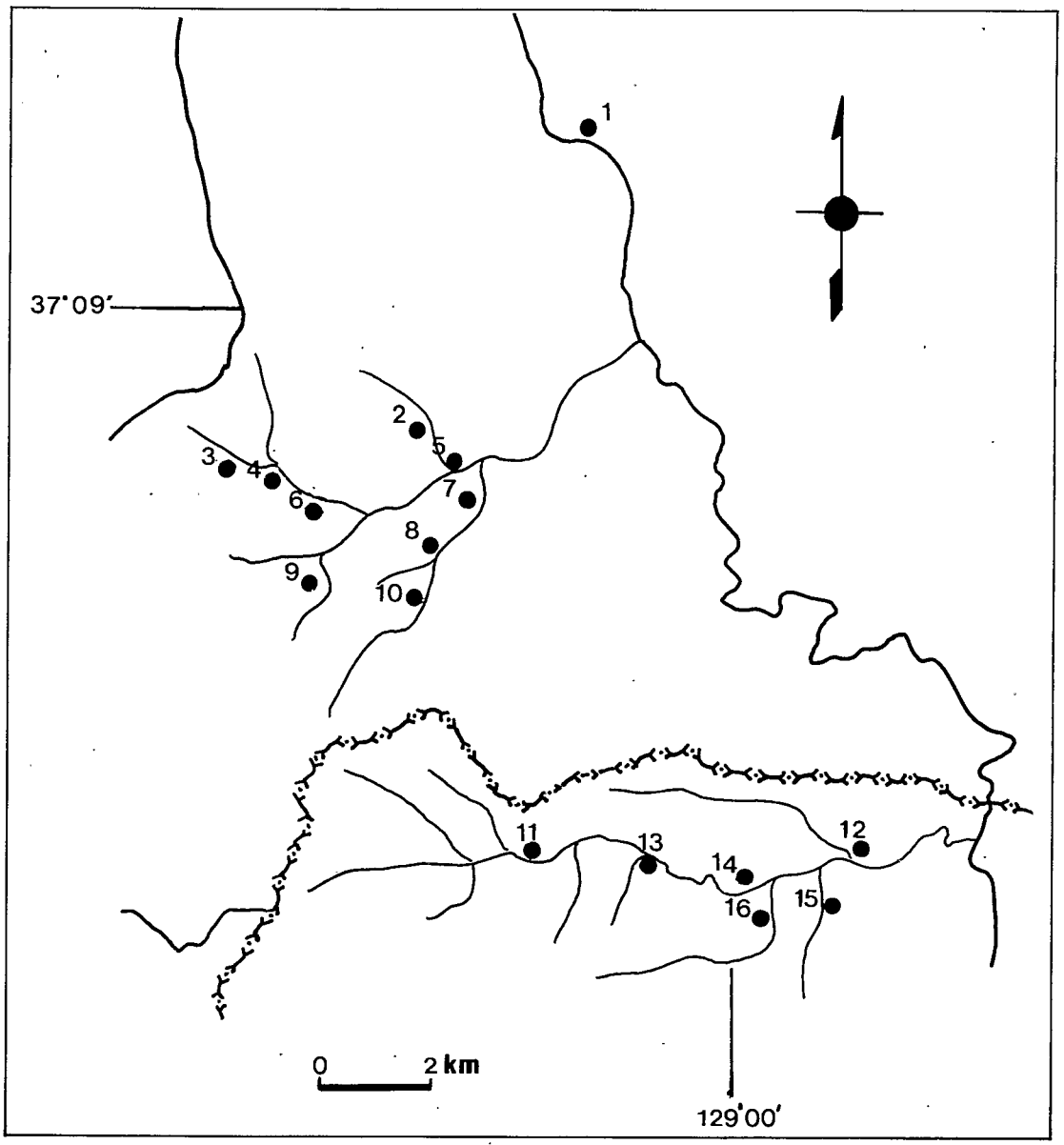

Fig. 1. A map showing the T'aebaek area.

1. 황지동 상수도원	2. 소도동	3. 혈리굴	4. 혈리굴 옆 하천
5. 함태광업소 앞	6. 사내골	7. 청음사 입구	8. 당골계곡
9. 백단사 입구	10. 단군각	11. 백천계곡	12. 연화광업소 앞
13. 열목어 양어장	14. 오마을	15. 대현 1 리	16. 대현국교 앞

의 採集 場所는 Fig. 1에 表示한 바와 같다.

資料의 採集에는 plankton net(Nxxx25)와 핀셋, 스포이드, 솔 등을 使用하였으며 採集된 資料는 3~5% formalin으로 即時 固定하였다. 標本의 分類는 G. M. Smith와 F. Hustedt의 分類體系에 依해서 分類 排列하였다.

한편, 각 조사지점에 對하여서는 採集時의 水温과 pH를 測定하였다(Table 1).

Table 1. 調査地点別 水温과 pH値

St.	測 定 地 点	水温(℃)	pH
1	황지동 상수도원	13	6.5
2	소도동	12.5	6
3	혈리굴	13	5.5
4	혈리굴 옆 하천	13.5	6
5	함태광업소 앞	13.5	5
6	사내골	13	6.5
7	청음사 입구	13.5	6
8	당골계곡	11	6
9	백단사 입구	13	5.5
10	단군각	12	6
11	백천계곡	11	6
12	연화광업소 앞	13	6
13	열목어 양어장	13.5	6.5
14	오마을	13	6.5
15	대현 1 리	14	6.5
16	대현국민학교 앞	14	7

그리고 珪藻는 各 taxon 밑에 有機汚濁의 耐性에 對한 生態를 調査 記載하였으나 기재되지 않은 각 taxon은 모두 intolerant taxa이다. 各 taxon 밑에 기재된 tolerant taxa, indifferent taxa, intolerant taxa의 3群을 區別한 기준은 다음과 같다.

Tolerant taxa : BOD_5가 7ppm 이상의 水域에서는 相對頻度가 10% 이상이 되는 수가 있어도 7ppm 이하에서는 相對頻度가 항상 10% 이하의 경향이 强한 taxon. 그리고 相對頻度가 보통 10% 이상이 되지 않는 taxon에 대하여서는 BOD_5가 7ppm 以上의 水域에서만 出現하는 taxon이다.

Indifferent taxa : BOD_5가 7ppm 以上의 水域에서 相對頻度가 10% 以上이 되는 경향이 强한 taxon. 그리고 相對頻度가 보통 10% 以上이 되지 않는 taxon에 對하여서는 BOD_5가 7ppm 以上의 水域이나 以下의 水域에도 出現하는 taxon이다.

Intolerant taxa : BOD_5가 7ppm 이하의 水域에서 相對頻度가 10% 이상이 되는 수가 있어도 7ppm 이상의 수역에서는 상대빈도가 항상 10% 이하의 경향이 강한 taxon이다.

結果 및 考察

1. 今般의 調査에서 同定된 淡水藻類는 4綱 9目 8亞目 18科 11亞科 45屬 113種 35變種 4品種인 總 152taxa였으며 이들을 綱別로 要約하면 Table 2와 같다.

Table 2. Studies on Freshwater Algae in T'aebaek Area.

	Ord.	Subord.	Fam.	Subfam.	Gen.	Sp.	Var.	Form.
Clorophyceae	4	1	6	.	12	17	4	2
Euglenophyceae	1	.	1	.	1	1	.	.
Cyanophyceae	2	2	5	.	10	21	1	.
Bacillariophyceae	2	5	6	11	22	74	30	2
Total	9	8	18	11	45	113	35	4
								152taxa

2. 今般 調査된 珪藻를 有機汚濁에 對한 耐性에 依하여 tolerant taxa 7, indifferent taxa 36, intolerant taxa 63로 區別할 수 있었다.

藻 類 目 錄

Class CHLOROPHYCEAE
Tetrasporales
Palmellaceae
Sphaerocystis schroteri Chodat
Ulotrichales
Ulotrichineae
Ulotrichaceae
Ulothrix subconstricta G. S. West
Ulothrix subtilissima Rabenhorst
Ulothrix tenerrima Kuetzing
Ulothrix variabilis Kuetzing
Ulothrix zonata Kuetzing
Chaetophoraceae
Protoderma viride Kuetzing
Chlorococcales
Scenedesmaceae
Scenedesmus acutus for. *costulatus* (Chodat) Uherkovich
Scenedesmus ecornis (Ralfs) Chodat
Scenedesmus quadrispina var. *westu* G. M. Smith
Zygnematales
Mesotaeniceae
Mesotaenium chlamydosporum De Bary var. *violascens* (De Bary) Kriger
Mesotaenium degreyi var. *breve* W. West
Cylindrocystis crassa De Bary
Desmidiaceae
Closterium acerosum (Schronk) Ehrenberg
Penium margaritaceum (Ehrenberg) Brebisson
Euastrum anastum var. *dideltiform* Duchellier
Cosmarium diploporum (Lundell) Lutkemuller
Cosmarium miscrosphinctum W. et. G. S. West
Cosmarium pseudopyramidatum var. *stenonatum* Nordstedt for. *minor* Raciborski
Staurastrum donardens W. et G. S. West
Staurastrum punctulatum Brebisson
Hyalotheca dissiliens (Smith) Brebisson

Class EUGLENOPHYCEAE
Euglenales
Euglenaceae
Phacus curvicauda Swirenko

Class CYANOPHYCEAE
Chroococcales
Chroococcaceae
Chroococcus minutus (Kuetzing) Nageli
Gloeocapsa aeruginosa (Carm) Kuetzing
Gloeocapsa punctana Nageli
Gloeocapsa decorticans (A. Braun) P. Richter
Gloeocapsa montana Kuetzing
Aphanocapsa elachista var. *conferta* W. et G. S. West
Aphanothece castagnei (De Breb.) Rabenhorst
Oscillatoriales
Oscillatorineae
Oscillatoriaceae
Oscillatoria agardhii Gomont
Oscillatoria amoena (Kuetzing) Gomont
Oscillatoria amphibia C. A. Agardh
Oscillatoria formosa Bory
Oscillatoria subbrevis Schmidle
Phormidium klebsii G. M. Smith
Lyngbya versicolor (Wartmann) Gomont
Lyngbya diquetii Gomont
Lyngbya martensiana Meneghini
Nostochineae
Scytonemataceae
Scytonema hofmanni Agardh
Stigonemataceae
Stigonema informe Kuetzing
Stigonema mamillosum (Lyngb) C. A. Agardh
Stigonema ocellatum (Dillw) Thuret
Rivulariaceae
Calothrix africana Schmidle
Calothrix fusca (Kuetzing) Bornet & Flahault

Class BACILLARIOPHYCEAE
Centrales
Discineae
Coscinodiscaceae
Melosiroideae
Melosira ambigua (Grun.) O. Muller
Valve : 4—15×13μ, Striae : 10—13 in 10μ.
Melosira granulata (Ehr.) Ralfs

Valve : 8—21×5—18μ, Striae : 10—13 in 10μ. Ecology : Tolerant taxon

Melosira granulata var. *angustissima* Mull

Valve : 5—21×5—18μ, Striae : 8—9 in 10μ.

Melosira varians C. A. Ag

Valve : 8—35×9—13μ, Ecology : Indifferent taxon

Coscinodiscoideae

Cyclotella glomerata Backmann

Valve : 4—10μ, Striae : 13—15 in 10μ. Ecology : Indifferent taxon

Cyclotella meneghiniana Kutz.

Valve : 10—13μ, Striae : 8—9 in 10μ. Ecology : Indifferent taxon

Stephanodiscus hantzschii Grun.

Valve : 8—20μ, Striae : 8—10 in 10μ. Ecology : Indifferent taxon

Coscinodiscus lacustris Grun.

Valve : 20—25μ, Puncta : 10—12 in 10μ.

Pennales

Araphidineae

Fragilariaceae

Tabellarioideae

Tabellaria flocculosa (Roth) Kutz.

Valve : 12—15×5—16μ, Striae : 18 in 10μ.

Diatomoideae

Diatoma elongatum Agardh

Valve : 40—120×2×4μ, Striae : 16 in 10μ, Costae : 6—10 in 10μ.

Diatoma hiemale var. *mesodon* (Ehr.) Grun.

Valve : 12—40×6—15μ, Striae : 18—20 in 10μ, Costae : 2—4 in 10μ.

Diatoma vulgare Bory

Valve : 30—60×10—13μ, Striae : 16 in 10μ, Costae : 6—8 in 10μ.

Fragilarioideae

Ceratoneis arcus Kutz.

Valve : 15—150×4—7μ, Striae : 15—18 in 10μ.

Ceratoneis arcus var. *amphioxys* (Robh.) Kutz.

Valve : 15—150×4—7μ, Striae : 15—18 in 10μ.

Fragilaria brevistriata Grun.

Valve : 12—28×3—5μ, Striae : 13—17 in 10μ. Ecology : Indifferent taxon

Fragilaria capucina Desmazieres

Valve : 25—100×2—5μ, Striae : 15 in 10μ.

Fragilaria construens (Ehr.) Grun.

Valve : 7—25×5—12μ, Striae : 14—17 in 10μ.

Fragilaria construens var. *binodis* (Ehr.) Grun.

Valve : 7—25×5—12μ, Striae : 14—17 in 10μ.

Fragilaria intermedia Grun.

Valve : 15—60×2.5—5μ, Striae : 9—13 in 10μ.

Synedra parasitica (W. Sm.) Hust.

Valve : 10—25×3—5μ, Striae : 16—19 in 10μ. Ecology : Indifferent taxon

Synedra rumpens Kutz.

Valve : 30—80×3—4μ, Striae : 18—20 in 10μ. Ecology : Indifferent taxon

Synedra rumpens var. *fomiliaris*(Kutz.) Hust.

Valve : 30—80×3—4μ, Striae : 18—20 in 10μ. Ecology : Indifferent taxon

Synedra ulna (Nitz.) Ehr.

Valve : 75—100×5—9μ, Striae : 9—11 in 10μ. Ecology : Indifferent taxon

Synedra ulna var. *impressa* Hust.

Valve : 50—350×5—9μ, Striae : 8—12 in 10μ.

Synedra vaucheriae (Kutz.) Peters

Valve : 10—40×2—4μ, Striae : 12—16 in 10μ.

Raphidioidineae

Eunotiaceae

Eunotioideae

Eunotia exigua (Breb. ex Kutz.) Rabh

Valve : 10—26×2—4μ, Striae : 20—25 in 10μ.

Eunotia monodon var. *maior* (W. Sm.) Hust.

Valve : 35—90×11—15μ, Striae : 8—10 in 10μ.

Eunotia pectinalis (O. F. Mull.) Rabh.

Valve : 17—140×5—10μ, Striae : 7—12 in 10μ.

Eunotia pectinalis (Kutz.) var. *minor* Rabh.

Valve : 10—50×5—10μ, Striae : 7—12 in 10μ.

Eunotia polydentula var. *perpusilla* Grun.

Valve : 14×3μ, Striae : 18 in 10μ.

Eunotia tenalla (Grun.) Hust.

Valve : 6—27×3μ, Striae : 16—20 in 10μ.

Monoraphidineae

Achnanthaceae

Cocconeiodeae

Cocconeis placentula Ehr.

Valve : 11—70×8—40μ, Striae : 23 in 10μ.

Cocconeis placentula var. *euglypta* (Ehr.) A. Cl.

Valve : 10—50×8—30μ, Striae : 19—23 in 10μ.

Achnanthoideae

Achnanthes coarctata Brebisson

Valve : 36—80×20—30μ, Striae : 11—14 in 10μ.

Achnanthes exigua Grun.

Valve : 7—17×4.5—6μ, Striae : 24—25 in 10μ. Ecology : Tolerant taxon

Achnanthes lanceolata (Brb.) Grun.

Valve : 13—31×4.5—8μ, Striae : 11—14 in 10μ.

Achnanthes lanceolata var. *dubida* Grun.

Valve : 8—16×3—5μ, Striae : 10—14 in 10μ. Ecology : Indifferent taxon

Achnanthes lanceolata Breb. var. *blliptica* Cleve

Valve : 18—40×4—10μ, Striae : 13—16 in 10μ.

Achnanthes linearis (W. Sm.) Grun.

Valve : 10—20×2.5—3.5μ, Striae : 23—26 in 10μ. Ecology : Indifferent taxon

Achnanthes linearis for. *curta* H. L. Sm.

Valve : 4—8×2.4—3μ, Striae : 24 in 10μ. Ecology : Indifferent taxon

Achnanthes minutisima Kutz.

Valve : 5—40×2—4μ, Striae : 30—32 in 10μ. Ecology : Indifferent taxon

Rhoicosphenia curvata (Kutz.) Grun. & Rabh.

Valve : 12—75×4—8μ, Striae : 9—15 in 10μ. Ecology : Indifferent taxon

Biraphidineae

Naviculaceae

Naviculoideae

Caloneis amphisbaena (Bory) Cleve

Valve : 36—80×20—30μ, Striae : 16—18 in 10μ.

Stauroneis anceps Ehr.

Valve : 25—130×6—18μ, Striae : 20—30 in 10μ.

Stauroneis montana Krasske

Valve : 15—17×3—5μ, Striae : 24 in 10μ. Ecology : Indifferent taxon

Stauroneis pygmaea Krieger

Valve : 20—24×4—5μ, Striae : 30 in 10μ.

Navicula bacillum Ehr.

Valve : 30—80×10—20μ, Striae : 12—14 in 10μ.

Navicula brevissima Hust.

Valve : 8—14×3.5—4.5μ, Striae : 20—23 in 10μ. Ecology : Indifferent taxon

Navicula cryptocephala Kutz.

Valve : 20—40×5—7μ, Striae : 16—18 in 10μ. Ecology : Indifferent taxon

Navicula cryptocephala var. *veneta* (Kutz.) Rabh.

Valve : 13—26×5—6μ, Striae : 14—16 in 10μ. Ecology : Indifferent taxon

Navicula elegans W. Sm.

Valve : 60—115×20—30μ, Striae : 9 in 10μ.

Navicula gottlandica Grun.

Valve : 35—60×8—9μ, Striae : 14 in 10μ. Ecology : Indifferent taxon

Navicula gregaria Donkin

Valve : 15—35×5—9μ, Striae : 16—22 in 10μ. Ecology : Indifferent taxon

Navicula hungarica Grun. var. *linearis* Ostrup

Valve : 10—30×4—7μ, Striae : 8—10 in 10μ.

Navicula lanceolata (Agardh) Kutz.

Valve : 27—50×6.5—12μ, Striae : 10 in 10μ. Ecology : Indifferent taxon

Navicula menisculus var. *upsaliensis* (Grun.) Grun.

Valve : 11—40×8—15μ, Striae : 9—12 in 10μ.

Navicula minima Grun.

Valve : 6—17×2.5—5μ, Striae : 26 in 10μ. Ecology : Tolerant taxon

Navicula mutica Kutz.

Valve : 10—40×7—12μ, Striae : 14—20 on 10μ. Ecology : Tolerant taxon

Navicula pupula Kutz.

Valve : 20—40×7—11μ, Striae : 13—17 in 10μ. Ecology : Indifferent taxon

Navicula pupula var. *mutata* (Krasske) A. Cl.

Valve : 10—18×5—8μ, Striae : 22—24 in 10μ. Ecology : Indifferent taxon

Navicula radiosa Kutz.

Valve : 40—120×10—19μ, Striae : 10—12 in 10μ.

Navicula seminulum Hust.

Valve : 5—15×3—6μ, Striae : 20—24 in 10μ. Ecology : Tolerant taxon

Navicula seminulum var. *hustedtii* Patr.

Valve : 4—18×3—5μ, Striae : 18—22 in 10μ. Ecology : Indifferent taxon

Navicula symmetrica Patr.

Valve : 32—35×5—7μ, Striae : 15—17 in 10μ. Ecology : Indifferent taxon

Navicula viridula (Kg.) var. *rostellata* (Kutz.) Cleve

Valve : 35—65×8—11μ, Striae : 9—12 in 10μ. Ecology : Indifferent taxon

Pinnularia abaujensis var. *subundulata* (A. Meyer ex Hust) Patr.

Valve : 50—140×7—13μ, Striae : 10—13 in 10μ.

Pinnularia borealis Ehr.
Valve : 28—110×8—18μ, Striae : 4—6 in 10μ.
Pinnularia brevicostata Cieve
Valve : 70—120×12—16μ, Striae : 8—10 in 10μ.
Pinnularia divergens W. Sm.
Valve : 50—140×12—20μ, Striae : 10—12 in 10μ.
Pinnularia gibba var. *parva* (Ehr.) Grun.
Valve : 34—70×7—13μ, Striae : 9—11 in 10μ.
Pinnularia gibba for. *subundulata* Meyer
Valve : 50—140×7—13μ, Striae : 9—11 in 10μ.
Pinnularia horrida var. *genuina* A. Cl.
Valve : 120—165×22—25μ, Striae : 6—7 in 10μ.
Pinnularia major (Kutz.) Cleve
Valve : 140—180×25—40μ, Striae : 5—7 in 10μ.
Pinnularia mesolepta (Ehr.) W. Sm.
Valve : 30—65×9—11μ, Striae : 10—14 in 10μ.
Pinnularia microstauron (Ehr.) A. Cl.
Velve : 25—80×7—11μ, Striae : 10—13 in 10μ.
Ecology : Indifferent taxon
Pinnularia microstauron var. *brevissonii* (Kutz.) Hust.
Valve : 20—30×7—8μ, Striae : 15—16 in 10μ.
Amphiproroideae
Amphora ovalis var. *pediculus* (Kutz.) V. H. ex De T.
Valve : 15—30×3.6—6μ, Striae : 15 in 10μ. Ecology : Indifferent taxon
Amphora veneta Kutz.
Valve : 10—45×4—6μ, Striae : 24—25 in 10μ.
Cymbella affinis Kg.
Valve : 20—70×7—16μ, Striae : 9—11 (dors.), 10—12 (venta.) in 10μ.
Cymbella cistula (Hemprich) Grun.
Valve : 35—180×25—40μ, Striae : 6—9 in 10μ.
Cymbella delicatula Kutz.
Valve : 16—32×3—6μ, Striae : 16—18 in 10μ.
Cymbella leptocero (Ehr.) Grun.
Valve : 23—47×8—13μ, Striae : 7—11 in 10μ.
Cymbella minuta Hilse ex Rabh.
Valve : 9—28×4.5—6μ, Striae : 14—16 in 10μ.
Cymbella sinuata Greg.
Valve : 10—17×3.5—5μ, Striae : 11—13 in 10μ.
Cymbella tumida (Breb.) van Heurck
Valve : 40—105×15—23μ, Striae : 8—10 in 10μ.
Cymbella turgida (Gerg.) Cleve
Valve : 30—100×9—25μ, Striae : 7—9 in 10μ.
Cymbella turgidula Grun. var. *nipponica* Skv.
Valve : 27—37×9.5—12μ, Striae : 9—11 in 10μ.
Cymbella ventricosa Kutz.
Valve : 10—40×5—12μ, Striae : 12—18 in 10μ.
Gomphonema angustatum (Kutz.) Robh.
Valve : 12—45×5—9μ, Striae : 9—12 in 10μ. Ecology : Indifferent taxon
Gomphonema angustatum var. *citeta* (Hohn & Hel.)Patr.
Valve : 18—25×5—7μ, Striae : 11—13 in 10μ.
Gomphonema angustatum var. *productum* Grun.
Valve : 13—48×4—6μ, Striae : 10—11 in 10μ.
Ecology : Indifferent taxon
Gomphonema tenellum Kutz.
Valve : 15—25×4—6μ, Striae : 18—20 in 10μ.
Ecology : Indifferent taxon
Gomphonema intricatum Kutz.
Valve : 26—70×5—9μ, Striae : 8—11 in 10μ.
Gomphonema longiceps Ehr. var. *subclavate* Grun.
Valve : 44—51×9—11μ, Striae : 10—12 in 10μ.
Gomphonema pavulum (Kutz.) Grun.
Valve : 15—30×5—18μ, Striae : 13—16 in 10μ.
Ecology : Tolerant taxon
Gomphonema pavulum var. *micropus* A. Cl.
Vale : 14—30×5—18μ, Striae : 10—15 in 10μ.
Ecology : Indifferent taxon
Gomphonema truncatum Ehr.
Valve : 26—65×6—14μ, Striae : 10—12 in 10μ.
Nitzschiaceae
Nitzschioideae
Hantzschia amphioxys (Ehr.) Grun.
Valve : 20—100×5—10μ, Striae : 13—20 in 10μ.
Ecology : Indifferent taxon
Hantzschia virgata (Roper) Grun.
Valve : 50—150×6—12μ, Striae : 9—15 in 10μ.
Hantzschia virgata var. *capitellata* Hust.
Vlve : 50—150×6—12μ, Striae : 9—15 in 10μ.
Nitzschia amphibia Grun.
Valve : 12—50×3—5μ, Striae : 15—19 in 10μ.
Ecology : Indifferent taxon
Nitzschia frustulum var. *peninuta* Grun.
Valve : 7—35×2.5—4μ, Striae : 27—31 in 10μ.
Ecology : Indiferent taxon
Nitzschia gandersheimiensis Krasske
Valve : 60—70×4μ, Carnate dots : 8—9 in 10μ.
Ecology : Tolerant taxon
Nitzschia paleacea Grun.

Valve : 10—55×3—5μ, Carnate dots : 13—17 in 10 μ. Ecology : Indifferent taxon

Nitzschia recta Hantzsch

Valve : 60—130×5—7μ, Carnate dots : 5—9 in 10μ.

Nitzschia sublinearis Hust.

Valve : 40—75×4—6μ, Carnate dots : 13—15 in 10 μ. Ecology : Indifferent taxon

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