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Research Article

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Abstract: The algal flora at 4 stations chosen on Aksu Stream were investigated between September 1993 and August 1994. The flora consisted of 73 taxa belonging to the *Bacillariophyta, Chlorophyta, Cyanophyta* and *Euglenophyta* divisions. The species of *Navicula* Broy., *Nitzschia* Hassall, *Surirella* Turpin, *Amphora* Ehr., *Cymbella* Agardh, *Concconeis* Ehr., *Fragilaria* Lyngbye and *Synedra ulana* (Nitz.) Ehr. were found to be widespread. Apart from members of *Bacillariophyta, Oscillatoria limosa* (Roth.). C.A.A.gardh., *Oscillatoria formosa* Broy. and *Merismopedia punctata* Meyen (*Cyanophyta*) were observed to be abundant and frequent, in the year when the research was carried out. The members of other divisions were determined in various frequencies in different months of the year. As a result, *Bacillariophyta* was dominant among the algal flora of Aksu Stream.

Key Words: Algae, Flora, Stream.

Aksu Deresi'nin Alg Florası (Isparta-Türkiye)

Özet: Aksu Deresi alg florası, seçilen 4 istasyonda Eylül 1993-Ağustos 1994 tarihleri arasında incelenmiştir., Florada *Bacillariophyta, Chlorophyta Cyanophyta* ve *Euglenophyta* bölümlerine ait toplam 73 tür tespit edilmiştir. *Bacillariophyta* grubu içerisinde *Navicula* Broy., *Nitzschia* Hassall, *Surirella* Turpin, *Amphora* Ehr., *Cymbella* Agardh, *Cocconeis* Ehr., *Fragilaria* Lyngbye cinslerine ait türler ile *Synedra* ulna (Nitz.) Ehr. türü bol miktarda bulunmuştur. Diyatomeler dışında *Cyanophyta*'dan *Oscillatoria limosa* (Roth.) C.A.Agardh., *Oscillatoria formosa* Broy., *Merismopedia punctata* Meyen. türleri de araştırmanın yapıldığı yıl içinde nispeten devamlı ve bol olarak gözlenmiştir. Diğer bölüm üyeleri ise yılın farklı aylarında değişen bolluklarda tespit edilmiştir. Sonuç olarak mevcut florada *Bacillariophyta* tür çeşitliliği bakımından dominanttır.

Anahtar Sözcükler: Alg, Flora, Dere

Introduction

Turkey has a water network 145,000 km long and a large amount of living in inland waters (1). Among the variety of living things algae are important because they are the first part of the food chain they ensure ecological balance and contain the species which are important indicator taxa in the determination of water pollution.

The number of algoloical studies on inland waters have increased considerably in recent years (2-4).

The aim of the study on Aksu Stream, by establishing the algae species, was to determine the relationship between the algae development and physical and chemical features of the stream and to determine the differences between the stations.

Aksu Stream is located on the border of the Eğirdir and Aksu districts in province of Isparta. The height of Başpınar, the source of Aksu Stream, is about 1200 meters. The height decreases to 916 meters at the point where Aksu Stream reaches Lake Eğirdir. The length of the Stream from the spring to Lake Eğirdir is about 30 km.

Materials and Methods

Four research stations were chosen along the stream (Figure 1). Identification of algae species was made with the help of the relevant literature(5-7).

The determined taxa were listed according to the system described by Round (8). In addition while taking samples, some physical and chemical characteristics of Aksu Stream were determined monthly.

Results

Some Physical and Chemicals Features of Aksu Stream

The physical and chemical features of Aksu Stream varied between seasons and stations. In monthly

Table 1. Some physical and chemical characteristics of Aksu Stream (September 1993- August 1994)

Months	Stations	pH	O_2 mg/lt	Temperature °C	Electrical conductivity µmhos/cm
	I	8.1	13.0	8.0	164
September	II	8.3	10.2	12.0	160
1993	III	8.6	11.5	13.0	170
	IV	8.7	6.0	24.0	466
	I	8.2	13.0	7.5	164
October	II	8.3	10.1	11.5	176
1993	III	8.4	10.2	11.0	160
	IV	8.4	6.0	20.0	378
	I	8.1	12.0	7.5	-
November	II	8.3	10.0	11.0	-
1993	III	8.3	9.0	10.0	-
	IV	8.1	6.0	17.0	-
	I	8.3	11.1	8.0	164
December	II	8.3	9.4	11.0	233
1993	III	8.4	10.0	10.0	246
	IV	8.2	10.4	8.5	252
	I	8.0	12.0	7.0	-
January	II	8.0	12.5	8.0	-
1994	III	8.6	9.6	8.0	-
	IV	8.4	13.0	7.5	-
	I	8.1	12.0	6.5	164
February	II	8.3	13.0	5.5	160
1994	III	8.4	13.5	5.5	195
	IV	8.0	15.0	4.0	220
	I	8.0	11.0	9.0	-
March	II	8.4	12.0	7.0	-
1994	III	8.5	12.5	7.0	-
	IV	8.2	10.0	10.0	-
	I	7.9	9.8	7.0	138
April	II	8.6	8.8	10.0	201
1994	III	8.6	9.2	10.0	176
	IV	8.4	9.4	12.0	151
	I	8.2	10.2	7.0	164
May	II	8.2	9.6	8.5	151
1994	III	8.2	9.6	8.5	176
	IV	8.1	9.0	10.0	189
	I	-	-	-	-
June	II	-	-	-	-
1994	III	8.2	9.2	13.0	164
	IV	8.4	6.6	25.0	340
	I	8.4	10.4	7.0	151
July	II	8.5	8.2	13.0	201
1994	III	8.4	7.2	14.0	220
	IV	-	-	-	-
	I	8.2	9.0	8.0	170
August	II	8.3	8.0	16.0	189
1994	III	8.4	7.0	17.0	227
	IV	8.4	8.0	19.0	378

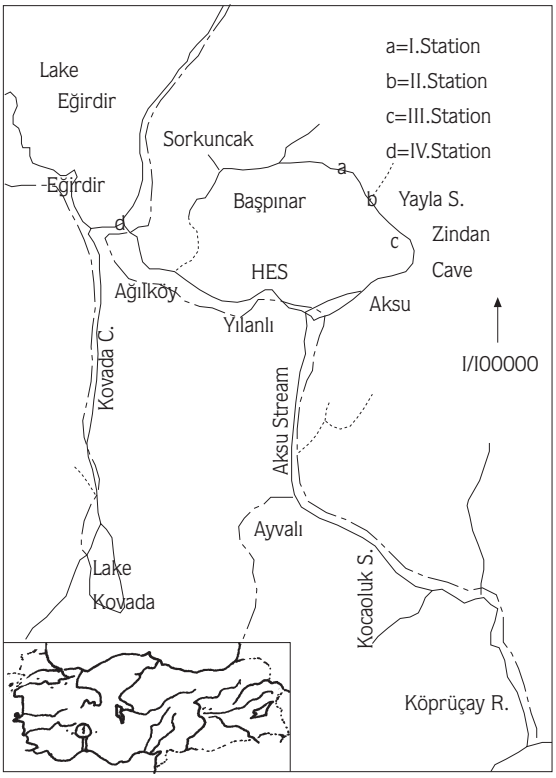

Figure 1. Geographical location of the study area and research stations.

measurements during one year, there were some variations in temperature from 4˚C to 25˚C, in O_2 level from 6 to 15 mg/l, in pH from 7.9 to 8.7 and in electrical conductivity from 138 to 466 µmhos/cm. In our results temperature was inversely proportional to the oxygen in the water and directly proportional to the electrical conductivity (Table 1).

Algae

Among the species identified in Aksu Stream, 56 of them belonged *Bacillariophyta,* 11 to *Chlorophyta,* 5 to *Cyanophyta* and 1 to *Euglenophyta.* The species belonging to *Bacillariophyta* made up 75 % of the total species. Identified species are given below and their photographs can be seen in figures 2-13 (Scale: 10µm).

Identified Species and Their Characteristics

Divisio : Bacillariophyta

Classis : Centrobacillariophyceae

Order : Centrales

Melosira varians C.A. Ag.

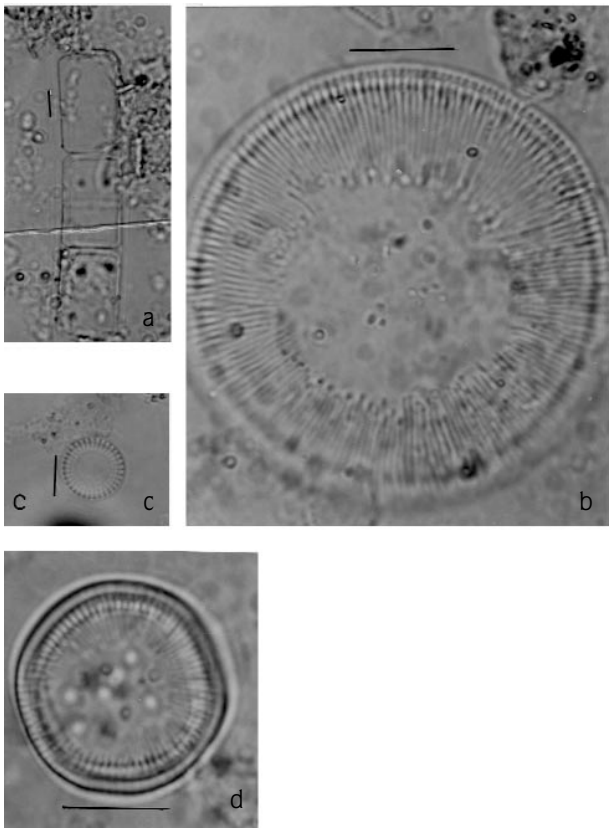

Figure 2. a. *Melosira varians* C.A. Ag., b. C*yclotella kützingiana* Thawaites, c. *Cyclotella meneghiniana* Kütz., d. *Cyclotella ocellata* Pant.

Cylindrical, cells are arranged in closed chains. Long (L): 25 µm, Wide (W): 20µm (Figure 2.a).

Cyclotella kützingiana Thwaites

Valve is in discoid shape. Diameter of valves (DV: 45 µm (Figure 2.b.).

Cyclotella meneghiniana Kütz

Valve is circular, DV: 25µm (Figure 2.c.).

Cyclotella ocellata Pant.

The outer side of valves is slightly flat circular DV: 20µ (Figure 2.d.).

Pennatibacillariophyceae

Order: Pennales

Amphora ovalis (Kütz) Kütz.

Valve broad elliptical, part of the end is trimmed. L: 50 µm, W: 27.5 µm (Figure 3.a.).

Caloneis silicula (Ehr.) Cleve.

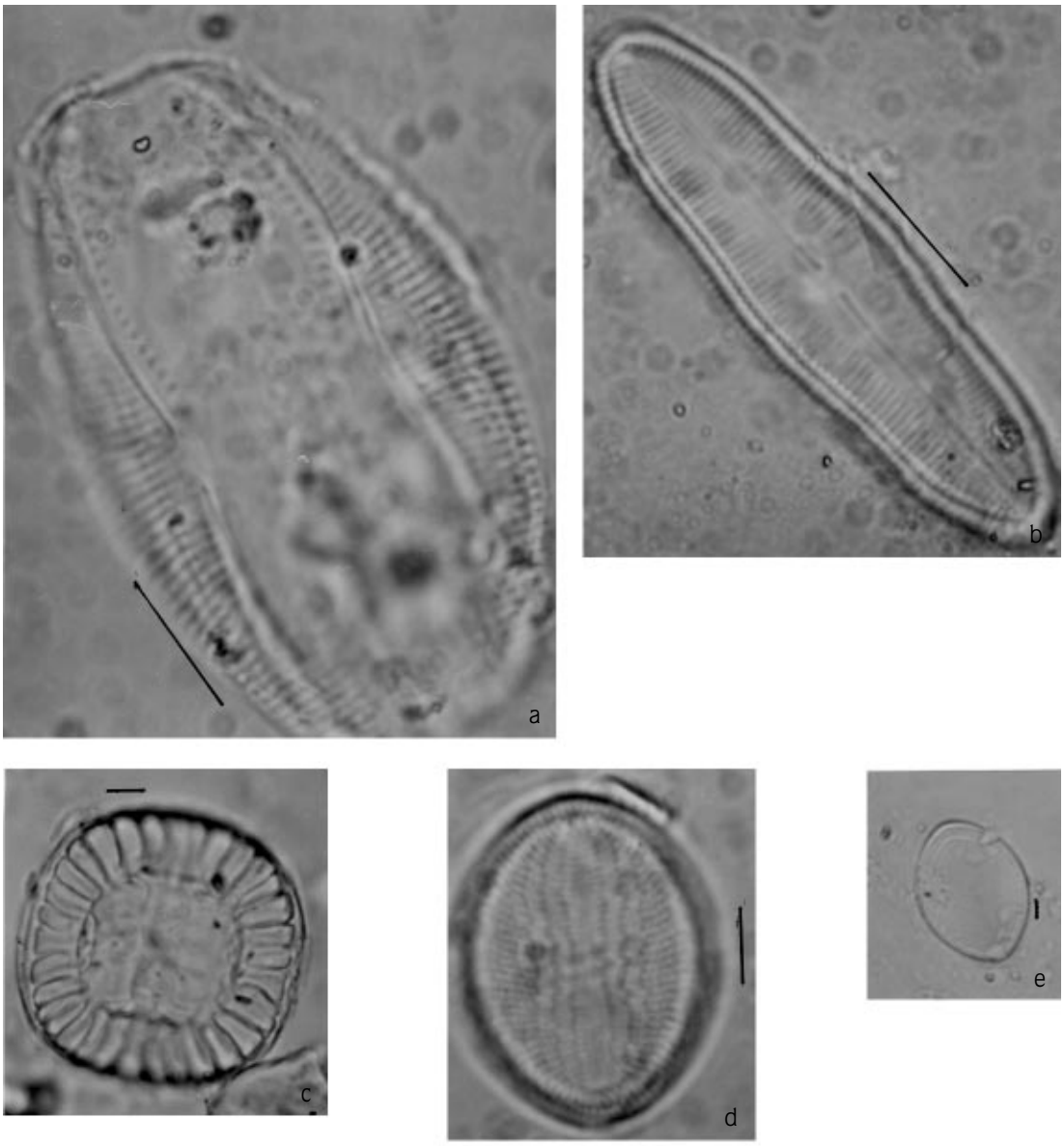

Figure 3. a. *Amphora ovalis* (Kütz.) Kütz., b. *Caloneis silicula* (Ehr.) Cleve., c. *Campylodiscus clypeus* Ehr., d. *Cocconeis pediculus* Ehr., e. *Cocconeis placentula* Ehr.

Valve biconstricted, median portion swollen. L: 46 µm, W: 12 µm (Figure 3.b.).

Campylodiscus clypeus Ehr.

Valves circular in outline DV: 87.5 µm (Figure 3.c.).

Cocconeis pediculus Ehr.

Valve has a rhombic elliptical outline. L: 40 µm, W: 20µm (Figure 3.d.).

Cocconeis placentula Ehr.

Valce is flat L: 32 µm, W: 24 µm (Figure 3.e.).

Cocconeis placentula var. euglypta (Ehr.) Cleve

Valve slightly flat L: 25 µm, W: 15 µm (Figure 4.a.).

Cocconeis sp.

Valve is slightly rhombic elliptic L: 21 µm, W: 13 µm (Figure 4.b.).

Cymatopleura elliptica (Breb.) W. Smith

Valve is broad elliptical with broad waves L: 75 µm, W: 47.5 µm (Figure 4.c.).

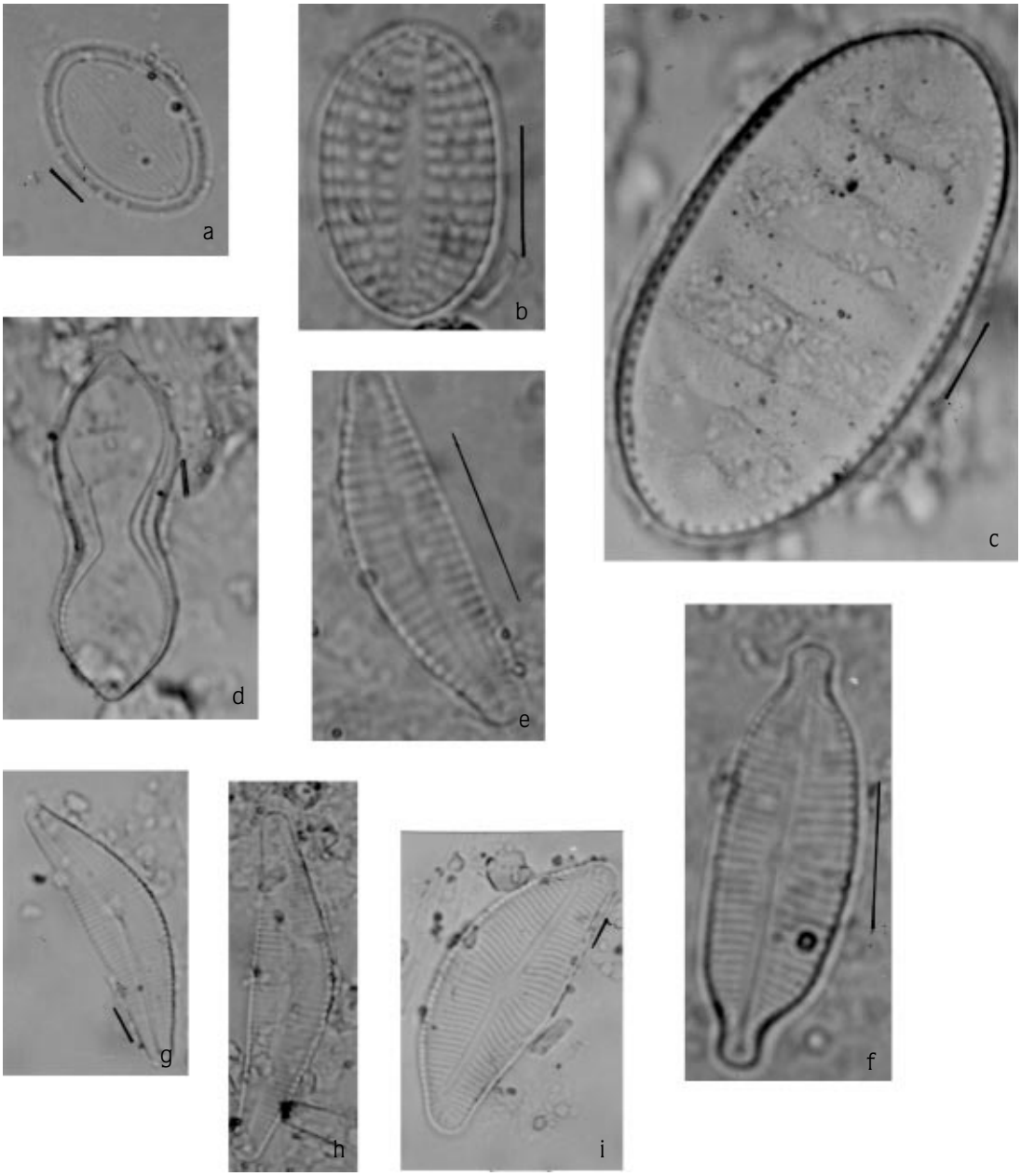

Figure 4. a. *Cocconeis placentula* var. *euglypta* (Ehr.) Cleve., b. *Cocconeis sp.*, c. *Cymatopleura elliptica* (Breb.) W. Smith., d. *Cymatopleura solea* (Breb.) W. Smith, e. *Cymbella affinis* Kütz., f. *Cymbella amphicephala* Naeg. ex. Tüz., g. *Cymbella cistula* (Hemp.) Grun., h. *Cymbella cymbiformis* Ag., i. *Cymbella prostrata* (Berkeley) Cleve.

Cymatopleura solea (Breb). W. Smith

Valve broad linear, middle part retracted wedge shape, strongly wavy L: 65 µm, W: 18 µm (Figure 4.d.).

Cymbella affinis sKütz.

Valve asymmetrical, half lanceolate to over half elliptical with convex dorsal margin, short protracted apices L: 22 µm, W: 6 µm (Figure 4.e.).

Cymbella amphicephala Naege. ex. Kütz.

Valve slightly asymmetric with strongly convex dorsal margin and slightly convex ventral margin L: 28 µm, W: 10 µm (Figure 4.f.).

Cymbella cistula (Hemprich) Grun.

Valve storngly asymmetric, boat-shaped, with convex

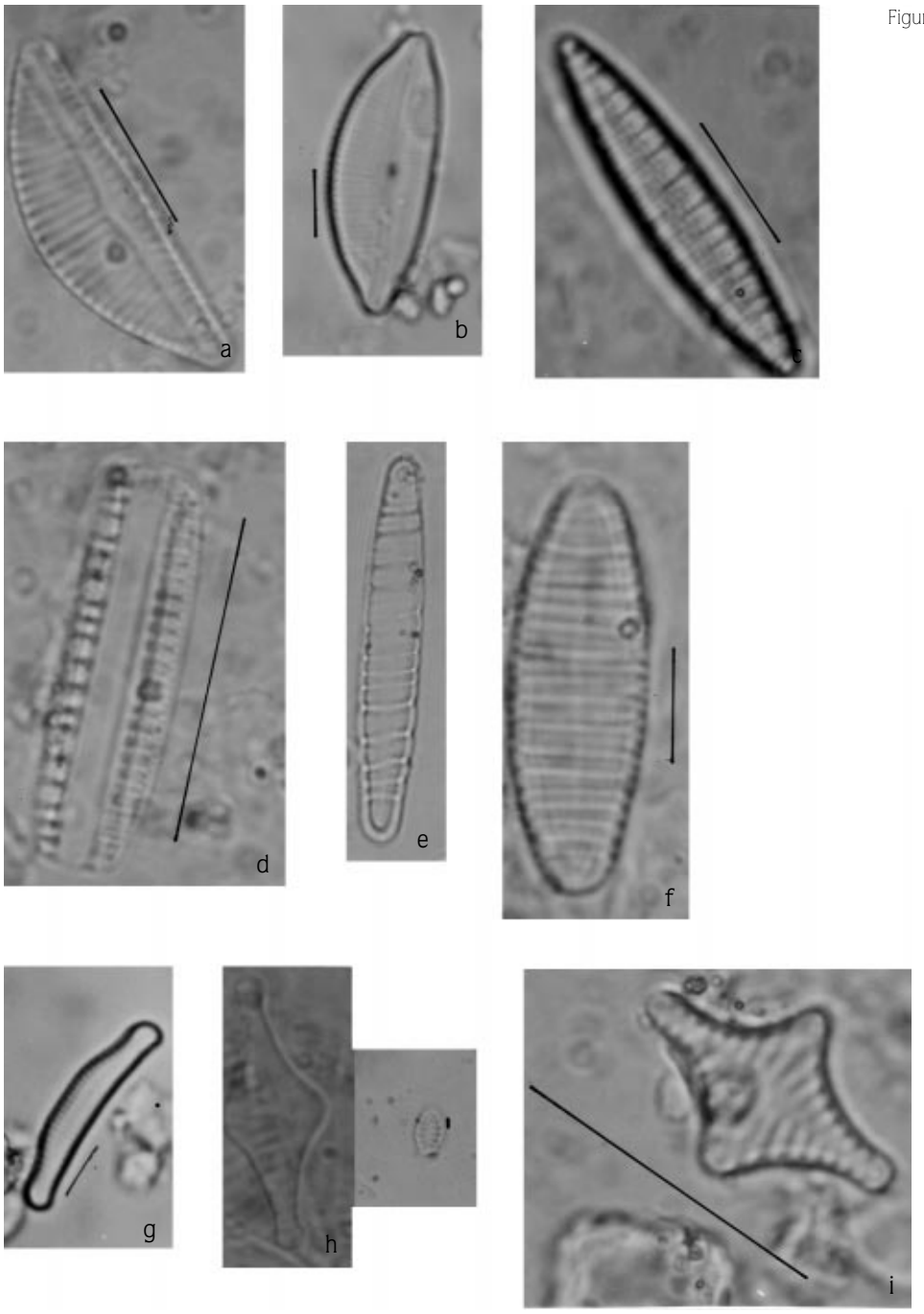

Figure 5. a. *Cymbella ventricosa* Kütz., b. *Cymbella sp.*, c. *Denticula elegans* Kütz., d. *Denticula tenuis* Kütz., e. *Diatoma hiemale* (Roth.) Heib., f. *Diatoma vulgare* Broy., g. *Eutonia arcus* Ehr., h. *Fragilaria contruens* (Ehr.) Grun., i. *Fragilaria harrissonii* W. Smith.

dorsal side and concave ventral side L: 70 µm, W: 19 µm (Figure 4.g.).

Cymbella cymbiformis (Agardh & Kütz) Van Heurk

Valve boat-shoped, with convex dorsal and straight ventral margin L: 70 µm, W: 12.5 µm (Figure 4.h.).

Cymbella prostrata (Berkeley) Cleve

Valve asymmetrical, half elliptical, with highly convex dorsal margin bluntly rounded at the apices L: 65 µm, W: 15 µm (Figure 4.i.).

Cymbella ventricosa Kütz.

Valve crescent-shaped with convex dorsal margin and weakly convex ventral margin, sharply rounded at the apices L: 26 µm, W: 9 µm (Figure 5.a.).

Cymbella sp.

Valve half elliptical with convex dorsal margin and

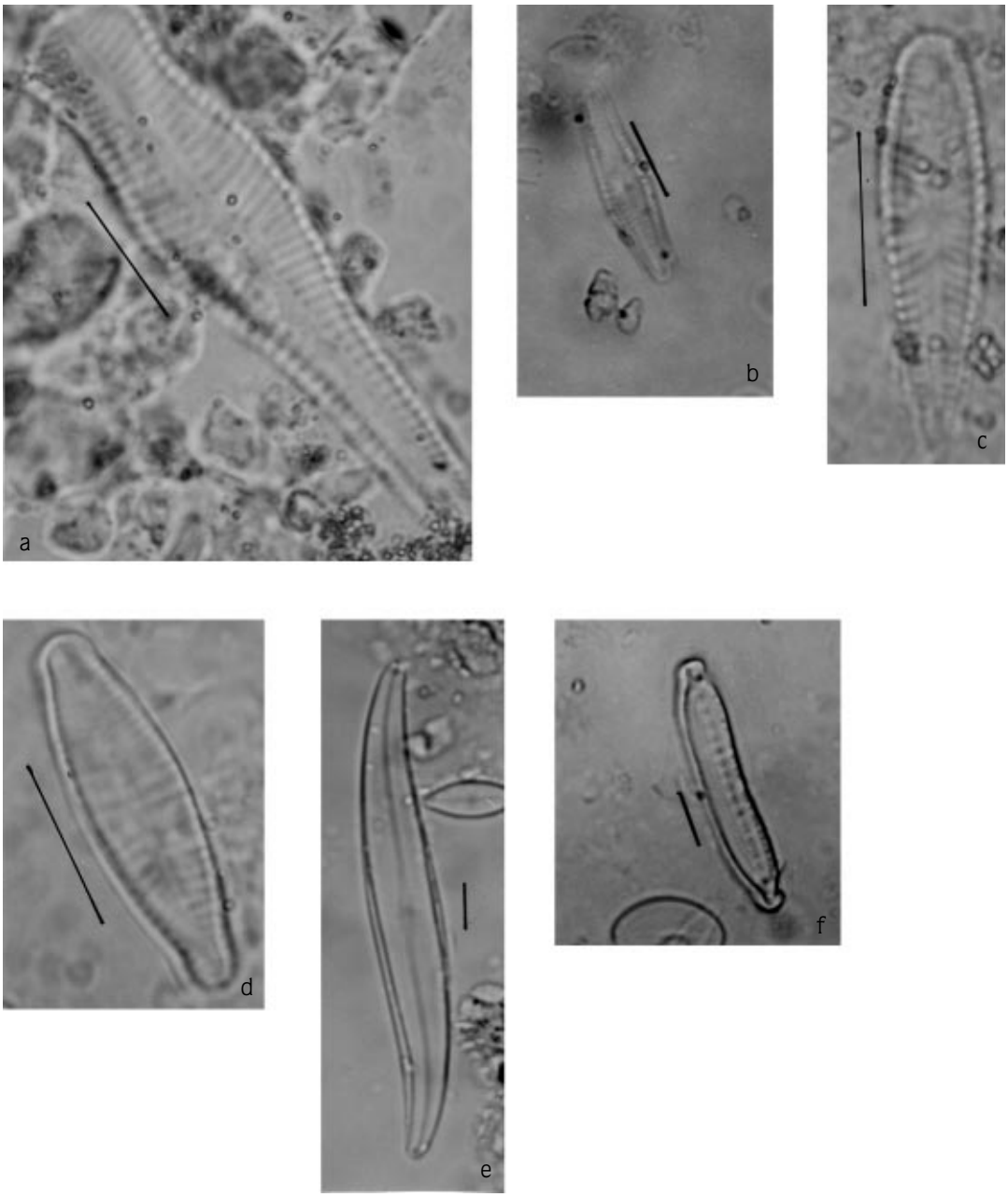

Figure 6. a. *Gomphonema constrictum* Ehr., b. *Gomphonema intricatum* Kütz., c. *Gomphonema olivaceum* (Lyngb.) Kütz., d. *Gomphonema parvulum* Kütz., e. *Gyrosigma attenatum* (Kütz.) Rabh., f. *Hantzschia amphioxys* (Ehr.) Grun.

convex ventral margin L: 50 µm, W: 20 µm (Figure 5.b.).

Denticula elegans Kütz.

Valve linear with slightly convex, bluntly rounded apices L: 30 µm, W: 5 µm (Figure 5.c.).

Denticula tenuis Kütz.

Valve narrow lanceolate with slightly widened middel and rounded apices L: 12.5 µm, W: 7 µm (Figure 5.d.).

Diatoma hiemale (Roth) Heib.

Valve linear lanceolate, decreasing in width from the middle towards the appices, broadly rounded to trimmed poles L: 50 µm, W: 10µm (Figure 5.e.).

Diatoma vulgare Broy.

Valve elliptical lanceolate with convex sides, bluntly rounded apices L: 40 µm, W: 10 µm (Figure 5.f.).

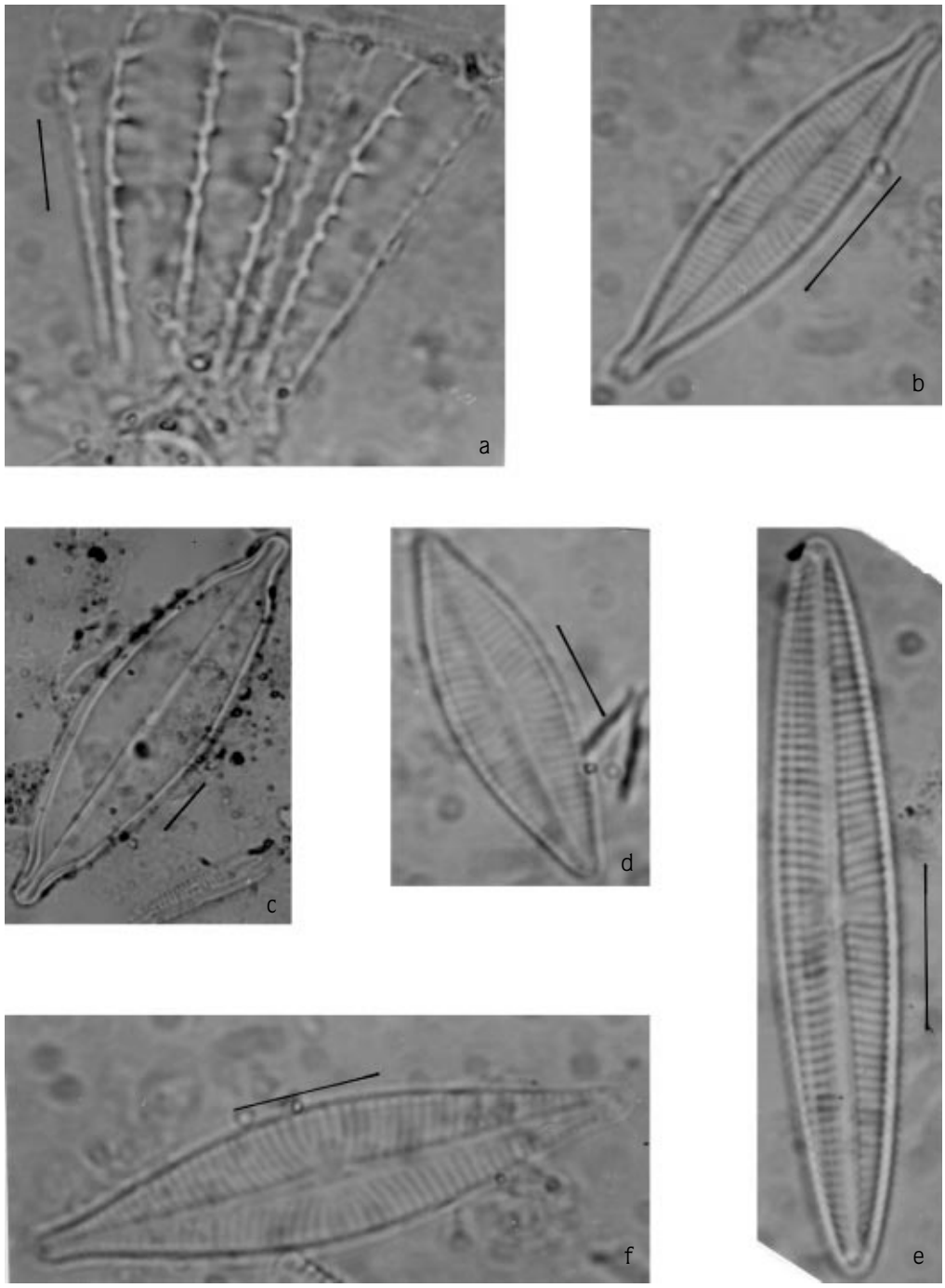

Figure 7. a. *Meridion circulare* Ag., b. *Navicula cryptocephala* Kütz., c. *Navicula cuspidata* Kütz., d. *Navicula lanceolata* (Ag.) Kütz., e. *Navicula radiosa* Kütz., f. *Navicula rhyncocephala* Kütz.

Eutonia arcus Ehr.

Frustules in girdle view rectangular. Ventral margin concave, dorsal margin convex L: 37.5 µm, W: 7.5 µm (Figure 5.g.).

Fragilaria contruens (Ehr.) Grun.

Valve convex transapical inflation in the middle, narrowed toward the apices, poles blunt L: 18.75 µm, W: 10 µm (Figure 5.h.).

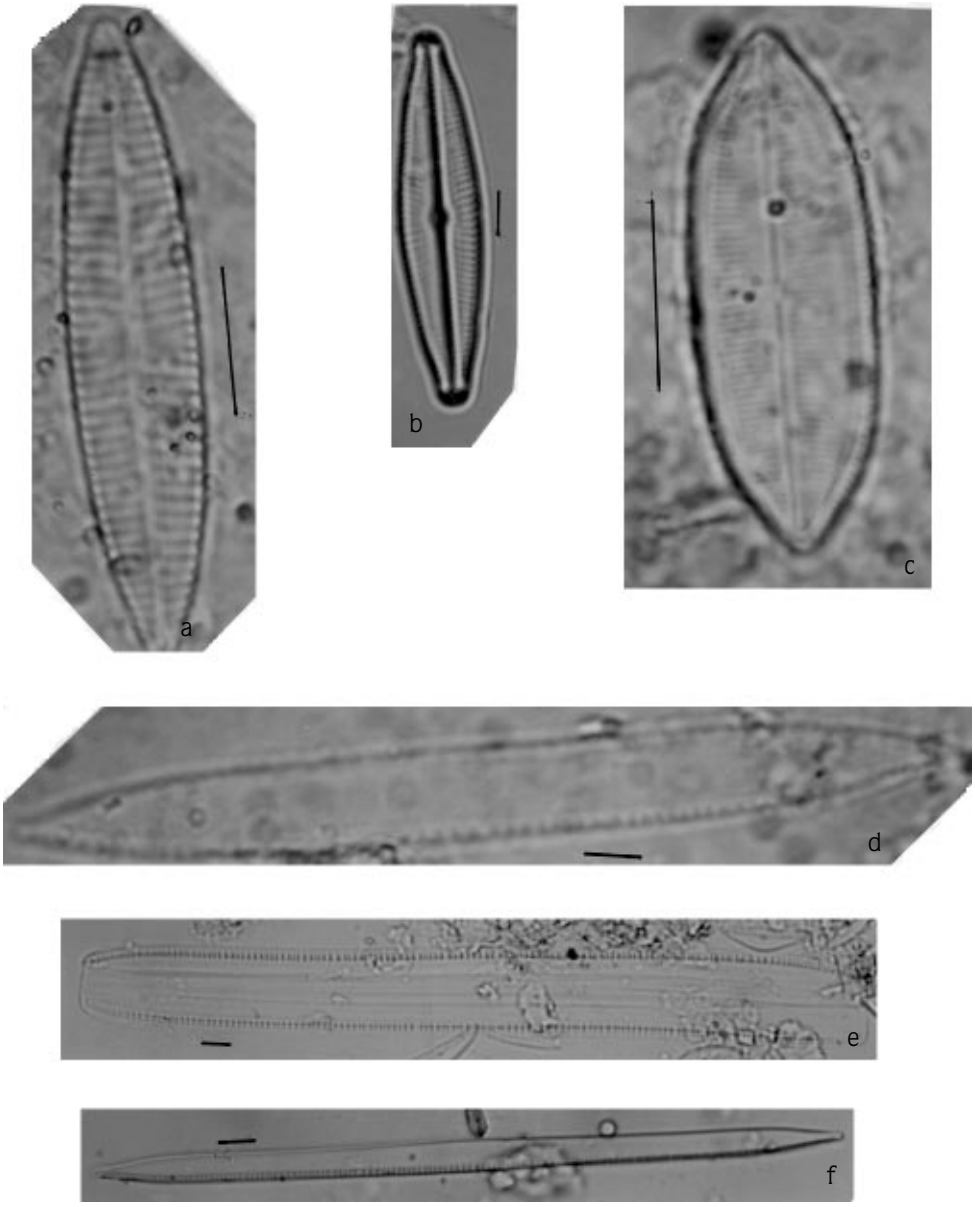

Figure 8. a. *Navicula tripunctata* (O.F. Müll.) Broy., b. *Navicula viridula* Kütz., c. *Neidium dubium* (Ehr.) Cleve., d. *Nitzschia gandersheimiensis* Krasske., e. *Nitzschia sigmoidea* (Ehr.) W. Smith., f. *Nitzschia sp.*

Fragilaria harrissonii W. Smith.

Valve rectangular in girdle view forming L: 10 µm, W: 20 µm (Figure.5.i.).

Gomphonema constrictum Ehr.

Valve club-shaped, with broad flatly rounded head pole and narrowed foot pole, strongly constricted underneath the head pole L: 45 µm, W: 10 µm (Figure 6.a.).

Gomphonema intricatum Kütz.

Valve linear club-shaped with bluntly rounded head pole and narrowed foot pole L: 26 µm, W: 8 µm (Figure 6.b.).

Gomphonema olivaceum (Lyngb.) Kütz.

Valve shaped like an egg-shaped club with rounded head pole and narrowed rounded foot pole L: 25 µm, W: 8 µm (Figure 6.c.).

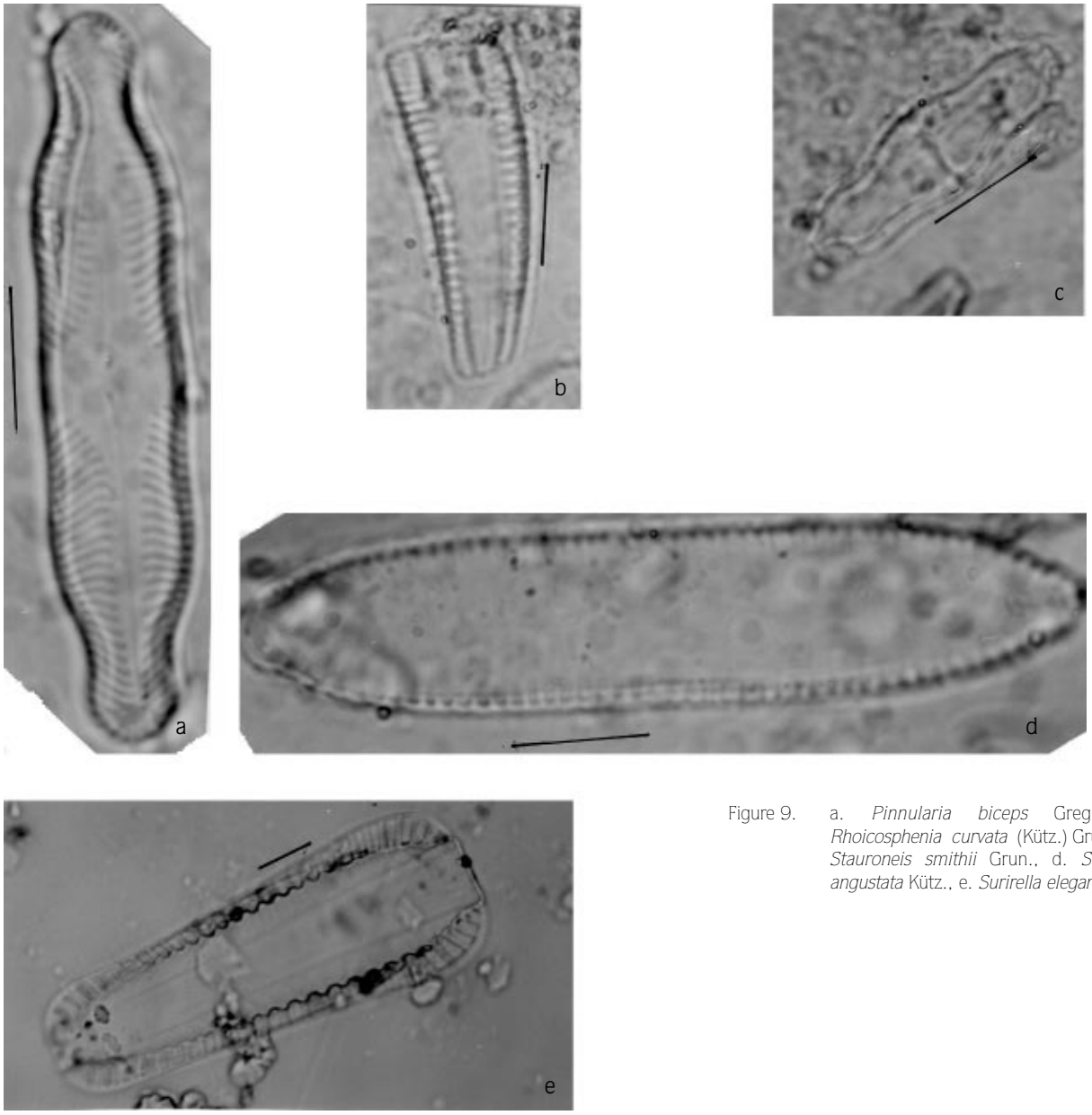

Figure 9. a. *Pinnularia biceps* Greg., b. *Rhoicosphenia curvata* (Kütz.) Grun., c. *Stauroneis smithii* Grun., d. *Surirella angustata* Kütz., e. *Surirella elegans* Ehr.

Comphonema parvulum Kütz.

Valve lanceolate club-shaped L: 22.5 µm, W: 5 µm (Figure 6.d.).

Gyrosigma attenatum (Kütz.) Rabh.

Valve bent into S shape, decreasing in width from the middle L: 95 µm, W: 12.5 µm (Figure 6.e.).

Hantzschia amphioxys (Ehr.) Grun.

Valve with concave ventral margin and convex dorsal margin, narrowed apices, L: 45 µm, W: 5 µm (Figure 6.f.).

Meridion circulare Agardh.

Valve rounded at the head pole, gradually narrowing toward foot L: 45 µm, W: 7.5 µm (Figure 7.a).

Navicula cryptocephala Kütz.

Valve lanceolate with globose capitate apices L: L: 32.5 µm, W: 10 µm (Figure 7.b).

Navicula cuspidata Kütz.

Valve lanceolate, gradually tapering toward acute, distinctly rostrate apices L: 82.5 µm, W: 25 µm (Figure7.c).

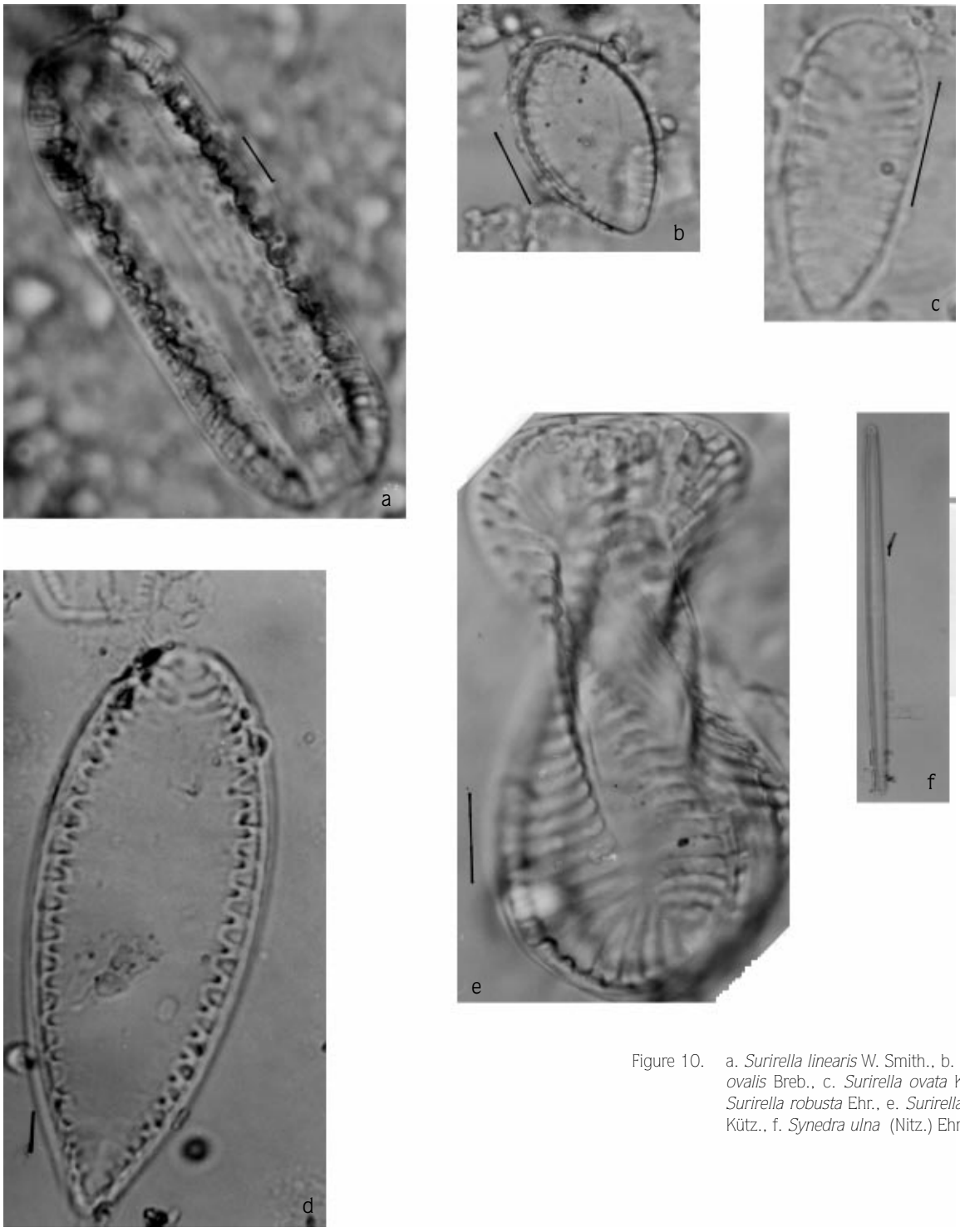

Figure 10. a. *Surirella linearis* W. Smith., b. *Surirella ovalis* Breb., c. *Surirella ovata* Kütz., d. *Surirella robusta* Ehr., e. *Surirella spiralis* Kütz., f. *Synedra ulna* (Nitz.) Ehr.

Navicula lanceolate (Ag.) Kütz.

Valve lanceolate, narrowed toward the apices L: 33 µm, W: 9 µm (Figure 7.d).

Navicula radiosa Kütz.

Valve linear lanceolate with acute rounded apices L: 43 µm, W: 10 µm (Figure 7.e).

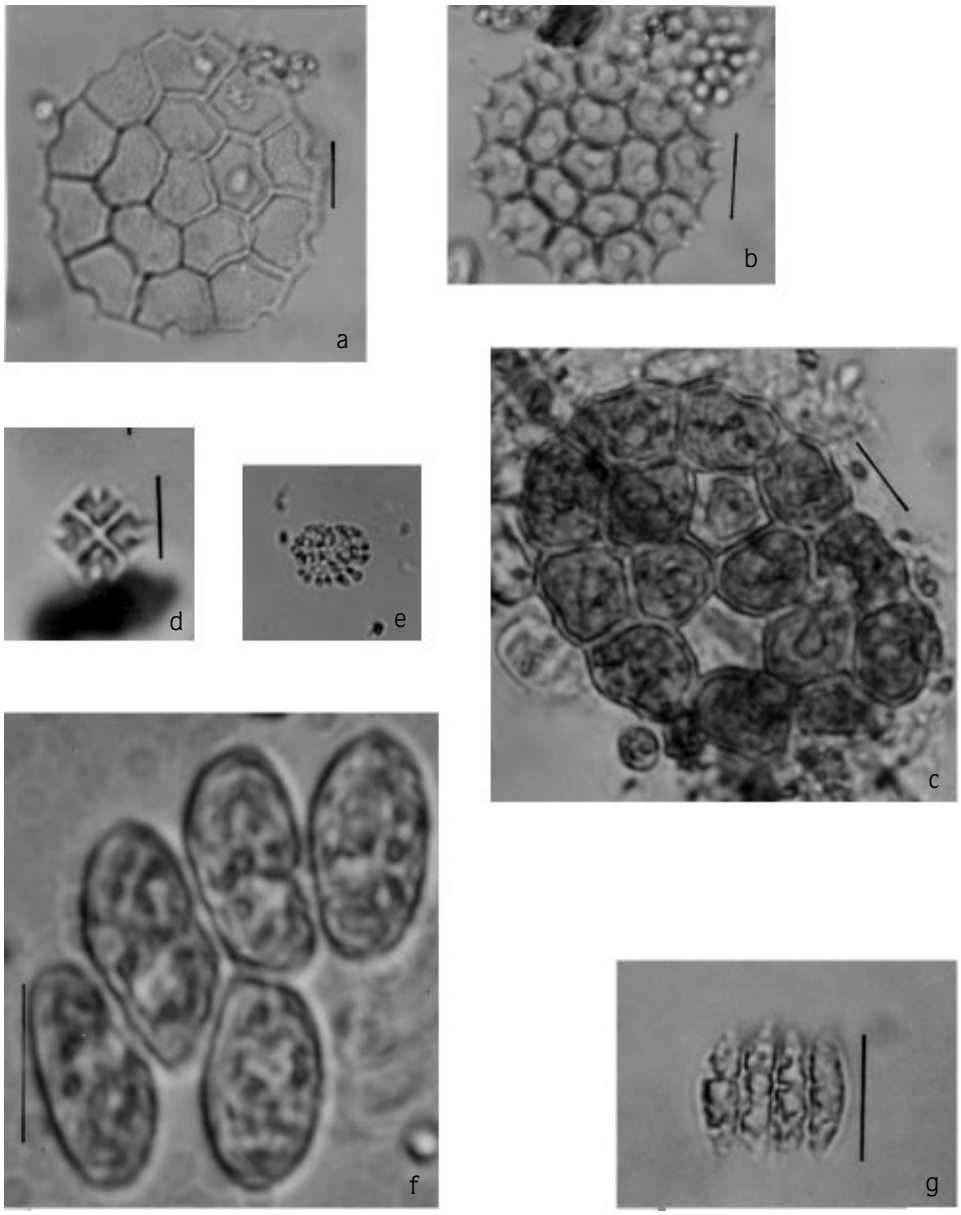

Figure 11. a. *Pediastrum boryanum* (Trup) Meneghini., b. *Pediastrum dublex* Meyen., c. *Pediastrum muticum* Kuetzing., d. *Pediastrum tetras* var. *tetraedron* (Corda) Rabenhorst, e. *Dictyosphaerium pulchellum* Wood., F. *Scenedesmus ecornis* (Ralfs.) Chod., g. *Scenedesmus sp.,*

Navicula rhyncocephala Kütz.

Valve lanceolate with protracted rostrate to capitate ends, L: 40 µm, W: 10 µm (Figure 7.f.).

Navicula tripunctata (O.F. Müll.) Broy.

Valve linear with obtuse rounded apices L: 43 µm, W: 10 µm (Figure 8.a).

Navicula viridula Kütz.

Valve linear lanceolate, narrowing to obtuse, rostrate apices L: 60 µm, W: 12.5 µm (Figure 8.b.).

Neidium dubium (Ehr.) Cleve.

Valve linear with convex sides and rostrate apices L: 27.5 µm, W: 10 µm (Figure 8.c.).

Nitzschia gandersheimiensis Krasske

Valve linear lanceolate with fairly blunt capitate apices L: 63 µm, W: 4 µm (Figure 8.d.).

Nitzschia sigmoidea (Ehr.) W. Smith.

Valve long canoe-shaped, narrow lanceolate narrowed wedge shaped L: 300 µm, W: 25 µm (Figure 8.e.).

Nitzschia sp.

Valve long canoe-shaped, fairly rounded apices L: 250 µm, W: 12.5 µm (Figure 8.f.).

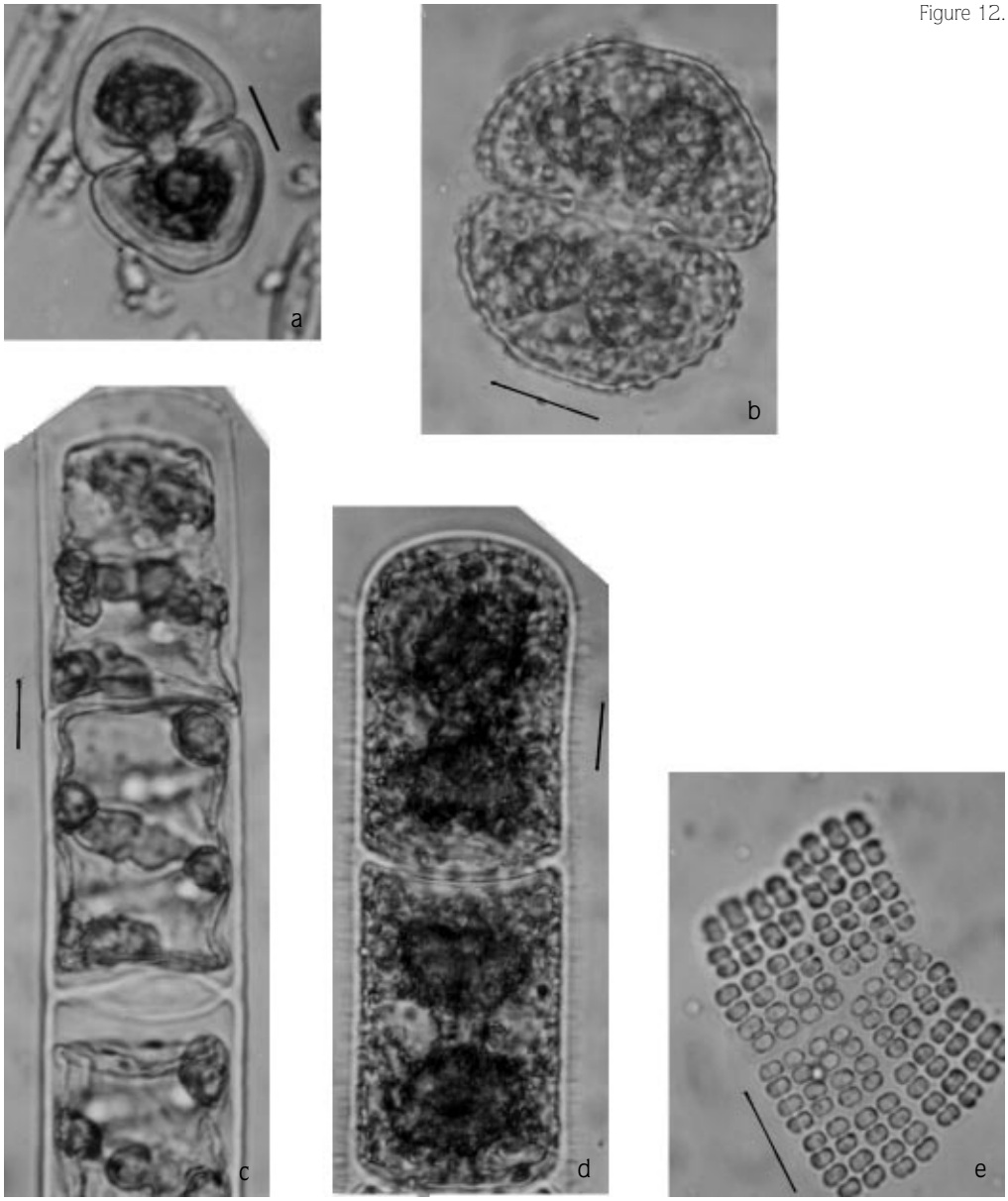

Figure 12. a. *Cosmarium granatum* Breb. Ralfs., b. *Cosmarium reniforme* (Ralfs.) Archer., c. *Spirogyra sp.*, d. *Zygnema sp.*, e. *Merismopedia punctata* Meyen.

Pinnularia biceps Greg.

Valve linear with distinctly capitate apices L: 47.5 µm, W: 10 µm (Figure 9.a.).

Rhoicosphenia curvata (Kütz.) Grun.

Valve linear lanceolate, clearly heteropolar to nearly isopolar L: 25 µm, W: 8 µm (Figure 9.b.).

Stauroneis smithii Grun.

Valve elliptical lanceolate with triundulate margins the centre undulation is the broadest L: 25 µm, W: 6 µm (Figure 9.c.).

Surirella angustata Kütz.

Valve linear with parallel margins and wedge-shaped, protracted apices L: 64 µm, W: 13 µm (Figure 9.d).

Surirella elegans Ehr.

Valve wedge-shaped with heteropolar apices, L: 85 µm, W: 30 µm (Figure 9.e.).

Surirella linearis W. Smith

Valve slightly convex sides and bluntly rounded, narrowed apices L: 112.5 µm, W: 37.5 µm (Figure 10.a.).

Surirella ovalis Breb.

Valve with heteropolar apical axis and wedge-shaped lanceolate with blunt narrow apices L: 27.5 µm, W: 10 µm (Figure 10.b.).

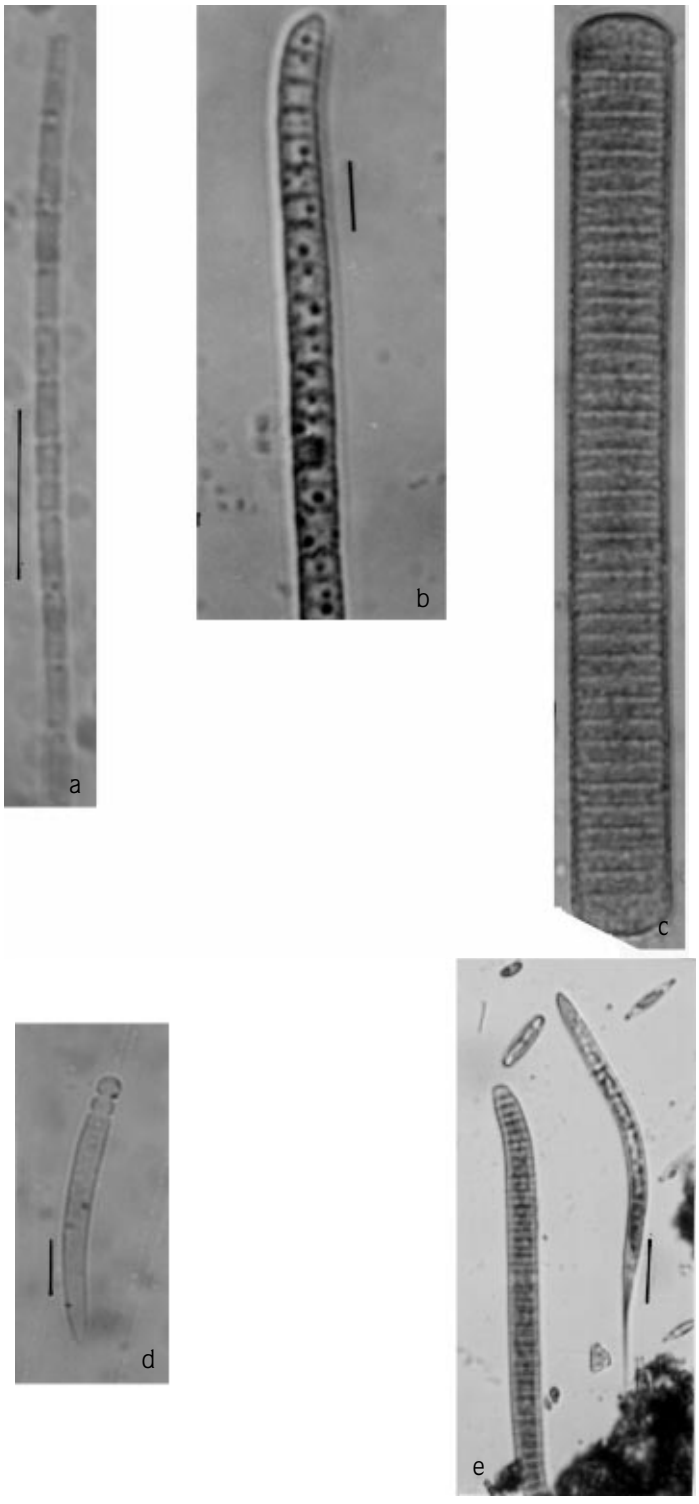

Figure 13. a. *Aphanizomenon sp.*, b. *Oscillatoria formosa* Broy. c. *Oscillatoria limosa* (Roth.) C.A.Agardh., d. *Calothrix sp.*, e. *Euglena acus* Ehr.

Surirella ovata Kütz.

Valve wider egg-shaped with bluntly rounded apices L: 27.5 µm, W: 10 µm (Figure 10.c.).

Surirella robusta Ehr.

Valve egg-shaped with bluntly rounded apices L: 125 µm, W: 42.5 µm (Figure 10.d.).

Surirella spiralis Kütz.

Valve linear elliptica with bluntly rounded wedge-shaped apices L: 105 µm, W: 40 µm (Figure 10.e.).

Synedra ulna (Nitz.) Ehr.

Valve linear gradually attenuated to the rostrate wedge-shaped L: 162.5 µm, W: 7.5 µm (Figure 10.f.).

Divisio: Chlorophyta

Classis: Chlorophyceae

Order: Chlorococcales

Pediastrum boryanum (Trup) Meneghini

Colony 16 celled, cells 5-6 sides with smooth or granular walls, L: 7.5 µm (Figure 11.a.).

Pediastrum dublex Meyen.

Colony 16 celled, there are lens-shaped spaces between the inner which are quadtrate, D.C: 10 µm (Figure 11.b.).

Pediastrum muticum Kuetzing

Colony 16 celled, inner cells 5 or 6 sides, peripheral cells with emarginate outer walls, L: 20 µm (Figure 11.c.).

Pediastrum tetras var. tetraedron (Corda) Rabenhorts

Colony 4 celled, outer margins of peripheral cells with deep incisions. Diameter of cell, D.C.: 7 µm (Figure 11.d.).

Dictyosphaerium pulchellum Wood.

Colony ovoid, composed nearly 32 spherical cells arranged in series of 4 branched thread, D.C: 3 µm (Figure 11.e).

Scenedesmus ecornis (Ralfs.) Chod.

Colony with 4-8 cells are extended in a smooth row, D.C.: 3.5 µm, L: 15 µm (Figure 11.f.).

Scenedesmus sp.

Colony with 4 cells are extended in a row, D.C.: 2.5 µm, L: 10 µm (Figure 11.g.).

Classis: Conjugatophyceae

Order: Desmidiales

Cosmarium granatum Breb. Ralfs.

Cells with convex margin, apical side elliptical and laterals ovate, D.C.: 15 µm, L: 30 µm (Figure 12.a).

Cosmarium reniforme (Ralfs.) Archer

Cells middle size, apical side elliptical and laterals convex, D.C.: 22 µm, L: 32.5 µm (Figure 12.b.).

Order : Zygnematales

Spirogyra sp.

Filaments slender, D.C: 40 µm, L: 75 µm (Figure 12.c.).

Zygnema sp.

Vegetative cells 37.5 µm in diameter, 55 µm long (Figure 12.d.).

Divisio: Cyanophyta

Classis: Cyanophyceae

Order: Chroococcales

Merismopedia punctata Meyen.

A rectangular plate, ussually arranged 4-8 ovate impact groups are separated within a broad gelatinous envelope D.C.: 2.5 µm (Figure 12.e).

Aphanizomenon sp.

Filamentous, united to fusiform bundles and flaked of parallel trichomes, Diameter of trichome 3 µm, Long of trichome 6 µm (Figure 13.a.).

Order: Hormogonales

Oscillatoria formosa Broy.

Trichomes aggregated straight and rather firm, curved and slightly tapering toward the apex D.C.: 4 µm, l: 5 µm (Figure 13.b.).

Oscillatoria limosa (Roth) C.A. Agardh

Straight, tapering towards the apex, apical cell rotund, outer membrane thickened, D.C.: 15 µm, L.: 5 µm (Figure 13.c.).

Calothrix sp.

Trichome is cylindrical, only apical region tapering, L: 45 µm (Figure 13.d.).

Divisio: Euglenophyta

Classis: Euglenophyceae

Order: Euglenales

Euglena acus Ehr.

Cells elongate spindle-shaped, produced posteriorly into a long, fine tapering point, narrowed and truncate at the anterior end, D.C: 14 µm, L.: 100 µm (Figure 13.e.).

Discussion

The development of large algal flora on the sediments of rivers, epipelic flora consisting of diatoms and attached specise of algae, generally consisting of diatoms (90 %) have been determined (9). In our study on algae flora in Aksu Stream the members of *Bacillariophyta* formed the majority with a ratio of 75 %. In Aksu Stream, in addition to the real epipelic species belonging to genera such as *Navicula* Broy., *Nitzschia* Hassal., *Surirella* Turpin., *Amphora* Ehr. and *Fragilaria* Lyngbye; *Cymbella affinis, Cymbella ventricosa, Denticula tenuis, Cocconeis pediculus* and *Synedra ulna* species which are epifitic and epilithic have been commonly found. This can be explained by the variety of habitats and the fast flow in the part of stream studied (10). The same situation has been observed in Meram Stream, Karasu River and Aras River (11, 4, 12). The species except *Denticula tenuis* have been commonly observed on sediments in studies on several streams in Turkey. Although *Denticula tenuis* has also been observed in other research (3, 13) it was commonly found on sediments in our study and this may have been the result of physical, chemical or geographical differences between the streams (Table 1). Except the diatoms *Oscillatoria limosa, O. formosa* and *Merismopedia punctata* belonging to *Cyanophyta* were generally found on sediments during the months when the research was carried out. *Cosmarium granatum, C. reniforme, Pediastrum dublex, Dictyosphaerium pulchellum* and *Scenedesmus ecornis* belonging to *Chlorophyta* and *Euglena acus* belonging to *Euglenophyta* were observed in varying numbers in different months of the year. In a study on sediments of Meram Stream, *Pediastrum dublex, Scenedesmus ecornis* and *Cosmarium granatum* belonging to the *Cholorphyta* and *Merismopedia punctata* species belonging to *Cyanophyta* were confirmed (11). On the sediments of İncesu Stream-Samsun *Euglena acus* belonging to *Euglenophyta* was commonly observed in certain months (14). On the sediments of Karasu River, species of *Oscillatoria limosa* and *O. formosa* were rarely found (4).

The species of *Cyanophyta, Euglenophyta* and *Chlorophyta* observed on the sediments of rivers and streams have been represented by different species in different studies (15, 16). In Aksu Stream, *Dictyosphaerium pulchellum* was confirmed in addition to the species identified by other researchers. The differences between different studies may be related to the interchangeability of ecological parameters.

Cyclotella meneghiniana, which is a species of centric diatoms, has been found in Çubuk River and Kızılırmak River (16, 17). In Karasu River it has been observed that *Cyclotella ocellata* is abundant (1). There are a small number of *C. ocellata* and *C. emenghiniana* in Aksu Stream as in Meram Stream (18). Centric diatoms usually live as plankton but they can exist in benthic habitats in some periods of their lives or when they die (16). In Aksu Stream there was a phytoplankton in which *Cymbella affinis, C. ventricosa, Synedra ulna, Cocconeis pediculus* and *C. placentula* species were dominant. These species have been found in Meram Stream, Aras River and Karasu River (18, 12, 1).

The flora of the algae in Aksu Stream varied between stations and months. Among the species taken from all the stations, species of *Cholorphyta, Cyanophyta* and *Euglenophyta* were found in larger numbers at the second, third and fourth stations than at the first station. In addition to the factors such as light, temperature and flow speed on the growth of algae, allochthonous effects were also important. The first and second stations are near trout farms and the fourth station is near an agricultural area.

The species found in our research and the results were generally consistent with other studies on stream in Turkey.

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