

The Algae flora in Tekirdağ – Istanbul coastline

Tekirdağ – İstanbul sahil şeridi alg florası

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Abstract

In this work 36 algae species were collected on the coastline between Tekirdağ and Istanbul. There were 12 Chlorophyceae, 10 Phaeophyceae and 14 Rhodophyceae amongst them. The algae were first determined in Sea of Marmara are: *Gigartina teedii*, *Cystoseira opuntioides*, *Lithothamnion lichenoides*, *Hildenbrandia prototypus*, *Rhodymenia corallicola*.

Keywords: Algae, Istanbul coastline, Sea of Marmara

Introduction

The first record on marine algae in Turkish coasts was made by Frischt (1895). This was followed by Handel – Mazetti (1909). Diratzuyan (1895) prepared a collection of algae in the region of

*M.Sc. thesis, I. Ü. Deniz Bilimleri ve Coğrafya Enst. 1992

Istanbul coastline and the Sea of Marmara Öztiğ (1971). A long time elapsed, then Öztiğ (1957), Karamanoğlu(1964), Zeybek (1969), Güven (1970), Güner (1970) and Çirik (1978) published papers on algae of Turkey.

Comprehensive literature was gathered on the algae collected in Turkish coasts. The findings were summarized by Güven and Öztiğ (1971), Zeybek *et. al.* (1986), Güven *et. al.*(1991).

The algae of the Sea of Marmara was studied by numerous teams of workers supervised by Ayten during 1986-1996.

In this paper a list is given for the algae collected in the Sea of Marmara between 1991 and 1992.

Materials and Methods

The sampling stations are shown in the map (Figure 1.)

The algae were collected, at 0 –5 m depth in coastal areas between Tekirdağ – İstanbul coast.

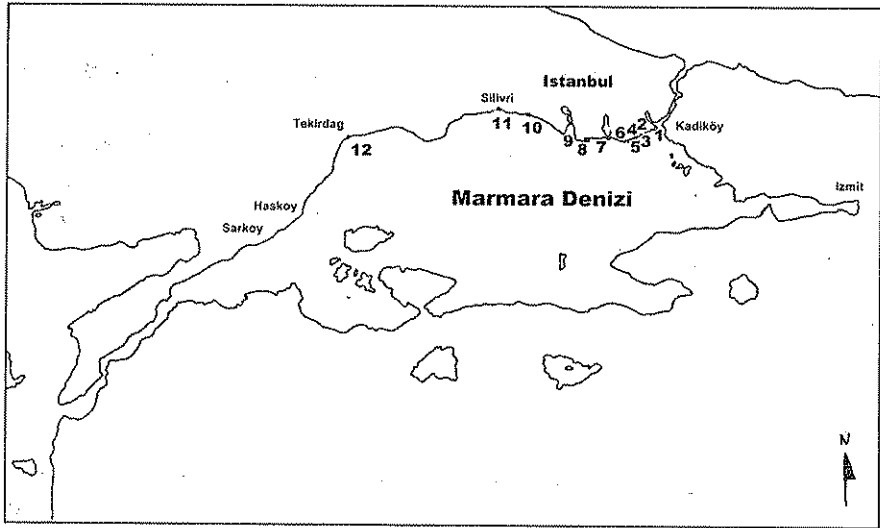


Figure 1. Sampling stations: 1. Sarayburnu, 2. Ahırkapı Feneri, 3. Balık hali, 4. Kocamustafapaşa, 5. Bakırköy, 6. Yeşilköy, 7. Küçükçekmece, 8. Ambarlı, 9. Büyükçekmece, 10. Celaliye, 11. Silivri, 12. Tekirdağ.

Results and Discussion

The algae collected are tabulated in Table 1.

The algae determined earlier in the Sea of Marmara are listed in Table 2.

The algae determined by other workers in the same area are given in Table 3.

Table 1. The algae collected in this study

Station 1: Sarayburnu

Scytosiphon lomentaria (Lyngb.) Link
Enteromorpha linza (Linnaeus) J. Agardh
Enteromorpha intestinalis (Linnaeus) Link
Ceramium rubrum (Hudson) C.A. Agardh
Ulva lactuca Linnaeus
Cladophora rupestris Kütz
Callithamnion corymbosum (Smith) Lyngbye
Rhodymenia corallicola Ardisson
Laurencia obtusa (Hudson) Lamouroux
Gelidium latifolium (Grev) Thur & Born
Lithothamnion lichenoides Foslie
Bryopsis balbisana Lamouroux
Ceramium diaphanum (Lohtf) Roth

Station 2: Ahırkapı Feneri

Ulva lactuca Linnaeus
Ceramium rubrum (Hudson) C. A. Agardh
Enteromorpha intestinalis (Linnaeus) Link
Enteromorpha linza (Linnaeus) J. Agardh
Cystoseira opuntioides Bory
Ceramium diaphanum (Lohtf) Roth

Station 3: Balık Hali

Ulva lactuca Linnaeus
Ceramium rubrum (Hudson) C: A. Agardh
Enteromorpha intestinalis (Linnaeus) Link
Enteromorpha linza (Linnaeus) J. Agardh
Ceramium diaphanum (Lohtf) Roth

Station 4: Kocamustafapaşa

Ulva lactuca Linnaeus
Ceramium rubrum (Hudson) C. A. Agardh
Enteromorpha linza (Linnaeus) J. Agardh

Station 5: Bakırköy

Ulva lactuca Linnaeus
Ceramium rubrum (Hudson) C. A. Agardh
Enteromorpha linza (Linnaeus) J. Agardh
Enteromorpha intestinalis (Linnaeus) Link

Cladophora rupestris Kütz
Bryopsis balbisana Lamouroux

Station 6: Yeşilköy Çiroz Plajı

Ulva lactuca Linnaeus
Ceramium rubrum (Hudson) C. A. Agardh
Callithamnion corymbosum (Smith) Lyngbye
Cladophora rupestris Kütz
Bryopsis balbisana Lamouroux
Cystoseira discors (L.) C. A. Ag.
Enteromorpha compressa (Linnaeus) Greville
Enteromorpha intestinalis (Linnaeus) Link
Enteromorpha linza (Linnaeus) J. Agardh
Cystoseira barbata J. Ag.
Chaetomorpha aerea (Dkw) Kütz
Codium tomentosum Stackhouse

Station 7: Küçük Çekmece

Ceramium rubrum (Hudson) C. A. Ag.
Enteromorpha linza (Linnaeus) J. Ag.
Enteromorpha intestinalis (Linnaeus) Link
Ulva lactuca Linnaeus

Station 8: Ambarlı

Codium tomentosum Stackhouse
Ulva lactuca Linnaeus
Ceramium rubrum (Hudson) C. A. Ag.
Enteromorpha linza (Linnaeus) J. Ag.
Cladophora rupestris Kütz
Sphaceiaria cirrosa (Roth) C. A. Ag.

Station 9: Büyükçekmece

Codium tomentosum Stackhouse
Ulva lactuca Linnaeus
Ceramium rubrum (Hudson) C. A. Ag.
Enteromorpha linza (Linnaeus) J. Ag.
Enteromorpha intestinalis (Linnaeus) Link
Nitophyllum punctatum (Stackhouse) Greville
Cladophora rupestris Kütz.
Cystoseira barbata J. Ag.
Cystoseira discors (L.) C. A. Ag.

Station 10: Celaliye

Corallina mediterranea Aresch
Cystoseira crinita (Desf.) Duby.
Cystoseira fimbriata (Desf.) Bory
Cystoseira barbata J. Ag.

Enteromorpha linza (Linnaeus) J. Ag.
Enteromorpha intestinalis (Linnaeus) Link
Ulva lactuca Linnaeus
Codium tomentosum Stackhouse
Ceramium rubrum (Hudson) C. A. Ag.
Cladophora prolifera (Roth) Kützing

Station 11: Silivri

Codium tomentosum Stackhouse
Ulva lactuca Linnaeus
Enteromorpha linza (Linnaeus) J. Ag.
Enteromorpha intestinalis (Linnaeus) Link
Enteromorpha compressa (Linnaeus) Greville
Ceramium rubrum (Hudson) C. A. Agardh
Ceramium diaphanum (Lohtf) Roth
Cladophora rupestris Kütz
Corallina mediterranea Aresch
Cystoseira discors (L.) C. Ag.
Bryopsis balbisana (Lamouroux)
Gigartina teedii (Rorth) Lamourox

Station 12: Tekirdağ

Enteromorpha linza (Linnaeus) J. Agardh
Enteromorpha intestinalis (Linnaeus) Link
Enteromorpha compressa (Linnaeus) Greville
Ulva lactuca Linnaeus
Codium tomentosum Stackhouse
Callithamnion corymbosum (Smith) Lyngbye
Corallina mediterranea Aresch
Ceramium rubrum (Hudson) C. A. Agardh
Cystoseira barbata J. Ag.
Codium dichotomum (Hudson) Setschell
Padina pavonia Gaillon
Cladostephus verticillatus (Lightf) C. Ag.
Phyllophora nervosa (D. C.) Greville
Hildenbrandia prototypus Nardo
Gracilaria verrucosa (Hudson) Papenfus
Dictyota dichotoma (Hudson) Lam.
Ceramium diaphanum (Lohtf) Roth
Gelidium latifolium (Greville) Thur & Born
Gigartina teedii (Roth) Lam.

Table 2. The algae detected in Sea of Marmara through by Güven and Öztüğ (1970), Zeybek et al., (1986) and Güven et al., (1991).

Enteromorpha linza (Linnaeus) J. Agardh
Enteromorpha intestinalis (Linnaeus) Link
Enteromorpha compressa (Linnaeus) Greville

Ulva lactuca Linnaeus
Cladophora prolifera (Roth) Kützing
Cladophora rupestris Kütz
Chaetomorpha aerea (Dkw) Kütz
Bryopsis balbisana (Lamouroux)
Codium tomentosum Stackhouse
Codium dichotomum (Hudson) Setschell
Cystoseira barbata J. Ag.
Cystoseira crinita (Desf.) Duby.
Cystoseira discors (L.) C. Ag.
Cystoseira fimbriata (Desf.) Bory
Scytosiphon lomentaria (Lyngb.) Link
Sphaceiaria cirrosa (Roth) C. A. Ag.
Padina pavonia Gaillon
Cladostephus verticillatus (Lightf) C. Ag.

Phyllophora nervosa (D. C.) Greville
Dictyota dichotoma (Hudson) Lam.
Callithamnion corymbosum (Smith) Lyngbye
Ceramium rubrum (Hudson) C. A. Agardh
Ceramium diaphanum (Lohtf) Roth
Nitophyllum punctatum (Stackhouse) Greville
Corallina mediterranea Aresch
Gelidium latifolium (Greville) Thur & Born
Laurencia obtusa (Hudson) Lamouroux
Gracilaria verrucosa (Hudson) Papenfus

Table 3a. The algae detected by Ünal (1970) and present study (1992) in Büyükçekmece region:

Ünal's study(1970)	Present study (1992)
<i>Sargassum linifolium</i>	<i>Codium tomentosum</i> <i>Ulva lactuca</i> <i>Ceramium rubrum</i> <i>Enteromorpha linza</i> <i>Enteromorpha intestinalis</i> <i>Nitophyllum punctatum</i> <i>Cladophora rupestris</i> <i>Cystoseira barbata</i> <i>Cystoseira discors</i>

Table 3b. Silivri:

Ünal's study(1970)	Present study (1992)
<i>Cladophora Pellucida</i> <i>Bryopsis balbisana</i> <i>Bryopsis plumosa</i> <i>Laurencia papillosa</i> <i>Chaetomorpha linum.</i>	<i>Ulva lactuca</i> <i>Enteromorpha linza</i> <i>Enteromorpha intestinalis</i> <i>Enteromorpha compressa</i> <i>Ceramium rubrum</i> <i>Ceramium diaphanum</i> <i>Codium tomentosum</i> <i>Cladophora rupestris</i> <i>Corallina mediterranea</i> <i>Cystoseira barbata</i> <i>Cystoseira discors</i> <i>Bryopsis balbisana</i> <i>Gigartina teedii.</i>

Table 3c. Tekirdağ:

Ünal's study(1970)	Present study (1992)
<i>Cystoseira crinita</i>	<i>Enteromorpha linza</i>
<i>Cladophora prolifera</i>	<i>Enteromorpha intestinalis</i>
<i>Cladophora utriculosa</i>	<i>Enteromorpha compressa</i>
<i>Codium effesum</i>	<i>Ulva lactuca</i>
<i>Codium tomentosum</i>	<i>Callithamnion corymbosum</i>
<i>Sargassum linifolium</i>	<i>Codium tomentosum</i>
<i>Cystoseira corniculata</i>	<i>Corallina mediterraneo</i>
	<i>Ceramium rubrum</i>
	<i>Cystoseira barbata</i>
	<i>Codium dichotomum</i>
	<i>Padina pavonia</i>
	<i>Cladostephus verticillatus</i>
	<i>Phyllophora nervosa</i>
	<i>Hildenbrandia prototypus</i>
	<i>Gracilaria verrucosa</i>
	<i>Dictyota dichotoma</i>
	<i>Ceramium diaphanum</i>
	<i>Gelidium latifolium</i>
	<i>Gigartina teedii</i> .

Table 3d. The algae detected by Güner (1974) and present study (1992) in Bakırköy and Yeşilköy region:

Güner's study (1974)	present study (1992)
<i>Enteromorpha crinita</i>	<i>Enteromorpha linza</i>
<i>Cladostephus verticillatus</i>	<i>Ulva lactuca</i>
<i>Cystoseria compressa</i>	<i>Ceramium rubrum</i>
<i>Ectocerphus confervoides</i>	<i>Callithamnion corymbosum</i>
<i>Sphacelaria cirrosa</i>	<i>Cladophora rupestris</i>
<i>Strioria lomentaria</i>	<i>Bryopsis balbisana</i>
<i>Bangia atropurpurea</i>	<i>Cystoseira discors</i>
<i>Porphyra leucosticta</i>	<i>Enteromorpha compressa</i>
<i>Ceramium elegans</i>	<i>Cystoseira barbata</i>
<i>Polysiphonia elongata</i>	<i>Chaetomorpha aerea</i>
<i>Enteromorpha intestinalis</i>	<i>Codium tomentosum</i>
<i>Ulva lactuca</i>	
<i>Cystoseira barbata</i>	
<i>Ceramium rubrum</i>	
<i>Callithamnion corymbosum</i>	

Table 3e. The algae detected by Kuntasal (1991) and present study (1992) in Tekirdağ region:

Kuntasal's study (1991)	present study (1992)
<i>Chaetomorpha sp</i>	<i>Enteromorpha linza</i>
<i>Codium fragile</i>	<i>Enteromorpha intestinalis</i>
<i>Codium sp</i>	<i>Enteromorpha compressa</i>
<i>Ulva lactuca</i>	<i>Ulva lactuca</i>
<i>Valonia utricularis</i>	<i>Callithamnion corymbosum</i>
<i>Cladophora pellucida</i>	<i>Codium tomentosum</i>
<i>Enteromorpha linza</i>	<i>Corallina mediterranea</i>
<i>Enteromorpha intestinalis</i>	<i>Ceramium rubrum</i>
<i>Bryopsis sp</i>	<i>Cystoseira barbata</i>
<i>Dictyota dichotoma</i>	<i>Codium dichotomum</i>
<i>Sargassum vulgare</i>	<i>Padina pavonia</i>
<i>Cladostephus verticillatus</i>	<i>Cladostephus verticillatus</i>
<i>Ectocarpus sp</i>	<i>Phyllophora nervosa</i>
<i>Sargassum sp</i>	<i>Hildenbrandia prototypus</i>
<i>Cystoseira sp</i>	<i>Gracilaria verrucosa</i>
<i>Cystoseira barbata</i>	<i>Dictyota dichotoma</i>
<i>Padina povonia</i>	<i>Ceramium diaphanum</i>
<i>Corallina mediterranea</i>	<i>Gelidium latifolium</i>
<i>Peyssonnelia squamaria</i>	<i>Gigartina teedii</i>
<i>Halymenia sp</i>	
<i>Lithophyllum sp</i>	
<i>Pseudolithophyllum expansum</i>	
<i>Nitophyllum punctatum</i>	
<i>Amphiroa rigida</i>	
<i>Phyllophora nervosa</i>	
<i>Cryptonemia lomotion</i>	
<i>Nemastoma dichotoma</i>	
<i>Jania rubens</i>	

In the table above are tabulated the algae which have been found by Ünal in the same region. The algae which we detected are also shown in the same table. Thus the algae which we detected in this work, are in Silivri region: *Ulva lactuca*, *Enteromorpha linza*, *Enteromorpha intestinalis*, *Enteromorpha compressa*, *Ceramium rubrum*, *Ceramium diaphanum*, *Codium tomentosum*, *Cladophora rupestris*, *Corallina mediterranea*, *Cystoseira barbata*, *Cystoseira discors*, *Gigartina teedii*.

in Tekirdağ region: *Enteromorpha compressa*, *Callithamnion corymbosum*, *Ceramium rubrum*, *Codium dichotomum*, *Hildenbrandia prototypus*, *Gracilaria verrucosa*, *Ceramium diaphanum*, *Gelidium latifolium*, *Gigartina teedii*

in Büyükçekmece region: *Codium tomentosum*, *Ulva lactuca*, *Ceramium rubrum*, *Enteromorpha linza*, *Enteromorpha intestinalis*, *Nitophyllum punctatum*, *Cladophora rupestris*, *Cystoseira barbata*, *Cystoseira discors*

in Bakırköy and Yeşilköy region: *Enteromorpha linza*, *Cladophora rupestris*, *Bryopsis balbisana*, *Cystoseira discors*, *Enteromorpha compressa*, *Chaetomorpha aerea*, *Codium tomentosum*

The algae was not detected before our study in the coast of Sea of Marmara: *Gigartina teedii* (Roth) Lam.

Cystoseira opuntioides Bory

Lithothamnion lichenoides Foslie

Hildenbrandia prototypus Nardo

Rhodomenia corallicola Ardisson

Özet

Bu çalışmada İstanbul Tekirdağ sahil şeridinde 1992 yılında yapılan alg çalışması sonuçları verilmiştir. Toplam 36 alg türü saptanmıştır. Bunlardan 12'si Chlorophyceae, 10'u Phaeophyceae ve 4'ü Rhodophyceae'ye aittir.

Bu dönemde Marmara'da ilk defa bulunan algler *Gigartina teedii*, *Cystoseira opuntioides*, *Lithothamnion lichenoides*, *Hildenbrandia prototypus*, *Rhodomenia corallicola*'dır.

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Received 10.09.2000

Accepted 01.01.2001