

Preliminary Studies on The Marine Vegetation of Northern Cyprus *

Kuzey Kıbrıs'ın Deniz Bitkileri Üzerine Notlar

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Abstract

These preliminary studies were mainly carried out on the marine vegetation of the upper littoral zone of northern Cyprus. A total of 151 taxa (Cyanophyceae 11, Rhodophyceae 83, Fucophyceae 27, Chlorophyceae 25, Liliopsida 5) were determined.

Key words: Marine vegetation, algae, northern Cyprus.

Introduction

Lack of knowledge on the diversity, abundance and distribution of the living resources of a region seriously impedes the sound management and production of these resources. The information regarding marine vegetations of the Eastern Mediterranean coast of Turkey (Aysel, 1996 a,

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b; Cirik, 1991; Cirik and Öztürk, 1991; Gallardo *et al.*, 1993; Güven *et al.*, 1991; Ribera *et al.*, 1992; Zeybek *et al.*, 1986) and the living resources along the coast of the Northern Cyprus (Lipkin, 1975; Nechama and Payiatis, 1999; Russo, 1997) is rather limited due to the scarce studies carried out in the region. In order to increase our knowledge on the living resources of the northern Cyprus, recently two research surveys were conducted with R/V K. Piri Reis in spring 1997 and summer 1998 (Benli *et al.*, 1999). These surveys aimed to determine mainly the diversity, abundance and distribution of the marine plants and animals along the coast of the northern Cyprus Turkish Republic, and also to monitor the basic oceanographic parameters influencing the organisms living in the region.

This paper is a preliminary contribution to the knowledge on the diversity of the marine plants of the northern Cyprus, and it is based on the data collected during the recent cruises.

Material and Methods

Plant material for this study were collected during two research surveys conducted in this region with R/V K. Piri Reis operated by the Institute of Marine Sciences and Technology of Dokuz Eylül University. The first survey was carried out in spring 1997 (8-20 May 1997) and the second in summer 1998 (10-22 July 1998). Collection of plant material was performed in 12 coastal stations (Figure 1) mainly by skin and SCUBA divers down to the 12 meters depth. Plant samples from the deeper waters were collected with dredging and grabbing equipment in addition to bottom and beam trawls. The material was preserved in the field and later examined and determined in the laboratory.

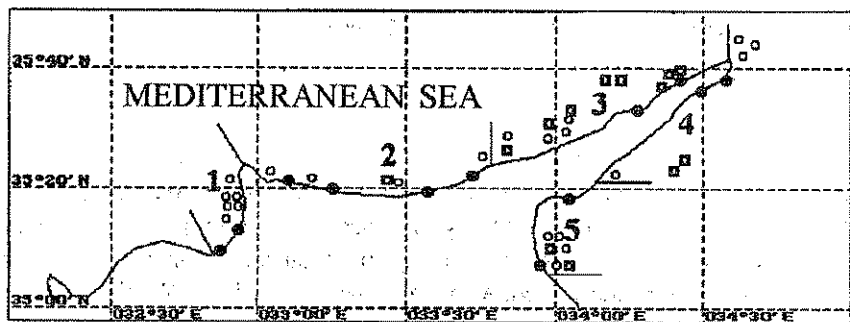


Fig.1. Sampling stations of northern Cyprus (KKTC)

Basic oceanographic parameters and also nutrients were measured in 38 offshore stations.

Results

A total of 151 marine plant species have been determined from the samples collected along the coast of the Northern Cyprus (Table 1). The species list is presented in Table 1. Blue-green (Cyanophyceae), red (Rhodophyceae), brown (Fucophyceae) and green algae (Chlorophyceae) are represented with 84, 11, 27 and 25 species, respectively. The list also includes 4 seagrasses (Liliopsida) species. The number of species is expected to increase with additional surveys to cover the other seasons. An inspection of Table 1 reveals that the proportion of the species of tropical and indo-pacific origin is fairly high. According to the literature, more than 300 hundred species, which are also called as lessepsian migrants, are known to enter the Mediterranean Sea especially after the opening of the Suez Channel (Unep, 1998; Cirik and Cirik, 1995; Aleem, 1992; Den Hartog, 1972; Lipkin, 1975). These invasions caused considerable changes in the composition of native species in the eastern Mediterranean Sea (Benli, et al. 1999, Por 1971). Further investigations will be conducted on these lessepsian plant species such as *Stypopodium schimperi*, *Caulerpa racemosa* and *Halophila stipulacea*.

Table 1. List of determined vegetations from Northern Cyprus

CYANOPHYTA

CYANOPHYCEAE

HORMOGONALES

RIVULARIACEAE

Calothrix clavata G.S.West,

C. parietina (Naegeli) Thur.

C. scopulorum (Web. et Mohr.)

C. Ag.

OSCILLATORIACEAE

Hydrocoleum lyngbyaceum Kütz.

Lyngbya adriae Ercégovic

L. baculum Gom.

L. lagerheimii (Möbius) Gom.

L. confervoides C.Ag.

Phormidium tenue (Menegh.)

Gomont.

Symploca hydroides Kütz.

S. muscorum Gom.

RHODOPHYTA

RHODOPHYCEAE

BANGIOPHYCIDAE

PORPHYRIDIALES

GONIOTRICHACEAE

Chroodactylon ornatum (C. Ag.)
Basson ; (*C. ramosum* (Thwait.
in Harv.) Hansg., *in South*
Asterocystis ornata (C. Ag.)
Hamel, *A. ramosa* (Thwait.
in Harv.) Gobi *Stylonema alsidii*
(Zanard.) Drew (= *Goniotricum*
alsidii (Zanard.) Howe, *G.*
elegans (Chauv.) Le Jolis,

BANGIALES

ERYTHROPELTIDACEAE

Erythrotricia carnea (Dilliw.)
J. Ag. (= *E. ceramicola* (Lyngb.)
Aresch., *E. bertholdii* Batt., *E.*
investiens (Zanard.) Born., *E.*
obscura Bert., *E. reflexa* (Cr.)
Thur., *E. biseriata*, *E. ciliaris*
(Carm. *ex Harv. in Hook.*) Thur.
in Le Jolis, *E. rhizoidea* Cle.

ACROCHAETIALES,

ACROCHAETIACEAE

Audouinella mediterranea
(Levring) Woelk. (= *Acrochaetium*
mediterraneum (Levring) Boud.)

NEMALIONALES,

HELMINTHOCLADIACEAE

Liagora farinosa Lam.
L. viscida (Forssk.) C. Ag.

CHAETANGIACEAE,

Galaxaura cylindrica (Ellis *et*
Sol.) Kjelm. *G. oblongata* (Ellis
et Sol.) Lam. (= *G. fastigiata*
Dec., *G. fragilis* Lamarck *et*
Dec., *ricleocarpa oblongata*
Huisman *et* Borowitzka

GELIDIALES

GELIDIACEAE

Gelidiella lubrica (Kütz.)
J. Feldm. *et* Hamel *G. pannosa*
(Born. *ex Feldm.*) Feld. *et*
Hamel *Gelidium melanoideum*
Schousb. *ex Born.* var.
melanoideum G. pusillum
(Stackh.) Le Jolis var. *pusillum*
Pterocladia capillacea (Gmel.)
Born. *in Born. et Thur.* (= *P.*
pinnata (Huds.) Papenf.,
Gelidium capillaceum (Gmel.)
Kütz.

GIGARTINALES

CALOSIPHONIACEAE

Calosiphonia vermicularis (J.
Ag.) Schmitz

NEMASTOMACEAE

Platoma cyclocalpa (Mont.)
Schmitz

HYPNEACEAE

Hypnea musciformis (Wulf. *in*
Jaquin) Lam.

GIGARTINACEAE

Gigartina acicularis (Roth)
Lam.

RHODYMENIALES

RHODYMENIACEAE

Botryocladia botryoides (Wulf.
in Jacq.) J. Feldm.

CHAMPIACEAE

Jolis *Lomentaria clavellosa*
(Turn.) Gaill.

CRYPTONEMIALES

PEYSSONNELIACEAE

Peyssonnelia bornetii Boud. *et*
Denizot *P. squamaria* (Gmel.)
Decaisne

CORALLINACEAE
CORALLINACEAE

Amphiroa beauvoisii Lam. (= *A. zonata* Yendo *A. rigida* Lam.)
Corallina elongata Ellis et Sol. (= *C. mediterranea* Aresch. in J. Ag.) *Fosliella farinosa* (Lam.) Howe (= *Melobesia farinosa* Lam.) F.--- var. *chalicodictya* Taylor *Haliptylon squamatum* (L.) Johans. et al. (= *Corallina squamata* Ell., *C. confusa* Yendo) *Jania adhaerens* Lam. *J. rubens* (L.) Lam. *Lithophyllum incrustans* Philippi
Melobesia membranacea (Esp.) Lam. (= *Epilithon membranaceum* (Esp.) Heydr. *Pneophyllum lejolisii* osan.) Chamberline (= *Fosliella lejolisii* (Rosan.) Howe) *Pseudolithophyllum expansum* (Philippi) Lemoine (= *Lithophyllum expansum* Philippi) *Tenarea undulosa* Bory *Titanoderma cystoseirae* (Hauck) Huve (= *Dermatholithon cystoseirae* (Hauck) Huve, *D. papillosum* (Zanard.) Foslie *T. pustulatum* (Lam.) Woelk. = *Dermatholithon pustulosum* (Lam.) Foslie

CRYPTONEMIACEAE

Halymenia floresia (Clem.) C. Ag. (= *H. harveyana* J. Ag)

BONNEMAISONIALES

BONNEMAISONIACEAE

Falkenbergia rufolanosa (Harv.) Schmitzstatium
(Tetrasporophyte
d'Asparagopsis armata)

CERAMIALES

CERAMIACEAE

CERAMIALES

CERAMIACEAE

Centroceras clavulatum (C. Ag.) Montagne
Ceramium ciliatum (Ell.) Ducl. var. *ciliatum*
C.---var. *robustum* (J. Ag.) G. Mazoyer *C. flaccidum* (Kütz.) Ardiss. (= *C. gracillimum* (Kütz.) Griff. et Harv. in Harv., *C. byssoideum* Harv. *C. fastigiatum* Harvey (= *C. fastigiramosum* Boo et Lee) *C. tenerrimum* (Martens) Okamura var. *brevizonatum* (Peters.) G. Feldm.-Mazoyer *C. tenuissimum* (Lyngb.) J. Ag. var. *tenuissimum* *C. taylori* Dawson *Crouania attenuata* (Bonnem.) J. Ag. *Griffithsia devoniensis* Harv. *Champia parvula* (C. Ag.) Harvey *Chylocladia verticillata* (Lightf.) Blid. (*C. kaliformis* Good. et Woodw.) Grev., *C. bistratosa* Ercegovic, *C. squarrosa* (Kütz.) Le G. *globulifera* Harvey (*Anotrichum* (*Griffithsia*) *tenue*)
Pleonosporium borreri (Smith) Näg. ex Hauck *Ptilothamnion pluma* (Dillwyn) Thur. *Seirospora giraudyi* (Kütz.) De Toni *Spermothamnion flabellatum* Born. in Born. et

Thur. *Spyridia filamentosa*
(Wulf.) Harv. in Hook.;
Wrangelia penicillata C. Ag.

DASYACEAE

Dasya rigidula (Kütz.) Ardiss.
Heterosiphonia wurdemanni
(Bailey ex Harv.) Falkenb.

DELESSERIACEAE

Radicilingua thysanorhizans
(Holm.) Papenf

RHODOMELACEAE

Acanthophora najadiformis
(Delile) Papenf.
Alsidium corallinum Kütz
Chondria tenuissima (Good. et
Woodw.) C. Ag.
Digenea simplex (Wulf.) C. Ag.
Herposiphonia secunda (C. Ag.)
Ambronnf. *secunda*
Laurencia obtusa (Huds.) Lam.
var. *obtusa* L.—var. *gracilis*
(Kütz.) Hauck L.—var. *laxa*
(Kütz.) Ardiss. (= var. *crucifera*
Kütz L. *paniculata* (C. Ag.) J.
Ag. (L. *patentramea* (Mont.)
Kütz. L. *papillosa* (Forsk.) Grev.
; *L. — var. *subsecundata*
Lophocladia lallemandii (Mont.)
Schmitz *Lophosiphonia cristata*
Falkenb. L. *obscura* (C. Ag.)
Falkenb. (=L. *reptabunda* (Shur.
in Kütz.) Kylin) L. *subadunca*
(Kütz.) Falkenb. *Polysiphonia*
kampsaxii Børgesen P.
scopulorum Harv. (L.
scopulorum (Harv.) Womers.)

P. tenerrima Kütz.
P. tripinnata J. Ag.
P. variegata (C. Ag.) Zanard.
Rodriguezella strafforelli
Schmitz ex Rodriguez var.
crassicaulis Ercegovic
Rytiphloea tinctoria (Clem.) C.
Ag.
Vidalia volubilis (L.) J. Ag.

PHAEOPHYTA

FUCOPHYCEAE

SCYTOSIPHONALES

SCYTOSIPHONACEAE

Colpomenia sinuosa (Mertens ex
Roth) Der. et Sol.
Hydroclathrus clathratus (Bory
ex C. Ag.) Howe

CUTLERIALES

CUTLERIACEAE

Styopodium schimperii
(Buchinger ex Kütz.) Verlaque et
Boudour.

SPHACELARIALES

SPHACELARIACEAE

Sphacelaria cirrosa (Roth) C.
Ag. (*S. hystrix* Suhr in Reinke)
S. f. mediterranea Sauvageau
S. rigidula Kütz. (*S. furcigera*
Kütz.) *S. tribuloides* Menegh.

STYPOCAULACEAE

Halopteris scoparia (L.) Sauv
[*Styopocaulon scoparium* (L.)
Kütz.]

DICTYOTALES
DICTYOTACEAE

Dictyopteris polypodioides
(D.C.) Lam. [= *D. membranacea*
(Stackh.) Batt.] *Dictyota dichotoma*
(Huds.) Lam. var. *dichotoma*
D. --- var. *intricata* (C. Ag.)
Grev. (= var. *implexa* (Desf.) J.
Ag.)
D. linearis (C. Ag.) Grev.
(= *D. divaricata* Lamour.)
Lobophora variegata (Lam.)
Womersley *Dilophus fasciola*
(Roth) Howe.
D. mediterraneus Schiffn. var.
mediterraneus *D. ---* var.
crassus Schiffn. *D. repens* (J.
Ag.) J. Ag.
(= *D. fasciola* var. *repens* (J.
Ag.) Feldm.)
Padina pavonica (L.) Lam.

FUCALES
CYSTOSEIRACEAE

C. barbata C. Ag. var. *barbata*
[= *C. hoppii* C. Ag.]
C. compressa (Esper) Gerloff et
Nizamuddin (= *C. fimbriata*
(Desf.) Bory) f. *compressa*
C. --- var. *stricta* (Mont.) (= *C.*
stricta Sauv. var. *stricta*)
C. crinita (Desf.) Bory. f. *crinita*
C. elegans Sauv.
C. schiffneri Hamel f. *schiffneri*
[= *C. discors* f. *discors* = *C. ---* f.
dubia Ercegovic, =
C. ercegovicii Giaccone f.
ercegovicii, = *C. ---* f. *schiffneri*
(Hamel) Giaccone]

Cystoseira spinosa Sauv. var.
compressa (Ercegovic) Cormaci
et al. (= *Cystoseira adriatica* var.
compressa (Ercegovic)
Giaccone)

SARGASSACEAE

Kütz.
Sargassum hornschurchii C. Ag.
S. vulgare C. Ag. var. *vulgare* [=
S. saliculifolium Naccari = *S.*
vulgare var. *diversifolium* Bory
= *S. ---* var. *megalophyllum*
(Mont.) Grun.]

CHLOROPHYTA
CHLOROPHYCEAE
VOLVOCALES
TETRASPORACEAE

Palmophyllum crassum
(Naccari) Rabenh.

ULOTRICHALES
CHAETOPHORACEAE

Achrochaete repens Pringh.
Phaeophila dendroides (P.L. et
H.M. Crouan
Uronema confervicolum
Lagerheim

ULVACEAE

Enteromorpha clathrata (Roth.)
Grev.
E. intestinalis (L.) var.
intestinalis
E. linza (L.) J. Ag. var. *linza*

CLADOPHORALES
ANADYOMENACEAE

Anadyomene rhizoidifera Joly et
Pereira
A. stellata (Wulf.) C. Ag.

CLADOPHORACEAE

Cladophora pellucida (Huds.)
Kütz.
C. rudolphiana (C. Ag.) Kütz.
C. sericea (Huds) Kütz.
C. trichotoma (C. Ag.) Kütz.
Cladophoropsis modonensis
(Kütz.) Reinbold

VALONIACEAE

Valonia utricularis (Roth) C.
Ag.

BRYOPSIDALES
BRYOPSIDACEAE

Bryopsis cupressina Lam. (= *B.*
penicillata Kütz.)
B. pennata Lam.

CAULERPACEAE

Caulerpa prolifera (Forssk.)
Lam.
C. racemosa (Forssk.) J. Ag.

CODIACEAE

Codium decorticatum (Woodw.)
Howe) (= *C. elongatum* (Turn.)
C. Ag.) *C. tomentosum* (Huds.)
Stackh.

UDOTEACEAE

Flabellia petiolata (Turra)
Nizam.
Halimeda tuna (Ellis et
Solander) Lam.

DASYCLADALES
POLYPHYSAEAE

Acetabularia acetabulum (L.)
Silva
Dasycladus vermicularis
(Scopoli) Krasser
(= *D. clavaeformis* (Roth)
C. Ag.)

MAGNOLIOPHYTA

LILIOPSIDA

ALISMATIDAE

(=HELOBIAE, FLUVIALES)

HYDROCHARITALES

HYDROCHARITACEAE

Halophila stipulaceae Forssk.

POTAMOGETONALES
CYMODOCEACEAE

Cymodocea nodosa (Ucria)
Ascherson

POSIDONIACEAE

Posidonia oceanica (L.) Delile

ZOSTERACEAE

Zostera marina L.
Zosterella noltii Horn

Özet

Bu arařtırmada, Kuzey Kıbrıs Türk Cumhuriyeti deniz florası arařtırılmıřtır. Arařtırılan alan üst infralittoral zon olup 151 takson (Cyanophyceae 11, Rhodophyceae 81, Fucophyceae 27, Chlorophyceae 25, Liliopsida 5) tayin edilmiřtir.

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