Original scientific paper

**LICHENS FROM CROATIA**

**STEEN N. CHRISTENSEN and ERIC STEEN HANSEN**

(Botanical Museum, University of Copenhagen)

Received April 1, 1993.

121 taxa of lichens are reported from Croatia. Four taxa are new to the NW Balkans, viz. *Caloplaca velana var. placidia*, *Lecanora sienae*, *Lepraria lobificans*, and *Petractis luetkemuelleri*. One species, viz. *Chryso- trix candelaris*, is new to Croatia. Eight taxa, including *Phaeophyctica insignis*, are new to the Croatian Littoral (H. Pr.), and nine taxa, including *Ochrolechia turneri* and *Physconia servitii*, are new to Istria.

**Introduction**

The former Yugoslavia is one of the licheno logically better investigated Mediterranean areas (Christensen 1987). The comprehensive checklist of Kusán (1953) constitutes a valuable source of information. Recently a flora of the area has been commenced, of which the first volume has been published (Murati 1992). In spite of this there is still much to do in the field of floristics, as can be seen from this work on one of the more thoroughly investigated parts of the area.

**Materials**

The material from the localities Bakar, Kraljevica, Uvala Scott and Senj was collected by the second author in June 1971. The specimens are not numbered. In cases where more than one specimen were collected, the numbers of specimens are indicated. Material from the remaining localities was collected by the first author. The collection numbers are those of the first author. Specimens referred to by numbers in brackets are cooccurring with...
S.N. CHRISTENSEN and E.S. HANSEN

the specimen to which the number refers. The specimens are deposited at the Botanical Museum of Copenhagen (C) and in the private herbarium of the first author.

The investigated area of Croatia is divided into four botanical districts (Kušan 1953): Istria (Istra, I.), the interior of Croatia (un. Hrvatska, u. Hrv.), the Croatian Littoral (Hrvatsko Primorje, H. Pr.) and Dalmatia (Dalmacija, Dalm.) The area covered by the former Yugoslavia, with the exclusion of Macedonia, is here designated as the NW Balkans.

Distributional data were compared with Kušan (1953), Murati (1992), and Christensen (1982, 1988) and the literature cited therein - and with monographs (Breuss 1990, Degelius 1954). The paper of Schuler (1902) was not available to us. Therefore, we had to rely on the notes of the referee.

Climate and vegetation

The climatic conditions of the sampling sites are comparable with that of Pazin (Christensen 1988), with the exception that for those of the sites which lie south of Istria, frost periods do not occur at most of the coastal sites. Some of these, e.g. Kraljevica, have short, dry periods during the summer.

Most of the localities lie within the Eumediterranean and Submediterranean-colline vegetation belts, while a few (nos 10 and 17) lie within the montane belt (Bertović & Lovrić 1992). The Submediterranean zones are characterized by forests and coppices of Quercus, Carpinus and Ostrya and their degradation products, while Fagus and Abies forests are dominating in the montane zone.

The localities

The geographical positions of the localities are indicated in Fig. 1. The bold face names in the locality description below are the names used in the species list.

2. About 7 km N of Poreč, the village Tar. Limestone fences and road side trees in the village. Alt. o. 100 m. 23. 6. 1985.
4. 8 km N of the town Rovinj, about 1 km SW of the village Kloštar. Mixed forest/coppice of Acer campestre, Carpinus, Fraxinus and Quercus spp. on limestone. Along forest road. Alt. 75 m. 7. 5. 1989.
5. About 7 km NW of the town Rovinj, between the town Vrsar and the hill Mukaba. Maquis on limestone. Alt. c. 50 m. 10. 5. 1989.

102
7. About 30 km NW of Opatija, about 1 km NW of the village Vodice. Dry meadow on SW slope with scattered limestone outcrops. Alt. c. 650 m. 2. 7. 1985.


10. About 51 km E of Rijeka, Velika Kapela Mts., NW of the town Ogulin, at the river Dobra near the village Gomirje. Thicket with among others Carpinus betulus. Alt. c. 350 m. 29. 6. 1982 (loc. 13 of Christensen 1987).

11. About 6 km ESE of Rijeka, the town Bakar. 20. 6. 1971.

12. About 11 km SE of Rijeka, the town Kraljevica. 15th, 16th, 18th and 20th June, 1971.


14. The island of Krk, about 4 km NW of the town Vrbnik. Arable land on limestone. Salix trees along field track. Alt. c. 150 m. 8. 7. 1990.

15. The island of Krk, just E of the town Baška, Mt. Vidohlam. Grass steppe with limestone outcrops in the opening of Pinus wood (plantation) on SSE slope. Alt. c. 350 m. 10. 7. 1990.


18. 27 km NE of the town Zadar, the village Starigrad-Paklenica. Ulmus trees in the village. Alt. c. 5 m. 6. 7. 1990.

19. About 30 km E of Omiš, near the village Lokvičići, at a Bogumil burial place. Few Quercus trees in grazed thicket (Sibljak). Alt. c. 600 m. 5. 7. 1990.

The species

Arthonia radiata (Pers.) Ach.
Gomirje: on Carpinus betulus, 909.

Aspicilia calcarea (L.) Mudd
Vabriga: on limestone fence, 2449.

Aspicilia contorta (Hoffm.) Krempelh.
Uvala Scott: on limestone.

Aspicilia hoffmannii (Ach.) Flag.
Vodice: on limestone outcrop, 2726.
Kraljevica: on limestone on stone fence. Two specimens, one conf. by Clauzade & Roux.
Uvala Scott: on limestone.
This is the second record from Istria (Christensen 1988).

Aspicilia subcircinata (Nyl.) Coppins
(= A. radiosa (Hoffm.) Poelt & Leuckert p. p.)
Kraljevica: on limestone and on limestone fence. Two specimens.

Buellia aff. punctata (Hoffm.) Massal.
Vrbnik: on Salix alba, 8369, 8372. The spores are more light-coloured and smaller (about 10x4 µm) than in North European material. »In the Mediterranean area this group is represented by several species and requires a detailed taxonomic revision« (Nimis & Poelt 1987).

Caloplaca aurantia (Pers.) Hellb.
Vabriga: on limestone fence, 2452.
Cervar Bay: on limestone boulder in maquis, 2448, on limestone outcrop in littoral meadow, 2530, 2535.
Tar: on limestone fence in the village, 2467.
Kraljevica: on limestone fence and limestone outcrops. Eight specimens, one confirm. Clauzade & Roux.

Caloplaca cerina (Ehrh. ex Hedw.) Th. Fr.
Vrbnik: on Salix alba, 8364, 8366, 8368.
Starigrad-Paklenica: on Ulmus minor (cum 8348).
Caloplaca citrina (Hoffm.) Th. Fr. f. citrina
Vabriga: on limestone fence shaded by Ulmus (cum 2451).
Kraljevica: on limestone.
Uvala Scott: on limestone.
Not mentioned for Istria by Kušan (1953), but reported by Schuler (1902).

Caloplaca erythrocarpa (Pers.) Zw.
Kraljevica: on limestone fence and on limestone pebbles.
Three specimens, one confirm. by C. Roux.
Not included in Kušan (1953), but reported by Schuler (1902).

Caloplaca ferruginea (Huds.) Th. Fr.
Červar Bay: on bark.

Caloplaca flavescens (Huds.) Laund.
Červar Bay: on limestone outcrop in littoral meadow, 2471, 2526, 2537.
Kraljevica: on limestone outcrops and limestone fence. Four specimens.
Uvala Scott: on limestone.
Vidohlman: on limestone outcrop (cum 8376).

Caloplaca flavorubescens (Huds.) Laundon
Starigrad-Paklenica: on Ulmus minor (cum 8348).

Caloplaca flavovirescens (Wulf) DT. & Sarnth.

Caloplaca haematites (Chaub. ex St Am.) Zw.
Starigrad-Paklenica: on Ulmus minor (cum 8348 & 8352).

Caloplaca ochracea (Schaerer) Flag.
Červar Bay: on limestone outcrop in littoral meadow, 2473, 2523, 2526a.
Kraljevica: on limestone fence. Two specimens.
Uvala Scott: on limestone. Two specimens.

Caloplaca pollinii (Massal.) Jatta
Uvala Scott: on bark.

Caloplaca pyracea (Ach.) Th. Fr.
Starigrad-Paklenica: on trunk of Ulmus minor, 8349.

Caloplaca saxicola (Hoffm.) Nordin ssp. saxicola
Vidohlman: on limestone outcrop, 8376.

Caloplaca spalatensis Zahlbr.
Vodice: 2715 (det. by C. Roux), 2724a.
Known from Dalmatia, near Split (Kušan 1953). New to Istria.

Caloplaca tenuatula (Nyl.) Zahlbr. ssp. tenuatula var. lithophila (H. Magn.) Clauz. & Roux
Kraljevica: on limestone on stone fence. Two specimens, one confirm by Clauzade & Roux.
See taxon below.

Caloplaca tenuatula (Nyl.) Zahlbr. ssp. verrucariarum (Clauz. & Roux) Clauz. & Roux
Uvala Scott: on Verrucaria sp. on limestone. Det. by Clauzade & Roux.
C. tenuatula var. verrucariarum was published from the area (H. Pr. & Dalm.) by Kušan (1953) in a broad sense as C. polycarpa (Mass.) A. Zahlbr.

Caloplaca velana (Massal.) Du Rietz var. placidia
(Massal.) Clauz. & Roux
Vodice: 2724 (det. by G. Clauzade and C. Roux)
The variety is new to the NW Balkans.

Caloplaca sp. (aff. C. crenularia (With.) Laundon, syn.: C. festiva (Ach.) Zwackh)
Kraljevica: on limestone outcrops.

Candelaria concolor (Dicks.) B. Stein
Kloštar: on Quercus ilex, 6079.
Kraljevica: on bark.
Uvala Scott: on bark. Four specimens.
Starigrad-Paklenica: on Ulmus minor, 8339, 8355.

Candelariella medians (Nyl.) A. L. Sm.
Lanišće: on limestone fence, 2620.
Kraljevica: on limestone on stone fence. Six specimens, one confirm. Clauzade & Roux.
The species was not reported from the Croatian Littoral (H. Pr.) by Kušan (1953) or Murati (1992), but was earlier reported by Schuler (1902).
Candelariella xanthostigma (Ach.) Lettau
Uvala Scott: on bark. Two specimens.

Catapyrenium pilosellum Breuss
Kraljevica: on soil and among mosses on limestone. Three specimens, det. by O. Breuss.
Uvala Scott: on soil and among mosses on soil and on mosses on rocks near the beach. Two specimens, det. by O. Breuss.
Not included in Murati (1992), but known from Croatia (Breuss 1990).

Catapyrenium squamulosum (Ach.) Breuss
Uvala Scott: on soil, det. by O. Breuss.

Cetrelia olivetorum (Nyl.) Culb. & Culb.
Kloštar: on Quercus ilex, 6080.

Chrysothrix candelaris (L.) Laund.
Kloštar: on Quercus ilex, 6043, 6074.
Included neither in Kušan (1953) nor in Murati (1992), but known from Vojvodina (Gaál 1975). New to Croatia.

Cladonia convoluta (Lam.) P. Cout.
Mukaba: in opening in the maquis, 6086, Uvala Scott. Two specimens.
Vidohlam: on shallow soil, 8373.

Cladonia fimбриata (L.) Fr.
Kloštar: on Quercus cerris, 6068, 6073.

Cladonia furcata (Huds.) Schrad. ssp. subrangiformis (Sandst.) Pisut
Kraljevica: on limestone fence.
Uvala Scott: on rocks near the beach. Two specimens.
Known from Dalm. (Murati 1992). New to the Croatian Littoral (H. Pr.).

Cladonia pocillum (Ach.) O.-J. Rich.
Kraljevica: on soil and mosses. Four specimens.
Uvala Scott: on soil and mosses. Two specimens.

Cladonia rangiformis Hoffm.
Mukaba: in opening in the maquis, 6087 (con apoth.).
Kraljevica: on soil and mosses on limestone fence (form with primary thallus dominant and only few, very small podetia).
Uvala Scott: on soil and mosses and on rocks near the beach. Seven specimens.
Vidohlam: on shallow soil, 8375.

Cladonia symphycarpa (Ach.) Fr.
Vidohlam: on shallow soil, 8374.
This is the second record from the Croatian Littoral (H. Pr., Christensen 1987). The species was probably overlooked.

Collema crispum (Huds.) G. H. Web. var. crispum
Kraljevica: on soil, mosses and pebbles on limestone fence and directly on the rock. Two specimens, conf. G. Degelius.
Uvala Scott: on soil, mosses, and pebbles and rock on limestone fence, conf. G. Degelius.
Known from Istria, Dalmatia (Kušan 1953, Degelius 1954), and the Croatian Littoral (H. Pr., Schuler 1902).

Collema cristaetum (L.) Web.
Uvala Scott: on mosses, det. by G. Degelius.

Collema cristaetum (L.) Web. var. marginale (Huds.) Degel.
Kraljevica: det. by G. Degelius.
Uvala Scott: det. by G. Degelius.
The variety is not mentioned in Kušan (1953). Known from Croatia, (Degelius 1954, Breuss 1980).

Collema fuscovirens (With.) Laundon
Syn.: C. transforsme (Ach.) Ach.
Uvala Scott: on limestone, conf. by G. Degelius.

Collema polycarpon Hoffm. var. coryrense (Arn.) Harm.
Kraljevica: on limestone, conf. by G. Degelius.
Uvala Scott: on limestone. Two specimens, conf. by G. Degelius.
The variety is not mentioned in Kušan (1953), but known from Croatia, (Degelius 1954).

**Collema subflaccidum** Degel.
Uvala Scott: on bark, conf. by G. Degelius.
For distributional data see Degelius (1954).

**Collema tenax** (Sw.) Ach. em Degel.
Kraljevica: on soil and mosses on limestone fence. Two specimens, conf. by G. Degelius.

**Collema tenax** (Sw.) Ach. em. Degel. var. vulgare (Schaerer) Degel.
Kraljevica: on soil, mosses, and pebbles on the ground.
Two specimens, conf. by G. Degelius.

**Collema spp.**
Kraljevica: on soil and on limestone fence.
Uvala Scott: on bark

**Diploschistes muscorum** (Scop.) R. Sant.
Uvala Scott: on Catapyrenium ? on soil.

**Fulgensia fulgens** (Sw.) Elenk.
Vodice: on mosses on limestone outcrop, 2722.
Račja Vas: on mosses on limestone outcrop, 2634a.
Not mentioned from Istria by Kušan (1953) or Murati (1992), but reported by Głowacki (1874, as Psoroma fulgens (Sw.) Körb.).

**Hyperphyscia adglutinata** (Flörke) Mayrh. & Poelt
Kloštar: on *Quercus ilex*, 6082.
Vrbnik: on *Salix alba*, 8371.

**Lecania cyrtella** (Ach.) Th. Fr.
»The taxonomy of the corticolous species [of the genus *Lecania*] is often confused, and ... needs a monographic treatment.« (Nimis & Poelt 1987).

**Lecania rabenhorstii** (Hepp) Arnold
Syn. *L. erysibe* auct., non (Ach.) Mudd
Vabriga: on limestone fence shaded by *Ulmus*, 2450.
Kraljevica: on limestone and on limestone fence. Three specimens, one det. by Clauzade & Roux.
Uvala Scott: on limestone.
New to Istria (Murati 1992).

**Lecanora albescens** (Hoffm.) Branth Sc Rostrup
Kraljevica: on limestone.

**Lecanora chlorotera** Nyl. ssp. *chlorotera* f. *crassula* (H. Magn.) Poelt
Kloštar: on *Quercus cerris*, 6058, 6064, 6066.
In the NW Balkans *L. chlorotera* is seldom reported, but is known from Bosnia, Serbia (Kušan 1953), Slovenia (Batič & Martinčič 1982), and Croatia (Christensen 1988). It was probably overlooked.

**Lecanora crenulata** (Dicks.) Hook.
Vabriga: on limestone fence, (cum 2449, 2452).
New to Istria (Kušan 1953).

**Lecanora expallens** Ach.
Kloštar: on *Quercus cerris*, 6072, 6078, both sterile, with usnic acid and zeorin (tlc).
Published by Kušan (1953, as *L. conizaea* (Ach.) Nyl.).

**Lecanora hagenii** (Ach.) Ach.
Kraljevica: on limestone.

**Lecanora pruinosa** Chaub.
Kraljevica: on limestone on stone fence and outcrops.
Three specimens.

**Lecanora sienae** B. de Lesd.
S.N. CHRISTENSEN and E.S. HANSEN

concept is adopted here, although the material seems to contain two different morphological types.
New to the NW Balkans (Kušan 1953).

Lecidea lurida (With.) Ach.
Syn. Psora lurida (With.) DC.
Kraljevica: on soil and mosses on limestone fence and limestone outcrops. Three specimens.
Uvala Scott: on soil, mosses and Thyrea, det. by E. Timdal.
Senj: on limestone outcrop.

Lecidella achristerotera (Nyl.) Hertel & Leuckert
Kloštar: on Quercus cerris, 6044, 6045, 6049, 6050, 6051.
Kraljevica: on bark.
Uvala Scott: on bark. Three specimens.
Starigrad-Paklenica: on Ulmus minor, 8345.
L. achristerotera was recently published as new to Croatia (Christensen 1987, 1988).

Lecidella elaeochroma (Ach.) Choisy var. elaeocbroma
Kloštar: on Quercus cerris, 6061.
Kraljevica: on bark.
Starigrad-Paklenica: on Ulmus minor (cum 8342).

Lecidella euphorea (Flörke) Hertel
Starigrad-Paklenica: on Ulmus minor, 8349a.
New to the Croatian Littoral (H. Pr.).

Lecidella stigmatea (Ach.) Hertel
Syn. Lecidea vulgata Zahlbr.
Cervar Bay: on limestone outcrop in littoral meadow, 2528.
New to Istria (Kušan 1953).

Lepraria incana (L.) Ach.
Kloštar: on Quercus cerris, 6048 (tic: atranorin & divaricatic acid), 6062 (tic: atranorin and unknown purple spot in rf. 6–7), the blue-white colour of the specimens argues for the present taxon, despite the deficient chemistry (Laudon 1992).
[L. incana, no. 903, reported by Christensen (1987) is in fact L. lobifiscans (tic: atranorin, zeorin & stictic acid aggregate), while no. 2685 (tic: atranorin & zeorin) with a blue-white thallus (Christensen 1988) is best referred to as L. incana.]

Lepraria lobifiscans Nyl.
Kloštar: on Quercus cerris, 6069 (tic: atranorin, zeorin & stictic acid aggregate).
Apparently new to the NW Balkans.

Leptogium cyanescens (Rabenh.) Körber
Kraljevica: on bark.

Leptogium lichenoides (L.) Zahlbr.
Kraljevica: among mosses on soil on limestone fence. Two specimens.
Uvala Scott: on limestone (var. lichenoides).

Leptogium massiliense Nyl.
Kraljevica: on limestone fence.
Uvala Scott: on limestone. Two specimens.

Normandina pulchella (Borr.) Nyl.
Kloštar: on Quercus cerris, 6046.

Ochrolechia tumeri (Sm.) Hasselrot
Kloštar: on Quercus cerris, 6047.
New to Istria (Murati 1992).

Opegrapha atra Pers.
Kloštar: on Quercus cerris, 6055, 6057 (both conf. by Torrente and Egea).

Parmelia acetabulum (Neck.) Duby
Kraljevica: on bark. Thallus of the «normal» brown-green form.
Lokvičići: on Quercus pubescens, 8338. Thallus lead-grey, a form that seems to increase in frequency from N to S through the Balkan Peninsula (cf. Nimis & Poelt 1987). The specimen (2690) reported from Tinjan, Istria (Christensen 1988) belongs to this colour form, and so does the Greek specimen cited in Christensen (1989).

Parmelia borreri (Sm.) Turn.
Starigrad-Paklenica: on Ulmus minor, 8346.
Parmelia caperata (L.) Ach.
Kloštar: on Quercus cerris, 6042, 6054, 6071, the latter with apothecia.
Kraljevica: on bark.
Uvala Scott: on bark. Three specimens.
Starigrad-Paklenica: on Ulmus minor, 8340.

Parmelia carpophizans Th. Tayl.
Kloštar: on Quercus ilex, 6084.
New to Istria (Kušan 1953).

Parmelia coniocarpa Laurer
Syn.: P. perlata (Huds.) Vain.
Kloštar: on Quercus cerris, 6053, 6067.
Uvala Scott: on bark.

Parmelia exasperata (Ach.) De Not.
Kraljevica: on bark (ster.)
Uvala Scott: on bark.

Parmelia glabra (Schaerer) Nyl.
Kloštar: on Quercus ilex, 6085.

Parmelia glabrata (Lamy) Nyl. ssp. glabrata
Uvala Scott: on bark.
This taxon was earlier published from the Croatian Littoral (H. Pr.) by Breuss (1980).

Parmelia quercina (Willd.) Vainio
Uvala Scott: on bark.
Starigrad-Paklenica: on Ulmus minor, 8343, 8344.

Parmelia saxatilis (L.) Ach.
Kraljevica: on bark.

Parmelia subaurifera Nyl.
Kloštar: on Acer campestre, 6076.
Kraljevica: on bark.
Uvala Scott: on bark. Three specimens.

Parmelia subrudecta Nyl.
Kloštar: on Quercus cerris, 6056, 6060.
Uvala Scott: on bark.
P. subrudecta was recently published as new to Croatia (Christensen 1987).

Parmelia sulcata Th. Tayl.
Kloštar: on Quercus cerris, 6063.
Kraljevica: on bark (cum apoth.)

Parmelia tiliacea (Hoffm.) Ach.
Kloštar: on Quercus cerris, 6059, 6077.
Peltigera rufescens (Weis) Humb.
Bakar: on mosses.

Pertusaria albenscens (Huds.) Choisy & Werner
Kloštar: on Quercus ilex, 6081.

Pertusaria flavida (DC.) Laund.
Syn.: P. lutescens (Hoffm.) Lamy
Vučjak: on Fagus sylvatica, 761.
New to the Croatian Littoral (H. Pr., Kušan 1953).

Petractis luetschmuelleri (Zahlbr.) Vezda
Červar Bay: on limestone outcrop in littoral meadow, 2525 (conf. by A. Vezda).
New to the NW Balkans (Kušan 1953).

Phaeophyscia chloantba (Ach.) Moberg

Phaeophyscia hirsuta (Mereschk.) Moberg
Vabriga: on limestone fence (cum 2452).
Uvala Scott: on bark, conf. by R. Moberg.
Senj: on limestone outcrop.
Starigrad-Paklenica: on Ulmus minor, 8352.
New to the Croatian Littoral (H. Pr.).

Phaeophyscia insignis (Mereschk.) Moberg
Uvala Scott: on bark, det. R. Moberg.
P. insignis is probably overlooked in South Europe, where it is known from Switzerland and Yugoslavia (Moberg 1978). Known from Dalm. (Murati 1992). Apparently new to the Croatian Littoral (H. Pr.).

Phaeophyscia orbicularis (Necker) Moberg
Starigrad-Paklenica: on Ulmus minor (cum 8349, det. by R. Moberg).

Phlyctis argena (Ach.) Flotow
Kloštar: on Acer campestre, 6075.

Physcia adscendens (Fr.) H. Oliv.
Kloštar: on Quercus cerris, 6052.
Kraljevica: on limestone and on Erica? stems. Five specimens.
Uvala Scott: on bark. Two specimens.
Vrbinik: on Salix alba, 8362.
Starigrad-Paklenica: on Ulmus minor (cum 8345, conf. R. Moberg).

Physcia aipolia (Ehrhrt.) Hampe
Kloštar: on Quercus ilex, 6083.
Kraljevica: on bark. Two specimens.
Uvala Scott: on bark, conf. by R. Moberg.

Physcia biziana (Massal.) Zahlbr. var. biziana
Starigrad-Paklenica: on Ulmus minor, 8347, 8354.

Physcia semipinnata (Gmelin) Moberg
Starigrad-Paklenica: on Ulmus minor, 8342.

Physcia stellaris (L.) Nyl.
Uvala Scott: on bark.

Physconia distorta (With.) Laundon
Syn. P. pulverulacea Moberg
Kraljevica: on bark.

Physconia grisea (Lam.) Poelt ssp. grisea
Starigrad-Paklenica: on Ulmus minor, 8353.

Physconia servitii (Nadv.) Poelt
Kloštar: on Quercus ilex, 6083a, sterile.

Placynthium nigrum (Huds.) S. Gray
Kraljevica: on limestone. Three specimens.
Uvala Scott: on limestone. Two specimens.

Protoblastenia calva (Dicks.) Zahlbr.
Uvala Scott: on limestone.

Protoblastenia incrustans (DC.) Steiner
Uvala Scott: on limestone.

Protoblastenia rupestris (Scop.) J. Stein.
Cervar Bay: on stone on shallow soil on limestone outcrop in maquis, 2427.
Oprtalj: on limestone fence, 2705.
Not reported from Istria by Kušan (1953), but reported by Schuler (1902).

Psora decipiens (Hedw.) Hoffm.
Kraljevica: on soil and mosses on limestone fence. Two specimens.
Uvala Scott: on soil and mosses. Four specimens.

Cf. Pyrrhospora quernea (Dicks.) Körber
Vabriga: on Olea in dry hay meadow, 2503.
New to Istria (Murati 1992).

Ramalina farmacea (L.) Ach.
Kloštar: on Quercus cerris, 6070.

Ramalina cf. fastigiata Pers.
Vrbinik: on Salix alba, 8363, sterile.

Rinodina exigua (Ach.) Gray
Kraljevica: on Erica? stems.
New to the Croatian Littoral (H. Pr.).
LICHENS FROM CROATIA

Rinodina pyrina (Ach.) Arnold
Kraljevica: on bark of twig.

Rinodinella controversa (Massal.) Mayrhofer & Poelt
Senj: on limestone.
New to the Croatian Littoral (H. Pr.).

Sarcogyne regularis Körber var. intermedia (Körber) Golubk.
Syn.: S. pruinosa var. pruinosa auct. (Clauzade & Roux 1985)
Uvala Scott: on limestone.

Squamarina cartilaginea (With.) P. James
Kraljevica: on soil and mosses on limestone fence. Two specimens.
Uvala Scott: on litter, soil and limestone pebbles. Three specimens.

Teloschistes chrysophthalmus (L.) Th. Fr.
Mukaba: on dead stem of Spartium junceum in maquis, 6088.

Toninia sedifolia (Scop.) Timdal
Kraljevica: on soil and among mosses on limestone fence and limestone outcrops. Five specimens, conf. by E. Timdal.
Uvala Scott: on moss on soil, conf. by E. Timdal.

Verrucaria calcisedia DC.
Uvala Scott: on limestone.

Verrucaria marmorea (Scop.) Arnold
Uvala Scott: on limestone, conf. by C. Roux.

Verrucaria nigrescens Pers.
Kraljevica: on limestone fence and limestone outcrop. Two specimens, one det. by G. Clauzade & C. Roux.
Uvala Scott: on limestone. Four specimens, two conf. by C. Roux.
Senj: on limestone outcrop.

Xanthoria parietina (L.) Th. Fr.
Kraljevica: on bark (of trunk?) and on bark of twig. Two specimens.
Uvala Scott: on bark. Two specimens.
Vrbnik: on Salix alba, 8357, 8358, 8359, 8367.
Starigrad-Paklenica: on Ulmus minor, 8350.

Acknowledgements. Prof G. Degelius confirmed/revised the Collemataceae, Dr. R. Möberg some of the Physcia and related genera, Dr. E. Timdal some of the Toninia specimens, Dr. C. Roux and Prof. G. Clauzade selected specimens of the genera Aspicilia, Caloplaca, Lecania, Lecanora and Verrucaria, Drs. J. M. Egge and P. Torrente certain specimens of the Opegraphaceae, Dr. A. Vézda confirmed the identity of Petractis buerkemuehleri, and Dr. O. Breuss determined the Catapyrenium specimens. An unknown referee drew our attention to certain earlier records not included in Kuszan (1953).

References

S.N. CHRISTENSEN and E.S. HANSEN


Schuler, J., 1902: Zur Flechtenflora von Fiume. Mittheilungen des naturw. Clubs in Fiume, Jahrg. VI. (not seen!).


*Dr. Steen N. Christensen*
*Dr. Eric Steen Hansen*
Botanical Museum, University of Copenhagen
Gothersgade 130
DK–1123 København K, Denmark