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Contribution to the lichen flora of Anatolia, Turkey

Beitrag zur Flechtenflora von Anatolien, Türkei

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Key words: lichenized fungi, biodiversity, distribution, Asia.

Schlagwörter: Lichenisierte Pilze, Biodiversität, Verbreitung, Asien.

Summary: The contribution reports on 111 lichen species from Turkey. It is based on two collections, the first from S W Anatolia in 1969 and the second from the Black Sea region in 2001. The occurrence of 11 species was untraced in recent literature; these represent either common species (e.g. *Caloplaca microthallina)*, generally widespread, but uncommon species (e.g. *Leptogium subtile, L. tenuissimum)*, or rare species *(Gyalecta derivata, Heppia solorinoides, Collema confertum, Physconia petraea* and *Ramalina sinensis).*

Zusammenfassung: Auf Grundlage zweier separater Flechtenaufssamlungen sind im Beitrag 111 Flechtenarten aus der Türkei angeführt. Die erste Aufsammlung (SW-Anatolien) stammt aus dem Jahre 1969, die andere aus dem Schwarzmeergebiet vom 2001. 11 Arten wurden bislang aus dem Lande in der Literatur nich angegeben. Es handelt sich entweder um häufige Arten (z. B. *Caloplaca microthallina)*, weit verbreitete aber zerstreut vorkommende (z. B. *Leptogium subtile, L. tenuissimum)* oder seltene Arten *(Gyalecta derivata, Heppia solorinoides, Collema confertum, Physconia petraea* und *Ramalina sinensis).*

Lichenological research in Turkey has a relatively short history. By 1900, ca 190 lichen species were reported from the country, but by 1975 the number of reported species was ca 510 (JOHN 1996b). Since the 1980s, the number of active Turkish lichenologists has gradually increased, as well as the interest of foreign experts to explore the country (JOHN 2007), resulting in significant advances in our knowledge of many lichenological aspects and in the compilation of checklists (e. g. JOHN 1996a, NIMIS & JOHN 1998). This vast and richly varied country is still patchily explored (cf. HALICI et al. 2007).

The present contribution is based on two unpublished collections, by the first author who studied lichen diversity in south-western and southern Anato-

lia in 1969 and the other assembled by the second author on a field trip with J.P. HALDA, Z. PALICE and CH. PRINTZEN in 2001. The S.W. Anatolian localities cover the area around the towns of Denizli, Burdur, Balıkesir, Sindirgi, Bozüyük, Bilecik, Izmit and Yalova and the localities in north-eastern Turkey are distributed in the provinces of Trabzon, Artvin and Rize. Detail information on some of these are provided in the report of the BLAM excursion in 1997 (JOHN & BREUSS 2004).

Our list comprises 111 species, including 11 not reported in the literature such as: *Caloplaca microthallina*, a common species growing in the littoral zone; *Leptogium subtile* and *L. tenuissimum*, generally widespread, but uncommon locally; *Gyalecta derivata*, widespread in Europe, but locally very rare; *Heppia solorinoides* thinly distributed in Canary Islands, Iberian Penninsula, North Africa, Iran (HENSSEN 1994), south Italy (NIMIS & MARTELLOS 2004), Greece – Crete (SPRIBILLE et al. 2006), Russia – Irkutska oblast (ANONYMUS 2003); *Collema confertum*, a very rare species known only from Germany (Bavaria), Slovenia (Istria), Ireland (Clare) and Greece (DEGELIUS 1954, 1974); *Physconia petraea*, an epilithic species known only from a few European and African localities (OTTE et al. 2002, TÜRK & OBERMAYER 2006); *Ramalina sinensis*, a rare species with a scattered distribution in Fennoscandia, Estonia, the Alps, the Carpathians, Russia, Japan, China and Argentina (MAGNUSSON 1955, PIŠÚT 2002a, b).

List of species

Abbreviations and symbols

Collectors: IP – Ivan PIŠÚT, AG – Anna GUTTOVÁ, JH – Josef HALDA, ZP – Zdeněk PALICE, CP – Christian PRINTZEN.

Localities: SWAR – South-western Anatolian Region, EBS-S – East Black Sea Subregion, P – Province; Acigöl – slopes above lake Acigöl near the village Çardak (between Denizli and Burdur); Balikesir – a nearby hill on the Balikesir to Susurluk road; Bigadiç – a nearby hill on by the Balikesir to Sindirgi road; Bozüyük – a nearby valley on the Bozüyük to Bilecik road; Buirköy – a nearby hill close to Pamukova, near the Bilecik to Adapazari road; Çeltikçi Beli – mountain pass ca 20 km from Burdur, near the Burdur to Antalya road; Karamürsel – between Izmit and Yalova; Kuşadasi – a seaside resort near Selcuk; Kütahya – valley of the river Porsuk ca 5 km from the town, by the Kütahya to Eskişehir road; Topraktepe – valley of the river Alara near Topraktepe, NE of Manavgat.

Substrates: *An – Abies nordmaniana, Cs – Castanea sativa, Fo – Fagus orientalis, Oe – Olea europaea, Po – Picea orientalis, Qr – Quercus robur, Rp – Rhododendron ponticum.*

* species new to Turkey

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The specimens collected by I. PIŠÚT are kept in Slovak National Museum – Natural History Museum (BRA), and those by A. GUTTOVÁ in the Institute of Botany – Slovak Academy of Sciences (SAV).

Acarospora cervina A.MASSAL. – SWAR: Buirköy, open limestone outcrops near village, 150 m, IP, 1969; on limestone rock.

Anaptychia crinalis (SCHLEICH.) VĚZDA ex NOWAK – EBS-S: P Artvin, Kafkasör, foot of Genya Mt, forest of *Po* with *Cs*, *An* and *Rp*, road banks, AG, JH, ZP & CP, 6.7.2001; on *Po*, *Abies*. – P Trabzon, Maçka, Altındere valley S of Sümela, spruce forest on slopes, ca 1000 m, AG, JH, ZP & CP, 10.7.2001; on bases of *Picea* sp. – P Trabzon, mountain pass Zigana between Maçka and Torul, ca 1800 m, AG, JH, ZP & CP, 12.7.2001; on *Pinus* sp.

Anaptychia ulotrichoides (VAIN.) POELT – SWAR: Kütahya, valley of the river Porsuk, 800 m, IP, 1969; on schistose walls. – Çeltikçi Beli, on vertical limestone rock, ca 1250 m, IP, 1969, det. J. POELT 1971.

Aspicilia desertorum (KREMP.) MERESCH. – SWAR: Çeltikçi Beli, slope above mountain pass, 1400 m, IP, 1969; on limestone rock.

Bacidia rosella (PERS.) DE NOT. – EBS-S: P Rize, Ayder, W slope of Huser Mt (2548 m), ca 1500 m, N 40°57′48′′ E41°7′12′′, AG, JH, ZP & CP, 1.7.2001, det. P M. JØRGENSEN 2002; on *Fo*.

Byssoloma subdiscordans (NYL.) P.JAMES – EBS-S: P Rize: area of Şenyuva village, the valley of Firtina stream, on slope above the ruins of Zil castle (Zil kale), ca 750 m a. s. l., N 40°57′24′′ E40°7′30′′, AG, JH, ZP, 2.7.2001; on *Alnus*, leaves of *Buxus*.

Caloplaca arenaria (PERS.) MÜLL.ARG. – SWAR: Balikesir, hill near town, open quartzite rock, ca 300 m, IP, 1969; on rock.

Caloplaca aurantia (PERS.) J.STEINER – SWAR: Kuşadasi, limestone rocks, 5-15 m, IP, 1969.

Caloplaca cerina (EHRH. ex HEDW.) TH.FR. **var. *chloroleuca*** (Sm.) TH. FR. – SWAR: Bozüyük, valley near town, ca 700 m, IP, 1969; on bryophytes on schists.– Çeltikçi Beli, slope above mountain pass, 1400 m, IP, 1969; on bryophytes.

Caloplaca coronata (KREMP. ex KÖRB.) J.STEINER – SWAR: Acigöl, conglomerate rocks on south exposed slope above lake, 950 m, IP, 1969; on rock.

Caloplaca crenularia (WITH.) J.R.LAUNDON – SWAR: Bozüyük, Bozüyük – Bilecik road in valley, ca 700 m, IP, 1969; open schistose rocks.

Caloplaca flavorubescens (HUDS.) J.R.LAUNDON – SWAR: Çeltikçi Beli, mountain pass, 1300 m, IP, 1969; dead tree branches. – Karamürsel, *Oe* near valley, 10 m, IP, 1969; on bark.

Caloplaca fuscoatroides J. STEINER – SWAR: Balikesir, hill near town, 300 m, IP, 1969; on quartzite rocks.

Caloplaca herbidella (HUE) H.MAGN. – EBS-S: P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, AG, JH, ZP & CP, 11.7.2001; on *Alnus* sp.

Caloplaca holocarpa (ACH.) WADE – SWAR: Bozüyük, ca 700 m, IP, 1969; on dry twigs.

Caloplaca lactea (A.MASSAL.) ZAHLBR. – SWAR: Burdur, hill near town, 1100 m, IP, 1969; on marly limestone rocks.

****Caloplaca microthallina*** WEDD. – SWAR: Karamürsel, coastline near village, 1-1.5 m, IP, 1969; on granite rocks.

Caloplaca ochracea (SCHAER.) FLAGEY – SWAR: Izmit, Hereke village, south exposed slope, 50 m, IP, 1969; on limestone rock. – Topraktepe, 200 m, IP, 1969; on limestone rock.

Caloplaca saxicola (HOFFM.) NORDIN – SWAR: Kütahya, 800 m, IP, 1969; on overhanging schistose rocks.

Caloplaca velana s.lat. – SWAR: Izmit, Hereke village, south slope of hill, 50 m, IP, 1969; on limestone rocks.

Candelariella aurella (HOFFM.) ZAHLBR. – SWAR: Bozüyük, 700 m, IP, 1969; on lichens on schistose rock. – Buirköy, open limestone outcrops near village, 150 m, IP, 1969; on rock. – Balikesir, north exposed slope of hill, 300 m, IP, 1969; on volcanic rock. – Çeltikçi Beli, 1300 m, IP, 1969; on limestone rock.

Candelariella vitellina (EHRH.) MÜLL.ARG. – SWAR: Bigadiç, road between Balikesir and Sindirgi, granite wall on western slope of hill, ca 600 m, IP, 1969; on rock. – Acigöl, ca 950 m, IP, 1969; on conglomerate rock.

Candelariella xanthostigma (ACH.) LETTAU – EBS-S: P Trabzon, mountain pass Zigana between Maçka and Torul, ca 1800 m, AG, JH, ZP & CP, 12.7.2001; on *Pinus* sp.

Catapyrenium squamulosum (ACH.) BREUSS – SWAR: Buirköy, open limestone outcrops near village, 150 m, IP, 1969; on soil.

Catillaria lenticularis (ACH.) TH.FR. – SWAR: Burdur, marly limestone rocks near town, 1100 m, IP, 1969; on rock.

Cetraria aculeata (SCHREB.) FR. – EBS-S: P Trabzon, mountain pass Zigana between Maçka and Torul, xerothermic slope, ca 1800 m, AG, JH, ZP & CP, 12.7.2001; on soil.

Cetraria ericetorum OPIZ – EBS-S: P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, AG, JH, ZP & CP, 11.7.2001; on soil.

Cetraria islandica (L.) ACH. – EBS-S: P Trabzon, Maçka, Altmdere valley S of Sümela, ca 1000 m, fertile, AG, JH, ZP & CP, 11.7.2001; on soil.

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Cladonia convoluta (LAM.) ANDERS – EBS-S: P Trabzon, mountain pass Zigana between Maçka and Torul, xerothermic slope, ca 1800 m, AG, JH, ZP & CP, 12.7.2001; on soil.

Clauzadea monticola (SCHAER.) HAFELLNER & BELLEM. – SWAR: Kuşadasi, 100 m, IP, 1969; det. H. HERTEL; on shaded limestone rocks.

Collema auriforme (WITH.) COPPINS & J.R.LAUNDON – EBS-S: P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, AG, JH, ZP & CP, 10.7.2001; in fissures of roadside rocks.

**Collema confertum* HEPP ex ARNOLD – SWAR: Topraktepe, 400 m., IP, 1969; on limestone rock.

Collema crispum (HUDS.) G.H.WEBER ex WIGG. **var.** ***crispum*** – SWAR: Karamürsel, seashore, 3 m, IP, 1969; soil among granitic rocks.

Collema cristatum (L.) G.H.WEBER ex WIGG. – SWAR: Kuşadasi, 5 – 30 m, IP, 1969; on limestone rock. – Topraktepe, 200 m, IP, 1969; on limestone rock. – Acigöl, south exposed slope, 950 m, IP, 1969; on conglomerate rock.

Collema flaccidum (ACH.) ACH. – EBS-S: P Artvin, Kafkasör, foot of Genya Mt, forest of *Po* with *Cs*, *An* and *Rp*, road banks, AG, JH, ZP & CP, 6.7.2001; on soil. – P Rize, Ayder, W slope of Huser Mt. (2548 m), ca 1500 m, N 40°57´48´´ E41°7´12´´, AG, JH, ZP & CP, 1.7.2001; on *Fo*. – P Rize: area of Şenyuva village, valley of Firtina stream, forest road on E slope ca 500 m from the ruins of Zil castle (Zil kale), fertile, N 40°57´49´´, E 40°57´36´´, ca 750 m a. s. l., AG, JH, ZP & CP, 2.7.2001; on shaded rocks; on mossy rock temporarily submerged in stream. – EBS-S, P Trabzon, Sümela, forest on slope below the monastery, AG, JH, ZP & CP, 10.7.2001; on mossy rocks.

Collema fuscovirens (WITH.) J.R.LAUNDON – SWAR: Yalova, Soğusak village, travertine walls on north slope, 100 m, IP, 1969; on rock.

Collema parvum DEGEL. – SWAR: Topraktepe, ca 400 m, IP, 1969; on limestone rock.

Collema subflaccidum DEGEL. – EBS-S: P Trabzon, Maçka, Altındere valley S of Sümela, spruce forest on slopes, ca 1000 m, AG, JH, ZP & CP, 10.7.2001; on bases of *Picea* sp.

Collema tenax (Sw.) ACH. em. DEGEL. – SWAR: Kuşadasi, 100 m, IP, 1969; on calcareous soil. – Acigöl, south exposed slope of hill, 950 m, IP, 1969; on soil. – Çeltikçi Beli, above mountain pass, 1400 m, IP, 1969; on calcareous soil. – EBS-S: P Trabzon, mountain pass Zigana between Maçka and Torul, xerothermic slope, ca 1800 m. AG, JH, ZP & CP, 12.7.2001; on soil.

Cornicularia normoerica (GUNNERUS) DU RIETZ – EBS-S: P Rize, Ayder, valley of Kavron stream, Kavron settlement in alpine zone, N 40°55´32,5´´ E41°9´12,8´´, AG, JH, ZP & CP, 4.7.2001; on granitic rock. – P Rize, Ayder, W slope of

Huser Mt (2548 m), ca 1500 m, N 40°57´48´´ E41°7´12´´, AG, JH, ZP & CP; on *Fo*.

Diploschistes gypsaceus (ACH.) ZAHLBR. – SWAR: Çeltikçi Beli, above the mountain pass, 1400 m, IP, 1969; in fissures of limestone rocks.

Diplotomma venustum (KÖRB.) KÖRB. – SWAR: Çeltikçi Beli, slope above mountain pass, 1300 m, IP, 1969; on limestone rock. – Acigöl, conglomerate rocks on south exposed slope, 1000 m, IP, 1969; on rock.

Evernia divaricata (L.) ACH. – EBS-S: P Trabzon, mountain pass Zigana between Maçka and Torul, ca 1800 m, AG, JH, ZP & CP, 12.7.2001; on *Pinus* sp.

Flavoparmelia caperata (L.) HALE – EBS-S: P Artvin, Kafkasör, foot of Genya Mt, forest of *Po* with *Cs*, *An* and *Rp*, AG, JH, ZP & CP, 6.7.2001; on *Po*. – P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, AG, JH, ZP & CP, 11.7.2001; on *Picea* sp. – P Trabzon, mountain pass Zigana between Maçka and Torul, ca 1800 m, AG, JH, ZP & CP, 12.7.2001; on *Pinus* sp.

Fulgensia fulgida (NYL.) SZAT. – SWAR: Acigöl, south exposed slope, ca 1000 m, IP, 1969; on conglomerate rock. – Çeltikçi Beli, 1400 m, IP, 1969; on limestone walls.

Fulgensia subbracteata (NYL.) POELT – SWAR: Bozüyük, 700 m, IP, 1969; on soil in fissures of schistose rocks.

Fuscopannaria leucophaea (VAHL:) P.M.JØRG. – EBS-S: P Rize: area of Şenyuva village, valley of Firtina stream, on slope above the ruins of Zil castle (Zil kale), ca 750 m a. s. l. N 40°57´24´´ E40°7´30´´, AG, JH, ZP, 2.7.2001, leg. P. M. JØRGENSEN 2002; on shaded rocks.

****Gyalecta derivata*** (NYL.) H.OLIVIER – EBS-S: P Rize, Ayder, W slope of Huser Mt (2548 m), ca 1500 m, N 40°57´48´´ E41°7´12´´, AG, JH, ZP & CP, 1.7.2001; on *Fo*.

Gyalectidium caucasicum (ELENK. & WORONICH.) VĚZDA – EBS-S: P Rize: area of Şenyuva village, valley of Firtina stream, on slope above the ruins of Zil castle (Zil kale), ca 750 m a. s. l., N 40°57´24´´ E40°7´30´´, AG, JH, ZP, 2.7.2001; on leaves of *Buxus*.

****Heppia solorinoides*** (NYL.) NYL. – SWAR: Kuşadasi, south exposed slope, 50 m, IP, 1969; on calcareous soil.

Heterodermia speciosa (WULFEN) TREVIS. – EBS-S: P Trabzon, Maçka, Altmdere valley S of Sümela, ca 1000 m, AG, JH, ZP & CP, 11.7.2001; on mossy bark of *Sambucus*.

Lecanora argentata (ACH.) MALME – SWAR: Karamürsel, *Oe* near village, 10 m, IP, 1969; on bark of *Oe*.

Lecanora campestris (SCHAER.) HUE – SWAR: Balikesir, hill near the town, 300 m, IP, 1969; on open quartzite rock.

Lecanora graeca J.STEINER – SWAR: Çeltikçi Beli, 1300 m, IP, 1969; det. J. POELT; on limestone walls.

Lecanora pulicaris (PERS.) ACH. – EBS-S: P Trabzon, mountain pass Zigana between Maçka and Torul, ca 1800 m, AG, JH, ZP & CP, 12.7.2001; on *Pinus* sp.

Lecanora riparia (FLOT.) J.STEINER – SWAR: Buirköy, hill near the village, 150 m, IP, 1969; det. J. POELT; on open limestone rock. – Çeltikçi Beli, limestone rocks in mountain pass, 1280 m, IP, 1969; on quartzite.

Lecidella elaeochroma (ACH.) M.CHOISY – SWAR: Alanya, Okurcalar Kogü on the road Alanya – Manavgat, 5 m, IP, 1969; on dead branches of *Nerium oleander*. – Dolyalar, Afyon – Kütahya road, meadow, 1100 m, IP, 1969; on *Quercus pubescens*. – Çeltikçi Beli, slope above mountain pass, 1400 m, IP, 1969; on twigs.

Lecidella scabra (TAYLOR) HERTEL & LEUCKERT – SWAR: Çeltikçi Beli, mountain pass, 1300 m, IP, 1969; on limestone rock.

Lemmopsis arnoldiana (HEPP) ZAHLBR. – EBS-S: P Rize: area of Şenyuva village, valley of Firtina stream, forest road on E slope ca 500 m from the ruins of Zil castle (Zil kale), on dusty siliceous rock (40°57′49′′ N, 40°57′36′′ E), ca 750 m, 2.7.2001, AG, JH, ZP.

Lempholemma botryosum (A.MASSAL.) ZAHLBR. – EBS-S: P Trabzon, Sümela, area of the monastery, AG, JH, ZP & CP, 10.7.2001; on calcareaous wall.

Lepraria nivalis J.R.LAUNDON – SWAR: Çeltikçi Beli, slope above mountain pass, 1400 m, IP, 1969; on bryophytes on the rocks.

Leprocaulon microscopicum (VILL.) GAMS – EBS-S: P Rize, area of Şenyuva village, valley of Firtina stream, forest road on E slope ca 500 m from the ruins of Zil castle (Zil kale), N 40°57′49′′, E 40°57′36′′, ca 750 m a. s. l., AG, JH, ZP & CP, 2.7.2001; in fissures of rocks.

Leptogium biatorinum s.lat. [=*Leptogium cretaceaum* (SM.) NYL. sec CZEIKA et al. 2004] – EBS-S: Artvin vilayet: Şavşat, Veliköy village, Karagöl, surroundings of tarn (ca 17 km from Şavşat), open bank of forest road (mixed pine-spruce forest), AG, JH, ZP & CP, 7.7.2001; on rock.

Leptogium cyanescens (RABENH.) KÖRB. – EBS-S: P Rize: area of Şenyuva village, valley of Firtina stream, forest road on E slope ca 500 m from the ruins of Zil castle (Zil kale), on mossy rock, 40°57′49′′ N, 40°57′36′′ E, ca 750 m, fertile, AG, JH, ZP & CP, 2.7.2001; in fissures of damp rocks. – P Rize, Ayder, outskirts of village, ca 1450 m, AG, JH, ZP & CP, 1.7.2001; on mossy rock, *Fo.* – P Rize, Ayder, W slope of Huser Mt (2548 m), ca 1500 m, N 40°57′48′′ E41°7′12′′ AG, JH, ZP & CP, 1.7.2001; on *Picea* sp. – P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, AG, JH, ZP & CP, 10.7.2001; on *Sambucus* sp. near stream in valley, on *An*, mossy granite rocks near the stream in the valley. – P Trabzon, Maçka, Altındere valley S of Sümela, spruce forest on slopes, ca 1100 m, AG, JH, ZP & CP, 10.7.2001; on basis of *Picea* sp.

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Leptogium gelatinosum (WITH.) J.R.LAUNDON – EBS-S: P Rize, Palkçur valley, N. of Mt Kavron, N 40°55´9,2´´ E41°11´54,4´´ ca 2600 m, AG, JH, ZP & CP, 10.7.2001; on wet rock, temporarily immersed in stream. – P Rize: area of Şenyuva village, valley of Firtina stream, forest road on E slope ca 500 m from the ruins of Zil castle (Zil kale), N 40°57´49´´, E 40°57´36´´, ca 750 m a. s. l., AG, JH, ZP & CP, 2.7.2001; on shaded rocks.

Leptogium intermedium (ARNOLD) ARNOLD – EBS-S: P Artvin, Kafkasör, foot of Genya Mt, forest of *Po* with *Cs*, *An* and *Rp*, road banks, AG, JH, ZP & CP, 6.7.2001; on soil.

Leptogium lichenoides (L.) ZAHLBR. – SWAR: Çeltikçi Beli, slope above mountain pass, 1400 m, IP, 1969; on bryophytes. – Acigől, south exposed slope above lake, 1000 m, IP, 1969; on conglomerate. – EBS-S: P Artvin, Kafkasör, foot of Genya Mt, forest of Po with Cs, An and Rp, road banks, AG, JH, ZP & CP, 6.7.2001; on soil. – P Rize, Ayder, W slope of Huser Mt (2548 m), ca 1500 m, N 40°57´48´´ E41°7´12´´, AG, JH, ZP & CP, 1.7.2001; among mosses on ground, on Fo. – P Rize: area of Şenyuva village, valley of Firtina stream, forest road on E slope ca 500 m from the ruins of Zil castle (Zil kale), (40°57´49´´ N, 40°57´36´´ E), ca 750 m a. s. l., AG, JH, ZP & CP, 2.7.2001; on shaded rocks, bases of *Pyrus* sp. – P Rize, Ayder, W slope of Huser Mt (2548 m), ca 1500 m, N 40°57´48´´ E41°7´12´´, AG, JH, ZP & CP, 1.7.2001. – P Trabzon, Sümela, forest on slope below the monastery, AG, JH, ZP & CP, 10.7.2001; on mossy rocks. – P Trabzon, Maçka, Altmdere valley S of Sümela, on mossy granite rocks near stream in valley, ca 1000 m, AG, JH, ZP & CP, 10.7.2001.

Leptogium saturninum (DICKS.) NYL. – EBS-S: P Rize, Ayder, W slope of Huser Mt (2548 m), ca 1500 m, N 40°57´48´´ E41°7´12´´, AG, JH, ZP & CP, 1.7.2001; on *Fo*. – P Trabzon, Sümela, area of the monastery, AG, JH, ZP & CP, 10.7.2001; on *Juglans*. – P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, AG, JH, ZP & CP, 10.7.2001; on *Alnus* sp., *Sambucus* sp. near stream in valley.

****Leptogium subtile*** (SCHRAD.) TORSS. – SWAR: Topraktepe, gorge of river Alara, 200 m, IP, 1969; corticolous.

****Leptogium tenuissimum*** (DICKS.) KÖRB. – EBS-S: P Artvin, Kafkasör, foot of Genya Mt, forest of *Po* with *Cs*, *An* and *Rp*, road banks, AG, JH, ZP & CP, 6.7.2001; on soil. – P Artvin, Şavşat, Veliköy village, Karagöl, surroundings of tarn (ca 17 km from Şavşat), open bank of forest road (mixed pine-spruce forest), among mosses and lichens *(Peltigera venosa)*, fertile, AG, JH, ZP & CP, 7.7.2001, rev. P. M. Jørgensen 2002; on soil. – P Trabzon, mountain pass Zigana between Maçka and Torul, xerothermic slope, ca 1800 m, AG, JH, ZP & CP, 12.7.2001; on soil.

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Leptogium teretiusculum (WALLR.) ARNOLD – EBS-S: P Rize, Ayder, W slope of Huser Mt (2548 m), ca 1500 m, N 40°57′48′′ E41°7′12′′, AG, JH, ZP & CP, 1.7.2001; on *Fo*.

Lichinella iodopulchra (CROZALS) MORENO & EGEA – SWAR: Kütahya, 800 m, IP, 1969; on open schistose rocks.

Lobaria pulmonaria (L.) HOFFM. – EBS-S: P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, fertile, AG, JH, ZP & CP, 10.7.2001; fallen on the gound, probably on *An*.

Lobaria virens (WITH.) J.R.LAUNDON – EBS-S: P Rize: area of Şenyuva village, valley of Firtina stream, on slope above the ruins of Zil castle (Zil kale), ca 750 m a. s. l., N 40°57′24′′ E40°7′30′′, AG, JH, ZP, 2.7.2001; on branch of *Rhododendron* sp.

Lobothallia alphoplaca (WAHLENB.) HAFELLNER – SWAR: Bőzüyük, 700 m, leg. IP, 1969; on schistose rocks. – Balikesir, north slope of hill, 300 m, IP, 1969; on volcanic rock.

Megaspora verrucosa (ACH.) HAFELLNER & V.WIRTH – SWAR: Çeltikçi Beli, slope above mountain pass, 1400 m, IP, 1969; on bryophytes.

Nephroma parile (ACH.) ACH. – EBS-S: P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, AG, JH, ZP & CP, 11.7.2001; on *Abies* sp.

Ochrolechia turneri (SM.) HASSELROT. – SWAR: Karmisali, *Oe* near village, 10 m, IP, 1969; on bark of *Oe*.

Pannaria conoplea (ACH.) BORY – EBS-S: P Rize, Ayder, W slope of Huser Mt. (2548 m), ca 1500 m, N 40°57′48′′ E41°7′12′′, AG, JH, ZP & CP, 1.7.2001, det. P. M. JØRGENSEN 2002; on *Fo*. – P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, AG, JH, ZP & CP, 10.7.2001; on *Abies* sp. near stream in valley, on mossy acid rocks.

Parmelia submontana NÁDV. ex HALE – EBS-S: P Artvin, Kafkasör, foot of Genya Mt, forest of *Po* with *Cs*, *An* and *Rp*, AG, JH, ZP & CP, 6.7.2001; on *Po*.

Parmeliella* cf. *triptophylla (ACH.) MÜLL.ARG. – EBS-S: P Rize, Ayder, W slope of Huser Mt (2548 m), ca 1500 m, N 40°57′48′′ E41°7′12′′, AG, JH, ZP & CP, 1.7.2001, det. P.M. JØRGENSEN 2002; on *Fo*.

Parmeliella triptophylla (ACH.) MÜLL.ARG. – EBS-S: P Rize, Ayder, W slope of Huser Mt (2548 m), ca 1500 m, N 40°57′48′′ E41°7′12′′, AG, JH, ZP & CP, 1.7.2001, det. P.M. JØRGENSEN 2002; on *Fo*. – P Rize, Ayder, valley of Kavron stream, spruce forest close to scout camp, AG, JH, ZP & CP, 4.7.2001, det. P.M. JØRGENSEN 2002; bark of *Alnus* sp. – P Trabzon, Maçka, Altındere valley S of Sümela, spruce forest on slopes, ca 1000 m, AG, JH, ZP & CP, 10.7.2001; on bases of *Picea* sp.

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Parmeliopsis hyperopta (ACH.) ARNOLD – EBS-S: P Trabzon, mountain pass Zigana between Maçka and Torul, ca 1800 m, AG, JH, ZP & CP, 12.7.2001; on *Pinus* sp.

Parmotrema chinense (OSBECK) HALE & AHTI – EBS-S: P Rize: area of Şenyuva village, valley of Firtina stream, forest road on E slope ca 500 m from the ruins of Zil castle (Zil kale), N 40°57´49´´ E 40°57´36´´, ca 750 m a. s. l., AG, JH, ZP & CP, 2.7.2001; on mossy shaded rocks. – EBS-S, P Trabzon, Maçka, Altındere valley S of Sümela, on *Abies* sp., ca 1000 m, AG, JH, ZP & CP, 11.7.2001.

Peltula euploca (ACH.) POELT ex PIŠÚT – SWAR: Buirköy, south slope of hill near village, 150 m, IP, 1969; on limestone walls.

Peltula obscurans (NYL.) GYELN. – SWAR: Bigadiç – village between Balikesir and Sindirgim, western slope of hill, 600 m, IP, 1969; on soil in rock fissures.

Pertusaria leucosora NYL. – SWAR: Çeltikçi Beli, limestone rocks, 1400 m, IP, 1969; on quartzite. – Balikesir, open siliceous rocks near town, 300 m, IP, 1969; on rock.

Physcia adscendens (FR.) H.OLIVIER – SWAR: Karamürsel, *Oe* near village, 10 m, IP, 1969; on bark of *Oe*. – Çeltikçi Beli, 1300 m, IP, 1969; on twigs of *Quercus coccifera*. – Dolyalar, meadows near village, 1100 m, IP, 1969; on *Qr*.

Physcia dimidiata (ARNOLD) NYL. – SWAR: Bozüyük, valley, 700 m, IP, 1969; on schistose rocks.

Physconia detersa (NYL.) POELT – SWAR: Çeltikci Beli, slope above mountain pass, 1400 m, IP, 1969; on bryophytes.

Physconia grisea (LAM.) POELT – SWAR: Dolyalar, meadows near village, 1100 m, IP, 1969; on *Qr*.

Physconia muscigena (ACH.) POELT – SWAR: Çeltikçi Beli, slope above mountain pass, 1400 m, IP, 1969; on bryophytes on limestone rocks.

****Physconia petraea*** (POELT) VĚZDA & POELT – SWAR: Balikesir, hill near town, towards Susurluk, ca 300 m, IP, 1969; on open quartzite rock.

Placocarpus schaereri (FR.) BREUSS – SWAR: Acigöl, south exposed slope above lake, 1000 m, IP, 1969; on thalli of *Lecanora* sp. on conglomerate rock.

Polychidium muscicola (SW.) GRAY – EBS-S: P Rize, Ayder, W slope of Huser Mt (2548 m), ca 1500 m, fertile, N 40°57´48´´ E41°7´12´´, AG, JH, ZP & CP, 1.7.2001; on mossy granite. – P Rize: area of Şenyuva village, valley of Firtina stream, forest road on E slope ca 500 m from the ruins of Zil castle (Zil kale), fertile, N 40°57´49´´, E 40°57´36´´, ca 750 m, AG, JH, ZP & CP, 2.7.2001; in fissures of damp rocks. – P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, AG, JH, ZP & CP, 10.7.2001; on mossy rock near stream in valley.

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Psoroma hypnorum (VAHL.) GRAY – EBS-S: P Rize, Ayder, valley of Kavron stream, Kavron settlement in alpine zone, N 40°55´32,5´´ E41°9´12,8´´, AG, JH, ZP & CP, 4.7.2001; on soil.

Pyrrhospora quernea (DICKS.) KÖRB. – EBS-S: P Trabzon, mountain pass Zigana between Maçka and Torul, ca 1800 m, AG, JH, ZP & CP, 12.7.2001; on *Pinus* sp.

Ramalina calicaris (L.) FR. – EBS-S: P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, leg. AG, JH, ZP & CP, 11.7.2001; on *Alnus* sp.

Ramalina roesleri (HOCHST. ex SCHAER.) Hue – EBS-S: P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, AG, JH, ZP & CP, 11.7.2001; on *Alnus* sp.

****Ramalina sinensis*** JATTA – EBS-S: P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, AG, JH, ZP & CP, 10.7.2001; on *Alnus* sp. – P Trabzon, mountain pass Zigana between Maçka and Torul, ca 1800 m, AG, JH, ZP & CP, 12.7.2001; on *Pinus* sp.

Rinodina bischofii (HEPP) A.MASSAL. – SWAR: Kuşadasi, south slope of hill, 50 m, IP; on limestone rock.

Rinodina gennarii BAGL. – SWAR: Bigadiç, hill near village, 600 m, IP, 1969; det. H. MAYRHOFER; on rhyolite rocks.

Rinodina mayrhoferi A.CRESPO – SWAR: Çeltikçi Beli, 1300 m, IP, 1969; det. K. ROPIN; on *Juniperus oxycedra*.

Sarcogyne fallax H.MAGN. – SWAR: Çeltikçi Beli, 1300 m, IP, 1969; on limestone rocks.

Sarcogyne regularis KÖRB. – SWAR: Karamürsel, seashore, ca 1 m, IP, 1969; on granitic rocks.

Staurothele hymenogonia (NYL.) TH.FR. – SWAR: Buirköy, south slope of hill near village, 150 m, IP, 1969; on open limestone rocks.

Sticta sylvatica (HUDS.) ACH. – EBS-S: P Rize, Ayder, outskirts of village, ca 1450 m, AG, JH, ZP & CP, 1.7.2001; on *Fo*. – P Trabzon, mountain pass Zigana between Maçka and Torul, ca 1800 m, AG, JH, ZP & CP, 12.7.2001; on *Pinus* sp. – P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, AG, JH, ZP & CP, 10.7.2001; on mossy granitic rocks near stream in valley.

Tephromela atra (ACH.) HAFELLNER – SWAR: Çeltikçi Beli, 1300 m, IP, 1969; on siliceous-limestone rocks. – Bigadiç, hill near village, 600 m, IP, 1969; on rhyolite rocks.

Thelotrema lepadinum (ACH.) ACH. – EBS-S: P Rize: area of Şenyuva village, valley of Firtina stream, on slope above the ruins of Zil castle (Zil kale), ca 750 m a. s. l., N 40°57´24´´ E40°7´30´´, AG, JH, ZP, 2.7.2001; on *Alnus*.

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Umbilicaria cylindrica (L.) DELISE ex DUBY – EBS-S: P Trabzon, mountain pass Zigana between Maçka and Torul, xerothermic slope, ca 1800 m, AG, JH, ZP & CP, 12.7.2001; on rocks.

Umbilicaria vellea (L.) HOFFM. – EBS-S: P Trabzon, mountain pass Zigana between Maçka and Torul, xerothermic slope, ca 1800 m, AG, JH, ZP & CP, 12.7.2001; on rocks.

Usnea longissima ACH. – EBS-S: P Trabzon, Maçka, Altındere valley S of Sümela, ca 1000 m, AG, JH, ZP & CP, 11.7.2001; on *Picea* sp.

Xanthoparmelia conspersa (EHRH. ex ACH.) HALE – EBS-S: P Trabzon, mountain pass Zigana between Maçka and Torul, xerothermic slope, ca 1800 m, AG, JH, ZP & CP, 12.7.2001, det. V ORTHOVÁ 2002; on rocks.

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