

Lichens and lichenicolous fungi of Syria, including a first checklist

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Abstract: JOHN, V., SEAWARD, M. R. D., SIPMAN, H. J. M. & ZEDDA, L. 2004. Lichens and lichenicolous fungi from Syria, including a first checklist. – *Herzogia* 17: 157–177.

Based on a literature survey and identification of recent collections, 399 taxa of lichens and lichenicolous fungi are listed for Syria; of these, 125 are reported for the first time from the country. A checklist with literature references and details of the new records are presented.

Zusammenfassung: JOHN, V., SEAWARD, M. R. D., SIPMAN, H. J. M. & ZEDDA, L. 2004. Lichenisierte und lichenicole Pilze aus Syrien, einschließlich einer ersten Checkliste. – *Herzogia* 17: 157–177.

Aus Literaturauswertung und Bestimmung rezenter Aufsammlungen ergab sich eine Liste von 399 Taxa lichenisierter und lichenikoler Pilze für Syrien, darunter 125 Taxa, die zum ersten Mal für das Land gemeldet werden. Die Ergebnisse werden in Form einer Checkliste mit Literaturverweisen und Fundortangaben zu den Neufunden präsentiert.

Key words: Lichenized fungi, biodiversity, mediterranean lichen flora.

Introduction

While the phanerogamic flora of the Mediterranean has been reasonably well studied, the cryptogamic flora is generally poorly known. To improve this situation, NIMIS (1996) initiated a campaign to prepare checklists of the lichen flora of all Mediterranean countries. The present paper on Syria is a further contribution to the lichen floras resulting from this initiative.

The Syrian Arabic Republic covers an area of 185,180 km². In the west a Mediterranean sandy coast line is followed by two parallel ranges of coastal mountains, the Western Mount Lebanon, which extends to the northern part of the Syrian coastline (Latakia Mountain) and includes Mount Hermon, the highest peak of the country rising to 2814 m a.s.l., and the Eastern Mount Lebanon, which stretches along the Syria-Lebanon border. The Orontes river flows between these two ranges and creates a fertile valley extending north to Homs, Hama, and the Aleppo plains. East of the mountains a chalky plateau extends to the town of Damascus. More than 60 % of the Syrian territory is desert to semi-desert, especially the central part of the country (Al-Sham desert). North of the desert area a large fertile basin occurs, formed by the Euphrate river. It crosses Syria diagonally in the north-east and has its continuation on Iraq territory. In the south a volcanic plateau is found, the Jabal al-Arab, reaching an altitude of 1800 m a.s.l.

The climate shows a gradient from west to east. The western coast has a Mediterranean climate, with a mean annual precipitation up to 1000 mm in the mountains. In the central part of the country, along the line Aleppo-Hama-Homs-Deraa, the climate is characterized by very hot summers and mean annual precipitation to 400 mm. In the desert precipitation is less than 100 mm/year and summers are extremely hot.

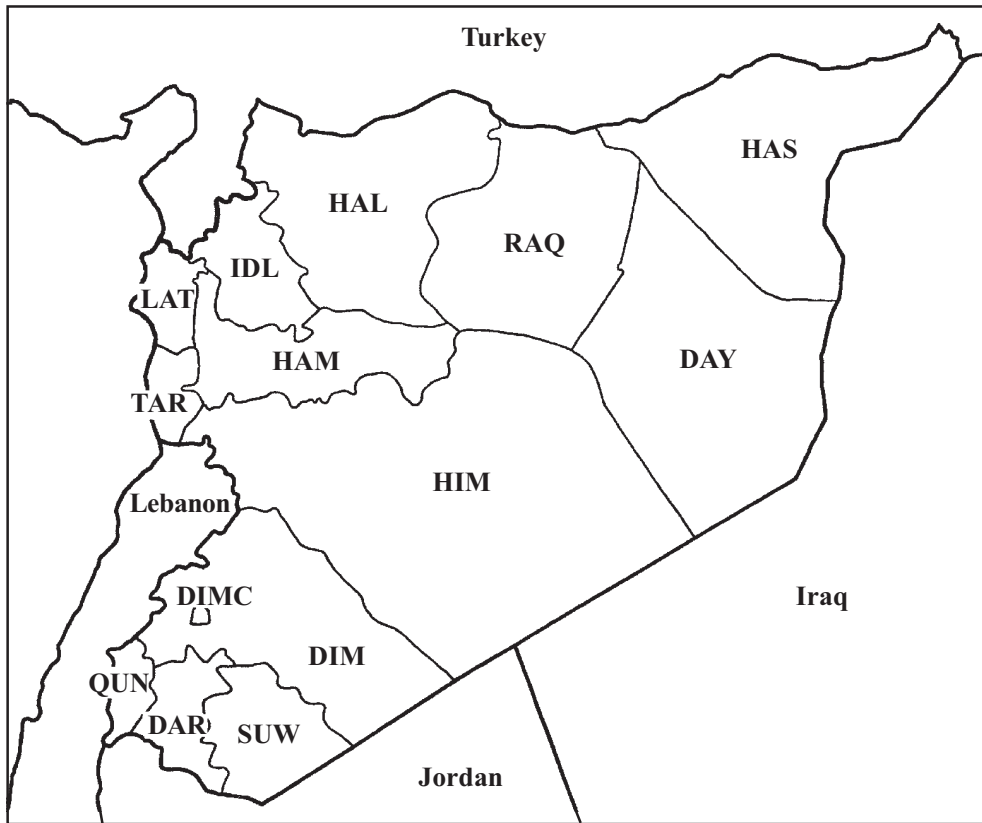


Fig. 1: The 14 provinces of Syria: Al Hasakah (HAS), Al Lādhiqīyah (LAT), Al Qunaytirah (QUN), Ar-Raqqa (RAQ), As Suwaydā' (SUW), Dar'ā (DAR), Dayr az-Zwar (DAY), Dimashq (DIMC), Dimashq (DIM), Halab (HAL), Hamāh (HAM), Hims (HIM), Idlib (IDL) and Tartūs (TAR).

The natural vegetation of Syria has been influenced by human activities since prehistoric times. The forests in the mountains have been destroyed for wood production and are converted into pasture land. Relict forests occur nowadays in the north-western mountains and on Mount Lebanon. On south-west woodlands of the evergreen oak *Quercus calliprinos* are found.

The lichen flora of Syria has been studied for more than 150 years. The earliest investigations depended on travelling scientists who visited the country and collected various groups of organisms, including lichens. These were sent to specialists for identification. In this way, KREMPELHUBER (1868) was the first to report on lichens from the country, collected by Kotschy. Other important contributions were made in the same way by STEINER (1921), SZATALA (1940, 1961) and SANTESSON (1942).

Since these investigations were based on collections made by non-specialists, they are naturally incomplete and restricted to conspicuous taxa. Accordingly, there was a great improvement when the first lichenologist, Roger-Guy Werner, visited the area; for his biographical details see LLIMONA (1979). Werner was well prepared for the job, because he had studied the lichen flora of North Africa extensively before he visited Syria and Lebanon in 1938. His

results are published in 8 parts (WERNER 1954, 1955, 1956, 1957, 1958, 1959, 1963, 1966). In all, he recognized 281 species for both countries, and provided a phytogeographical analysis. However, his publications consist of notes on selected taxa, together with an overall analysis, and unfortunately do not give a clear survey of the lichens known from Syria at that time.

After Werner attention to the lichen flora of Syria has been very limited, being restricted to the occasional mention of Syrian specimens in taxonomic revisions (e.g. MAYRHOFER & POELT 1979, MAYRHOFER 1984, KNOPH 1990, BREUSS 1996, NAVARRO-ROSINÉS & HLADUN 1996). At the same time the introduction of new techniques for chemical analysis and improved optical equipment have greatly changed the classification of lichens, so that many earlier reports are now in need of confirmation.

Nimis' campaign and collections made by trained lichenologists in Syria in 1993 and 1999 induced the preparation of the present paper. The authors acknowledge its deficiencies and imperfections, but trust that it will provide a useful starting point for a more detailed lichenological investigation of Syria.

Materials and methods

For the following checklist, all relevant literature was evaluated. The encountered taxa are listed under their currently accepted name. Since infraspecific taxa are nowadays much less used than before, they are included in the pertinent species, unless indications exist that they still deserve a special mention. A comprehensive list of references has been appended.

Due to boundary changes, a number of species reported from Syria had to be excluded: *Lecanora (Aspicilia) ferruginea*, *Caloplaca variabilis* var. *lecideina*, *Buellia tumida* (= *B. dispersa*), *Catillaria lutosa* and *Collema multifidum* (= *C. cristatum* var. *marginale*), reported in STEINER (1921) and *Usnea syriaca* reported in MOTYKA (1936–38).

In addition, results of new identifications based on two recent collections are included. No attempt has been made to locate further unpublished collections.

(1) Leg. L. Zedda; samples are kept in B and Hb. Seaward; identifications by H. Sipman and L. Zedda. Collecting localities:

- 1a - Muhafazat As Suwaydā': Salkhad, abandoned fortification on hill top. Jebel Druz/Jabal El-Arab. 1300–1400 m. 32°29.59'N, 36°42.57'E. On basalt rock in open, low scrub. 30 Mar. 1999.
- 1b - Muhafazat As Suwaydā': Tel Al Los, Jebel Druz/Jabal El-Arab. 1450 m. 32°34.8'N, 36°46.5'E. Open, low scrub; pastureland with basalt stone walls and heaps. 30 Mar. 1999.
- 1c - Muhafazat As Suwaydā': 2 km SE of Maiamas, Jebel Druz/Jabal El-Arab. 1500 m. 32°37.2'N, 36°40.8'E. Grazed, open, shrubby *Quercus* forest. 30 Mar. 1999.
- 1d - Muhafazat As Suwaydā': Tel Qulieb near Al Kafr NW of Maiamas, Jebel Druz/Jabal El-Arab. 1400 m. 32°38.9'N, 36°39.8'E. Grazed, open, shrubby *Quercus* forest. 30 Mar. 1999.
- 1e - Muhafazat As Suwaydā': S of Qanawat, Jebel Druz/Jabal El-Arab. 1020 m. 32°44.6'N, 36°39.8'E. Dense *Quercus calliprinos*-forest with pastures. 31 Mar. 1999.
- 1f - Muhafazat As Suwaydā': N of Qanawat, Jebel Druz/Jabal El-Arab. 1200 m. 32°44.2'N, 36°37.4'E. Arable fields, pastures with fruit trees, scrubs, basalt stone walls, *Rhus corearia*. 31 Mar. 1999.
- 1g - Muhafazat As Suwaydā': Shabha, volcanic ash hill in outskirts, Jebel Druz/Jabal El-Arab. C. 1400 m. 32°N, 36°E. Open vegetation on lava debris. 31 Mar. 1999.
- 1h - Muhafazat Dimashq: Steppe 60 km NE of Damascus at S foot of Jabal Haymur, near the road. 750 m. 33°46.0'N, 37°00.5'E. Xeromorphic, open, low scrub. 1 Apr. 1999.
- 1i - Muhafazat Dayr az-Zwar: Steppe NE of Ash Shola, c. 30 km SW of Deir Ez Zor E of Jebel El Bishry. 300 m. 35°14.6'N, 39°46.7'E. Xeromorphic, open, low scrub. 2 Apr. 1999.

- lj - Muhafazat Halab: Meadows on SW-shore of Euphrates river near bridge c. 5 km S of Tal Ahmar (NW Manbej). C. 400 m. 36°37.9'N, 38°12.0'E. 3 Apr. 1999.
- lk - Muhafazat Halab: Meadows along Euphrates river at bridge near Turkish border E of Jarablos. 400 m. 36°49.3'N, 38°02.0'E. *Populus euphratica* riverside forest, arable fields, road banks. 3 Apr. 1999.
- ll - Muhafazat Idlib: Towards Ariha c. 5 km E of Alia. 580 m. 35°47.2'N, 36°29.9'E. Overgrazed rocky pastureland with open herb- and low shrub vegetation on S-slope. 4 Apr. 1999.
- lm - Muhafazat Idlib: Jesr Al Shogur, outskirts and near river Assy (Orontes). 180 m. 35°48.9'N, 36°20.1'E. Road bank, arable fields. 4 Apr. 1999.
- ln - Muhafazat Al Lādhiqīyah: Ghabat el Foroulluk (Frouloq Forest), c. 40 km NNE of Lattakia. 540–650 m. 35°51.0'N, 35°59.9'E. *Quercus cerris* ssp. *pseudocerris* forest on gabbro and serpentine, partly along stream. 5 Apr. 1999.
- lo - Muhafazat Al Lādhiqīyah: Qala'at Salah ad-Din (Saladins Castle), NE of Al Haffe. Castle and valley below. 580 m. 35°35.7'N, 36°03.3'E. Rocks, maquis, road bank. 6 Apr. 1999.
- lp - Muhafazat Al Lādhiqīyah: E of Slenfe (Slunfe, Slenfeh). 1300–1420 m. 35°35.30'N, 36°12.59'E. Grazed *Abies-Quercus* forest on W-slope on limestone. 6 Apr. 1999.
- lq - Muhafazat Hims: Barschien SW of Btaise, near Barshin. 850 m. 34°52.5'N, 36°20.2'E. *Castanea-Quercus* forest. 7 Apr. 1999.
- lr - Muhafazat Dimashq: Border of dry salt lake 5 km ESE of Jerud ("Mamlahat Jerud"). 800 m. Coord.: 33°48.18'N, 36°47.82'E. Salty soil. 8 Apr. 1999.
- ls - Deir Attejjah, E of town. 1380–1550 m. 34°05.6'N, 36°49.37'E. Degraded, hilly steppe, young fruit tree plantation. 8 Apr. 1999.

(2) Leg. K. Doebritz; samples in hb. John, stored in M; identifications are by V. John. Collecting localities:

- 2a - Ar-Raqqa: Tell Cheura, 36°35'N, 39°28'E. Sept.–Oct. 1993
- 2b - Al Lādhiqīyah: Hafila, 35°37'N, 35°48'E. Sept.–Oct. 1993
- 2c - Al Lādhiqīyah: Ugarit 35°35'N, 35°45'E. Sept.–Oct. 1993
- 2d - Al Lādhiqīyah: Salahaddin, 35°40'N, 36°06'E. Sept.–Oct. 1993

Annotated checklist

Accepted taxa are in bold; they are listed together with synonyms used in published records of Syrian lichens (not in bold). **H** = References from herbarium specimens. **L** = References from the literature. * after literature reference = first description of taxon with type material from Syria. * before name = newly reported taxon for Syria. Details of the cited herbarium specimens are provided in the lists of localities above, following the code in brackets.

- Acarospora bornmuelleri*** J.Steiner – **L**: WERNER 1958: 240.
- Acarospora cervina*** A.Massal. – **L**: STEINER 1921: 18 (as *A. percaena*). - **H**: (1i) Zedda S-196 (B); (1j) Zedda S-220 (B); (1s) Zedda S-488 (B).
- Acarospora fuscata*** (Schrad.) Th.Fr. – **L**: WERNER 1959: 333 (as *A. fuscata* var. *effigurata*).
- Acarospora fuscata* var. *effigurata* (Sommerf.) H.Magn. = *A. fuscata*.
- Acarospora handelii* J.Steiner = *A. nodulosa*.
- Acarospora hospitans*** H.Magn. – **L**: WERNER 1959: 333.
- Acarospora laqueata*** Stizenb. ex Flagey – **H**: (2a) Doebritz (hb. John 10636, 10645, 10626).
- Acarospora livida*** Werner – **L**: WERNER 1958: 240*.
- Acarospora nodulosa*** (Dufour) Hue – **L**: STEINER 1921: 21 (as *A. handelii*).
- Acarospora percaena* (Ach.) J.Steiner = *A. cervina*.
- Acarospora scabra* (Pers.) Th.Fr. = *Glypholecia scabra*.
- Acarospora strigata*** (Nyl.) Jatta – **L**: WERNER 1958: 241.
- Acarospora veronensis*** A.Massal. – **L**: SZATALA 1960: 315 (as *A. veronensis* f. *minima*). - **H**: (11) Zedda S-240 (B).
- Acarospora veronensis* f. *minima* Harm. = *A. veronensis*.
- Acrocordia conoidea*** (Fr.) Korb. – **L**: WERNER 1963: 314 (as *Arthopyrenia conoidea*).
- ****Acrocordia gemmata*** (Ach.) A.Massal. – **H**: (1n) Zedda S-299 (B).

- Adelococcus lecanorae* Werner – **L**: WERNER 1963: 315* (on *Lecanora farinosa*).
- **Agonimia octospora* Coppins & P.James – **H**: (1e) Zedda S-92 (B), S-126 (B); (1p) Zedda S-384 (B). *Allarthonia lapidicola* (Taylor) Zahlbr. = *Arthonia lapidicola*.
- Anaptychia ciliaris* (L.) Körb. ex A.Massal. – **L**: SANTESSON 1942: 2; WERNER 1955: 360. – **H**: (1b) Zedda S-11 (B); (1c) Zedda S-34 (hb. Seaward 112869), S-39 (B), S-51b (B); (1p) Zedda S-374 (B), S-444 (hb. Seaward 112868); (1q) Zedda S-454 (B); (2c) Doebritz (hb. John 10670). *Anaptychia intricata* (Desf.) A.Massal. = *Tornabea scutellifera*.
- **Anaptychia roemerii* Poelt – **H**: (1s) Zedda S-477a (B).
- **Anaptychia setifera* Mereschk. ex Räsänen – **H**: (1p) Zedda S-376 (B), S-408 (B).
- **Anaptychia ulotrichoides* (Vain.) Vain. – **H**: (1a) Zedda S-3 (B); (1b) Zedda S-15 (B).
- Arthonia clemens* (Tul.) Th.Fr. agg. – **L**: WERNER 1956b: 467 (as *Conida clemens*, on *Aspicilia syrica*).
- **Arthonia excipienda* (Nyl.) Leight. – **H**: (1n) Zedda S-306 (B).
- Arthonia glaucumaria* Nyl. – **L**: WERNER 1956b: 467 (as *Celidium varians*, on *Lecanora bicincta* var. *lecidina*); WERNER 1963: 315 (as *Arthonia varians*, on *Lecanora rupicola*).
- Arthonia lapidicola* (Taylor) Branth & Rostr. – **L**: STEINER 1921: 7 (as *Allarthonia lapidicola*).
- **Arthonia radiata* (Pers.) Ach. – **H**: (1p) Zedda S-433 (B).
- Arthonia varians* (Davies) Nyl. = *Arthonia glaucumaria*.
- **Arthonia vinosa* Leight. – **H**: (1p) Zedda S-371 (B).
- Arthopyrenia calcicola* Werner – **L**: WERNER 1966: 74*.
- Arthopyrenia conoidea* (Fr.) Zahlbr. = *Acrocordia conoidea*.
- Aspicilia albosparsa* (Werner) S.Y.Kond. – **L**: WERNER 1958: 241*.
- Aspicilia amylyphora* (J.Steiner) S.Y.Kond. & N.Beznis – **L**: STEINER 1921: 33*.
- Aspicilia armeniaca* (Werner) S.Y.Kond. – **L**: WERNER 1959: 333*.
- Aspicilia caesiocinerea* (Nyl. ex Malbr.) Arnold – **L**: STEINER 1921: 30* (incl. var. *planior*); WERNER 1956a: 352 (as *Lecanora caesiocinerea*), 1956b: 461 (as *Lecanora caesiocinerea* var. *planior*).
- Aspicilia caesiocinerea* var. *planior* J.Steiner = *A. caesiocinerea*.
- Aspicilia calcarea* (L.) Körb. – **L**: STEINER 1921: 35 (as *Lecanora calcarea*, incl. f. *atomaria*); WERNER 1958: 241 (as *Lecanora calcarea*), 242 (as *Lecanora calcarea* f. *ochracea*); NAVARRO-ROSINÉS & HAFELLNER 1996: 223. – **H**: (11) Zedda, in S-240 sub *Acarospora veronensis* (B); (2a) Doebritz (hb. John in 10641 sub *Caloplaca coronata*, 10624, 10620).
- Aspicilia calcarea* var. *reagens* (Zahlbr.) Szat. – **L**: STEINER 1921: 35 (as *Lecanora calcarea* var. *reagens*).
- Aspicilia calcarea* f. *atomaria* A.Massal. = *A. calcarea*.
- Aspicilia calcarea* f. *ochracea* (Körb.) Leight. = *A. calcarea*.
- Aspicilia contorta* (Hoffm.) Kremp. – **L**: STEINER 1921: 36 (as *Lecanora contorta* var. *cinereo-virens*) & 37 (as *Lecanora contorta* var. *glaucopruinosa*, var. *albocincta*, var. *ochrocincta* & var. *disseminata*). – **H**: (1h) Zedda S-190 (B); (1j) Zedda S-219 (B), S-224 (hb. Seaward 112879); (1l) Zedda S-238 (B); (1s) Zedda, in S-479 sub *Caloplaca decipiens* (B); (2a) Doebritz (hb. John 10630).
- **Aspicilia contorta* ssp. *hoffmanniana* Ekman & Fröberg – **H**: (2a) Doebritz (hb. John 10654, 10650).
- **Aspicilia desertorum* (Kremp.) Mereschk. – **L**: SZATALA 1941: 72 (as *Aspicilia sphaerothallina*). – **H**: (2a) Doebritz (hb. John 10667, 10633).
- Aspicilia dubertretii* (Werner) S.Y.Kond. – **L**: WERNER 1956b: 462*.
- Aspicilia esculenta* (Pall.) Flagey – **L**: STEINER 1921: 44 (as *Lecanora esculenta*).
- Aspicilia euphratica* (Werner) S.Y.Kond. – **L**: WERNER 1958: 242*.
- Aspicilia farinosa* (Flörke) Arnold – **L**: STEINER 1921: 37 (as *Lecanora farinosa*); WERNER 1956b: 462* (as *Lecanora farinosa*, incl. f. *subopegraphoides*), 1958: 242 (as *Lecanora farinosa*), 243, 1966: 76 (as *Lecanora farinosa*, incl. f. *subopegraphoides*).
- Aspicilia intermutans* (Nyl.) Arnold – **L**: WERNER 1958: 242 (as *Lecanora intermutans*).
- Aspicilia platycarpa* (J.Steiner) Hue – **L**: STEINER 1921: 33 (as *Lecanora platycarpa*); SANTESSON 1942: 4 (as *Lecanora platycarpa*).
- Aspicilia radiosa* (Hoffm.) Poelt & Leuckert = *Lobothallia radiosa*.
- Aspicilia radians* (Werner) S.Y.Kond. var. *rubescens* (Werner) S.Y.Kond. – **L**: WERNER 1958: 242*.
- Aspicilia recedens* (Taylor) Arnold – **L**: WERNER 1956b: 462 (as *Lecanora recedens*).
- Aspicilia sphaerothallina* (J.Steiner) Szatala = *A. desertorum*.
- Aspicilia subcaesiocinerea* Werner – **L**: WERNER 1956b: 463* (as *Lecanora subcaesiocinerea*), 1958: 243 (as *Lecanora subcaesiocinerea*).

- Aspicilia subcircinata* (Nyl.) Coppins = *Lobothallia radiosa*.
- Aspicilia syriaca* (J.Steiner) Szatala – L: STEINER 1921: 40* (as *Lecanora syriaca*); SANTESSON 1942: 4 (as *Lecanora syriaca*); WERNER 1956b: 463 (as *Lecanora syriaca*), 1958: 243 (as *Lecanora syriaca*); Szatala 1960: 316.
- Bacidia naegelii* (Hepp) Zahlbr. = *Lecania naegelii*.
- Bacidia rubella* (Ehrh.) A.Massal. – L: WERNER 1959: 332. – H: (1n) Zedda S-295 (B); (1p) Zedda S-370 (B).
- **Bacidia subincompta* (Nyl.) Arnold – H: (1p) Zedda S-382a (B).
- Bagliettoa parmigera* (Steiner) Vězda & Poelt – L: WERNER 1963: 313 (as *Verrucaria parmigera* f. *alociza*).
- Biatorella leucothallina* J.Steiner = *Sarcogyne leucothallina*.
- Biatorella pruinosa* (Sm.) Mudd = *Sarcogyne regularis*.
- Blastenia ochracea* (Fr.) Trevis. f. *lactea* (A.Massal.) Kernst. = *Caloplaca ochracea*.
- Buellia badia* (Fr.) A.Massal. – L: WERNER 1956b: 467 (on *Lecanora muralis* var. *diffRACTA*), 1959: 336; SZATALA 1960: 323. – H: (1b) Zedda, in S-19 sub *Tephromela atra* (B).
- Buellia betulina* (Hepp) Th.Fr. = *B. griseovirens*.
- Buellia dubyana* (Hepp) Rabenh. = *Rinodina dubyana*.
- Buellia epigaea* (Pers.) Tuck. – L: STEINER 1921: 65; SZATALA 1941: 80 (as *Diploicia epigaea*).
- Buellia epipolia* (Ach.) Mong. var. *calcarea* (Weiss.) J.Steiner = *Diploctoma venustum*.
- Buellia epipolia* var. *venusta* (Körb.) Mong. = *Diploctoma venustum*.
- Buellia griseovirens* (Turner & Borrer ex Sm.) Almb. – L: WERNER 1959: 336 (as *B.betulina*).
- Buellia venusta* (Körb.) Lettau = *Diploctoma venustum*.
- Calicium abietinum* Pers. var. *minutum* (Körb.) Keissl. – L: WERNER 1957: 321.
- **Caloplaca aegatica* Giralt, Nimis & Poelt – H: (1n) Zedda S-309 (B).
- Caloplaca aegyptiaca* (Müll.Arg.) J.Steiner – L: STEINER 1921: 57 (as *C. variabilis* var. *candida*, *C. aegyptiaca* var. *circinans* and *C. inspersa*); WERNER 1957: 325 (as *Caloplaca aegyptiaca* var. *ochracea*), 1963: 314. – H: (1h) Zedda S-187 (B); (1j) Zedda S-216 (B, hb. Seaward 112877).
- Caloplaca aegyptiaca* var. *circinans* J.Steiner = *Caloplaca aegyptiaca*.
- Caloplaca aegyptiaca* var. *ochracea* (Müll.Arg.) Zahlbr. = *Caloplaca aegyptiaca*.
- **Caloplaca albolutescens* (Nyl.) H.Olivier – H: (2a) Doebritz (hb. John 10627).
- Caloplaca alociza* (A.Massal.) Mig. – L: WERNER 1956a: 353 (as *C. alocyza*).
- Caloplaca alocyza* = *C. alociza*.
- Caloplaca arenaria* (Pers.) Müll.Arg. – L: STEINER 1921: 60; WERNER 1956a: 354 (as *C. lamprocheila*), 1956b: 465.
- Caloplaca aurantia* (Pers.) J.Steiner – L: STEINER 1921: 64* (as *C. callopisma*, incl. f. *orientalis*); Werner 1956b: 466* (as *C. callopisma* f. *crenulata* & f. *orientalis*). – H: (1j) Zedda S-218 (B).
- Caloplaca aurantiaca* (Lightf.) Th.Fr. = *C. flavorubescens* p.p. & *C. flavovirescens* p.p.
- Caloplaca aurea* (Schaer.) Zahlbr. – L: SZATALA 1941: 78 (as *Gasparrinia aurea*).
- Caloplaca bracteata* (Hoffm.) Jatta = *Fulgensia bracteata*.
- Caloplaca callopisma* (Ach.) Th.Fr. = *C. aurantia*.
- Caloplaca callopisma* f. *crenulata* Werner = *C. aurantia*.
- Caloplaca callopisma* f. *orientalis* J.Steiner = *C. aurantia*.
- Caloplaca cerina* (Ehrh.) Th.Fr. – L: WERNER 1956a: 354 (as var. *anthracina*). – H: (1b) Zedda S-17 (B); (1d) Zedda S-62 (B); (1f) Zedda S-124 (B), S-175 (B); (1p) Zedda, in S-365 sub *Rinodina plana* (B), S-372 (B), S-428 (hb. Seaward 112881).
- Caloplaca cerina* var. *anthracina* Pers. = *C. cerina*.
- Caloplaca cerina* var. *muscorum* (A.Massal.) Jatta – L: WERNER 1956a: 354 (as *C. muscorum*).
- **Caloplaca cerinella* (Nyl.) Flagey – H: (1d) Zedda S-59 (B); (1e) Zedda S-104 (B); (1f) Zedda S-143 (B), S-150 (B); (1k) Zedda, in S-235 sub *Lecania fuscella* (B); (1p) Zedda S-364 (B).
- **Caloplaca cerinelloides* (Erichsen) Poelt – H: (1p) Zedda, in S-365 sub *Rinodina plana* (B).
- Caloplaca chalybaea* (Fr.) Müll.Arg. – L: WERNER 1956a: 354. – H: (2a) Doebritz (hb. John 10658).
- Caloplaca conglomerata* (Bagl.) Jatta – L: WERNER 1956a: 354 (as *C. squamulosa*), 1958: 243 (as *C. squamulosa*).
- Caloplaca coronata* (Körb.) J.Steiner – L: STEINER 1921: 59; SZATALA 1960: 322 (as *Placodium coronatum*). – H: (2a) Doebritz (hb. John 10641).
- Caloplaca crenularia* (With.) J.R.Laundon – L: WERNER 1959: 336 (as *C. festiva*, incl. *obscurata*). – H: (1f) Zedda S-171 (B); (1n) Zedda S-255 (B).
- **Caloplaca decipiens* (Arnold) Blomb. & Pers. – H: (1a) Zedda S-6 (B); (1j) Zedda, in S-220 sub *Acarospora cervina* (B); (1s) Zedda S-479 (B); (2a) Doebritz (hb. John 106222, 10631).
- Caloplaca erythrocarpa* (Pers.) Zwackh – L: STEINER 1921: 60 (as *C. lallavei*); WERNER 1957: 325 (as *C.*

- lallavei*). – **H:** (2a) Doebritz (hb. John in 10649 sub *C. teicholyta*, in 10656 sub *Candelariella aurella*, 10661, 10666, 10651, in 10658 sub *C. chalybaea*).
- Caloplaca farinulenta** Werner – **L:** WERNER 1956b: 466*, 1959: 335.
- Caloplaca ferrarii** (Bagl.) Jatta – **L:** STEINER 1921: 61 (as var. *pura*); NAVARRO-ROSINÉS & HLADUN 1996: 151.
- Caloplaca ferrarii* var. *pura* J.Steiner = *C. ferrarii*.
- Caloplaca ferruginea** (Huds.) Th.Fr. – **L:** WERNER 1957: 325, 1959: 336. – **H:** (1p) Zedda S-426 (B).
- Caloplaca festiva* (Ach.) Zwackh = *C. crenularia*.
- Caloplaca festiva* var. *depauperata* H.Magn. = *C. hungarica*.
- Caloplaca festiva* var. *obscurata* H.Magn. = *C. crenularia*.
- Caloplaca flavorubescens** (Huds.) J.R.Laundon – **L:** WERNER 1957: 325 (as *C. aurantiaca*). – **H:** (2a) Doebritz (hb. John 10653).
- ***Caloplaca flavorubescens** var. *quercina* (Flagey) Giralt – **H:** (1f) Zedda S-142 (B), S-147 (hb. Seaward 112882); (1n) Zedda, in S-337 sub *Rinodina oleae* (B); (1p) Zedda S-388 (B), S-429 (B), S-450 (B).
- Caloplaca flavovirescens** (Wulfen) Dalla Torre & Sarnth. – **L:** WERNER 1957: 325 and 1959: 335 (both as *C. aurantiaca*).
- Caloplaca fulgens* (Sw.) Zahlbr. var. *campestris* (Th.Fr.) J.Steiner = *Fulgensia fulgens*.
- Caloplaca fulva** (Anzi) Jatta – **L:** STEINER 1921: 53 (as var. *isabellina*).
- Caloplaca fulva* var. *isabellina* J.Steiner = *Caloplaca fulva*.
- ***Caloplaca haematites** (Chaub. ex St.Amans) Zwackh – **H:** (1e) Zedda S-99 (B); (1f) Zedda S-144 (hb. Seaward 112883), S-148 (B); (1n) Zedda, in S-309 sub *Caloplaca aegatica* (B); (1p) Zedda S-352 (B), S-449 (B); (2b) Doebritz (hb. John 10676).
- ***Caloplaca herbidella** (Hue) H.Magn. – **H:** (1p) L. Zedda S 373 (B), S-427 (B).
- Caloplaca holocarpa** (Hoffm.) Wade – **L:** STEINER 1921: 59 (as *C. pyracea*); WERNER 1957: 325 (as *C. pyracea*) & 326 (as *C. pyracea* f. *vitellinuloides*). Steiner's reports are from limestone, Werner's from bark.
- Caloplaca hungarica** H.Magn. – **L:** WERNER 1957: 325 (as *C. festiva* var. *depauperata*). – **H:** (1c) Zedda, in S-53 sub *Buellia disciformis* (B).
- ***Caloplaca inconnexa** (Nyl.) Zahlbr. – **H:** (1b) Zedda S-28 (B). On *Aspicilia* sp.
- Caloplaca inspersa* (J.Steiner) J.Steiner = *Caloplaca aegyptiaca*.
- Caloplaca intumescens** (Bagl.) J.Steiner – **L:** STEINER 1921: 61; SZATALA 1960: 322 (as *Placodium intumescens*).
- Caloplaca lactea** (A.Massal.) Zahlbr. – **L:** STEINER 1921: 61 (incl. f. *laetior*); SZATALA 1960: 321 (as *Gyalolechia lactea* f. *athallina* and f. *laetior*). – **H:** (2a) Doebritz (hb. John 10625).
- Caloplaca lactea* f. *laetior* J.Steiner = *C. lactea*.
- Caloplaca lacteoides** Nav.-Ros. & Hladun – **L:** NAVARRO-ROSINÉS & HLADUN 1996: 159. – **H:** (1b) Zedda S-27a (hb. Seaward 112886); (1d) Zedda S-82 (B); (1f) Zedda S-166 (B); (1i) Zedda S-197 (B); (1j) Zedda S-223 (B); (1l) Zedda, in S-238 sub *Aspicilia contorta* (B); (1r) 800 m, Zedda S-463 (hb. Seaward 112887); (1s) Zedda S-485 (B).
- Caloplaca lallavei* (Clemente) Flagey = *C. erythrocarpa*.
- Caloplaca lamprocheila* (Pers.) Flagey = *C. arenaria*.
- ***Caloplaca lecideina** (Müll.Arg.) Clauzade & Rondon – **H:** (1a) Zedda S-4 (B).
- Caloplaca lobulata** (Flörke) Hellb. – **L:** WERNER 1959: 336. – **H:** (1k) Zedda S-232 (B).
- Caloplaca luteoalba** (Turner) Th.Fr. – **L:** WERNER 1959: 335 (as *Candelariella luteoalba*).
- Caloplaca marmorata** (Bagl.) Jatta – **L:** NAVARRO-ROSINÉS & HLADUN 1996: 163. – **H:** (1s) Zedda S-486 (B).
- Caloplaca murorum* (Ach.) Th.Fr. = *C. saxicola*.
- Caloplaca muscorum* (A.Massal.) M.Choisy & Werner = *C. cerina* var. *muscorum*.
- Caloplaca ochracea** (Schaer.) Flagey – **L:** WERNER 1956a: 353 (as *Blastenia ochracea* f. *lactea*), 1956b: 465 (as *Blastenia ochracea* f. *lactea*) & 467 (as *C. tetrasticha*).
- Caloplaca oasis** (A.Massal) Szatala – **L:** SZATALA 1960: 322 (as *Placodium oasis*).
- Caloplaca paepalostoma* (Anzi) Jatta = *C. variabilis*.
- Caloplaca paulsenii** (Vain.) Zahlbr. – **L:** SANTESSON 1942: 2. – **H:** (1h) Zedda S-192 (B); (1j) Zedda S-227 (B).
- Caloplaca placidia* (A.Massal.) J.Steiner var. *diffRACTA* (A.Massal.) J.Steiner = *C. velana*.
- Caloplaca placidia* var. *leucotis* (A.Massal.) J.Steiner = *C. velana*.
- ***Caloplaca polycarpa** (A.Massal.) Zahlbr. – **H:** (2a) Doebritz (hb. John 10655).
- Caloplaca pyracea* auct. = *C. holocarpa*.
- Caloplaca pyracea* auct. f. *vitellinuloides* (Harm.) Zahlbr. = *C. holocarpa*.
- Caloplaca rubelliana** (Ach.) Lojka – **L:** WERNER 1956b: 465.

- Caloplaca saxicola** (Hoffm.) Nordin – **L:** WERNER 1957: 326 (as *C. murorum*, 1963: 315. – **H:** (1a) Zedda, in S-1 sub *Aspicilia* cf. *intermutans* (B); (1h), 750 m, Zedda S-186 (B); (1j) Zedda S-217 (B); (2a) Doebritz (hb. John 10663, 10664, in 10629 sub *C. variabilis*).
- Caloplaca squamulosa* Bouly de Lesd. = *C. conglomerata*.
- Caloplaca subochracea** (Wedd.) Werner – **L:** WERNER 1956a: 354.
- Caloplaca tetrasticha* H.Olivier = *C. ochracea*.
- Caloplaca teicholyta** (Ach.) J.Steiner – **L:** STEINER 1921: 60. – **H:** (1j) Zedda, in S-220 sub *Acarospora cervina* (B); (2a) Doebritz (hb. John 10649, 10665, 10646, in 10658 sub *C. chalybaea*, in 10625 sub *C. lactea*, 10621, 10638).
- Caloplaca variabilis** (Pers.) Müll.Arg. – **L:** STEINER 1921: 54 (also as *C. paepalostoma*) & 55 (as var. *fusca*); WERNER 1957: 326 (as var. *subimmersa*), 1958: 243 (as var. *ochracea*); SZATALA 1960: 321 (as *Placodium paepalostomum* var. *ochraceum* and as *P. variabile* var. *ochraceum*). – **H:** (2a) Doebritz (hb. John 10637, 10652, 10629, in 10638 sub *C. teicholyta*).
- Caloplaca variabilis* var. *candida* Stizenb. = *C. aegyptica*.
- Caloplaca variabilis* var. *fusca* A.Massal. = *C. variabilis*.
- Caloplaca variabilis* var. *ochracea* Müll.Arg. = *C. variabilis*.
- Caloplaca variabilis* var. *subimmersa* (Nyl.) Blomb. & Forss. = *C. variabilis*.
- Caloplaca velana** auct. – **L:** STEINER 1921: 60 (as *C. placidia* var. *diffRACTA* and var. *leucotis*); WERNER 1957: 325 (as *C. placidia* var. *diffRACTA*). – **H:** (2a) Doebritz (hb. John in 10628 sub *Lecanora crenulata*).
- Caloplaca vitellinula** (Nyl.) H.Olivier – **L:** STEINER 1921: 59.
- Candelaria concolor** (Dicks.) Stein – **L:** WERNER 1959: 335. – **H:** (1e) Zedda S-86 (B), S-102 (B).
- Candelariella aurella** (Hoffm.) Zahlbr. – **L:** STEINER 1921: 50 (as *C. subsimilis*); WERNER 1956a: 352, 1956b: 465, 1958: 243, 1959: 335; SZATALA 1960: 319 (as *C. aurella* f. *aurella*). – **H:** (1d) Zedda S-78 (B); (1f) Zedda S-153 (B); (1h) Zedda, in S-186 sub *Caloplaca saxicola* (B); (1p) Zedda, in S-449 sub *Caloplaca haematites* (B); (1s) Zedda S-483 (B); (2a) Doebritz (hb. John 10656, in 10661 sub *Caloplaca erythrocarpa*).
- Candelariella aurella* f. *aurella* = *C. aurella*.
- Candelariella luteoalba* (Turner) Lettau = *Caloplaca luteoalba*.
- Candelariella subsimilis* (Th.Fr.) J.Steiner = *C. aurella*.
- Candelariella vitellina** (Hoffm.) Müll.Arg. – **L:** WERNER 1955: 357 (incl. f. *atallina*, f. *corruscans* & f. *vulgaris*), 1958: 243, 1959: 335. – **H:** (1b) Zedda S-32 (B); (1e) Zedda S-125 (B).
- Candelariella vitellina* f. *atballina* (Wedd.) Zahlbr. = *C. vitellina*.
- Candelariella vitellina* f. *corruscans* (Ach.) Lettau = *C. vitellina*.
- Candelariella vitellina* f. *vulgaris* (Th.Fr.) Werner = *C. vitellina*.
- ***Candelariella xanthostigma** (Ach.) Lettau – **H:** (1n) Zedda, in S-295 sub *Bacidia rubella* (B); (1p) Zedda S-430 (B); (1q) Zedda S-460 (B).
- ***Carbonea vitellinaria** (Nyl.) Hertel – **H:** (1f) Zedda, in S-171 sub *Caloplaca crenularia* (B). On *Candelariella vitellina*.
- Catillaria athallina* (Hepp) Hellb. = *Toninia athallina*.
- Catillaria chalybeia** (Borrer) A.Massal. – **L:** WERNER 1959: 332 (incl. f. *ecrustacea*). – **H:** (1n) Zedda, in S-314 sub *Sphinctrina tubiformis* (B).
- Catillaria chalybeia* f. *ecrustacea* (Leight.) Zahlbr. = *C. chalybeia*.
- ***Catillaria nigroclavata** (Nyl.) Schuler – **H:** (1n) Zedda, in S-294 sub *Melanelia subaurifera* (B).
- Catillaria olivacea* (Dufour) Zahlbr. var. *sorediifera* Zahlbr. = *Solenopsora olivacea*.
- ***Catillaria praedicta** Tretiach & Hafellner – **H:** (1p) Zedda S-382 (B).
- Celidium varians* (Davies) Arnold = *Arthonia glaucomarina*.
- Cladonia convoluta** (Lam.) Anders – **L:** WERNER 1959: 332 (as *Cladonia foliacea* var. *convoluta*).
- Cladonia fimbriata** (L.) Fr. – **L:** WERNER 1959: 332. – **H:** (1n) Zedda S-269 (B), S-333 (B); (1p) Zedda S-409 (B); (1q) Zedda S-456 (hb. Seaward 112888).
- Cladonia foliacea* (Huds.) Willd. var. *convoluta* (Lam.) Vain. = *C. convoluta*.
- ***Cladonia furcata** (Huds.) Schrad. – **H:** (1n) Zedda S-244 (B).
- Cladonia pyxidata** (L.) Fr. – **L:** WERNER 1959: 332. – **H:** (1p) Zedda S-375 (B); (1n) Zedda S-246 (B), S-267 (B).
- ***Cladonia rangiformis** Hoffm. – **H:** (1n) Zedda S-245 (B), S-248 (B), S-251 (hb. Seaward 112889).
- Clauzadea immersa** (Weber) Hafellner & Bellem. – **L:** WERNER 1958: 243 (as *Protoblastenia immersa*).
- ***Collema auriforme** (With.) Coppins & J.R.Laundon – **H:** (1e) Zedda S-114 (B).

- Collema cheileum* Ach. var. *lividofuscum* (Flk.) A.Zahlbr. = *C. crispum* var. *metzleri*.
- Collema crispum* (Huds.) F.H.Wigg. – L: DE-
GELIUS 1954: 294. – H: (1p) Zedda S-440 (B);
(2c) Doebritz (hb. John 10680).
- Collema crispum* var. *metzleri* (Arnold) Degel. – L:
SZATALA 1941: 65 (as *C. cheileum* var. *lividofuscum*).
- Collema cristatum* (L.) F.H.Wigg. – L: STEINER
1921: 22; DEGELIUS 1954: 329; WERNER 1956a:
351. – H: (1e) Zedda S-90 (B), S-112 (hb. Sea-
ward 112890); (1f) Zedda S-174 (B); (1j) Zedda
S-208 (B); (1n) Zedda S-278 (B); (1o) Zedda S-
348 (B); (1s) Zedda S-475 (hb. Seaward 112891).
- Collema cristatum* var. *marginale* (Huds.) Degel.
– L: WERNER 1958: 238 (as f. *undulatum* subf.
isidiatum).
- Collema cristatum* var. *marginale* f. *undulatum*
(Ach.) Degel. subf. *isidiatum* Degel. = *C.*
cristatum var. *marginale*.
- Collema flaccidum* (Ach.) Ach. – L: WERNER
1966: 74. – H: (1n) Zedda S-279 (B); (1p) Zedda
S-412 (B); (2b) Doebritz (hb. John 10674).
- Collema furfuraceum* (Arnold) Du Rietz – L:
WERNER 1958: 238. – H: (1p) Zedda S-392 (B).
- Collema granulatum* (Sw.) Arnold = *C. tenax*.
- **Collema multipartitum* Sm. – H: (2a) Doebritz
(hb. John in 10626 sub *Acarospora laqueata*).
- **Collema parvum* Degel. – H: (2a) Doebritz (hb.
John 10640).
- **Collema nigrescens* (Huds.) DC. – H: (1n) Zedda
S-274 (B).
- Collema polycarpon* Hoffm. – L: WERNER 1958: 238.
- Collema pulposum* (Bernh.) Ach. = *C. tenax*.
- **Collema subflaccidum* Degel. – H: (1p) Zedda
S-360 (B).
- Collema tenax* (Sw.) Ach. – L: STEINER 1921: 22
(as *C. granulatum* & *C. pulposum*). – H: (1f)
Zedda S-155 (B); (1h) Zedda S-182 (B); (1j)
Zedda S-206 (hb. Seaward 112892); (1n) Zedda
S-247 (B); (1s) Zedda S-468 (B); (2a) Doebritz
(hb. John in 10632 sub *Psora decipiens*); (2d)
Doebritz (hb. John 10681).
- Collema tenax* var. *vulgare* (Schreb.) Degel. – L:
WERNER 1958: 238.
- Conida clemens* (Tul.) A.Massal. = *Arthonia*
clemens.
- Degelia atlantica* (Degel.) P.M.Jørg. & P.James –
L: WERNER 1957: 322 (as *Parmeliella plumbea*
var. *myriocarpa*), 1958: 239 (as *Parmeliella*
atlantica).
- **Degelia plumbea* (Lightf.) P.M.Jørg. & P.James
– H: (1n) Zedda S-265 (B), S-331 (hb. Seaward
112884); (1p) Zedda S-399 (B).
- Dermatocarpon meiophyllizum* Vain. – L: WERNER
1963: 313 (as *D. meiophyllum*).
- Dermatocarpon meiophyllum* Vain. = *D. meio-*
phyllizum.
- **Dermatocarpon miniatum* (L.) Mann – H: (1e)
Zedda S-106 (B).
- Dermatocarpon monstrosum* (Schaer.) Vain. =
Placocarpus schaeereri.
- Didymosphaeria dannenbergii* Sacc. – L: WERNER
1957: 326 (on *Pertusaria pertusa*).
- Diploicia epigaea* (Hoffm.) A.Massal. = *Buellia*
epigaea.
- Diploschistes actinostomus* (Ach.) Zahlbr. – L:
WERNER 1958: 238.
- Diploschistes albescens* Lettau = *D. diacapsis*.
- Diploschistes albissimus* (Ach.) Dalla Torre &
Sarnth. = *D. diacapsis*.
- Diploschistes albissimus* var. *coloratus* J.Steiner
= *D. diacapsis*.
- Diploschistes cretaceus* (Ach.) Lettau = *D.*
gypsaceus.
- Diploschistes diacapsis* (Ach.) Lumbsch – L:
STEINER 1921: 8 (as var. *coloratus*); SANTESSON
1942: 2 (as *D. cf. induratus*); REICHERT 1940:
175* (as *D. steppicus*); WERNER 1955: 356 (as
D. albescens); LUMBSCH 1988: 21.
- Diploschistes gypsaceus* (Ach.) Zahlbr. – L:
SZATALA 1941: 64 (as *D. cretaceus*).
- Diploschistes induratus* (Vain.) Zahlbr. = *D.*
diacapsis.
- Diploschistes ocellatus* (Vill.) Norman – L: SAN-
TESSON 1942: 2; WERNER 1955: 356. – H: (1j)
Zedda S-200 (B).
- Diploschistes scruposus* (Schreb.) Norman – L:
WERNER 1955: 356. – H: (1n) Zedda S-254 (B).
- Diploschistes steppicus* Reichert = *D. diacapsis*.
- Diplotomma alboatrum* (Hoffm.) Flotow – L:
SZATALA 1960: 324 (as *D. porphyricum*).
- Diplotomma porphyricum* Arnold = *D. alboatrum*.
- Diplotomma venustum* (Körb.) Körb. – L: STEINER
1921: 66 (as *Buellia epipolia* f. *calcarea*);
WERNER 1956a: 355 (as *Buellia epipolia* var.
venusta), 1965b: 465 (as *Buellia epipolia* var.
venusta), 1957b: 352 (as *Buellia epipolia*);
NORDIN 2000: 102 (as *Buellia venusta*). – H: (1h)
Zedda, in S-192 sub *Caloplaca paulsenii* (B); (1j)
Zedda S-221 (B); (1s) Zedda S-480 (B).
- Discothecium gemmiferum* (Taylor) Vouaux =
Endococcus propinquus.
- Endocarpon pusillum* Hedw. – L: STEINER 1921: 7.
- Endococcus propinquus* (Körb.) D.Hawksw. – L:
WERNER 1956b: 467 (as *Discothecium gemmi-*
ferum, on *Aspicilia recedens*).

- Evernia prunastri* (L.) Ach. – **L**: SANTESSON 1942: 3; WERNER 1955: 358 (as var. *vulgaris* and as var. *sorediifera*). – **H**: (1p) Zedda S-446 (B); (1q) Zedda, in S-462 sub *Hypogymnia tubulosa* (B). *Evernia prunastri* var. *sorediifera* Ach. = *E. prunastri*.
Evernia prunastri var. *vulgaris* Körb. = *E. prunastri*.
- **Flavoparmelia caperata* (L.) Hale – **H**: (1n) Zedda S-275 (B), S-324 (B), in S-270 sub *Peltigera praetextata* (hb. Seaward 112909).
- Fulgensia bracteata* (Hoffm.) Räsänen – **L**: STEINER 1921: 63 (as *Caloplaca bracteata*).
- Fulgensia fulgens* (Sw.) Elenkin – **L**: STEINER 1921: 62 (as *Caloplaca fulgens* var. *campestris*).
- **Fulgensia subbracteata* (Nyl.) Poelt – **H**: (1j) Zedda S-204 (B); (1m) 180 m, Zedda S-243 (B); (1s) Zedda S-469 (hb. Seaward 112885).
- **Fuscopannaria olivacea* (P.M.Jørg.) P.M.Jørg. – **H**: (1n) Zedda S-266 (B); (1p) Zedda S-400 (B). *Gasparrinia aurea* (Schaer.) Szatala = *Caloplaca aurea*.
- Glypholecia scabra* (Pers.) Müll.Arg. – **L**: STEINER 1921: 15 (as *Acarospora scabra*). – **H**: (2a) Doebritz (hb. John 10639).
- **Gyalecta truncigena* (Ach.) Hepp – **H**: (1n) Zedda S-293 (B).
- Gyalolechia lactea* (A.Massal.) Arnold f. *athallina* (Müll. Arg.) Szat. = *Caloplaca lactea*.
- Gyalolechia lactea* f. *laetior* (J. Steiner) Szat. = *Caloplaca lactea*.
- **Hafellia disciformis* (Fr.) Marbach & H.Mayrhofer – **H**: (1c) Zedda S-53 (B).
- **Heppia lutosa* (Ach.) Nyl. – **H**: (2a) Doebritz (hb. John in 10635 sub *Lichinella nigritella*).
- **Hymenelia prevostii* (Duby) Kremp. – **H**: (1j) Zedda S-198 (B), S-225 (B).
- **Hypogymnia physodes* (L.) Nyl. – **H**: (1n) Zedda S-320 (B).
- Hypogymnia tubulosa* (Schaer.) Hav. – **L**: WERNER 1955: 358 (as *Parmelia tubulosa*). – **H**: (1q) Zedda S-462 (B).
- **Immersaria athrocarpa* (Ach.) Rambold & Pietschm. – **H**: (1b) Zedda S-18 (hb. Seaward 112915); (1e) Zedda S-118 (B); (1f) Zedda S-158 (B).
- **Immersaria usbekica* (Hertel) Barbero, Nav.-Ros. & Cl.Roux – **H**: (1b) Zedda S-26 (B); (1s) Zedda S-482 (B).
- **Lecanactis lyncea* (Sm.) Fr. – **H**: (1n) Zedda S-297 (B).
- **Lecania cyrtella* (Ach.) Th.Fr. – **H**: (1f) Zedda S-140 (B).
- Lecania erysibe* (Ach.) Mudd – **L**: WERNER 1959: 335. *Lecania erysibe* (Ach.) Mudd var. *ceramonea* (A.Massal.) Zahlbr. = *L. rabenhorstii*.
- **Lecania fuscella* (Schaer.) A.Massal. – **H**: (1c) Zedda, in S-42 sub *Lecanora cf. dispersa* (B); (1f) Zedda S-151 (B); (1k) Zedda S-235 (B).
- Lecania naegelii* (Hepp) Diederich & P.v.d.Boom – **L**: WERNER 1959: 332 (as *Bacidia naegelii*). – **H**: (1p) Zedda, in S-352 sub *Caloplaca haematites* (B).
- Lecania rabenhorstii* (Hepp) Arnold – **L**: STEINER 1921: 49 & 50* (as var. *subverrucosa*); WERNER 1959: 335 (as *L. erysibe* var. *ceramonea*).
- Lecania rabenhorstii* var. *subverrucosa* J.Steiner = *L. rabenhorstii*.
- Lecania rabenhorstii* var. *turicensis* (Hepp) J.Steiner = *L. turicensis*.
- Lecania sipmannii* P.v.d.Boom & L.Zedda – **L**: VAN DEN BOOM & ZEDDA 2000. – **H**: (1k) Zedda S-233 (B, hb. Seaward 112878), 3701 (B), 3703 (B), s.n. (hb. Seaward 109951).
- Lecania spadicea* (Flot.) Zahlbr. – **L**: STEINER 1921: 50 (as var. *gennari*).
- Lecania spadicea* (Flot.) Zahlbr. var. *gennarii* (Bagl.) J.Steiner = *Lecania spadicea*.
- **Lecania subcaesia* (Nyl.) Bouly de Lesd. – **H**: (1l) Zedda, in S-240 sub *Acarospora veronensis* (B).
- Lecania turicensis* (Hepp) Müll.Arg. – **L**: STEINER 1921: 50 (as *L. rabenhorstii* var. *turicensis*); SZATALA 1960: 319.
- Lecanora agardhiana* Ach. – **L**: WERNER 1956a: 352.
- Lecanora albescens* (Hoffm.) Branth & Rostr. – **L**: STEINER 1921: 46.
- Lecanora albomarginata* (Nyl.) Cromb. = *L. muralis*.
- Lecanora albosparsa* Werner = *Aspicilia albosparsa*.
- Lecanora allophana* (Ach.) Röhl. – **L**: WERNER 1959: 333. – **H**: (2b) Doebritz (hb. John 10672).
- Lecanora amyliophora* J.Steiner = *Aspicilia amyliophora*.
- Lecanora (Aspicilia) angulata* Werner – **L**: WERNER 1966: 75*.
- Lecanora argentata* (Ach.) Malme – **L**: WERNER 1966: 76 (as *L. subfusca* var. *vulgaris*).
- Lecanora armeniaca* Werner = *Aspicilia armeniaca*.
- Lecanora atra* (Huds.) Ach. = *Tephromela atra*.
- Lecanora bicincta* Ramond – **L**: SZATALA 1960: 317; WERNER 1956b: 463 (as *Lecanora bicincta* var. *lecideina*).
- Lecanora bicincta* var. *lecideina* (Schaer.) Cromb. = *L. bicincta*.
- Lecanora bolcana* (Pollini) Poelt – **L**: SZATALA 1960: 317 (as *Squamaria diffracta* and f. *chalybeata*). – **H**: (1d) Zedda S-72 (B); (1e)

- Zedda S-129 (B); (1f) Zedda S-170 (B); (1g) ca. 1400 m, Zedda S-181 (hb. Seaward 112917).
- Lecanora cadubriae*** (A.Massal.) Hedl. – **L:** WERNER 1966:75 (as *Lecidea cadubriae*).
- Lecanora caesiocinerea* Nyl. ex Malbr. = *Aspicilia caesiocinerea*.
- Lecanora caesiocinerea* var. *planior* J.Steiner = *Aspicilia caesiocinerea*.
- Lecanora calcarea* (L.) Sommerf. = *Aspicilia calcarea*.
- Lecanora calcarea* var. *reagens* (Zahlbr.) Szatala = *Aspicilia calcarea* var. *reagens*.
- Lecanora campestris*** (Schaer.) Hue – **L:** WERNER 1956b: 463. – **H:** (1n) Zedda S-263 (B).
- Lecanora carpinea*** (L.) Vain. – **L:** WERNER 1959: 333. – **H:** (1n) Zedda S-338 (B); (1p) Zedda S-387 (B), S-447 (B); (1q) Zedda S-459 (B).
- Lecanora charleyti*** Werner – **L:** WERNER 1959: 335.
- Lecanora chlarona* (Ach.) Nyl. = *L. pulicaris*.
- Lecanora chlarotera*** Nyl. – **L:** WERNER 1959: 334. – **H:** (1c) Zedda, in S-53 = *Buellia disciformis* (B); (1n) Zedda S-311 (B); (1p) Zedda S-423 (B); (2b) Doebritz (hb. John 10673).
- Lecanora circinata* (Pers.) Ach. var. *rauca* J.Steiner = *Lobothallia radiosa*.
- Lecanora contorta* (Hoffm.) A.Massal. = *Aspicilia contorta*.
- Lecanora contorta* var. *albocincta* J.Steiner = *Aspicilia contorta*.
- Lecanora contorta* var. *cinereovirens* (A.Massal.) J.Steiner = *Aspicilia contorta*.
- Lecanora contorta* var. *disseminata* J.Steiner = *Aspicilia contorta*.
- Lecanora contorta* var. *glaucopruinosa* (A.Massal.) J.Steiner = *Aspicilia contorta*.
- Lecanora contorta* var. *ochrocincta* J.Steiner = *Aspicilia contorta*.
- Lecanora crassa* (Huds.) Ach. = *Squamarina cartilaginea*.
- Lecanora crassa* f. *dufourae* (Fr.) Schaer. = *Squamarina cartilaginea*.
- Lecanora crenulata*** Hook. – **L:** STEINER 1921: 45 (as var. *terrigena*); WERNER 1956b: 464, 1959: 334. – **H:** (2a) Doebritz (hb. John in 10661 sub *Caloplaca erythrocarpa*, 10662, in 10658 sub *Caloplaca chalybaea*, 10628, 10648).
- Lecanora crenulata* Hook. var. *terrigena* J.Steiner = *Lecanora crenulata*.
- Lecanora dispersa*** (Pers.) Sommerf. – **L:** STEINER 1921: 46; WERNER 1956b: 464, 1963: 314. – **H:** (1f) Zedda S-145 (B), S-154 (B); (1k) Zedda S-231 (B); (1n) Zedda S-316 (B).
- Lecanora dispersella*** J.Steiner – **L:** STEINER 1921: 46.
- Lecanora dubertretii* Werner = *Aspicilia dubertretii*.
- Lecanora esculenta* (Pall.) Eversm. = *Aspicilia esculenta*.
- Lecanora euphratica* Werner = *Aspicilia euphratica*.
- **Lecanora expallens*** Ach. – **H:** (1n) Zedda S-335 (B).
- Lecanora farinosa* (Flörke) Nyl. = *Aspicilia farinosa*.
- Lecanora farinosa* f. *subopegraphoides* Werner = *Aspicilia farinosa*.
- Lecanora frustulosa*** (Dicks.) Ach. – **L:** WERNER 1956b: 464 (as var. *thiodes*).
- Lecanora frustulosa* var. *thiodes* (Spreng.) Link = *L. frustulosa*.
- Lecanora garovaglii*** (Körb.) Zahlbr. – **L:** STEINER 1921: 47 & 48* (as var. *diffractella* f. *pruinosa*); Werner 1956b: 465, 1957 325.
- L. garovaglii* var. *diffractella* J.Steiner f. *pruinosa* J.Steiner = *Lecanora garovaglii*.
- Lecanora glabrata*** (Ach.) Malme – **L:** WERNER 1957b: 323.
- Lecanora hagenii*** (Ach.) Ach. – **L:** STEINER 1921: 45 (as var. *saxigena*). – **H:** (2b) Doebritz (hb. John in 10675 sub *Lecidella elaeochroma*).
- Lecanora hagenii* var. *saxigena* J.Steiner = *L. hagenii*.
- **Lecanora horiza*** (Ach.) Linds. – **H:** (1e) Zedda S-88 (B); (1k) Zedda, in S-232 sub *Caloplaca boulyi* (B); (1n) Zedda S-305 (B); (1p) Zedda S-385 (B), S-421 (B, Seaward 112903).
- Lecanora intermutans* Nyl. = *Aspicilia intermutans*.
- Lecanora intumescens*** (Rebent.) Rabenh. – **L:** WERNER 1959: 334.
- **Lecanora laatokkaensis*** (Räsänen) Poelt – **H:** (1b) Zedda S-31 (B).
- Lecanora lentigera* (Weber) Ach. = *Squamarina lentigera*.
- Lecanora muralis*** (Schreb.) Rabenh. – **L:** STEINER 1921: 46 (as var. *versicolor*) & 47 (as *L. albomarginata*); SZATALA 1941: 76 (as *Squamaria alboeffigurata* and as *Squamarina alboeffigurata* f. *nudiuscula*); WERNER 1956b: 464 (as *L. albomarginata*) & 465 (incl. var. *diffracta* & var. *versicolor*), 1959: 335 (as var. *diffracta*); SZATALA 1960: 319 (as *Squamaria riparia* f. *nigrovirens*). – **H:** (1a) Zedda S-8 (hb. Seaward 112910); (1b) Zedda S-9 (B); (1d) Zedda S-73 (B); (1s) Zedda S-471 (B); (2a) Doebritz (hb. John 10642, 10657, 10623).
- Lecanora muralis* var. *diffracta* (Ach.) Ach. = *L. muralis*.
- Lecanora muralis* var. *versicolor* (Pers.) Tuck. = *L. muralis*.

- Lecanora palmyrensis* H.Magn. – L: SANTESSON 1942: 3*; Poelt 1958: 503.
- Lecanora platycarpa* J.Steiner = *Aspicilia platycarpa*.
- Lecanora pruinosa* Chaub. – L: STEINER 1921: 49; Werner 1956b: 465, 467, 1966: 76.
- Lecanora pulcaris* (Pers.) Ach. – L: WERNER 1959: 334 (as *L. chlarona*).
- Lecanora radians* Werner var. *rubescens* Werner = *Aspicilia radians* var. *rubescens*.
- Lecanora radiosa* (Hoffm.) Schaer. = *Lobothallia radiosa*.
- Lecanora radiosa* f. *ocellata* (Bagl. & Carestia) Zahlbr. = *Lobothallia radiosa*.
- Lecanora recedens* (Taylor) Nyl. = *Aspicilia recedens*.
- Lecanora rugosella* Zahlbr. – L: WERNER 1959: 334.
- Lecanora rupicola* (L.) Zahlbr. = *L. rupicola* ssp. *rupicola*.
- Lecanora rupicola* ssp. *rupicola*. – L: WERNER 1956b: 464, 1957: 325, 1959: 334 (as *Lecanora rupicola*). – H: (1b) Zedda S-22 (B, hb. Seaward 112920); (1d) Zedda S-81 (B).
- Lecanora rupicola* ssp. *subplanata* (Nyl.) Leuckert & Poelt – L: SZATALA 1960: 317 (as *Lecanora subplanata*).
- **Lecanora rupicola* ssp. *sulphurata* (Ach.) Leuckert & Poelt – H: (1b) Zedda, in S-25 sub *Rhizocarpon geographicum* (B); (1f) Zedda S-165 (B).
- Lecanora subcaesiocinerea* Werner = *Aspicilia subcaesiocinerea*.
- Lecanora subcircinata* Nyl. = *Lobothallia radiosa*.
- Lecanora subfusca* (L.) Ach. var. *vulgaris* (Schaer.) Rabenh. = *L. argentata*.
- Lecanora subplanata* Nyl. = *L. rupicola* ssp. *subplanata*.
- Lecanora subradiosa* Nyl. = *L. swartzii* ssp. *nylanderi*.
- Lecanora sulphurea* (Hoffm.) Ach. – L: WERNER 1956b: 464; Szatala 1960: 313 (as *Lecidea sulphurea*).
- Lecanora swartzii* (Ach.) Ach. ssp. *nylanderi* (Räsänen) Leuckert & Poelt – L: WERNER 1959: 334 (as *L. subradiosa*).
- Lecanora syriaca* J.Steiner = *Aspicilia syriaca*.
- Lecidea atrobrunnea* (Lam. & DC.) Schaer. – L: WERNER 1966: 74.
- Lecidea cadubriae* (A.Massal.) Nyl. = *Lecanora cadubriae*.
- Lecidea carpathica* (Körb.) Szatala = *Lecidella carpathica*.
- Lecidea carpathica* f. *distrata* (Arnold) Maas G. = *Lecidella asema*.
- Lecidea decipiens* (Hedw.) Ach. = *Psora decipiens*.
- Lecidea decipiens* f. *dealbata* (Torss.) Jatta = *Psora decipiens*.
- Lecidea elaeochroma* (Ach.) Ach. f. *limitata* H.Olivier = *Lecidella elaeochroma*.
- Lecidea exigua* Chaub. – L: WERNER 1966: 75.
- **Lecidea fuscoatra* (L.) Ach. var. *grisella* (Flörke) Nyl. – H: (1n) Zedda S-260 (B).
- Lecidea glomerulosa* (DC.) Steud. = *Lecidella euphorea*.
- Lecidea latypaea* Ach. = *L. plana*.
- Lecidea latypiza* auct. = *Lecidella carpathica*.
- Lecidea lithophila* (Ach.) Ach. – L: WERNER 1957: 322.
- Lecidea lurida* Ach. = *Mycobilimbia lurida*.
- Lecidea plana* (J.Lahm) Nyl. – L: SZATALA 1960: 313 (as *Lecidea latypaea*).
- Lecidea sanguineoatra* (Wulfen) Ach. = *Mycobilimbia hypnorum*.
- Lecidea sulphurea* (Hoffm.) Ach. = *Lecanora sulphurea*.
- Lecidea tabacina* (Ramond) Schaer. = *Toninia tristis*.
- Lecidea testacea* (Hoffm.) Ach. = *Psora testacea*.
- Lecidella asema* (Nyl.) Knoph & Hertel – L: SZATALA 1960: 313 (as *Lecidea carpathica* f. *distrata*). – H: (1d) Zedda S-79 (B); (1f) Zedda S-164 (B).
- Lecidella carpathica* Körb. – L: SZATALA 1960: 313 (as *Lecidea carpathica*); WERNER 1966: 75 (as *Lecidea latypiza*).
- Lecidella effugiens* (B.Nils.) Knoph & Hertel – L: KNOPH 1990: 101.
- Lecidella elaeochroma* (Ach.) M.Choisy – L: WERNER 1963: 314 (as *Lecidea elaeochroma* f. *limitata*). – H: (1e) Zedda S-85 (B); (1f) Zedda S-141 (B); (1n) Zedda S-336 (B); (1p) Zedda S-357 (B), S-381 (B), S-420 (hb. Seaward 112865); (2b) Doebritz (hb. John 10675); (2c) Doebritz (hb. John in 10678 sub *Xanthoria parietina*).
- Lecidella euphorea* (Flörke) Hertel – L: WERNER 1966: 75 (as *Lecidea glomerulosa*).
- Leciographa parasitica* A.Massal. = *Opegrapha parasitica*.
- Lempholemma botryosum* (A.Massal.) Zahlbr. – L: STEINER 1921: 22 (as *Physma botryosa*).
- Lempholemma omphalarioides* (Anzi) Zahlbr. = *Staurolemma omphalarioides*.
- **Lepraria lobificans* Nyl. – H: (1n) Zedda S-261 (B); (1q) Zedda S-461 (B).
- **Lepraria nivalis* J.R.Laundon – H: (1e) Zedda S-130 (B); (1o) Zedda S-349 (B), S-351 (hb. Seaward 112916); (1p) Zedda S-356 (B), S-416 (B); (2d) Doebritz (hb. John 10683).

- **Lepraria vouauxii* (Hue) R.C.Harris – **H**: (1j) Zedda S-203 (B); (1p) Zedda S-396 (B).
- Leptocaulon microscopicum* (Vill.) Gams ex D.Hawksw. – **L**: WERNER 1959: 332 (as *Stereocaulon microscopicum*).
- **Leptochidium albociliatum* (Desm.) M.Choisy – **H**: (1e) Zedda S-111 (B); (1f) Zedda S-176 (B).
- **Leptogium corniculatum* (Hoffm.) Minks – **H**: (1n) Zedda S-271 (B), S-273 (B).
- Leptogium gelatinosum* (With.) J.R.Laundon – **L**: WERNER 1956a: 351 (as *L. scotinum*, incl. var. *sinuatum*). – **H**: (1e) Zedda S-113 (B).
- Leptogium lichenoides* (L.) Zahlbr. – **L**: WERNER 1956a: 351. – **H**: (1e) Zedda S-110 (B); (1n) Zedda S-253 (B); (1p) Zedda S-413 (B).
- **Leptogium microphyloides* Nyl. – **H**: (1e) Zedda S-89 (B).
- **Leptogium saturninum* (Dicks.) Nyl. – **H**: (1p) Zedda S-377 (B), S-411 (B).
- **Leptogium schraderi* (Bernh.) Nyl. – **H**: (11) Zedda, in S-240 sub *Acarospora veronensis* (B). *Leptogium scotinum* (Ach.) Fr. = *L. gelatinosum*. *Leptogium scotinum* var. *sinuatum* (Huds.) Torss. = *L. gelatinosum*.
- **Leptogium teretiusculum* (Wallr.) Arnold – **H**: (1e) Zedda S-91 (B); (1n) Zedda S-264 (B).
- **Leptogium turgidum* (Ach.) Cromb. – **H**: (1j) Zedda S-207 (B).
- Lichenostigma elongata* Nav.-Ros. & Hafellner – **L**: NAVARRO-ROSINÉS & HAFELLNER 1996: 223.
- **Lichinella nigritlella* (Lettau) P.Moreno & Egea – **H**: (2a) Doebritz (hb. John 10635, in 10660 sub *Toninia diffracta*, 10634).
- **Lichinella stipitata* Nyl. – **H**: (2a) Doebritz (hb. John 10643).
- Lobaria pulmonaria* (L.) Hoffm. – **L**: WERNER 1955: 356 (incl. f. *leptophylla*, f. *aggregata*, f. *hypomela* & f. *papillari-sorediata*). – **H**: (1n) Zedda S-277 (B), S-321 (hb. Seaward 112902); (1p) Zedda S-355 (B), S-402 (B).
- Lobaria pulmonaria* f. *aggregata* (Del.) Cromb. = *L. pulmonaria*.
- Lobaria pulmonaria* f. *hypomela* (Del.) Cromb. = *L. pulmonaria*.
- Lobaria pulmonaria* f. *leptophylla* (Wallr.) Zahlbr. = *L. pulmonaria*.
- Lobaria pulmonaria* f. *papillari-sorediata* Werner = *L. pulmonaria*.
- Lobothallia radiosa* (Hoffm.) Hafellner – **L**: STEINER 1921: 49 (as *Lecanora subcircinata* & *L. circinata* var. *rauca*); WERNER 1957: 324 (incl. f. *ocellata* and var. *subcircinata*); SZATALA 1960: 318 (as *Squamaria farinosa*). – **H**: (1a) Zedda S-7 (B); (1j) Zedda S-214 (B); (2a) Doebritz (hb. John 10644, in 10620, sub *Aspicilia calcarea*).
- **Megaspora verrucosa* (Ach.) Hafellner & V.Wirth – **H**: (1p) Zedda S-424 (B); (2b) 19 Sept. 1993, leg. Doebritz (hb. John in 10764 sub *Collema flaccidum*).
- **Melanelia exasperata* (De Not.) Essl. – **H**: (1c) Zedda, in S-52 sub *Parmelina quercina* (B); (1f) Zedda S-137 (B); (1p) Zedda, in S-453 sub *Physcia adscendens* (B).
- Melanelia exasperatula* (Nyl.) Essl. – **L**: WERNER 1957: 324 (as *Parmelia exasperatula*).
- **Melanelia infumata* (Nyl.) Essl. – **H**: (1b) Zedda S-14 (B); (1e) Zedda S-120 (hb. Seaward 112864); (1s) Zedda S-474 (B).
- **Melanelia subaurifera* (Nyl.) Essl. – **H**: (1n) Zedda S-294 (B).
- Muellerella pygmaea* (Körb.) D.Hawksw. – **L**: WERNER 1958: 243 (as *Tichothecium pygmaeum* on *Aspicilia farinosa*).
- Mycobilimbia hypnorum* (Lib.) Kalb & Hafellner – **L**: WERNER 1966: 75 (as *Lecidea sanguineo-atra*).
- Mycobilimbia lurida* (Ach.) Hafellner & Türk – **L**: WERNER 1958: 239 (as *Lecidea lurida*).
- **Myxobilimbia lobulata* (Sommerf.) Hafellner – **H**: (1p) Zedda S-439 (B).
- **Naetrocymbe fraxini* (A.Massal.) R.C.Harris – **H**: (1n) Zedda S-317 (B).
- Neofuscelia delisei* (Duby) Essl. – **L**: SZATALA 1960: 320 (as *Parmelia delisei* var. *imbricata*); ESSLINGER 1977: 173 (map) (as *Parmelia delisei*).
- **Neofuscelia glabrans* (Nyl.) Essl. – **H**: (1e) Zedda S-109 (B).
- Neofuscelia loxodes* (Nyl.) Essl. – **L**: SZATALA 1960: 320 (as *Parmelia isidiotyta*). – **H**: (1e) Zedda S-108 (B).
- Neofuscelia perrugata* (Nyl.) Elix – **L**: SZATALA 1960: 320 (as *Parmelia proluxa* var. *perrugata*).
- Neofuscelia pulla* (Ach.) Essl. s.lat. – **L**: WERNER 1955: 357 (as *P. proluxa*, incl. f. *corrugata*), 1957: 324 (as *P. proluxa*).
- Neofuscelia verruculifera* (Nyl.) Essl. – **L**: WERNER 1955: 358 (as *Parmelia verruculifera*).
- Nephroma laevigatum* Ach. – **L**: SANTESSON 1942: 4 (as *N. lusitanicum*); WERNER 1955: 356 (as *N. lusitanicum*). – **H**: (1n) Zedda S-268 (hb. Seaward 112870), S-330 (B); (1p) Zedda S-401 (B); (1q) Zedda S-458 (B).
- Nephroma lusitanicum* Schaer. = *N. laevigatum*.
- **Ochrolechia alboflavescens* (Wulf.) Zahlbr. – **H**: (1n) Zedda, in S-332 sub *Pachyphiale carneola* (B); (1p) Zedda S-435 (B).

- **Ochrolechia androgyna* (Hoffm.) Arnold – **H**: (1p) Zedda S-434 (B).
- Ochrolechia pallescens* (L.) A.Massal. – **L**: WERNER 1957: 324 (as *O. parella* f. *corticola*); BOQUERAS 1997: 19.
- Ochrolechia parella* (L.) A.Massal. – **L**: WERNER 1957: 324. – **H**: (1n) Zedda S-259 (B); (1p) Zedda S-414 (B).
- Ochrolechia parella* f. *corticola* (Dietr.) Kieff. – misidentified = *O. pallescens*.
- **Ochrolechia subviridis* (Høeg) Erichsen – **H**: (1n) Zedda S-283 (B).
- Opegrapha parasitica* (A.Massal.) Vězda – **L**: WERNER 1958: 243 (as *Leciographa parasitica* on *Aspicilia farinosa*).
- Opegrapha rupestris* Pers. – **L**: WERNER 1966: 74* (as *O. semicincta* f. *aggregata*); TORRENTE & EGEE 1989: 119.
- Opegrapha semicincta* Zahlbr. f. *aggregata* Werner = *O. rupestris*.
- **Opegrapha varia* Pers. – **H**: (1n) Zedda S-300 (B).
- **Pachyphiale carneola* (Ach.) Hellb. – **H**: (1n) Zedda S-332 (B).
- Pannaria rubiginosa* (Ach.) Bory – **L**: WERNER 1958: 239.
- Parmelia acetabulum* (Neck.) Duby = *Pleurosticta acetabulum*.
- Parmelia contorta* Bory = *P. submontana*.
- Parmelia delisei* (Duby) Nyl. = *Neofuscelia delisei*.
- Parmelia delisei* var. *imbricata* Gyeln. = *Neofuscelia delisei*.
- Parmelia exasperatula* Nyl. = *Melanelia exasperatula*.
- Parmelia furfuracea* (L.) Ach. = *Pseudevernia furfuracea*.
- Parmelia furfuracea* var. *nuda* (Ach.) Th.Fr. = *Pseudevernia furfuracea*.
- Parmelia furfuracea* var. *scobicina* Ach. = *Pseudevernia furfuracea*.
- Parmelia idiotryla* Nyl. = *Neofuscelia loxodes*.
- Parmelia proluxa* (Ach.) Carroll = *Neofuscelia pulla*.
- Parmelia proluxa* f. *corrugata* Dalla Torre & Sarnth = *Neofuscelia pulla*.
- Parmelia proluxa* var. *perrugata* (Nyl.) Harmand = *Neofuscelia perrugata*.
- Parmelia quercina* (Willd.) Vain. = *Parmelina quercina*.
- Parmelia scorteae* (Ach.) Ach. = *Parmelina tiliacea*.
- Parmelia scorteae* f. *microphylla* (A.Massal.) Zahlbr. = *Parmelina tiliacea*.
- Parmelia scorteae* var. *microphyllina* (Erichs.) Zahlbr. = *Parmelina tiliacea*.
- Parmelia submontana* Nádvoř. ex Hale – **L**: WERNER 1955: 357 (as *P. contorta*).
- Parmelia sulcata* Taylor – **L**: SANTESSON 1942: 5; WERNER 1955: 358 (as f. *munda* H.Olivier). – **H**: (1n) Zedda S-272 (hb. Seaward 112871), S-325 (B); (1p) Zedda S-403 (B).
- Parmelia tinctoria* Maheu & A.Gillet = *Xanthoparmelia tinctoria*.
- Parmelia tubulosa* (Schaer.) Bitter = *Hypogymnia tubulosa*.
- Parmelia verruculifera* Nyl. = *Neofuscelia verruculifera*.
- Parmeliella atlantica* Degel. = *Degelia atlantica*.
- Parmeliella plumbea* (Lightf.) Vain. var. *myriocarpa* (Del.) Zahlbr. = *Degelia atlantica*.
- **Parmelina pastillifera* (Harm.) Hale – **H**: (1p) Zedda S-354 (hb. Seaward 112872), S-404 (B), S-448 (B).
- Parmelina quercina* (Willd.) Hale – **L**: SANTESSON 1942: 5 (as *Parmelia quercina*); WERNER 1955: 358 (as *Parmelia quercina*). – **H**: (1c) Zedda S-52 (B); (1p) Zedda, in S-404 sub *Parmelina pastillifera* (B).
- Parmelina tiliacea* (Hoffm.) Hale – **L**: WERNER 1955: 358 (as *Parmelia scorteae*, incl. f. *microphylla* & var. *microphyllina*). – **H**: (1c) Zedda S-45 (B); (1n) Zedda S-292 (hb. Seaward 112873), S-326 (B).
- **Parmotrema chinense* (Osbeck) Hale & Ahti – **H**: (1n) Zedda S-276 (B).
- Peltigera collina* (Ach.) Schrad. – **L**: WERNER 1957: 322 (as *P. scutata*). – **H**: (1p) Zedda S-359 (B), S-380 (B), S-397 (B).
- **Peltigera elisabethae* Gyeln. – **H**: (1n) Zedda S-249 (B).
- **Peltigera praetextata* (Flörke ex Sommerf.) Zopf – **H**: (1n) Zedda S-250 (B), S-270 (hb. Seaward 112909); (1p) Zedda S-438 (B).
- **Peltigera rufescens* (Weiss) Humb. – **H**: (1p) Zedda S-437 (B).
- Peltigera scutata* (Dicks.) Duby = *P. collina*.
- Pertusaria albescens* (Huds.) M.Choisy & Werner – **L**: WERNER 1957: 322 (as *P. discoidea* & *P. discoidea* f. *musciicola*) & 323 (as *P. polyzonalis*); BOQUERAS 1997: 323. – **H**: (1n) Zedda S-282 (hb. Seaward 112874), S-327 (B); (1p) Zedda S-363 (B), in S-367 sub *Phlyctis argena* (B), S-390 (B), S-393 (B), S-436 (B); (2b) Doebritz (hb. John 10671).
- **Pertusaria amara* (Ach.) Nyl. – **H**: (1n) Zedda S-281 (B), S-329 (B).
- **Pertusaria coccodes* (Ach.) Nyl. – **H**: (1p) Zedda S-366 (B), S-369 (B), S-395 (B), S-415 (hb. Seaward 112875).

- Pertusaria discoidea* (Pers.) Malme = *P. albescens*.
Pertusaria discoidea f. *musciicola* Erichsen = *P. albescens*.
- Pertusaria flavida* (DC.) J.R.Laundon – **L**: WERNER 1957: 322 (as *P. lutescens*); BOQUERAS 1997: 21. – **H**: (1n) Zedda, in S-288 sub *Phlyctis agelaea* (B); (1p) Zedda, in S-419 sub *Pertusaria pertusa* (B).
- **Pertusaria hemisphaerica* (Flörke) Erichsen – **H**: (1n) Zedda S-287 (hb. Seaward 112912), S-322 (B); (1p) Zedda S-362 (B).
- Pertusaria hymenea* (Ach.) Schaer. – **L**: WERNER 1957: 323* (as *P. sublecanorodes*); BOQUERAS 1997: 323. – **H**: (1n) Zedda S-289 (B); (1p) Zedda S-418 (B).
- **Pertusaria leioplaca* DC. – **H**: (1n) Zedda S-342 (B).
- Pertusaria lutescens* (Hoffm.) Lamy = *P. flavida*.
- **Pertusaria paramerae* A.Crespo & Vězda – **H**: (1p) Zedda S-358 (B), S-368 (B, hb. Seaward 112913), S-425 (B).
- Pertusaria pertusa* (Weigel) Tuck. – **L**: WERNER 1957: 322 (as var. *meridionalis*); BOQUERAS 1997: 23. – **H**: (1n) Zedda S-280 (B), S-323 (hb. Seaward 112899); (1p) Zedda S-361 (B), S-386 (B), S-419 (B).
- Pertusaria pertusa* var. *meridionalis* Zahlbr. – misidentified = *P. pertusa*.
- Pertusaria polyzonalis* Erichsen = *P. albescens*.
- **Pertusaria pustulata* (Ach.) Duby – **H**: (1n) Zedda S-312 (B), S-342a (B).
- Pertusaria sublecanorodes* Werner = *P. hymenea*.
- **Phaeophyscia orbicularis* (Neck.) Moberg – **H**: (1c) Zedda S-38 (hb. Seaward 112876); (1d) Zedda S-55 (B), S-69 (B); (1e) Zedda S-96 (B); (1f) Zedda S-138 (B); (1p) Zedda, in S-448 sub *Parmelina pastillifera* (B); (2b) Doebritz (hb. John 10677).
- **Phaeophyscia poeltii* (Frey) Nimis – **H**: (1c) Zedda S-36 (B); (1d) Zedda S-58 (B).
- Pharcidia epicymatia* (Wallr.) Winter = *Stigmidium schaeereri*.
- **Phlyctis agelaea* (Ach.) Flot. – **H**: (1n) Zedda S-288 (B), S-341 (B); (1p) Zedda S-422 (B).
- **Phlyctis argena* (Spreng.) Flot. – **H**: (1n) Zedda S-328 (B); (1p) Zedda S-367 (B), S-391 (B), S-432 (hb. Seaward 112896).
- **Physcia adscendens* (Fr.) H.Olivier – **H**: (1c) Zedda S-43 (B), Zedda S-50 (B); (1e) Zedda S-93 (B); (1p) Zedda S-453 (B).
- Physcia aipolia* (Ehrh. ex Humb.) Fűrnr. – **L**: STEINER 1921: 68; WERNER 1955: 359 (as var. *acrita*).
- Physcia aipolia* var. *acrita* (Ach.) Hue = *Physcia aipolia*.
- Physcia albinea* (Ach.) Nyl. – **L**: WERNER 1959: 337 (as f. *corticola*).
- Physcia albinea* f. *corticola* Flagey = *P. albinea*.
- Physcia biziana* (A.Massal.) Zahlbr. – **L**: WERNER 1955: 359 (as var. *saxicola*).
- Physcia biziana* var. *saxicola* (Zahlbr.) Lyng = *P. biziana*.
- **Physcia caesia* (Hoffm.) Fűrnr. – **H**: (1f) Zedda S-172b (B).
- Physcia leptalea* (Ach.) DC. = *P. semipinnata*.
- Physcia muscigena* (Ach.) Nyl. f. *squarrosa* (Ach.) Lyng = *Physconia muscigena*.
- Physcia pulverulenta* (Hoffm.) Fűrnr. var. *angustata* (Hoffm.) Nyl. = *Physconia distorta*.
- Physcia pulverulenta* var. *argyphaea* (Ach.) Nyl. = *Physconia distorta*.
- Physcia pulverulenta* f. *nuda* Harm. = *Physconia distorta*.
- Physcia semipinnata* (Gmelin) Moberg – **L**: WERNER 1955: 359 (as *P. leptalea*). – **H**: (1f) Zedda S-136 (B), S-149 (B); (1n) Zedda S-310 (B), in S-336 sub *Lecidella elaeochroma* (B), S-339 (B); (1p) Zedda, in S-451 sub *Physcia stellaris* (B), in S-453 sub *Physcia adscendens* (B).
- **Physcia stellaris* (L.) Nyl. – **H**: (1c) Zedda S-40 (B), S-49 (B); (1d) Zedda S-54 (B), S-67 (hb. Seaward 112897); (1e) Zedda S-94 (B), S-101 (hb. Seaward 112894); (1p) Zedda S-451 (B).
- Physcia tenella* (Scop.) DC. – **L**: WERNER 1956a: 356. – **H**: (1c) Zedda S-37 (B), S-51 (B).
- **Physcia tribacia* (Ach.) Nyl. – **H**: (1s) Zedda S-477 (B).
- Physconia distorta* (With.) J.R.Laundon – **L**: WERNER 1955: 360 (as *Physcia pulverulenta* var. *argyphaea* & f. *nuda*), 1958: 243 (as *Physcia pulverulenta* var. *angustata*). – **H**: (1c) Zedda S-47 (B), S-48 (B); (1d) Zedda S-60 (B), S-65 (hb. Seaward 112895), S-75 (B).
- **Physconia enteroxantha* (Nyl.) Poelt – **H**: (1b) Zedda S-16 (B); (1d) Zedda S-74a (B); (1e) Zedda S-107 (B); (1f) Zedda S-172a (hb. Seaward 112898).
- Physconia grisea* (Lam.) Poelt ssp. *algeriensis* (Flagey) Poelt – **L**: POELT 1966: 119 (“Irak”).
- Physconia grisea* ssp. *lilacina* (Arnold) Poelt – **H**: (1j) Zedda S-211 (B).
- Physconia muscigena* (Ach.) Poelt – **L**: WERNER 1955: 360 (as *Physcia muscigena* f. *squarrosa*).
- **Physconia perisidiosa* (Erichs.) Moberg – **H**: (1c) Zedda S-46 (B); (1d) Zedda S-74 (B); (1e) Zedda S-95 (B), S-107a (hb. Seaward 112900); (1f) Zedda S-135 (hb. Seaward 112893), S-172 (B).

- Physma botryosa* (A.Massal.) Zahlbr. = *Lempho-lemma botryosum*.
- Placidopsis cinerascens* (Nyl.) Breuss – L: BREUSS 1996: 82.
- Placidopsis tenella* (Nyl.) Zahlbr. – L: STEINER 1921: 7.
- **Placidium squamulosum* (Ach.) Breuss – H: (1b) Zedda S-21 (B); (1h) Zedda S-183 (B); (1j) Zedda S-205 (B); (2a) Doebritz (hb. John 10647).
- Placocarpon schaeereri* (Fr.) Breuss – L: WERNER 1956a: 350 (as *Dermatocarpon monstrosum*).
- Placodium coronatum* (Kremp.) Szatala = *Caloplaca coronata*.
- Placodium intumescens* (Bagl.) Szatala = *Caloplaca intumescens*.
- Placodium oasis* (A.Massal.) Szatala = *Caloplaca oasis*.
- Placodium paepalostomum* Anzi var. *ochraceum* (Zahlbr.) Szatala = *Caloplaca variabilis*.
- Placodium variabile* (Pers.) Hepp var. *ochraceum* (Müll. Arg.) Szatala = *Caloplaca variabilis*.
- Placynthium nigrum* (Huds.) Gray – L: SZATALA 1960: 313 (as *P. nigrum* f. *nigrescens* Gyeln.). – H: (2d) Doebritz (hb. John 10683).
- Placynthium nigrum* f. *nigrescens* Gyeln. = *P. nigrum*.
- Placynthium subradiatum* (Nyl.) Arnold – L: WERNER 1963: 314.
- Pleurosticta acetabulum* (Neck.) Elix & Lumbsch – L: SANTESSON 1942: 4 (as *Parmelia acetabulum*); WERNER 1955: 357 (as *Parmelia acetabulum*). – H: (1n) Zedda S-296 (B); (1p) Zedda S-398 (B), S-450a (hb. Seaward 112901); (2b) Doebritz (hb. John 10668).
- Polyblastia albida* Arnold – L: STEINER 1921: 5.
- Polysporina simplex* (Davies) Vězda – L: SZATALA 1960: 315 (as *Sarcogyne simplex* var. *calcicola*).
- Porina declivum* (Bagl. & Car.) J.Steiner = *P. mammillosa*.
- Porina mammillosa* (Th.Fr.) Vain. – L: STEINER 1921: 7 (as *P. declivum*).
- **Porpidia macrocarpa* (DC.) Hertel & A.J.Schwab. – H: (1n) Zedda S-256 (B).
- Protoblastenia calva* (Dicks.) Zahlbr. – L: WERNER 1956a: 353.
- Protoblastenia immersa* (Weber) J.Steiner = *Clauzadea immersa*.
- Protoblastenia rupestris* (Scop.) J.Steiner – L: WERNER 1956a: 353.
- **Protoparmelia psarophana* (Nyl.) Sancho & Crespo – H: (1b) Zedda S-12 (B).
- Pseudevernia furfuracea* (L.) Zopf – L: WERNER 1955: 357 (as *Parmelia furfuracea*, incl. var. *nuda* & var. *scobicina*). – H: (1p) Zedda S-445 (B).
- Psora decipiens* (Hedw.) Hoffm. – L: STEINER 1921: 10 (as *Lecidea decipiens*); SZATALA 1941: 67 (as *Lecidea decipiens*); SANTESSON 1942: 4 (as *Lecidea decipiens*); WERNER 1958: 239 (as f. *dealbata*). – H: (1b) Zedda S-13 (hb. Seaward 112911); (1c) Zedda S-33 (B); (1h) Zedda S-184 (B); (1j) Zedda S-212 (B); (1m) 180 m, Zedda S-242 (B); (2a) Doebritz (hb. John 10659, 10632).
- Psora testacea* Hoffm. – L: WERNER 1958: 239.
- **Psora vallesiaca* (Schaer.) Timdal – H: (1j) Zedda S-213 (B).
- Psorotichia vermiculata* (Nyl.) Forss. – L: STEINER 1921: 22.
- Psorotichiella davidis* Werner – L: WERNER 1956a: 350*.
- **Pyrenula chlorospila* Arnold – H: (1n) Zedda S-286 (B).
- **Pyrrhospora querneae* (Dicks.) Körb. – H: (1n) Zedda, in S-303 sub *Schismatomma decolorans* (B).
- Ramalina calicaris* (L.) Fr. – L: SANTESSON 1942: 5.
- **Ramalina canariensis* J.Steiner – H: (1n) Zedda S-319 (B), S-343 (B).
- Ramalina capitata* (Ach.) Nyl. – L: WERNER 1955: 359 (as *R. strepsilis*).
- Ramalina farinacea* (L.) Ach. – L: WERNER 1966: 76. – H: (1q) Zedda S-455 (B).
- Ramalina fastigiata* (Pers.) Ach. – L: SANTESSON 1942: 5; WERNER 1955: 358. – H: (1p) Zedda S-405 (B), S-441 (B).
- Ramalina fraxinea* (L.) Ach. – L: WERNER 1955: 359 (as var. *taeniata*).
- Ramalina fraxinea* var. *caliciformis* (Nyl.) Hue. – L: WERNER 1955: 359. – H: (1p) Zedda S-406 (B), S-442 (B).
- Ramalina fraxinea* var. *taeniata* (Ach.) Rebert. = *R. fraxinea*.
- Ramalina pollinaria* (Ach.) Ach. – L: KREMPPEL-HUBER 1868: 314; WERNER 1959: 335;.
- Ramalina strepsilis* (Ach.) Zahlbr. = *R. capitata*.
- Rhizocarpon geographicum* (L.) DC. – L: WERNER 1956a: 351, 1957: 322. – H: (1b) Zedda S-25 (B); (1d) Zedda S-83 (B); (1f) Zedda S-167 (B).
- Rhizoplaca melanophthalma* (DC.) Leuckert & Poelt – L: SZATALA 1960: 318 (as *Squamaria melanophthalma*).
- **Rhizoplaca peltata* (Ram.) Leuckert & Poelt – H: (1s) Zedda S-466 (B, hb. Seaward 112908).
- **Rimularia furvella* (Nyl. ex Mudd) Hertel & Rambold – H: (1e) Zedda S-117 (B).
- **Rimularia insularis* (Nyl.) Hertel & Rambold – H: (1f) Zedda, in S-165 sub *Lecanora rupicola*

- ssp. *sulphurata* (B). On *Lecanora rupicola* ssp. *sulphurata*.
- Rinodina bischoffii*** (Hepp) A.Massal. – **L:** STEINER 1921: 66 (as *R. bischoffii* var. *confra-gosa*); WERNER 1956a: 355 & 356 (as *R. bischoffii* var. *protuberans*), 356 (as *R. bischoffii* var. *intermedia*), 1956b: 467, 1963: 315; MAYRHOFER 1984: 383 (map). – **H:** (1h) Zedda S-189 (B); (1i) Zedda S-195 (B); (1l) Zedda, in S-238 sub *Aspicilia contorta* (B).
- Rinodina bischoffii*. var. *confragosa* (Hepp) Müll.Arg. = *R. bischoffii*.
- Rinodina bischoffii* var. *immersa* Körb. = *R. immersa*.
- Rinodina bischoffii* var. *intermedia* Müll.Arg. = *R. bischoffii*.
- Rinodina bischoffii* var. *protuberans* Körb. = *R. bischoffii*.
- Rinodina calcarea*** (Arnold) Arnold – **L:** STEINER 1921: 67; MAYRHOFER & POELT 1979: 74; MAYRHOFER 1984: 389 (map), 390. – **H:** Idlib: Jabal az Zawiyah SW Aleppo, ca. 600 m, 14 Apr. 2002, Huss s.n. [GZU].
- Rinodina collectica* (Flörke) Arnold = *R. teichophila*.
- Rinodina controversa* A.Massal. = *Rinodinella controversa*.
- Rinodina cretica*** H.Mayrhofer – **L:** MAYRHOFER 1984: 403.
- Rinodina crustulata* (A.Massal.) Arnold = *Rinodinella controversa*.
- Rinodina demissa* auct. = *R. gennarii*.
- Rinodina dubyana*** (Hepp) J.Steiner – **L:** STEINER 1921: 65 (as *Buellia dubyana*); MAYRHOFER & POELT 1979: 94 (“Iraq”); MAYRHOFER 1984: 406 (map).
- Rinodina exigua*** (Ach.) Gray – **L:** WERNER 1956b: 467. – **H:** (1n) Zedda, in S-342 sub *Pertusaria leioplaca* (B).
- Rinodina gennarii*** Bagl. – **L:** WERNER 1959: 336 (as *R. demissa*), 1963: 315 (as *R. salina*). – **H:** (2a) Doebritz (hb. John in 10626 sub *Acarospora laqueata*).
- Rinodina guzzinii*** Jatta – **L:** MAYRHOFER 1984: 420.
- Rinodina immersa*** (Körb.) Arnold – **L:** STEINER 1921: 67 (as *R. bischoffii* var. *immersa*); MAYRHOFER 1984: 423 (map), 425. – **H:** (1s) Zedda S-487 (B), S-489 (B).
- Rinodina lecanorina*** (A.Massal.) A.Massal. – **L:** STEINER 1921: 67 (as *R. ocellata*); WERNER 1959: 336 (as *R. ocellata*); MAYRHOFER 1984: 430 (map), 432; MAYRHOFER et al. 1990: 339 (map), 346.
- **Rinodina nimisii*** Giralte & H.Mayrhofer – **H:** (1e) Zedda S-87 (B).
- Rinodina ocellata* (Hoffm.) Arnold = *R. lecanorina*.
- **Rinodina oleae*** Bagl. – **H:** (1n) Zedda S-308 (B), S-313 (B), S-315 (B), S-337 (B).
- **Rinodina plana*** H.Magn. – **H:** (1p) Zedda S-365 (B).
- Rinodina poeltii*** H.Mayrhofer – **L:** MAYRHOFER 1984: 452.
- Rinodina pyrina*** (Ach.) Arnold – **L:** GIRALTE & MAYRHOFER 1995: 153. – **H:** (1e) Zedda, in S-104 sub *Caloplaca cerinella* (B); (1f) Zedda S-139 (B), S-152 (B).
- Rinodina salina* Degel. = *R. gennarii*.
- Rinodina teichophila*** (Nyl.) Arnold – **L:** WERNER 1956b: 467 (as *R. collectica*).
- Rinodinella controversa*** (A.Massal.) H.Mayrh. & Poelt – **L:** STEINER 1921: 67 (as *Rinodina crustulata*); WERNER 1958: 243 (as *Rinodina controversa*); MAYRHOFER & POELT 1978: 97 (map), 98; MAYRHOFER 1984: 478 (map)..
- Sarcogyne leucothallina*** (J.Steiner) H.Magn. – **L:** STEINER 1921: 14* (as *Biatorella leucothallina*).
- Sarcogyne pruinosa* auct. var. *decipiens* A.Massal. = *S. regularis* var. *decipiens*.
- Sarcogyne pruinosa* auct. var. *intermedia* (Körb.) H.Magn. = *S. regularis* var. *intermedia*.
- Sarcogyne regularis*** Körb. – **L:** STEINER 1921: 13 (as *Biatorella pruinosa*).
- Sarcogyne regularis*** var. *decipiens* (A.Massal.) N.S.Golubk. – **L:** SANTESSON 1942: 5 (as *S. pruinosa* var. *decipiens*).
- Sarcogyne regularis*** var. *intermedia* (Körb.) N.S.Golubk. – **L:** WERNER 1958: 240 (as *S. pruinosa* var. *intermedia*).
- Sarcogyne simplex* (Ach.) Nyl. var. *calcicola* H. Magn. = *Polysporina simplex*.
- **Schismatomma decolorans*** (Turner & Borrer ex Sm.) Clauzade & Vězda – **H:** (1n) Zedda S-298 (hb. Seaward 112907), S-303 (B), S-334 (B).
- Solenopsora olivacea*** (Fr.) H.Kiliias – **L:** WERNER 1963: 314 (as *Catillaria olivacea* var. *sorediifera*).
- Sphinctrina gelasinata* (With.) Zahlbr. = *S. turbinata*.
- **Sphinctrina tubiformis*** A.Massal. – **H:** (1n) Zedda S-314 (B). On *Pertusaria* sp.
- Sphinctrina turbinata*** (Pers. ex Fr.) De Not. – **L:** WERNER 1957: 321 (as *S. gelasinata*, on *Pertusaria hymenea*).
- Squamaria alboeffigurata* Anzi = *Lecanora muralis*.
- Squamaria alboeffigurata* f. *nudiuscula* (J.Steiner) Szatala = *Lecanora muralis*.

- Squamaria crassa* (Huds.) DC. var. *periculosa* (Duf.) Nyl. = *Squamarina periculosa*.
Squamaria diffracta auct., non (Ach.) Duby = *Lecanora bolcana*.
Squamaria diffracta (Ach.) Duby f. *chalybeata* (J.Steiner) Szatala = *Lecanora bolcana*.
Squamaria farinosa (Anzi) Szatala = *Lobothallia radiosa* s.l.
Squamaria melanophthalma (Ramond) DC. = *Rhizoplaca melanophthalma*.
Squamaria riparia (Flot.) Szatala f. *nigrovirens* (J.Steiner) Szatala = *Lecanora muralis* s.l.
Squamarina cartilaginea (With.) P.James – L: STEINER 1921: 48 (as *Lecanora crassa* f. *dufourae*); WERNER 1956b: 464 (as *Lecanora crassa*). – H: (1j) Zedda S-209a (B).
Squamarina lentigera (Weber) Poelt – L: WERNER 1956b: 465 (as *Lecanora lentigera*).
Squamarina periculosa (Duf.) Poelt – L: SZATALA 1941: 75 (as *Squamaria crassa* var. *periculosa*).
 **Squamarina stella-petraea* Poelt – H: (1j) Zedda S-209 (B).
Staurolemma omphalarioides (Anzi) P.M.Jørg. & Henssen – L: WERNER 1956a: 351 (as *Lemphollemma omphalarioides*). – H: (1n) Zedda S-252 (B); (1p) Zedda S-394 (hb. Seaward 112906), S-410 (B).
Staurothele hymenogonia Th.Fr. – L: WERNER 1963: 313 (as f. *minor*).
Staurothele hymenogonia f. *minor* Zahlbr. = *S. hymenogonia*.
Stereocaulon microscopicum (Vill.) Frey = *Leprocaulon microscopicum*.
Stigmidium scharereri (A.Massal.) Trevis. agg. – L: WERNER 1956b: 467 (as *Pharcidia epicymatia* on *Lecanora pruinosa*).
 **Strigula mediterranea* Etayo – H: (1n) Zedda, in S-295 sub *Bacidia rubella* (B).
Tephromela atra (Huds.) Hafellner – L: WERNER 1957: 323 (as *Lecanora atra*); SZATALA 1960: 316 (as *Lecanora atra*). – H: (1b) Zedda S-19 (B); (1e) Zedda S-128 (B).
 **Thelenella justii* (Servít) H.Mayrhofer & Poelt – H: (1p) Zedda S-383 (B).
Thelidium myriocarpoides J.Steiner – L: STEINER 1921: 5*.
Thelidium syriacum Werner – L: WERNER 1963: 313*.
Tichothecium pygmaeum Körb. = *Muellerella pygmaea*.
 **Toninia albilabra* (Duf.) H.Olivier – H: (1j) Zedda S-210a (B).
Toninia alutacea (Anzi) Jatta – L: WERNER 1958: 239 (as *T. subcandida*).
Toninia athallina (Hepp) Timdal – L: Werner 1956a: 351 (as *Catillaria athallina*).
Toninia coeruleonigricans (Lightf.) Th.Fr. = *T. sedifolia*.
Toninia coeruleonigricans f. *globosa* (Ach.) J.Steiner = *T. sedifolia*.
 **Toninia diffracta* (A.Massal.) Zahlbr. – H: (2a) Doebritz (hb. John 10660).
 **Toninia ruginosa* (Tuck.) Herre ssp. *ruginosa*. – H: (1f) Zedda S-173 (B).
Toninia sedifolia (Scop.) Timdal – L: STEINER 1921: 13 (incl. f. *globosa*); TIMDAL 1991: 97. – H: (1j) Zedda S-210 (B).
Toninia subcandida Bouly de Lesd. = *T. alutacea*.
Toninia tristis (Th.Fr.) Th.Fr. – L: WERNER 1958: 239 (as *Lecidea tabacina*).
Tornabea scutellifera (With.) J.R.Laundon – L: SANTESSON 1942: 2 (as *Anaptychia intricata*); WERNER 1955: 360 (as *Anaptychia intricata*); VĚZDA 1994: 3 (Nr. 158). – H: (1c) Zedda, in S-51a sub *Teloschistes* sp. (B); (1n) Zedda S-290 (B), S-307 (B), S-345 (hb. Seaward 112905); (1p) Zedda S-353 (B), S-378 (B), S-407 (B), S-443 (B); (1q) Zedda S-457 (hb. Seaward 112904).
 **Trapelia coarctata* (Sm.) M.Choisy – H: (1n) Zedda S-257 (B).
Trematosphaeria (Xenosphaeria) dermatocarponis Werner – L: WERNER 1963: 315* (on *Dermatocarpon meiophyllum*).
Verrucaria amphibola Nyl. – L: WERNER 1963: 311.
Verrucaria attica J.Steiner – L: STEINER 1921: 2.
Verrucaria brachyspora Arnold = *V. murina*.
Verrucaria calciseda DC. – L: STEINER 1921: 1; WERNER 1963: 311.
Verrucaria dolomitica (Flörke) A.Massal. = *V. foveolata*.
Verrucaria emergens J.Steiner – L: STEINER 1921: 2*.
Verrucaria floerkeana Dalla Torre & Sarnth. – L: STEINER 1921: 4.
Verrucaria foveolata (Flörke) A.Massal. – L: WERNER 1963: 311 (as *V. dolomitica*).
Verrucaria fuscocincta Werner – L: WERNER 1963: 311*.
Verrucaria fuscula Nyl. – L: STEINER 1921: 3; WERNER 1963: 312. – H: (2a) Doebritz (hb. John in 10641 sub *Aspicilia calcarea*, sub *Caloplaca coronata*).
Verrucaria grisea Werner – L: WERNER 1963: 312*.
Verrucaria hochstetteri Fr. – L: STEINER 1921: 4.
Verrucaria interrupta (Anzi) J.Steiner – L: STEINER 1921: 2.
Verrucaria lecideoides (A.Massal.) Körb. var. *minuta* Hepp = *V. minuta*.

- Verrucaria macrostoma* Dufour ex DC. – **L**: WERNER 1963: 312; WERNER 1963: 312, 1966: 74.
- Verrucaria minuta* (Hepp) Zschacke – **L**: STEINER 1921: 5 (as *V. lecideoides* var. *minuta*).
- **Verrucaria muralis* Ach. – **H**: (1j) Zedda S-230 (B, Seaward 112919); (2c) Doebritz (hb. John 10679).
- Verrucaria murina* Leight. – **L**: STEINER 1921: 4.
- Verrucaria nigrescens* Pers. – **L**: STEINER 1921: 5; WERNER 1963: 313. – **H**: (1j) Zedda S-228 (B).
- Verrucaria parmigera* J.Steiner f. *alociza* J.Steiner = *Bagliettoa parmigera*.
- Verrucaria reichertii* Servít – **L**: SERVÍT 1946: 79.
- Verrucaria sordidula* J.Steiner – **L**: STEINER 1921: 4.
- Verrucaria transiliens* Arnold – **L**: STEINER 1921: 2.
- Verrucaria syriaca* J.Steiner – **L**: STEINER 1921: 3*.
- Xanthoparmelia tinctina* (Maheu & A.Gillet) Hale – **L**: WERNER 1955: 358 (as *Parmelia tinctina*).
- Xanthoria calcicola* Oksner – **L**: WERNER 1955: 359 (as *X. parietina* var. *aureola*, incl. f. *tumida* & f. *congranulata*).
- **Xanthoria elegans* (Link) Th.Fr. – **H**: (1s) Zedda S-478 (B).
- Xanthoria parietina* (L.) Th.Fr. – **L**: STEINER 1921: 65. – **H**: (1c) Zedda S-35 (B), in S-39 sub *Anaptychia ciliaris* (B), S-51c (B); (1d) Zedda S-56 (B), S-63 (hb. Seaward 112867); (1e) Zedda S-98 (B), S-105 (hb. Seaward 112866); (1f) Zedda S-146 (B); (1n) Zedda, in S-306 sub *Arthonia excipienda* (B); (1p) Zedda, in S-449 sub *Caloplaca haematites* (B); (2b) Doebritz (hb. John 10669, in 10675 sub *Lecidella elaeochroma*); (2c) Doebritz (hb. John 10678).
- Xanthoria parietina* var. *aureola* (Ach.) Th.Fr. = *X. calcicola*.
- Xanthoria parietina* var. *aureola* f. *congranulata* (Cromb.) Bouly de Lesd. = *X. calcicola*.
- Xanthoria parietina* var. *aureola* f. *tumida* (Wedd.) Hillm. = *X. calcicola*.
- Xylographa parallela* (Ach.: Fr.) Behlen & Desberger – **L**: WERNER 1963: 314 (as *X. abietina* var. *parallela*).
- Xylographa abietina* (Pers.) Zahlbr. var. *parallela* (Ach.) Redinger = *X. parallela*.

Conclusions

In all, 399 taxa are listed as occurring in Syria, of which 125 are newly recorded for the country. The high percentage of new records suggests that further explorations will equally reveal many additions and that the lichen flora is still very incompletely known. Nevertheless it exceeds the 234 taxa reported from Israel (Galun & Mukhtar 1996), a much more intensely investigated area. However, from Cyprus, probably more comparable as to landscape diversity, LITTERSKI & MAYRHOFER (1998) reported 357 taxa. No comparable information is available from the other surrounding countries.

The additions are mainly epiphytic lichens, since one collector (L. Z.) concentrated efforts on this group; consequently, the total figure for epiphytic lichens in Syria is at least doubled. This suggests that a similar attention to saxicolous lichens will equally double the number of Syrian representatives and that the total number of lichen taxa occurring in Syria will almost certainly exceed 500.

The records include 32 taxa newly described from Syrian specimens. Many of these are known only from the type collection. Nobody has studied these taxa after their original publication. Therefore it is assumed here that most of these taxa will end up as synonyms of more widespread taxa, or they will be discovered eventually in surrounding areas.

The published records cover a time span of almost 150 years, during which general knowledge of lichen classification has increased greatly. Since this increase has in general led to more narrowly defined species, many early records may need reidentification. No such reexamination of specimens has been done for the present checklist, and the interpretation of records before 1970 should be considered as provisional. In several cases they evidently need a different classification. No new combinations have been made in the present study in order to avoid useless nomenclatural combinations. Revision by a specialist is required to decide whether in such cases a synonym is at hand or a new combination is needed.

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References

- VAN DEN BOOM, P. P. G. & ZEDDA, L. 2000. *Lecania sipmanii*, a new epiphytic lichen species from Syria. – *Willdenowia* **30**: 155–160.
- BOQUERAS, M. 1997. Els generes *Ochrolechia* i *Pertusaria* a l'herbari Werner. – *Acta Bot. Barcinon.* **44**: 17–28.
- BREUSS, O. 1996. Revision der Flechtengattung *Placidiopsis* (Verrucariaceae). – *Oesterr. Z. Pilzk.* **5**: 65–94.
- DEGELIUS, G. 1954. The lichen genus *Collema* in Europe. – *Symb. Bot. Upsal.* **13**: 1–499.
- ESSLINGER, T. L. 1997. A chemosystematic revision of the brown *Parmeliae*. – *J. Hattori Bot. Lab.* **42**: 1–211.
- GALUN, M. & MUKHTAR, A. 1996. Checklist of the lichens of Israel. – *Israel J. Plant Sci.* **44**: 195–218.
- GIRALT, M. & MAYRHOFFER, H. 1995. Some corticolous and lignicolous species of the genus *Rinodina* (lichenized Ascomycetes, Physciaceae) lacking secondary lichen compounds and vegetative propagules in South Europe and adjacent regions. – *Biblioth. Lichenol.* **57**: 127–160.
- KNOPH, J.-G. 1990. Untersuchungen an gesteinsbewohnenden xanthonhaltigen Sippen der Flechtengattung *Lecidella* (Lecanoraceae, Lecanorales) unter besonderer Berücksichtigung von außereuropäischen Proben exklusive Amerika. – *Biblioth. Lichenol.* **36**: 1–183.
- KREMPELHUBER, A. VON 1868. Exotische Flechten aus dem Herbar des k. k. botanischen Hofkabinetes in Wien. – *Verhandl. K. K. Zool.-Bot. Ges. Wien* **18**: 303–330.
- LITTERSKI, B. & MAYRHOFFER, H. 1998. Catalogue of lichenized and lichenicolous fungi of Cyprus. – *Stud. Geobot.* **16**: 57–70.
- LLIMONA, X. 1979. Roger-Guy Werner (1901–1977). – *Collect. Bot. (Barcelona)* **11**: 475–504.
- LUMBSCH, H. T. 1988. The identity of *Diploschistes gypsaceus*. – *Lichenologist* **20**: 19–24.
- MAYRHOFFER, H. 1984. Die saxicolen Arten der Flechtengattungen *Rinodina* und *Rinodinella* in der Alten Welt. – *J. Hattori Bot. Lab.* **55**: 327–492.
- MAYRHOFFER, H. & POELT, J. 1978. *Rinodinella* – eine neue Gattung der Flechtenfamilie Physciaceae. – *Hoppea, Denkschr. Regensb. Bot. Ges.* **37**: 89–105.
- MAYRHOFFER, H. & POELT, J. 1979. Die saxicolen Arten der Flechtengattung *Rinodina* in Europa. – *Biblioth. Lichenol.* **12**: 1–186.
- MAYRHOFFER, H., SCHEIDEGGER, C. & SHEARD, J. W. 1990. *Rinodina lecanorina* and *Rinodina luridata*, two closely related species on calciferous rocks. – *Biblioth. Lichenol.* **38**: 335–356.
- MOTYKA, J. 1936–38. *Lichenum genus Usnea* studium monographicum, pars systematica. – Leopoli.
- NAVARRO-ROSINÉS, P. & HAFELLNER, J. 1996. *Lichenostigma elongata* spec. nov. (Dothideales), a lichenicolous ascomycete on *Lobothallia* and *Aspicilia* species. – *Mycotaxon* **57**: 211–225.
- NAVARRO-ROSINÉS, P. & HLADUN, N. L. 1996. Las especies saxícola-calcícolas del grupo de *Caloplaca lactea* (Teloschistaceae, líquenes), en las regiones mediterránea y medioeuropea. – *Bull. Soc. Linn. Provence* **47**: 139–166.
- NIMIS, P. L. 1996. Towards a checklist of Mediterranean lichens. – *Bocconea* **6**: 5–17.
- NORDIN, A. 2000. Taxonomy and phylogeny of *Buellia* species with pluriseptate spores (Lecanorales, Ascomycotina). – *Symb. Bot. Upsal.* **33**: 1–117.
- POELT, J. 1958. Die lobaten Arten der Flechtengattung *Lecanora* Ach. sensu ampl. in der Holarktis. – *Mitt. Bot. Staatssamml. München* **19/20**: 411–589.
- POELT, J. 1966. Zur Kenntnis der Flechtengattung *Physconia*. – *Nova Hedwigia* **12**: 107–135.
- REICHERT, I. 1940. A new species of *Diploschistes* from oriental steppes and its phytogeographical significance. – *Palestine J. Bot.* **3**: 162–182.
- SANTESSON, R. 1942. Some lichens from Palestine and Syria. – *Arch. Bot.* **30B**(5): 1–5.
- SERVÍT, M. 1946. The new lichens of the Pyrenocarpace-group. – *Stud. Bot. Čechoslov.* **7**: 49–188.
- STEINER, J. 1921. Lichenes aus Mesopotamien und Kurdistan sowie Syrien und Prinkipo. – *Ann. Naturhist. Mus. Wien* **34**: 1–68.
- SZATALA, Ö. 1941. Lichenes in Armenia, Kurdistania, Palaestina et Syria annis 1909–1910 a Cl. Fr. Nabelek collecti. – *Borbasia* **3**: 61–80.
- SZATALA, Ö. 1960. Lichenes Turciae asiaticae ab Victor Pietschmann collecti. – *Ann. Mycol.* **14**: 312–325.

- TIMDAL, E. 1991. A monograph of the genus *Toninia*. – Opera Bot. **110**: 1–137.
- TORRENTE, P. & EGEA, J. M. 1989. La familia *Opegraphaceae* en el area Mediterranea de la Peninsula Iberica y Norte de Africa. – Biblioth. Lichenol. **32**: 1–282.
- VÉZDA, A. 1994. Lichenes Rariores Exsiccati. Fasciculus sextus decimus (numerus 151-160). – Brno.
- WERNER, R. G. 1954. Notes de lichénologie libano-syrienne. I. – Bull. Soc. Bot. France **101**: 355–360.
- WERNER, R. G. 1955. Notes de lichénologie libano-syrienne. II. – Bull. Soc. Bot. France **102**: 350–356.
- WERNER, R. G. 1956. Notes de lichénologie libano-syrienne. III. – Bull. Soc. Bot. France **103**: 461–467.
- WERNER, R. G. 1957. Notes de lichénologie libano-syrienne. IV. – Bull. Soc. Bot. France **104**: 321–326.
- WERNER, R. G. 1958. Notes de lichénologie libano-syrienne. V. – Bull. Soc. Bot. France **105**: 238–243.
- WERNER, R. G. 1959. Notes de lichénologie libano-syrienne. VI. – Bull. Soc. Bot. France **106**: 332–337.
- WERNER, R. G. 1963. Notes de lichénologie libano-syrienne. VII. – Bull. Soc. Bot. France **110**: 311–315.
- WERNER, R. G. 1966. Notes de lichénologie libano-syrienne, VIII et égyptienne. – Bull. Soc. Bot. France **113**: 74–83.
- WUNDER, H. 1974. Schwarzfrüchtige, saxicole Sippen der Gattung *Caloplaca* (Lichenes, Teloschistaceae) in Mitteleuropa, dem Mittelmeergebiet und Vorderasien. – Biblioth. Lichenol. **3**: 1–195.

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