

## **A preliminary lichen checklist for Iran**

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## A preliminary lichen checklist for Iran

### Abstract

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An evaluation of literature and recent collections made by Iranian researchers resulted in a list of 396 species of lichenized fungi and eight species of lichenicolous or allied fungi for Iran. Of these, 97 species are new for Iran while some species not confirmed by recent collections are doubtful. Pertinent literature references and, for the newly reported species, locality and collection data are presented.

### Introduction

At first glance, the lichen flora of Iran may seem well studied. The first report dates from over 170 years ago, when Göbel (1830) and Eversmann (1831: 357) reported the occurrence of the manna lichen, *Aspicilia esculenta*, in Iran. The first list of lichens was published by Buhse (1860), when he reported on the collections made on his journey from Russia to northern Iran. Afterwards lichens were regularly collected by European botanists visiting the country, their collections often handed to lichen specialists for identification and treated in several extensive publications (Müller 1892, Steiner 1896, 1910, 1916, Szatala 1940). Szatala (1957) summarized all available information in a treatment of 248 species and added keys.

After 1957 collecting continued. A limited enquiry in European herbaria has revealed that a considerable number of unpublished collections exists in H, TUR and W, in part collected by experienced lichenologists. However, the results remained mostly unpublished, except for a collection studied by Weber (1965). Nevertheless, published knowledge of the Iranian lichen flora kept increasing because Iranian specimens were included in taxonomic revisions (e.g. Breuss 1998, Egea 1989, Harris 1989, Knoph 1990, Mayrhofer 1984, Wunder 1974).

Since 2001 a small group of Iranian scientists has started to investigate the lichen flora and sent numerous specimens for identification to the non-Iranian authors of this paper. Thus, it became clear that the lichen flora of Iran is in fact poorly known and many old records are in need of verification. Based on results obtained from these collections, a key to the genera has been prepared and made available in the internet (Sipman 2003). The present study intends to summarize all hitherto available information as a baseline for a more detailed investigation of the lichen flora of Iran.

## Material and methods

For the present checklist, all geographically relevant publications were analysed. In addition, taxonomic studies of groups expected to occur in Iran were screened. A full list of the references examined is appended. The taxa encountered are listed under their most recent name. No effort was made to taxonomically re-examine the herbarium material supporting literature records. Intraspecific taxa for which few current citations are available have been included under the main species, except when there are indications that the taxon merits separate treatment or when the taxonomic position is unclear. No effort was made to improve the author citations of these generally insignificant names. Some taxa that evidently needed transferring to a different genus have been listed provisionally under these names (indicated as “[ad interim]”) without intending validation of the combinations. In the authors’ opinion a re-examination of the type material to clarify its status is required before any formal nomenclatural change is made.

A few lichen records have been omitted from the Iranian flora because the boundaries have changed since their publication. This concerns some lichens reported from Bahrain by Lamb (1936), which were included in Szatala (1957): *Buellia subalbula* var. *fuscocapitellata* Lamb, *Dermatocarpon tumidulum* Lamb (as *Placidium tumidulum*), *Ramalina maciformis* (Delile) Bory and *Xanthoria steineri* Lamb.

The checklist also includes the first results of recent collections made by A. A. Maassoumi in 2002-03, S. R. Safavi in 2002, M. Sohrabi (in part together with M. Mofid) in 2001-04, M. Haji Moniri (in part together with M. R. Joharchi) in 2002-03 and T. Valad Beigi (in part together with H. Bahadorani) in 2003. From these collections duplicates deposited in B, HBG, TSB and the herbarium of M. R. D. Seaward (abbreviated as herb. Seaward) were investigated; the originals are stored in TARI and SBUH.

The specimens were investigated with the usual optical equipment and test solutions, and many foliose and fruticose samples were chemically analysed by TLC (Orange & al. 2001).

## Checklist

The accepted taxa in bold are followed by references from the literature, if any, and references from herbarium specimens seen by us so far. An asterisk (\*) after a literature reference denotes first description of the taxon based on type material from Iran. A question mark preceding a name indicates a probable but uncertain synonymy. An asterisk (\*) preceding an accepted name indicates a taxon newly reported here from Iran. Synonyms used in published Iranian lichen records are listed in standard italics with reference to the accepted name. The following abbreviations apply: (LF) = lichenicolous fungus, (F) = non-lichenized fungus.

Species included in mixed samples, which are filed in the herbarium under another name, are indicated as, e.g., “in *Maassoumi & Safavi 1856* sub *Lecidea* cf. *plana*”, where the sample is filed under *Lecidea* cf. *plana*.

*Note.* – The list contains many doubtful references of taxa, which are probably misidentified or whose current taxonomic position is unclear. Only taxa confirmed by recent specimens or revisions can be considered as reliably recorded.

***Acarospora anatolica*** H. Magn. – Szatala (1940: 524; 1957: 121).

***Acarospora bella*** var. *rageoti* (Maheu & Werner) H. Magn. – Szatala (1940: 524; 1957: 121).

***Acarospora bullata*** Anzi – Müller (1892: 155\* as *Placodium microphthalmum*); Steiner (1910: 220 as *A. microphthalmum*); Magnusson (1929: 360); Szatala (1940: 524; 1957: 123); Riedl (1979: 220).

***Acarospora cervina*** A. Massal. – Müller (1892: 154 as *Placodium cervinum* & 155 as var. *percaenum*); Steiner (1910: 216 & 1916: 29 as *Acarospora percaena*); Magnusson (1929: 247); Szatala (1940: 524 as f. *normalis*, 525 as f. *leucospora* & f. *percaena*; 1957: 122 & as f. *mammata*, f. *normalis* & f. *percaena*). – GOLESTAN: C. 15 km to Maraveh-Tappeh from Inch-e

Borun, opposite Hemat Abbad, 169 m, on calcareous rock, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1905, 1908, 1909* (TARI). KHORASAN: Neishabour towards Kashmar, Rivash, Kalateh Teimour, 1550 m, on calcareous rock, 9.4.2002, in *Haji Moniri 1436c* sub *Rhizocarpon viridiatrum* (B, FUMH). KUHGILUYE O BOIRAHMAD: C. 30 km on the road from Yassuj to Semirom, 1850 m, 17.11.2002, *Maassoumi & Safavi 1841* (B, TARI, herb. Seaward 112794).

*Acarospora cervina* f. *larvata* (Müll. Arg.) H. Magn. – Müller (1892: 155\* as *Placodium cervinum* var. *larvatum*); Steiner (1910: 218 as *A. percaena* f. *larvata*); Szatala (1940: 524; 1957: 122).

*Acarospora cervina* f. *leucospora* A. Massal. = *A. cervina*

*Acarospora cervina* f. *mammata* (Hue) H. Magn. = *A. cervina*

*Acarospora cervina* f. *normalis* A. Massal. = *A. cervina*

*Acarospora cervina* f. *percaena* (Schaer.) A. Massal. = *A. cervina*

*Acarospora cervina* f. *theobromina* (Hue) H. Magn. = *A. cervina*

*Acarospora cervina* var. *ochracea* Müll. Arg. = *A. ochracea*

*Acarospora chlorophana* (Wahlenb.) A. Massal. = *Pleopsidium chlorophanum*

*Acarospora coeruleoalba* var. *concreta* J. Steiner – Steiner (1910: 219\*); Magnusson (1929: 210); Szatala (1940: 525; 1957: 122).

*Acarospora compacta* H. Magn. – Szatala (1940: 525\*; 1957: 122); Lamb (1963: 3).

*Acarospora elbursensis* H. Magn. – Szatala (1940: 526\*; 1957: 123); Lamb (1963: 3).

*Acarospora fuscata* (Schrad.) Th. Fr. – Oxner (1946: 82); Szatala (1957: 123).

*Acarospora glaucocarpa* (Ach.) Körb. – Oxner (1946: 83).

*Acarospora heufleriana* Körb. – Oxner (1946: 82).

*Acarospora interrupta* var. *nuda* (Müll. Arg.) J. Steiner = *A. placenta*

*Acarospora laqueata* Stizenb. – Sohrabi (in prep.).

*Acarospora macrospora* (Hepp ex A. Massal.) Bagl. – Szatala (1957: 123).

*Acarospora microphthalmia* Hue = *Acarospora bullata*

*Acarospora murorum* A. Massal. – Szatala (1957: 123). – KHUZESTAN: C. 27 km on the road from Behbahan to Deylam, 270 m, 16.11.2002, *Maassoumi & Safavi 1758* (B, TARI).

*Acarospora nodulosa* (Dufour) Hue – Vězda (1978, *Lich. Sel. Exs.* 1561).

*Acarospora ochracea* (Müll. Arg.) H. Magn. – Müller (1892: 155 as *Placodium cervinum* var. *ochraceum*); Magnusson (1929: 249 as “*Acarospora cervina* var. *ochracea*”; probably *Aspicilia* sp.).

*Acarospora oxytona* (Ach.) A. Massal. = *Pleopsidium flavum*

*Acarospora percaena* (Ach.) J. Steiner = *A. cervina*

*Acarospora percaena* f. *larvata* Müll. Arg. = *A. cervina* f. *larvata*

*Acarospora placenta* (Ehrenb. ex Nyl.) Hue – Müller (1892: 155\* as *Placodium interruptum* var. *nudum*); Steiner (1910: 218 as *A. interrupta* var. *nuda*); Magnusson (1929: 359); Szatala (1940: 526; 1957: 124).

*Acarospora sphaerothallina* (J. Steiner) Szatala = *A. desertorum*

*Acarospora stapfiana* (Müll. Arg.) Hue – Müller (1892: 154\* as *Placodium stapfianum*); Magnusson (1929: 110); Szatala (1940: 526; 1957: 121); Steiner & Poelt (1984: 566). – KHORASAN: Neishabour towards Kashmar, Rivash, Kalateh Teimour, 1550 m, on rock, 9.4.2002, in *Haji Moniri 1442* sub *Acarospora placenta?* (B, FUMH); Torbatejam, Bezd, 1300 m, on rock, 24.4.2002, *Haji Moniri & Joharchi 1429a* (B, FUMH).

*Acarospora strigata* (Nyl.) Jatta – Müller (1892: 155 as *Placodium interruptum*); Magnusson (1929: 208); Szatala (1940: 527); Magnusson (1940: 74); Szatala (1957: 123); Riedl (1979: 220). – KHORASAN: Chenaran, Akhlamad valley, 1600 m, 17.9.2002, *Haji Moniri 1519* (B, FUMH); Neishabour towards Kashmar, Rivash, Kalateh Teimour, 1550 m, on calcareous rock, 9.4.2002, in *Haji Moniri 1436c* sub *Rhizocarpon viridiatrum* (B, FUMH).

*Acarospora subpruinata* J. Steiner – Steiner (1910: 219); Magnusson (1929: 266); Szatala (1957: 123).

- Acarospora veronensis* A. Massal. – Szatala (1957: 123).
- Acrocordia gemmata* (Ach.) A. Massal. – Buhse (1860: 244 as *Verrucaria alba*); Szatala (1957: 107 as *Arthopyrenia alba*). – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2008* (B, TARI).
- Alectoria cana* (Ach.) Leight. = *Bryoria capillaris*
- Alectoria jubata* (L.) Ach. = *Bryoria ? fuscescens*
- Allarthonia depressula* (J. Steiner) Szatala = *Arthonia depressula*
- Allarthonia ruderella* (Nyl.) Szatala = *Arthonia ruderella*
- Amphiloma aurantium* Müll. Arg. = *Caloplaca aurantia*
- Amphiloma elegans* Körb. = *Xanthoria elegans*
- Amphiloma murorum* var. *aurantiacum* (Schaer.) Müll. Arg. = *Caloplaca saxicola* var.?
- Amphiloma murorum* var. *gyalolechioides* Müll. Arg. = *Caloplaca saxicola*
- Amphiloma murorum* var. *miniatum* Körb. = *Caloplaca saxicola*
- Amphiloma murorum* var. *obliteratum* Körb. = *Caloplaca saxicola*
- Anaptychia caspica* Gyeln. = *A. setifera*
- Anaptychia ciliaris* (L.) Körb. ex A. Massal. – Buhse (1860: 241 as *Parmelia ciliaris*); Szatala (1957: 153); Weber (1964: 7); Sohrabi (in prep.).
- Anaptychia ciliaris* var. *crinalis* (Schleich.) Rabenh. = *A. crinalis*
- Anaptychia crinalis* (Schräd.) Vězda – Buhse (1860: 241 as *Parmelia ciliaris*  $\beta$  *crinalis*); Szatala (1957: 153 as *A. ciliaris* var. *crinalis*); Sohrabi (in prep.).
- Anaptychia elbursiana* (Szatala) Poelt – Szatala (1940: 532\* as *Physcia grisea* var. *elbursiana*); Szatala (1957: 152 as *Physcia elbursiana*); Vězda (1974, *Lich. Sel. Exs. 1224*).
- \**Anaptychia roemerii* Poelt. – GOLESTAN: C. 15 km to Maraveh-Tappeh from Inch-e Borun, opposite Hemat Abbad, 169 m, on calcareous rock, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1893* (B, TARI). KHORASAN: Chenaran, Akhlamad valley, 1600 m, on moss, 9.2002, *Haji Moniri 1506a* (FUMH).
- Anaptychia setifera* Meresch. ex Räsänen – Szatala (1957: 153 as *A. caspica*). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2047, 2069* (B, TARI); Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, *Maassoumi & Safavi 1992* (B, TARI); on the Maraveh-Tappeh road from Kalaleh, c. 20 km from Chatal towards Ashkhaneh, 846 m, forest margin, 27.1.2003, *Maassoumi, Sohrabi & Safavi 1941* (B, TARI).
- Anaptychia ulothrichoides* (Vain.) Vain. – Szatala (1940: 533 as *Physcia muscigena* f. *lenta*); Oxner (1946: 84); Szatala (1957: 153 as *Physcia caucasica*); Sohrabi (in prep.). – KHORASAN: Torbatejam, S of Salehabad, 1100 m, on bark of *Pistacia vera*, 25.4.2002, *Haji Moniri 1463* (FUMH).
- Anema decipiens* (A. Massal.) Forssell – Szatala (1940: 522; 1957: 110).
- Anema nummularium* (Durieu & Mont.) Nyl. – Steiner (1896: 437); Szatala (1957: 110).
- Arthonia cinnabarina* (DC.) Wallr. – Vězda (1978, *Lich. Sel. Exs. 1508*). – MAZANDARAN: Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2107* (B, TARI, herb. Seaward 112712).
- Arthonia depressula* J. Steiner – Steiner (1896: 442\*); Szatala (1957: 107 as *Allarthonia depressula*).
- Arthonia radiata* (Pers.) Ach. – Szatala (1957: 107 as var. *astroidea*). – MAZANDARAN: Chamestan, experimental station, 400 m, degraded forest, 9.11.2002, *Maassoumi 1350* (HBG, TARI).
- Arthonia ruderella* Nyl. – Szatala (1957: 107 as *Allarthonia ruderella*).
- Arthonia tumidula* (Ach.) Ach. = *A. cinnabarina*
- Arthopyrenia alba* (Schräd.) Zahlbr. = *Acrocordia gemmata*
- Arthopyrenia atomaria* (Ach.) Müll. Arg. = *Leptorhaphis atomaria*
- Arthopyrenia rhypona* (Ach.) A. Massal. (F) – Buhse (1860: 244 as *Verrucaria rhypona*  $\gamma$  *aterrima*); Szatala (1957: 107).

- \**Arthothelium spectabile* Flot. ex A. Massal. – GOLESTAN: Kordkooy, 5 km towards Radkan, 300–1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2036* (B, TARI). MAZANDARAN: Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2108* (B, TARI, herb. Seaward 112825), *2118* (B, TARI, herb. Seaward 112714).
- Aspicilia aschabadensis* (J. Steiner) [ad interim] – Steiner (1910: 227 as *Sphaerothallia aschabadensis*); Szatala (1957: 130 as *Lecanora aschabadensis*).
- Aspicilia caesiascens* Pisút – Vězda (1979, *Lich. Sel. Exs. 1602*).
- Aspicilia calcarea* (L.) Körb. – Steiner (1896: 439 as *Lecanora calcarea* var. *concreta*); Szatala (1957: 126). – LORESTAN: C. 40 km on the road from Boroujerd to Khoramabad, 1800 m, 14.11.2002, *Maassoumi 1383* (HBG, TARI).
- Aspicilia calcarea* subsp. *hoffmanniana* S. Ekman & Fröberg – Müller (1892: 157 as *Lecanora hoffmannii*); Szatala (1957: 127 as *Aspicilia contorta* var. *hoffmannii*). – LORESTAN: C. 40 km on the road from Boroujerd to Khoramabad, 1800 m, 14.11.2002, *Maassoumi 1382* (HBG, TARI).
- Aspicilia calcarea* var. *raucum* (J. Steiner) [ad interim] – Steiner (1910: 224 as *Lecanora calcarea* var. *raucum*).
- Aspicilia candida* (Anzi) Hue – Szatala (1940: 527; 1957: 127). – KHORASAN: Tabas towards Boshrouieh, 1150 m, 17.4.2002, *Haji Moniri 1408* (B, FUMH).
- Aspicilia cheresina* (Müll. Arg.) Hue – Steiner (1896: 439 as *Lecanora cheresina*); Szatala (1957: 128).
- Aspicilia cheresina* var. *granuligera* (J. Steiner) Szatala – Steiner (1910: 231\* as *Lecanora cheresiana* var. *granuligera*); Szatala (1957: 128).
- Aspicilia cheresina* var. *microspora* (Arnold) Clauzade & Cl. Roux – Steiner (1910: 231\* as *Lecanora microspora* & var. *punctulata*); Szatala (1940: 527\*; 1957: 128 incl. var. *astroidea* & var. *punctulata*).
- Aspicilia cinerea* var. *alba* (Schaer.) Anzi – Müller (1892: 157 as *Lecanora cinerea* var. *alba*); Szatala (1957: 126).
- Aspicilia contorta* (Hoffm.) Kremp. – Szatala (1957: 127 as *A. viridescens*). – GOLESTAN: C. 20 km on the road from Eslamabad to Ashkane, 615 m, on calcareous rock, 21.1.2003, *Maassoumi & Safavi 1959* (B, TARI).
- Aspicilia contorta* var. *hoffmannii* (Ach.) Szatala = *A. calcarea* subsp. *hoffmanniana*
- Aspicilia coronata* (A. Massal.) Bouly de Lesd. – Szatala (1940: 527; 1957: 127). – KUH Giluyeh O BOIRAHMAD: C. 30 km on the road from Yassuj to Semirom, 1850 m, 17.11.2002, *Maassoumi & Safavi 1844* (TARI, herb. Seaward 112789).
- Aspicilia cupreoatra* (Nyl.) Arnold = *Bellemerea cupreoatra*
- Aspicilia desertorum* (Kremp.) Mereschk. – Steiner (1910: 224 as *Lecanora calcarea* var. *sphaerothallina*); Szatala (1940: 527 & as *A. sphaerothallina*); Oxner (1946: 83); Szatala (1957: 127 as *A. sphaerothallina* & 129 as *Sphaerothallia desertorum*); Riedl (1979: 220). – ESFAHAN: C. 2 km to Ghohrud from Kamou, 2150 m, 18.11.2002, *Maassoumi & Safavi 1858* (B, TARI, herb. Seaward 112787).
- Aspicilia esculenta* (Pall.) Flagey – Eversmann (1825: 357 as *Lecanora esculenta*); Göbel (1830 as *Parmelia esculenta*); Steiner (1910: 224 as *L. esculenta*); Szatala (1927: 130 as *Sphaerothallia esculenta*).
- Aspicilia excrescens* (J. Steiner) Szatala – Steiner (1910: 223\* as *Lecanora calcarea* var. *excrescens*); Szatala (1957: 126); Riedl (1979: 220).
- Aspicilia farinosa* (Flörke) Arnold – Steiner (1910: 224 as *Lecanora farinosa*); Szatala (1957: 127 & 136 as *Squamaria farinosa*, incl. var. *rauca*). – KUH Giluyeh O BOIRAHMAD: C. 30 km on the road from Yassuj to Semirom, 1850 m, 17.11.2002, *Maassoumi & Safavi 1840* (B, TARI, herb. Seaward 112792).
- Aspicilia ferruginea* (J. Steiner) Szatala – Szatala (1957: 127).
- Aspicilia microspora* (Arnold) Hue = *A. cheresina* var. *microspora*
- Aspicilia microspora* var. *astroidea* Szatala = *A. cheresina* var. *microspora*



- Aspicilia microspora* var. *punctulata* (J. Steiner) Szatala = *A. cheresina* var. *microspora*  
*Aspicilia ochracea* (Müll. Arg.) H. Magn. = *Eiglera flavida*  
*Aspicilia persica* (Müll. Arg.) [ad interim] – Müller (1892: 154\* as *Placodium persicum*); Szatala (1957: 135 as *Squamaria persica*). – Poelt (1958: 553) indicates that the type consists of two different species of *Aspicilia*.  
*Aspicilia polychroma* (Anzi) Nyl. – Szatala (1940: 527; 1957: 127).  
*Aspicilia polychromoides* (J. Steiner) Hue – Steiner (1910: 230\* as *Lecanora polychromoides*, incl. f. *rubescens*); Szatala (1940: 527; 1957: 127 incl. f. *rubescens*).  
*Aspicilia straussii* (J. Steiner) [ad interim] – Steiner (1910: 228\* as *Lecanora fruticulosa* var. *straussii*); Szatala (1957: 129 as *Sphaerothallia straussii*) (*Aspicilia*?).  
*Aspicilia subcalcarea* (Müll. Arg.) Szatala – Szatala (1957: 127).  
*Aspicilia trachytica* (A. Massal.) Arnold – Steiner (1916: 32 as *Lecanora reticulata* var. *trachytica*); Szatala (1957: 126).  
*Aspicilia vagans* Oxner – Crum (1993: 303).  
*Aspicilia viridescens* (A. Massal.) Kremp. = *A. contorta*  
*Bacidia atrogrisea* (Hepp) Körb. = *B. laurocerasi*  
*Bacidia laurocerasi* (Delise ex Duby) Zahlbr. – Szatala (1940: 523 & 1957: 116 as *Bacidia atrogrisea*).  
\**Bacidia rubella* (Hoffm.) A. Massal. – MAZANDARAN: Mazandaran-Chalus, 450-600 m, on bark, roadside forest, 20.7.2004, *Sohrabi 9109A* (herb. Seaward 113112).  
*Bacidia subacerina* Nyl. ex Vain. – Vězda (1978, *Lich. Sel. Exs. 1517*).  
*Bacidia tenax* (Kremp.) Szatala – Szatala (1957: 116).  
\**Bactrospora dryina* (Ach.) A. Massal. – MAZANDARAN: Nowshahr, Mashalak river, 200-1600 m, forest, 10.11.2002, *Maassoumi 1343, 1346, 1348* (HBG, TARI).  
*Bellemeria cupreoatra* (Nyl.) Clauzade & Cl. Roux – Steiner (1910: 222 as *Lecanora cupreoatra*); Szatala (1940: 527 as *Aspicilia cupreoatra*); Oxner (1946: 83 as *A. cupreoatra*); Szatala (1957: 126 as *A. cupreoatra*).  
*Biatorrella ochrophora* (Nyl.) Arnold – Sohrabi (in prep.).  
*Biatorrella pruinosa* auct. = *Sarcogyne regularis*  
*Biatorrella pusilla* J. Steiner = *Polysporina pusilla*  
*Biatorrella urceolata* J. Steiner = *Polysporina urceolata*  
*Bryopogon jubatus* Link = *Bryoria fuscescens*  
*Bryoria capillaris* (Ach.) Brodo & D. Hawksw. – Szatala (1957: 140 as *Alectoria cana*).  
*Bryoria* cf. *fuscescens* (Gyeln.) Brodo & D. Hawksw. – Buhse (1860: 240 as *Bryopogon jubatus* Link); Szatala (1957: 140 as *Alectoria jubata*).  
*Buellia alboatra* (Hoffm.) Branth & Rostr. = *Diplotomma alboatrum*  
*Buellia disciformis* var. *saprophila* (Ach.) Mudd – Buhse (1860: 243 as *Lecidea parasema*  $\gamma$  *saprophila*); Szatala (1957: 148).  
*Buellia epipolia* (Ach.) Mong. = *Diplotomma alboatrum*  
*Buellia epipolia* var. *calcareo* Weis. = *Diplotomma venustum*  
*Buellia epipolia* var. *venusta* (Körb.) J. Steiner = *Diplotomma venustum*  
*Buellia meiosperma* (Nyl.) Müll. Arg. – Steiner (1916: 38 as *B. subdisciformis* var. *meiosperma*); Szatala (1957: 149 as *B. subdisciformis* var. *meiosperma*).  
*Buellia retrovertens* Tuck. – Weber (1964: 7).  
*Buellia subalbula* (Nyl.) Müll. Arg. – Riedl (1979: 220).  
*Buellia subdisciformis* var. *meiosperma* (Nyl.) J. Steiner = *B. meiosperma*  
\**Buellia zoharyi* Galun. – GOLESTAN: Maraveh-Tappeh, c. 8 km towards Ghazan Ghayeh, 170 m, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1923, 1927, 1932* (B, TARI).  
*Calloplisma aurantiacum* A. Massal. = *Caloplaca velana*  
*Calloplisma aurantiacum* var. *erythrellum* (Nyl.) Müll. Arg. = *Caloplaca flavovirescens*  
*Calloplisma bullatum* Müll. Arg. = *Caloplaca bullata*  
*Calloplisma pyraceum* var. *lacteam* (A. Massal.) Müll. Arg. = *Caloplaca lactea*  
*Calloplisma variabile* Körb. = *Caloplaca variabilis*

*Caloplaca aegyptiaca* (Müll. Arg.) J. Steiner – Steiner (1895: 438, 445 & 1910: 238 as *Caloplaca variabilis* var. *candida*); Steiner (1896: 439, as *C. interveniens*); Steiner (1910: 238\* as *C. aegyptiaca* var. *inspersa*); Szatala (1940: 530, 531 as *Placodium inspersum*; 1957: 143 as *P. aegyptiacum*, as *P. aegypticum* var. *ochraceum* & *P. inspersum*; 1957: 144 as *P. interveniens* & *P. variabile* var. *candidum*); Wunder (1974: 56, 61 & 64 as *C. circumalbata*); Riedl (1979: 220 as *C. aegyptiaca*)

*Caloplaca aegyptiaca* var. *inspersa* J. Steiner = *C. aegyptiaca*

*Caloplaca alociza* (A. Massal.) Mig. – Steiner (1910: 238 as *C. variabilis* f. *acrustacea*); Szatala (1957: 144 as *Placodium variabile* var. *acrustaceum*). – KHORASAN: Between Daregaz and Kalat, 800 m, on calcareous rock, 18.9.2002, *Haji Moniri & Joharchi 1497a* (FUMH).

*Caloplaca aurantia* (Pers.) Hellb. – Müller (1892: 153 as *Amphiloma aurantium*); Steiner (1896: 438, 445); Szatala (1957: 145 as *Gasparrinia aurantia*).

*Caloplaca biatorina* (A. Massal.) J. Steiner – Steiner (1910: 239); Szatala (1940: 531 & 1957: 145 as *Gasparrinia biatorina*); ?Szatala (1954: 137\* as *G. biatorina* var. *centrifuga*; 1957: 145 as *G. biatorina* var. *centrifuga*); Riedl (1979: 220). – ESFAHAN: C. 2 km to Ghohrud from Kamou, 2150 m, 18.11.2002, in *Maassoumi & Safavi 1856* sub *Lecidea* cf. *plana* (B, TARI, herb. Seaward 112731). GOLESTAN: C. 20 km on the road from Eslamabad to Ashkane, 615 m, on calcareous rock, 21.1.2003, *Maassoumi & Safavi 1962* (B, TARI).

*Caloplaca biatorina* var. *gyalolechioides* (Müll. Arg.) Poelt – Szatala (1957: 146 as *Gasparrinia gyalolechioides*).

*Caloplaca biatorina* var. *pusilloides* J. Steiner – Steiner (1910: 239\*); Szatala (1957: 146 as *Gasparrinia biatorina* var. *pusilloides*).

*Caloplaca biatorina* var. *sympecta* J. Steiner – Steiner (1910: 240\*; 1916: 37); Szatala (1940: 531 & 1957: 146 as *Gasparrinia biatorina* var. *sympecta*).

*Caloplaca bullata* (Müll. Arg.) Zahlbr. – Müller (1892: 156\* as *Callopisma bullatum*); Szatala (1957: 144 as *Placodium bullatum*); Wunder (1974: 120 as *Caloplaca variabilis* var. *bullata*).

*Caloplaca cerina* (Ehrh. ex Hedw.) Th. Fr. – Oxner (1946: 83); Szatala (1940: 530 as var. *ehrharti*); Szatala (1957: 142 as *Placodium cerinum*, incl. f. *dispersum*). – GOLESTAN: On the Maraveh-Tappeh road from Kalaleh, c. 20 km from Chatal towards Ashkhaneh, 846 m, forest margin, 27.1.2003, in *Maassoumi, Sohrabi & Safavi 1949* sub *Lecidella elaeochroma* (B, TARI), in *Maassoumi, Sohrabi & Safavi 1942* sub *Physcia adscendens* (B, TARI).

*Caloplaca cerina* f. *dispersum* Oliv. = *C. cerina*

*Caloplaca cerina* var. *cyanolepra* (DC.) Kickx. – Szatala (1957: 142 as *Placodium cerinum* var. *cyanoleprum*).

*Caloplaca cerina* var. *ehrharti* (Schaer.) Trev. = *C. cerina*

*Caloplaca cerina* var. *flava* (Anzi) Jatta – Szatala (1957: 142, as *Placodium stillicidiorum* f. *flavum* (Anzi) Szat.); see Lamb (1963: 574).

\**Caloplaca chalybeia* (Fr.) Müll. Arg. – KHORASAN: Between Daregaz and Kalat, 800 m, on calcareous rock, 18.9.2002, in *Haji Moniri & Joharchi 1496a* sub *Diplotomma venustum* (B, FUMH), in *Haji Moniri & Joharchi 1497a* sub *Caloplaca alociza* (FUMH).

*Caloplaca circumalbata* (Delile) Wunder = *C. aegyptiaca*

*Caloplaca deceptoria* (Flagey) J. Steiner – Szatala (1957: 146 as *Gasparrinia deceptoria*).

*Caloplaca decipiens* (Arnold) Blomb. & Forssell – Steiner (1910: 239 as f. *corticola*; 1916: 37); Szatala (1940: 531 as *Gasparrinia decipiens*); Oxner (1946: 83); Szatala (1957: 145 as *G. decipiens* & f. *corticola*). – GOLESTAN: C. 15 km to Maraveh-Tappeh from Inch-e Borun, opposite Hemat Abbad, 169 m, on calcareous rock, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1898, 1904* (B, TARI); c. 20 km on the road from Eslamabad to Ashkane, 615 m, on calcareous rock, 21.1.2003, *Maassoumi & Safavi 1968* (B, TARI).

*Caloplaca diphyodes* (Nyl.) Jatta – Steiner (1910: 238 as *C. variabilis* var. *lecideina*); Szatala (1957: 144 as *Placodium variabile* var. *lecideinum*); Wunder (1974: 89).

*Caloplaca elegans* (Link) Th. Fr. = *Xanthoria elegans*



*Caloplaca elegans* f. *tenuis* Th. Fr. = *Xanthoria elegans* f. *tenuis*

\**Caloplaca flavorubescens* (Huds.) J. R. Laundon – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2005a* (B, TARI). MAZANDARAN: Mazandaran-Chalus, 450-600 m, on bark, roadside forest, 20.7.2004, *Sohrabi 9180* (herb. Seaward 113113).

*Caloplaca flavovirescens* var. *persica* Szatala – Müller (1892: 156 as *Calloplisma aurantiacum* var. *erythrellum*); Szatala (1940: 531\*; 1954: 137 & 1957: 143 as *Placodium velanum* var. *persicum*). – MAZANDARAN: Mazandaran-Chalus, roadside forest, 450-600 m, 20.7.2004, *Sohrabi 9118, 9144, 9197* (herb. Seaward 113103, 113095, 113098).

*Caloplaca holocarpa* (Hoffm.) A. E. Wade – Steiner (1896: 438 as *C. pyracea* var. *pyrithroma*); Szatala (1940: 531 as *C. pyracea*); Szatala (1957: 143 as *Placodium pyraceum*, incl. var. *pyrithromum*); ?Szatala (1957: 143 as *P. pyraceum* var. *muscicolum*). – MAZANDARAN: Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2117* (B, TARI).

*Caloplaca interveniens* Müll. Arg. = *C. aegyptiaca*

*Caloplaca lactea* (A. Massal.) Zahlbr. – Müller (1892: 156 as *C. pyraceum* var. *lactea*); Szatala (1957: 142 as *Placodium lacteum*); Riedl (1979: 220).

*Caloplaca lactea* var. *laetior* J. Steiner (Iranian records) = *C. marmorata*

\**Caloplaca lacteoides* Nav.-Ros. & Hladun. – GOLESTAN: C. 20 km on the road from Eslamabad to Ashkane, 615 m, on calcareous rock, 21.1.2003, *Maassoumi & Safavi 1954* (B, TARI).

*Caloplaca luteoalba* (Turner) Th. Fr. – Szatala (1957: 142 as *Placodium luteoalbum*). – GOLESTAN: Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, in *Maassoumi & Safavi 1976* sub *Xanthoria parietina* (B, TARI).

*Caloplaca marmorata* (Bagl.) Jatta – Szatala (1940: 531 as *C. lactea* var. *laetior* & 1957: 142 as *Placodium lacteum* f. *laetior*, specimen revised by Navarro-Rosinés & Hladun 1996); Navarro-Rosinés & Hladun (1996: 163).

*Caloplaca nideri* J. Steiner – Steiner (1910: 239); Szatala (1957: 146 as *Gasparrinia nideri*).

*Caloplaca paulsenii* (Vain.) Zahlbr. = *C. transcaspica*

*Caloplaca persica* (J. Steiner) M. Steiner & Poelt – Steiner (1910: 241\* as *Xanthoria polycarpoides* var. *persica*, 1916: 37 as *Xanthoria polycarpoides* var. *persica*); Szatala (1957: 148); Steiner & Poelt (1982: 168, 173); *Sohrabi* (in prep.).

*Caloplaca polycarpoides* (J. Steiner) M. Steiner & Poelt – Steiner (1910: 241\* as *Xanthoria polycarpoides*); Szatala (1957: 148 as *X. polycarpoides*); Steiner & Poelt (1982: 169, 175). – GOLESTAN: Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, in *Maassoumi & Safavi 1976* sub *Xanthoria parietina* (B, TARI).

*Caloplaca pyracea* (Ach.) Th. Fr. = *C. holocarpa*

*Caloplaca pyracea* var. *pyrithroma* Ach. = *C. holocarpa*

*Caloplaca salicina* (Schrad.) Szatala – Szatala (1957: 143 *Placodium salicinum*).

*Caloplaca saxicola* (Hoffm.) Nordin – Müller (1892: 153 as *Amphiloma murorum* var. *gyalolechioides*, var. *miniatum* & var. *obliteratum*); ?Müller (1892: 153 as *A. murorum* var. *aurantiacum*); Oxner (1946: 83 as *C. tegularis*); Szatala (1957: 146 as *Gasparrinia miniata*, incl. f. *obliterata*); ?Szatala (1957: 146 as *G. murorum* f. *aurantia*).

*Caloplaca tegularis* (Ehrh.) Sandst. = *C. saxicola*

\**Caloplaca teicholyta* (Ach.) J. Steiner – GOLESTAN: C. 15 km to Maraveh-Tappeh from Inch-e Borun, opposite Hemat Abbad, 169 m, on calcareous rock, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1902* (B, TARI).

\**Caloplaca trachyphylla* (Tuck.) Zahlbr. – KHORASAN: Neishabour towards Kashmar, Rivash, Kalateh Teimour, 1550 m, on rock, 9.4.2002, in *Haji Moniri 1442* sub *Acarospora placenta*? (B, FUMH).

*Caloplaca transcaspica* (Nyl.) Zahlbr. – Magnusson (1940: 136 as *C. paulsenii*); Wunder (1974: 94 as *C. paulsenii*). – GOLESTAN: C. 15 km to Maraveh-Tappeh from Inch-e Borun, opposite Hemat Abbad, 169 m, on calcareous rock, 26.1.2003, in *Maassoumi, Sohrabi & Safavi 1902*

sub *C. teicholyta* (B, TARI). KHORASAN: SW of Gonabad, Kalat Mt. 1950 m, 18.4.2002, in *Haji Moniri 1420* sub *Lecanora crenulata* (B, FUMH). KUHGLIUYE O BOIRAHMAD: C. 30 km on the road from Yassuj to Semirom, 1850 m, 17.11.2002, *Maassoumi & Safavi 1848* (B, TARI).

***Caloplaca variabilis*** (Pers.) Müll. Arg. – Müller (1892: 156 as *Callopisma variabile*); Steiner (1896: 438); Szatala (1957: 144 as *Placodium paepalostomum* & *P. variabile*); Wunder (1974: 113); Riedl (1979: 220).

*Caloplaca variabilis* f. *acrustacea* Arnold = *C. alociza*

*Caloplaca variabilis* var. *bullata* (Müll. Arg.) Wunder = *C. bullata*

*Caloplaca variabilis* var. *candida* (Stizenb.) J. Steiner = *C. aegyptiaca*

*Caloplaca variabilis* var. *lecideina* (Müll. Arg.) H. Olivier = *C. diphyodes*

***Caloplaca velana*** (A. Massal.) Du Rietz – Müller (1892: 156 as *Callopisma aurantiacum*); Szatala (1957: 143 as *Placodium velanum*, incl. var. *placidium*).

\****Caloplaca xantholyta*** (Nyl.) Jatta – LORESTAN: C. 44 km on the road from Khoramabad to Andimeshk, 1000 m, 5.11.2002, *Maassoumi 1721* (HBG, TARI).

***Candelaria concolor*** (Dicks.) Stein – Weber (1964: 5). – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2024* (B, TARI).

*Candelaria subsimilis* (Th. Fr.) Müll. Arg. = *Candelariella aurella*

***Candelariella aurella*** (Hoffm.) Zahlbr. – Müller (1892: 151 as *Candelaria subsimilis*); Steiner (1910: 237 as *Candelariella subsimilis* incl. f. *alpina*); Oxner (1946: 83); Szatala (1940: 530; 1957: 139); Riedl (1979: 220). – GOLESTAN: Maraveh-Tappeh, c. 8 km towards Ghazan Ghayeh, 170 m, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1920* (B, TARI); c. 15 km to Maraveh-Tappeh from Inch-e Borun, opposite Hemat Abbad, 169 m, on calcareous rock, 26.1.2003, in *Maassoumi, Sohrabi & Safavi 1902* sub *Caloplaca teicholyta* (B, TARI). – KHORASAN: Between Daregaz and Kalat, 800 m, 18.9.2002, *Haji Moniri & Joharchi 1497b* (FUMH).

***Candelariella aurella*** var. *decolorans* (Müll. Arg.) Zahlbr. – Szatala (1957: 139).

*Candelariella aurella* var. *unilocularis* (Elenkin) Zahlbr. = *C. unilocularis*

\****Candelariella oleifera*** H. Magn. – KUHGLIUYE O BOIRAHMAD: C. 30 km on the road from Yassuj to Semirom, 1850 m, 17.11.2002, in *Maassoumi & Safavi 1835* sub *Aspicilia* cf. *coronata* (B, TARI, herb. Seaward 112735).

***Candelariella placodizans*** (Nyl.) H. Magn. – Szatala (1957: 139).

*Candelariella subsimilis* f. *alpina* J. Steiner = *C. aurella*

*Candelariella subsimilis* J. Steiner = *C. aurella*

***Candelariella unilocularis*** (Elenkin) Nimis – Szatala (1940: 530 as *C. aurella* var. *unilocularis*; 1957: 139 as *C. aurella* var. *unilocularis*).

\****Candelariella vitellina*** (Hoffm.) Müll. Arg. – ESFAHAN: C. 2 km to Ghohrud from Kamou, 2150 m, 18.11.2002, *Maassoumi & Safavi 1860* (B, TARI). GOLESTAN: C. 15 km to Maraveh-Tappeh from Inch-e Borun, opposite Hemat Abbad, 169 m, on calcareous rock, 26.1.2003, in *Maassoumi, Sohrabi & Safavi 1905* sub *Acarospora cervina* (B, TARI). MAZANDARAN: Mazandaran-Chalus, 450-600 m, on rock, roadside forest, 20.7.2004, *Sohrabi 9190* (herb. Seaward 113114).

***Candelariella xanthostigma*** (Ach.) Lettau – Oxner (1946: 83).

*Catapyrenium rufescens* (Ach.) Breuss = *Placidium rufescens*

*Catapyrenium semaforonense* Breuss = *Placidium semaforonense*

*Catapyrenium squamulosum* (Ach.) Breuss = *Placidium squamulosum*

*Catillaria bouteillei* (Desm.) Zahlbr. = *Fellhanera bouteillei*

***Catillaria*** cf. *chalybeia* (Borrer) A. Massal. – Szatala (1940: 523\* as *Thalloidima rechingeri*; 1957: 117 as *T. rechingeri*); Timdal (1991: 128).

***Catillaria detractula*** (Nyl.) H. Olivier – Steiner (1896: 440 as *Lecania detractula*); Szatala (1957: 138 as *L. detractula*).

*Catocarpon oreites* (Vain.) Eitner = *Rhizocarpon alpicola*

***Cercidospora epipolytropia*** (Mudd) Arnold (LF) – Steiner (1896: 445).

- \**Cetrelia olivetorum* (Nyl.) W. L. Culb. & C. H. Culb. – MAZANDARAN: Nowshahr, Mashalak river, 200-1600 m, forest, 10.11.2002, *Maassoumi 1340* (HBG, TARI).
- \**Chrysothrix candularis* (L.) J. R. Laundon – MAZANDARAN: Ramsar, towards Janat rudbar, 1000 m, 2.4.2003, *Maassoumi 2127* (B, TARI); Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2126* (B, TARI).
- Cladonia alcicornis*  $\beta$  *endiviaefolia* Schaer. = *Cladonia convoluta*
- \**Cladonia awasthiana* Ahti & Upreti – MAZANDARAN: Ramsar, towards Janat rudbar, 1000 m, 2.4.2003, *Maassoumi 2135* (B, TARI, herb. Seaward 112734); Ramsar, towards Neydasht, 300 m, forest, 30.3.2003, *Maassoumi 2096* (B, TARI); Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2124* (B, TARI, herb. Seaward 112796).
- \**Cladonia caespiticia* (Pers.) Flörke – MAZANDARAN: Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2119* (B, TARI, herb. Seaward 112793).
- Cladonia convoluta* (Lam.) Anders – Buhse (1860: 242 as *C. alcicornis*  $\beta$  *endiviaefolia*); Szatala (1957: 118 as *C. foliacea* var. *convoluta*).
- \**Cladonia farinacea* (Vain.) A. Evans – MAZANDARAN: Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2106* (B, TARI), *2125* (B, TARI, herb. Seaward 112824).
- Cladonia foliacea* (Huds.) Willd. – Szatala (1957: 118 as var. *alcicornis*); Weber (1964: 4). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2079* (B, TARI). MAZANDARAN: Ramsar, towards Neydasht, 300 m, forest, 30.3.2003, *Maassoumi 2088* (B, TARI).
- Cladonia foliacea* var. *alcicornis* (Lightf.) Schaer. = *C. foliacea*
- Cladonia foliacea* var. *convoluta* (Lam.) Vain. = *C. convoluta*
- Cladonia furcata* (Huds.) Schrad. – Szatala (1957: 118); Weber (1964: 5). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2072* (B, TARI).
- Cladonia furcata* subsp. *subrangiformis* (Sandst.) Abbayes – Szatala (1940: 524 & 1957: 118 as *C. subrangiformis*); Vězda (1978, *Lich. Sel. Exs. 1524* as *C. klementii*, pers. comm. T. Ahti).
- Cladonia klementii* Oxner (Iranian record) = *C. furcata* subsp. *subrangiformis* (Ahti in litt.).
- Cladonia pocillum* (Ach.) Grognot – Szatala (1957: 118 as var. *pocillum*).
- Cladonia pyxidata* (L.) Hoffm. – Szatala (1957: 118). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2046* (B, TARI). MAZANDARAN: Ramsar, towards Neydasht, 300 m, forest, 30.3.2003, *Maassoumi 2093* (B, TARI, herb. Seaward 112828), *2097* (B, TARI), *2098* (B, TARI, herb. Seaward 112732); Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2120* (B, TARI, MRDS 112733).
- Cladonia pyxidata* var. *pocillum* (Ach.) Flot. = *C. pocillum*
- \**Cladonia ramulosa* (With.) J. R. Laundon – MAZANDARAN: Tonekabon, Seh Hezar river, 350 m, 13.11.2002, *Maassoumi 1322*, *1329* (HBG, TARI).
- Cladonia rangiferina* (L.) F. H. Wigg. – Buhse (1860: 242 as *C. rangiferina*  $\alpha$  *vulgaris*); Szatala (1957: 118).
- Cladonia rangiferina*  $\alpha$  *vulgaris* Schaer. = *Cladonia rangiferina*
- Cladonia rangiformis* Hoffm. – Szatala (1940: 524 as var. *nivea*; 1957: 118 as var. *muricata* & var. *nivea*). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2071*, *2080*, *2082* (B, TARI). – MAZANDARAN: Ramsar, towards Neydasht, 300 m, forest, 30.3.2003, *Maassoumi 2089* (B, TARI, herb. Seaward 112643); Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2110* (B, TARI, herb. Seaward 112826), *2111* (B, TARI, herb. Seaward 112827), *2112* (B, TARI, herb. Seaward 112644).
- Cladonia rangiformis* var. *muricata* (Del.) Arnold = *C. rangiformis*
- Cladonia rangiformis* var. *nivea* (Ach.) Szatala = *C. rangiformis*
- Cladonia subrangiformis* Sandst. = *C. furcata* subsp. *subrangiformis*

- \**Collema auriforme* (With.) Coppins & J. R. Laundon – Sohrabi (in prep.). – KHORASAN: Torbatejam, S of Salehabad, 1100 m, on soil, 25.4.2002, *Haji Moniri 1435a* (B, FUMH).  
*Collema cheileum* var. *graniforme* (Hoffm.) Ach. = *C. crispum*  
*Collema cheileum* var. *hyporrhizum* Nyl. = *C. crispum*
- Collema crispum* (Huds.) F. H. Wigg. – Szatala (1940: 522 as *C. cheileum* var. *graniforme* & var. *hyporrhizum*); Szatala (1957: 111). – MAZANDARAN: Ramsar, towards Neydasht, 300 m, forest, 30.3.2003, *Maassoumi 2099* (B, TARI, herb. Seaward 112830).
- \**Collema cristatum* (L.) Weber ex. F. H. Wigg. – GOLESTAN: Maraveh-Tappeh, c. 8 km towards Ghazan Ghayeh, 170 m, 26.1.2003, in *Maassoumi, Sohrabi & Safavi 1923* sub *Buellia zoharyi* (B, TARI). KUHGILUYE O BOIRAHMAD: C. 30 km on the road from Yassuj to Semirom, 1850 m, 17.11.2002, *Maassoumi & Safavi 1836* (B, TARI).
- Collema cristatum* var. *marginale* (Huds.) Degel. – Szatala (1940: 522 as *C. multifidum* var. *jacobeaeifolium*); Szatala (1957:111).
- \**Collema flaccidum* (Ach.) Ach. – MAZANDARAN: Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2101* (B, TARI, herb. Seaward 112706).
- \**Collema furfuraceum* (Arnold) Du Rietz – MAZANDARAN: Mazandaran-Chalus, roadside forest, 450-600 m, 20.7.2004, *Sohrabi 9131* (B, herb. Sohrabi).
- Collema fuscovirens* (With.) J. R. Laundon – Weber (1964: 4 as *C. tunaeforme*); Sohrabi (in prep.).  
*Collema hydrocharum* var. *stygioides* (Flagey) Szatala = *C. tenax*  
*Collema multifidum* var. *jacobeaeifolium* (Schränk.) Rabenh. = *C. cristatum* var. *marginale*
- \**Collema polycarpon* Hoffm. var. *polycarpon* – KUHGILUYE O BOIRAHMAD: C. 30 km on the road from Yassuj to Semirom, 1850 m, 17.11.2002, *Maassoumi & Safavi 1846* (B, TARI, herb. Seaward 112748).
- Collema subflaccidum* Degel. – Weber (1964: 3 as *C. subfurvum*). – MAZANDARAN: Ramsar, towards Janat rudbar, 1000 m, 2.4.2003, *Maassoumi 2128* (B, TARI, herb. Seaward 112707), 2130 (B, TARI, herb. Seaward 112821); Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2116* (B, TARI, herb. Seaward 112705).
- Collema subfurvum* (Müll. Arg.) Degel. = *C. subflaccidum*
- Collema tenax* (Sw.) Ach. – Szatala (1940: 522 as *C. hydrocharum* var. *stygioides*); Szatala (1957: 111); Weber (1964: 4); Riedl (1979: 220). – GOLESTAN: Gorgan, 600 m, 14.12.2001, *Sohrabi 29* (herb. Seaward 111658); c. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2059* (B, TARI). KUHGILUYE O BOIRAHMAD: C. 30 km on the road from Yassuj to Semirom, 1850 m, 17.11.2002, *Maassoumi & Safavi 1834* (B, TARI).
- Collema tunaeforme* Ach. = *C. fuscovirens*
- Dermatocarpon aegyptiacum* (Müll. Arg.) Zahlbr. – Steiner (1896: 444 as *Verrucula aegyptiaca*); Szatala (1957: 104 as *Placidium aegyptiacum*). – Note: This species seems not to fit in the genus *Dermatocarpon* as currently understood. A re-examination of the type seems required to establish its generic affinity.
- Dermatocarpon compactum* (A. Massal.) Lettau = *Verrucaria compacta*
- Dermatocarpon desertorum* Tomin – Vězda (1980, *Lich. Sel. Exs. 1724*) p.p. = ? *Placidium squamulosum* (see Breuss 1998: 666); p.p. = ? *P. semaforonense* (see Breuss 1998: 665).
- Dermatocarpon lachneum* Ach. = *Placidium lachneum*
- Dermatocarpon miniatum* (L.) W. Mann – Buhse (1860: 243 as *Endocarpon miniatum*); Steiner (1916: 25); Szatala (1957: 105); Weber (1964: 3). – KHORASAN: Torbatejam, S of Salehabad, 1100 m, on rock, 25.4.2002, *Haji Moniri 1432a* (B, FUMH). SHARQI: Bostanabad, 1800 m, 6.7.2001, *Sohrabi 20* (herb. Seaward 111657).
- \**Dermatocarpon miniatum* var. *cirsodes* (Ach.) Zahlbr. – KHORASAN: N of Neishabour, Sarwelayat, 1400 m, on rock, 30.4.2002, *Haji Moniri & Joharchi 1470a* (FUMH).
- Dermatocarpon miniatum* var. *complicatum* (Lightf.) Hellb. – Buhse (1860: 243 as *Endocarpon miniatum* b. *complicatum*); Müller (1892: 158); Szatala (1957: 106). – KHORASAN: N of Neishabour, Sarwelayat, 1400 m, on rock, 30.4.2002, *Haji Moniri & Joharchi 1470a* (FUMH).
- Dermatocarpon miniatum* var. *pruinoseum* (A. Massal.) Müll. Arg. – Szatala (1957: 106).



- \**Dermatocarpon vellereum* Zschacke – GOLESTAN: Gorgan towards Zyarat, 300 m, 24.9.2001, *Sohrabi* 22 (herb. Seaward 111659); Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi* & *Safavi* 2001 (B, TARI); Nahar Khoran towards Ziarat, 900 m, cliff, 28.1.2003, *Maassoumi* & *Safavi* 1993 (B, TARI). MAZANDARAN: Ramsar, towards Ney-dasht, 300 m, forest, 30.3.2003, *Maassoumi* 2094 (B, TARI, herb. Seaward 112735).
- Dermatocarpon verruculosum* (Müll. Arg.) Zahlbr. – Müller (1892: 159\* as *Endopyrenium verruculosum*); Szatala (1940: 521); Magnusson (1940: 25); Szatala (1957: 105 as *Placidium verruculosum*). – Note: This species seems not to fit in the genus *Dermatocarpon* as currently understood. A re-examination of the type seems required to establish its generic affinity.
- Dimelaena oreina* (Ach.) Norman – Steiner (1910: 243 as *Rinodina oreina*); Szatala (1940: 532 as *R. hueana*); Szatala (1957: 151 as *Placothallia hueana* & *P. oreina*).
- Diploschistes actinostomus* (Pers.) Zahlbr. – Steiner (1916: 26); Szatala (1957: 108).
- Diploschistes actinostomus* var. *calcareus* Müll. Arg. = *D. candidissimus*
- Diploschistes albissimus* (Ach.) Dalla Torre & Sarnth. = *D. diacapsis*
- Diploschistes calcareus* (Müll. Arg.) J. Steiner = *D. candidissimus*
- Diploschistes candidissimus* (Kremp.) Zahlbr. – Steiner (1896: 441 as *D. actinostomus* var. *calcareus*); Szatala (1957: 109 as *D. calcareus*).
- Diploschistes diacapsis* (Ach.) Lumbsch – Steiner (1916: 25 as *D. albissimus*); Reichert (1940: 176 as *D. steppicus*); Szatala (1957: 109 as *D. albissimus* & *D. steppicus*, incl. var. *typica*); Lamb (1963: 229 as *D. steppicus*); Vězda (1978, *Lich. Sel. Exs. 1560* as *D. steppicus*); Riedl (1979: 220 as *D. albissimus*); *Sohrabi* (in prep.).
- Diploschistes gypsaceus* (Ach.) Zahlbr. – Müller (1892: 157 as *D. scruposus* var. *cretaceus*).
- Diploschistes muscorum* (Scop.) R. Sant. – Weber (1964: 3 as *D. scruposus* var. *bryophilus*).
- \**Diploschistes ocellatus* (Vill.) Norman – Lumbsch (1989: 181) – GOLESTAN: C. 15 km to Maraveh-Tappeh from Inch-e Borun, opposite Hemat Abbad, 169 m, on calcareous rock, 26.1.2003, *Maassoumi, Sohrabi* & *Safavi* 1896 (B, TARI); c. 20 km on the road from Eslamabad to Ashkane, 615 m, on calcareous rock, 21.1.2003, *Maassoumi* & *Safavi* 1956 (B, TARI); Maraveh-Tappeh, c. 8 km towards Ghazan Ghayeh, 170 m, 26.1.2003, *Maassoumi, Sohrabi* & *Safavi* 1918 (B, TARI).
- Diploschistes scruposus* (Schreb.) Norman – Weber (1964: 3). – MAZANDARAN: Mazandaran-Chalus, roadside forest, 450-600 m, 20.7.2004, *Sohrabi* 9206 (herb. Seaward 113096).
- Diploschistes scruposus* var. *bryophilus* Müll. Arg. = *D. muscorum*
- Diploschistes scruposus* var. *cretaceus* Müll. Arg. = *D. gypsaceus*
- Diploschistes steppicus* Reichert = *D. diacapsis*
- Diploschistes steppicus* var. *typica* Reichert = *D. diacapsis*
- Diplotomma alboatrum* (Hoffm.) Flot. – Müller (1892: 158 as *D. alboatrum* var. *intermedium*); Steiner (1910: 242 as *Buellia epipolia*); Szatala (1940: 532; 1957: 149 as *D. epipolium* and as *D. margaritatum*); Weber (1964: 7 as *B. alboatra*). – MAZANDARAN: Mazandaran-Chalus, roadside forest, 450-600 m, 20.7.2004, *Sohrabi* 9199 (herb. Seaward 113105).
- Diplotomma alboatrum* var. *intermedium* Müll. Arg. = *D. alboatrum*
- Diplotomma epipolium* (Ach.) Arnold = *D. alboatrum*
- Diplotomma epipolium* var. *calcareum* (Weis.) Flagey = *D. venustum*
- Diplotomma margaritaceum* (Sommerf.) Szatala = *D. alboatrum*
- Diplotomma venustum* Körb. – Müller (1892: 158); Steiner (1910: 242, as *D. epipolium* var. *calcareum*); Steiner (1916: 38 as *Buellia epipolia* var. *venusta*); Szatala (1957: 149, also as *D. epipolium* var. *calcareum*). – GOLESTAN: Maraveh-Tappeh, c. 8 km towards Ghazan Ghayeh, 170 m, 26.1.2003, in *Maassoumi, Sohrabi* & *Safavi* 1920 sub *Candelariella aurella* (B, TARI). KHORASAN: Between Daregaz and Kalat, 800 m, on calcareous rock, 18.9.2002, *Haji Moniri* & *Joharchi* 1496a (B, FUMH), 1496b+c (FUMH); Neishabour towards Kashmar, Rivash, Kalateh Teimour, 1550 m, on calcareous rock, 9.4.2002, *Haji Moniri* 1436b (B, FUMH). KUHILUYE O BOIRAHMAD: C. 30 km on the road from Yassuj to Semirom, 1850 m, 17.11.2002, *Maassoumi* & *Safavi* 1838 (B, TARI, herb. Seaward 112749).

- Eiglera flavida* (Hepp) Hafellner – Szatala (1957: 126 as *A. ochracea*).  
*Endocarpon ambrosianum* (A. Massal.) Serv. = *Staurothele ambrosianum*  
*Endocarpon clopimum* (Wahlenb.) Serv. = *Staurothele clopima*  
*Endocarpon miniatum* Ach. = *Dermatocarpon miniatum*  
*Endocarpon miniatum* b. *complicatum* Schaer. = *Dermatocarpon miniatum* var. *complicatum*  
*Endocarpon pusillum* Hedw. – Oxner (1946: 82). – KHORASAN: Torbatejam, S of Salehabad, 1100 m, on soil, 25.4.2002, *Haji Moniri 1433b* (B, FUMH).  
*Endococcus rugulosus* Nyl. (LF) – Steiner (1896: 445 as *Tichothecium calcaricola*).  
*Endopyrenium crassum* Müll. Arg. = *Verrucaria crassa*  
*Endopyrenium hepaticum* (Ach.) Körb. = *Placidium squamulosum*  
*Endopyrenium hepaticum* var. *nigrata* Müll. Arg. = *Placidium hepaticum* f. *nigratum*  
*Endopyrenium monstrosum* Körb. = *Placocarpus schaeereri*  
*Endopyrenium rufescens* Körb. = *Placidium rufescens*  
*Endopyrenium verruculosum* Müll. Arg. = *Dermatocarpon verruculosum*  
\**Enterographa huichinsiae* (Leighton) A. Massal. – MAZANDARAN: Nowshahr, Mashalak river, 200-1600 m, forest, 10.11.2002, *Maassoumi 1345, 1348* (HBG, TARI); Chamestan, experimental station, 400 m, degraded forest, 9.11.2002, *Maassoumi 1350* (HBG, TARI).  
*Evernia prunastri* (L.) Ach. – Szatala (1957: 140). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2066, 2075* (B, TARI).  
\**Farnoldia jurana* (Schaer.) Hertel. – KHORASAN: Chenaran, Akhlamad valley, 1600 m, on calcareous rock, 9.2002, *Haji Moniri 1528a* (FUMH).  
*Fellhanera bouteillei* (Desm.) Vězda – Oxner (1946: 82); Szatala (1957: 116 as *Catillaria bouteillei*).  
*Flavoparmelia caperata* (L.) Hale – Buhse (1860: 241 as *Parmelia caperata*); Steiner (1916: 35); Szatala (1940: 530 as *Parmelia caperata* var. *cyphisphora*); Szatala (1957: 140); Weber (1964: 5). – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 1998, 2020* (B, TARI). MAZANDARAN: Zirab, Amlak Valley, on bark, 6.10.2003, *Valad Beigi 7* (B, SBUH); Mazandaran-Chalus, roadside forest, 450-600 m, on bark, 20.7.2004, *Sohrabi 9108* (herb. Seaward 113088).  
*Fulgensia bracteata* (Hoffm.) Räsänen – Müller (1892: 153 as *Placidium fulgens* var. *bracteatum*); Szatala (1957: 145); Weber (1964: 7).  
*Fulgensia desertorum* (Tomin) Poelt – Vězda (1978, *Lich. Sel. Exs. 1562*).  
? *Fulgensia fulgens* (Sw.) Elenkin – Oxner (1946: 83).  
\**Fulgensia fulgida* (Nyl.) Szat. – GOLESTAN: C. 20 km on the road from Eslamabad to Ashkane, 615 m, on calcareous rock, 21.1.2003, *Maassoumi & Safavi 1960* (B, TARI); c. 40 km on the road from Aghala to Inch-e Borun, around Alagol Lake, 45 m, soil, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1883* (B, TARI); Maraveh-Tappeh, c. 8 km towards Ghazan Ghayeh, 170 m, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1917* (B, TARI).  
\**Fulgensia subbracteata* (Nyl.) Poelt – GOLESTAN: C. 40 km on the road from Aghala to Inch-e Borun, around Alagol Lake, 45 m, on soil, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1891* (B, TARI). KHORASAN: Torbatejam, S of Salehabad, 1100 m, on calcareous soil, 25.4.2002, in *Haji Moniri 1434a* sub *Catapyrenium* s.l. (FUMH), in *Haji Moniri 1433b* sub *Endocarpon pusillum* (B, FUMH).  
*Gasparrinia aurantia* (Pers.) Sydow = *Caloplaca aurantia*  
*Gasparrinia biatorina* (A. Massal.) Szatala = *Caloplaca biatorina*  
*Gasparrinia biatorina* var. *centrifuga* Szatala = *Caloplaca biatorina*?  
*Gasparrinia biatorina* var. *pusilloides* (J. Steiner) Szatala = *Caloplaca biatorina* var. *pusilloides*  
*Gasparrinia biatorina* var. *sympecta* (J. Steiner) Szatala = *Caloplaca biatorina* var. *sympecta*  
*Gasparrinia deceptoria* (Flagey) Szatala = *Caloplaca deceptoria*  
*Gasparrinia decipiens* (Arnold) Sydow = *Caloplaca decipiens*  
*Gasparrinia decipiens* f. *corticola* (Nyl.) Szatala = *Caloplaca decipiens*  
*Gasparrinia elegans* (Link.) Stein = *Xanthoria elegans*



- Gasparrinia elegans* var. *tenuis* (Link) Stein = *Xanthoria elegans* var. *tenuis*  
*Gasparrinia gyalolechioides* (Müll. Arg.) Szatala = *Caloplaca biatorina* var. *gyalolechioides*  
*Gasparrinia miniata* (Hoffm.) Szatala = *Caloplaca saxicola*  
*Gasparrinia miniata* f. *obliterata* (Pers.) Szatala = *Caloplaca saxicola*  
*Gasparrinia murorum* f. *aurantia* (Schaer.) Szatala = *Caloplaca saxicola* var.?  
*Gasparrinia nideri* (J. Steiner) Szatala = *Caloplaca nideri*  
***Gloeoheppia turgida*** (Ach.) Gyeln. – Müller (1892: 151 as *Heppia turgida*); Szatala (1957: 112 as *H. turgida*). – HORMOZGAN: Kuh-e Genu, W part, 580 m, 2002, *Maassoumi & Safavi 1737, 1739, 1740, 1742* (B, TARI). KHUZESTAN: C. 62 km on the road from Ramhormoz to Behbahan, 221 m, 16.11.2002, *Maassoumi & Safavi 1747, 1753* (B, TARI).  
***Glypholecia persica*** J. Steiner – Steiner (1910: 221\*); Magnusson (1929: 376); Szatala (1957: 124).  
***Glypholecia scabra*** (Pers.) Müll. Arg. – Müller (1892: 156); Steiner (1916: 30); Oxner (1946: 83); Szatala (1940: 527; 1957: 124). – ESFAHAN: Ghohrud, c. 10 km on the road to Kashan, Shahsavaran pass, 2031 m, on rock, 18.11.2002, *Maassoumi & Safavi 1865* (B, TARI). KHORASAN: Neishabour towards Kashmar, Rivash, Kalateh Teimour, 1550 m, rock, 9.4.2002, *Haji Moniri 1455* (B, FUMH).  
***Glypholecia scabra*** var. ***candidissima*** (Nyl.) H. Magn. – Szatala (1957: 124).  
*Gonohymenia algerica* J. Steiner = *Lichinella algerica*  
*Graphina analoga* (Nyl.) Zahlbr. = *Graphis analoga*  
 ?***Graphis analoga*** (Nyl.) Zahlbr. – Szatala (1940: 522; 1957: 108 as *Graphina analoga*).  
***Graphis scripta*** (L.) Ach. – Buhse (1860: 243 as *G. scripta*  $\alpha$  *limitata*); Szatala (1957: 108 incl. f. *limitata*). – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2039* (B, TARI). – MAZANDARAN: Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2114* (B, TARI, herb. Seaward 112708); Mazandaran-Chalus, roadside forest, 450-600 m, on bark, 20.7.2004, *Sohrabi 9123, 9184* (herb. Seaward 113099, 113104).  
*Graphis scripta*  $\alpha$  *limitata* Schaer. = *G. scripta*  
*Graphis scripta* f. *limitata* (Pers.) Ach. = *G. scripta*  
***Graphis scripta*** var. ***varia*** Ach. – Szatala (1940: 521).  
*Gyrophora cylindrica* var. *tornata* (Ach.) Arnold = *Umbilicaria cylindrica* var. *tornata*  
 \****Heppia despreauxii*** (Mont.) Tuck. – LORESTAN: C. 60 km towards Andimeshk from Khoramabad, 424 m, 5.11.2002, *Maassoumi & Safavi 1735* (B, TARI).  
***Heppia hepaticella*** Müll. Arg. – Müller (1892: 152\*); Szatala (1957: 111).  
***Heppia lobulata*** Müll. Arg. – Müller (1892: 152\*); Steiner (1896: 437); Szatala (1957: 112).  
***Heppia myriospora*** Müll. Arg. – Müller (1892: 152\*); Szatala (1957: 111).  
*Heppia reticulata* (Dufour) Nyl. = *H. solorinoides*  
***Heppia solorinoides*** (Nyl.) Nyl. – Vězda (1978, *Lich. Sel. Exs. 1553* as *H. reticulata*; material belongs in part to *Placidium tenellum*, see Breuss 1998: 667); Egea (1989: 56 as *H. reticulata*); Henssen (1994: 72). – LORESTAN: C. 60 km towards Andimeshk from Khoramabad, 424 m, 5.11.2002, *Maassoumi & Safavi 1736* (B, TARI).  
*Heppia turgida* (Ach.) Nyl. = *Gloeoheppia turgida*  
 \****Hyperphyscia adglutinata*** (Flörke) H. Mayrhofer & Poelt – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, in *Maassoumi & Safavi 2065* sub *Physcia ascendens* (B, TARI). MAZANDARAN: Zirab, between Khalil Kola and Zebh Valley, on tree bark, 6.9.2003, *Valad Beigi 18* (B, SBUH).  
***Immersaria usbekica*** (Hertel) M. Barbero, Nav.-Ros. & Cl. Roux – Hertel (2001: 103); Steiner (1910: 216 as *Lecidea atrobrunnea*).  
*Lecania albariella* (Nyl.) Müll. Arg. = *L. turicensis*  
*Lecania albariella* var. *subcaesia* Nyl. = *L. subcaesia*  
*Lecania asperatula* J. Steiner = *Solenopsora asperatula*  
***Lecania brachyspora*** Müll. Arg. – Müller (1892: 157); Szatala (1957: 137).

*Lecania detractula* (Nyl.) Arnold = *Catillaria detractula*

*Lecania koerberiana* J. Lahm – Steiner (1910: 237); Szatala (1940: 529; 1957: 138). – MAZANDARAN: Around Ramsar, 300 m, 14.4.2002, *Maassoumi 1314* (HBG, TARI).

*Lecania nylanderiana* A. Massal. – Szatala (1957: 138).

*Lecania nylanderiana* var. *ochracea* Szatala – Szatala (1940: 529\*; 1957: 138).

*Lecania ochronigra* J. Steiner – Steiner (1910: 236\*); Szatala (1957: 137).

*Lecania rechingeriana* Szatala – Szatala (1940: 529\*; 1957: 138); Lamb (1963: 289).

*Lecania subcaesia* (Nyl.) Bouly de Lesd. – Szatala (1957: 137); Steiner (1896: 440 as *L. albariella* var. *subcaesia*).

*Lecania triseptata* (Vain.) Zahlbr. – Steiner & Poelt (1987: 137).

*Lecania turicensis* (Hepp) Müll. Arg. – Steiner (1896: 440, 445 as *L. albariella*); Szatala (1957: 137 as *L. albariella*).

*Lecanora agardhiana* Ach. – Müller (1892: 157 as *L. agardhianoides*); Szatala (1957: 131). – KHORASAN: Chenaran, Akhlamad valley, 1600 m, 17.9.2002, *Haji Moniri 1534* (B, FUMH); between Daregaz and Kalat, 800 m, on calcareous rock, 18.9.2002, in *Haji Moniri & Joharchi 1496b-c* sub *Diplotomma venustum* (FUMH).

*Lecanora agardhiana* var. *microstygna* A. Massal. – Szatala (1957: 131).

*Lecanora agardhianoides* A. Massal. = *L. agardhiana*

*Lecanora albomarginata* Nyl. = *L. muralis*

*Lecanora allophana* (Ach.) Röhl. – Szatala (1957: 133, incl. *L. subfuscata* f. *geographica*).

*Lecanora argentata* (Ach.) Malme – Buhse (1860: 242 as *Lecanora subfusca*  $\alpha$  *vulgaris*); Szatala (1957: 132 as *L. subfuscata*). – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, in *Maassoumi & Safavi 2021* sub *Punctelia subrudecta* (B, TARI).

*Lecanora argopholis* (Ach.) Ach. – Weber (1964: 5 as *L. frustulosa* var. *argopholis*).

*Lecanora aschabadensis* J. Steiner = *Aspicilia aschabadensis*

*Lecanora atra* (Huds.) Ach. = *Tephromela atra*

*Lecanora bolcana* Pollini – Steiner (1910: 236 as *L. garovaglii* var. *diffracta*); Szatala (1957: 134 as *Squamaria garovaglii* var. *diffractella*).

*Lecanora caesioalba* (Flörke) Körb. = *L. crenulata*

*Lecanora calcarea* var. *concreta* Schaer. = *Aspicilia calcarea*

*Lecanora calcarea* var. *excrescens* J. Steiner = *Aspicilia excrescens*

*Lecanora calcarea* var. *raucum* J. Steiner = *Aspicilia calcarea* var. *raucum*

*Lecanora calcarea* var. *sphaerothallina* J. Steiner = *Aspicilia desertorum*

\**Lecanora campestris* (Schaer.) Hue. – MAZANDARAN: Mazandaran-Chalus, roadside forest, 450-600 m, 20.7.2004, *Sohrabi 9139* (herb. Seaward 113107).

*Lecanora cheresina* Müll. Arg. = *Aspicilia cheresiana*

*Lecanora cheresina* var. *granuligera* J. Steiner = *Aspicilia cheresina* var. *granuligera*

*Lecanora chlarona* (Ach.) Nyl. = *L. meridionalis*

\**Lecanora chlarotera* Nyl. – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, in *Maassoumi & Safavi 2021* sub *Punctelia subrudecta* (B, TARI). – MAZANDARAN: Mazandaran-Chalus, roadside forest, 450-600 m, on bark, 20.7.2004, *Sohrabi 9112, 9188* (herb. Seaward 113086, 113092).

*Lecanora cinerea* var. *alba* Schaer. = *Aspicilia cinerea* var. *alba*

*Lecanora circinata* var. *rauca* J. Steiner = *Lobothallia radiosa*

*Lecanora concolor* Ramond – Steiner (1916: 33); Szatala (1957: 135 as *Squamaria concolor*).

*Lecanora crassa* b. *caespitosa* Schaer. = *Squamarina cartilaginea*

*Lecanora crenulata* Hook. – Müller (1892: 157 as *L. caesioalba*); Steiner (1910: 232; 1916: 31); Szatala (1940: 528; 1957: 131). – GOLESTAN: C. 20 km on the road from Eslamabad to Ashkane, 615 m, on calcareous rock, 21.1.2003, in *Maassoumi & Safavi 1968* sub *Caloplaca decipiens* (B, TARI). KHORASAN: SW of Gonabad, Kalat Mt. 1950 m, 18.4.2002, *Haji Moniri 1420* (B, FUMH).

*Lecanora cupreoatra* Nyl. = *Bellemerea cupreoatra*

- Lecanora dispersa* (Pers.) Sommerf. – Steiner (1910: 232); Oxner (1946: 83); Szatala (1940: 528; 1957: 131); Weber (1964: 5). – GOLESTAN: Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, in *Maassoumi & Safavi 1976* sub *Xanthoria parietina* (B, TARI).
- Lecanora dispersella* J. Steiner – Szatala (1940: 528; 1957: 131).
- Lecanora dispersoareolata* (Schaer.) Lamy – Müller (1892: 154 as *Placodium dispersoareolatum*); Steiner (1916: 33); Szatala (1957: 135 as *Squamaria dispersoareolata*).
- Lecanora esculenta* Pall. em. Eversm. = *Aspicilia esculenta*
- Lecanora farinosa* Flörke = *Aspicilia farinosa*
- Lecanora flotowiana* Körb. – Müller (1892: 157); Sohrabi (in prep.).
- Lecanora frustulosa* var. *argopholis* Link = *L. argopholis*
- Lecanora fruticulosa* var. *straussii* J. Steiner = *Aspicilia straussii*
- Lecanora garovaglii* (Körb.) Zahlbr. – Steiner (1910: 236\*, incl. f. *fissa*); Szatala (1940: 528 as *Squamaria garovaglii* var. *pruinosa*; 1957: 134 & 135 as *S. garovaglii* incl. var. *pruinosa* & f. *fissa*). – LORESTAN: Khoramabad, 10 km towards Alestar, Makhmal kuh, tang-e Shabikhun, 1350 m, 5.11.2002, *Maassoumi & Safavi 1715* (HBG, TARI).
- Lecanora garovaglii* var. *diffracta* A. Massal. = *L. bolcana*
- Lecanora garovaglii* f. *fissa* J. Steiner = *L. garovaglii*
- Lecanora garovaglii* var. *diffracta* A. Massal. – Steiner (1910: 236); Szatala (1957: 134 as *Squamaria garovaglii* var. *diffractella*).
- Lecanora hagenii* (Ach.) Ach. – Müller (1892: 151, 157); Steiner (1910: 232\* as var. *congregata*); Szatala (1940: 528 as var. *congregata*); Oxner (1946: 83); Szatala (1957: 132, incl. var. *coerulescens* & var. *congregata*); Sohrabi (in prep.).
- Lecanora hagenii* var. *coerulescens* (Hag.) Hazl. = *L. hagenii*
- Lecanora hagenii* var. *congregata* J. Steiner = *L. hagenii*
- Lecanora heteromorpha* J. Steiner = *Rhizoplaca peltata*
- Lecanora hoffmannii* (Ach.) Müll. Arg. = *Aspicilia calcarea* subsp. *hoffmannii*
- \**Lecanora horiza* (Ach.) Linds. – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, in *Maassoumi & Safavi 2005* sub *Ramalina sinensis* (B, TARI).
- Lecanora lentigera* (Weber) Ach. = *Squamarina lentigera*
- Lecanora marginata* (Schaer.) Hertel & Rambold – Buhse (1860: 243 as *Lecidea elata*); Szatala (1940: 522\* as *Lecidea iranica*); Szatala (1957: 116 as *Lecidea elata*, incl. var. *marginata*). – KHORASAN: Chenaran, Akhlamad valley, 1600 m, on calcareous rock, 9.2002, *Haji Moniri 1532b* (B, FUMH).
- Lecanora melanophthalma* (Ramond) Ramond = *Rhizoplaca melanophthalma*
- Lecanora melanophthalma* var. *obscura* (J. Steiner) Poelt = *Rhizoplaca melanophthalma*
- Lecanora melanophthalma* var. *obscura* f. *peltata* J. Steiner = *Rhizoplaca melanophthalma*
- Lecanora meridionalis* H. Magn. – Szatala (1940: 528 as *L. chlorona*); Szatala (1957: 133).
- Lecanora microspora* var. *punctulata* J. Steiner = *Aspicilia microspora*
- Lecanora microspora* Zahlbr. = *Aspicilia cheresina* var. *microspora*
- Lecanora montagnei* (Fr.) Schaer. = *Protoparmelia montagnei*
- Lecanora muralis* (Schreb.) Rabenh. – Buhse (1860: 241 as *L. muralis*  $\alpha$  *ochroleuca*); Müller (1892: 153 as *Placodium saxicola* & var. *versicolor*); Steiner (1910: 234 & 1916: 33 as var. *versicolor*; 1910: 236 as *L. albomarginata*); ?Szatala (1940: 528\* as *Squamaria muralis* var. *elbursiana*); Szatala (1957: 134 as *S. muralis* & 135 as *S. albomarginata* & *S. versicolor*); ?Szatala (1957: 135 as *S. versicolor* var. *elbursiana*); Weber (1964: 5); Riedl (1979: 220 incl. var. *versicolor*). – GOLESTAN: C. 15 km to Maraveh-Tappeh from Inch-e Borun, opposite Hemat Abbad, 169 m, on calcareous rock, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1895, 1901* (B, TARI). KHORASAN: N of Neishabour, Sarwelayat, 1400 m, on moss, 30.4.2002, *Haji Moniri & Joharchi 1469a* (B, FUMH). KUH Giluyeh O Boirahmad: C. 30 km on the road from Yassuj to Semirom, 1850 m, 17.11.2002, *Maassoumi & Safavi 1845* (herb. Seaward I12822).
- Lecanora muralis* var. *subversicolor* J. Steiner – Steiner (1910: 235\*, incl. f. *verrucigera*); Szatala (1957: 136 as *Squamaria versicolor* var. *subversicolor*, incl. f. *verrucigera*).

- Lecanora muralis* var. *versicolor* (Pers.) Tuck. = *L. muralis*  
*Lecanora muralis*  $\alpha$  *ochroleuca* Schaer. = *Lecanora muralis*  
*Lecanora peltata* (Ramond) Steud. = *Rhizoplaca peltata*  
*Lecanora placentiformis* J. Steiner – Steiner (1910: 233\*); Szatala (1940: 528; 1957: 132).  
*Lecanora polychromoides* f. *rubescens* (J. Steiner) Szatala = *Aspicilia polychromoides*  
*Lecanora polychromoides* J. Steiner = *Aspicilia polychromoides*  
*Lecanora radiosa* (Hoffm.) Schaer. = *Lobothallia radiosa*  
*Lecanora reticulata* var. *trachytica* (A. Massal.) J. Steiner = *Aspicilia trachytica*  
*Lecanora riparia* (Flot.) Szatala – Szatala (1940: 529 as *Squamaria riparia*; 1957: 134 as *S. riparia*).  
*Lecanora subfusca*  $\alpha$  *vulgaris* Schaer. = *L. argentata*  
*Lecanora subfusca* f. *geographica* (Flagey) Szatala = *L. allophana*  
*Lecanora subfusca* H. Magn. = *L. argentata*  
\**Lecanora thysanophora* R. C. Harris. – MAZANDARAN: Sari, from Vanamak to Sarta, 400–1000 m, 20.12.2003, *Maassoumi* 2820 (B, TARI).  
*Lecanora umbrina* var. *subnigricans* Vain. – Szatala (1957: 132).  
\**Lecanora usbekica* Poelt – KHORASAN: Torghabeh towards Noghdar, 1450 m, 1.5.2003, *Haji Moniri* 1621 (B, FUMH). CHAHARMAHAL-E BAKHTIARI: C. 33 km on the road from Bardshir bridge to Kuhrang, 2250 m, 4.11.2003, *Maassoumi & Safavi* 2626 (B, TARI). KOHGUILOOYEH: C. 20 km from Semirom to Yassuj, 2470 m, 5.11.2003, *Maassoumi & Safavi* 2642 (B, TARI); C. 71 km from Semirom to Yassuj, 1750 m, 5.11.2003, *Maassoumi & Safavi* 2662 (B, TARI); Sepidan, c. 11 km from Bereshnan to Behesht-e Gomshodeh, 2360 m, 5.11.2003, *Maassoumi & Safavi* 2710 (B, TARI).  
*Lecidea atrobrunnea* (Ramond ex Lam. & DC.) Schaer. – Müller (1892: 157 as var. *grandiuscula*); Szatala (1957: 113).  
*Lecidea atrobrunnea* apud Steiner 1910 = *Immersaria usbekica*  
*Lecidea atrobrunnea*  $\alpha$  *grandiuscula* Schaer. = *L. atrobrunnea*  
*Lecidea decipiens* (Ehrh.) Ach. = *Psora decipiens*  
*Lecidea decipiens* f. *dealbata* (A. Massal.) Jatta = *Psora decipiens* f. *dealbata*  
*Lecidea elaeochroma* (Ach.) Ach. = *Lecidella elaeochroma*  
*Lecidea elata* Schaer. = *Lecanora marginata*  
*Lecidea elata* var. *marginata* (Schaer.) A. Massal. = *Lecanora marginata*  
*Lecidea enteroleuca* var. *elbursensis* J. Steiner = *Lecidella patavina*  
*Lecidea enteroleuca* var. *epipolioides* J. Steiner = *Lecidella patavina*  
*Lecidea epipolioides* (J. Steiner) Szatala = *Lecidella patavina*  
*Lecidea epipolioides* var. *elbursensis* (J. Steiner) Szatala = *Lecidella patavina*  
*Lecidea euphorea* (Flörke) Nyl. = *Lecidella euphorea*  
*Lecidea euphorea* f. *decussata* Szatala = *Lecidella euphorea*  
\**Lecidea fuscoatra* (L.) Ach. – LORESTAN: Khoramabad, 10 km towards Alestar, Makhmal kuh, tang-a Shabikhun, 1350 m, 5.11.2002, *Maassoumi* 1390, 1711 (HBG, TARI).  
*Lecidea iranica* Szatala = *Lecanora marginata*  
*Lecidea latypea* f. *ochracea* (Körb.) H. Olivier = *L. plana*  
*Lecidea latypea* Ach. = *L. plana*  
*Lecidea olivacea* f. *elaeochroma* (Ach.) Vain. = *Lecidella elaeochroma*  
*Lecidea olivacea* f. *limitata* (Ach.) Vain. = *Lecidella elaeochroma*  
*Lecidea parasema* Ach. = *Lecidella elaeochroma*  
*Lecidea parasema*  $\alpha$  *limitata* Ach. = *Lecidella elaeochroma*  
*Lecidea parasema*  $\gamma$  *saprophila* Ach. = *Buellia disciformis* var. *saprophila*  
*Lecidea parasema* f. *limitata* (Scop.) Ach. = *Lecidella elaeochroma*  
*Lecidea persica* J. Steiner = *L. tessellata* var. *caesia*  
*Lecidea plana* (J. Lahm) Nyl. – Szatala (1957: 114 as *L. latypea*, incl. f. *ochracea* (Körb.) Oliv.).  
*Lecidea polackiana* Müll. Arg. = *Sarcogyne polackiana*

*Lecidea rufonigra* (Tuck.) Nyl. = *Psorula rufonigra*

*Lecidea simplex* Nyl. = *Polysporina simplex*

*Lecidea spilota* auct. = *L. tessellata*

*Lecidea steriza* (Ach.) Vain. = *Porpidia macrocarpa*

***Lecidea subbrunnea*** J. Steiner – Steiner (1910: 215\*); Szatala (1957: 115).

***Lecidea tessellata*** Flörke – Müller (1892: 157 as *L. spilota*); Steiner (1910: 214\* as *L. persica*); Szatala (1940: 523 as *L. persica*); Szatala (1957: 115 also as *L. persica*); Hertel (1977: 283, 285). – ESFAHAN: C. 2 km to Ghohrud from Kamou, 2150 m, 18.11.2002, *Maassoumi & Safavi 1852* (B, TARI).

***Lecidella elaeochroma*** (Ach.) M. Choisy – Buhse (1860: 243 as *Lecidea parasema*  $\alpha$  *limitata*); Steiner (1916: 27 as *Lecidea parasema*); Szatala (1940: 523 as *Lecidea olivacea* f. *elaeochroma* & f. *limitata*); Szatala (1957: 113 as *Lecidea elaeochroma*; 1957: 114 as *Lecidea parasema* incl. f. *limitata* & f. *euphoroides*). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2048* (B, TARI); Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2029* (B, TARI); on the Maraveh-Tappeh road from Kalaleh, c. 20 km from Chatal towards Ashkhaneh, 846 m, forest margin, 27.1.2003, *Maassoumi, Sohrabi & Safavi 1949* (B, TARI). MAZANDARAN: Mazandaran-Chalus, roadside forest, 450-600 m, on bark, 20.7.2004, *Sohrabi 9109* (herb. Seaward 113102).

***Lecidella euphorea*** (Flörke) Hertel – Szatala (1957: 114 as *Lecidea euphorea* incl. f. *decussata*).

***Lecidella patavina*** (A. Massal.) Knoph & Leuckert – Steiner (1910: 213 as *Lecidea enteroleuca* var. *epipolioides*\*); Steiner (1916: 27\* as *Lecidea enteroleuca* var. *elbursensis*); Szatala (1957: 113 as *Lecidea epipolioides* & 114 as *L. epipolioides* var. *elbursensis*); Hertel (1970: 55 as *Lecidella spitsbergensis*); Knoph (1990: 119 & 127).

*Lecidella spitsbergensis* (Lyngé) Hertel & Leuckert = *L. patavina*

***Leciographa insidens*** J. Steiner (LF?) – Steiner (1896: 442\*).

\****Lempholemma polyanthes*** (Bernh.) Malme – LORESTAN: Khoramabad, 10 km towards Alestar, Makhmal kuh, tang-a Shabikhun, 1350 m, 5.11.2002, *Maassoumi 1394* (HBG, TARI), *1714* (HBG, TARI).

\****Leprocaulon microscopicum*** (Vill.) Gams ex D. Hawksw. – MAZANDARAN: Mazandaran-Chalus, roadside forest, 450-600 m, 20.7.2004, *Sohrabi 9156* (herb. Seaward 113106).

\****Leptogium cyanescens*** (Rabenh.) Körb. – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, in *Maassoumi & Safavi 2032* sub *Peltigera praetextata* (B, TARI). MAZANDARAN: Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, in *Maassoumi 2116* sub *Collema subflaccidum* (B, TARI, herb. Seaward 112705).

\****Leptogium hildenbrandii*** (Garov.) Nyl. – GORGAN: Toskaestan towards Saraliabad and Shah kuh, 1400-2000 m, 19.10.2003, *Maassoumi & H. Yarmand 2768* (B, TARI).

***Leptogium lichenoides*** (L.) Zahlbr. – Weber (1964: 4). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2076* (B, TARI); on the Maraveh-Tappeh road from Kalaleh, c. 20 km from Chatal towards Ashkhaneh, 846 m, 27.1.2003, *Maassoumi, Sohrabi & Safavi 1953* (B, TARI). MAZANDARAN: Ramsar, towards Neydasht, 300 m, forest, 30.3.2003, *Maassoumi 2088a* (B, TARI, herb. Seaward 112709); Mazandaran-Chalus, roadside forest, 450-600 m, on bark, 20.7.2004, *Sohrabi 9191* (herb. Seaward 113097).

***Leptogium minutissimum*** (Flörke) Fr. – Weber (1964: 3).

***Leptogium saturninum*** (Dicks.) Nyl. – Szatala (1957: 111). – MAZANDARAN: Ramsar, Javaherdeh, 2000 m, 21.8.2002, *Maassoumi 580* (B, TARI). GORGAN: Toskaestan towards Saraliabad and Shah kuh, 1400-2000 m, 19.10.2003, *Maassoumi & H. Yarmand 2767* (B, TARI).

\****Leptogium teretiusculum*** (Wallr.) Arnold. – MAZANDARAN: Tonekabon, Seh Hezar river, 350 m, 13.11.2002, *Maassoumi 1327* (HBG, TARI).



- \**Leptogium turgidum* (Ach.) Cromb. – GOLESTAN: On the Maraveh-Tappeh road from Kalaleh, c. 20 km from Chatal towards Ashkhaneh, 846 m, 27.1.2003, *Maassoumi, Sohrabi & Safavi 1953a* (B, TARI).
- Leptorhaphis atomaria* (Ach.) Szatala (LF) – Buhse (1860: 244 as *Verrucaria punctiformis*  $\alpha$  *atomaria*); Szatala (1957: 106 as *Arthopyrenia atomaria*).
- Lichinella algerica* (J. Steiner) P. Moreno & Egea – Szatala (1957: 109 as *Gonohymenia algerica*); Riedl (1979: 220 as *G. algerica*).
- Lichinella iodopulchra* (Couderc ex Crozals) P. Moreno & Egea – Müller (1892: 151 as *Omphalaria pulvinata*  $\beta$  *schleicheri*); Szatala (1957: 110 as *Thyrea pulvinata* and as *T. pulvinata* var. *schleicheri*). – GOLESTAN: Gorgan-Golestan, 680-700 m, 14.12.2001, *Sohrabi 2001* (herb. Seaward 111662).
- Lobaria pulmonaria* (L.) Hoffm. – Szatala (1957: 112 as *Sticta pulmonaria*). – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2030, 2033* (B, TARI).
- \**Lobothallia alphoplaca* (Wahlenb.) Hafellner – GOLESTAN: C. 15 km to Maraveh-Tappeh from Inch-e Borun, opposite Hemat Abbad, 169 m, on calcareous rock, 26.1.2003, in *Maassoumi, Sohrabi & Safavi 1893* sub *Anaptychia roemeri* (B, TARI).
- Lobothallia radiosa* (Hoffm.) Hafellner – Müller (1892: 154 as *Placodium radiosum*); Steiner (1910: 234 as *Lecanora circinata* var. *rauca*); ?Szatala (1957: 136 as *Squamaria radiosa* f. *subfarinosa*); Riedl (1979: 220 as *Lecanora radiosa*).
- \**Melanelia exasperata* (De Not.) Essl. – ?Steiner (1910: 237\* as *Parmelia aspidota* var. *persica*); ?Szatala (1940: 530; 1957: 139 as *P. aspidota* var. *persica*). – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, in *Maassoumi & Safavi 1997* sub *Melanelia* sp. (B, TARI).
- Melanelia exasperatula* (Nyl.) Essl. – Weber (1964: 6 as *Parmelia exasperatula*).
- Melanelia glabra* (Schaer.) Nyl. – Oxner (1946: 83 as *Parmelia glabra*); Szatala (1957: 139 as *P. glabra*). – GOLESTAN: Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, *Maassoumi & Safavi 1979, 1981* (B, TARI); Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, in *Maassoumi & Safavi 1999* sub *Ramalina sinensis* (B, TARI).
- \**Melanelia infumata* (Nyl.) Essl. – GOLESTAN: Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, *Maassoumi & Safavi 1987* (B, TARI).
- \**Melanelia subargentifera* (Nyl.) Essl. – GOLESTAN: Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, in *Maassoumi & Safavi 1991* sub *Parmelina tiliacea* (B, TARI), in *Maassoumi & Safavi 1985* sub *Physcia tenella* (B, TARI); Gorgan, 600 m, 14.12.2001, *Sohrabi 21* (herb. Seaward 111661).
- Melaspilea gibberulosa* (Ach.) Zwackh (F) – Buhse (1860: 243 as *Opegrapha varia* var. *deformis*); Szatala (1957: 108).
- \**Milospium graphideorum* (Nyl.) D. Hawksw. (LF) – MAZANDARAN: Mazandaran-Chalus, 450-600 m, roadside forest, on bark, 20.7.2004, *Sohrabi 9171* (herb. Seaward 113121).
- Muellerella lichenicola* (Sommerf. ex Fr.) D. Hawksw. (LF) – Steiner (1896: 445 as *Tichothecium erraticum*).
- Muellerella pygmaeum* (Körb.) D. Hawksw. (LF) – Steiner (1896: 445 as *Tichothecium pygmaeum*).
- \**Mycobilimbia lurida* (Ach.) Hafellner & Türk – GOLESTAN: Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, *Maassoumi & Safavi 1973* (B, TARI).
- \**Myelochroa aurulenta* (Tuck.) Elix & Hale – MAZANDARAN: Zirab, Amlak Valley, on bark, 6.10.2003, *Valad Beigi 14* (B, SBUH).
- \**Neocatapyrenium rhizinosum* (Müll. Arg.) Breuss. – AZARBAYEJAN: Bazargan, SW of Bazar-gan Dedovly village, 1750 m, 10.8.2002, *Sohrabi & B. Alizadeh 700* (B, TARI).
- \**Neofuscelia perrugata* (Nyl.) Elix – KHORASAN: Neishabour towards Kashmar, Rivash, Kalateh Teimour, 1550 m, on siliceous rock, 9.4.2002, in *Haji Moniri 1436a* sub *Rhizocarpon geminatum* (B, FUMH).



- Neofuscelia pulla* (Ach.) Essl. – Steiner (1916: 35 as *Parmelia prolixa*); Szatala (1957: 139 as *P. prolixa*); Weber (1964: 6 as *P. prolixa*).
- \**Nephroma parile* (Ach.) Ach. – MAZANDARAN: Nowshahr, Mashalak river, 200-1600 m, forest, 10.11.2002, *Maassoumi 1342, 1344* (HBG, TARI).
- \**Nephroma resupinatum* (L.) Ach. – GILAN: Talesh area, Asalem to Khalkhal Asbavuni, 0 m, 15.10.2002, *Maassoumi 1362* (HBG, TARI).
- Omphalaria arabica* Müll. Arg. = *Peccania arabica*  
*Omphalaria coralloides* Nyl. = *Peccania coralloides*  
*Omphalaria pulvinata* Nyl. = *Lichinella iodopulchra*  
*Omphalodina peltata* (Ramond) Follmann & Redón = *Rhizoplaca peltata*
- Opegrapha atra* Pers. – Szatala (1940: 521; 1957: 107). – MAZANDARAN: Around Ramsar, 300 m, 14.4.2002, *Maassoumi 1319* (B, TARI); Chamestan, experimental station, 400 m, 9.11.2002, *Maassoumi 1352* (B, TARI).
- Opegrapha diaphora* var. *signata* Nyl. = *O. varia*
- Opegrapha varia* Pers. – Buhse (1860: 243 as *O. varia* var. *hebraica*); Szatala (1957: 108 as *O. diaphora* var. *signata*). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2056* (B, TARI).
- Opegrapha varia* var. *deformis* Rabenh. = *Melaspilea gibberulosa*  
*Opegrapha varia* var. *hebraica* Schaer. = *Opegrapha varia*
- \**Opegrapha vermicellifera* (Kunze) J. R. Laundon – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2050* (B, TARI).
- \**Opegrapha vulgata* (Ach.) Ach. – MAZANDARAN: Sari, from Vanamak to Sarta, 400-1000 m, 20.12.2003, *Maassoumi 2801* (B, TARI).
- Parmelia aspidota* var. *persica* J. Steiner = *Melanelia exasperata*?
- Parmelia caperata* (L.) Ach. = *Flavoparmelia caperata*  
*Parmelia caperata* var. *cylisphora* Ach. = *Flavoparmelia caperata*  
*Parmelia ciliaris* Ach. = *Anaptychia ciliaris*  
*Parmelia ciliaris*  $\beta$  *crinalis* (Schleich.) = *Anaptychia crinalis*  
*Parmelia conspersa* (Ach.) Ach. = *Xanthoparmelia conspersa*  
*Parmelia dubia* (Wulf.) Schaer. = *Punctelia subrudecta*  
*Parmelia esculenta* (Pall.) Spreng. = *Aspicilia esculenta*  
*Parmelia exasperatula* Nyl. = *Melanelia exasperatula*  
*Parmelia glabra* (Schaer.) Nyl. = *Melanelia glabra*  
*Parmelia obscura*  $\alpha$  *chloantha* Schaer. = *Phaeophyscia orbicularis*  
*Parmelia parietina*  $\alpha$  *vulgaris* Schaer. = *Xanthoria parietis*  
*Parmelia prolixa* (Ach.) Röhl = *Neofuscelia pulla*  
*Parmelia pulchella*  $\alpha$  *caesia* Schaer. = *Physcia caesia*  
*Parmelia quercina* (Willd.) Vain. = *Parmelina quercina*  
*Parmelia scorteia* Ach. = *Parmelina tiliacea*  
*Parmelia stellaris*  $\alpha$  *aipolea* Schaer. = *Physcia aipolea*  
*Parmelia tiliacea* Ach. = *Parmelina tiliacea*  
*Parmelia trichotera* Hue = *Parmotrema chinense*  
*Parmelia trichotera* var. *typica* Du Rietz = *Parmotrema chinense*
- \**Parmelia sulcata* Taylor – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2027* (B, TARI).
- Parmelina quercina* (Willd.) Hale – Szatala (1957: 140 as *Parmelia quercina*).
- Parmelina tiliacea* (Hoffm.) Hale – Buhse (1860: 240 as *Parmelia tiliacea*); Oxner (1946: 83 as *Parmelia scorteia*). – GOLESTAN: Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, *Maassoumi & Safavi 1991* (B, TARI).
- Parmotrema chinense* (Osbeck) Hale & Ahti – Szatala (1940: 530 & 1957: 140 as *P. trichotera* var. *typica*). – MAZANDARAN: Zirab, between Khalil Kola and Zebh Valley, on tree, 6.10.2003, *Valad Beigi 4* (B, SBUH); Zirab, Zebh Valley, on tree bark, 6.8.2003, *Valad Beigi 5* (B, SBUH).

- Peccania arabica* (Müll. Arg.) Henssen – Müller (1892: 151 as *Omphalaria arabica*); Szatala (1957: 110 as *Thyrea arabica*). – HORMOZGAN: Kuh-e Genu, W part, 580 m, *Maassoumi & Safavi 1740* (HBG, TARI).
- Peccania coralloides* (A. Massal.) A. Massal. – Müller (1892: 151 as *Omphalaria coralloides*); Szatala (1957: 110); Riedl (1979: 220).
- Peccania terricola* H. Magn. – Sohrabi (in prep.).
- Peltigera canina* (L.) Willd. – Weber (1964: 4). – MAZANDARAN: Ramsar, Javaherdeh, 2000 m, 21.8.2002, *Maassoumi 574, 576, 587* (B, TARI).
- \**Peltigera horizontalis* (L.) Willd. – GILAN: Talish area, Asalem to Khalkhal Asbavuni, 0 m, 15.10.2002, *Maassoumi 1358* (B, TARI).
- \**Peltigera lepidophora* (Nyl. ex Vain.) Bitter. – MAZANDARAN: Ramsar, Javaherdeh, 2000 m, 21.8.2002, in *Maassoumi 594* sub *Xanthoparmelia somloensis* (B, TARI).
- \**Peltigera polydactylon* (Neck.) Hoffm. – MAZANDARAN: Ramsar, Javaherdeh, 2000 m, 21.8.2002, *Maassoumi 573* (B, TARI).
- \**Peltigera praetextata* (Flörke ex Sommerf.) Zopf – GOLESTAN: Gorgan, Galikesh-Abparan, 540 m, 24.9.2001, *Sohrabi 25* (herb. Seaward 112209); Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2018, 2032* (B, TARI). MAZANDARAN: Ramsar, towards Neydasht, 300 m, forest, 30.3.2003, *Maassoumi 2091* (B, TARI, herb. Seaward 112940), *2092* (B, TARI, herb. Seaward 112935), *2095* (B, TARI, herb. Seaward 112937); Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *2102* (B, TARI, herb. Seaward 112941), *2103* (B, TARI, herb. Seaward 112936), *2113* (B, TARI, herb. Seaward 112939), *2122* (B, TARI, herb. Seaward 112938).
- \**Peltigera rufescens* (Weiss) Humb. – Sohrabi (in prep.). – MAZANDARAN: Ramsar, Javaherdeh, 2000 m, 21.8.2002, *Maassoumi 570* (B, TARI).
- \**Peltula obscurans* (Nyl.) Gyeln. – KHUZESTAN: C. 27 km on the road from Behbahan to Deylam, 270 m, 16.11.2002, *Maassoumi & Safavi 1755* (B, TARI).
- Pertusaria albescens* (Huds.) M. Choisy & Werner – Sohrabi (in prep.).
- Pertusaria amara* var. *alnea* (Ach.) Erichs. – Szatala (1957: 124).
- Pertusaria communis* DC. = *P. pertusa*
- Pertusaria leptospora* Nitschke ex J. Lahm – Vězda (1978, *Lich. Sel. Exs. 1522*).
- Pertusaria multipuncta* (Turner) Nyl. – Vězda (1978, *Lich. Sel. Exs. 1521*).
- Pertusaria pertusa* (Weigel) Tuck. – Buhse (1860: 243 as *P. communis*); Szatala (1957: 124).
- Pertusaria pustulata* (Ach.) Duby – Szatala (1940: 527; 1957: 124).
- \**Pertusaria trachythallina* Erichs. – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 1995a* (B).
- Phaeographis dendritica* var. *sinensigrapha* (Fée) Zahlbr. – Szatala (1940: 522; 1957: 108).
- Phaeophyscia ciliata* (Hoffm.) Moberg – Müller (1892: 151 as *Physcia obscura*); Steiner (1910: 244 as *Physcia obscura* var. *ulothrix*); Szatala (1957: 152 as *Physcia ciliata*). – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, in *Maassoumi & Safavi 2005* sub *Ramalina sinensis* (B, TARI), in *Maassoumi & Safavi 2012* sub *Physcia aipolia* (B, TARI). MAZANDARAN: Zirab, between Khalil Kola and Zebh Valley, on tree bark, 6.9.2003, in *Valad Beigi 18* sub *Hyperphyscia adglutinata* (B, SBUH).
- \**Phaeophyscia endopoenicea* (Harm.) Moberg. – MAZANDARAN: Zirab, Amlak Valley, on tree bark, 6.10.2003, *Valad Beigi 22* (B, SBUH).
- Phaeophyscia orbicularis* (Neck.) Moberg – Buhse (1860: 241 as *Parmelia obscura*  $\alpha$  *chloantha*); Oxner (1946: 84); Szatala (1957: 152).
- Phaeophyscia sciastra* (Ach.) Moberg – Steiner (1910: 243 as *Physcia lithotea*); Szatala (1957: 153 as *Physcia sciastra*).
- Phloeopeccania pulvinulina* J. Steiner – Vězda (1979, *Lich. Sel. Exs. 1654*, as *Pyrenopsis sojakii*); Schultz & al. (2000: 195).
- Phlyctis argena* (Spreng.) Flot. – Sohrabi (in prep.).
- \**Physcia adscendens* (Fr.) H. Olivier – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2065* (B, TARI); Golestan forest, 925 m, on *Quercus*

- macranthera* tree, 21.1.2003, *Maassoumi & Safavi 1983* (B, TARI); on the Maraveh-Tappeh road from Kalaleh, c. 20 km from Chatal towards Ashkhaneh, 846 m, forest margin. 27.1.2003, *Maassoumi, Sohrabi & Safavi 1942* (B, TARI).
- Physcia aipolia*** (Ehrh. ex Humb.) Fűrnr. – Buhse (1860: 241 as *Parmelia stellaris*  $\alpha$  *aipolea*); Szatala (1957: 152, incl. var. *acrita*). – GOLESTAN: Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, *Maassoumi & Safavi 1988* (B, TARI); Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2012* (B, TARI).
- Physcia aipolia* var. *acrita* (Ach.) Hue = *P. aipolia*
- Physcia albinea*** (Ach.) Nyl. – Szatala (1940: 532; 1957: 152).
- \****Physcia biziana*** (A. Massal.) Zahlbr. – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2078* (B, TARI).
- Physcia caesia*** (Hoffm.) Fűrnr. – Buhse (1860: 241 as *Parmelia pulchella*  $\alpha$  *caesia*); Müller (1892: 151); Szatala (1957: 152).
- Physcia caucasica* J. Steiner = *Anaptychia ulotrichoides*
- Physcia ciliata* (Hoffm.) Du Rietz = *Phaeophyscia ciliata*
- Physcia elbursiana* Szatala = *Anaptychia elbursiana*
- Physcia grisea* (Lam.) Zahlbr. = *Physconia grisea*
- Physcia grisea* var. *elbursiana* Szatala = *Anaptychia elbursiana*
- Physcia grisea* var. *iranica* Szatala = *Physconia grisea* var.
- Physcia hispida* (Hoffm.) Frège = *P. tenella*
- Physcia iranica* (Szatala) Szatala = *Physconia grisea* var.
- Physcia lithotea* Nyl. = *Phaeophyscia sciastra*
- Physcia muscigena* f. *lenta* (Ach.) Vain. = *Anaptychia ulotrichoides*
- Physcia obscura* Nyl. = *Phaeophyscia ciliata*
- Physcia obscura* var. *ulothrix* Crombie = *Phaeophyscia ciliata*
- Physcia orbicularis* (Neck.) Poetsch = *Phaeophyscia orbicularis*
- Physcia pulverulenta* (Schreb.) Hampe = *Physconia distorta*
- Physcia sciastra* (Ach.) Du Rietz = *Phaeophyscia sciastra*
- Physcia stellaris*** (L.) Nyl. – Steiner (1910: 244); Oxner (1946: 84); Szatala (1957: 152).
- Physcia stellaris*** var. *rosulata* (Ach.) Nyl. em. Flagey – Szatala (1957: 152).
- Physcia tenella*** (Scop.) DC. – Oxner (1946: 83 as *P. hispida*). – GOLESTAN: Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, *Maassoumi & Safavi 1985* (B, TARI). MAZANDARAN: Zirab, Amlak Valley, on tree bark, 6.10.2003, in *Valad Beigi 23* sub *Xanthoria parietina* (B, SBUH).
- Physcia tribacia*** (Ach.) Nyl. – Szatala (1940: 533; 1957: 152); Sohrabi (in prep.).
- Physconia distorta*** (With.) J. R. Laundon – Oxner (1946: 84 as *Physcia pulverulenta*); Szatala (1957: 152 as *P. pulverulenta*). – GOLESTAN: Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, *Maassoumi & Safavi 1980* (B, TARI); Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 1995* (B, TARI).
- Physconia grisea*** (Lam.) Poelt – Oxner (1946: 84 as *Physcia grisea*); Sohrabi (in prep.).
- Physcia grisea*** var. *iranica* (Szatala) [ad interim] – Szatala (1940: 532\* as *Physcia grisea* var. *iranica*); Szatala (1957: 153 as *Physcia iranica*).
- \****Physconia perisidiosa*** (Erichsen) Moberg – GOLESTAN: Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, *Maassoumi & Safavi 1982, 1984, 1990* (B, TARI).
- Placidium aegyptiacum* (Müll. Arg.) Szatala = *Dermatocarpon aegyptiacum*
- Placidium crassum* (Anzi) Szatala = *Verrucaria crassa*
- Placidium hepaticum* (Ach.) Arnold = *Placidium squamulosum*
- Placidium hepaticum* f. *nigratum* (Müll. Arg.) Szatala = *Placidium squamulosum*
- Placidium iranicum* Szatala = *Verrucaria fuscula*
- Placidium lachneum*** (Ach.) Bouly de Lesd. – Szatala (1957: 104); Riedl (1979: 219 as *Dermatocarpon lachneum*).
- Placidium lachneum*** var. *pruinatum* (J. Steiner) Szatala – Szatala (1957: 104).

*Placidium lacinulatum* (Ach.) Breuss – Breuss (1998: 664).

*Placidium monstrosum* (Schaer.) A. Massal. = *Placocarpus schaeferi*

\**Placidium pilosellum* (Breuss) Breuss. – KHORASAN: Chenaran, Akhlamad valley, 1600 m, soil, 9.2002, *Haji Moniri 1523* (B, FUMH).

*Placidium rufescens* (Ach.) Breuss – Müller (1892: 158 as *Endopyrenium rufescens*); Breuss (1990: 11 as *Catapyrenium rufescens*).

*Placidium semaforonense* (Breuss) Breuss – Breuss (1990: 114 as *Catapyrenium semaforonense*; 1998: 665). – HORMOZGAN: Kuh-e Genu, W part, 580 m, 2002, *Maassoumi & Safavi 1744* (B, TARI). KHUZESTAN: C. 27 km on the road from Behbahan to Deylam, 270 m, 16.11.2002, *Maassoumi & Safavi 1756* (B, TARI); c. 62 km on the road from Ramhormoz to Behbahan, 221 m, 16.11.2002, *Maassoumi & Safavi 1751* (B, TARI). LORESTAN: C. 60 km towards Andimeshk from Khoramabad, 424 m, 5.11.2002, *Maassoumi & Safavi 1734* (B, TARI).

*Placidium squamulosum* (Ach.) Breuss – Müller (1892: 158 as *Endopyrenium hepaticum*, incl. var. *nigrata*); Szatala (1957: 104 as *P. hepaticum*, incl. f. *nigratum*); Breuss (1990: 125 as *Catapyrenium squamulosum*; 1998: 666). – GOLESTAN: Maraveh-Tappeh, c. 8 km towards Ghazan Ghayeh, 170 m, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1931* (B, TARI). KHUZESTAN: C. 62 km on the road from Ramhormoz to Behbahan, 221 m, 16.11.2002, *Maassoumi & Safavi 1752* (B, TARI). KUHGILOYE O BOIRAHMAD: C. 30 km on the road from Yassuj to Semirom, 1850 m, 17.11.2002, *Maassoumi & Safavi 1839* (B, TARI).

*Placidium tenellum* (Breuss) Breuss – Breuss (1998: 667).

*Placidium tumidulum* (Lamb.) Szatala = *Dermatocarpon tumidulum*

*Placidium verruculosum* (Müll. Arg.) Szatala = *Dermatocarpon verruculosum*

*Placocarpus schaeferi* (Fr.) Breuss – Müller (1892: 158 as *Endopyrenium monstrosum*); Szatala (1957: 105 as *Placidium monstrosum*). – GOLESTAN: C. 15 km to Maraveh-Tappeh from Inch-e Borun, opposite Hemat Abbad, 169 m, on calcareous rock, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1907* (B, TARI). KUHGILOYE O BOIRAHMAD: C. 30 km on the road from Yassuj to Semirom, 1850 m, 17.11.2002, *Maassoumi & Safavi 1842* (B, TARI).

*Placodium aegyptiacum* (Müll. Arg.) Szatala = *Caloplaca aegyptiaca*

*Placodium aegyptiacum* var. *ochraceum* (Müll. Arg.) Szatala = *Caloplaca aegyptiaca*

*Placodium bullatum* (Müll. Arg.) Szatala = *Caloplaca bullata*

*Placodium cerinum* (Ehrh. ex Hedw.) Naeg. ex Hepp = *Caloplaca cerina*

*Placodium cerinum* f. *dispersum* (H. Olivier) Szatala = *Caloplaca cerina*

*Placodium cerinum* var. *cyanoleprum* (DC.) Anzi = *Caloplaca cerina* var. *cyanolepra*

*Placodium cervinum* f. *normalis* A. Massal. = *Acarospora cervina*

*Placodium cervinum* Müll. Arg. = *Acarospora cervina*

*Placodium cervinum* var. *larvatum* Müll. Arg. = *Acarospora cervina* f. *larvata*

*Placodium cervinum* var. *ochraceum* Müll. Arg. = *Acarospora ochracea*

*Placodium cervinum* var. *percaenum* Müll. Arg. = *Acarospora cervina*

*Placodium chrysoleucum* var. *opacum* Körb. = *Rhizoplaca melanophthalma*

*Placodium crassum* (Huds.) Link = *Squamarina cartilaginea*

*Placodium crassum* var. *deserti* Müll. Arg. = *Squamarina cartilaginea*?

*Placodium crassum* var. *melatoma* (Ach.) Müll. Arg. = *Squamarina cartilaginea*?

*Placodium dispersoareolatum* Körb. = *Lecanora dispersoareolata*

*Placodium fulgens* var. *bracteatum* Müll. Arg. = *Fulgensia bracteata*

*Placodium inspersum* (J. Steiner) Szatala = *Caloplaca aegyptiaca*

*Placodium interruptum* Müll. Arg. = *Acarospora strigata*

*Placodium interruptum* var. *nudum* Müll. Arg. = *Acarospora placentia*

*Placodium interveniens* (Müll. Arg.) Szatala = *Caloplaca aegyptiaca*

*Placodium lacteum* (A. Massal.) Räsänen = *Caloplaca lactea*

*Placodium lacteum* f. *laetior* (J. Steiner) Szatala (Iranian records) = *Caloplaca marmorata*

*Placodium luteoalbum* (Pers.) Anzi = *Caloplaca luteoalba*

*Placodium microphthalmum* Müll. Arg. = *Acarospora bullata*

- Placodium paepalostomum* Anzi = *Caloplaca variabilis*  
*Placodium peltatum* (Ramond) Arnold = *Rhizoplaca peltata*  
*Placodium persicum* Müll. Arg. = *Aspicilia persica*  
*Placodium pyraceutum* (Ach.) Anzi = *Caloplaca holocarpa*  
*Placodium pyraceutum* var. *muscicolum* (Schaer.) Szatala = *Caloplaca holocarpa*?  
*Placodium pyraceutum* var. *pyrithromum* (Ach.) A. L. Sm. = *Caloplaca holocarpa*  
*Placodium radiosum* A. Massal. = *Lobothallia radiosa*  
*Placodium rubinum* (Vill.) Müll. Arg. = *Rhizoplaca chrysoleuca*  
*Placodium salicinum* (Schrad.) Szatala = *Caloplaca salicina*  
*Placodium saxicola* A. Massal. = *Lecanora muralis*  
*Placodium saxicola* var. *versicolor* Körb. = *Lecanora muralis*  
*Placodium stapfianum* Müll. Arg. = *Acarospora stapfiana*  
*Placodium stillicidiorum* f. *flavum* (Anzi) Szatala = *Caloplaca cerina* f. *flava*  
*Placodium variabile* (Pers.) Hepp = *Caloplaca variabilis*  
*Placodium variabile* var. *acrustaceum* (Müll. Arg.) A. L. Sm. = *Caloplaca alociza*  
*Placodium variabile* var. *candidum* (Stizenb.) Szatala = *Caloplaca aegyptiaca*  
*Placodium variabile* var. *lecideinum* (Müll. Arg.) Szatala = *Caloplaca diphyodes*  
*Placodium velanum* (A. Massal.) Szatala = *Caloplaca velana*  
*Placodium velanum* var. *persicum* (Szatala) Szatala = *Caloplaca flavovirescens* var. *persica*  
*Placodium velanum* var. *placidium* (A. Massal.) Szatala = *Caloplaca velana*  
*Placothallia hueana* (Vain.) Szatala = *Dimelaena oreina*  
*Placothallia oreina* (Ach.) Szatala = *Dimelaena oreina*  
\**Placopyrenium bucekii* (Nadv. & Servit) Breuss – LORESTAN: Khoramabad, 10 km towards Alestar, Makhmal kuh, tang-a Shabikhun, 1350 m, 5.11.2002, *Maassoumi 1701, 1707* (HBG, TARI).  
\**Placynthium nigrum* (Huds.) Gray – LORESTAN: C. 44 km on the road from Khoramabad to Andimeshk, 1000 m, 5.11.2002, *Maassoumi 1722* (HBG, TARI).  
*Pleopsisidium chlorophanum* (Wahlenb.) Zopf – Steiner (1916: 29 as *Acarospora chlorophana*); Szatala (1957: 121 as *A. chlorophana*).  
*Pleopsisidium flavum* (Bellard) Körb. – Magnusson (1929: 102 as *Acarospora oxytona*); Szatala (1957: 121 as *Acarospora oxytona*).  
*Pleurosticta acetabulum* (Neck.) Elix & Lumbsch – Sohrabi (in prep.).  
\**Polychidium muscicola* (Sw.) S. Gray – LORESTAN: C. 44 km on the road from Khoramabad to Andimeshk, 1000 m, 5.11.2002, *Maassoumi 1723, 1729* (HBG, TARI).  
*Polysporina pusilla* (Anzi) M. Steiner & Vězda – Steiner (1910: 216 as *Biatorrella pusilla*); Szatala (1957: 119 as *Sarcogyne pusilla*).  
*Polysporina simplex* (Davies) Vězda – Müller (1892: 157 as *Lecidea simplex*); Szatala (1957: 119 as *Sarcogyne simplex*).  
*Polysporina urceolata* (Anzi) Brodo – Steiner (1910: 216 as *Biatorrella urceolata*); Szatala (1957: 119 as *Sarcogyne urceolata*).  
\**Porina aenea* (Wallr.) Zahlbr. – MAZANDARAN: Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2117a* (B, TARI).  
*Porpidia macrocarpa* (DC.) Hertel & A. J. Schwab – Szatala (1957: 115 as *L. steriza*).  
\**Protoblastenia rupestris* (Scop.) J. Steiner – MAZANDARAN: Around Ramsar, 300 m, 14.4.2002, *Maassoumi 1315* (HBG, TARI).  
*Protoparmelia montagnei* (Fr.) Poelt & Nimis – Steiner (1916: 31 as *Lecanora montagnei*); Szatala (1957: 132 as *L. montagnei*).  
*Psora decipiens* (Hedw.) Hoffm. – Müller (1892: 156); Oxner (1946: 82); Szatala (1957: 116 as *Lecidea decipiens*); Weber (1964: 4 as *L. decipiens*); Vězda (1978, *Lich. Sel. Exs. 1559* as *L. decipiens*); Riedl (1979: 220). – GOLESTAN: C. 20 km on the road from Eslamabad to Ashkane, 615 m, on calcareous rock, 21.1.2003, *Maassoumi & Safavi 1958* (B, TARI); Maraveh-Tappeh, c. 8 km towards Ghazan Ghayeh, 170 m, 26.1.2003, *Maassoumi, Sohrabi & Safavi*



- 1922 (B, TARI). KHORASAN: Torbatejam, S of Salehabad, 1100 m, on soil, 25.4.2002, *Haji Moniri 1433a* (B, FUMH). KHUZESTAN: C. 27 km on the road from Behbabad to Deylam, 270 m, 16.11.2002, *Maassoumi & Safavi 1757* (B, TARI); c. 62 km on the road from Ramhormoz to Behbahan, 221 m, 16.11.2002, *Maassoumi & Safavi 1750* (B, TARI).
- Psora decipiens* f. *dealbata* A. Massal. – Szatala (1957: 116 as *Lecidea decipiens* f. *dealbata*).
- \**Psora vallesiaca* (Schaer.) Timdal – LORESTAN: C. 44 km on the road from Khoramabad to Andimeshk, 1000 m, 5.11.2002, *Maassoumi & Safavi 1730* (HBG, TARI).
- Psoroma hypnorum* (Vahl) Gray – Szatala (1957: 112).
- Psorotichia frustulosa* Anzi – Steiner (1896: 437).
- Psorotichia lugubris* (A. Massal.) Arnold – Riedl (1979: 220).
- Psorotichia lugubris* var. *buschirensis* J. Steiner – Steiner (1896: 436\*); Szatala (1957: 110).
- Psorula rufonigra* (Tuck.) G. Schneider – Weber (1964: 4 as *Lecidea rufonigra*).
- \**Punctelia horreri* (Sm.) Krog – MAZANDARAN: Zirab, Amlak Valley, on bark, 6.10.2003, *Valad Beigi 12* (B, SBUH); Zirab, between Khalil Kola and Zebh Valley, on tree bark, 6.10.2003, *Valad Beigi 2* (B, SBUH).
- Punctelia subrudecta* (Nyl.) Krog – Szatala (1957: 140 as *Parmelia dubia*). – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2021* (B, TARI). MAZANDARAN: Zirab, between Khalil Kola and Zebh Valley, on tree, 6.9.2003, *Valad Beigi 24-27* (B, SBUH).
- Pyrenopsis sojakii* Vězda = *Phloeopeccania pulvinulina*
- Pyrenula chlorospila* Arnold – Szatala (1940: 521 as *P. nitidella* f. *chlorospila*); Szatala (1957: 107).
- Pyrenula imperfecta* (Ellis & Everh.) R. C. Harris = *P. subelliptica*
- \**Pyrenula laevigata* (Pers.) Arnold – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2019* (B, TARI).
- \**Pyrenula nitida* (Weigel) Ach. – MAZANDARAN: Sari, from Vanamak to Sarta, 400-1000 m, 20.12.2003, *Maassoumi 2802, 2806* (B, TARI).
- Pyrenula nitidella* f. *chlorospila* (Nyl.) Szatala = *P. chlorospila*
- Pyrenula subelliptica* (Tuck.) R. C. Harris – Vězda (1978, *Lich. Sel. Exs. 1552* as *P. imperfecta*); Harris (1989: 101). – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2025* (B, TARI). MAZANDARAN: Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2104* (B, TARI, herb. Seaward 112823), *2109* (B, TARI, herb. Seaward 112704).
- \**Pyrgidium montelicum* (Beltr.) Tibell – MAZANDARAN: Nowshahr, Mashalak river, 200-1600 m, forest, 10.11.2002, *Maassoumi 1348* (HBG, TARI).
- \**Ramalina baltica* Lettau – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2067* (B, TARI).
- \**Ramalina capitata* (Ach.) Nyl. – AZARBAYEJAN: Bazargan towards Boralan, beside road towards Ararat Mt, 1400 m, 10.8.2002, *Sohrabi & B. Alizadeh 683* (B, TARI).
- Ramalina farinacea* (L.) Ach. – Steiner (1916: 36); Szatala (1940: 530 as var. *gracilentata* & 1957: 140, incl. var. *gracilentata*). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2058* (B, TARI); Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2031* (B, TARI); Gorgan, 650 m, 14.12.2001, *Sohrabi 27* (herb. Seaward 111683). MAZANDARAN: Tonekabon, She-hezar towards Lireh-sar, 400 m, forest, 28.3.2003, *Maassoumi 2105* (B, TARI, herb. Seaward 112710).
- Ramalina farinacea* var. *gracilentata* Ach. = *R. farinacea*
- Ramalina farinacea* var. *phalerata* (Ach.) Ach. – Szatala (1957: 140).
- \**Ramalina nervulosa* (Müll. Arg.) Des Abb. – MAZANDARAN: Zirab, Amlak Valley, on bark, 6.10.2003, *Valad Beigi 10* (B, SBUH), *17* (B); Zirab, between Khalil Kola and Zebh Valley, tree bark, 6.9.2003, *Valad Beigi 19* (B, SBUH).
- Ramalina pollinaria* (Westr.) Ach. – Buhse (1860: 240); Szatala (1957: 141); Sohrabi (in prep.).



- Ramalina pollinaria* f. *cucullata* Harm. – Szatala (1957: 141).  
*Ramalina scopulorum* (Retz.) Ach. = *R. siliquosa*  
 ?*Ramalina siliquosa* (Huds.) A. L. Sm. – Szatala (1957: 141 as *R. scopulorum*). – Note: doubtful record; this is a seashore species unlikely to occur in Iran.
- Ramalina sinensis* Jatta – Szatala (1957: 141); Weber (1964: 6). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2057* (B, TARI); Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, *Maassoumi & Safavi 1986* (B, TARI); Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 1999, 2005* (B, TARI).
- Ramalina thrausta* (Ach.) Nyl. – Szatala (1957: 141).
- Rhizocarpon alpicola* (Anzi) Rabenh. – Müller (1892: 158 as *R. geographicum* var. *alpicola*); Szatala (1957: 117 as *Catocarpus oreites*).
- Rhizocarpon concretum* (Ach.) Elenkin = *R. geminatum*
- Rhizocarpon disporum* (Naeg. ex Hepp) Müll. Arg. – Müller (1892: 158); Weber (1964: 4).
- Rhizocarpon geminatum* Körb. – Steiner (1910: 216; 1916: 28 as *R. montagnei*); Szatala (1940: 523 as *R. concretum*); Szatala (1957: 118 & as *R. montagnei*). – KHORASAN: Neishabour towards Kashmar, Rivash, Kalateh Teimour, 1550 m, on siliceous rock, 9.4.2002, *Haji Moniri 1436a* (B, FUMH).
- Rhizocarpon geographicum* (L.) DC. – Szatala (1957: 118); Weber (1964: 4); Sohrabi (in prep.). – KHORASAN: Neishabour towards Kashmar, Rivash, Kalateh Teimour, 1550 m, on siliceous rock, 9.4.2002, in *Haji Moniri 1436a* sub *R. geminatum* (B, FUMH).
- Rhizocarpon geographicum* f. *lecanorinum* Flörke = *R. lecanorinum*
- Rhizocarpon geographicum* var. *alpicola* (Anzi) A. Massal. (in Müller 1892: 158) = *R. alpicola*
- Rhizocarpon laevigata* (Ach.) Malme = *R. archaea*
- Rhizocarpon lecanorinum* Anders – Steiner (1910: 216 as *R. geographicum* f. *lecanorinum*); Szatala (1957: 118).
- Rhizocarpon montagnei* (Flot.) Körb. = *R. geminatum*
- Rhizocarpon viridiatrum* (Wulfen) Körb. – Szatala (1940: 523; 1957: 118). – KHORASAN: Neishabour towards Kashmar, Rivash, Kalateh Teimour, 1550 m, on calcareous rock, 9.4.2002, *Haji Moniri 1436c* (B, FUMH).
- Rhizoplaca chrysoleuca* (Sm.) Zopf – Müller (1892: 153 as *Placodium rubinum*); Szatala (1957: 136 as *Squamaria rubina*); Oxner (1946: 83 as *P. rubinum*); Sohrabi (in prep.).
- Rhizoplaca melanophthalma* (Ramond) Leuckert & Poelt – Müller (1892: 153 as *Placodium chrysoleucum* var. *opacum*); Steiner (1916: 33 as *Lecanora melanophthalma* & 34 as *L. melanophthalma* var. *obscura* f. *peltata*); Szatala (1957: 136 as *Squamaria melanophthalma*). – ESFAHAN: C. 2 km to Ghohrud from Kamou, 2150 m, 18.11.2002, *Maassoumi & Safavi 1855* (B, TARI, herb. Seaward 112736). – KHORASAN: N of Neishabour, Sarwelayat, 1400 m, on rock, 30.4.2002, *Haji Moniri & Joharchi 1471* (B, FUMH).
- Rhizoplaca peltata* (Ramond) Leuckert & Poelt – Steiner (1910: 236 as *Lecanora heteromorpha*; 1916: 33 as *L. heteromorpha*); Szatala (1940: 529 as *Squamaria peltata* & f. *nigromarginata*); Magnusson (1940: 122 as *L. peltata*); Oxner (1946: 83 as *Placodium peltatum*); Szatala (1957: 136 as *S. peltata*, incl. f. *nigromarginata*); Weber (1964: 5 as *L. peltata*); Vězda (1974, *Lich. Sel. Exs. 1217* as *Omphalodina peltata*). – ESFAHAN: C. 2 km to Ghohrud from Kamou, 2150 m, 18.11.2002, *Maassoumi & Safavi 1853* (B, TARI).
- Rinodina archaea* (Ach.) Arnold – Szatala (1940: 532 as *R. laevigata*; 1957: 149).
- Rinodina bischoffii* (Hepp) A. Massal. – Steiner (1896: 439); Szatala (1940: 532 as var. *protuberans*); Oxner (1946: 83); Szatala (1957: 150). – GOLESTAN: Maraveh-Tappeh, c. 8 km towards Ghazan Ghayeh, 170 m, 26.1.2003, in *Maassoumi, Sohrabi & Safavi 1920* sub *Candelariella aurella* (B, TARI). KHORASAN: Chenaran, Akhlamad valley, 800 m, on calcareous rock, 9.2002, *Haji Moniri 1522* (B, FUMH). KUHGILOYE O BOIRAHMAD: C. 30 km on the road from Yassuj to Semirom, 1850 m, 17.11.2002, *Maassoumi & Safavi 1833* (B, TARI).
- Rinodina bischoffii* var. *aegyptiaca* Müll. Arg. = *R. dubyana*
- Rinodina bischoffii* var. *convexula* Flagey – Steiner (1910: 242); Szatala (1957: 150).

- Rinodina bischoffii* var. *leucomelas* Müll. Arg. = *R. dubyana*  
*Rinodina bischoffii* var. *ochrata* J. Steiner = *R. guzzinii*  
*Rinodina bischoffii* var. *protuberans* Körb. = *R. bischoffii*  
*Rinodina controversa* A. Massal. = *Rinodinella controversa*  
***Rinodina dubyana*** (Hepp) J. Steiner – Müller (1892: 157 as *R. bischoffii* var. *aegyptiaca*); Szatala (1940: 532 & 1957: 150 as *R. bischoffii* var. *leucomelas*); Szatala (1957: 150 as *R. bischoffii* var. *aegyptiaca*).  
***Rinodina exigua*** (Ach.) Gray – Steiner (1916: 38); Szatala (1957: 150).  
***Rinodina guzzinii*** Jatta – Steiner (1910: 242\* as *R. bischoffii* var. *ochrata*); Szatala (1957: 150 as *R. bischoffii* var. *ochrata*); Mayrhofer (1984: 418, 420).  
*Rinodina hueana* Vain. = *Dimelaena oreina*  
***Rinodina immersa*** (Körb.) Zahlbr. – Szatala (1940: 532; 1957: 150); Mayrhofer (1984: 425).  
***Rinodina immersa* f. *perexigua*** (Müll. Arg.) Szatala – Szatala (1957: 150).  
*Rinodina laevigata* (Ach.) Malme = *R. archaea*  
*Rinodina oreina* (Ach.) A. Massal. = *Dimelaena oreina*  
***Rinodina pycnocarpa*** H. Magn. – Mayrhofer (1984: 455).  
***Rinodina straussii*** J. Steiner – Steiner (1910: 242\*); Szatala (1957: 150); Mayrhofer & Poelt (1979: 145); Mayrhofer (1984: 456, 458).  
***Rinodina turfacea*** (Wahlenb.) Körb. – Szatala (1957: 151).  
***Rinodinella controversa*** (A. Massal.) H. Mayrhofer & Poelt – Müller (1892: 157 as *Rinodina controversa*); Szatala (1957: 150 as *Rinodina controversa*).  
***Sarcogyne clavus*** (DC.) Kremp. – Weber (1964: 5).  
***Sarcogyne polackiana*** (Müll. Arg.) H. Magn. – Müller (1892: 157\* as *Lecidea polackiana*); Szatala (1957: 119).  
*Sarcogyne pruinosa* auct. = *S. regularis*  
*Sarcogyne pusilla* Anzi = *Polysporina pusilla*  
***Sarcogyne regularis*** Körb. – Steiner (1896: 441 as *Biatorella pruinosa*); Szatala (1957: 119); Riedl (1979: 220). – MAZANDARAN: Mazandaran-Chalus, roadside forest, 450-600 m, on stone, 20.7.2004, *Sohrabi 9153* (herb. Seaward 113115).  
*Sarcogyne simplex* (Davies) Nyl. = *Polysporina simplex*  
*Sarcogyne urceolata* Anzi = *Polysporina urceolata*  
**\**Schismatomma decolorans*** (Turner & Borrer ex Sm.) Clauzade & Vězda – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2049* (B, TARI).  
***Solenopsora asperatula*** (J. Steiner) Zahlbr. – Steiner (1896: 439\* as *Lecania asperatula*); Szatala (1957: 138).  
***Solorina saccata*** (L.) Ach. – Szatala (1957: 112).  
*Sphaerothallia aschabadensis* (J. Steiner) Szatala = *Aspicilia aschabadensis*  
*Sphaerothallia desertorum* (Kremp.) Szatala = *Aspicilia desertorum*  
*Sphaerothallia esculenta* (Pall.) Reichert = *Aspicilia esculenta*  
*Sphaerothallia straussii* (J. Steiner) Szatala = *Aspicilia straussii*  
*Squamaria albomarginata* (Nyl.) Räsänen = *Lecanora muralis*  
*Squamaria concolor* (Ramond) Nyl. = *Lecanora concolor*  
*Squamaria crassa* f. *melaloma* (Ach.) Duby = *Squamarina cartilaginea*  
*Squamaria crassa* var. *caespitosa* (Vill.) Anzi = *Squamarina cartilaginea*  
*Squamaria dispersoareolata* (Schaer.) Anzi = *Lecanora dispersoareolata*  
*Squamaria farinosa* (Anzi) Szatala = *Aspicilia farinosa*  
*Squamaria farinosa* var. *rauca* (J. Steiner) Szatala = *Aspicilia farinosa*  
*Squamaria garovaglii* (Körb.) Anzi = *Lecanora garovaglii*  
*Squamaria garovaglii* f. *fissa* J. Steiner = *Lecanora garovaglii*  
*Squamaria garovaglii* var. *diffractella* (J. Steiner) Szatala = *Lecanora bolcana*  
*Squamaria garovaglii* var. *fissa* (J. Steiner) Szatala = *Lecanora garovaglii*

- Squamaria garovaglii* var. *pruinosa* (J. Steiner) Szatala = *Lecanora garovaglii*  
*Squamaria iparia* (Flot.) Szatala = *Lecanora riparia*  
*Squamaria lentigera* (Weber) DC. = *Squamarina lentigera*  
*Squamaria lentigera* var. *deserti* Nyl. = *Squamarina lentigera*  
*Squamaria melanophthalma* (Ramond) DC. = *Rhizoplaca melanophthalma*  
*Squamaria muralis* (Schreb.) Elenkin = *Lecanora muralis*  
*Squamaria muralis* var. *elbursiana* Szatala = *Lecanora muralis* var.?  
*Squamaria peltata* (Ramond) DC. = *Rhizoplaca peltata*  
*Squamaria peltata* f. *nigromarginata* Nyl. = *Rhizoplaca peltata*  
*Squamaria persica* (Müll. Arg.) Szatala = *Aspicilia persica*  
*Squamaria radiosa* f. *subfarinosa* (Nyl.) Szatala = *Lobothallia radiosa*?  
*Squamaria rubina* (Vill.) Hoffm. = *Rhizoplaca chrysoleuca*  
*Squamaria versicolor* (Pers.) H. Olivier = *Lecanora muralis*  
*Squamaria versicolor* var. *elbursiana* (Szatala) Szatala = *Lecanora muralis* var.?  
*Squamaria versicolor* var. *subversicolor* (J. Steiner) Szatala = *Lecanora muralis* var. *subversicolor*  
*Squamaria versicolor* var. *subversicolor* f. *verrucigera* (J. Steiner) Szatala = *Lecanora muralis* var. *subversicolor*
- Squamarina cartilaginea*** (With.) P. James – Buhse (1860: 241 as *Lecanora crassa* b. *caespitosa*); Müller (1892: 154 as *Placodium crassum*); ?Müller (1892: 154\* as *P. crassum* var. *deserti*); ?Müller (1892: 154\* as *P. crassum* var. *melaloma*); Oxner (1946: 83 as *P. crassum*); Szatala (1957: 134 as *Squamaria crassa* var. *caespitosa*, incl. f. *melaloma*). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2083* (B, TARI); c. 15 km to Maraveh-Tappeh from Inch-e Borun, opposite Hemat Abbad, 169 m, on calcareous rock, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1897* (B, TARI); c. 20 km on the road from Eslamabad to Ashkane, 615 m, on calcareous rock, 21.1.2003, *Maassoumi & Safavi 1957* (B, TARI). KHORASAN: Kalat, Gharehsou waterfall, 1050 m, 9.4.2002, *Haji Moniri 1653* (FUMH).
- \****Squamarina concrescens*** (Müll. Arg.) Poelt – LORESTAN: Khoramabad, 10 km towards Alestar, Makhmal kuh, tang-a Shabikhun, 1350 m, 5.11.2002, *Maassoumi 1397* (HBG, TARI).
- \****Squamarina gypsacea*** (Sm.) Poelt – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2081* (B, TARI); Golestan forest, 925 m, 21.1.2003, in *Maassoumi & Safavi 1973* sub *Mycobilimbia lurida* (B, TARI).
- Squamarina lentigera*** (Weber) Poelt – Steiner (1916: 33 as *Lecanora lentigera*); Szatala (1957: 134 as *Squamaria lentigera*, incl. var. *deserti*); Weber (1964: 5 as *L. lentigera*); Vězda (1974, *Lich. Sel. Exs. 1216*); Riedl (1979: 220). – KHORASAN: Torghabeh towards Noghdar, 1450 m, 1.5.2003, *Haji Moniri 1537* (B, FUMH). KHUZESTAN: C. 62 km on the road from Ramhormoz to Behbahan, 221 m, 16.11.2002, *Maassoumi & Safavi 1749* (B, TARI).
- \****Staurolemma omphalarioides*** (Anzi) P. M. Jørg. & Henssen – MAZANDARAN: Ramsar, towards Janat rudbar, 1000 m, 2.4.2003, *Maassoumi 2134* (B, TARI).
- Staurothele ambrosiana*** (A. Massal.) Zschacke – Steiner (1916: 24); Szatala (1957: 106 as *Endocarpon ambrosianum*).
- Staurothele clopima*** (Wahlenb.) Th. Fr. – Müller (1892: 159); Szatala (1940: 521 as *S. clopima* f. *protuberans*); Szatala (1957: 106 as *Endocarpon clopimum*).
- Staurothele clopima* f. *protuberans* (Schaer.) J. Steiner = *Staurothele clopima*
- \****Staurothele hymenogonia*** (Nyl.) Th. Fr. – KUHGIUYE O BOIRAHMAD: C. 30 km on the road from Yassuj to Semirom, 1850 m, 17.11.2002, *Maassoumi & Safavi 1837* (B, TARI, herb. Seaward 112788).
- Staurothele orbicularis*** var. *orientalis* J. Steiner – Steiner (1910: 212\*); Szatala (1957: 106).
- Sticta pulmonaria* (L.) Birola = *Lobaria pulmonaria*
- Tephromela atra*** (Huds.) Hafellner – Weber (1964: 5 as *Lecanora atra*).

*Thalloidima (Thalloeadaema) coeruleonigricans* (Lightf.) Poetsch = *Toninia sedifolia*

*Thalloidima granulosa* Szatala = *Toninia weberi*

*Thalloidima rechingeri* Szatala = *Catillaria* cf. *chalybeia*

*Thrombium corticolum* J. Steiner – Steiner (1910: 212\*); Szatala (1957: 103).

*Thrombium stereocarpum* J. Steiner – Steiner (1896: 444\*); Magnusson (1940: 21); Szatala (1957: 102).

*Thyrea arabica* (Müll. Arg.) Zahlbr. = *Peccania arabica*

*Thyrea pulvinata* (Schaer.) A. Massal. = *Lichinella iodopulchra*

*Thyrea pulvinata* var. *schleicheri* (Hepp) Arnold = *Lichinella iodopulchra*

*Tichothecium calcaricola* (Mudd) Arnold = *Endococcus rugulosus*

*Tichothecium erraticum* A. Massal. = *Muellerella lichenicola*

*Tichothecium pygmaeum* Körb. = *Muellerella pygmaeum*

*Toninia aromatica* (Sm.) A. Massal. – Steiner (1896: 441 as var. *acervulata*); Szatala (1957: 116).

*Toninia aromatica* var. *acervulata* Th. Fr. = *Toninia aromatica*

*Toninia candida* (Weber) Th. Fr. – Oxner (1946: 82). – GOLESTAN: Golestan, 650 m, 14.12.2001, Sohrabi 24 (herb. Seaward 111664); Golestan forest, 925 m, 21.1.2003, *Maassoumi & Safavi 1971* (B, TARI). KHORASAN: Road of Mashhad to Kalat, Ortokand, 1365 m, on soil, 17.9.2002, *Haji Moniri 1492* (FUMH).

\**Toninia cinereovirens* (Schaer.) A. Massal. – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2087* (B, TARI).

*Toninia coeruleonigricans* (Lightf.) Th. Fr. = *T. sedifolia*

\**Toninia diffracta* (A. Massal.) Zahlbr. – ESFAHAN: Ghohrud, c. 10 km on the road to Kashan, Shahsavaran pass, 2031 m, on rock, 18.11.2002, *Maassoumi & Safavi 1862* (B, TARI, herb. Seaward 112790). GOLESTAN: C. 20 km on the road from Eslamabad to Ashkane, 615 m, on calcareous rock, 21.1.2003, *Maassoumi & Safavi 1964* (B, TARI); Maraveh-Tappeh, c. 8 km towards Ghazan Ghayeh, 170 m, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1916, 1929* (B, TARI). KHORASAN: Road from Kashmar to Neishabour, 15 km N of Kashmar, 1400 m, on soil, 10.4.2002, *Haji Moniri 1453a, 1453b* (B, FUMH). KUHILUYE O BOIRAHMAD: C. 30 km on the road from Yassuj to Semirum, 1850 m, 17.11.2002, *Maassoumi & Safavi 1847* (B, TARI).

\**Toninia physaroides* (Opiz) Zahlbr. – KHORASAN: Road of Mashhad to Kalat, Ortokand, 1365 m, on moss, 17.9.2002, *Haji Moniri 1480a* (B, FUMH).

*Toninia sedifolia* (Scop.) Timdal – Müller (1892: 156 as *Thalloidima coeruleonigricans*); Oxner (1946: 82 as *Toninia coeruleonigricans*); Szatala (1957: 116 as *Thalloeadaema coeruleonigricans*); Weber (1964: 4 as *Toninia coeruleonigricans*); Riedl (1979: 220 as *T. coeruleonigricans*); Timdal (1991: 97). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2084, 2085* (B, TARI); c. 40 km on the road from Aghala to Inch-e Borun, around Alagol Lake, 45 m, on soil, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1890* (B, TARI); Maraveh-Tappeh, c. 8 km towards Ghazan Ghayeh, 170 m, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1924* (B, TARI). KHORASAN: Road of Mashhad to Kalat, Ortokand, 1365 m, on moss, 17.9.2002, *Haji Moniri 1480a* (B, FUMH). KHUZESTAN: C. 62 km on the road from Ramhormoz to Behbahan, 221 m, 16.11.2002, *Maassoumi & Safavi 1748* (B, TARI).

*Toninia taurica* (Szatala) Oksner – Sohrabi (in prep.).

*Toninia weberi* Timdal – Szatala (1954: 133\* & 1957: 117 as *Thalloidima granulosa*); Lamb (1963: 701 as *T. granulosa*); Timdal (1991: 118).

\**Tornabea scutellifera* (With.) J. R. Laundon – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2063, 2064* (B, TARI); on the Maraveh-Tappeh road from Kalaleh, c. 20 km from Chatal towards Ashkhaneh, 846 m, forest margin, 27.1.2003, *Maassoumi, Sohrabi & Safavi 1944, 1946* (B, TARI).

- \**Trapelia coarctata* (Sm.) Choisy – MAZANDARAN: Around Ramsar, 300 m, 14.4.2002, *Maassoumi 1316* (HBG, TARI); Mazandaran-Chalus, roadside forest, 450-600 m, 20.7.2004, *Sohrabi 9173* (herb. Seaward 113091).
- \**Umbilicaria aprina* Nyl. – E AZERBAIJAN: Jolfa-Daran village, Kiamakidagh, 2800-3000 m, on siliceous rock, 26.7.2001, *Sohrabi 26* (herb. Sohrabi, herb. Seaward 111660).
- Umbilicaria cylindrica* var. *tornata* (Ach.) Nyl. – Steiner (1916: 28 as *Gyrophora cylindrica* var. *tornata*); Szatala 1957: 119 as *G. cylindrica* var. *tornata*).
- Usnea articulata* (L.) Hoffm. – Weber (1964: 7). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2051* (B, TARI); Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 2003* (B, TARI).
- Usnea barbata* a. *campestris* = *U. hirta*
- Usnea barbata* b. *hirta* Hoffm. = *U. hirta*
- Usnea hirta* (L.) F. H. Wigg. – Buhse (1860: 240 as *U. barbata* a. *campestris* and *U. barbata* b. *hirta*); Szatala (1957: 141).
- \**Usnea lapponica* Vain. s.l. – GOLESTAN: Kordkooy, 5 km towards Radkan, 300-1800 m, mixed forest, 28.1.2003, *Maassoumi & Safavi 1995* (B, TARI).
- Verrucaria alba* Schrad. = *Acrocordia gemmata*
- Verrucaria buschirensis* J. Steiner – Steiner (1896: 443\*); Szatala (1957: 101); Riedl (1979: 219).
- Verrucaria compacta* (A. Massal.) Jatta – Riedl (1979: 219 as *Dermatocarpon compactum*).
- Verrucaria crassa* (Anzi) Jatta – Müller (1892: 158 as *Endopyrenium crassum*); Szatala (1957: 105 as *Placidium crassum*). – Note: See Breuss (1990: 141) regarding the taxonomic position of this taxon.
- Verrucaria fuscella* (Turner) Winch – Szatala (1957: 102 as *V. glaucina*, probably this). – MAZANDARAN: Mazandaran-Chalus, roadside forest, 450-600 m, 20.7.2004, *Sohrabi 9177* (herb. Seaward 113093).
- Verrucaria fuscula* Nyl. – Szatala (1954: 131\* & 1957: 104 as *Placidium iranicum*); Lamb (1963: 567 as *P. iranicum*); Breuss (1994: 17).
- Verrucaria glaucina* Ach. = *V. fuscella*
- \**Verrucaria lecideoides* Trevisan – LORESTAN: C. 35 km from Boroujerd to Khoramabad, c. 2 km after Dorud deviation, 1632 m, 14.11.2002, *Maassoumi & Safavi 1372* (HBG, TARI).
- Verrucaria lecideoides* var. *minuta* Hepp = *V. minuta*.
- Verrucaria macrostoma* Dufour ex DC. – Müller (1892: 159\* as f. *nigrata*); Szatala (1957: 102 as f. *nigrata*); Szatala (1957: 102).
- Verrucaria macrostoma* f. *nigrata* Müll. Arg. = *V. macrostoma*
- Verrucaria marmorea* (Scop.) Arnold – Sohrabi (in prep.).
- Verrucaria minuta* (Hepp) Zschacke – Szatala (1957: 102 as *V. lecideoides* var. *minuta*).
- Verrucaria nigrescens* Pers. – Müller (1892: 159); Steiner (1896: 437, 440, 443, 445); Szatala (1957: 102). – GOLESTAN: C. 12 km from Aliabad towards Zaringol, 420 m, 29.1.2003, *Maassoumi & Safavi 2060* (B, TARI). MAZANDARAN: Mazandaran-Chalus, roadside forest, 450-600 m, 20.7.2004, *Sohrabi 9149* (herb. Seaward 113100).
- Verrucaria punctiformis*  $\gamma$  *atomaria* Schaer. = *Leptorhaphis atomaria*
- Verrucaria rhypona*  $\gamma$  *aterrima* Schaer. = *Arthopyrenia rhypona*
- Verrucula aegyptiaca* J. Steiner = *Dermatocarpon aegyptiacum*
- Xanthoparmelia conspersa* (Ehrh. ex Ach.) Hale (s.l.) – Weber (1964: 6 as *Parmelia conspersa* s.l.).
- Xanthoria candelaria* (L.) Th. Fr. – Steiner (1910: 242 as *X. lychnea*); Oxner (1946: 83); Szatala (1957: 147).
- ?*Xanthoria ectaneoides* (Nyl.) Zahlbr. – Szatala (1957: 147 as *X. parietina* var. *ectanea*).
- Xanthoria elegans* (Link) Th. Fr. – Müller (1892: 153 as *Amphiloma elegans*); Steiner (1910: 240 as *Caloplaca elegans*); Szatala (1940: 531 as *Gasparrinia elegans*); Szatala (1957: 147); Weber (1964: 7 as *C. elegans*). – ESFAHAN: C. 2 km to Ghohrud from Kamou, 2150 m,



- 18.11.2002, *Maassoumi & Safavi 1849* (B, TARI), 1851 (B, TARI, herb. Seaward 112646). KHORASAN: Road of Mashhad to Kalat, Ortokand, 1365 m, 17.9.2002, *Haji Moniri 1491* (B, FUMH).
- Xanthoria elegans* var. *tenuis* (Wahlenb.) Th. Fr. – Steiner (1910: 241 as *Caloplaca elegans* f. *tenuis*); Szatala (1940: 532 as *Gasparrinia elegans* var. *tenuis*); Szatala (1957: 147 as var. *tenuis*).
- Xanthoria fallax* (Hepp) Arnold – Szatala (1957: 147 as *X. substellaris*). – GOLESTAN: On the Maraveh-Tappeh road from Kalaleh, c. 20 km from Chatal towards Ashkhaneh, 846 m, forest margin, 27.1.2003, *Maassoumi, Sohrabi & Safavi 1950* (B, TARI).
- Xanthoria fulva* (Hoffm.) Poelt & Petutschnig – Sohrabi (in prep.).
- Xanthoria lychnea* (Ach.) Th. Fr. = *X. candelaria*
- Xanthoria parietina* (L.) Th. Fr. – Buhse (1860: 241 as *Parmelia parietina*  $\alpha$  *vulgaris*); Szatala (1957: 147); Weber (1964: 7) – GOLESTAN: Golestan forest, 925 m, on *Quercus macranthera* tree, 21.1.2003, *Maassoumi & Safavi 1974, 1976* (B, TARI); Maraveh-Tappeh, c. 8 km towards Ghazan Ghayeh, 170 m, 26.1.2003, *Maassoumi, Sohrabi & Safavi 1915* (B, TARI); Maraveh-Tappeh, on the pass towards Ghapan, 800 m, on scattered dwarfshrubs, 27.1.2003, *Maassoumi, Sohrabi & Safavi 1936* (B, TARI). MAZANDARAN: Zirab, Amlak Valley, on tree bark, 6.10.2003, *Valad Beigi 23* (B, SBUH).
- Xanthoria parietina* var. *ectanea* (Ach.) Kickx = *X. ectaneoides*?
- Xanthoria persica* (J. Steiner) Szatala = *Caloplaca persica*
- Xanthoria polycarpoides* J. Steiner = *Caloplaca polycarpoides*
- Xanthoria polycarpoides* var. *persica* J. Steiner = *Caloplaca persica*
- Xanthoria steineri* Lamb – Vězda (1974, *Lich. Sel. Exs. 1249*).
- Xanthoria substellaris* (Ach.) Vain. = *X. fallax*

## Discussion and conclusions

Since the first accounts of lichens from Iran were published, general knowledge of lichen taxonomy has increased considerably and as a consequence the delimitation of many taxa has changed. Therefore the identity of many literature reports for Iran is uncertain, and a re-examination of the underlying specimens would be required to assess their correct position. Thus the synonymies in the above list are often tentative, assuming that the underlying material is correctly identified after current interpretations. Taxa not confirmed by observations after 1970 are often doubtful.

Of particular concern are the infraspecific taxa. Such taxa have been used extensively to describe morphological variation of uncertain taxonomic value in the first half of the 20th century. Currently, formal taxonomy is mostly restricted to variation that is likely to reflect genetic differences; this is usually given specific value, and infraspecific taxa are scarcely used. Accordingly, the current taxonomic position of many infraspecific taxa reported from Iran is uncertain and in the above list they have been included in the pertinent species unless indications for the contrary exist.

As the list shows, currently 396 species of lichenized fungi, lichenicolous fungi and related taxa are known for Iran; this includes 97 species that are newly reported. The high number of new reports clearly indicates that the lichen flora is still incompletely investigated and that the number of species actually occurring in Iran is very much higher. An indication is the report of about 350 taxa from a single mountain range in adjacent Azerbaijan by Barkhalov (1975). In view of the presence of several mountain chains rising up to 5000 m and of very humid montane forests as well as deserts in Iran, it seems more than likely that over 1000 species are present in the country.

The checklist contains many lichens widespread in Europe and temperate Asia, and suggests that this is the main phytogeographical element in the Iranian lichen flora. However, it may be over-represented, because the pertinent lichens are much better known and more easily identified.



able. Nevertheless some predominantly European species, such as *Opegrapha vermicellifera*, seem to have their eastern limit in Iran.

In general, species known only from SW Asia are poorly known and the possibility cannot be excluded that many of them will end up as synonyms of more widespread species. This concerns in particular the listed 61 taxa based on Iranian type specimens: they should not be interpreted as a sign of a specialized flora rich in endemic species, but rather as a result of poor knowledge.

Of particular interest is the presence of species that are unknown or very rare in Europe but common in eastern North America and East Asia, such as *Ramalina sinensis* and *Myelochroa aurulenta*. Particularly remarkable is *Pyrenula subelliptica*, which has its main range in eastern North America and appears to be absent from elsewhere in Eurasia, and *Cladonia awasthiana*, recently described from the Himalayas (Ahti & Upreti 2004). Such examples show that a study of the lichen flora of Iran is very promising from a phytogeographical point of view.

The authors appreciate the incompleteness of the above list: their intention is to produce a baseline on which to build our knowledge of a hitherto unworked, but promising, lichen flora. The first three authors acknowledge the current work being undertaken by several enthusiastic Iranian lichenologists who will undoubtedly add considerably to our currently limited understanding of the Iranian flora.

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