

The lichenized and lichenicolous fungi of Afghanistan

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Abstract. The study is based on a comprehensive evaluation of 87 publications concerning reports from Afghanistan and a critical revision of herbarium specimens. Two hundred and thirty eight taxa (230 species with 8 varieties) of lichenized fungi, and 16 species of lichenicolous fungi are listed with their citations or localities in the case of new records for the country or for provinces. New for Afghanistan are *Acarospora bicolor*, *A. interrupta*, *Caloplaca monacensis*, *C. stillicidiorum* var. *muscorum*, *Collema furfuraceum*, *Endocarpon pusillum*, *Gloeoheppia turgida*, *Gyalolechia bracteata*, *Heteroplacidium fuscum*, *Lecanora horiza*, *Lecidea laboriosa*, *Melanohalea elegantula*, *Myriolecis semipallida*, *Peltula bolanderi*, *P. obscurans* var. *obscurans*, *P. obscurans* var. *deserticola*, *P. polyspora*, *P. radicata*, *Physconia americana*, *P. perisidiosa*, *Phaeophyscia hirsuta*, *Placidium pilosellum*, *P. rufescens*, *Sarcogyne praetermissa*, *S. pusilla*, *S. urceolata*, *Scytinium fragrans*, *Staurothele areolata*, *Umbilicaria virginis*, *Xalocoa ocellata*, *Xanthoparmelia neodelisei*, and the lichenicolous fungus *Acarospora subfuscescens*.

Key words: Central Asia, checklist, geo-ecology, lichen herbarium Maximilian Steiner, new records

Introduction

This study lists lichenized and lichenicolous fungi from 87 references. Up to now, current checklists and catalogues dealing with lichenized fungi of the surrounding countries have been compiled, namely those of Iran (Seaward et al. 2008, update in process by M. Sohrabi), Pakistan (Aptroot & Iqbal 2012), Tajikistan (Kudratov & Mayrhofer 2002), and Xinjiang Province, China (Tumur et al. 2021).

Natural regions

Afghanistan lies in the SW of the Asian continent with an area of 652,089 km² (Shank 2006) between 29°30'–38°30'N latitude and 60°30'–74°50'E longitude. Afghanistan is a very mountainous country. Glaciated ranges and peaks

of the Hindu Kush rise up to more than 7,000 m, along with other high mountains, deeply eroded valleys, high plateaus, inter-montane basins and wide pediments, hilly deserts characterize the general topography. The mountains are surrounded by steppes, semideserts and deserts in the S, SW and N.

Five major natural landscape units can be distinguished:

1. The high mountains of Hindu Kush over 4,500 m (>700 mm mean annual rainfall).

2. The mountainous regions of central Afghanistan including Koh-e Baba, Ferozkoh, Paropamesus, and Tirbande Turkistan: 4,500–1,250 m (700–200 mm mean annual rainfall).

3. The hilly semidesert and steppe regions of the SW, NW and those of N Afghanistan between 1,250 and less than 500 m (100–200 mm mean annual rainfall).

4. The arid desert-lowlands of southwestern Afghanistan between 1,000 and about 500 m (<100 mm mean annual rainfall).

5. A narrow strip at the eastern part of the country under the influence of the Indian summer monsoon where a secondary maximum of rainfall occurs (200 to more than 1,000 mm mean annual precipitation). The basins of Jalalabad and Laghman are located within this summer rain area (<500 mm annual precipitation).

About half of Afghanistan is at altitudes of over 2,000 m. The highest point of the country lies in the

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main peak of E Hindu Kush (Nowshaq, 7,485 m) on the Afghan-Pakistan border. Afghanistan also has a share of the Tajik Pamir plateau in the Wakhan, part of the province Badakhshan.

Hindu Kush is one of the huge high mountain ranges of Afghanistan. The greater part of the eastern Hindu Kush is glaciated. The eastern Hindu Kush sends long glaciers downwards to the valleys from the nival elevational belt. In the Afghan central mountains, only a few of these snow patches survive the extreme daily solar radiation in summer. The recently glaciated high mountain regions of the Hindu Kush and the nival belt of Koh-e Baba receive their main rainfall in spring and winter. Rather large areas of rocks and blocks become snow free in summer, and are covered almost totally by microphytic crusts and various lichens. Here, the lichens are the dominant autotrophic organisms.

Geology

The geology of Afghanistan is very complex (Wolfart & Wittekindt 1980; Rafiqpoor & Breckle 2010; Quraischi 2014; Siehl 2017). Large areas of the northern Afghan-Tajikistan block are composed of carbonate rocks (limestones, dolomites, gypsum, etc.). These rock formations, which are of Mesozoic age, are also accompanied here and there with volcanites and plutonites. All of these rock types represent good bases for the settlement of lichens.

Afghanistan's position on the western end of the Himalayan orogenic belt consists of a number of separated tectonic blocks with its own geologic history (Siehl 2017). Two clearly defined tectonic lineaments (Moqor-Chaman and Hari Rod-Panjshir Line) divide the country into three main blocks:

1. N-Afghan-Tajikistan block,
2. E-Iran-C Afghan block and
3. E Afghan-Pakistan block.

Block-movements persist till today and occur regularly in Turkey, Iran and Afghanistan with devastating earthquakes.

Terrestrial deposits filled the basins of central Afghanistan with syn-orogenic sediments (Molasse Interior), such as the red conglomerates of Bamyan. In southeastern Afghanistan, the Cretaceous formation is evident in the thick deposits of slates and limestones, which are known from the area between Khost and Tangi Gharu.

In the Hindu Kush in the middle Tertiary, powerful tectonic events took place, as shown by intensive folding of young sediments and the syn- and post-orogenic magmatism and plutonism (Salang granite).

Soils

The usable agricultural land is only 80,450 km² (~12.3% of the whole surface) compared with the total area of the country 652,089 km². The fertile soils are concentrated either in large valleys and inter-montane basins or on large alluvial fans, especially in N Afghanistan.

The widespread dry climates in Afghanistan and the lack of vegetation cover and/or their extremely high

degradation leads to steady soil degradation through soil erosion caused by torrential heavy rains (Sivall 1977; Rathjens 1978), by soil out-wash, by aeolian processes, and not least through a variety of anthropogenic activities. For more information about soils see Breckle & Rafiqpoor (2010).

Climate

The climate of Afghanistan has great importance for the spatial differentiation of the vegetation (and thus agriculture and forestry).

Afghanistan lies in the sub-tropical dry winter-rain zone of the Old World. Its climate is significantly influenced by its high mountain character. Over the course of the year, the atmospheric circulation is dominated by two great supra-regional systems (Breckle & Rafiqpoor 2022).

In summer, the eastern parts of Afghanistan come under the influence of the tropical monsoon circulation. The rainfall is dynamically caused by the arrival of monsoon disturbance with SW winds from the Indian Ocean when the moist air layer increases. The results are a vigorous convection, cloud formation and, in some years, heavy rainfall. The influence of monsoon disturbance rather regularly reaches up to the Kabul- and sometimes to the Koh-e Daman basin.

Precipitation

The small amount of precipitation throughout the country is a fundamental characteristic, as well as its high variability. It may be concentrated to just a few days in the rainy season.

Besides the atmospheric circulation, the mountains in Afghanistan determine the spatial distribution pattern of precipitation. The data of meteorological stations of Afghanistan do not really give an exact picture on the hygric conditions of the neighboring mountainous regions because all stations are located in the valleys and therefore, due to their location in the rain shadow, are much drier than the surrounding mountainous areas, with the exception of stations at the Salang-pass (Fig. 1).

In the desert areas around Sistan in southwestern Afghanistan, the mean annual precipitation is generally less than 100 mm (Zaranj: 59 mm; Darweyshan: 91 mm). The semi-deserts of south western and northern Afghanistan receive about 100–200 mm annual precipitation (Kandahar: 162 mm; Girishk: 168 mm; Mazar-e Sharif: 183 mm). The 100-mm isohyete generally marks the boundary between desert and semidesert regions in southwestern Afghanistan. The markedly desert areas with sand dunes are located in the provinces of Nimroz, such as Registan, and those with mainly clay deposits in the province Kandahar, such as Dasht-e Margo. The dune landscapes are shaped by strong S and SW winds from the high-pressure cell caused by the high summer heat.

For plant life, as well as for land-use, the rainfall at the two opposite mountain slopes is important, though even more important is their seasonal distribution. In the Kohistan basin, the precipitation amounts culminate in

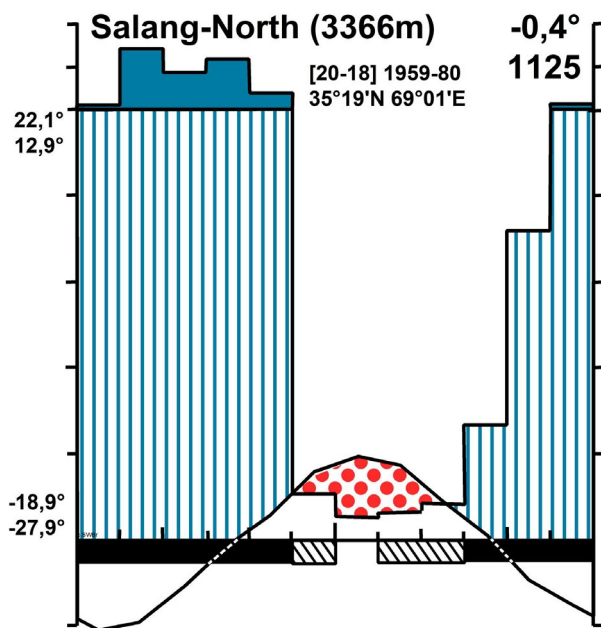


Figure 1. Ecological climate diagrams of N and S Salang pass as example for mountainous regions of Afghanistan.

April and the few rain events in May fall only as remnants of the spring rains. On the N-facing slopes of the Hindu Kush, however, precipitation is prolonged into June.

In the crest regions of Koh-e Bâbâ, Pâropâmesus and Ferozkoh, there is higher precipitation of ≥ 600 mm per year. At the main summit of the Koh-e Bâbâ (Shah Fuladi: 5,049 m, Breckle & Rafiqpoor 2021) and other high peaks of the mountainous region of central Afghanistan, the snow cover lasts in the north-exposed cirques until late summer.

The central part of the Jalalabad basin is quite dry, with an annual rainfall of $\sim < 250$ mm, because the Safed Koh in the south shields the basin against the rain-bearing winds of the shallow summer monsoon front. The surrounding mountains of Jalalabad basin have significantly higher rainfalls, as the forest-cover indicates. The combination of the cyclonal winter and monsoon summer rains in the mountainous regions of east Afghanistan gives favorable conditions for the growth of a dense vegetation cover of Mediterranean type and Himalayan forests. Conifer forests of Himalayan nature (*Cedrus deodara*) are therefore found on the S slopes of both the Hindu Kush and the Safed Koh over a xerophytic deciduous Mediterranean forest belt of *Quercus baloot* (Freitag 1971a; Freitag et al. 2010).

Temperature

The temperature, its annual variability and altitudinal zonation determine the living conditions of the people, the rhythm of land use, and the life cycle of natural vegetation.

The amplitude between the absolute maximum temperature in summer and the absolute minimum in winter is highly pronounced. The highest absolute maximum air temperature in Afghanistan was measured in Zaranj (+51°C) in the province of Nimroz and the lowest absolute minimum air temperature in Panjao (−52.2°C) in central

Afghanistan (Breckle 2004). Even if these data are not based on long-term observations, they make the following clear: with large fluctuations between the thermal maxima of the warmest and the minima of the coldest month, the climate of Afghanistan is highly seasonal and continental, exhibiting a range of more than 100°C. Even the monthly means of the coldest and the warmest months exhibit a big variation and indicate a strong continentality.

For a thermally high-continental region like Afghanistan where almost all the year round there is very low relative humidity, if a dry adiabatic temperature gradient of 0.7–1.0°C pro 100 m would be taken into account, the altitudinal zonation of temperature corresponds very well with the distribution and altitudinal zonation of the natural vegetation.

Flora and biodiversity

Though Afghanistan is a rather arid country with extensive deserts and semi-deserts, the number of vascular plant species is higher than in the more humid C European countries which offer more favorable conditions for plant growth (Heywood & Watson 1995). As everywhere, the amount and seasonal distribution of precipitation and the altitude determine the distribution patterns of the country's flora and vegetation. Thus, diverse ecological conditions, ranging from hot deserts and humid subtropical regions to high alpine regions, have favored the establishment of a complex and varied flora and vegetation. However, the composition of the flora and the vegetation structure is also greatly influenced by a long history of over-exploitation which has led not only to the almost complete loss of forests, but also to widespread degradation of formerly rich woodland and semi-desert ecosystems. Grazing by sheep and especially goats, as well as cutting of trees and uprooting of shrubs and even dwarf shrubs have not only greatly reduced the coverage of the vegetation, but also changed its composition and floristic diversity.

The rich Afghan vascular flora comprises more than 5,000 taxa, about 4,840 species; the degree of endemism is 24% (Table 1). Bryophytes and lichens are less rich, though knowledge of those groups is sparse (Breckle et al. 2013; Kürschner et al. 2020) or even nil, as in fungi (except lichenicolous fungi) and algae.

The species numbers with increasing altitude show a decreasing trend, which is known from many countries (Breckle 1981; Lauer et al. 2001; Agakhanjanz & Breckle 2002; Körner 2021), at least for the upper mountain regions of Afghanistan. This is true for Angiosperms, Gymnosperms and Ferns, as well as for Bryophytes. According to H. Roemer in Poelt & Wirth (1968), lichens have their optimum between 3,200 and 3,800 m in Wakhan which belongs to the province Badakhshan.

Vegetation

Except for some weeks from spring to early summer, excluding the irrigated areas which cover about 5% of the country's surface and the few areas of forest, the plant cover of Afghanistan looks poor and rather uniform. When

Table 1. Number of plant families, genera, species, taxa and endemics in the Afghan flora (acc. to Breckle et al. 2013; Kürschner et al. 2020).

Plant group	Number of families	Number of genera	Number of species	Number of taxa	Number of endemics + subendemics
Dicotyledons	106	860	3940	4120	1138
Monocotyledons	28	195	818	841	75
Gymnosperms	4	8	24	24	2
Pteridophytes	11	23	50	56	0
Bryophytes (s.l.)	41	104	253	269	11
Lichens	–	63	230	238	1
Fungi	–	–	–	–	–
Algae	–	–	–	–	–

seen from a distance, plant life appears to be almost completely absent for most of the year, and the monotonous grey or brown color of the landscape seems to be caused by the barren soil or rock surfaces. This is caused by the strongly seasonal and predominantly semi-arid climate in combination with the long-lasting destructive influence of man on the plant cover.

The main broadly defined vegetation types are based on the “potential natural vegetation” (a hypothetical vegetation as it would exist without the influence of man in natural habitats) and on the 4-year long country-wide survey by Freitag (1971a, b; Freitag et al. 2010), slightly modified by Breckle (2007). Recently a survey on the Fuladi-region was published (Breckle & Rafiqpoor 2021).

The vegetation of the country is very diverse because of the highly mountainous character of the country. The common rocky sites, as well as the wide scree-covered slopes or naturally eroding slopes in weak marly

sediments, have their own peculiar plant communities. As a result of their geographic or topographic isolation, these communities, made up of highly specialized plant species, are particularly rich in localized endemics. The main zonal vegetation categories on normal ecological sites are shown in Fig. 2 (categories #1 to #8). Those with the predominant influence of one ecological factor, namely additional water supply or salinity (river valleys, lakes, swamps and saline flats), are summarized in Fig. 2 under category #9. They represent azonal vegetation types. In these regions, the climate is less influential than ecological factors (water, salt, gypsum, heavy metals, etc.).

The dry lowland and hilly regions are the most important grazing areas in winter and spring. Additionally, in good years, large quantities of hay fodder and fuel are collected and stored in large haystacks around the winter camps of nomads, or brought into the villages. They may harbor many drought-resistant bryophytes (e.g.,

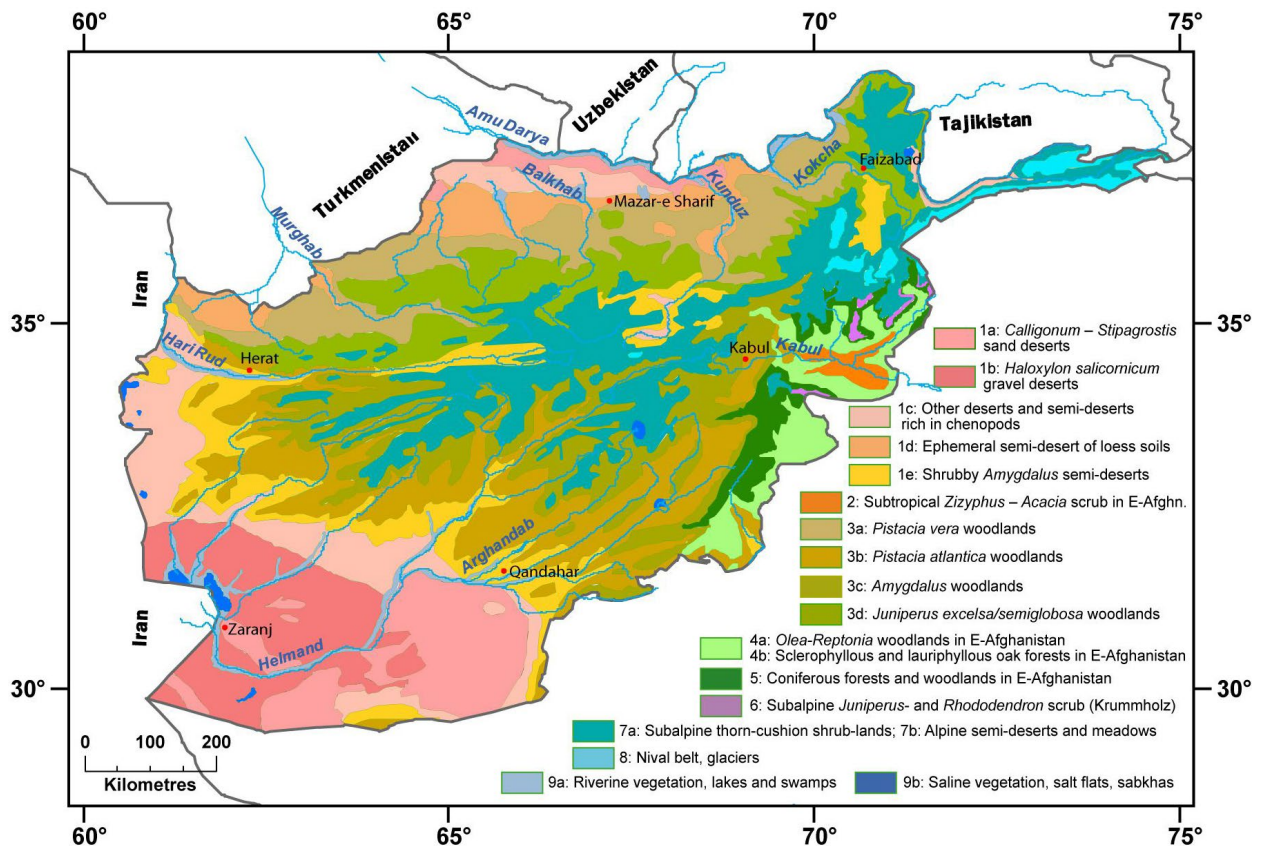


Figure 2. Potential natural vegetation of Afghanistan (modified from Freitag 1971a).



Figure 3. Loess surface in N Afghanistan near Balkh with lichen cover of squamulose lichens (*Placidium* sp.div.) between small *Carex stenophylla* tufts (Photo: Robinette).

Pottiaceae of “harsh environments”, *Bryaceae*) that grow below the subshrubs, together with cyanobacteria and lichens. On untouched surfaces of loess, lichens can slowly colonize the surface and become visible by forming small squamules (Fig. 3).

Within the shrubs and dry forest vegetation, microphytic crusts on the soil surface with lichens and mosses are also common (Kürschner et al. 2020). Frequent on rocks are saxicolous species, such as *Grimmiaceae* (e.g., *Grimmia* spp., *Schistidium* spp.) and crustose, squamulose and foliose lichens (Fig. 4). Also, on branches and twigs of some shrubs and trees occasionally lichen thalli can be observed.

In the wettest parts of Nuristan, from the timber-line at 3,200 to 3,300 m up to ~4,000 m, *Abies spectabilis*, *Picea smithiana* and *Quercus semecarpifolia* are replaced by a subalpine *Juniperus squamata* community and *Rhododendron* scrub (Krummholz). Dew in the morning is common and thus mosses and lichens are favored (Breckle & Rafiqpoor 2010).

The alpine meadows are characterized by various grasses and *Cyperaceae*. Due to steep topography, delayed soil formation, and the locally long-lasting snow cover, even small areas might show a high diversity of plant communities. Vast stretches look almost devoid of vegetation as they consist of rocks, blocks and scree.

A coherent nival belt occurs only in the highest parts of the Pamirs, the Hindu Kush and the Koh-e Baba range (Breckle & Rafiqpoor 2020), albeit exhibiting also open rocky surfaces.

Lichenological exploration

The earliest lichen records from Afghanistan were listed by Magnusson (1937) based on specimens collected by

G. Kerstan during the German Hindukusch Expedition in 1935. Riehmer (1938) published a list of Kerstan’s lichens. Poelt & Wirth (1968) processed the samples of the German Wakhan-Expedition in 1964. Most of the lichens were collected by H. Roemer. Two additional lichen records from high altitudes of Mir Samir NE of Kabul are thanks to Oliver Gilbert. The famous Austrian plant taxonomist and editor of the impressive *Flora Iranica* Karl Heinz Rechinger collected some lichens during his research expeditions in 1962 (specimens in W), 1965 and 1967 (dupla of specimens given to Josef Poelt are kept in GZU). The French ecologists M. Jacquemin-Roussard and G. Kilbertus collected lichens in the province Bamyan 1969 (Jacquemin-Roussard & Kilbertus 1971). Maximilian Steiner was the only lichenologist who visited the country in 1970 in connection with an exchange professorship at the University of Kabul. He carried out lichenological field work especially around Kabul and neighboring provinces from April until July 1970. He was not able to visit the forests of Paktia and Nuristan because of blocked/destroyed roads caused by heavy rainfalls during the monsoon (Steiner & Poelt 1986a). Therefore, the knowledge especially of the corticolous foliose and fruticose lichens is lacking. They are only represented by very few species collected by H. Freitag, G. Kerstan, and D. Podlech. M. Steiner was supported by his son in law, the plant taxonomist Dieter Podlech, who collected specimens in the years 1965, 1969, 1970, 1971, 1977 and 1978 and contributed them to his lichen herbarium. Also A. Dieterle, a student of Podlech, collected lichens in 1970 for M. Steiner as the ecologist Otto Heinrich Volk during 1971, and the vegetation ecologist Siegm-W. Breckle in 1966–1969 and 1976. M. Steiner died in 1988. His lichen herbarium is the most important collection of Afghan lichens. It was transferred to the lichen herbarium



Figure 4. Dense cover of crustose and subfoliose lichens in the subalpine zone on rocks near Shatu-Kotal (Yakaulang), Prov. Bamyan (photo: T. Poyesh, 20.09.2020).

at the University of Graz (GZU) in 1994. Based mainly on his herbarium samples M. Steiner published several contributions in collaboration with Josef Poelt and one with Helmut Mayrhofer (Poelt & Steiner 1971; Steiner & Poelt 1984, 1986a, 1987b; Steiner & Mayrhofer 1987). M. Steiner and Josef Poelt also distributed the exsiccatum *Lichenotheca Afghanistanica* in three fascicels with 78 numbers (Steiner & Poelt 1986b, 1987a, 1988). Perti Uotila (Helsinki) was a member of the Finnish Botanical Expedition to Western-Central Asia in 1972 and collected some lichens. The young biologist Herbert Huss (at that time in Graz) was a member of the Austrian Research Venture in 1975 to Wakhan-Pamir. His specimens were determined by Josef Poelt and published in Huss (1978).

Table 2 shows the number of recorded taxa from the provinces of Afghanistan. It is worth mentioning that no records exist from the large provinces of Farah, Nimruz, Helmand and Kandahar in the west and southwest of the country. Badakhshan in the north with the Wakhan region is the best investigated province followed by the central provinces of Kabul, Paktia and Bamyan.

The first checklist of the country by Feuerer (2006, 2007) was based on the evaluation of 14 papers including 208 taxa of lichenized and lichenicolous fungi.

Methods and arrangement of the updated checklist

The genera and species within each genus are arranged alphabetically. For each taxon, the citations are given in chronological order arranged according to the provinces. New records for Afghanistan or provinces are based on revised herbarium material from GZU by experts which are either co-authors or mentioned after the citation of the taxon. The nomenclature follows Nimis (2023), except for

the genus *Caloplaca*. For taxa not occurring in Italy, other modern treatments are used. In the case of nomenclatural changes, citations are followed by the name used in the original publication in brackets.

Lichenized Fungi (Lichens)

Acarospora altissima H. Magn.

Kabul (Riehmer 1938: 20);

Nuristan (Magnusson 1937: 94–95; Riehmer 1938: 20, Braun & Stordeur 2001: 2).

Acarospora assimulans Vain.

Badakhshan (Poelt & Wirth 1968: 227).

Acarospora bicolor Vain.

Ghazni: Dasht-i-Nawar, 33°31'N, 67°42'E, 3120–3200 m, 16.8.1976, S.W. Breckle (GZU).

Acarospora bohlinii H. Magn.

Badakhshan (Poelt & Wirth 1968: 227);

Baghlan (Steiner & Poelt 1988: 10).

Acarospora brevilobata H. Magn.

Paktia (Steiner & Mayrhofer 1987: 323; Steiner & Poelt 1988: 10).

Acarospora cervina A. Massal.

Ghorat: Mollah Allah, 12 km SW Taiwara, 33°30'N, 64°24'E, ~2200–2300 m, 29.7.1962, K.H. Rechinger (W);

Kabul (Magnusson 1937: 96; Riehmer 1938: 20);

Kunar: oberhalb Kamdesch, 35°24'N, 71°21'E, 2000 m, D. Podlech (GZU);

Kunduz (Poelt & Wirth 1968: 226);

Nuristan (Riehmer 1938: 20);

Samangan: ~15 km W des Passes Kotal-i-Mirza Atbili

Table 2. Number of taxa from the Afghan provinces.

Afghan province	Lichens	Lichenicolous fungi	Total
Badakhshan	83	7	90
Badghis	0	–	–
Baghlan	31	1	32
Balkh	4	–	4
Bamyan	55	2	57
Dehkundi + Urozgan	7	1	8
Jozjan + SarePul	0	–	–
Farah	0	–	–
Faryab	6	–	6
Ghazni + Paktika	13	–	13
Ghorat	7	–	7
Helmand	0	–	–
Herat	1	–	1
Kabul	73	7	80
Kandahar	0	–	–
Kapisa	1	–	1
Kunar	14	1	15
Kunduz	11	–	11
Laghman	0	–	–
Logar	3	–	3
Nangahar	9	1	10
Nimruz	0	–	–
Nuristan	41	–	41
Paktia, Khost	67	4	71
Parwan + Panshir	42	–	42
Samangan	29	1	30
Takhar	7	–	7
Wardak, Maidan	5	–	5
Zabul	6	–	6

(Kotal-i-Rabotak), ~10 km E Aybak, 36°13'N, 68°08'E, 1170 m, 5.6.1970, M. Steiner (GZU).

Acarospora glypholecioides H. Magn.

Badakhshan (Huss 1978: 186);

Paktia: Gardez, in jugo Sata Kandao, inter Gardez, 33°37'N, 69°09'E, 2740 m, et Khost, 33°22'N, 70°01'E, 1080 m, 8.7.1965, K.H. Rechinger (GZU).

Acarospora interrupta (Ehrenb. ex Nyl.) Vain.

Ghazni: Dasht-i-Nawar, 33°31'N, 67°42'E, 3120–3200 m, W-seitiger Hang, 16.8.1976, S.W. Breckle (GZU);

Zabul: Passhöhe 20 km NW Shenkay, an der Straße von Qualat-Ghilzai nach Shenkay, 32°05'N, 67°10'E, 2170 m, 25.3.1970, M. Steiner (GZU).

Acarospora cf. *invadens* H. Magn.

Badakhshan (Poelt & Wirth 1968: 240, sub *Lecanora subcaesia*).

Acarospora lavicola J. Steiner

Paktia (Steiner & Poelt 1984: 560–562; Steiner & Poelt 1986b: 6).

Acarospora nodulosa (Dufour) Hue

Nuristan (Magnusson 1937: 96).

Acarospora rosulata (Th.Fr.) H. Magn.

Badakhshan (Poelt & Wirth 1968: 227; Mayrhofer 1984: 463; Steiner & Mayrhofer 1987: 324, all as *Acarospora rufà*);

Baghlan: oberes Darrah-i-Kayan, beim Dorfe Dahane Ah-anfalad, 35°39.5'N, 68°26'E, 2150 m, 7.6.1970, M. Steiner (GZU);

Bamyan (Steiner & Mayrhofer 1987: 324, as *Acarospora rufà*);

Ghazni: ad marginem orientalem altoplanititei Dasht-i-Nawar, 3000 m, 18.7.1967, K.H. Rechinger (GZU);

Nuristan: Bashgal-Quelltäler, Suengal-Tal, 35°55.5'N, 71°12'E, 3600 m, 2.9.1969, D. Podlech (GZU);

Paktia: Gardez, in jugo Sata Kandao, inter Gardez, 33°37'N, 69°09'E, 2750 m, et Khost, 33°22'N, 70°01'E, 1080 m, 8.7.1965, K.H. Rechinger (GZU).

Acarospora rufoalutacea (Harm.) H. Magn.

Afghanistan (Poelt & Wirth 1968: 227).

Acarospora sinopica (Wahlenb.) Körb.

Badakhshan (Poelt & Wirth 1968: 226).

Acarospora stapfiana (Müll.Arg.) Hue

Bamyan (Poelt & Steiner 1971: 168–169; Steiner & Poelt 1984: 566; Steiner & Poelt 1986b: 4, as parasite on *Caloplaca trachyphylla*; Steiner & Mayrhofer 1987: 322);

Ghazni: Dasht-i-Nawar, 33°31'N, 67°42'E, 3120–3200 m, 16.–17.8.1976, S.W. Breckle (GZU);

Logar (Poelt & Steiner 1971: 169, Steiner & Poelt 1984: 566; Steiner & Poelt 1986b: 4, as parasite on *Caloplaca trachyphylla*);

Paktia (Steiner & Poelt 1984: 566; Leuckert & Buschardt 1978: 811);

Parwan (Poelt & Steiner 1971: 168; Steiner & Poelt 1984: 566).

Acarospora strigata (Nyl.) Jatta

Bamyan (Poelt & Wirth 1968: 226, 252).

Note: *Acarospora strigata* s.str. is endemic to South America according to Knudsen et al. (2023: 88).

Acarospora suprasedens H. Magn.

Badakhshan (Poelt & Wirth 1968: 226, 237).

Anamylopsora pulcherrima (Vain.) Timdal

Badakhshan (Poelt & Wirth 1968: 246, 247 and 256, as *Lecidea pulcherrima*).

Anaptychia desertorum (Rupr.) Poelt – syn.

Anaptychia ulotricoides (Vain.) Vain.

Note: The correct spelling is *ulotricoides* and not *ulotrichoides*!

Badakhshan (Poelt & Wirth 1968: 229; Poelt & Wunder 1970: 461; Steiner & Poelt 1986a: 222, all as *A. ulotrichoides*);

Baghlan (Steiner & Poelt 1986a: 221; Steiner & Mayrhofer 1987: 321, both as *A. ulotrichoides*); Bamyan (Steiner & Poelt 1986a: 221, as *A. ulotrichoides*);

Faryab (Steiner & Poelt 1986a: 221, as *A. ulotrichoides*);

Kabul (Peveling & Poelt 1974: 640; Steiner & Poelt 1986a: 221; Steiner & Poelt 1986b: 8; Steiner & Poelt 1988: 8, all as *A. ulotrichoides*; Hollinger et al. 2022: 582);

Kunduz (Poelt & Wirth 1968: 228, 255; Steiner & Poelt 1986a: 220, both as *A. ulotrichoides*);

Nuristan (Steiner & Poelt 1986a: 221, as *A. ulotrichoides*);

Paktia (Steiner & Poelt 1986a: 221; Steiner & Poelt 1986b: 5; Steiner & Poelt 1987a: 6; Esslinger 2007: 795, all as *A. ulotrichoides*; Hollinger et al. 2022: 582);

Parwan (Steiner & Poelt 1986a: 221, as *A. ulotrichoides*);

Samangan (Steiner & Poelt 1987a: 7 and 8; Steiner & Mayrhofer 1987: 317 and 321; Fröden & Litterski 2005: 25, all as *A. ulotrichoides*; Hollinger et al. 2022: 582).

Note: Hollinger et al. (2022) cite the type locality as Kopehdah under Afghanistan but it is situated in northeastern Iran.

Anaptychia elbursiana (Szatala) Poelt

Afghanistan (Hollinger et al. 2022: 583 map);

Baghlan (Steiner & Poelt 1986a: 220);

Bamyan (Steiner & Poelt 1986a: 220);

Daykundi (Poelt & Wunder 1970: 461; Esslinger 2007: 793);

Kabul (Steiner & Poelt 1986a: 220; Steiner & Poelt 1986a: 220);

Parwan (Steiner & Poelt 1986a: 220; Steiner & Mayrhofer 1987: 324);

Samangan (Steiner & Mayrhofer 1987: 325);

Urozgan (Steiner & Poelt 1986a: 220).

Anaptychia mereschkowskii (Tomin) Kulakov

Afghanistan (Hollinger et al. 2022: 586 map).

Note: According to Hollinger et al. (2022: 587) many reports of *A. desertorum* in literature prior to the 21st century most likely refer to this species.

Anaptychia roemeri Poelt

Afghanistan (Hollinger et al. 2022: 593 map);

Badakhshan (Poelt & Wirth 1968: 228–229; Poelt & Wunder 1970: 463; Steiner & Poelt 1986a: 222; Hollinger et al. 2022: 592).

Aspicilia asiatica (H. Magn.) Oxner var. *asiatica*

Badakhshan (Poelt & Wirth 1968: 239 and 241, as *Lecanora asiatica*).

Aspicilia asiatica var. *subfarinosa* (H. Magn.) ined.

Badakhshan (Poelt & Wirth 1968: 239, as *Lecanora asiatica* var. *subfarinosa*).

Aspicilia bohlinii (H. Magn.) J.C. Wei

Badakhshan (Poelt & Wirth 1968: 239, as *Lecanora bohlinii*).

Aspicilia hartliana (J. Steiner) Hue

Bamyan (Jaquemin-Roussard & Kilbertus 1971: 62, as *Lecanora hartliana*).

Aspicilia subalbicans (H. Magn.) J.C. Wei

Badakhshan (Poelt & Wirth 1968: 231 and 240, as *Lecanora subalbicans*).

Aspicilia subcaesia (H. Magn.) J.C. Wei

Badakhshan (Poelt & Wirth 1968: 237 and 240, as *Lecanora subcaesia*).

Buellia afghanica ined.

Afghanistan (Feuerer 2007: 1 lists the taxon under the name *Buellia longispora*)

Paktia (Steiner & Mayrhofer 1987: 316).

Buellia elegans Poelt

Baghlan (Steiner & Mayrhofer 1987: 316; Trinkaus & Mayrhofer 2000: 292);

Nangahar (Poelt & Sulzer 1974: 86; Steiner & Mayrhofer 1987: 316; Hafellner 1999: 514; Trinkaus & Mayrhofer 2000: 292).

Caloplaca anchon-phoeniceon Poelt & Clauzade

Badakhshan (Poelt & Wirth 1968: 226, 230, and 237) – parasitic on *Aspicilia*.

Caloplaca biatorina (A. Massal.) J. Steiner var. *biatorina*

≡ *Calogaya biatorina* (A. Massal.) Arup, Frödén & Søchting

Badakhshan (Poelt & Wirth 1968: 230, 244; Huss 1978: 186; Gaya 2009: 62);

Baghlan (Steiner & Mayrhofer 1987: 322);

Bamyan (Poelt & Wirth 1968: 250; Jaquemin-Roussard & Kilbertus 1971: 61; Steiner & Poelt 1986b: 6; Steiner & Mayrhofer 1987: 323, 324 and 325);

Ghorat: Mollah Allah, 12 km SW Taiwara, 33°30'N, 64°24'E, ~2200–2300 m, 29.7.1962, K.H. Rechinger (W);

Herat: in valle Tang-i-Chorsar inter Qala Chabrak (Sharak) et Chisht (Tschischt), 2800 m, 22.7.1962, K.H. Rechinger (W);

Kabul (Riehmer 1938: 23, as *Caloplaca elegans*; Steiner & Poelt 1986a: 235; Steiner & Mayrhofer 1987: 317, 318, 323 and 324);

Kunduz (Poelt & Wirth 1968: 230, 232 and 233);

Parwan (Steiner & Mayrhofer 1987: 323);

Samangan (Steiner & Poelt 1986b: 6).

Caloplaca biatorina (A. Massal.) J. Steiner var. *gylalechioides* (Müll.Arg.) Clauzade & Cl.Roux

Bamyan (Jaquemin-Roussard & Kilbertus 1971: 61).

Caloplaca bicolor H. Magn.

Badakhshan (Poelt & Wirth 1968: 230 and 255; Poelt & Hinteregger 1993: 87);

Bamyan (Poelt & Hinteregger 1993: 87 and 119).

Caloplaca circumalbata (Delile) Wunder – syn. *Pyrenodesmia circumalbata* (Delile) I.V. Forlov & Vondrák

Kabul (Wunder 1974: 61; Steiner & Mayrhofer 1987: 323 and 324).

Caloplaca decipiens (Arnold) Blomb. & Forsell

≡ *Calogaya decipiens* (Arnold) Arup, Frödén & Søchting

Bamyan (Steiner & Poelt 1986b: 5; Steiner & Poelt 1987a: 3; Steiner & Mayrhofer 1987: 322, 323 and 324; Poelt & Hinteregger 1993: 87 and 119; Gaya 2009: 68);

Kabul (Steiner & Mayrhofer 1987: 323);

Parwan (Steiner & Mayrhofer 1987: 323).

Caloplaca flavocitrina (Nyl.) H. Olivier – syn. *Flavoplaca flavocitrina* (Nyl.) Arup, Frödén & Søchting

Bamyan (Steiner & Poelt 1988: 3).

Caloplaca intrudens H. Magn. – syn. *Pachypeltis intrudens* (H. Magn.) Söchting, Frödén & Arup

Badakhshan (Poelt & Wirth 1968: 231).

Caloplaca monacensis (Leder.) Lettau

Parwan (Poelt & Hinteregger 1993: 94, as *Caloplaca cerina*).

Caloplaca paulii Poelt – syn. *Variospora paulii* (Poelt) Arup, Frödén & Söchting

Badakhshan (Poelt 1965: 591; Poelt & Wirth 1968: 231).

Caloplaca persica (J. Steiner) M. Steiner & Poelt – syn. *Calogaya polycarpoides* (J. Steiner) Arup, Frödén & Söchting subsp. *persica* (J. Steiner) M. Haji Moniri & Vondrák

Kabul (Steiner & Poelt 1982: 173–175; Steiner & Peveling 1984: 779; Steiner & Poelt 1986b: 9; Steiner & Poelt 1987a: 6; Steiner & Poelt 1987b: 137; Steiner & Poelt 1988: 6 and 8);

Parwan (Steiner & Poelt 1987b: 137).

Caloplaca polycarpoides (J. Steiner) M. Steiner & Poelt – syn. *Calogaya polycarpoides* (J. Steiner) Arup, Frödén & Söchting subsp. *polycarpoides*

Baghlan (Steiner & Poelt 1982: 175; Steiner & Poelt 1987b: 137; Steiner & Mayrhofer 1987: 321);

Balkh (Steiner & Poelt 1982: 175; Steiner & Poelt 1987b: 137);

Faryab (Steiner & Poelt 1982: 176);

Nuristan (Riehmer 1938: 23, as *Xanthoria polycarpa*; Steiner & Poelt 1986a: 235, sub *Xanthoria polycarpa*; Steiner & Poelt 1982: 175, 176);

Paktia (Steiner & Poelt 1982: 176; Steiner & Peveling 1984: 779; Steiner & Mayrhofer 1987: 323; Steiner & Poelt 1987b: 137; Steiner & Poelt 1988: 5);

Samangan (Steiner & Poelt 1982: 175; Steiner & Mayrhofer 1987: 317 and 321; Steiner & Poelt 1987a: 8; Steiner & Poelt 1987b: 137–138; Steiner & Poelt 1988: 3; Frödén & Litterski 2005: 25).

Caloplaca pyracea (Ach.) Zwackh – syn. *Athallia pyracea* (Ach.) Arup, Frödén & Söchting

Badakhshan (Huss 1978: 186);

Paktia (Steiner & Poelt 1988: 7);

Takhar (Poelt & Wirth 1968: 232).

Caloplaca saxicola (Hoffm.) Nordin – syn. *Calogaya saxicola* (Hoffm.) Vondrák

Bamyán (Jaquemin-Roussard & Kilbertus 1971: 60, as *Caloplaca murorum*).

Caloplaca sororicida M. Steiner & Poelt – syn. *Variospora sororicida* (M. Steiner & Poelt) Vondrák

Kabul (Mayrhofer 1984: 420; Steiner & Mayrhofer 1987: 323; Steiner & Poelt 1988: 6; Poelt & Hinteregger 1993: 202; Vondrák et al. 2019: 36);

Parwan (Steiner & Mayrhofer 1987: 323);

Samangan (Steiner & Poelt 1987a: 6; Steiner & Poelt 1988: 6).

Note: lichenicolous on *Caloplaca transcaspica* and other crustose lichens.

Caloplaca stillicidiorum (Vahl) Lynge var. *muscorum* (A. Massal.) ined.

Kabul: Paghman-Gebirge, oberhalb des Ortes Paghman, an der Talgabelung Chap-Darrah und Rast-Darrah, 34°37'N, 68°56'E, 2550 m, auf Moosen, 21.6.1970, M. Steiner (GZU).

Caloplaca tominii Savicz – syn. *Xanthocarpia tominii* (Savicz) Frödén, Arup & Söchting

Badakhshan (Poelt & Wirth 1968: 232).

Caloplaca transcaspica (Nyl.) Zahlbr. – syn. *Pyrenodesmia transcaspica* (Nyl.) S.Y. Kondr.

Badakhshan (Wunder 1974: 95, as *Caloplaca paulsenii*);

Bamyán (Jaquemin-Roussard & Kilbertus 1971: 60; Steiner & Mayrhofer 1987: 321 and 322, both as *Caloplaca paulsenii*);

Kabul (Steiner & Mayrhofer 1987: 317, 323 and 324, as *Caloplaca paulsenii*; Steiner & Poelt 1988: 6);

Kunduz (Poelt & Wirth 1968: 232 and 253; Wunder 1974: 95, all as *Caloplaca paulsenii*);

Paktia (Wunder 1974: 95, as *Caloplaca paulsenii*);

Parwan (Steiner & Mayrhofer 1987: 323);

Samangan (Mayrhofer 1984: 463, as *Caloplaca paulsenii*; Steiner & Poelt 1987a: 6; Steiner & Poelt 1988: 6).

Caloplaca variabilis (Pers.) Th.Fr. – syn. *Pyrenodesmia variabilis* (Pers.) A. Massal.

Bamyán (Jaquemin-Roussard & Kilbertus 1971: 61).

Candelaria concolor (Dicks.) Stein

Paktia (Steiner & Poelt 1986a: 221, 222).

Candelariella antennaria Räsänen

Samangan (Westberg & Sohrabi 2012: 535).

Candelariella aurella (Hoffm.) Zahlbr.

Badakhshan (Poelt & Wirth 1968: 226, 230, 232 and 237; Huss 1978: 186);

Baghlan (Steiner & Mayrhofer 1987: 321);

Bamyán (Poelt & Wirth 1968: 232; Jaquemin-Roussard & Kilbertus 1971: 61; Poelt & Hinteregger 1993: 87 and 119)

Kabul (Steiner & Poelt 1988: 6 and 8);

Paktia (Steiner & Mayrhofer 1987: 323);

Samangan (Steiner & Mayrhofer 1987: 317);

Takhar (Poelt & Wirth 1968: 232).

Candelariella kansuensis H. Magn.

Badakhshan (Poelt & Wirth 1968: 230, 231, 233, 240, 245 and 246; Huss 1978: 186).

Candelariella rosulans (Müll.Arg.) Zahlbr.

Badakhshan (Poelt & Wirth 1968: 231 and 240; Poelt & Reddi 1969: 10, all as *C. oleifera*);

Bamyán (Poelt & Wirth 1968: 232 and 245, both as *C. oleifera*);

Kunduz (Poelt & Wirth 1968: 232, as *C. oleifera*);

Nangarhar (Steiner & Mayrhofer 1987: 324, as *C. oleifera*).

Candelariella subdeflexa (Nyl.) Lettau

Paktia: Passhöhe des Kotal-i-Teraki, an der Straße zwischen Chamkani und Zambar, 33°38'N, 69°48'E, 2220 m,

Waldfragment am islamischen Heiligtum, auf *Fraxinus xanthoxyloides*, 4.7.1970, M. Steiner (GZU).

Samangan (Yakovchenko et al. 2017: 124).

Candelariella vitellina (Hoffm.) Müll.Arg.

Kabul (Riehmer 1938: 22)

Nuristan (Riehmer 1938: 22).

Catapyrenium perumbratum (Nyl.) J.C. Wei

Kunduz (Poelt & Wirth 1968: 236, as *Dermatocarpon* cf. *perumbratum*).

Note: The taxon needs confirmation.

Circinaria calcarea (L.) A. Nordin, Savić & Tibell

Bamyan (Jaquemin-Roussard & Kilbertus 1971: 60, as *Lecanora calcarea*).

Circinaria changaica (Klem.) ined.

Ghorat: in faucibus calc. infra Parjuman (Partchewan), 33°10'N, 63°52'E, ~1850 m, 30.7.–1.8.1962, K.H. Reichinger (W);

Kunduz (Poelt & Wirth 1968: 253, as *Sphaerothallia desertorum*).

Circinaria maculata (H. Magn.) Q. Ren

Badakhshan (Poelt & Wirth 1968: 230, as *Lecanora maculata*).

Circinaria scabridula (H. Magn.) Sohrabi

Badakhshan (Poelt & Wirth 1968: 240, as *Lecanora scabridula*; Huss 1978: 186, as *Aspicilia scabridula*);

Bamyan (Steiner & Mayrhofer 1987: 322, as *Aspicilia scabridula*);

Paktia (Steiner & Mayrhofer 1987: 323, as *Aspicilia scabridula*).

Circinaria straussii (J. Steiner) Sohrabi

Badakhshan (Poelt & Wirth 1968: 253, as *Sphaerothallia straussii*)

Cladonia fimbriata (L.) Fr.

Nuristan (Riehmer 1938: 19, as *Cladonia fimbriata* var. *simplex*; Steiner & Poelt 1986a: 222 and 227).

Clauzadea immersa (Hoffm.) Hafellner & Bellem.

Bamyan (Jaquemin-Roussard & Kilbertus 1971: 60, as *Protoblastenia immersa*).

Collema furfuraceum (Arnold) Du Rietz

Nuristan: oberhalb Kamdesh, 2000 m, on *Quercus baloot*, 30.7.1978, D. Podlech (GZU); Bashgal-Tal 3 km E Kamu, 1340 m, auf *Quercus baloot*, 30.7.1978, D. Podlech (GZU).

Conotrema freyi Vězda & Poelt

Badakhshan (Poelt & Wirth 1968: 235)

Dermatocarpon miniatum (L.) W. Mann

Baghlan (Steiner & Poelt 1986a: 222);

Balkh (Steiner & Poelt 1986a: 222);

Kabul (Riehmer 1938: 17; Steiner & Poelt 1986a: 222; Steiner & Poelt 1986b: 4 and 8; Steiner & Mayrhofer 1987: 322; Steiner & Poelt 1988: 4; Hafellner 2009b: 91);

Kapisa (Steiner & Poelt 1986a: 222);

Kunar (Steiner & Poelt 1986a: 222);

Nangarhar (Steiner & Poelt 1986a: 222);

Paktia (Steiner & Poelt 1986a: 222);

Parwan (Steiner & Poelt 1986a: 221 and 222);

Samangan (Steiner & Poelt 1986a: 222).

Dermatocarpon moulinsii (Mont.) Zahlbr.

Kabul (Steiner & Poelt 1986a: 222; Steiner & Mayrhofer 1987: 322; Steiner & Poelt 1988: 7);

Nuristan (Steiner & Poelt 1986a: 222);

Paktia (Steiner & Poelt 1986a: 222);

Takhar (Steiner & Poelt 1986a: 233).

Dermatocarpon pellitum (Poelt & V. Wirth) Breuss

Kabul (Steiner & Poelt 1986b: 9, as *Dermatocarpon moulinsii*; Breuss 1995: 143, 144);

Paktia: Nordhänge an der Straße von Chamkani nach Zambur, 33°38.5'N, 69°47.5'E, ~2150 m, 4.7.1970, M. Steiner (GZU);

Parwan: District Surkhi Parsa, SW of the city Mushi, 34°43'44"N, 68°39'33"E, 3087 m, 2017, A. Ghani Karimi (GZU);

Takhar (Poelt & Wirth 1968: 235; Poelt 1977a: 415 and 416; Steiner & Poelt 1986a: 222, all as *Dermatocarpon moulinsii* var. *pellitum*; Breuss 1995: 143)

Dermatocarpon vellereum Zschacke

Balkh (Poelt 1977b: 439; Steiner & Poelt 1986a: 222 and 224; Breuss 1995: 144);

Paktia (Steiner & Poelt 1986b: 7; Breuss 1995: 144).

Dermatocarpon wernerii Roussard

Bamyan (Jaquemin-Roussard & Kilbertus 1971: 61).

Dimelaena oreina (Ach.) Norman

Badakhshan (Poelt & Wirth 1968: 236, 242 and 250; Huss 1978: 186; Steiner & Mayrhofer 1987: 318; Obermayer et al. 2004: 337);

Kabul (Steiner & Mayrhofer 1987: 318; Obermayer et al. 2004: 337 and 339; Ametrano et al. 2019: 144);

Nuristan (Riehmer 1938: 24, as *Rinodina oreina*; Steiner & Mayrhofer 1987: 318).

Diploschistes diacapsis (Ach.) Lumbsch

Baghlan (Steiner & Mayrhofer 1987: 316 as *Diploschistes albescens*);

Samangan: 18 km S Tashqurghan, 3 km S Sayad, an der Straße nach Aybak, 36°33'N, 67°47'E, 670 m, 5.6.1970, M. Steiner (GZU);

Zabul: Passhöhe 20 km NW Shenkay, an der Straße von Qualat-Ghilzai nach Shenkay, 32°05'N, 67°10'E, 2170 m, 25.3.1971, D. Podlech 50 (GZU).

Diplotomma hedinii (H. Magn.) P. Clerc & Cl.Roux

Badakhshan (Poelt & Wirth 1968: 240, as *Buellia hedinii*);

Bamyan (Steiner & Mayrhofer 1987: 317, 322, 323 and 324, as *Buellia epipolia*);

Paktia (Steiner & Mayrhofer 1987: 316, 317 and 323, as *Buellia epipolia*).

Diplotomma populorum A. Massal.

Paktia (Steiner & Mayrhofer 1987: 317 and 318, as *Buellia populorum*);

Samangan (Steiner & Mayrhofer 1987: 317, as *Buellia populorum*).

Enchylium polycarpon (Hoffm.) Otálora, P.M. Jørg. & Wedin

Kabul (Riehm 1938: 17, as *Collema polycarpon*).

Enchylium tenax (Sw.) Gray

Badakhshan (Poelt & Wirth 1968: 233, as *Collema tenax*);
Baghlan (Steiner & Mayrhofer 1987: 316, as *Collema tenax*).

Endocarpon pusillum Hedw.

Samangan: Lösshügel beim Kotal "Rabodak", 900 m,
2.9.1971, O.H. Volk 71.898 (GZU).

Gloeoheppia turgida (Ach.) Gyeln.

Paktia: 5 km S Tani, ~18 km SW Khost, 33°12'N, 69°49.5'E,
1450 m, 6.7.1970, M. Steiner (GZU); 4 km S Ya'qubi, an der
Straße nach Khost, 35°25'N, 69°59.5'E, 1175 m, 4.7.1970,
M. Steiner (GZU).

Glypholecia scabra (Pers.) Müll.Arg.

Badakhshan (Poelt & Wirth 1968: 226, 231, 237 and 241;
Huss 1978: 186);

Bamyan (Steiner & Mayrhofer 1987: 317);

Kunduz (Poelt & Wirth 1968: 237);

Paktia (Steiner & Mayrhofer 1987: 323; Steiner & Poelt
1987a: 9);

Zabul: Passhöhe 20 km NW von Shenkay, an der Straße von
Qualat-Ghilzai nach Shenkay, 32°05'N, 67°10'E, 25.3.1971,
D. Podlech (GZU).

Gyalolechia bracteata (Hoffm.) A. Massal.

Parwan: Salangtal, unterhalb Samedá, 35°14'N, 69°09'E,
2150 m, 25.5.1970, M. Steiner (GZU).

Gyalolechia desertorum (Tomin) Söchting, Frödén
& Arup

Badakhshan (Poelt & Wirth 1968: 236; Poelt & Hinteregger
1993: 233, both as *Fulgensia desertorum*);

Bamyan (Jaquemin-Roussard & Kilbertus 1971: 60, as *Ful-*
gensia desertorum).

Gyalolechia epiphyta (Lyngé) Vondrák

Parwan (Steiner & Poelt 1987a: 4, as *Caloplaca juniperina*).

Gyalolechia subbracteata (Nyl.) Söchting, Frödén
& Arup

Baghlan (Steiner & Mayrhofer 1987: 316, as *Fulgensia*
subbracteata);

Kabul (Steiner & Mayrhofer 1987: 325, as *Fulgensia sub-*
bracteata).

Heppia lutosa (Ach.) Nyl.

Paktia (Schumm & Aptroot 2023: 32); Khost, 33°20'N,
69°55'E, ~1170 m, 19.9.1971, O.H. Volk 71.897 (GZU,
det. C.M. Wetmore, 1973);

Heteroplacidium fuscum (Nyl.) Gueidan & Cl.Roux

Bamyan: Band-i-Amir, ~50 m oberhalb des islamischen
Heiligtums, 34°49'N, 67°10.5'E, ~2950 m, 12.5.1970,
M. Steiner (GZU);

Ghazni: Dasht-i-Nawar, 33°31'N, 67°42'E, 3120–3200 m,
16./17.8.1976, S.W. Breckle (GZU, sub *Staurothele are-*
olata).

Lathagrium cristatum (L.) Otálora, P.M. Jørg. & Wedin

Nangarhar (Steiner & Mayrhofer 1987: 324, as *Collema*
cristatum).

Lecania diplococca M. Steiner & Poelt

Baghlan (Steiner & Poelt 1987b: 138);

Paktia (Steiner & Poelt 1987b: 137);

Samangan (Steiner & Mayrhofer 1987: 321; Steiner & Poelt
1987b: 137 and 138; Steiner & Poelt 1988: 3).

Note: parasitic on *Caloplaca polycarpoides*.

Lecania erysibe (Ach.) Mudd

Bamyan (Jaquemin-Roussard & Kilbertus 1971: 60).

Lecania koerberiana J. Lahm

Takhar (Poelt & Wirth 1968: 237, as *Lecanora koerberiana*)

Lecania ochronigra J. Steiner

Afghanistan (Ismailov & Urbanavichus 2019: 29, map);

Badakhshan (Poelt & Wirth 1968: 238);

Bamyan (Jaquemin-Roussard & Kilbertus 1971: 60).

Lecania triseptata (Vain.) Zahlbr.

Baghlan (Steiner & Poelt 1982: 175; Steiner & Mayrhofer
1987: 321; Steiner & Poelt 1987b: 137);

Balkh (Steiner & Poelt 1982: 175; Steiner & Poelt
1987b: 137);

Kabul (Steiner & Poelt 1982: 175; Steiner & Poelt
1987b: 137);

Paktia (Steiner & Poelt 1987b: 137);

Samangan (Steiner & Poelt 1982: 175; Steiner & Mayrhofer
1987: 317 and 321; Steiner & Poelt 1987b: 137 and 138;
Steiner & Poelt 1988: 3).

Note: often parasitic on *Caloplaca polycarpoides*

Lecania turicensis (Hepp) Müll.Arg.

Samangan (Mayrhofer 1988: 116).

Lecanora argopholis (Ach.) Ach.

Afghanistan (Vänskä 1984: 400);

Badakhshan (Poelt & Wirth 1968: 240, 242, 248, 250 and
257, as *Lecanora frustulosa*; Mayrhofer 1984: 463, as *Le-*
canora frustulosa);

Kabul (Steiner & Mayrhofer 1987: 318 and 322; Steiner
& Poelt 1987a: 8);

Paktia (Steiner & Mayrhofer 1987: 316; Steiner & Poelt
1987a: 8);

Parwan (Steiner & Mayrhofer 1987: 324).

Lecanora baicalensis Zahlbr.

Badakhshan (Poelt & Wirth 1968: 231, 236, 240 and 242;
Huss 1978: 186; Poelt & Grube 1993: 316).

Lecanora dispersoareolata (Schaer.) Lamy

Badakhshan (Poelt & Wirth 1968: 243).

Lecanora hedinii H. Magn.

Badakhshan (Poelt & Wirth 1968: 239).

Lecanora horiza (Ach.) Linds.

Paktia: 2 km N Rabat, ~12 km S Chamkani, an der Straße
nach Rabat, 33°42'N, 69°47.5'E, 1920 m, an *Cedrus deo-*
dara, 4.7.1970, M. Steiner (GZU).

- Lecanora monodi*** Werner
Bamyan (Jaquemin-Roussard & Kilbertus 1971: 62).
- Lecanora pachyphylla*** H. Magn.
Badakhshan (Poelt & Wirth 1968: 245).
- Lecanora zederbaueri*** J. Steiner ex Zahlbr.
Badakhshan (Poelt & Wirth 1968: 242 and 250; Mayrhofer 1984: 463).
- Lecidea atrobrunnea*** (DC.) Schaer.
Badakhshan (Poelt & Wirth 1968: 241; Hertel 1977: 232);
Kabul (Poelt & Wirth 1968: 245; Hertel 1977: 232; Steiner & Mayrhofer 1987: 318 and 322);
- Lecidea laboriosa*** Müll.Arg.
Parwan: Salangtal, ~5 km unterhalb Qalatak, 34°14'E, 69°12'E, 1820 m, 25.5.1970, M. Steiner (GZU, as *Lecidea leptoboloides*, det. H. Hertel 1982).
- Lecidea paratropoides*** Müll.Arg.
Badakhshan (Hertel 1977: 265);
Baghlan (Steiner & Poelt 1986b: 7);
Kabul (Hertel 1977: 265; Steiner & Mayrhofer 1987: 318);
Nuristan (Hertel 1977: 265);
Urozgan (Hertel 1977: 265).
- Lecidea pavimentans*** H. Magn.
Badakhshan (Poelt & Wirth 1968: 245 and 246).
- Lecidea percrassata*** H. Magn.
Badakhshan (Poelt & Wirth 1968: 246).
- Lecidea promiscens*** Nyl.
Badakhshan (Hertel 1977: 274);
Baghlan (Hertel 1977: 274);
Kabul (Hertel 1977: 274).
- Lecidea tessellata*** Flörke var. *tessellata*
Badakhshan (Hertel 1977: 285; Huss 1978: 186);
Bamyan (Jaquemin-Roussard & Kilbertus 1971: 60, as *Lecidea cyanea*; Hertel 1977: 285);
Kabul (Poelt & Wirth 1968: 247; Hertel 1977: 285);
Paktia (Hertel 1977: 288).
- Lecidea tessellata*** var. *caesia* (Anzi) Arnold
Badakhshan (Poelt & Wirth 1968: 247).
- Lecidella carpathica*** Körb.
Badakhshan (Hertel 1977: 325; Knoph 1990: 84, 85);
Bamyan (Hertel 1977: 325; Steiner & Mayrhofer 1987: 325);
Kabul (Steiner & Mayrhofer 1987: 325).
- Lecidella elaeochroma*** (Ach.) M. Choisy
Nuristan (Riehmer 1938: 18, as *Lecidea parasema*).
- Lecidella patavina*** (A. Massal.) Knoph & Leuckert
Badakhshan (Hertel 1977: 320, as *Lecidella alaiensis*; Knoph 1990: 128);
Bamyan (Poelt & Wirth 1968: 232 and 245, as *Lecidea alaiensis*; Hertel 1977: 320, as *Lecidella alaiensis*; Steiner & Mayrhofer 1987: 323, as *Lecidella alaiensis*, and 324, as *Lecidella spitzbergensis*; Knoph 1990: 128).
Daykundi (Knoph 1990: 128);
Logar (Hertel 1977: 320, as *Lecidella alaiensis*);
Parwan (Steiner & Mayrhofer 1987: 324, as *Lecidella inamoena*).
- Lecidella stigmatea*** (Ach.) Hertel & Leuckert
Badakhshan (Hertel 1977: 336);
Kabul (Riehmer 1938: 18, as *Lecidea oreja*; Hertel 1977: 336; Steiner & Mayrhofer 1987: 317).
- Lecidella tumidula*** (A. Massal.) Knoph & Leuckert
Paktia (Steiner & Poelt 1987a: 2, as *Lecidella euphorea*);
Parwan: Salangtal, ~3 km oberhalb Qalatak, 35°15.5'N, 69°10.5'E, ~2080 m, 25.5.1970, M. Steiner (GZU);
Samangan (Steiner & Mayrhofer 1987: 317, as *Lecidella euphorea*).
- Lobothallia cheresina*** (Müll.Arg.) A. Nordin, Cl.Roux & Sohrabi
Kunduz (Poelt & Wirth 1968: 239, 240, as *Lecanora microspora*).
- Lobothallia praeradiosa*** (Nyl.) Hafellner
Kabul (Steiner & Mayrhofer 1987: 316 and 318, as *Aspicilia praeradiosa*).
- Melanelixia subargentifera*** (Nyl.) O. Blanco et al.
Nuristan (Steiner & Poelt 1986a: 226, as *Parmelia subargentifera*).
- Melanohalea elegantula*** (Zahlbr.) O. Blanco et al.
Kunar: oberhalb Kamdesh, 2000 m, 30.7.1978, D. Podlech (GZU, det. T.L. Esslinger, 1991).
- Melanohalea exasperatula*** (Nyl.) O. Blanco et al.
Nuristan (Steiner & Poelt 1986a: 225, as *Parmelia exasperatula*);
Kunar: oberhalb Kamdesh, 2000 m, 30.7.1978, D. Podlech (GZU, sub *Melanohalea infumata*).
- Melanohalea infumata*** (Nyl.) O. Blanco et al.
Badakhshan (Poelt & Wirth 1968: 230, 244 and 248; Steiner & Poelt 1986a: 225; Poelt & Hinteregger 1993: 87, all as *Parmelia infumata*);
Baghlan (Steiner & Poelt 1986a: 225, as *Parmelia infumata*);
Kunar (Steiner & Poelt 1986a: 225, as *Parmelia infumata*);
Nuristan (Steiner & Poelt 1986a: 225, as *Parmelia infumata*).
- Montanelia tominii*** (Oxner) Divakar, A. Crespo, Wedin & Essl.
Kabul (Steiner & Poelt 1986a: 220 and 226; Steiner & Mayrhofer 1987: 322, both as *Parmelia substygia*).
- Myriospora scabrada*** (Hedl. ex H. Magn.) K. Knudsen & Arcadia
Bamyan (Jaquemin-Roussard & Kilbertus 1971: 60, as *Acarospora verruciformis*).
- Myriolecis albescens*** (Hoffm.) Śliwa, Zhao Xin & Lumbsch
Bamyan (Jaquemin-Roussard & Kilbertus 1971: 60, as *Lecanora albescens*).

Myriolecis crenulata (Hook.) Śliwa, Zhao Xin & Lumbsch

Bamyan (Poelt & Wirth 1968: 240, as *Lecanora crenulata*).

Myriolecis dispersa (Pers.) Śliwa, Zhao Xin & Lumbsch

Nuristan (Riehmer 1938: 21, as *Lecanora dispersa*).

Myriolecis hagenii (Ach.) Śliwa, Zhao Xin & Lumbsch

Nuristan (Riehmer 1938: 21, as *Lecanora hagenii* var. *umbrina*);

Paktia (Steiner & Mayrhofer 1987: 323, as *Lecanora hagenii*);

Samangan (Steiner & Mayrhofer 1987: 317 and 321, as *Lecanora hagenii*).

Myriolecis invadens (H. Magn.) Śliwa, Zhao Xin & Lumbsch

Badakhshan (Poelt & Wirth 1968: 227 and 241, as *Lecanora invadens*).

Myriolecis percrenata (H. Magn.) Śliwa, Zhao Xin & Lumbsch

Badakhshan (Poelt & Wirth 1968: 241, als *Lecanora percrenata*);

Bamyan (Jaquemin-Roussard & Kilbertus 1971: 62; Steiner & Mayrhofer 1987: 323; Steiner & Poelt 1988: 3 and 4, all as *Lecanora percrenata*);

Ghorat: Mollah Allah, 12 km SW Taiwara, 33°30'N, 64°24'E, ~2200–2300 m, 29.7.1962, K.H. Rechinger (W).

Myriolecis semipallida (H. Magn.) Śliwa, Zhao Xin & Lumbsch

Kabul (Steiner & Poelt 1988: 3 and 7, as *Lecanora dispersa*).

Parmelina tiliacea (Hoffm.) Hale

Nuristan (Steiner & Poelt 1986a: 225, as *Parmelia tiliacea*).

Peccania crispa M. Steiner nom.nud.

Bamyan (Steiner & Poelt 1988: 9);

Parwan (Steiner & Poelt 1988: 8 and 9; Schultz 2014: 229–230).

Note: According to Schultz (2014), the species seems to be widespread in arid regions of Arabia. The name needs to be validated.

Peccania terricola H. Magn.

Baghlan (Steiner & Poelt 1988: 8; Schultz 2000: Anhang);

Bamyan (Steiner & Poelt 1988: 9);

Parwan (Steiner & Poelt 1988: 8 and 9).

Peltigera monticola Vitik.

Kabul: östliches Seitental des Logar-Tales, Guldara, 34°25'N, 69°16'E, 2050 m, 1.5.1970, A. Dieterle (GZU, det. O. Vitikainen);

Paktia (Steiner & Poelt 1986a: 227, as *Peltigera scabrosa*, rev. O. Vitikainen);

Parwan: unteres Gorbant-Tal, 7 km oberhalb Totumdar-i-Ulya, 35°03'N, 69°05'E, ~1600 m, 11.5.1970, M. Steiner (GZU, det. O. Vitikainen).

Peltigera praetextata (Flörke ex Sommerf.) Zopf

Parwan (Steiner & Poelt 1986a: 227).

Peltigera rufescens (Weiss) Humb.

Kabul (Steiner & Poelt 1986a: 227);

Nuristan (Riehmer 1938: 18, as *Peltigera lepidophora*; Steiner & Poelt 1986a: 227).

Peltula bolanderi (Tuck.) Wetm.

Baghlan: unteres Andarab-Tal, bei Gazan, ~3 km W Khinjan, an der Straße nach Doshi, 35°36'N, 68°52'E, ~1050 m, 4.6.1970, M. Steiner (GZU, det. B. Büdel, 1993).

Peltula obscurans (Nyl.) Gyeln. var. *obscurans*

Baghlan: unteres Andarab-Tal, bei Gazan, ~3 km W Khinjan, an der Straße nach Doshi, 35°36'N, 68°52'E, ~1050 m, 4.6.1970, M. Steiner (GZU, det. J.M. Egea, 1988).

Peltula obscurans var. *deserticola* (Zahlbr.) Wetm.

Zabul: Passhöhe 20 km NW Shenkay, an der Straße von Qualat-Ghilzai nach Shenkay, 32°05'N, 67°10'E, 2170 m, 23.3.1971, D. Podlech (GZU, det. C.M. Wetmore, 1973).

Peltula polyspora (Tuck.) Wetm.

Zabul: Passhöhe 20 km NW Shenkay, an der Straße von Qualat-Ghilzai nach Shenkay, 32°05'N, 67°10'E, 2170 m, 23.3.1971, D. Podlech (GZU, det. C.M. Wetmore, 1973).

Peltula radicata Nyl.

Paktia: westlich Khost, 33°20'N, 69°55'E, ~1170 m, O.H. Volk 71.903 (GZU, det. C.M. Wetmore, 1973).

Phaeophyscia cernohorskyi (Nád.v.) Essl.

Paktia (Steiner & Poelt 1986a: 231, as *Physcia strigosa*).

Phaeophyscia hirsuta (Mereschk.) Essl.

Paktia: 2 km S unterhalb des Passes Kotal-i-Teraki, an der Straße von Chamkani nach Zambar, 33°37.5'N, 69°48.5'E, 2200 m, auf *Quercus baloot*, 3.7.1970, M. Steiner (GZU, det R. Moberg, 1988).

Phaeophyscia hispidula (Ach.) Essl.

Paktia (Steiner & Poelt 1986a: 229; Steiner & Poelt 1986b: 5 and 6; Steiner & Poelt 1987a: 4, all as *Physcia hispidula* subsp. *hispidula*).

Phaeophyscia kairamoi (Vain.) Moberg

Paktia (Steiner & Poelt 1986a: 227–228, as *Physcia kairamoi*);

Samangan (Steiner & Mayrhofer 1987: 317, as *Physcia kairamoi*).

Phaeophyscia latifolia Kudratov

Faryab (Steiner & Poelt 1986a: 230, as *Physcia latifolia*);

Kabul (Steiner & Poelt 1986a: 229–230; Steiner & Poelt 1988: 6 and 8, all as *Physcia latifolia*);

Nuristan (Steiner & Poelt 1986a: 230; as *Physcia latifolia*);

Paktia (Steiner & Poelt 1986a: 230, as *Physcia latifolia*).

Note: *Physcia latifolia* M. Steiner & Poelt is illegitimate according to Art. 53.1 (*Physcia latifolia* Nyl.).

Phaeophyscia nigricans (Flörke) Moberg

Nuristan (Riehmer 1938: 24, as *Physcia nigricans*; Steiner & Poelt 1986a: 230, as *Physcia nigricans*).

Phaeophyscia orbicularis (Neck.) Moberg

Kabul (Steiner & Poelt 1986a: 230, as *Physcia orbicularis*; Steiner & Poelt 1986b: 5, as *Physcia orbicularis*);

Nuristan (Riehmer 1938: 24, as *Physcia orbicularis*; Steiner & Poelt 1986a: 230, as *Physcia orbicularis*);

Paktia (Steiner & Poelt 1986a: 230, as *Physcia orbicularis*).

Phaeophyscia primaria (Poelt) Trass

Paktia (Steiner & Poelt 1986a: 229, as *Physcia hispidula* subsp. *primaria*).

Phaeophyscia pusilloides (Zahlbr.) Essl.

Kabul (Steiner & Poelt 1986a: 230, as *Physcia pusilloides*);

Nuristan (Riehmer 1938: 24, as *Physcia orbicularis*; Steiner & Poelt 1986a: 230, as *Physcia pusilloides*);

Parwan (Steiner & Poelt 1986a: 230, as *Physcia pusilloides*).

Phaeophyscia sciastra (Ach.) Moberg

Kabul (Steiner & Poelt 1986a: 231, as *Physcia sciastra*);

Parwan (Steiner & Poelt 1986a: 231, as *Physcia sciastra*).

Physcia adscendens H. Olivier

Paktia (Steiner & Poelt 1986a: 227; Steiner & Poelt 1987a: 4);

Samangan (Steiner & Mayrhofer 1987: 317).

Physcia aipolia (Ehrh. ex Humb.) Fűrnr.

Paktia (Steiner & Poelt 1988: 6; Hafellner 2009a: 112).

Physcia caesia (Hoffm.) Fűrnr. var. *caesia*

Kabul (Steiner & Poelt 1986a: 227; Steiner & Poelt 1987a: 3).

Physcia caesia var. *ventosa* (Lynge) Frey

Nuristan (Riehmer 1938: 24; Steiner & Poelt 1986a: 227, as *Physcia caesia* var. *ventosa*);

Physcia dimidiata (Arnold) Nyl.

Faryab (Steiner & Poelt 1986a: 227);

Ghazni (Steiner & Poelt 1986a: 227);

Kabul (Steiner & Poelt 1986a: 227);

Paktia (Steiner & Poelt 1986a: 227);

Parwan (Steiner & Poelt 1986a: 227).

Physcia dubia (Hoffm.) Lettau

Badakhshan (Poelt & Wirth 1968: 230 and 248; Huss 1978: 186; Steiner & Poelt 1986a: 228; Poelt & Hinteregger 1993: 87);

Baghlan (Steiner & Poelt 1986a: 228; Steiner & Mayrhofer 1987: 322);

Kabul (Steiner & Poelt 1986a: 228; Steiner & Mayrhofer 1987: 318; Steiner & Poelt 1987a: 3);

Kunar (Steiner & Poelt 1986a: 228);

Maidan (Steiner & Poelt 1986a: 228);

Nangarhar (Steiner & Mayrhofer 1987: 324).

Physcia leptalea (Ach.) DC.

Kunar (Steiner & Poelt 1986a: 231, as *Physcia semipinnata*).

Physcia magnussonii Frey

Kabul (Steiner & Poelt 1986a: 230).

Physcia stellaris (L.) Nyl.

Nuristan (Riehmer 1938: 25; Steiner & Poelt 1986a: 231);

Paktia (Steiner & Poelt 1986a: 231; Steiner & Poelt 1986b:

5 and 6; Steiner & Poelt 1987a: 3 and 5; Steiner & Poelt 1988: 5).

Physcia tenella (Scop.) DC.

Kabul (Steiner & Poelt 1986a: 231);

Nuristan (Steiner & Poelt 1986a: 231);

Paktia (Steiner & Poelt 1986a: 231).

Physconia americana Essl.

Nuristan (Riehmer 1938: 24, as *Physcia pulverulenta*; Steiner & Poelt 1986a: 232, as *Physconia pulverulenta*);

Paktia (Steiner & Poelt 1986a: 232, as *Physconia pulverulenta*; Steiner & Poelt 1986b: 5 and 6; Steiner & Poelt 1988: 4, both as *Physconia distorta*, all rev. T.L. Esslinger, 1996).

Physconia detersa (Nyl.) Poelt

Kunar (Steiner & Poelt 1986a: 231);

Nuristan (Steiner & Poelt 1986a: 231).

Physconia perisidiosa (Erichsen) Moberg

Faryab (Steiner & Poelt 1986a: 231, as *Physconia farrea*);

Kunar (Steiner & Poelt 1986a: 231, as *Physconia farrea*; rev. T.L. Esslinger 1996);

Nuristan (Riehmer 1938: 24, as *Physcia grisea* var. *pityrea*; Steiner & Poelt 1986a: 231, as *Physconia farrea*);

Paktia (Steiner & Poelt 1986a: 231, as *Physconia farrea*).

Physconia thorstenii A. Crespo & Divakar

Paktia (Divakar et al. 2007: 1317).

Placidium lacinulatum (Ach.) Breuss

Paktia (Breuss 1998: 664); Khost – W. “Dasht”, 33°20'N, 39°55'E, ~1170 m, 30.9.1971, O.H. Volk 71.903 (GZU); bei Sarobi, 3.6.1971, O.H. Volk 71.253 (GZU);

Samangan: Lösshügel beim Kotal “Rabodak”, 900 m, 2.9.1971, O.H. Volk 71.898 (sub *Endocarpon pusillum*) and 71.908 (GZU).

Placidium pilosellum (Breuss) Breuss

Paktia: Yaqubi-N, steinige Steppe in Waldlichtungen, 22.9.1971, O.H. Volk 71.899 (GZU).

Placidium rufescens (Ach.) A. Massal.

Bamyan: W Band-i-Amir, 4 km E Jakaulang, 34°45'N, 69°00'E, 2530 m, 18.7.1970, A. Dieterle (GZU);

Ghorat: SW Naourak, 2480 m, 28.7.1962, K.H. Re-chinger (W);

Kabul: Paghman-Gebirge, ~7 km W oberhalb des Ortes Paghman, 34°37'N, 68°58'E, ~2540 m, 10.4.1977, D. Podlech (GZU); östliches Seitental des Logartales, Gul dara, 34°25'N, 69°16'E, 2050 m, 1.5.1970, A. Dieterle (GZU);

Parwan: oberes Gorbant-Tal, ~5 km unterhalb Darah Ghor Bandak, 34°55'N, 68°18'E, ~2560 m, 8.6.1970, M. Steiner (GZU);

Samangan: 18 km S Tashqurghan, 3 km S Sayad, an der Straße nach Aybak, 36°33'N, 67°47'E, ~670 m, 5.6.1970, M. Steiner (GZU).

Placidium semaforonense (Breuss) Breuss

Afghanistan (Breuss 1990: 114, as *Catapyrenium semaforonense*);

Paktia: Löss-Dasht bei Khost, 33°20'N, 69°55'E, 1170 m, 28.5.1971, O.H. Volk 71.131 (GZU);

Samangan (Breuss 1998: 665).

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

Baghlan: unteres Andarab-Tal, bei Gazan, etwa 3 km W Khinjan, an der Straße nach Doshi, 35°36'N, 68°52'E, ~1050 m, 4.6.1970, M. Steiner (GZU); unteres Darrah-i-Kayan, Seitental des Darrah-i-Surkhab, W Doshi, 3 km oberhalb der Mündung, 35°37'N, 68°33'E, ~1200 m, 7.6.1970, M. Steiner (GZU);

Kabul: östliches Seitental des Logartales, Guldara, 34°25'N, 69°16'E, 2100 m, 1.5.1970, A. Dieterle (GZU);

Paktia: 5 km S Tani, ~15 km SW Khost, 33°12'N, 69°49.5'E, 1450 m, 4.7.1970, M. Steiner (GZU);

Parwan: unteres Gorbantaldal, 2 km oberhalb Totumdara-i-Ulya, 35°05'N, 69°09'E, ~1600 m, 11.5.1970, M. Steiner (GZU);

Zabul (Breuss 1998: 667); Passhöhe 20 km NW Shenkay, an der Straße von Qualat-Ghilzai nach Shenkay, 32°05'N, 67°10'E, 2170 m, 25.3.1971, D. Podlech (GZU).

***Placidium tenellum* (Breuss) Breuss**

Afghanistan (Breuss 1990: 127, as *Catapyrenium tenellum*);

Paktia (Breuss 1998: 667); Löss-Dasht bei Khost, 33°20'N, 69°55'E, 1170 m, 28.5.1971, O.H. Volk 71.130 (GZU);

Parwan: Top. Darrah, 4 km SW Charikar, 34°59'N, 69°07'E, 1950 m, 25.3.1970, D. Podlech & A. Dieterle (GZU).

***Protoparmelia badia* (Hoffm.) Hafellner**

Badakhshan (Poelt & Grube 1992: 387).

***Protoparmelia placentifformis* (J. Steiner) Poelt**

Afghanistan (Ismailov & Urbanavichus 2019: 30, map);

Badakhshan (Poelt & Wirth 1968: 241, as *Lecanora placentifformis*; Poelt & Grube 1992: 394);

Nangarhar (Steiner & Mayrhofer 1987: 324, as *Lecanora placentifformis*).

***Protoparmeliopsis garovaglii* (Körb.) Arup, Zhao Xin & Lumbsch**

Badakhshan (Poelt & Wirth 1968: 243, as *Lecanora garovaglii*);

Ghazni: Dasht-i-Nawar, 33°31'N, 67°42'E, 3100–3200 m, 16.8.1976, S.W. Breckle (GZU);

Kabul: Tal des Paghman-Flusses, ~4 km oberhalb des Ortes Paghman, 34°37'N, 68°55'E, ~2700 m, 24.4.1970, M. Steiner (GZU).

Protoparmeliopsis muralis* (Schreb.) M. Choisy var. *muralis

Nangarhar (Steiner & Mayrhofer 1987: 324, as *Lecanora muralis*);

Nuristan (Riehmer 1938: 21, as *Lecanora muralis*);

Paktia (Steiner & Poelt 1988: 9, as *Lecanora muralis* var. *muralis*).

***Protoparmeliopsis muralis* var. *diffracta* (Ach.)**

M. Choisy ex Werner

Nuristan (Riehmer 1938: 22, as *Lecanora muralis* var. *diffracta*).

***Protoparmeliopsis muralis* var. *dubyi* (Müll.Arg.)**

Hafellner & Türk

Badakhshan (Poelt & Wirth 1968: 244; Huss 1978: 186; Poelt & Grube 1993: 334, all as *Lecanora muralis* var. *dubyi*);

Kabul (Steiner & Mayrhofer 1987: 318 and 324, as *Lecanora muralis* var. *dubyi*; Calatayud et al. 2013: 550, as *Lecanora dubyi*);

Paktia (Steiner & Poelt 1984: 561; Steiner & Mayrhofer 1987: 316, both as *Lecanora muralis* var. *dubyi*).

***Protoparmeliopsis peltata* (Ramond) Arup, Zhao Xin & Lumbsch**

Badakhshan (Poelt & Wirth 1968: 236, 242 and 245, as *Lecanora peltata*; Leuckert et al. 1976: 123–124; Huss 1978: 186; Poelt & Obermayer 1990: 276, all as *Rhizoplaca peltata*);

Baghlan (Poelt & Obermayer 1990: 277, as *Rhizoplaca peltata*);

Bamyan (Leuckert et al. 1976: 123–125; Steiner & Mayrhofer 1987: 325, both as *Rhizoplaca peltata*);

Ghazni: Sang-i-Masha, 33°15'N, 67°10'E, ~2400 m, 1.7.1962, K.H. Rechinger (W);

Kabul (Leuckert et al. 1976: 123 and 125; Steiner & Poelt 1986b: 9; Steiner & Mayrhofer 1987: 317–318, 322 and 324; Poelt & Obermayer 1990: 276–277, all as *Rhizoplaca peltata*);

Paktia (Leuckert et al. 1976: 125; Steiner & Mayrhofer 1987: 323, both as *Rhizoplaca peltata*);

Parwan (Leuckert et al. 1976: 125, as *Rhizoplaca peltata*).

***Psora decipiens* (Hedw.) Hoffm.**

Badakhshan: 30 km N Keshm, 4.9.1975, H. Huss 79 (GZU);

Kabul: östliches Seitental des Logartals, Guldara, 34°25'N, 69°16'E, 2050 m, 1.5.1970, A. Dieterle (GZU);

Kunduz (Poelt & Wirth 1968: 245, as *Lecidea decipiens*);

Paktia (Breuss 1998: 664);

Parwan: Top Darrah, 4 km SW Charikar, 34°59'N, 69°07'E, 1950 m, D. Podlech & A. Dieterle (GZU);

Samangan: Kotal "Rabodak", 900 m, 2.9.1971, O.H. Volk 71.898 (GZU).

***Psora rubiformis* (Ach.) Hook.**

Kabul (Steiner & Poelt 1987a: 7).

***Ramalina sinensis* Jatta**

Paktia (Steiner & Poelt 1986a: 232);

***Rhizocarpon disporum* (Nägeli ex Hepp) Müll.Arg.**

Nuristan (Riehmer 1938: 18).

***Rhizocarpon effiguratum* (Anzi) Th.Fr.**

Badakhshan (Poelt & Wirth 1968: 248).

***Rhizocarpon geminatum* Körb.**

Kabul (Steiner & Mayrhofer 1987: 322).

***Rhizocarpon geographicum* (L.) DC.**

Nuristan (Riehmer 1938: 18);

Parwan: Salangtal, ~5 km unterhalb Qualatak, 34°14'N, 69°12'E, 1820 m, 25.5.1970, M. Steiner (GZU).

Rhizocarpon kansuense H. Magn.

Badakhshan (Huss 1978: 186; Poelt 1990: 529);

Bamyan (Steiner & Mayrhofer 1987: 322 and 323; Steiner & Poelt 1987a: 9; Poelt 1990: 529).

Rhizocarpon macrosporum Räsänen

Kabul (Steiner & Mayrhofer 1987: 318 and 322, as *Rhizocarpon sphaerosporum*).

Rhizocarpon pusillum Runemark var. *asiaticum* Poelt

Badakhshan (Poelt & Wirth 1968: 249).

Rhizocarpon ridescens (Nyl.) Zahlbr.

Badakhshan (Poelt & Wirth 1968: 248, 252 and 256).

Rhizocarpon solitarium H. Magn.

Badakhshan (Poelt & Wirth 1968: 250).

Rhizoplaca melanophthalma (DC.) Leuckert & Poelt var. *melanophthalma*

Badakhshan (Poelt & Wirth 1968: 230, 239, 243, 245, 247, 254 and 256, as *Lecanora melanophthalma*; Leuckert et al. 1976: 119; Calatayud et al. 2013: 552);

Bamyan (Leuckert et al. 1976: 119);

Daykundi (Leuckert et al. 1976: 119; Calatayud et al. 2013: 552);

Ghazni (Leuckert et al. 1976: 119–120; Steiner & Poelt 1986b: 8);

Kabul (Leuckert et al. 1976: 120; Steiner & Mayrhofer 1987: 317–318 and 322; Calatayud et al. 2013: 552);

Kunar (Leuckert et al. 1976: 119);

Maidan (Leuckert et al. 1976: 117 and 121);

Paktia (Leuckert et al. 1976: 117 and 120);

Parwan (Steiner & Mayrhofer 1987: 324).

Rhizoplaca melanophthalma var. *obscura* (J. Steiner) ined.

Badakhshan (Poelt & Wirth 1968: 239, 244, 254 and 256, as *Lecanora melanophthalma* var. *obscura*; Huss 1978: 186);

Kabul: Dahan Abdila prope Farakulum, 2800 m, 22.7.1962, K.H. Rechinger (W);

Takhar (Poelt & Wirth 1968: 244, as *Lecanora melanophthalma* var. *obscura*).

Rinodina afghanica M. Steiner & Poelt

Baghlan (Steiner & Mayrhofer 1987: 321);

Samangan (Steiner & Mayrhofer 1987: 321; Steiner & Poelt 1987a: 8; Steiner & Poelt 1987b: 137–140).

Rinodina bischoffii (Hepp) A. Massal.

Bamyan (Jaquemin-Roussard & Kilbertus 1971: 60; Steiner & Mayrhofer 1987: 321);

Kabul (Steiner & Mayrhofer 1987: 325, as *Rinodina tominii*);

Parwan (Steiner & Mayrhofer 1987: 322–323);

Samangan (Steiner & Mayrhofer 1987: 322).

Rinodina bohlinii H. Magn.

Bamyan (Steiner & Mayrhofer 1987: 322).

Note: The record of Poelt & Wirth (1968: 242 and 250) from Badakhshan refers to *Rinodina subnigra* according

to Steiner & Mayrhofer (1987: 324) which is treated as a synonym of *Rinodina epianthina* in this study.

Rinodina epianthina (Harm.) Zahlbr. – syn. *Rinodina subnigra* H. Magn.

Badakhshan (Poelt & Wirth 1968: 250; Mayrhofer 1984: 463; Steiner & Mayrhofer 1987: 324, all as *Rinodina subnigra*);

Baghlan (Steiner & Mayrhofer 1987: 322);

Bamyan (Mayrhofer 1984: 463; Steiner & Mayrhofer 1987: 324–325, both as *Rinodina subnigra*);

Kabul (Steiner & Mayrhofer 1987: 322).

Samangan (Mayrhofer 1984: 463; Mayrhofer & Leuckert 1985: 127; Steiner & Mayrhofer 1987: 324–325, all as *Rinodina subnigra*).

Rinodina guzzinii Jatta

Badakhshan (Steiner & Mayrhofer 1987: 323);

Bamyan (Mayrhofer 1984: 419–420; Steiner & Mayrhofer 1987: 323);

Kabul (Mayrhofer 1984: 420; Steiner & Mayrhofer 1987: 323);

Parwan (Mayrhofer 1984: 420; Steiner & Mayrhofer 1987: 323).

Rinodina poeltii H. Mayrhofer

Badakhshan (Ertl 2000: 118).

Rinodina pycnocarpa H. Magn.

Badakhshan (Ertl 2000: 123);

Paktia (Mayrhofer 1984: 454; Steiner & Mayrhofer 1987: 323).

Rinodina pyrina (Ach.) Arnold

Paktia (Steiner & Mayrhofer 1987: 323).

Rinodina straussii J. Steiner

Badakhshan (Poelt & Wirth 1968: 231, 240);

Bamyan (Poelt & Wirth 1968: 250; Mayrhofer & Poelt 1979: 145; Poelt & Mayrhofer 1979: 330; Mayrhofer 1984: 420, 458; Steiner & Mayrhofer 1987: 324–325);

Kabul (Steiner & Mayrhofer 1987: 324);

Nangarhar (Steiner & Mayrhofer 1987: 324);

Parwan (Mayrhofer 1984: 458; Steiner & Mayrhofer 1987: 324).

Rinodina violascens H. Magn.

Badakhshan (Poelt & Wirth 1968: 252).

Rusavskia elegans (Link) S.Y. Kondr. & Kärnefelt – syn. *Xanthoria elegans* (Link) Th.Fr.

Badakhshan (Poelt & Wirth 1968: 227, 230–231, 240, 242, 244–245, 254, 256–257; Huss 1978: 186; Steiner & Poelt 1986a: 234; Poelt & Petutschnig 1992: 21, all as *Xanthoria elegans*);

Baghlan (Steiner & Poelt 1986a: 234; Steiner & Mayrhofer 1987: 322; Arnold & Poelt 1995: 54, all as all as *Xanthoria elegans*);

Bamyan (Steiner & Poelt 1986a: 234; Steiner & Poelt 1988: 4, both as *Xanthoria elegans*);

Ghazni (Steiner & Poelt 1986a: 234, as *Xanthoria elegans*);

Kabul (Steiner & Poelt 1986a: 234–235; Steiner & Mayrhofer 1987: 317–318, and 324, all as *Xanthoria elegans*);

Kunar (Poelt 1977a: 415; Steiner & Poelt 1986a: 234, both as *Xanthoria elegans*);

Nuristan (Riehmer 1938: 23, as *Caloplaca elegans*; Steiner & Poelt 1986a: 234; Poelt & Petutschnig 1992: 21, both as *Xanthoria elegans*);

Maidan (Steiner & Poelt 1986a: 234, as *Xanthoria elegans*);

Parwan (Steiner & Poelt 1986a: 234, as *Xanthoria elegans*);

Urozgan (Steiner & Poelt 1986a: 234, as *Xanthoria elegans*).

***Rusavskia sorediata* (Vain.) S.Y. Kondr. & Kärnefelt – syn. *Xanthoria sorediata* (Vain.) Poelt**

Nuristan (Riehmer 1938: 23, as *Caloplaca cerina* and *Caloplaca decipiens*; Steiner & Poelt 1986a: 235; Poelt & Petutschnig 1992: 28, both as *Xanthoria sorediata*);

Paktia (Steiner & Poelt 1986a: 235, as *Xanthoria sorediata*).

***Sarcogyne calcifraga* (Müll.Arg.) H. Magn.**

Afghanistan (Fayyaz et al. 2023: 8, key);

Parwan: unterhalb Samedá, 35°14'N, 69°09'E, 2150 m, 25.5.1970, M. Steiner (GZU).

***Sarcogyne cyclocarpa* (Anzi) J. Steiner**

Bamyan (Knudsen & Kocourková 2009: 204, as *Polysporina cyclocarpa*).

***Sarcogyne gyrocarpa* H. Magn.**

Bamyan (Poelt & Wirth 1968: 252; Jacquemin-Roussard & Kilbertus 1971: 62);

Kabul (Magnusson 1937: 98–99; Riehmer 1938: 19; Steiner & Mayrhofer 1987: 318; Knudsen & Kocourková 2009: 200, as *Polysporina g.*; Knudsen et al. 2017: 40, as *Acarospora gyrocarpa*);

Nuristan (Riehmer 1938: 19; Braun & Stordeur 2001: 3; Knudsen & Kocourková 2009: 202, as *Polysporina g.*);

Parwan: oberstes Salangtal, südlich des Tunnelausgangs, 35°57'N, 59°42.5'E, 25.5.1970, M. Steiner (GZU).

***Sarcogyne hypophaea* (Nyl.) Arnold**

Kabul (Steiner & Mayrhofer 1987: 318, as *Sarcogyne privigna*).

Maidan: 2 km SE Kot-e-Ashru, 2000 m, 34°26'N, 68°48'E, 16.11.1966, S.W. Breckle (GZU).

Nangarhar (Steiner & Mayrhofer 1987: 324, as *Sarcogyne privigna*).

Parwan: unteres Gorband-Tal, 2 km oberhalb Totumdarra-i-Ulya, 1000 m, 35°05'N, 69°09'E, 11.5.1970, M. Steiner (GZU).

***Sarcogyne praetermissa* K. Knudsen & Kocurok.**

Kabul: Logar-Tal, Stupa Guldara, S von Saydkhel, 2100 m, 34°23'N, 69°16'E, 25.11.1978, D. Podlech (GZU).

***Sarcogyne pusilla* Anzi**

Ghazni: Dasht-i-Nawar, 33°31'N, 67°42'E, 8.1976, S.W. Breckle (GZU);

Kabul: östliches Seitental des Logartales, Guldara, 34°25'N, 69°16'E, 2050 m, 1.5.1970, A. Dieterle (GZU).

***Sarcogyne urceolata* Anzi**

Baghlan: Oberes Darrah-i-Kayan, beim Dorf Dahane Ahanfald, 35°39.5'N, 68°26'E, 2150 m, 7.6.1970, M. Steiner (GZU);

Bamyan: Band-i-Zulfeqar, 34°49.5'N, 67°10.5'E, 3000 m,

7.1970, A. Dieterle (GZU); Band-i-Amir, ~50 m oberhalb des islamischen Heiligtums, 34°49'N, 67°10.5'E, 2950 m, 30.5.1970, A. Dieterle (GZU).

***Scytinium fragrans* (Sm.) Otalorá, P.M. Jørg. & Wedin**

Paktia: Passhöhe des Kotal-i-Teraki, an der Straße zwischen Chamkani und Zambar, 33°38'N, 69°48'E, 2200 m, Waldfragment am islamischen Heiligtum, auf *Fraxinus xanthoxyloides*, 4.7.1970, M. Steiner (GZU).

***Seiropora contortuplicata* (Ach.) Frödén**

Badakhshan (Poelt & Wirth 1968: 232, as *Teloschistes contortuplicatus*);

Bamyan (Steiner & Poelt 1986a: 232, as *Teloschistes contortuplicatus*).

***Seiropora orientalis* Frödén**

Badakhshan (Steiner & Poelt 1986a: 232, as *Teloschistes brevior*);

Baghlan (Steiner & Poelt 1986a: 232; Steiner & Mayrhofer 1987: 321, both as *Teloschistes brevior*);

Paktia (Steiner & Poelt 1986a: 232, as *Teloschistes brevior*);

Samangan (Steiner & Poelt 1986a: 232; Steiner & Mayrhofer 1987: 317 and 321; Steiner & Poelt 1987a: 7–8; Söchting & Frödén 2002: 264, all as *Teloschistes brevior*; Frödén & Litterski 2005: 25).

***Sporastatia asiatica* H. Magn.**

Badakhshan (Poelt & Wirth 1968: 239, 246–247, 249, 254 and 256; Huss 1978: 186).

Kabul (Steiner & Mayrhofer 1987: 324).

***Sporastatia testudinea* (Ach.) A. Massal.**

Badakhshan (Poelt & Wirth 1968: 254).

***Staurothele areolata* (Ach.) Lettau**

Bamyan: Koh-i-Baba, Passhöhe des Kotal-i-Devali, 34°38'N, 66°58'E, 3025 m, 18.7.1970, A. Dieterle (GZU);

Ghazni: Dasht-i-Nawar, 33°31'N, 67°42'E, 3120–3200 m, 16./17.8.1976, S.W. Breckle (GZU).

***Staurothele clopima* (Wahlenb.) Th.Fr.**

Badakhshan (Poelt & Wirth 1968: 254);

Kabul (Riehmer 1938: 17);

Nuristan (Riehmer 1938: 17).

***Staurothele levinae* Oxner**

Badakhshan (Huss 1978: 186);

Bamyan (Steiner & Poelt 1986b: 5; Steiner & Mayrhofer 1987: 321–322; Gaya 2009: 68);

Ghazni: Dasht-i-Nawar, 33°31'N, 67°42'E, 3120–3200 m, 16./17.8.1976, S.W. Breckle (GZU);

Ghorat: Mollah Allah, 12 km SW Taiwara, 33°30'N, 64°24'E, ~2200–2300 m, 29.7.1962, K.H. Reching (W);

Maidan: Oberes Helmandtal, Schlucht E des Mullah-Yaqub-Passes, an der Straße von Behsud nach Panjaw, 2650 m, 27.5.1970, A. Dieterle (GZU).

***Thalloidima diffractum* (A. Massal.) A. Massal.**

Baghlan (Timdal 1991: 62, as *Toninia diffracta*);

Bamyan (Timdal 1991: 62, as *Toninia diffracta*).

Thalloidima sedifolium (With.) Kistenich, Timdal, Bendiksby & S. Ekman

Baghlan (Steiner & Mayrhofer 1987: 316, as *Toninia coeruleonigricans*; Timdal 1991: 97, as *Toninia sedifolia*);
Kabul (Timdal 1991: 97, as *Toninia sedifolia*);
Kunduz (Poelt & Wirth 1968: 255, as *Toninia coeruleonigricans*);
Zabol (Timdal 1991: 97, as *Toninia sedifolia*).

Tornabea scutellifera (With.) J.R. Laundon

Kunar (Steiner & Poelt 1986a: 233, as *Tornabea atlantica*);
Paktia (Steiner & Poelt 1986a: 233, as *Tornabea atlantica*).

Umbilicaria aprina Nyl.

Badakhshan (Poelt & Wirth 1968: 247 and 255, as *Umbilicaria cylindrica*; Steiner & Poelt 1986a: 233, sub *Umbilicaria cylindrica*);
Baghlan (Steiner & Poelt 1986a: 233);
Kabul (Poelt 1977a: 415; Hasenhüttl & Poelt 1978: 284; Steiner & Poelt 1986a: 233; Steiner & Poelt 1986b: 7 and 10; Steiner & Poelt 1988: 5; Wei & Jiang 1993: 77);
Kunar (Poelt 1977a: 415; Hasenhüttl & Poelt 1978: 284; Steiner & Poelt 1986a: 233);
Parwan: Distrikt Surkhi Parsa, SW of the city Mushi, 34°43'44"N, 68°39'33"E, 3087 m, 2017, A. Ghani Karimi (GZU);
Takhar (Poelt 1977a: 415–416; Steiner & Poelt 1986a: 233).

Umbilicaria decussata (Vill.) Zahlbr.

Badakhshan (Poelt & Wirth 1968: 256; Steiner & Poelt 1986a: 233).

Umbilicaria hirsuta (Sw. ex Westr.) Hoffm.

Kabul (Poelt 1977a: 420; Steiner & Poelt 1986a: 233; Steiner & Poelt 1986b: 8; Steiner & Mayrhofer 1987: 322; Steiner & Poelt 1988: 4; Wei & Jiang 1993: 133).

Umbilicaria vellea (L.) Ach.

Kabul (Hasenhüttl & Poelt 1978: 295; Steiner & Poelt 1986a: 234; Steiner & Poelt 1986b: 7; Steiner & Mayrhofer 1987: 322; Steiner & Poelt 1987a: 3; Wei & Jiang 1993: 187).

Umbilicaria virginis Schaer.

Kabul: Paghman Gebirge, oberhalb des Ortes Paghman, an der Talgabelung Chap-Darrah und Rast-Darrah, linke Talseite, 34°37'N, 68°56'E, 2550 m, 30.5.1970, M. Steiner (GZU, det. E.A. Davydov).

Verrucaria amphibola Nyl.

Bamyān (Jaquemin-Roussard & Kilbertus 1971: 62).

Verrucaria sphaerospora Anzi

Ghorat: Mollah Allah, 12 km SW Taiwara, 33°30'N, 64°24'E, ~2200–2300 m, 29.7.1962, K.H. Rechner (W).

Xalocoa ocellata (Fr.) Kraichak, Lücking & Lumbsch

Kunar: Pech-Tal bei Kandeh, 34°56'N, 70°59'E, ~1250 m, 2.8.1967, S.W. Breckle (GZU).

Xanthomendoza fulva (Hoffm.) Søchting, Kärnefelt & S.Y. Kondr.

Kabul (Steiner & Poelt 1987a: 5, as *Xanthoria candelaria*; Steiner & Poelt 1988: 6, as *Xanthoria fallax* var. *lychneoides*; Poelt & Petutschnig 1992: 25, as *Xanthoria fulva*);
Nuristan (Riehmer 1938: 23, as *Xanthoria candelaria*;

Steiner & Poelt 1986a: 234, as *Xanthoria candelaria* var. *fulva*);

Parwan (Poelt & Petutschnig 1992: 25, as *Xanthoria fulva*).

Xanthomendoza huculica (S.Y. Kondr.) Diederich

Faryab (Steiner & Poelt 1986a: 235, as *Xanthoria fallax*);
Kabul (Steiner & Poelt 1986a: 235, as *Xanthoria fallax*);
Nuristan (Steiner & Poelt 1986a: 235, as *Xanthoria fallax*;
Riehmer 1938: 23, as *Xanthoria parietina*);
Parwan (Steiner & Poelt 1986a: 227, as *Xanthoria fallax*).

Xanthomendoza trachyphylla (Tuck.) Frödén, Arup & Søchting

Bamyān (Poelt & Wirth 1968: 231, as *Caloplaca hedinii*; Steiner & Poelt 1986b: 4; Steiner & Mayrhofer 1987: 322, both as *Caloplaca trachyphylla*);
Logar (Steiner & Poelt 1986b: 4; Poelt & Hinteregger 1993: 213, both as *Caloplaca trachyphylla*).

Xanthomendoza ulophyllodes Räsänen var. *subsoresidiosa* (Räsänen) ined.

Paktia (Steiner & Poelt 1987a: 5 and 7, both as *Xanthoria fallax*; Poelt & Petutschnig 1992: 30, as *Xanthoria ulophyllodes* var. *subsoresidiosa*).

Xanthoparmelia loxodes (Nyl.) O. Blanco et al.

Kabul (Steiner & Poelt 1986a: 226, as *Parmelia loxodes*);
Parwan (Steiner & Poelt 1986a: 226, as *Parmelia loxodes*).

Xanthoparmelia mexicana (Gyeln.) Hale

Paktia (Steiner & Poelt 1986a: 226, as *Parmelia mexicana*; Steiner & Mayrhofer 1987: 316, as *Parmelia Mexicana*).

Xanthoparmelia neodelisei (Elix) O. Blanco et al.

Kabul: Paghman-Gebirge, oberhalb des Ortes Paghman, an der Talgabelung Chap-Darrah und Rast-Darrah, linke Talseite, 34°37'N, 68°56'E, 2550 m, 30.5.1970, M. Steiner (GZU, det. J.A. Elix).

Xanthoparmelia pulla (Ach.) O. Blanco et al.

Kabul (Steiner & Poelt 1986a: 226, as *Parmelia pulla*).

Xanthoparmelia verruculifera (Nyl.) O. Blanco et al.

Nuristan (Riehmer 1938: 22, as *Parmelia glomellifera* and *P. verruculifera*; Steiner & Poelt 1986a: 226, as *Parmelia verruculifera*);
Paktia (Steiner & Poelt 1986a: 226, as *Parmelia verruculifera*).

Erroneous records of lichenized fungi

Acarospora rufa (Vain.) H. Magn.

Note: The records refer to *Acarospora rosulata*.

Caloplaca cerina (Hedw.) Th.Fr.

Note: The record refers to *Caloplaca monacensis*.

Peltigera scabrosa Th.Fr.

Note: The record refers to *Peltigera monticola*.

Physconia distorta (With.) J.R. Laundon

Note: The records refer to *Physconia americana*.

Rinodina subnigra H. Magn.

Note: *Rinodina subnigra* is a new synonym of *Rinodina epiianthina*.

Rinodina tominii H. Mayrhofer

Note: The record refers to *Rinodina bischoffii*.

Umbilicaria cylindrica (L.) Delise

Note: The records refer to *Umbilicaria aprina* according to Steiner & Poelt (1986a: 233).

Xanthoria parietina (L.) Th.Fr.

Note: The record refers to *Xanthomendoza huculica* (Steiner & Poelt 1986a: 235, as *Xanthoria fallax*).

Lichenicolous fungi

Acarospora lendemeri K. Knudsen & Kocourk. – syn. *Sarcogyne sphaerospora* J. Steiner

Badakhshan (Huss 1978: 186 as *Sarcogyne sphaerospora*; Knudsen & Kocourková 2020a: 160);

Kunur (Knudsen & Kocourková 2020a: 160).

Acarospora subfuscescens (Nyl.) H. Magn.

Bamyan: Band-i-Amir, ~50 m oberhalb des islamischen Heiligtums, S-Kante der Terrasse, 34°49'N, 67°10.5'E, 2950 m, 12 May 1970, M. Steiner (GZU).

Kabul: Tal des Paghman-Flusses, ~4 km oberhalb des Ortes Paghman, 34°37'N, 68°55'E, 2450 m, 24.4.1970, M. Steiner (GZU).

Cercidospora macrospora (Uloth) Hafellner & Nav.-Ros.

Kabul (Calatayud et al. 2013: 550, on *Protoparmeliopsis muralis* var. *dubyi*);

Paktia (Calatayud et al. 2013: 550, on *Protoparmeliopsis muralis* var. *dubyi*).

Cercidospora melanophthalmae Nav.-Ros., Calat. & Hafellner

Badakhshan (Calatayud et al. 2013: 552, on *Rhizoplaca melanophthalma*);

Baghlan (Calatayud et al. 2013: 552, on *Rhizoplaca melanophthalma*);

Daykundi (Calatayud et al. 2013: 552, on *Rhizoplaca melanophthalma*);

Kabul (Calatayud et al. 2013: 552, on *Rhizoplaca melanophthalma*).

Didymosphaeria sporastatae (Anzi) G. Winter

Badakhshan (Poelt & Wirth 1968: 256, on *Sporastatia asiatica*).

Endococcus propinquus (Körb.) D. Hawksw.

Afghanistan (Arcadia 2023: 268).

Lichenochora aipoliae Etayo, Nav.-Ros. & Coppins

Paktia (Hafellner 2009a: 112, on *Physcia aipolia*).

Lichenostigma epipolina Nav.-Ros., Calat. & Hafellner

Kabul (Calatayud et al. 2002: 1235, on *Diplotomma hedinii*);

Paktia (Calatayud et al. 2002: 1235, on *Diplotomma hedinii*).

Lichenostigma semiimmersa Hafellner

Nangarhar (Hafellner 1999: 514, on *Buellia elegans*).

Lichenothelia dimelaenae (Calat. & Hafellner)

Kocourk., K. Knudsen & Muggia

Kabul (Ametrano et al. 2019: 144, on *Dimelaena oreina*).

Muellerella pygmaea (Körb.) D. Hawksw.

Badakhshan (Poelt & Wirth 1968: 247 and 257, on *Lecidea tessellata* var. *caesia*);

Bamyan (Jaquemin-Roussard & Kilbertus 1971: 62, as *Tichotheceum pygmaeum*, on *Lecanora hartliana*).

Opegrapha pulvinata Rehm

Kabul (Steiner & Poelt 1986a: 224; Hafellner 2009b: 91, both on *Dermatocarpon miniatum*);

Samangan (Steiner & Poelt 1986a: 224, on *Dermatocarpon miniatum*).

Sarcogyne paradoxa Kocourk. & K. Knudsen

Kabul (Knudsen & Kocourková 2009: 204, as *Polysporina arenacea*, on crustose lichen; Knudsen & Kocourková 2020b: 460).

Sphaerellothecium reticulatum (Zopf) Etayo

Badakhshan (Poelt & Wirth 1968: 257, as *Echinothecium reticulatum*, on *Lecanora argopholis*).

Stigidium psorae (Anzi) Hafellner

Paktia (Triebel 1989: 84, on *Psora decipiens*).

Doubtful records of lichenicolous fungi

Cercidospora caudata Kernst.

Badakhshan (Poelt & Wirth 1968: 256, as *Apiosporella caudata* on *Lecanora* sp.).

Note: The record of this species only occurring in *Teloschistaceae* is very likely to be incorrect according to Hafellner & John (2006: 161).

Phoma lichenis Pass.

Badakhshan (Poelt & Wirth 1968: 257, on *Xanthoria elegans*).

Note: It may refer to conidiomata from *Zwackhiomyces coepulonus* according to Hafellner & John (2006: 171).

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