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## **NEW SPECIES OF LICHEN-FORMING FUNGI FROM GOLAN HEIGHTS, ISRAEL**

*Key words:* lichen-forming fungi, *Candelaria*, *Candelariella*, *Lecanora*, *Leptogium*, *Oxneria*, *Phaeophyscia*, *Rusavskia*, *Asia*, *Israel*.

### **Abstract**

28 species of lichen-forming and lichenicolous fungi (*Arthonia clemens*, *Caloplaca biatorina*, *Candelaria concolor*, *Candelariella reflexa*, *C. subdeflexa*, *C. xanthostigma*, *Chrysothrix candelaris*, *Lecanora carpinea*, *L. leptyroides*, *Leptogium cyanescens*, *L. lichenoides*, *Leptorhaphis atomaria*, *Oxneria ulophyllodes*, *Parmelia exasperata*, *P. acetabulum*, *Pertusaria albescens*, *P. amara*, *Phaeophyscia hirsuta*, *P. nigricansi*, *P. orbicularis*, *Phlyctis argena*, *Protothelenella sphinctrinoidella*, *Ramalina fraxinea*, *Rhizocarpon polycarpum*, *Rinodina sophodes*, *Rusavskia elegans*, *R. sorediata*, and *Umbilicaria grisea*) new for Israel are recorded. Descriptions including synonyms, reference on the diagnosis, distribution in Israel, and general distribution (after the style of «The First Checklist of the Lichen-forming, Lichenicolous and Allied Fungi of Israel» [4]) are provided for each taxon.

### **Introduction**

During the last decade a number of lichen species new for Israel were found [3, 4, 7, 10]. New findings of lichen-forming

and lichenicolous fungi were recorded for the first time for Israel in «*The First Checklist of the Lichen-forming, Lichenicolous and Allied Fungi of Israel*» [4] as well.

Among the new-for-science taxa of lichen-forming and lichenicolous fungi *Lichenochora wasseri* S. Kondr. [7]; *Adelococcus porocyphii* S. Zelenko & S. Kondr. and *Sclerococcum acarosporae* S. Kondr. as well as *Xanthoria hermonii* S. Kondr. [3] were described. 41 new names for lichen-forming and lichenicolous fungi from the Near East region are proposed in a latter paper [3] as well. A number of new and rare species for Israel taxa of lichen-forming and lichenicolous fungi is provided on other publications of these authors [5, 6].

The 28 new-for-Israel taxa of lichen-forming and lichenicolous fungi are listed below. New taxa are provided by descriptions after the style of «*The First Checklist of Lichen-forming and Lichenicolous Fungi of Israel*» [4].

### Materials and methods

Material described was collected by the first co-author during two two-week expeditions to Israel in 2000 year. Some specimens of Israeli lichens kept in LD (Lund, Sweden) were analysed during this study as well. Standard methods for identifying lichen-forming and lichenicolous fungi were applied.

### Results

New-for-Israel taxa

1. *CALOPLACA biatorina* (Massal.) Stnr. In Sitzungsber. Kais. Akad. Wiss. Wien, math. — naturw. Classe, vol. CYII, I. Abt., 1898, p. 120.

SYNONYMS: *Caloplaca nideri* Steiner

DESCRIPTION: Oxner, 1993: 413.

HABITAT: on rocks.

DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, 1100–1200 m alt., on rock, 19.09.2000 S. Kondratyuk 20114 (KW); NE vicinity of Majdal Shams, EEN slope, old fruit garden with of *Pinus*, *Amygdalus*, *Crategus*, *Malus*, 1400 m alt., on rocks, 27.09.2000 S. Kondratyuk 20128 (KW).

GENERAL DISTRIBUTION: Europe, Caucasus, Asia (from Turkey and Israel to Mongolia), North Africa.

2. *CANDELARIA concolor* (Dickson) B. Stein., F.J. Cohn. Crypt. — Fl. Schlesien, 2 (2): 84 (1879). 1793.

SYNONYM: *Lichen concolor* Dickson, Fasc. Pl. Crypt. Brit., 3: 18

DESCRIPTION: Oxner, 1993: 362.

HABITAT: on bark of deciduous trees.

DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, 500 m to N of Neve Ativ village, old fruit garden, on bark of old fruit trees, 20.09.2000 S. Kondratyuk 20116 (KW); old (a. 600-year old) oak forest to S of Mas'ada settlement, 800–900 m alt., on bark of oak trees (*Quercus caliprinus*, *Q. infesta*, *Q. ithaburensis*, and *Q. boisei*), 20.09.2000 S. Kondratyuk 20115 (KW).

GENERAL DISTRIBUTION: Whole Europe, Caucasus, Asia (Russia, Japan, Syria, Israel, Saudi Arabia).

3. *CANDELARIELLA reflexa* (Nyl.) Lettau, Hedwigia, **52**: 196, 1912.  
 SYNONYMS: *Lecanora vitellina* var. *reflexa* Nyl., Bull. Soc. Bot. France, **16**: 241, 1866.  
 DESCRIPTION: Oxner, 1993: 372.  
 DISTRIBUTION IN ISRAEL. Golan Heights: NE vicinity of Majdal Shams, EEN slope, old fruit garden, 1400 m alt., on bark of *Pinus*, *Amygdalus*, *Crategus*, *Malus* growing together with *Physconia distorta*, 27.09.2000 S. Kondratyuk 20128 (KW).  
 GENERAL DISTRIBUTION: Europe, Asia (Israel, Mongolia, Tajikistan), North Africa (Algeria), North America, South America (Chile).
4. *CANDELARIELLA subdeflexa* (Nyl.) Lettau, Hedwigia, **52**: 196, 1912.  
 SYNONYMS: *Lecanora subdeflexa* Nyl., Flora, **62**: 355, 1879.  
 DESCRIPTION: Poelt, 1969: 194.  
 HABITAT: on eutrophic bark of trees, often near the bases of trunks.  
 DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, 500 m to N of Neve Ativ village, old fruit garden, on bark of old fruit trees, 20.09.2000 S. Kondratyuk 20116 (KW); NE vicinity of Majdal Shams, EEN slope, old fruit garden, 1400 m alt., on bark of *Pinus*, *Amygdalus*, *Crategus*, *Malus* growing together with *Physconia distorta*, 27.09.2000 S. Kondratyuk 20128 (KW).  
 GENERAL DISTRIBUTION: Central and Southern Europe, Asia (Israel).
5. *CANDELARIELLA xanthostigma* (Ach.) Lettau, Hedwigia, **52**: 196 (1912).  
 SYNONYMS: *Lichen xanthostigmus* [Pers. Ex] Ach., Lich. Univ.: 403, 1810.  
 DESCRIPTION: Oxner, 1993: 377.  
 HABITAT: on bark of trees and on wood.  
 DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, 500 m to N of Neve Ativ village, old fruit garden, on bark of old fruit trees, 20.09.2000 S. Kondratyuk 20116 (KW); NE vicinity of Majdal Shams, EEN slope, old fruit garden, 1400 m alt., on bark of *Pinus*, *Amygdalus*, *Crategus*, *Malus* growing together with *Physconia distorta*, 27.09.2000 S. Kondratyuk 20128 (KW).  
 GENERAL DISTRIBUTION: all of Europe, Caucasus, Asia (Russia, Israel, Iran), North America.
6. *CHRYSOTHRIX candelaris* (L.) Laundon, Lichenologist, **13**: 110, 1981.  
 SYNONYMS: *Byssus candelaris* L., Sp. Pl., **2**: 1169, 1753; *Bilimbia fulgens* Hampe ex Massal., *Chaenotheca trichialis* f. *candelaris* (Krempelh.) Dalla Torre & Sarnth., *Lepraria candelaris* (L.) Fr., *Lepra citrina* auct. Ital. P.p., *Lepraria flava* auct. Ital. p. p.  
 DESCRIPTION: Purvis et al., 1992: 187.  
 HABITAT: on bark of trees and on rocks.  
 DISTRIBUTION IN ISRAEL. Golan Heights: NE vicinity of Majdal Shams, EEN slope, old fruit garden, 1400 m alt., on bark of *Amygdalus*, *Crategus*, *Malus* growing together with *Physconia distorta*, 27.09.2000 S. Kondratyuk 20128 (KW).  
 GENERAL DISTRIBUTION: cosmopolitan.

7. *LECANORA carpinea* (L.) Vainio, Meddeland. Soc. Fauna, Fl. Fenn., 14: 23 (1888).

SYNONYMS: *Lichen carpineus* L., Sp. Pl.: 1141, 1753.

DESCRIPTION: Makarevich, 1971: 98.

HABITAT: on trunks of trees with smooth trunks.

DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, old (a. 600-year old) oak forest to S of Mas'ada settlement, 800-900 m alt., on bark of oak trees (*Quercus caliprinus*, *Q. infesta*, *Q. ithaburensis*, *Q. boisei*), 20.09.2000 S. Kondratyuk 20115 (KW).

GENERAL DISTRIBUTION. It has a wide distribution in temperate Europe, reaching part of the Boreal zone. Asia (Israel, Syria, Jordan), North Africa, North and Central America.

8. *LECANORA leptyroides* (Nyl.) Degel., Ark. Bot., 24a, 3: 82, 1931.

SYNONYMS: *Lecanora angulosa* v. *leptyroides* Nyl., Flora, 57: 16, 1874.

DESCRIPTION: Makarevich, 1971: 100.

HABITAT: on trunks of trees with smooth trunks.

DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, old (a. 600-year old) oak forest to S of Mas'ada settlement, 800—900 m alt., on bark of oak trees (*Quercus caliprinus*, *Q. infesta*, *Q. ithaburensis*, *Q. boisei*), 20.09.2000 S. Kondratyuk 20115 (KW).

GENERAL DISTRIBUTION: Europe (from Scandinavian to Mediterranean mountains), Asia.

9. *LEPTOGIUM cyanescens* (Rabenh.) Körb., Syst. Lich. Germ.: 420 (1855).

SYNONYMS: *Leptogium cyanizum* Nyl. ap. Cromb., in Journ. Linn. Soc. London, Botan., 16: 227 (1877); *Leptogium cyanescens* Nyl., Synops. Lich., 1: 131 (1858).

DESCRIPTION: Purvis et al., 1992: 353.

HABITAT: on mossy trees and rocks.

DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, old (a. 600-year old) oak forest to S of Mas'ada settlement, 800—900 m alt., on bark of oak trees (*Quercus caliprinus*, *Q. infesta*, *Q. ithaburensis*, *Q. boisei*), and on volcanic rocks growing together with *Aspicilia cinerea* and *Tephromela atra*, 20.09.2000 S. Kondratyuk 20115 (KW).

GENERAL DISTRIBUTION: cosmopolitan in temperate and subtropical regions.

10. *LEPTOGIUM lichenoides* (L.) Zahlbr., Cat. Lich. Univ., 3: 136, 1924.

SYNONYMS: *Tremella lichenoides* L., Sp. Pl.: 1157, 1753.

DESCRIPTION: Oxner, 1968: 397.

HABITAT: on terricolous bryophytes and on more or less calcareous soil.

DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, old (a. 600-year old) oak forest to S of Mas'ada settlement, 800—900 m alt., on bark of oak trees (*Quercus caliprinus*, *Q. infesta*, *Q. ithaburensis*, *Q. boisei*), and on volcanic rocks

growing together with *Aspicilia cinerea* and *Tephromela atra*, 20.09.2000 S. Kondratyuk 20115 (KW); slopes of Mt Hermon, old plantation of olea trees near Nimrod fortress ruins, on *Olea europea* bark, 20.09.2000 S. Kondratyuk 20117 (KW). Upper Galilee: Lower Nahal Keziv, Nahal Keziv Reserve, «Evolution Canyon» II, north-faced slopes, point 7, (the highest on the slope), on limestone and on bark of *Quercus*, *Laurus* etc., 14.01.2000, S. Kondratyuk 2014 (KW).

GENERAL DISTRIBUTION: Europe, Caucasus, Asia, North America, Greenland, North and Central Africa, South America.

11. **LEPTORHAPHIS atomaria** (Ach.) Szat., Magy. Bot. Lapok, 26: 31, 1928 («1927»).

SYNONYMS: *Lichen atomarius* Ach., Lich. Suec. Prodr.: 16, 1799;

*Sagedia salicis* Massal., *Verrucaria punctiformis* v. *atomaria* (Ach.) Ach., *Arthopyrenia punctiformis* v. *atomaria* (Ach.) Anzi, *Microthelia atomaria* (Ach.) Körb., *Arthopyrenia analepta* v. *atomaria* (Ach.) Jatta, *Mycomicrothelia atomaria* (Ach.) Keissler.

DESCRIPTION: Purvis et al., 1992: 357.

HABITAT: on bark of trees.

DISTRIBUTION IN ISRAEL. Golan Heights: NE vicinity of Majdan Shams, EEN slope, old fruit garden, 1400 m alt., on bark of *Malus* growing together with *Physconia distorta*, 27.09.2000 S. Kondratyuk 20128 (KW).

GENERAL DISTRIBUTION: Europe (temperate and boreal regions), Asia.

12. **OXNERIA ulophyllodes** (Räsänen) S. Kondratyuk & Kärnefelt, Ukr. Botan Journ., 60 (4): 432 (2003).

SYNONYMS: *Xanthoria substellaris* (Ach.) Vain. (pr. p.); *Xanthoria ulophyllodes* Räsänen, Die Flechten Estlands: 105, 1931.

DESCRIPTION: Lindblom, 1997: 160.

HABITAT: on bark of trees.

DISTRIBUTION IN ISRAEL. Golan Heights: NE vicinity of Majdan Shams, EEN slope, old fruit garden, 1400 m alt., on bark of *Amygdalus*, *Crataegus*, and *Malus* growing together with *Physconia distorta*, 27.09.2000 S. Kondratyuk 20128 (KW).

GENERAL DISTRIBUTION: Widespread in Northern Hemisphere, especially in boreal regions.

TAXONOMIC NOTES. Taxonomy of the soresidious species in the former *Xanthoria ulophyllodes* group was and still is very confusing [see 2, 8, 9]. Old records (as *Xanthoria substellaris* (Ach.) Vain.) should be cited with hesitation. Only revision of original herbarium specimens may be basement for conclusion which taxa were treated (and cited as *Xanthoria substellaris* (Ach.) Vain. in old literature) from Eurasia.

13. **PARMELIA exasperata** de Not., Giorn. Bot. Ital., 2, 2: 193, 1847.

SYNONYMS: *Melanelia exasperata* (de Not.) Essl., *P. aspidota* (Ach.) Poetsch, *P. aspera* Massal.

DESCRIPTION: Purvis et al., 1992: 433.

HABITAT: on bark of trees.

DISTRIBUTION IN ISRAEL. Golan Heights: NE vicinity of Majdal Shams, EEN slope, old fruit garden, 1400 m alt., on bark of *Amygdalus*, *Crategus*, *Malus* growing together with *Physconia distorta*, 27.09.2000 S. Kondratyuk 20128 (KW).

GENERAL DISTRIBUTION: Europe, Asia, North America, North Africa.

14. *PARMELIA acetabulum* (Neck.) Duby [in DC. & Duby], Bot. Gall., 2 ed., 2: 601, 1830.

SYNONYMS: *Lichen acetabulum* Necker, Delic. Gallo-Belg. Silv., 2: 506 (1768); *Pleurosticta acetabulum* (Neck.) Elix and Lumbsch, in Lumbsch, Kothe and Elix.

DESCRIPTION: Purvis et al., 1992: 436.

HABITAT: on trunk of trees.

DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, 500 m to N of Neve Ativ village, old fruit garden, on bark of old fruit trees, 20.09.2000 S. Kondratyuk 20116 (KW).

GENERAL DISTRIBUTION: a southern and eastern species in Europe, from central Scandinavia to North Africa. Asia (Syria, Israel, Jordan).

15. *PERTUSARIA albescens* (Hudson) M. Choisy ex Werner [in Werner], Cavanillesia, 5: 165, 1932.

SYNONYMS: *Lichen albescens* Hudson, Fl. Angl., ed. 1: 445, 1862; *Pertusaria discoidea* (Pers.) Malme.

DESCRIPTION: Purvis et al., 1992: 450.

HABITAT: on bark of trees.

DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, old plantation of olea trees near Nimrod fortress ruins, on *Olea europea* bark, 20.09.2000 S. Kondratyuk 20117 (KW).

GENERAL DISTRIBUTION: it is widely spread and often common in temperate areas of Europe, Caucasus, Asia (Turkey, Syria, Israel, Saudi Arabia), North Africa (Algeria, Morocco, Tunisia), North, Central and South America, New Zealand.

16. *PERTUSARIA amara* (Ach.) Nyl., Bull. Soc. Linn. Normandie, ser. 2, 6: 288, 1873.

SYNONYMS: *Variolaria amara* Ach., K. Sv. Vetensk.-Akad. N. Handl., 30, 3: 163, 1809; *Pertusaria faginea* auct. Ital. p. p.

DESCRIPTION: Purvis et al., 1992: 450.

HABITAT: on bark of trees.

DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, old plantation of olea trees near Nimrod fortress ruins, on *Olea europea* bark, 20.09.2000 S. Kondratyuk 20117 (KW).

GENERAL DISTRIBUTION: Europe, Asia (Turkey, Israel), North Africa (Algeria, Morocco, Tunisia), South Africa, North America.

17. **PHAEOPHYSCIA hirsuta** (Mereschk.) Essl., Mycotaxon, 7, 2: 302, 1978.

SYNONYMS: *Physcia hirsuta* Mereschk., Ann. Cons. J. Bot. Geneve, 121: 181, 1919; *Physcia labrata* Mereschk.

DESCRIPTION: Esslinger, 1978: 302.

HABITAT: on bark of trees.

DISTRIBUTION IN ISRAEL. Golan Heights: on secondary ridges, or on N-facing slope of Mt Hermon, 1600 m alt., in oak forest or bark of trees, 26.09.2000 S. Kondratyuk 20127 (KW).

GENERAL DISTRIBUTION: Southern Europe, Asia (Israel, Mongolia), North Africa (Algeria, Tunisia), North, Central and South America.

18. **PHAEOPHYSCIA nigricans** (Florke) Moberg, Symb. Bot. Upsal., 22, 1: 42, 1977.

SYNONYMS: *Lecanora nigricans* Florke, Deutsch. Lich., Anm., 5 Lief.: 10, 1819; *Physcia sciastrella* (Nyl.) Harm., *Physcia nigricans* (Florke) Stizenb.

DESCRIPTION: Purvis et al., 1992: 465.

HABITAT: on calcareous rocks and on bark of trees.

DISTRIBUTION IN ISRAEL. Golan Heights: NE vicinity of Majdal Shams, EEN slope, old fruit garden, 1400 m alt., on bark of *Amygdalus*, *Crategus*, and *Malus* growing together with *Physconia distorta*, 27.09.2000 S. Kondratyuk 20128 (KW).

GENERAL DISTRIBUTION: Europe, Asia (Israel, China, Tajikistan, Afghanistan), North America.

19. **PHAEOPHYSCIA orbicularis** (Necker) Moberg, Symb. Bot. Upsal., 22, 1: 44, 1977.

SYNONYMS: *Lichen orbicularis* Necker, Delic. Gallo-Belg.: 509, 1768.

DESCRIPTION: Purvis et al., 1992: 464.

HABITAT: on bark, calcareous and siliceous rocks and lignum.

DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, old plantation of olea trees near Nimrod fortress ruins, on *Olea europea* bark, 20.09.2000 S. Kondratyuk 20117 (KW).

GENERAL DISTRIBUTION: Europe and Asia (in the Near East Israel and Saudi Arabia).

REFERENCES: Kürschner, 1984; Abu-Zinada et al., 1986; Bokhary et al., 1993: 494; Nimis, 1993: 527.

20. **PHLYCTIS argena** (Sprengel) Flotow, Bot. Zeit., 8: 572, 1850.

SYNONYMS: *Parmelia argena* Sprengel, Caroli Linnaei Syst. Veget., 4, 1: 300, 1827.

DESCRIPTION: Oxner, 1993: 520.

HABITAT: on bark of deciduous trees.

DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, old plantation of olea trees near Nimrod fortress ruins, on *Olea europea* bark, 20.09.2000 S. Kondratyuk 20117 (KW).

GENERAL DISTRIBUTION: Almost all of Europe, Caucasus, Asia (Israel, Saudi Arabia).

21. **PROTOHELENELLA sphinctrinoidella** (Nyl.) H. Mayrh. & Poelt., Herzogia, 7: 45, 1985.

SYNONYMS: *Verrucaria sphinctrinoidella* Nyl., Flora, 47: 356, 1864; *Thelenella reducta* (Th. Fr.) Vainio, *Microglæna sphinctrinoidella* (Nyl.) Arnold.

DESCRIPTION: Purvis et al., 1992: 504.

HABITAT: overgrowing hepatics on acid soils or rocks.

DISTRIBUTION IN ISRAEL. Golan Heights: NE vicinity of Majdal Shams, EEN slope, old fruit garden, 1400 m alt., on mosses above rock outcrops, 27.09.2000 S. Kondratyuk 20128 (KW).

GENERAL DISTRIBUTION: Europe, Asia.

22. **RAMALINA fraxinea** (L.) Ach. v. *calicariformis* Nyl., Lich. Univ.: 602, 1810.

SYNONYMS: *Lichen fraxineus* L., Sp. Pl., 2: 1146, 1753; *Ramalina fraxinea* var. *calicariformis* Nyl.

DESCRIPTION: Purvis et al., 1998: 527.

HABITAT: on twigs and branches of trees.

DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, old (a. 600-year old) oak forest to S of Mas'ada settlement, 800—900 m alt., on bark of oak trees (*Quercus caliprinus*, *Q. infesta*, *Q. ithaburensis*, and *Q. boisei*), 20.09.2000 S. Kondratyuk 20115 (KW).

GENERAL DISTRIBUTION: Europe, Asia.

23. **RHIZOCARPON polycarpum** (Hepp) Th. Fr., Lichenogr. Scand., 1: 617 (1874).

SYNONYMS: *Lecidea confervoides* v. *polycarpa* Hepp, Flecht. Eur.: nr. 35, 1853; *Catocarpon polycarpon* (Hepp) Arnold.

DESCRIPTION: Oxner, 1968: 188.

HABITAT: on hard siliceous rocks.

DISTRIBUTION IN ISRAEL. Golan Heights: slopes of Mt Hermon, old (a. 600-year old) oak forest to S of Mas'ada settlement, 800—900 m alt., on volcanic rock growing together with *Aspicilia cinerea* and *Tephromela atra*, 20.09.2000 S. Kondratyuk 20115 (KW).

GENERAL DISTRIBUTION: Europe (rather rare), almost all of Asia, North America, Greenland, Antarctica.

24. **RINODINA sophodes** (Ach.) A. Massal., Ric. Auton. Lich. Crost.: 14 (1852).

SYNONYMS: *Lichen sophodes* Ach., Lich. Suec. Prodr.: 67 (1799).

DESCRIPTION: Purvis et al., 1992: 552.

HABITAT: on smooth, often base — rich bark of deciduous trees.

DISTRIBUTION IN ISRAEL. Golan Heights: NE vicinity of Majdal Shams, EEN slope, old fruit garden, 1400 m alt., on bark of *Amygdalus*, *Crategus*, *Malus* growing together with *Physconia distorta*, 27.09.2000 S. Kondratyuk 20128 (KW). Carmel Mountains: Mount Carmel National Park, Lower Nahal Oren, «Evolution Canyon» I (32° 43'N, 34° 58'E), south-facing slope, point 2 (at the middle part of slope), a. 90 m alt., 13.01.2000, S. Kondratyuk 2006 (KW).

GENERAL DISTRIBUTION: Europe, Asia.



25. *RUSAVSKIA elegans* (Link.) S. Kondratyuk & Kärnefelt, Ukr. Botan Journ., 60 (4): 434 (2003).

SYNONYMS: *Lichen elegans* Link. Ann. Naturges., 1: 37, 1791; *Xanthoria elegans* (Link.) Th. Fr., Gen. Heterolich. Eur. Recog: 61 (1861).

DESCRIPTION: Lindblom, 1997: 129.

HABITAT: on various rocks.

DISTRIBUTION IN ISRAEL. Golan Heights: Ski resort, N-facing or N-W-facing slopes of Mt Hermon at the upper cable station, 1600—2000 m alt., on basaltic rocks, 26.09.2000 S. Kondratyuk 20126 (KW).

GENERAL DISTRIBUTION: a cosmopolitan (bipolar) species, which is much commoner in arctic areas as well as in alpine belts.

26. *RUSAVSKIA sorediata* (Vainio) S. Kondratyuk & Kärnefelt, Ukr. Botan Journ., 60 (4): 434 (2003).

SYNONYMS: *Lecanora elegans* var. *sorediata* Vainio, Medd. Soc. F. Fl. Fenn., 6: 143, 1881; *XANTHORIA sorediata* (Vainio) Poelt, Mitt. Bot. Staats. Munchen, 11: 29, 1954.

DESCRIPTION: Oxner, 1993: 478.

HABITAT: on rocks.

DISTRIBUTION IN ISRAEL. Upper Jordan Valley: NE vicinity of Kokhav Ha-Yarden Reserve, upper part of the hills, on basaltic rocks, 25.09.2000 S. Kondratyuk 20124 (KW).

GENERAL DISTRIBUTION: Europe, Caucasus, Asia, North America.

27. *UMBILICARIA grisea* Hoffm., Deutschl. Flora: 111, 1796.

SYNONYMS: *Gyrophora murina* Ach., *Umbilicaria murina* (Ach.) DC.

DESCRIPTION: Purvis et al., 1992: 618.

HABITAT: on rocks.

DISTRIBUTION IN ISRAEL. Golan Heights: N-facing or N-W-facing slopes of Mt Hermon, 1600—2000 m alt., on rocks, 26.09.2000 S. Kondratyuk 20126 (KW).

GENERAL DISTRIBUTION: Europe, Asia.

Lichenicolous Fungi

28. *ARTHONIA clemens* (Tul.) Th. Fr., K. Sv. Vetensk. — Akad. Handl., 7, 2: 46, 1867.

SYNONYMS: *Phacopsis clemens* Tul., Ann. Sc. Nat. Bot., ser. 3, 17: 124, 1852; *Conida clemens* (Tul.) Massal.

DESCRIPTION: Purvis et al. 1992: 79

HABITAT: on *Lecanora hagenii* (apothecia and thallus).

DISTRIBUTION IN ISRAEL. Golan Heights: NE vicinity of Majdal Shams, EEN slope, old fruit garden, 1400 m alt., on bark of *Pinus*, *Amygdalus*, *Crategus*, *Malus*, on *Lecanora hagenii* (apothecia and thallus) growing together with *Physconia distorta*, 27.09.2000 S. Kondratyuk 20128 (KW).

GENERAL DISTRIBUTION: Europe, Asia (Israel, Syria, China), North Africa, Greenland.

REFERENCES: Nimis, 1993: 75.

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1. Galun, M. & Mukhtar, A. Checklist of the lichens of Israel // *Bocconea*. — 1996. — 6. — P. 149—171.
2. Kondratyuk S.Ya. Family *Teloschistaceae*, *Oxneria*, *Rusavskia*, *Teloschistes*, *Xanthoanaptychia*, *Xanthomendoza*, *Xanthoria* // Handbook of the lichens of Russia. 9. Fuscideaceae, Teloschistaceae / Eds. Andreev M.P., Roms E.G. — Sankt-Peterburg, Nauka, 2004. — P. 37—38, 242—302.
3. Kondratyuk, S.Y. & Zelenko, S.D. New lichens and lichenicolous fungi from Israel and the Near East // *Ukr. Botan. Journ.* — 2002. — 59, N 5. — P 598—607.
4. Kondratyuk, S.Y., Navrotskaya, I.L., Zelenko, S.D., Wasser, S.P., Nevo, E. The first checklist of lichen-forming and lichenicolous fungi of Israel / Eds. E. Nevo & S.P. Wasser. — Kyiv; Haifa, 1996. — 136 p.
5. Kondratyuk, S., Zelenko, S., Nevo, E. & Wasser, S. New and rare lichen-forming fungi from Upper Galilee // *Ukr. Botan. Journ.* — 2005. — 62. — [in press]
6. Kondratyuk, S., Nevo, E. & Wasser, S. New and rare lichen-forming and lichenicolous fungi from the Carmel Mounts, Israel // *Ukr. Botan. Journ.* — 2005. — 62, N 1. — P. 100—110.
7. Navrotskaya, I.L., Kondratyuk, S.Ya., Wasser, S.P., Nevo, E. & Zelenko, S.D. Lichens and lichenicolous fungi new for Israel and other countries // *Israel Journ. of Plant Sciences*. — 1996. — 44. — P. 181—196.
8. Poelt, J. & Petutschnig, W. Beiträge zur Kenntnis der Flechtenflora des Himalaya IV. Die Gattungen *Xanthoria* und *Teloschistes* zugleich Versuch einer Revision der *Xanthoria candelaria*-Gruppe // *Nova Hedwigia*. — 1992. — 54. — P. 1—36.
9. Poelt, J. & Petutschnig, W. *Xanthoria candelaria* und ähnliche Arten in Europa // *Herzogia*. — 1992. — 9. — P. 103—114.
10. Wasser, S.P., Nevo, E., Vinogradova, O.N., Navrotskaya, I.L., Ellanskaya, I.A., Volz, P.A., Virchenko, V.M., Tsarenko, P.M. & Kondratyuk, S.Y. Diversity of cryptogamic plants and fungi in «Evolution Canyon», Nahal Oren, Mount Carmel Natural Preserve, Israel // *Israel Journ. of Plant Sciences*. — 1995. — 43. — P. 367—383.

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### НОВІ ДЛЯ ІЗРАЇЛЮ ВИДИ ЛИШАЙНИКІВ З ГОЛАНСЬКИХ ВИСОТ

Наведено 28 нових (*Arthonia clemens*, *Caloplaca biatorina*, *Candelaria concolor*, *Candelariella reflexa*, *C. subdeflexa*, *C. xanthostigma*, *Chrysothrix candelaris*, *Lecanora carpinea*, *L. leptyrodes*, *Leptogium cyanescens*, *L. lichenoides*, *Leptorhaphis atomaria*, *Oxneria ulophylloides*, *Parmelia exasperata*, *P. acetabulum*, *Pertusaria albescens*, *P. amara*, *Phaeophyscia hirsuta*, *P. nigricans*, *P. orbicularis*, *Phlyctis argena*, *Protothelenella sphinctrinoidella*, *Ramalina fraxinea*, *Rhizocarpon*

*polycarpum*, *Rinodina sophodes*, *Rusavskia elegans*, *R. sorediata* та *Umbilicaria grisea*) для Ізраїлю видів лишайників з Голанських висот. Для всіх таксонів наведені описи, що включають синоніми, посилання на діагнози, поширення в Ізраїлі та загальне поширення.

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#### НОВЫЕ ДЛЯ ИЗРАИЛЯ ВИДЫ ЛИШАЙНИКОВ С ГОЛАНСКИХ ВЫСОТ

Приведено 28 новых (*Arthonia clemens*, *Caloplaca biatorina*, *Candelaria concolor*, *Candelariella reflexa*, *C. subdeflexa*, *C. xanthostigma*, *Chrysothrix candelaris*, *Lecanora carpineae*, *L. leptyroides*, *Leptogium cyanescens*, *L. lichenoides*, *Leptorhaphis atomaria*, *Oxneria ulophyllodes*, *Parmelia exasperata*, *P. acetabulum*, *Pertusaria albescens*, *P. amara*, *Phaeophyscia hirsuta*, *P. nigricans*, *P. orbicularis*, *Phlyctis argena*, *Protothelenella sphinctrinoidella*, *Ramalina fraxinea*, *Rhizocarpon polycarpum*, *Rinodina sophodes*, *Rusavskia elegans*, *R. sorediata* и *Umbilicaria grisea*) для Израиля видов лишайников с Голанских высот. Для всех таксонов приведены описания, включающие синонимы, ссылки на диагнозы, распространение в Израиле и общее распространение.