

NEW AND NOTEWORTHY LICHEN-FORMING AND LICHENICOLOUS FUNGI 4*

S. Y. KONDRATYUK^{1#}, L. LŐKÖS², J. P. HALDA³, M. HAJI MONIRI⁴, E. FARKAS⁵, J. S. PARK⁶,
B. G. LEE⁶, S.-O. OH⁶ and J.-S. HUR⁶

¹M. H. Kholodny Institute of Botany, Tereshchenkivska str. 2, 01004 Kiev, Ukraine
E-mail: [#]ksya_net@ukr.net

²Department of Botany, Hungarian Natural History Museum
H-1431 Budapest, Pf. 137, Hungary; E-mail: lokos@bot.nhmus.hu

³Muzeum a galerie Orlických hor, Jiráskova 2, 516 01 Rychnov nad Kněžnou, Czech Republic

⁴Department of Biology, Faculty of Sciences, Mashhad Branch, Islamic Azad University
Mashhad, Iran; E-mail: hmoniri@yahoo.com

⁵Institute of Ecology and Botany, Centre for Ecological Research, Hungarian Academy of Sciences
H-2163 Vácrátót, Alkotmány u. 2–4, Hungary

⁶Korean Lichen Research Institute, Suncheon National University, Suncheon 540-742, Korea
E-mail: jshur1@suncheon.ac.kr

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Data on about 27 new for South Korea species of lichen-forming and lichenicolous fungi, including one new for science genus *Verseghya* and 11 new for science species, i.e.: *Agominia loekoesii*, *Lecanora pseudosambuci*, *Nectriopsis verseghyklarae*, *Polysporina golubkova*, *Protoparmeliopsis zerovii*, *Psoroglaena chirisanensis*, *Pyrenopsis chejudoensis*, *Ropalospora chirisanensis*, *Thelopsis chirisanensis*, *Trapelia coreana*, and *Verseghya klarae*, as well as 27 taxa newly recorded for the country (*Biatora* aff. *subduplex*, *Buellia* cf. *uberior*, *Caloplaca kedrovopadensis*, *Catillaria chalybaea*, *Coenogonium isidiatum*, *Dibaeis yurii*, *Halecania australis*, *H. lobulata*, *Intraliichen christiansenii*, *Ivanpisutia oxneri*, *Lecania* cf. *olivacella*, *Lecanora lojkahugoi*, *L. sulphurea*, *Lecidella mandshurica*, *Lichenocodium erodens*, *Micarea lithinella*, *M. aff. stipitata*, *Muellerella pygmaea* var. *pygmaea*, *Oxneria alfredii*, *Pertusaria* aff. *flavocorallina*, *Phaeosporobolus alpinum*, *Polycoccum innatum*, *Porina fluminea*, *Rinodina xanthophaea*, *Ropalospora chloantha*, *Stigmidium cladoniicola*, and *S. epiramalina*) are provided.

Additional localities for the recently reported or described 39 species from South Korea, and for 1 species (*Oxnerella safavidiorum*) from Iran and China (for the first time for China) are provided.

The following taxa newly recorded for South Korea, i.e. *Ivanpisutia oxneri*, *Lecanora lojkahugoi*, *Lecidella mandshurica*, *Rinodina xanthophaea*, *Ropalospora chloantha*, as well as the newly described *Buellia chujadoensis* and *Verseghya klarae* found to be rather common in this country.

Key words: *Agominia*, *Ivanpisutia*, Korea, *Lecanora*, *Nectriopsis*, new for science, *Polysporina*, *Protoparmeliopsis*, *Psoroglaena*, *Pyrenopsis*, rare, *Ropalospora*, *Thelopsis*, *Trapelia*, *Verseghya*

* Previous contributions were published in 2013 and 2015 (Kondratyuk *et al.* 2013, 2015a, b).

INTRODUCTION

As a continuation of our former papers (Kondratyuk *et al.* 2013, 2015a, b) in this paper we intend to add 38 new species of lichen-forming and lichenicolous fungi and some more occurrence records to the Korean lichen flora, as well as further contributions to the lichen flora of other Asian areas (Iran, China, etc.).

MATERIALS AND METHODS

A total of 1,300 specimens were sampled during the current collections in 2014 and 2015, and these are deposited in the Korean Lichen Research Institute, Sunchon National University, South Korea (hereafter KoLRI), as well as some duplicates in the Hungarian Natural History Museum (hereafter BP) and the Lichen Herbarium of M. H. Kholodny Institute of the Botany of the National Academy of Sciences of Ukraine (hereafter KW-L).

The specimens were examined using standard microscopical techniques and hand-sectioned under a dissecting microscope (Nikon SMZ 645; Nikon, Tokyo, Japan). Anatomical descriptions were based on observations of these preparations under a microscope (Nikon Eclipse E200; Nikon, Tokyo, Japan, and Zeiss Scope.A1; Carl Zeiss, Oberkochen, Germany) with digital camera AxioCam ERc 5s. Section of apothecia were tested with water and with K and IKI (10% aqueous potassium iodide) for identification.

For identification chemical substances of critical taxa standard TLC and HPTLC methods with solvent C were carried out (Arup *et al.* 1993, Orange *et al.* 2001).

RESULTS AND DISCUSSION

New taxa

Agonimia loekoesii S. Y. Kondr., J. Halda et J.-S. Hur, *spec. nova*
(Figs 1–2)

Mycobank no.: MB 815786

Similar to Agonimia blumii, but differs in having indistinct thallus, in having irregular thalline fragments dissolving into soredious mass, in having more or less distinct soredia/blastidia chains forming 'lax' or more or less agglutinate soredious mass, as well as in the lack of isidia.

Type: Republic of Korea, Gangwon-do Prov., Samcheok-si, Geundeok-myeon, Gungchonhaebyeon-gil, seashore rocks, on siliceous rock, growing together with *Caloplaca* sp. Lat.: 37° 19' 43.68" N; Long.: 129° 16' 12.36" E; Alt.: ca 5 m a.s.l. Coll.: Lőkös, L. (151282), 11.07.2015 (holotype: KoLRI 034515); the same locality, (151285), (isotype: KoLRI 034518 sub *Caloplaca* sp.); the same locality, (151286), (isotype: KoLRI 034519 sub *Caloplaca* sp.); the same locality, (151287) (isotype: KoLRI 034520 sub *Caloplaca* sp.).

Thallus to several cm across, but usually indistinct (details can be seen only by dissecting microscope), from 'primary' crustose, of scattered areoles ca 0.2–0.3 mm across to more or less continuous irregular fragments to 0.5–1(–2) mm across, very thin, seen only in the peripheral zone (to 0.5–2 mm wide), smooth and very thin, mainly in undulations of rock surface, of dark brownish-greyish or dark greyish, soon becoming dissolving into soredia/blastidia and forming 'secondary' completely soredious mass, somewhat uplifted, whitish-greyish or dirty greenish-whitish-greyish, sometimes soredious mass divided into visible 'pseudoareoles' to 0.6–1.5 mm across with visible cracks to 0.1–0.2 mm wide. Thallus usually of very pied/variegated coloration ('primary' continuous thallus dark brownish-greyish or dark greyish, soredia/blastidia whitish, and mixture of brownish-greyish isidious chains of blastidia and whitish blastidia), which makes thalli very indistinct among other lichens.

Blastidia/soredia ca 20–30 µm diam., mainly regularly rounded, whitish, usually somewhat conglutinated in chains forming rather lax mass, forming from dissolving uplifted fragments of areoles or in more or less well-defined, rounded soralia, urceolate at first, 0.2–0.3 mm diam., but soon becoming aggregated and coalescing; blastidia often forming very narrow chains, 40–60 µm wide, with distinct constrictions between separate soredia/blastidia, and rather short, to 0.1–0.2 mm, which forming slightly uplifted confluent soredious mass, whitish-greenish-greyish or dull white to dull whitish-greenish, slightly lighter of thalline portions; separate blastidia or blastidia chains often becoming isidious, usually dark brownish-greyish or dark greyish, forming rather agglutinate soredious mass, where separate chains forming slightly uplifted soredious mass (but not so highly uplifted as in *A. blumii*); blastidious mass from rather scarce, where small groups more or less uplifted or irregularly directed chains of blastidia to 0.2 mm long form distant and scattered groups, to confluent mass covering substrate (especially in substrate undulations), from white or whitish, when blastidia predominant, to dark brownish-greyish or dark greyish, when forming mainly by isidious blastidia chains (often within the same thallus, see specimen nr 151286).

Prothallus indistinct. Apothecia and conidiomata unknown.

Ecology: It grows on siliceous rocks in coastal zones.

Etymology: It is named after a known Hungarian lichenologist and our friend László Lőkös (BP, Budapest), who has collected the type collection.

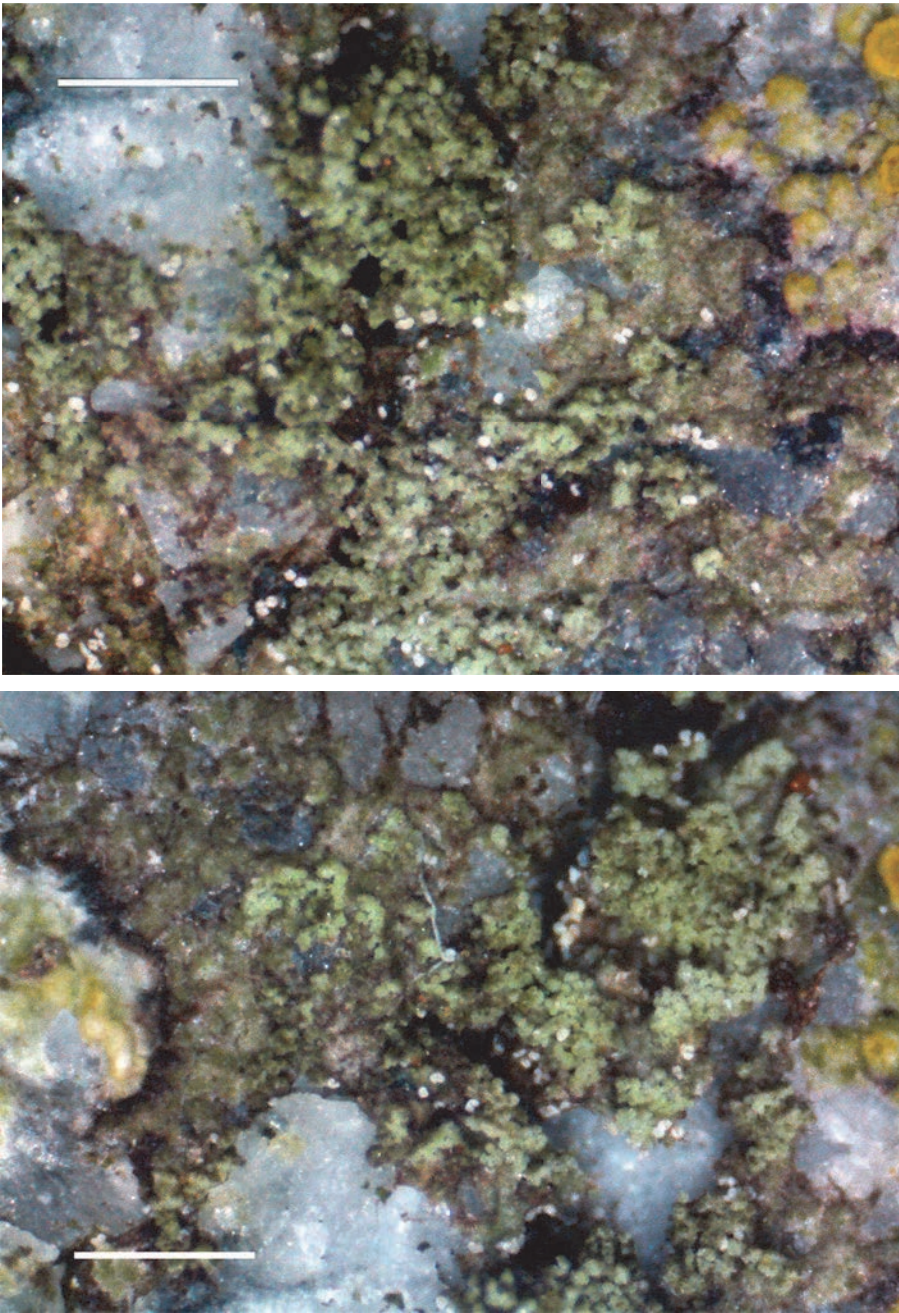


Fig. 1. *Agonimia loekoessii*, general habit (top: 151363, bottom: 151334). Scale 1 mm (photo: S. Kondratyuk)

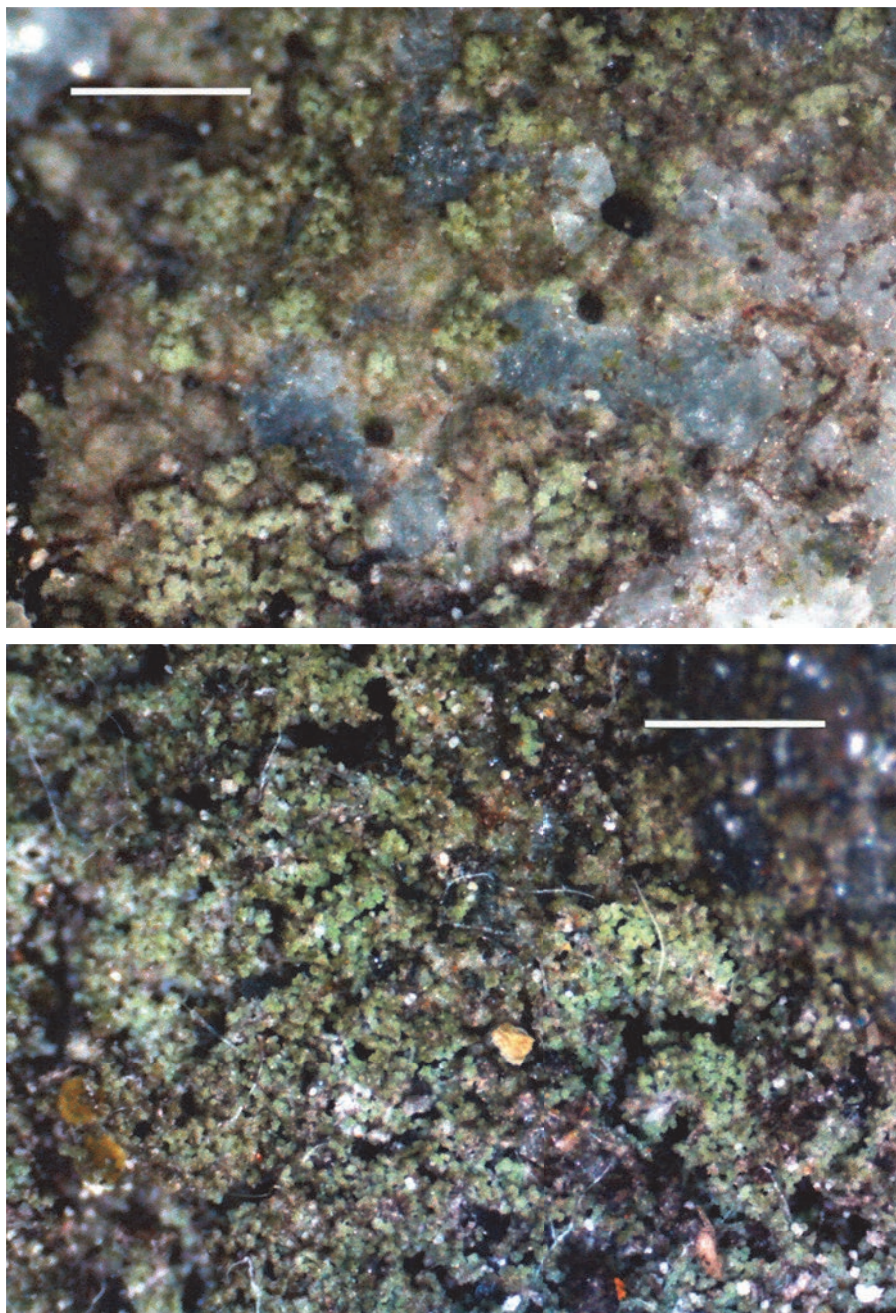


Fig. 2. *Agonimia loekoesii*, general habit (top: 151363, bottom: isotype, 151285). Scale 1 mm (photo: S. Kondratyuk)

Distribution: It is known so far from several localities in the eastern coastal region of South Korea, Eastern Asia.

Taxonomic notes: After having dark brownish grey primary thalline areoles and in dissolving thalline portions into soredious/blastidious mass, which can form irregular 'pseudoareoles' *Agonimia loekoesii* is similar to *A. blumii* S. Y. Kondr., recently described soredious and isidious taxon from Russian Far East, Eastern Asia, but differs in having indistinct thallus (*vs* easily recognised in nature as *Lepraria*-like lichen), in having irregular thalline fragments dissolving into continuous soredious mass (*vs* thallus formed by separate more or less distinct areoles), in having more or less distinct chains of blastidia forming 'lax' or more or less agglutinate soredious mass (*vs* rather highly uplifted, and forming distinct and thick 'pseudoareoles'), as well as in the lack of isidia (Kondratyuk 2015). *Agonimia loekoesii* is the second soredious *Agonimia* species in the eastern Asian region after *A. blumii*.

In portions of thallus, where blastidious/soredious chains are especially well developed, *Agonimia loekoesii* may resemble *A. cavernicola*, recently described from Cheju Island of South Korea, Eastern Asia, but differs in having much narrower chains (40–60 μm *vs* 0.1–0.2 mm wide), with distinct constrictions between separate soredia/blastidia (*vs* more or less cylindrical isidia), and chains are much shorter (0.1–0.2 mm *vs* to 1 mm long) (Kondratyuk *et al.* 2015a).

In contrast to *Lecania* growing side by side with *Agonimia* thallus ('primary' continuous thalline fragments in peripheral zone) in much thicker, somewhat uplifted above the substrate level (*vs* almost immersed into substrate or much thinner film covering substrate), as well as in having soredious mass and in the lack of apothecia (see isotype specimen nr 151285).

Agonimia loekoesii growing side by side with *Caloplaca* sp. and sometimes apothecia of *Caloplaca* can be among the soredious/blastidious mass. However, *Caloplaca* has thinner continuous from whitish to yellowish green thallus and does not belong to formation of blastidious mass.

Other specimens examined (paratypes): Republic of Korea, Gangwon-do Prov., Samcheok-si, Wondeok-eup, Sinnam-gil, seashore rocks, on siliceous rock, growing together with *Lecidella* sp. and *Caloplaca* sp. Lat.: 37° 15' 40.08" N; Long.: 129° 19' 51.36" E; Alt.: ca 5 m a.s.l. Coll.: Kondratyuk, S. (SK-100), Lőkös, L. (151334), 11.07.2015 (KoLRI 034567, sub *Lecidella*). – Gyeongsangbuk-do Prov., Uljin-gun, Giseong-myeon, Mangyang 1-gil, seashore rocks. Lat.: 36° 50' 05.29" N; Long.: 129° 26' 35.54" E; Alt.: ca 5 m a.s.l. on granitic rock, growing together with *Caloplaca* sp. and *Lecania* sp. Coll.: Kondratyuk, S. (SK-103), Lőkös, L. (151363), 12.07.2015 (KoLRI 034596); the same locality, growing together with *Bacidia* sp., *Yoshimuria spodoplaca*, *Caloplaca* sp., *Catillaria* sp., *Lecanora* spp. and *Lecania* sp. (151364), (KoLRI 034597); the same locality, growing together with *Caloplaca* aff. *flavovirescens*, *Caloplaca* sp. and *Lecanora* cf. *campestris* (151383), (KoLRI 034616, sub *Caloplaca* aff. *flavovirescens*).

Lecanora pseudosambuci S. Y. Kondr., L. Lőkös et J.-S. Hur, *spec. nova*
(Fig. 3)

Mycobank no.: MB 815787

Similar to Myriolecis sambuci, but differs in having well-developed true exciple, in having biatorine apothecia from the beginning, in having epihymenium K+ intensifying olivaceous, and in having only 16-spored asci.

Type: Republic of Korea, Gangwon-do, Samcheok-si, Hajang-myeon, Mt Sambong, on bark, growing together with *Hafellia pseudosubnexa*, *Rinodina* sp., *Biatora* sp., *Catillaria nigroclavata* and *Scoliciosporum chlorococcum*. Lat.: 37° 18' 18.36" N; Long.: 128° 56' 22.08" E; Alt.: ca 930 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A., Hur, J. Y. (090344), 15.05.2009. Holotype: KoLRI 010072 (sub *Hafellia pseudosubnexa*).

Thallus to 1–2 mm across, but may form larger aggregations, crustose, continuous, grey to light grey, somewhat thick, while indistinct and distinguished owing to aggregated dark brown apothecia. Hypothallus not observed.

Apothecia 0.25–0.4 mm in diam., in section 0.15 mm thick, biatorine, with very thin, to 30 µm wide own margin, disc more or less plane, dark brown, own margin slightly lighter of disc, yellowish brown; in section biatorine, thalline exciple absent or badly developed, to 50–60 µm thick, with cortical layer to 20 µm thick; true exciple to (20–)25–50(–60) µm thick in the

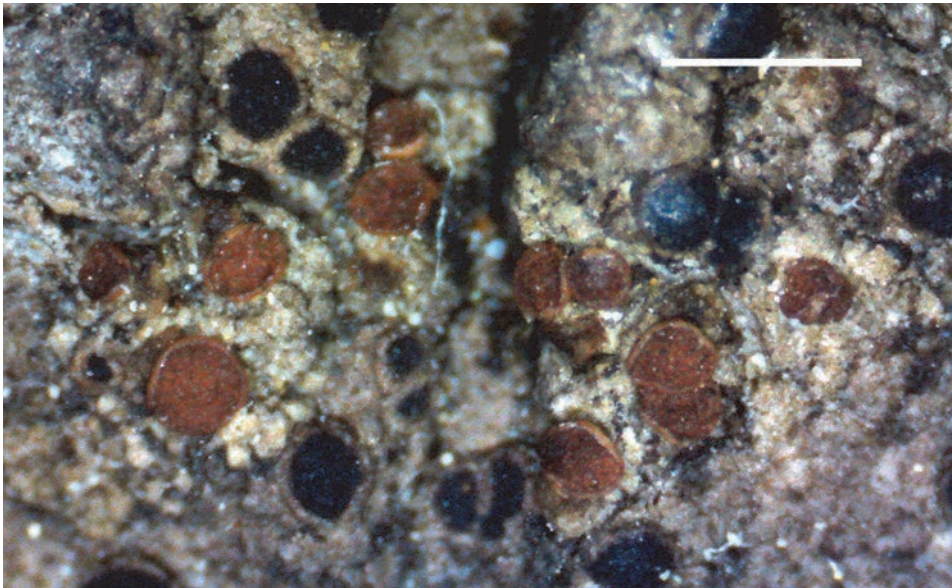


Fig. 3. *Lecanora pseudosambuci*, general habit (holotype). Scale 2 mm (A) and 1 mm (B) (photo: S. Kondratyuk)

uppermost lateral portion, to 35 μm thick in lower lateral portion of radiating hyphae and 20–30 μm thick in basal portion, of radiating hyphae or palisade plectenchymatous; hymenium to 70–80 μm high; epihymenium to 15 μm thick, brownish olivaceous, in K+ intensifying olivaceous; paraphyses becoming brownish in the upper portion to 20–30 μm long, the tips to 3–4 μm in diam.; subhymenium 30 μm thick; asci (15–)16-spored; ascospores widely ellipsoid, (7–)8–11(–12) \times 4–5.5(–8) μm .

Chemistry: Epihymenium K+ intensifying olivaceous.

Etymology: The species epithet reflects similarity with the species *Myriolecis sambuci*.

Distribution: It is known only from two distant localities so far, i.e. Mt Geumwonsan and Mt Sambong in South Korea, Eastern Asia.

Taxonomic notes: *Lecanora pseudosambuci* is similar to *Myriolecis sambuci*, but differs in having well-developed true exciple, in having biatorine apothecia from the beginning, in having only 16-spored asci (*vs* 8–16–32-spored), in having different reaction with K (K+ becoming intensifying olivaceous or greenish, *vs* K–), while apothecia (0.25–0.4 mm *vs* 0.2–0.4 mm diam.) and ascospores ((7–)8–11(–12) \times 4–5.5(–8) μm *vs* 6–8–12 \times 4–6 μm) are the same.

From the recently described *Lecanora loekoesii* L. Lü, Y. Joshi et Hur, known from a number of Eastern Asian countries (Korea, China, etc.) now, *L. pseudosambuci* differs in having smaller apothecia (to 0.4 mm *vs* up to 0.7 mm diam.), in having only 16-spored asci (*vs* 12–16-spored), and in having smaller ascospores ((7–)8–11(–12) \times 4–5.5(–8) μm *vs* (12–)12.6–15.3(–16.2) \times (7–)7.5–8.5(–9) μm).

Myriolecis sambuci is considered to be the type species of the genus *Myriolecis* Clements, recently resurrected by Zhao with colleagues (Zhao *et al.* 2015). However, the status of our species is still unclear, hopefully molecular studies of this material will help to clarify its generic position in future.

Other specimen examined: Republic of Korea, Gyeongsangnam-do, Geochang-gun, Wicheon-myeon, Mt Geumwonsan, on *Quercus* bark, growing together with *Lecanora imshaugii*. Lat.: 35° 43' 48.00" N; Long.: 127° 46' 31.56" E; Alt.: ca 994 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Han, G. S. (100493), 25.06.2010 (KoLRI 012099 sub *Lecanora imshaugii*).

Nectriopsis verseglyklarae S. Y. Kondr., L. Lőkös et J.-S. Hur, *spec. nova*
(Fig. 4)

Mycobank no.: MB 815788

Similar to Nectriopsis indigens, but differs in having smaller ascomata, in having thicker ascomatal wall, and in having longer ascospores.

Type: Republic of Korea, Jeollabuk-do, Muju-gun, Seolcheon-myeon, Mt Deogyusan, on *Quercus* bark, on thallus of *Verseghya klarae*, growing together with *Lecanora* sp. Lat.: 35° 50' 33.0" N; Long.: 127° 44' 49.0" E; Alt.: ca 1,490 m a.s.l. Coll.: Hur, J.-S. (060521), 10.08.2006. Holotype: KoLRI 004892 (sub *Lecanora*).

Ascomata lichenicolous on *Verseghya klarae* thalli, whitish mycelium near ascomata as very weak net of hyphae sometimes observed, but usually very hardly seen. Ascomata (0.11–)0.14–0.18(–0.2) mm in diam., perithecioid, solitary, superficial, non-stromatic, not immersed in a mycelium, regularly rounded or subspherical, to somewhat undulating or concave, often collapsing when dry, apothecia-like, scattered or 1–2 together but sometimes aggregated in numerous groups; dull orange to pale yellow or brownish orange. Exciple paraplectenchymatous, wall to 25(–28) μm thick, cells to 8–12 μm across, textura globulosa, in K becoming lighter; paraphyses to 2.5 μm in diam., gelatinized at maturity, remnants of paraphyses in K disappearing totally; asci 8-spored, subcylindrical to clavate; ascospores (0–)1-septate, hyaline, fusiform, attenuate toward the ends, septum mainly in central position, or one cell seems to be larger and shorter, (14–)15–17(–18) \times (4–)4.5–5.5(–6) μm .

Ecology: It grows on thallus of *Verseghya klarae*.

Etymology: This species is named after the well-known Hungarian lichenologist Dr Klára Verseghy (in Hungarian name order Verseghy Klára) (1930–), who has made important contributions to our knowledge on species diversity of the genus *Ochrolechia*.

Distribution: So far it is known from the type collection in S Korea, E Asia.

Taxonomic notes: *Nectriopsis verseghyklarae* is similar to *N. indigens* (Arnold) Diederich et Schroers, known from Europe from various crustose lichens, but differs in having smaller ascomata (0.14–0.18 mm vs 0.15–0.25 mm in diam.), in having thicker ascomatal wall (to 25(–28) μm thick vs composed of one single layer of cells, ca 20 μm thick), and in having narrower ascospores ((14–)15–17(–18) \times (4–)4.5–5.5(–6) μm vs 12–18 \times 6–8 μm).

Nectriopsis verseghyklarae is similar to *N. physciicola* D. Hawksw. et Earlbenn., recorded on *Physcia* cf. *aipolia* and *P. stellaris* in Europe, but differs in having smaller ascomata (0.14–0.18 mm vs (150–)200–300(–350) μm in diam.), in having narrower ascospores ((14–)15–17(–18) \times (4–)4.5–5.5(–6) μm vs (14–)15–20(–23) \times 5.5–8 μm), as well as in the lack of dark red around the ostiole, densely clothed with perithecial hairs.

Nectriopsis verseghyklarae is similar to *N. micareae* Diederich, van den Boom et Ernst, known from Europe from *Micarea* thalli, but differs in having larger ascomata (140–180 μm vs 100–125 μm in diam.), in having the perithecial wall forming a textura globulosa (vs a textura intricata), in having larger (longer and wider) ascospores ((14–)15–17(–18) \times (4–)4.5–5.5(–6) μm vs 12–14 \times 3.5–4.5 μm), as well as in the lack of perithecial hairs.

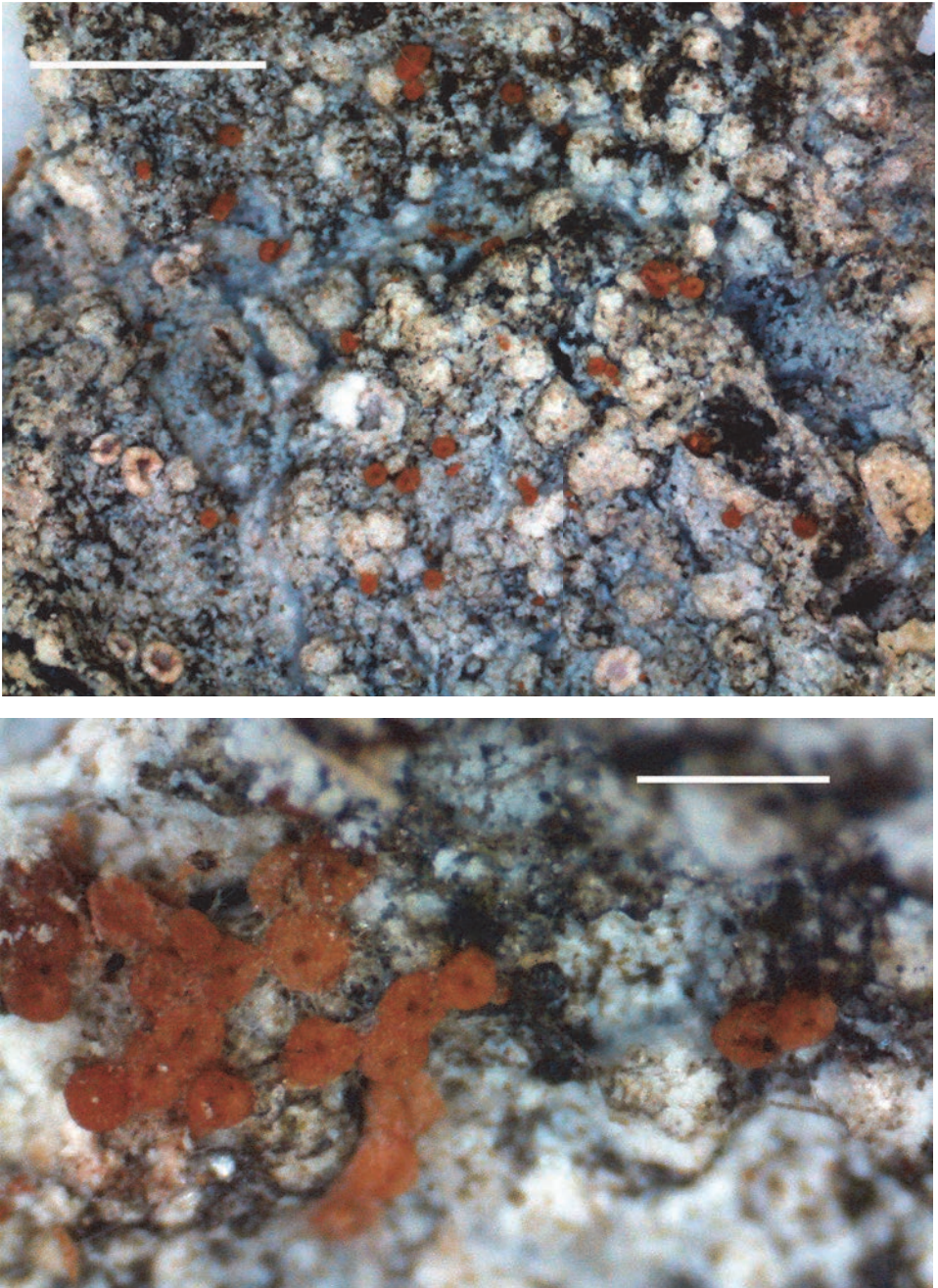


Fig. 4. *Nectriopsis verseghyklarae*, general habit (holotype). Scale 2 mm (top) and 1 mm (bottom) (photo: S. Kondratyuk)

Polysporina golubkova S. Y. Kondr., L. Lőkös, J. S. Park et J.-S. Hur,
spec. nova
(Fig. 5)

Mycobank no.: MB 815789

Similar to Polysporina simplex, but differs in having mainly lirellae-like apothecia, and in having shorter ascospores.

Type: Republic of Korea, Gyeongsangbuk-do, Gumi-si, Jangcheon-myeon, nearby mountain of Baenom Valley, on rock, growing together with *Trapelia coreana*, *Cladonia* sp. and *Placynthiella* sp. Lat.: 36° 09' 08.21" N; Long.: 128° 30' 40.41" E; Alt.: ca 158 m a.s.l. Coll.: Park, J. S. & Woo, J. J. (141421), 29.07.2014 (holotype: KoLRI 023875); the same locality, growing together with *Trapelia coreana*. Coll.: Park, J. S. & Woo, J. J. (141418), 29.07.2014 (isotype: KoLRI 023872 [holotype of *Trapelia coreana*]).

Thallus absent or indistinct, only blackish ascomata forming clusters present.

Apothecia (0.6–)0.7–1(–1.2) mm across, often lirellae-like, (0.3–)0.4–0.7 mm wide, elongate and branched or aggregated in the groups to 0.8–1.5(–2) mm long/across. Own margin from very thin (and seems to be very closely attached / immersed into rock cavities) to rather thick and highly uplifted. In section apothecia to 0.35–0.4 mm wide and 0.28–0.3 mm thick, lecideine, exciple entire, to 40–50 µm thick in the uppermost and lower lateral, as well as in basal portions, brownish blackish; hymenium to 130 µm high; asci with more than 200 ascospores, 100–120 × 18 µm; ascospores widely ellipsoid, (2.0–)2.5–3.5(–3.8) × (1–)1.2–1.5(–2.0) µm.

Ecology: It grows on siliceous rocks, growing together with *Trapelia coreana*, *Cladonia* sp. and *Placynthiella* sp.

Etymology: It is named after a known Russian lichenologist Nina S. Golubkova who has provided an important monographic treatment on the Aca-rosporaceae of Eurasia.

Distribution: It is hitherto known from scattered localities in South Korea, Eastern Asia.

Taxonomic notes: *Polysporina golubkova* is similar to *P. simplex* (Taylor) Vězda, but differs in having mainly lirellae-like apothecia ((0.3–)0.4–0.7 mm wide, and to 0.8–1.5(–2) mm long *vs* rounded 0.2–0.5(–0.7) mm in diam.), and in having shorter ascospores (2–3 × 0.9–1.5 µm *vs* 3–5 × 1.5–1.9 µm).

After having clusters of ascomata *Polysporina golubkova* reminds *Opegrapha verrucariae* Coppins, S. Y. Kondr. et Etayo, ad int., known from several European countries (see Kondratyuk *et al.* 2014b), but that species has 3-sep-tate and much larger ascospores (12.5–)13.5–15.5(–17.5) × 3.5–4.8 µm, mainly

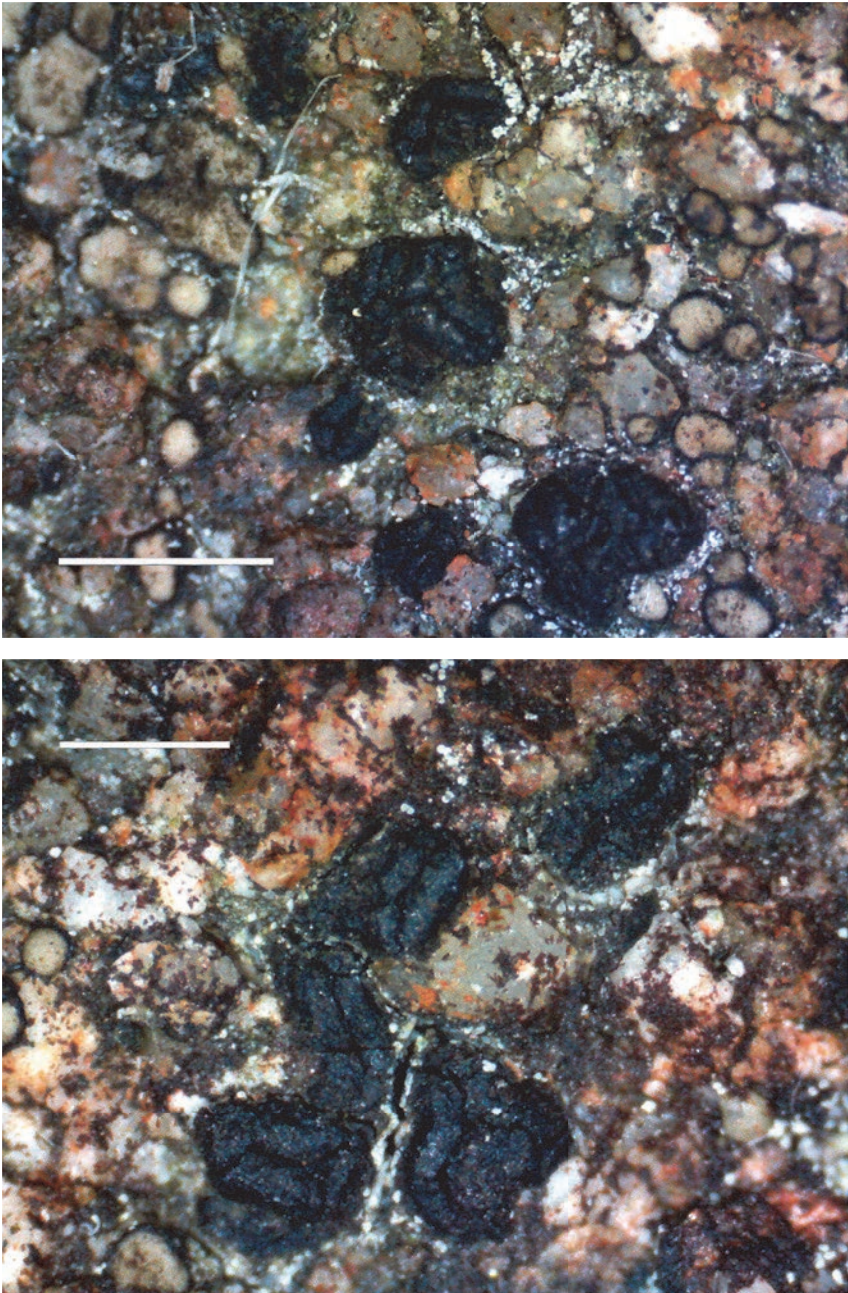


Fig. 5. Polysporina golubkovaе, general habit (holotype). Scale 2 mm (top) and 1 mm (bottom) (photo: S. Kondratyuk)

shorter ascomata mostly aggregated in dense convex clusters to 1 mm in diam. and parasitic habit (parasite on thallus of *Verrucaria nigrescens* and *V. viridula*).

Other examined specimens cited below (Nos 150378, 150331, 150343) are included to this taxon with some hesitation. They might belong to other taxon as far they are characterised by somewhat longer ascospores.

Other specimens examined: Republic of Korea, Jeollanam-do, Jangheung-gun, Gwansan-eup, Okdang-ri, Cheongwansan Mts, along the tourist track No. 2. Lat.: 34° 32' 22.93" N; Long.: 126° 55' 11.16" E; Alt.: ca 495 m a.s.l. Coll.: Kondratyuk, S. (SK-82), Lökös, L. (150378), 23.06.2015 (KoLRI 033973); the same locality growing together with *Ochrolechia* sp., (150331), (KoLRI 033926); the same locality growing together with *Buellia* sp., (150343), (KoLRI 033938, sub *Buellia*).

Protoparmeliopsis zerovii S. Y. Kondr., *spec. nova*

(Fig. 6)

Mycobank no.: MB 815790

Similar to Protoparmeliopsis taranii, but differs in having well-developed lobate thallus, in having white soralia, in having much smaller and non-pruinose thallus, in having well-distinct black hypothallus, in having much larger granular, mainly irregular soredia and in its mountainous habit.

Type: Republic of Korea, Gyeongsangnam-do, Yangsan-si, Wondong-myeon, Mt Cheontaesan, on rock, growing together with *Fulgogasparrea decipioides*. Lat.: 36° 09' 14.5" N; Long.: 127° 36' 59.6" E; Alt.: ca 214 m a.s.l. Coll.: Joshi, Y., Wang, X. Y. (061160), 03.11.2006 (holotype: KoLRI 005548); the same locality, growing together with *Buellia* sp. Coll.: Hur, J.-S. (061159), 03.11.2006 (isotype: KoLRI 005547 sub *Buellia*); the same locality, growing together with *Fuscidea* sp., *Lecanora* sp., *Aspicilia* sp. Coll.: Hur, J.-S. (061163), 03.11.2006 (isotype: KoLRI 005551 sub *Buellia*).

Thallus small, 4–10 mm across, while rarely aggregated in larger groups, mainly scattered among thalli of other lichens; rosette-like, distinctly lobate in peripheral zone, brownish grey to dark grey or dark yellowish green-brown to dull greenish brown, with distinct whitish (characteristically contrasting to the thallus), mainly punctiform soralia. Lobes 0.5–1 mm long, rather long and very narrow, 0.2–0.3 mm wide, slightly widened and branched towards the tips (to 0.3–0.4 mm wide in the most terminal portions), branched with short 0.1–0.2(–0.3) mm long and 0.1–0.2 mm wide secondary lobules, total width of all secondary lobes to 0.4–0.7 mm wide, subconvex to convex, but closely attached to the substrate. Hypothallus black, usually distinct, well developed in the centre between areoles or seen as blackish hyphae beyond lobe edges as well as in places of exfoliated portions of thallus.

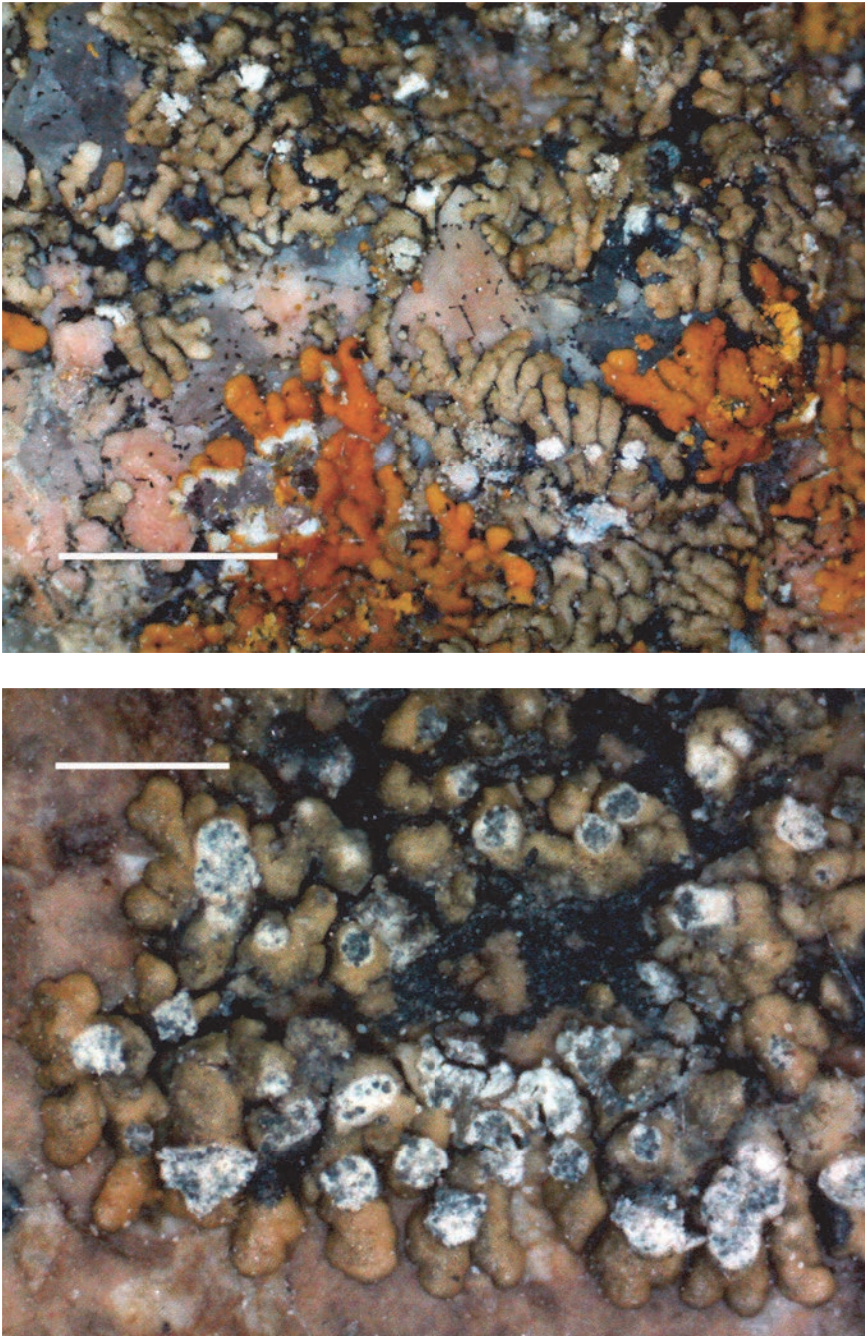


Fig. 6. Protoparmeliopsis zerovii, general habit (top: holotype, bottom: 070048). Scale 2 mm (top) and 1 mm (bottom) (photo: S. Kondratyuk)

Soralia punctiform at first regularly rounded, 0.1–0.2 mm in diam., later sometimes becoming somewhat elongated to 0.3 mm across or aggregated or coalescing two or more together to 0.5 mm across, concave, with well-distinct whitish naked medulla (well contrasting with the dark brownish-yellowish-greenish or brownish dull yellowish thallus), often empty and only medulla seen well. Soredia (20–)40–60 μm in diam., granular, usually irregular or slightly elongated, white or dirty whitish or greyish whitish, to bluish or blackish-bluish, somewhat irregular and rather rarely in outer layer of soralia becoming somewhat whitish blackish or dirty greyish; often in soralia or with time soredia becoming isidioid, or isidia-like formations to 60–80 μm in diam., regularly rounded or spherical sometimes forming aggregations in the centre of thallus above or between thalline lobes.

Apothecia and conidiomata unknown.

Chemistry: Thallus and soralia K– or K+ slightly yellow, C–, KC– or KC+ slightly yellow, P–.

Ecology: It grows on siliceous rocks, probably mainly on vertical surfaces according to ecology of associated species (*Fulgogasparrea decipioides* and *Lecanora* sp.).

Etymology: It is named after a famous Ukrainian bryologist, palaeobotanist and cryptogamist Dmytro K. Zerov (1895–1971, Kiev, Ukraine), one of the founders of the known Kiev school of cryptogamic plant taxonomists and phylogenetics.

Distribution: It is known from scattered localities in S Korea, E Asia.

Taxonomic notes: The irregular rosette-like thallus with distinct very narrow lobes, rounded soralia with white medullar and white granular soredia, which are often becoming isidioid, seen as regularly rounded formations in the centre of thallus, as well as well-distinct black hypothallus are the main characteristic features of *Protoparmeliopsis zerovii*.

Protoparmeliopsis zerovii is similar to another Eastern Asian soredious member of this genus, i.e. *P. taranii* S. Y. Kondr. et Tchaban., growing on siliceous rocks, in the littoral zone of Iturup Island, Russia, but differs in having well-developed lobate thallus with very long and narrow lobes (*vs* areoles small regularly rounded, (0.1–)0.2–0.5 mm in diam.), in having white or bluish black soralia (*vs* bright yellowish soralia), in having much smaller and non-pruinose thallus, in having well-distinct black hypothallus, in having much larger granular, mainly irregular soredia (*vs* farinose, 10–15 μm in diam., regularly rounded) and in its mountainous habit (Kondratyuk *et al.* 2013).

Protoparmeliopsis zerovii is similar to *Olegblumia demissa* (Flot.) S. Y. Kondr., L. Lőkös, J. Kim, A. S. Kondratiuk, S.-O. Oh et J.-S. Hur in having lobate, greyish or brownish thallus with soredia, but differs in having lighter thallus (not becoming dark brown or greenish brown), in having shorter thalline lobes (0.5–1 mm *vs* 1–1.5(–2) mm long), in having white soredia (not usually black-

ish or dark brownish), as well as in the lack of depsidones (vicanicin and caplopicin). It was only one soresidious species of the former genus *Placolecnora* Räs., i.e. *P. demissa* (Flot.) Kopacz., mentioned in the "Handbook of the lichens of the USSR" (Kopachevskaya 1971) from North Asian region. However, as recently shown, this species belongs to the genus *Olegblumia* S. Y. Kondr., L. Lőkös et J.-S. Hur (Kondratyuk *et al.* 2015c).

Protoparmeliopsis zerovii is similar to *Fulgogasparrea decipioides* (Arup) S. Y. Kondr., N. H. Jeong, Kärnefelt, Elix, A. Thell et J.-S. Hur with which growing side by side (see KoLRI 005548) after having lobate thallus, the same character of branching lobes and in having soredia and isidia, but differs in having grey to brownish grey thallus, concave soralia, in having white soredia and usually well-distinct white medullar, in having smaller isidia-like formations as well as in having black hypothallus, as well as in the lack of anthraquinones (Kondratyuk *et al.* 2014a, Lumbsch *et al.* 2011).

Protoparmeliopsis zerovii is similar to *P. crustaceum* (Savicz) S. Y. Kondr., growing on siliceous rocks, often in nitrophilous conditions in Asia (Arctic-Taimyr; Kamchatka), and *P. chejuensis* S. Y. Kondr. et J.-S. Hur, known from volcanic rocks of Cheju Island from South Korea, but differs from both mentioned taxa in having very narrow and long thalline lobes, in having well-developed rounded soralia, in having greenish grey (not whitish) thallus, as well as in the lack of squamulose central portion of thallus, and in the lack of reddish brown apothecium discs (Kondratyuk *et al.* 2013, Kopachevskaya 1971).

In having somewhat semiconvex thalline lobes *Protoparmeliopsis zerovii* may be similar to *P. garovaglii* (Körb.) S. Y. Kondr., but differs in having much smaller thalline rosettes, in having shorter and narrower lobes, usually slightly semiconvex and distant from each other, in having distinct soralia and soredia, as well as in having distinct black hypothallus (Kondratyuk 2010).

Other specimen examined (paratype): Republic of Korea, Gyeongnam-do, Tongyeong, Saryang Do trail, Sang-do, on rock, growing together with *Lecanora* cf. *campestris* and *Ramalina* sp. Lat.: 34° 50' 32.5" N; Long.: 128° 10' 37.6" E; Alt.: ca 308 m a.s.l. Coll.: Hur, J.-S. (070048), 17.03.2007 (KoLRI 007035 sub *Lecanora* sp.).

Psoroglaena chirisanensis L. Lőkös, S. Y. Kondr. et J.-S. Hur, *spec. nova*
(Fig. 7)

Mycobank no.: MB 815791

Similar to Psoroglaena japonica, but differs in having very thin film-like thallus, in having smaller perithecia, in having hyaline exciple, in having somewhat wider periphyses, in having larger ascospores, in its epiphytic habitat, as well as in the lack of papillate cortical cells.

Type: Republic of Korea, Gyeongsangnam-do, Sancheong-gun, Sancheong-eup, Chiri Mts, along the tourist path to Ungseokbong, on bark of *Robinia*. Lat.: 35° 22' 41.74" N; Long.: 127° 52' 21.93" E; Alt.: ca 324 m a.s.l. Coll.: Lókös, L. (150247), 22.06.2015. Holotype: KoLRI 033842.

Thallus 0.5–1(–1.5) mm across, but may form larger aggregations, crustose, very thin and indistinct, at large magnification continuous to consisting of whitish-greenish fragments of film with very uneven surface, somewhat warted to exfoliated in places, warts to 0.2–0.3 mm in diam., with hardly seen dull yellowish, beige or dull yellowish-brownish ostiole as dots to 0.04–0.06 mm across at the middle of uplifted portions. In section thallus to 25–40(–50) μm thick, cortical layer mainly indistinct to 5–7 μm thick, often of one-cell layer, surface more or less smooth. Hypothallus not observed.

Perithecia 170–180 μm in diam., and to 190 μm high, exciple hyaline throughout, including portion near the ostiole, only sometimes slightly yellowish in the upper part, to 25(–30) μm thick in lower parts and at sides, and to 30–40 μm thick in the upper portion. Periphyses to 2 μm in diam. and to 15–20(–25) μm long, without prominently pointed or rounded apices. Hymenium to 140–170 μm wide, and 140–150 μm high. Asci clavate, ca 40 \times 12 μm . Ascospores 8 per ascus, hyaline, transversely (1–)3-septate, uniformly thin-walled (to 0.5 μm thick), oval to narrowly ellipsoid, often guttulate, with distinct constrictions at the septa, (16–)18–20 \times 5.5–6.5(–7) μm .

Ecology: It grows on bark of *Robinia*.

Etymology: It is named after Chiri Mts (in Korean “Chiri-san”), South Korea, where the type collection was done.

Distribution: It is so far known only from type collection, Chiri Mts, South Korea, Eastern Asia.

Taxonomic notes: *Psoroglaena chirisanensis* is similar to *P. japonica* Harada, growing on friable rocks in shade in damp, semi-aquatic habitats in and around forests in warm temperate zone of the Pacific side of Honshu, central Japan (Harada 2003), but differs in having very thin film-like thallus (*vs* farinose, composed of goniocysts), in having smaller perithecia (170–180 μm *vs* 250–350 μm in diam.), in having hyaline exciple (*vs* orange brownish or brown in the outer layer at the sides and in the upper part), in having somewhat wider periphyses (to 2 μm *vs* 1–1.5 μm thick), in having larger ascospores ((16–)18–20 \times 5.5–6.5(–7) μm *vs* 13–17 \times 5–6 μm), and in its ecology (growing on the bark *vs* saxicolous habitat), as well as in the lack of papillate cortical cells.

Psoroglaena chirisanensis is similar to *P. stigonematoides* (A. Orange) Hensen, growing on shaded bark in bryophyte-dominated communities of Europe, Macaronesia, Asia and Africa, but differs in having continuous thallus (*vs* minutely filamentous thallus ‘often disintegrating into soredia-like granules’

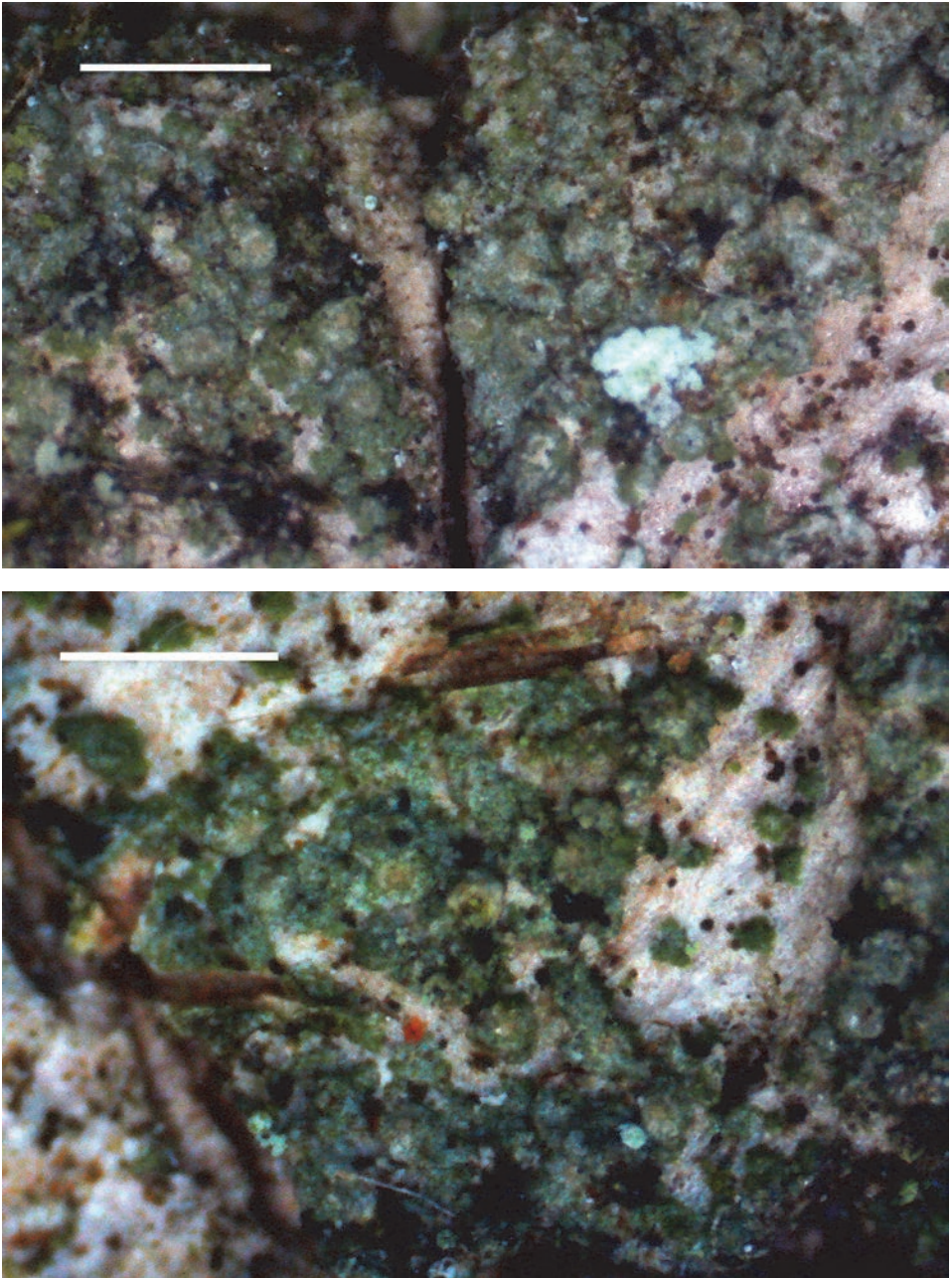


Fig. 7. Psoroglaena chirisanensis, general habit (holotype). Scale 2 mm (top) and 1 mm (bottom) (photo: S. Kondratyuk)

(Orange 1991), in having hyaline and smaller (*vs* orange-brown, 0.2–0.4 mm in diam.) perithecia, in having 3-septate ascospores (*vs* 3–5-septate), as well as in the lack of papillate cortical cells.

Psoroglaena chirisanensis is similar to *P. abscondita* (Coppins et Vězda) Hafellner et Türk, growing in fissures of bark of *Sambucus*, *Juniperus* and other trees of Europe, but differs in having continuous thallus (*vs* immersed or leprose), in having larger perithecia (to 0.2 mm *vs* 0.08–0.12 mm in diam.), in having thicker exciple (20–30 μm *vs* 10–12 μm thick), and in having wider ascospores ((16–)18–20 \times 5.5–6.5(–7) μm *vs* 12–20 \times 3–4.5 μm), as well as in the lack of inconspicuous papillae.

Pyrenopsis chejudoensis L. Lőkös, S. Y. Kondr. et J.-S. Hur, *spec. nova*
(Figs 8–9)

Mycobank no.: MB 815792

Similar to Pyrenopsis impolita, but differs in having 16(–32)-spored asci and in having much smaller ascospores.

Type: Republic of Korea, Jeju-do Prov., Cheju Island, Seogwipo-si, Seongsan-eup, Goseong-ri, Seopjicoji, on rock, growing together with *Caloplaca* cf. *diffluens*, *Buellia* sp., *Verrucaria* sp. and *Psorotichia* sp. Lat.: 33° 19' 21.0" N; Long.: 126° 50' 49.03" E; Alt.: ca 69 m a.s.l. Coll.: Lőkös, L. (140385), 19.06.2014 (holotype: KoLRI 022754); the same locality, growing together with *Squamulea squamosa*, *Caloplaca flavovirescens*, *Lichinella* sp., *Psorotichia* sp. Coll.: Kondratyuk, S. Y. (SK-02), Lőkös, L., Oh, S.-O., Jayalal, U., Joshi, S., Park, J. S., Hur, J.-S. (140292), 05.07.2012 (isotype: KoLRI 022651 sub *Squamulea squamosa*); the same locality, growing together with *Caloplaca diffluens*. Coll.: Kondratyuk, S. Y. (SK-02), Lőkös, L., Oh, S.-O., Jayalal, U., Joshi, S., Park, J. S., Hur, J.-S. (140294-2), 05.07.2012 (isotype: KoLRI 022654 sub *Caloplaca diffluens*); the same locality, growing together with *Caloplaca diffluens*. Coll.: Gagarina, L. (140362), 19.06.2014 (isotype: KoLRI 022728).

Thallus crustose, to 0.5 cm across, but probably may form larger aggregations, cracked-areolate, rather thick, brown-black to blackish; photobiont chlorococcoid, single or clustered cells, individual cells (4–8(–9) μm in diam. Areoles / squamules (of *Anema* like) to 0.2–0.7 mm across, irregular, seem to be rather convex, with distinctly warted or verrucose upper surface. Hypothallus not developed.

Apothecia 0.2–0.3(–0.35) mm in diam., very rare, lecanorine, immersed into thalline warts, badly distinct, similar to thalline warts, disc concave; hymenium 70–80 μm high; hamathecium of branched and anastomosing paraphysoids; asci clavate, wall thickened above without amyloid apical structures, multispored, with 16 or more ascospores, 35–40 \times 18–20 μm ; ascospores ovoid or spherical, 5–6(–7) \times 3.5–4(–4.5) μm .

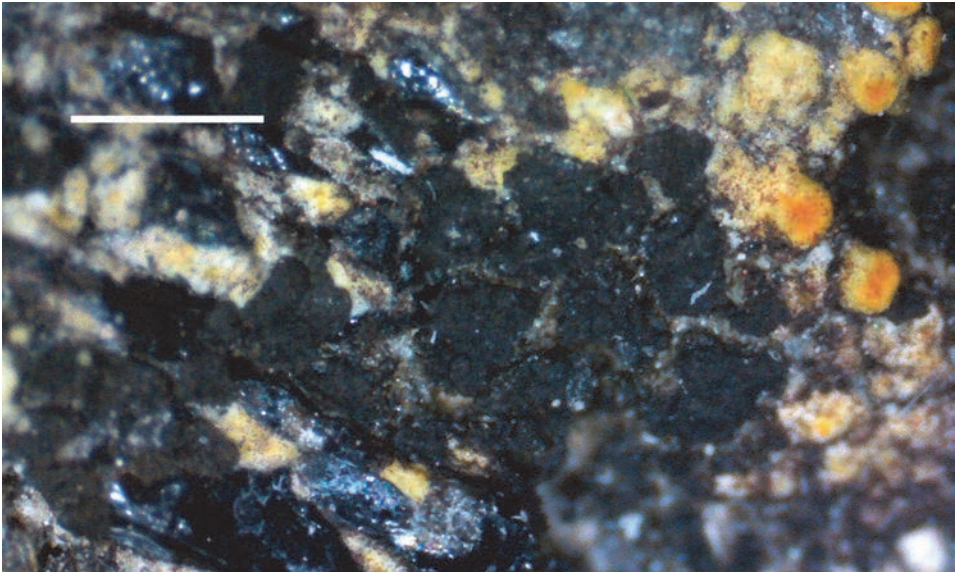


Fig. 8. *Pyrenopsis chejudoensis*, general habit (holotype). Scale 1 mm (photo: S. Kondratyuk)

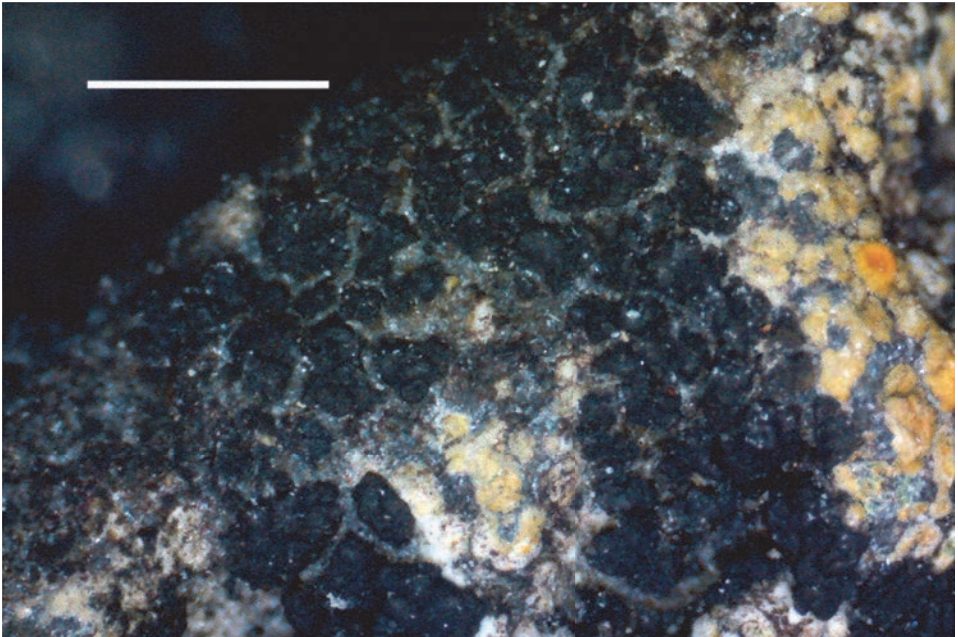


Fig. 9. *Pyrenopsis chejudoensis*, general habit (isotype). Scale 2 mm (photo: S. Kondratyuk)

Conidiomata to 60–80 μm in diam. and 70–90 μm high, conidia ellipsoid or widely bacilliform, 2–2.5–3 \times 1.1–1.4 μm .

Ecology: It grows on sea-water-flushed rocks in coastal zones.

Etymology: It is named after the type locality, i.e. Cheju Island (Cheju-do) in South Korea.

Distribution: It is so far known from several localities, all within Cheju Island, South Korea, Eastern Asia.

Taxonomic notes: *Pyrenopsis chejudoensis* is similar to *P. impolita* (Th. Fr.) Forssell, a very rare European lichen growing on water-flushed, upland, siliceous rocks, but differs in having 16(–32)-spored asci (*vs* 8-spored asci), and in having much thinner hymenium (70–80 μm *vs* 100–125 μm high), as well as in having much smaller ascospores (5–6(–7) \times 3.5–4(–4.5) μm *vs* (5–)8–10 \times (5–)7–8 μm).

Pyrenopsis chejudoensis is similar to *P. grumulifera* Nyl., a rare lichen species known from moist mica-schist rocks usually above 700 m alt., recorded also from sea-level basalt damp in Europe and North America, but differs in having less number of ascospores in asci (16(–32) *vs* 64 or more), and in having much wider ascospores (5–6(–7) \times 3.5–4(–4.5) μm *vs* 4.5–7 \times 2–3 μm) and in having chlorococcoid, single or clustered photobiont cells (*vs* *Gloeocapsa* enclosed in red-brown sheaths), and in having smaller algal cells (4–8 μm vs 10–15(–20) μm in diam.).

Pyrenopsis chejudoensis can be compared with *Pterygiopsis cava* M. Schultz, growing on inclined acidic rock surfaces and seepage tracks of North America, but differs in having crustose thallus (*vs* dwarf-fruticose thallus), in having smaller apothecia (0.2–0.3(–0.35) mm *vs* 0.35–0.55 mm wide), in having thinner hymenium (70–80 μm *vs* 125–150 μm), in having 16-spored asci (*vs* 24–32-spored), and in having somewhat narrower ascospores (5–6(–7) \times 3.5–4(–4.5) μm *vs* 4–6 \times 4–5 μm).

In contrast to thalli of *Psorotichia* growing side by side in all localities cited *Pyrenopsis chejudoensis* differs in having cyanobiont without reddish brown tinge (*vs* in section photobionts are reddish brown), in having different asci (*vs* very thin walled asci without thickening at the top), and in having smaller ascospores.

Other specimen examined: Republic of Korea, Jeju-do Prov., Cheju Island, Jeju-si, Hallim-eup, Gwideok-ri, coast near the Chorok village, on rock, growing together with *Protoparmeliopsis muralis*. Lat.: 33° 26' 33.3" N; Long.: 126° 17' 00.1" E; Alt.: ca 18 m a.s.l. Coll.: Kondratyuk, S. Y., Lökös, L., Oh, S.-O., Jayalal, U., Joshi, S., Park, J. S., Hur, J.-S. (121367), 05.07.2012 (KoLRI 016424).

Ropalospora chirisanensis S. Y. Kondr., L. Lőkös et J.-S. Hur, *spec. nova*
(Fig. 10)

Mycobank no.: MB 815793

Similar to Ropalospora lugubris, but differs in having convex apothecia not constricted at the basis, in having black exciple, in having thinner subhymenium, in having shorter and wider fusiform and (0–1–)2–3-septate ascospores, as well as in the lack of greyish pruina, in the lack of the pigment more or less intensifying olive in K, in the lack of oil in subhymenium, in the lack of a dark-olive-brown epihymenium zone to 20 µm thick and in the lack of pigmented brown to olive apices of paraphyses.

Type: Republic of Korea: Gyeongsangnam-do, Sancheong-gun, Sancheong-eup, Chiri Mts, along the tourist path to Ungseokbong, on rock. Lat.: 35° 22' 41.74" N; Long.: 127° 52' 21.93" E; Alt.: ca 324 m a.s.l. Coll.: Kondratyuk, S. (21574), Lőkös, L. (150263), 22.06.2015 (holotype: KoLRI 033858); the same locality, (150231, 150258), (isotypes: KoLRI 033826, KoLRI 033853); the same locality, growing together with *Ionaspis* sp. (150249, 150250), (isotypes: KoLRI 033844, KoLRI 033845, BP); the same locality, growing together with *Verrucaria* and *Porina* sp. Coll.: Kondratyuk, S. (21574), Lőkös, L. (150262), 22.06.2015 (KoLRI 033857 sub *Porina*).

Thallus to 1–2 mm across but probably may form larger aggregations, crustose, continuous, brownish grey to dark greyish. Hypothallus not observed.

Apothecia 0.4–1.5 mm in diam., and 0.3–0.4 mm thick in section, lecidine, distinctly sessile and constricted at the basis, seem to be on a stipe, slightly uplifted above the thallus surface, dull greyish brown or brown to dull dark brown or blackish brown or black; disc from plane to slightly subconvex to convex, dull greyish brown or brown to dull dark brown or blackish brown or black; own margin black, not uplifted of the disc level, usually well recognised after black colour, to 0.08 mm thick/wide, sometimes rather undulating; in section biatorine or lecidine, true exciple to 50–70(–130) µm thick in the uppermost lateral portion and to 80–100(–200) µm wide in lower lateral portion, to (150–)180–200 µm thick (or more if a stipe developed) in basal portion; in all portions outermost layer to 20–30(–50) µm wide more or less hyaline or colourless, while the inner portion bluish black to black and brownish black or violetish black close to hymenium, scleroplectenchymatous, cell lumina to 1–1.5 µm in diam.; thalline exciple absent; hymenium 70–80 µm high, hyaline; epihymenium not distinct, the same hyaline as hymenium; paraphyses slightly swollen towards the tips, to 3–4 µm in diam.; subhymenium to 20–25 µm thick, hyaline; asci 8-spored; ascospores (0–1–2–)3-septate, often 0–1-septate and 3-septate may be observed in the same ascus, hyaline, fusiform, widened at the equatorial portion with distinctly attenuated ends to somewhat

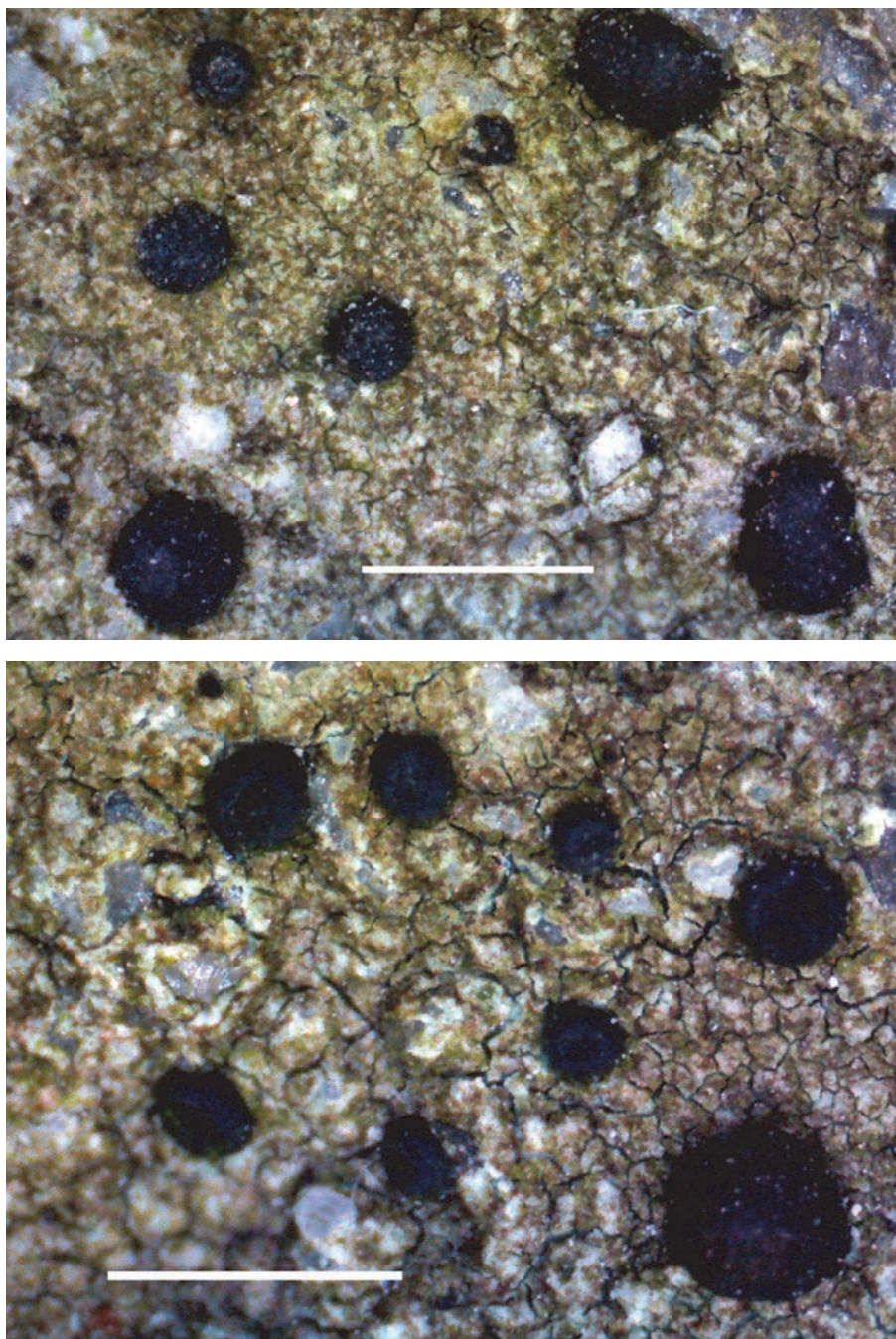


Fig. 10. *Ropalospora chirisanensis*, general habit (holotype). Scale 2 mm (photo: S. Kondratyuk)

rhomboid, sometimes with slight constriction at the septum, mainly straight or curved and only sometimes curved and sigmoid, (measurements only of 3-septate ascospores included) $(15-18-25(-28) \times (3.5-4-6(-6.5)) \mu\text{m}$.

Chemistry: K- or K+ exciple some portions becoming more violetish black and produces bright yellow colour at the basis; in N brownish portions of exciple becoming somewhat lighter, reddish brown.

Etymology: It is named after Chiri Mountains (in Korean 'Chiri-san'), South Korea, Eastern Asia, where the type collection was done.

Distribution: So far known from scattered localities in S Korea, E Asia.

Taxonomic notes: This species is characterised by black lecideine apothecia from plane with very thick own margin to convex and emarginate, dull brown, by hyaline hymenium and not differentiated (the same hyaline) epihymenium, by dark brown or violetish black true exciple, by *Teloschistes*-type of asci, by short 3-septate ascospores with attenuated ends.

Ropalospora chirisanensis is similar to *R. lugubris* (Sommerf.) Poelt, a saxicolous species known from Europe, North America, South Africa and Tasmania, but differs in having lighter grey thallus (*vs* brownish grey to dark grey-brown), in having convex apothecia not constricted at the basis, in having black exciple (opaque dark brown at the outer edge, becoming pale olive-brown within), in having thinner subhymenium (to 20–25 μm *vs* 100–180 μm), in having shorter and wider fusiform, $(15-18-25(-28) \times (3.5-4-6(-6.5)) \mu\text{m}$ (*vs* narrowly fusiform, typically more or less rounded at one apex and attenuated into a tail at the other, 29–58 \times 4–6.5 μm) and (0–1–2–)3-septate (*vs* 6–9(–11)-septate) ascospores, as well as in the lack of greyish pruina (*vs* rarely faintly greyish pruinose, in the lack of the pigment more or less intensifying olive in K (in contrast becoming yellowish in K)), in the lack of oil (*vs* oil droplets to 1–6 μm in diam.) in subhymenium, in the lack of a dark olive-brown epihymenium zone to 20 μm thick and in the lack of pigmented brown to olive apices of paraphyses (Kantvilas 2004).

Ropalospora chirisanensis is similar to *R. phaeoplaca* (Zahlbr.) S. Ekman, recorded from Republic of Korea by Aptroot and Moon (2014), but differs from this species in having different substrate (*vs* the bark of tree), in having biatorine (*vs* lecideine) apothecia, in having hyaline (and non-differentiated epihymenium), and thinner hymenium (*vs* brown to reddish brown, 90–95 μm high), in having non-capitate paraphyses (*vs* capitato-clavate), in having 0–1–2–3-septate (*vs* 4–6-septate) and shorter and wider ascospores (18–25 \times 4–6 μm *vs* 40–45 \times 2–3 μm).

It can be accepted as *Bacidia* or *Lecidea* in field, but easily differs in having *Teloschistes*-type of ascus, and other characters.

Other specimens examined: Republic of Korea, Jeju-do Prov., Cheju Island, Jeju-si, Jocheon-eup, Seonheul-ri, Dong Beak Hill, on rock. Lat.: 33° 29' 28.05" N; Long.: 126° 42'

45.28" E; Alt.: ca 365 m a.s.l. Coll.: Wang, X. Y., Park, J. S., Oh, S.-O. (120022), 22.02.2012 (KoLRI 014613 sub *Bacidia*). – Jeju-do Prov., Cheju Island, Seogwipo-si, Gangieng-dong, Yeongtto waterfall, on rock. Lat.: 33° 16' 01.7" N; Long.: 126° 29' 49.0" E; Alt.: ca 210 m a.s.l. Coll.: Kondratyuk, S. Y. (SK-03) (140639), 19.06.2014 (KoLRI 023048). – Gyeongsangbuk-do, Cheongsong-gun, Budong-myeon, Sangui-ri, Juwangsang National Park, Juwangsang Mts, on rock. Lat.: 36° 23' 47.7" N; Long.: 129° 08' 50.5" E; Alt.: ca 270 m a.s.l. Coll.: Hur, J.-S. (050595), 15.10.2005 (KoLRI 003499). – Gyeongsangnam-do, Sancheong-gun, Sancheong-eup, Chiri Mts, Mt Ungseokbong, on rock, growing together with *Lecania* aff. *coreana* and *Lecanora* cf. *campestris*. Lat.: 35° 22' 39.12" N; Long.: 127° 52' 18.32" E; Alt.: ca 339 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (101314), 11.10.2010 (KoLRI 012677 sub *Lecanora* cf. *campestris*). – Gyeongsangnam-do, Tongyeong-si, Saryang-myeon, Sang-do Island, Geumpyeong-ri, on rock, growing together with *Verrucaria* sp. Lat.: 34° 51' 2.70" N; Long.: 128° 12' 21.84" E; Alt.: ca 45 m a.s.l. Coll.: Wang, X. Y., Joshi, Y., Han, J. H. (110037), 20.04.2011 (KoLRI 012875). – Jeollanam-do, Yeosu-si, Nam-myeon, Geumoh-do, Uhak-ri port, on rock, growing together with *Verrucaria* sp. and *Phaeophyscia* sp. Alt.: ca 14 m a.s.l. Coll.: Jayalal, U., Park, J. S., Ryu, J. A. (120586), 27.04.2012 (KoLRI 015578). – Jeollanam-do, Wando-gun, Bogil-myeon, Bogil Island, Buhwang-ri, Mt Gyeokjasan, between Keungiljae and Suribong, on rock, growing together with *Lecanora* sp. and *Pertusaria* sp. Lat.: 34° 08' 30.24" N; Long.: 126° 32' 54.36" E; Alt.: ca 368 m a.s.l. Coll.: Joshi, Y., Jeon, H. S., Jeong, M. H. (100154), 05.02.2010 (KoLRI 011651 sub *Lecanora*).

Thelopsis chirisanensis L. Lőkös, S. Y. Kondr. et J.-S. Hur, *spec. nova*
(Fig. 11)

Mycobank no.: MB 815794

Similar to Thelopsis muriformis, but differs in having semi-immersed and much bigger ascomata, in having reddish brown exciple around ostiole, in having wider paraphysoids, in having larger number of ascospores, in having much smaller submuriform ascospores, with rather rounded ends.

Type: Republic of Korea, Gyeongsangnam-do, Sancheong-gun, Sancheong-eup, Chiri Mts, along the tourist path to Ungseokbong, on bark, growing together with *Phaeophyscia* and *Lepraria* sp. Lat.: 35° 22' 41.74" N; Long.: 127° 52' 21.93" E; Alt.: ca 324 m a.s.l. Coll.: Lőkös, L. (150251), 22.06.2015. Holotype: KoLRI 033846.

Thallus crustose, from very thin and almost indistinct to well distinct and rather thick, continuous, greenish grey. Hypothallus not observed.

Perithecia to 0.65 mm in diam. and 0.65 mm high in section; exciple very thick (to 70–80 µm), consisting of outer reddish brown portion, better developed especially at the ostiole (to 30 µm thick) and much thinner below (to 10–15 µm), inner portion hyaline (to 60 µm); paraphysoids to 2.5–3 µm in diam.; paraphyses to 2 µm thick and to 20–30 µm long; hymenium to 270 µm high, subhymenium to 50–60 µm thick, somewhat yellowish or hyaline, asci multisporous, with 40–60(–70) ascospores, narrowly elongated to somewhat

cylindrical, $200\text{--}220 \times 25\text{--}27 \mu\text{m}$; ascospores hyaline, submuriform, with only one longitudinal septum and 4–7 locules in optical section observed, widely ellipsoid to slightly elongated with more or less rounded ends, $(10\text{--})13\text{--}17 \times (6\text{--})6.5\text{--}7(8) \mu\text{m}$.

Ecology: It grows on bark of trees.

Etymology: It is named after Chiri Mts (“Chiri-san” in Korean), South Korea, where the type collection was done.

Distribution: It is so far known only from type locality in S Korea, E Asia.

Taxonomic notes: *Thelopsis chirisanensis* is similar to *T. muriformis* Aptroot et Moon, but differs in having semi-immersed and much bigger (0.6–0.7 mm in diam. and 0.6–0.7 mm high, almost spherical or slightly elongated vertically *vs* 0.4–0.6 mm in diam. and immersed) ascomata, in having reddish brown exciple around ostiole (*vs* not darkened around ostiole), in having wider paraphysoids (2.5–3 μm *vs* ca 2 μm wide), in having larger number of ascospores (40–60(–70) per ascus *vs* 50 per ascus), in having submuriform ascospores (with 4–7 locules in optical view *vs* densely muriform with 10–16 locules in optical view), with rather rounded ends (*vs* ends pointed), in having much smaller (both shorter and narrower) ascospores ($(10\text{--})13\text{--}17 \times (6\text{--})6.5\text{--}7(8) \mu\text{m}$ *vs* $17\text{--}20 \times 8\text{--}10 \mu\text{m}$).

From all species of *Topelia* Vězda *Thelopsis chirisanensis* differs in having much larger perithecia with multisporeous asci and in having much smaller ascospores (see also Jørgensen and Vězda 1984).

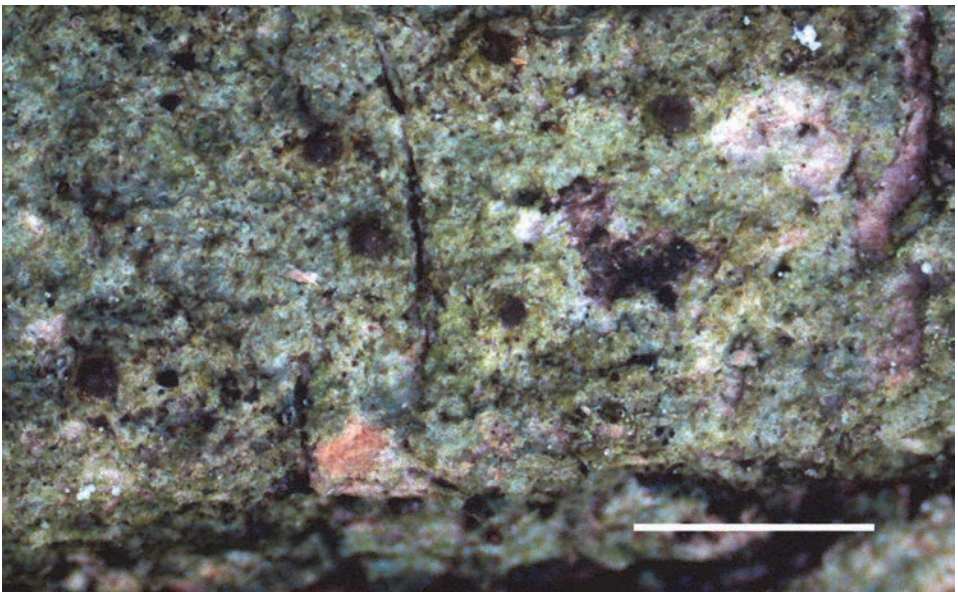


Fig. 11. *Thelopsis chirisanensis*, general habit (holotype). Scale 2 mm (photo: S. Kondratyuk)

Trapelia coreana S. Y. Kondr., L. Lőkös et J.-S. Hur, *spec. nova*
(Figs 12–13)

Mycobank no.: MB 815795

Similar to Trapelia glebulosa, but differs in having larger thalline areoles, and in having shorter ascospores.

Type: Republic of Korea, Gyeongsangbuk-do, Gumi-si, Jangcheon-myeon, nearby mountain of Baenom Valley, on rock, growing together with *Polysporina golubkova*. Lat.: 36° 09' 08.21" N; Long.: 128° 30' 40.41" E; Alt.: ca 158 m a.s.l. Coll.: Park, J. S., Woo, J. J. (141418), 29.07.2014 (holotype: KoLRI 023872); the same locality, growing together with *Gyalidea* sp., *Cladonia* sp., (141420), (isotype: KoLRI 023874); the same locality, growing together with *Polysporina golubkova*, *Cladonia* sp., and *Placynthiella* sp., (141421), (isotype: KoLRI 023875 [holotype of *Polysporina golubkova*]).

Thallus to 5–7 cm across, but probably may form larger spots, crustose, areolate to squamulose, mainly of scattered and distant areoles/squamules without soredia and isidia, pure grey or whitish grey, sometimes with numerous dark brown apothecia. Thalline areoles/squamules (0.2–)0.4–1.5(–2.3) mm in diam., greyish in peripheral portion and whitish and somewhat uplifted, wart-like in the centre or with apothecia; more or less scattered and distant in the peripheral portion and more closely aggregated in the centre; upper surface uneven especially in the centre, uplifted in one or several places and whitish where possibly apothecia will appear later. Hypothallus not observed.

Apothecia 0.2–0.4(–0.6) mm in diam., to 0.25–0.3 mm thick in section, biatorine or lecanorine, brown, uplifted above level of thalline areole, with crenulate margin (thalline fragments, as greyish portions of thallus, on own margin of apothecium), disc plane, pure brown to dark brown, own margin indistinct; in section biatorine or lecanorine, thalline exciple 30–50(–100) μ m thick, better developed on underside; true exciple to (10–)20–40(–50) μ m thick in the uppermost, and to 20–30(–50) μ m wide in lower lateral portion, brownish or dull brownish in inner portion, to 50–60 μ m thick in basal portion; hymenium to 100–120 μ m high; epihymenium 15–20 μ m thick, brownish; paraphyses very thin, ca 1.5 μ m in diam., almost the same thick towards the tips (not swollen), with well-distinct apices curved above asci; subhymenium (70–)80–90(–100) μ m thick, brownish or dull brownish, with scarce oil droplets, especially in the upper portion; asci 8-spored, 90 \times 17–18 μ m; ascospores simple, guttulate, with one large oil droplet 4–6.5 μ m in diam., with rather thin cell wall, (11–)13–18(–22) \times 7–9(–10) μ m.

Ecology: It grows on siliceous rocks.

Etymology: It is named after the country of the type collection, i.e. S Korea.

Distribution: It is known hitherto only from the type locality, South Korea, Eastern Asia.

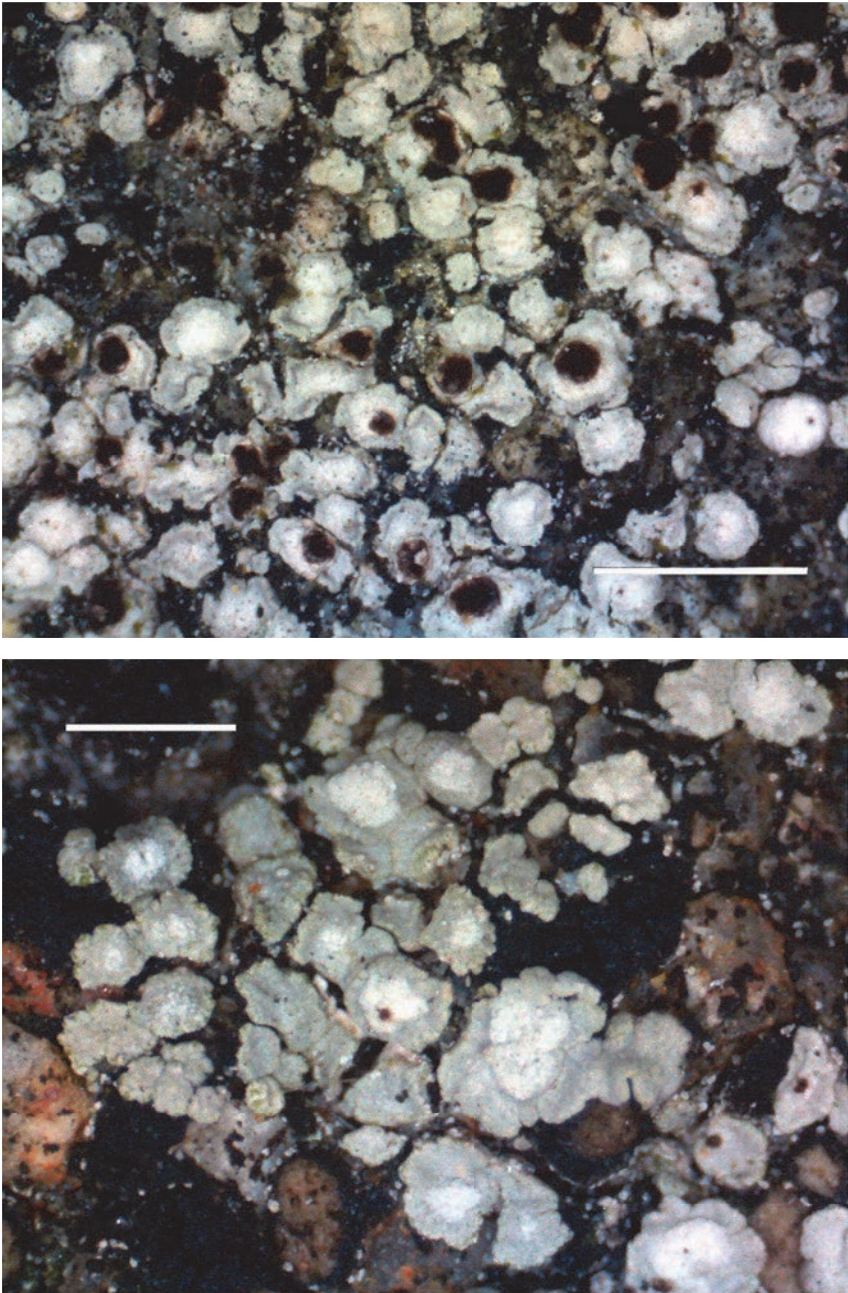


Fig. 12. *Trapelia coreana*, general habit (top: isotype, 141420, bottom: isotype, 141421). Scale 2 mm (top) and 1 mm (bottom) (photo: S. Kondratyuk)

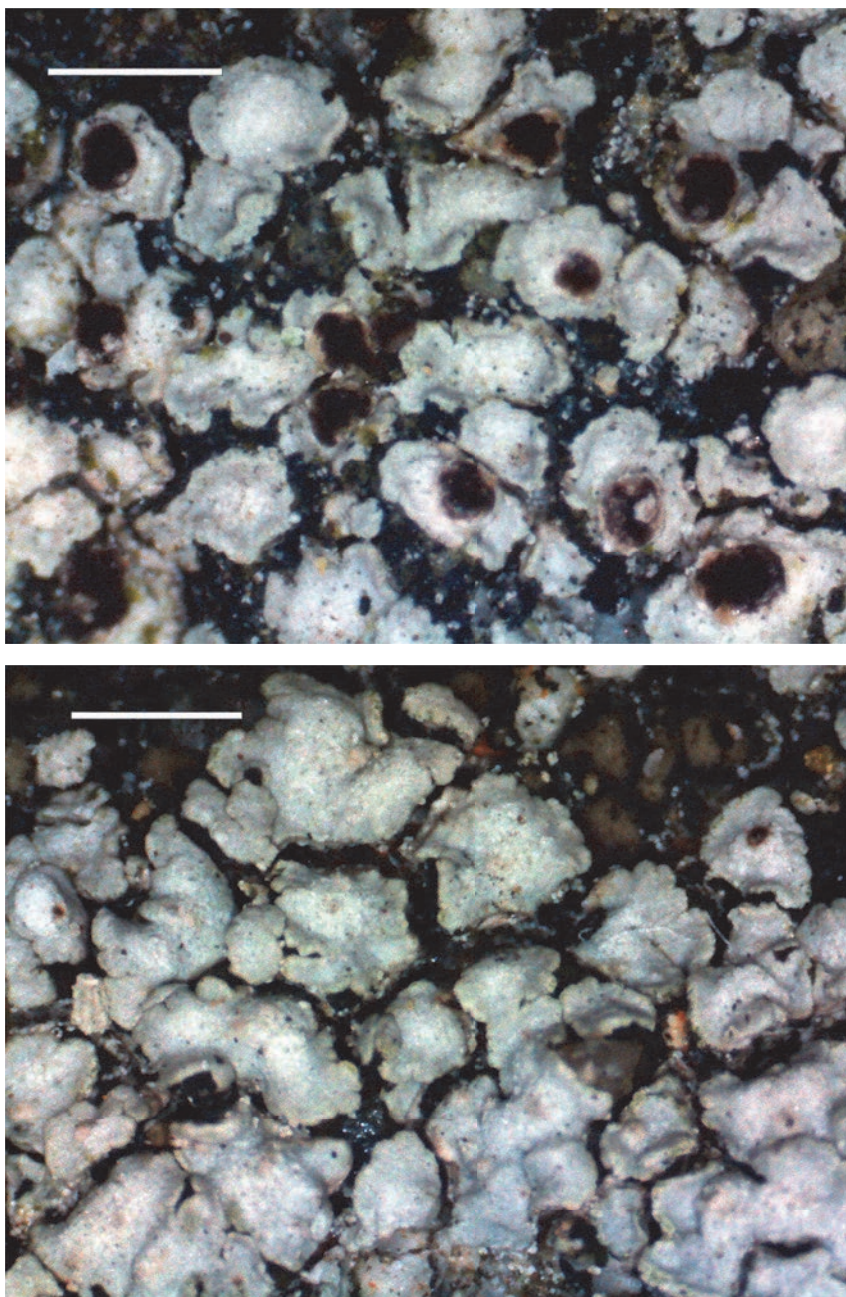


Fig. 13. *Trapelia coreana*, general habit (top: isotype, 141420, bottom: isotype, 141421). Scale 1 mm (photo: S. Kondratyuk)

Taxonomic notes: *Trapelia coreana* is similar to *T. glebulosa* (Sm.) J. R. Laundon, known from Europe, North America, and Indonesia in having the same effigurate or subsquamulose thallus of more or less convex often more or less overlapping areoles, mainly under the name *T. involuta* (Taylor) Hertel, but differs in having much larger marginal squamules (0.4–1.5(–2.3) mm diam./across *vs* 0.2–0.4 mm wide) as well as in having numerous apothecia and smaller ascospores ((11–)13–18(–22) × 7–9(–10) μm *vs* 15–25 × 7–13 μm), and in the lack of white prothallus.

Trapelia coreana is similar to widely distributed species *T. coarctata* (Sm.) M. Choisy, known from Eurasia, North America, Australia and New Zealand from siliceous rocks and stones, brickwork, occasionally from consolidated clay soil, but differs in having larger thalline areoles/squamules (0.4–1.5(–2.3) mm *vs* to 0.2 mm across), in having smaller and pure brown apothecia (0.2–0.4 mm *vs* 0.2–0.8 mm in diam., rose-pink to red-brown), in usually absence of thalline exciple as well as in having smaller ascospores ((11–)13–18(–22) × 7–9(–10) μm *vs* 15–25 × 7–13 μm), and in the lack of white prothallus.

Verseghya S. Y. Kondr., L. Lőkös et J.-S. Hur, *gen. nova*

Mycobank no.: MB 815796

Similar to Lecanora, but differs in having ecorticate continuous, esoredious thallus, in having Pertusaria-type of asci, in having larger and sometimes 1–2-septate ascospores, as well as in having usnic acid and zeorine.

Type species: *Verseghya clarae* S. Y. Kondr., L. Lőkös et J.-S. Hur.

Thallus crustose, continuous, very thin or of scattered and distant granules/areoles, soon becoming very closely aggregated forming smooth film-like continuous thallus in peripheral portion and becoming much thicker, somewhat undulating or warty or verruculose in the centre, sometimes divided into ‘pseudoareoles’, ecorticate, grey to greenish grey, whitish or bluish grey, esorediate, with mainly scarce and indistinct, only sometimes very abundant apothecia of extremely variegated shape. Hypothallus white, arachnoid or fibrous usually very distinct, often zones with very thin blackish zone dividing white hypothallus on several concentric circles.

Apothecia lecanorine, usually very undulating thalline margin, disc concave at first than plane, pale brownish or somewhat whitish-brownish to dull pinkish brownish, with very weak or more or less dense white pruina; in section lecanorine, cortical layer of thalline exciple, especially well developed on underside, usually dark and becoming lighter in K, palisade plectenchyma or *textura intricata*; true exciple almost indistinct in the uppermost lateral por-

tion, and rather thin in lower lateral portion and basal portions; paraphyses very lax, *ca* 1–1.5 μm thick, very gelatinised; subhymenium hyaline, sometimes with rather large hollow, as well as rarely slightly brownish in lower portion; asci 8-spored, very often without ascospores, or with collapsed (very narrow) or becoming somewhat pale brownish; ascospores 0(–1–2)-septate, septum usually not at the middle (one cell much larger), hyaline, ellipsoid, sometimes with one especially large oil droplet; ascospore wall to 0.5–1 μm thick. Conidia filiform, curved.

Chemistry: Usnic acid and zeorine present.

Ecology and distribution: It grows on wide range of deciduous as well as coniferous trees, common in places in the Eastern Asian region.

Etymology: The genus is named after the well-known Hungarian lichenologist Dr Klára Verseghy (in Hungarian name order Verseghy Klára) (1930–), who has made important contributions to our knowledge on species diversity of the genus *Ochrolechia*.

Taxonomic notes: After having *Pertusaria*-type of asci, in having larger and sometimes 1–2-septate ascospores, as well as after some anatomical features of thallus, hypothallus and apothecia this taxon is placed in intermediate place between *Ochrolechia*, *Pertusaria* and *Lecanora*. After preliminary phylogenetic analysis based on ITS nrDNA sequences the genus *Verseghya* is positioned in separate branch between genera *Ochrolechia* and *Pertusaria* and *Lecanora subcarnea* group (sensu Zhao *et al.* 2015), if representatives of the Pertusariales and Lecanoraceae are included. The further discussion on position of the genus *Verseghya* based on combined phylogenetic analysis based on data of ITS nrDNA, 28S nrLSU, and 12S mtSSU and data on some more members of the Pertusariales and Lecanoraceae will be published in a forthcoming paper.

Verseghya klarae S. Y. Kondr., L. Lőkös et J.-S. Hur, *spec. nova*
(Figs 14–15)

Mycobank no.: MB 815797

Similar to Lecanora thysanophora, but differs in having ecorticate continuous, greenish grey or grey, esoredious thallus, in having apothecia with very variegated in shape, and with brownish disc with white pruina, in having Pertusaria-type of asci, in having larger and sometimes 1–2-septate ascospores, as well as in having weak K+ reaction and in the lack of atranorin, porphyritic acid and species-specific terpenoids.

Type: Republic of Korea, Gangwon-do, Jeongseong-gun, Gangneung-si, tourist pass toward peak Seokbyeongsan, on bark of *Cornus controversus*, growing together with *Ivanpisia cf. oxneri*. Lat.: 37° 34' 41.82" N; Long.: 128° 51' 37.65" E; Alt.: *ca* 810 m a.s.l. Coll.: Lőkös, L. (151023), 10.07.2015 (holotype: KoLRI 034256); the same locality, on bark of *Acer*

bourgeanum, growing together with *Rinodina* sp., (151004), (isotype: KoLRI 034237); the same locality, on bark of *Acer bourgeanum*, growing together with *Rinodina* sp., and *Lecidella* sp., (151006), (isotype: KoLRI 034239 sub *Rinodina*); the same locality, on bark of *Acer bourgeanum*, (151007), (isotype: KoLRI 034240); the same locality, (151023, 151026), (isotypes: KoLRI 034256, KoLRI 034259).

Thallus to 5–10(–15) cm across but probably may form much larger spots, continuous, very thin or of scattered and distant granules/areoles 0.2–0.3 mm in diam., soon becoming very closely aggregated forming smooth film-like continuous thallus in peripheral portion (and on very smooth bark) and becoming much thicker, somewhat undulating or warty or verruculose in the centre or in undulation of bark, sometimes divided into ‘pseudoareoles’ 0.7–1.5(–2.0) mm across, ecorticate, grey to greenish grey, whitish or bluish grey, esorediate, with mainly scarce and indistinct, only sometimes very abundant apothecia of extremely variegated shape.

Hypothallus white, arachnoid or fibrous usually very distinct, to 1.5–2 mm wide, but often can be missing at least in some portions of thallus, often zones with very thin blackish zone dividing white hypothallus in several concentric circles.

Apothecia 0.3–1.5(–2) mm in diam., to 0.2–0.23 mm thick in section, lecanorine, at first regularly rounded but soon becoming of extremely variegated shape, and with usually very undulating thalline margin, disc concave at first than plane, pale brownish or somewhat whitish-brownish to dull pinkish-brownish, with very weak or more or less dense white pruina, thalline margin 0.1–0.15(–0.3) mm wide, concolorous with thallus, usually highly uplifted level of disc; in section lecanorine, thalline exciple to 80–100(–140) μm thick, cortical layer to (20–)40–50 μm thick, especially well developed on underside, usually dark and becoming lighter in K, palisade plectenchyma or textura intricata, hyphae to 7–8 μm thick (better seen in K) (somewhat uneven surface forming by hyphae tips similar to situation in *Ivanpisutia oxneri*, see Kondratyuk *et al.* 2015a), algal cells to 13–15 μm in diam.; true exciple almost indistinct in the uppermost lateral portion, and to (7–)15–25 μm thick in lower lateral portion and basal portions, sometimes only in the outermost basal portion, while indistinct in the centre of basal portion; hymenium (60–)70–80 μm high, hyaline; paraphyses very lax; epihymenium slightly yellowish, 5–7 μm thick, paraphyses *ca* 1–1.5 μm thick very gelatinised; subhymenium to (10–)30–40 μm thick, hyaline, sometimes with rather large hollow, as well as rarely slightly brownish in lower portion; asci 8-spored, 45–55(–80) \times (19–)21–25(–28) μm very often without ascospores, or with collapsed (very narrow) or becoming somewhat pale brownish; ascospores 0(–1–2)-septate, septum usually not at the middle (one cell much larger), hyaline, ellipsoid, sometimes with one especially large oil droplet of 5–6 μm in diam., (15–)18–25(–30) \times (7.5–)8–11 μm ;

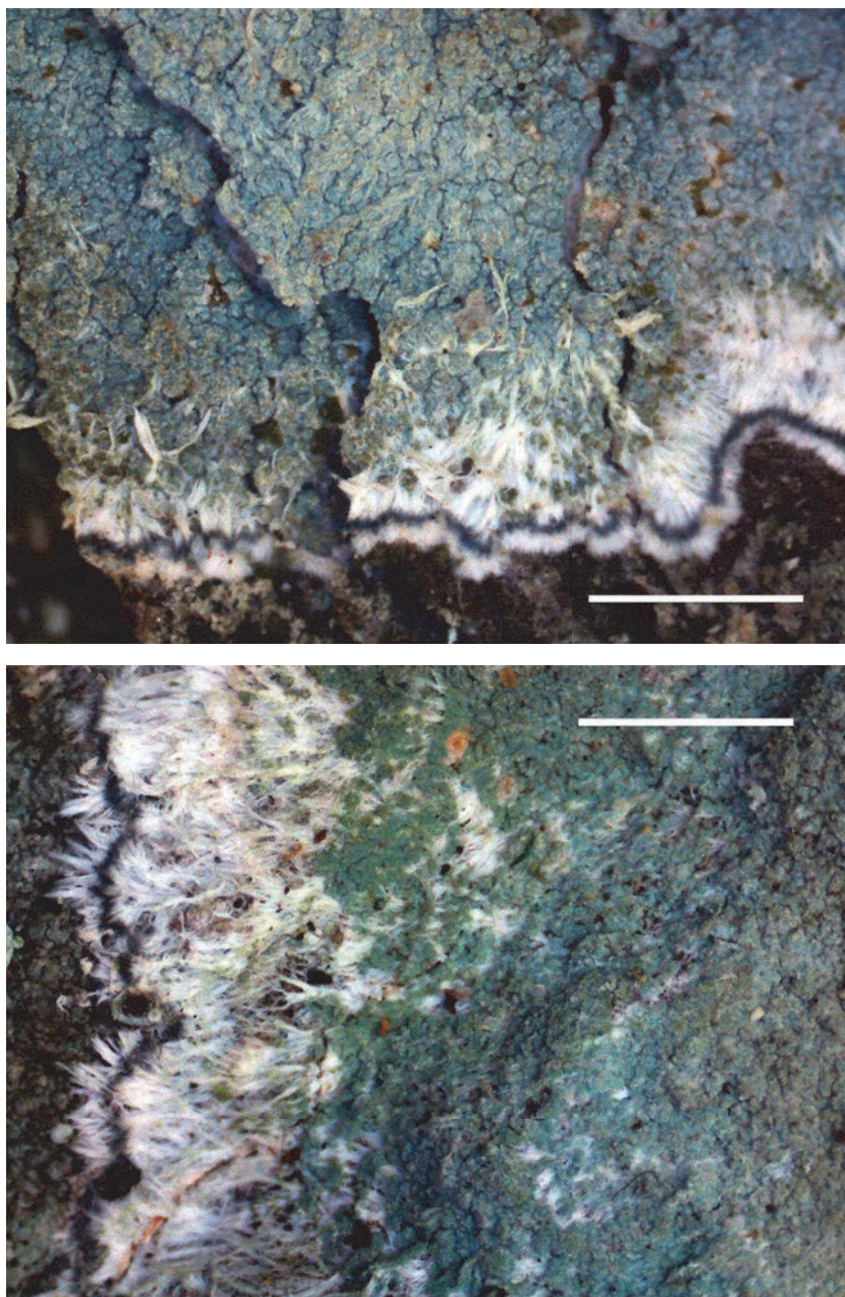


Fig. 14. *Versegghya klarae*, general habit (top: 150855, bottom: isotype, 151023). Scale 2 mm (photo: S. Kondratyuk)

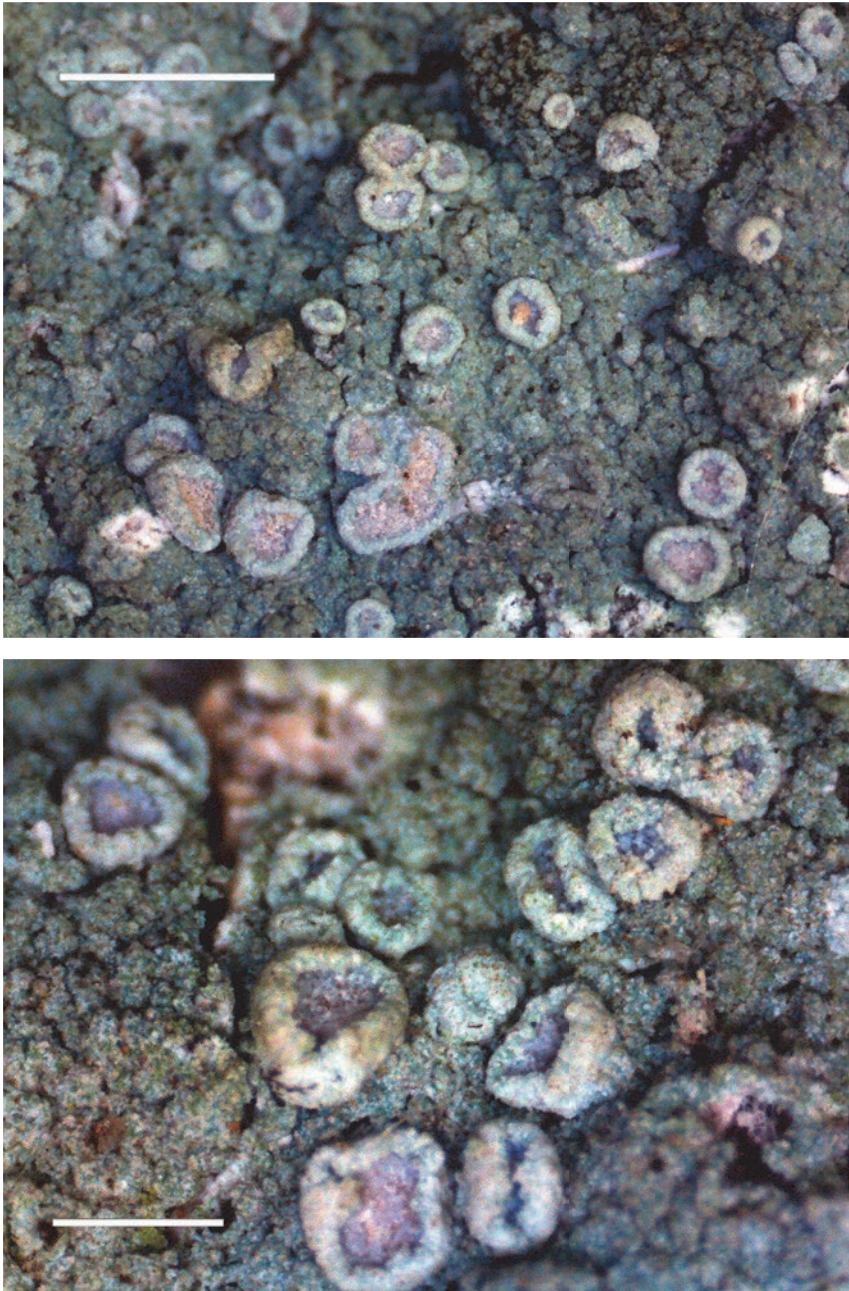


Fig. 15. Verseghya klarae, general habit (isotype, 151023). Scale 2 mm (top) and 1 mm (bottom) (photo: S. Kondratyuk)

ascospore wall to 0.5–1 μm thick (and to 1–1.5 μm thick in K). Conidiomata along the thalline edge to 0.4 mm in diam and 0.4–0.6 mm high; conidia filiform, curved, 18–20 \times 0.5–0.7 μm .

Chemistry: Thallus K– or K+ weakly yellow, than becoming brownish; C– or C+ weakly yellow; KC– or KC+ weakly yellow, than becoming brownish, not becoming gold; section of apothecium becoming yellowish in K. Usnic acid and zeorine present.

Ecology: It grows on a wide range of deciduous as well as coniferous trees, rather common in region investigated.

Etymology: This species is named after the well-known Hungarian lichenologist Dr Klára Verseghy (in Hungarian name order Verseghy Klára) (1930–), who has made important contributions to our knowledge on species diversity of the genus *Ochrolechia*.

Taxonomic notes: After having arachnoid/webby or fibrous white hypothallus *Verseghya klarae* is similar to widely distributed species in North America and recorded from scattered localities in Europe *Lecanora thysanophora* R. C. Harris in Harris, Brodo et Tønberg, which supposed to be the most reliable diagnostic character of this species (Harris *et al.* 2001). However, *Verseghya klarae* differs from latter species in having ecorticate, continuous, greenish grey or grey, esoredious thallus (sorediate, almost leprose, pale green to yellowish green), in having very variegated in shape apothecia with brownish disc with white pruina (small, yellowish brown or yellowish grey), in having *Pertusaria*-type of asci, in having larger and sometimes 1–2-septate ascospores (*vs* 11–14 \times 6–9 μm , simple), as well as in having weak K+ reaction (*vs* thallus K+ yellow), and in the lack of atranorin, porphyritic acid and species-specific terpenoids.

Status of material with isolated portions of thallus with soredious mass is under special investigation at the moment too.

Ascospores with 1 or 2 septa were observed very rarely (1–2 per apothecium) only in holotype collection (151023, KoLRI 034256). Detailed molecular study of this material is planned in the nearest future.

Other specimens examined (selected): Republic of Korea, Gangwon-do, Jeongseong-gun, Buk-myeon, Mt Bannonsan, on bark of *Quercus*. Lat.: 37° 26' 38.22" N; Long.: 128° 45' 29.64" E; Alt.: ca 1,067 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100834), 28.05.2010 (KoLRI 012517). – Gangwon-do, Gangneung-si, Jeongseong-gun, parking place along road Baekdudaegan-ro at Hwasil-gil, on bark of *Abies* sp., growing together with *Leprosaria* sp., *Cladonia* sp. Lat.: 37° 34' 40.26" N; Long.: 128° 51' 12.79" E; Alt.: ca 695 m a.s.l. Coll.: Kondratyuk, S. (SK-90), Lőkös, L. (150853), 10.07.2015 (KoLRI 034086 sub *Lepraria*); the same locality, (150854, 150855) (KoLRI 034087, KoLRI 034088). – Gangwon-do, Gangneung-si, Jeongseong-gun, tourist pass toward peak Seokbyeongsan, on bark of *Acer bourgeanum*. Lat.: 37° 34' 38.58" N; Long.: 128° 51' 23.94" E; Alt.: ca 760 m a.s.l. Coll.: Kondratyuk, S. (SK-91), Lőkös, L. (150889, 150890, 150951, 150952), 10.07.2015 (KoLRI 034122, KoLRI 034123,

KoLRI 034184, KoLRI 034185). – Gangwon-do, Gangneung-si, Jeongseong-gun, tourist pass toward peak Seokbyeongsan, on bark, growing together with *Bacidia* sp. and *Caloplaca oxneri*. Lat.: 37° 34' 40.79" N; Long.: 128° 51' 42.63" E; Alt.: ca 835 m a.s.l. Coll.: Kondratyuk, S. (SK-93), Lőkös, L., (151044), 10.07.2015 (KoLRI 034277). – Gangwon-do, Pyeongchang-gun, Jinbu-myeon, Suhang-ri, Mt Dutasan (Mt Bakjisan), on bark of *Acer*. Lat.: 37° 34' 23.40" N; Long.: 128° 36' 13.98" E; Alt.: ca 989 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100766), 27.05.2010 (KoLRI 012465). – Gangwon-do, Pyeongchang-gun, Daegwalnyeong-myeon, Odae Mts, on bark. Lat.: 37° 44' 44.3" N; Long.: 128° 37' 30.4" E; Alt.: ca 779 m a.s.l. Coll.: Hur, J.-S. (080365), 14.07.2008 (KoLRI 008620); the same locality, (080381), (KoLRI 008635); the same locality, on bark. Lat.: 37° 44' 47.0" N; Long.: 128° 37' 30.8" E; Alt.: ca 765 m a.s.l. Coll.: Hur, J.-S. (080395), 14.07.2008, (KoLRI 008647); the same locality, on bark. Lat.: 37° 44' 53.0" N; Long.: 128° 37' 31.9" E; Alt.: ca 776 m a.s.l. Coll.: Hur, J.-S. (080447), 14.07.2008, (KoLRI 008690). – Gangwon-do, Pyeongchang-gun, Daegwalnyeong-myeon, Odae Mts, on bark. Lat.: 37° 46' 17.2" N; Long.: 128° 36' 04.1" E; Alt.: ca 1,454 m a.s.l. Coll.: Hur, J.-S. (080527), 15.07.2008, (KoLRI 008752); the same locality, on bark. Lat.: 37° 46' 22.4" N; Long.: 128° 36' 05.8" E; Alt.: ca 1,418 m a.s.l. Coll.: Hur, J.-S. (080589), 15.07.2008, (KoLRI 008802). – Gangwon-do, Sokcho-si, Seorak Mts, on *Carpinus* bark, *Verseghya klarae* damaged by *Lichenocnium erodens*. Lat.: 38° 09' 58.86" N; Long.: 128° 27' 16.02" E; Alt.: ca 463 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A. (090790), 24.05.2009 (KoLRI 010462). – Gangwon-do, Yangyang-gun, Seorak Mts, Heulrimgol Valley, on *Acer* bark. Lat.: 38° 05' 16.20" N; Long.: 128° 25' 7.86" E; Alt.: ca 798 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A. (090912), 25.05.2009 (KoLRI 010584); the same locality, (090916) (KoLRI 010588); the same locality, on bark. Lat.: 38° 05' 25.98" N; Long.: 128° 24' 38.58" E; Alt.: ca 750 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A. (090885), 25.05.2009 (KoLRI 010557). – Gangwon-do, Yangyang-gun, Seorak Mts, Mt Jumbong, on bark. Lat.: 38° 03' 34.5" N; Long.: 128° 26' 41.6" E; Alt.: ca 805 m a.s.l. Coll.: Hur, J.-S. (041346), 09.10.2004 (KoLRI 002137); the same locality, on bark. ca 830 m a.s.l. Coll.: Hur, J.-S. (041354), 09.10.2004 (KoLRI 002145). – Gangwon-do, Taebaek-si, Gumunso-dong, Mt Hambaeksan, on *Quercus* bark, growing together with *Lecidella mandshurica* and *Lecanora sulcata*. Lat.: 37° 11' 47.4" N; Long.: 128° 54' 53.6" E; Alt.: ca 1,355 m a.s.l. Coll.: Hur, J.-S. (070657-4), 19.06.2007 (KoLRI 007529 sub *Lecanora sulcata* (Hue) H. Miyaw.). – Gangwon-do, Taebaek-si, Mungoksodo-dong, Taebaek Mts, Danggol-Munsubong, on *Salix* bark. Lat.: 37° 06' 23.6" N; Long.: 128° 57' 07.6" E; Alt.: ca 1,120 m a.s.l. Coll.: Lőkös, L. (050736), 14.10.2005 (KoLRI 003640, BP). – Gangwon-do, Taebaek-si, Sodo-dong, Taebaek Mts, Danggol-Manggyeong Temple, on bark. Lat.: 37° 06' 37.5" N; Long.: 128° 56' 41.0" E; Alt.: ca 970 m a.s.l. Coll.: Lőkös, L. (050731), 13.10.2005 (KoLRI 003635 sub *Lecanora imshaugii*, BP). – Gangwon-do, Taebaek-si, Taebaek Mts, on bark, growing together with *Biatora longispora*. Alt.: ca 1,280 m a.s.l. Coll.: Hur, J.-S. (041057), 12.09.2004 (KoLRI 001846). – Gangwon-do, Yangyang-gun, Seo-myeon, Gajeonggokbong, on bark, growing together with *Biatora longispora*. Lat.: 37° 52' 47.76" N; Long.: 128° 31' 2.40" E; Alt.: ca 1,020 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A. (090525), 22.05.2009 (KoLRI 010219); the same locality, on bark. Lat.: 37° 52' 57.12" N; Long.: 128° 30' 9.66" E; Alt.: ca 1,104 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A. (090563), 22.05.2009 (KoLRI 010247); the same locality, on bark. Lat.: 37° 52' 52.80" N; Long.: 128° 26' 50.94" E; Alt.: ca 1,101 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A. (090597), 22.05.2009 (KoLRI 010274); the same locality, on bark. Lat.: 37° 52' 8.88" N; Long.: 128° 30' 52.86" E; Alt.: ca 1,087 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A. (090640), 22.05.2009 (KoLRI 010307). – Gangwon-do, Yeongwol-gun, Sangdong-eup, Mt Jangsan, on bark. Lat.: 37° 07' 57.06" N; Long.: 128° 51' 33.78" E; Alt.: ca 1,261 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100913), 29.05.2010 (KoLRI 012569). – Gyeongsangnam-do, Hamyang-gun, Seosang-myeon, Mt Baekunsan, on bark of *Quercus*. Lat.: 35° 37' 4.50" N; Long.: 127° 39' 30.42" E;

Alt.: ca 1,042 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Han, G. S. (100458), 24.06.2010 (KoLRI 012074). – Gyeongsangnam-do, Hadong-gun, Hwagae-myeon, Chiri Mts, Byeoksoryeong-Seseok, on *Acer* bark. Lat.: 35° 19' 40.74" N; Long.: 127° 39' 31.32" E; Alt.: ca 1,346 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091319), 15.10.2009 (KoLRI 011266); the same locality, growing together with *Ivanpisutia oxneri*, *Biatora longispora*, (091380), (KoLRI 011300). – Jeollanam-do, Gurye-gun, Masan-myeon, Chiri Mts, Hwaeom valley, on bark. Lat.: 35° 16' 54.30" N; Long.: 127° 31' 0.18" E; Alt.: ca 816 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091018), 12.10.2009 (KoLRI 010379); the same locality, on bark. Lat.: 35° 15' 18.78" N; Long.: 127° 30' 4.68" E; Alt.: ca 266 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (090994), 12.10.2009 (KoLRI 006915). – Jeollanam-do, Gurye-gun, Masan-myeon, Chiri Mts, Nogodan-Yeonhaecheon, on *Quercus* bark. Lat.: 35° 17' 50.34" N; Long.: 127° 33' 11.88" E; Alt.: ca 1,364 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091091), 13.10.2009 (KoLRI 011143).

Rare or noteworthy species**

Agonimia cavernicola S. Y. Kondr., L. Lőkös et J.-S. Hur – Republic of Korea, Jeju-do Prov., Cheju Island, Jeju-si, Hangeong-myeon, Sinchang-ri, seashore road, on rock, growing together with *Pertusaria astomoides*. Lat.: 33° 20' 31.6" N; Long.: 126° 10' 12.08" E; Alt.: ca 82 m a.s.l. Coll.: Joshi, Y., So, J. (site 1) (140179), 18.06.2014 (KoLRI 022548 sub *Pertusaria astomoides*); the same locality, growing together with *Protoparmeliopsis chejuensis*, and *Phaeophyscia* sp. Coll.: Kondratyuk, S. (140260-1), 18.06.2014 (KoLRI 022616 sub *Agonimia*); the same locality, growing together with *Protoparmeliopsis chejuensis*, (140266-3), (KoLRI 022624). – Jeju-do Prov., Cheju Island, Seogwipo-si, Namwon-eup, Wimi-ri, on rock, growing together with *Lepraria* sp. Lat.: 33° 16' 13.26" N; Long.: 126° 39' 39.00" E; Alt.: ca 10 m a.s.l. Coll.: Joshi, Y., Wang, X. Y. (091452), 29.05.2009 (KoLRI 011095 sub *Lepraria*). – Jeju-do Prov., Cheju Island, Seogwipo-si, Seongsan-eup, Goseong-ri, Seopjicoji, on rock, growing together with *Pertusaria astomoides* and *Yoshimuria spodoplaea*. Lat.: 33° 19' 21.0" N; Long.: 126° 50' 49.03" E; Alt.: ca 1 m a.s.l. Coll.: Lőkös, L. (site 2) (140383-2), 19.06.2014 (KoLRI 022749 sub *Pertusaria astomoides*); the same locality. Coll.: Oh, S.-O., Park, J. S., Hur, J.-S. (site 2) (140512), 19.06.2014 (KoLRI 022908 sub *Chrysopsora testacea*). – Jeju-do Prov., Cheju Island, Seogwipo-si, Seongsan-eup, Sisan-ri, on sea shore rock, growing together with *Protoparmeliopsis muralis*. Lat.: 33° 22' 20.5" N; Long.: 126° 52' 42.4" E; Alt.: ca 1 m a.s.l. Coll.: Hur, J.-S. (061006), 17.10.2006 (KoLRI 005390 sub *Protoparmeliopsis muralis*). – Additional Korean records for the recently described species (Kondratyuk *et al.* 2015a).

Agonimia aff. *cavernicola* – Republic of Korea, Jeju-do Prov., Cheju Island, Seogwipo-si, Namwon-eup, Wimi-ri, on rock, growing together with *Pertusaria astomoides*, and *Caloplaca multicolor*. Lat.: 33° 16' 13.26" N; Long.: 126° 39' 39.00" E; Alt.: ca 10 m a.s.l. Coll.: Joshi, Y., Wang, X. Y. (091425), 29.05.2009

** Species new for Korea or China are marked by an asterisk.

(KoLRI 011068 sub *Pertusaria astomoides*); the same locality, on rock, growing together with *Lepraria* sp. Lat.: 33° 16' 13.26" N; Long.: 126° 39' 39.00" E; Alt.: ca 10 m a.s.l. Coll.: Joshi, Y., Wang, X. Y. (091452), 29.05.2009 (KoLRI 011095 sub *Lepraria*). – Specimens different from the typical species with blastidious/soredious thallus.

Amandinea melaxanthella (Nyl.) Marbach – Republic of Korea, Jeju-do Prov., Cheju Island, Seogwipo-si, Gangjeong-dong, Yeongtto waterfall, on bark. Lat.: 33° 16' 01.7" N; Long.: 126° 29' 49.00" E; Alt.: ca 210 m a.s.l. Coll.: Joshi, Y., So, J. (site 4), (140576), 19.06.2014 (KoLRI 022969). – Jeollanam-do, Yeosu-si, Hwayang-myeon, Yongju-ri, Najin elementary school yard, on bark of *Cedrus deodara*, *Cerasus*, *Pinus densiflora*. Lat.: 34° 42' 30.00" N; Long.: 127° 36' 44.46" E; Alt.: ca 15 m a.s.l. Coll.: Kondratyuk, S. K., Lökös, L., Park, C. H. (130760), 28.07.2013 (KoLRI 019402). – Jeollanam-do, Yeosu-si, Nam-myeon, Geumoh-do Island, Simjang-ri, Simpo coast, on bark. Lat.: 34° 29' 33.2" N; Long.: 127° 46' 13.7" E; Alt.: ca 49 m a.s.l. Coll.: Jayalal, U., Park, J. S., Ryu, J. A. (120464), 27.04.2012 (KoLRI 015454 sub *Buellia* sp.). – Jeollanam-do, Yeosu-si, Odong-do Island, along the tourist path, on bark of *Camellia japonica*, *Machilus thunbergii*, *Pinus thunbergii*, *Quercus serrata*. Lat.: 34° 44' 37.75" N; Long.: 127° 45' 50.57" E; Alt.: ca 25 m a.s.l. Coll.: Kondratyuk, S. K., Lökös, L., Park, C. H. (130733), 28.07.2013 (KoLRI 019375). – Additional Korean records for the recently reported species (Kondratyuk *et al.* 2013).

Arthonia molendoi (Frauenf.) R. Sant. – Republic of Korea, Gyeongsangnam-do, Tongyeong-si, Yokji-do Island, Yokji-myeon, Seosan-ri, Deokdong Beach, on rock, on thalli of *Caloplaca* sp. Lat.: 34° 38' 03.8" N; Long.: 128° 14' 15.6" E; Alt.: ca 19 m a.s.l. Coll.: Oh, S.-O., Jayalal, U., Park, J. S., Ryu, J. A. (120834), 11.05.2012 (KoLRI 015438 sub *Caloplaca*). – It was reported recently from Cheju Island (Kondratyuk *et al.* 2015a). It is the second record from another island.

Bacidia schweinitzii (Tuck.) A. Schneid. – Republic of Korea, Gangwon-do, Chuncheon-si, Buksan-myeon Jogyo-ri, Mt Maebong, on *Quercus* bark. Lat.: 37° 54' 55.86" N, Long.: 127° 59' 0.48" E; Alt.: 714 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100646), 26.05.2010 (KoLRI 012383 sub *Buellia*). – It was reported recently from three localities in South Korea (Mt Halla, Mt Hwangbyong, Mt Joryeong) by Joshi *et al.* (2011).

Biatora chrysantha (Zahlbr.) Printzen – Republic of Korea, Jeju-do Prov., Cheju Island, Jeju-si, Nohyeong-dong, Temple Cheonwang, on bark, growing together with *Bacidia* sp. and *Ropalospora chloantha*. Lat.: 33° 24' 39.4" N; Long.: 126° 29' 38.05" E; Alt.: 685 m a.s.l. Coll.: Joshi, Y., So, J. (site 5) (140725), 20.05.2014 (KoLRI 023182). – Gangwon-do, Chuncheon-si, Buksan-myeon Jogyo-ri, Mt Maebong, on *Quercus* bark, growing together with *Pyxine limbulata* and *Rinodina xanthophaea*. Lat.: 37° 54' 56.58" N; Long.: 127° 58' 51.42" E; Alt.:

704 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100661), 26.05.2010 (KoLRI 012396 sub *Pyxine limbulata* Müll. Arg.). – It was reported from South Korea (Mt Juwang) recently by Aptroot and Moon (2014).

Biatora longispora (Degel.) Lendemer et Printzen – Republic of Korea, Gyeongsangnam-do, Hadong-gun, Hwagae-myeon, Chiri Mts, Byeogsolyeong-Seseog, on bark. Lat.: 35° 19' 40.74" N; Long.: 127° 39' 31.32" E; Alt.: ca 1,346 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091380), 15.10.2009 (KoLRI 011300 sub *Lepraria*). – An additional Korean record for the recently reported species (Kondratyuk *et al.* 2013, Moon 2013, Printzen and Otte 2005).

**Biatora* aff. *subduplex* (Nyl.) Printzen – Republic of Korea, Jeollanam-do, Goheung-gun, Jeomam-myeon, Mt Palyeongsan, on bark, growing together with *Lecanora* sp. Lat.: 34° 37' 59.76" N; Long.: 127° 25' 24.48" E; Alt.: ca 264 m a.s.l. Coll.: Joshi, Y., Jeon, H. S., Han, G. S. (100281), 19.02.2010 (KoLRI 011792 sub *Lecanora*). – New for Korea!

Brigantiaea purpurata (Zahlbr.) Hafellner et Bellem. – Republic of Korea, Gyeongsangnam-do, Hadong-gun, Hwagae-myeon, Chiri Mts, Yeonhacheon-Byeoksoryeong, on bark, growing together with *Lecanora* sp. Lat.: 35° 18' 21.30" N; Long.: 127° 35' 12.84" E; Alt.: ca 1,473 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091161), 14.10.2009 (KoLRI 011182 *Lecanora*). – An additional Korean record for the recently reported species (Kondratyuk *et al.* 2013).

Buellia badia (Fr.) A. Massal. – Republic of Korea, Jeollabuk-do, Gunsansi, Okdo-myeon, Sinsido-ri, on rock. Lat.: 35° 49' 5.28" N; Long.: 126° 27' 33.48" E; Alt.: ca 19 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110828), 22.08.2011 (KoLRI 013837). – Jeollanam-do, Jindo-gun, Uisin-myeon, Jeop-do Island, Geumgap-ri, on rock, on thalli of *Aspicilia* aff. *contorta*. Lat.: 34° 23' 5.46" N; Long.: 126° 18' 15.00" E; Alt.: ca 2 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110517), 03.06.2011 (KoLRI 013561). – Jeollanam-do, Wando-gun, Cheongsan-myeon, Cheongsando Island, Guksan-ri, on rock. Lat.: 34° 12' 13.08" N; Long.: 126° 54' 21.42" E; Alt.: ca 5 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110752), 23.06.2011 (KoLRI 013776). – It was reported from Bogil Island by Joshi *et al.* 2010 (as *Buellia badia*), Joshi and Hur 2013 (as *Buellia badia*), Moon 2013 (as *Buellia badia*), and from Goheung-gun by Aptroot and Moon (2014 sub *Monerolechia badia*).

Buellia griseovirens (Sm.) Almb. – Republic of Korea, Jeollanam-do, Yeosu-si, Hwayang-myeon, Yongju-ri, Najin elementary school yard, on bark of *Cedrus deodara*, *Cerasus*, *Pinus densiflora*. Lat.: 34° 42' 30.00" N; Long.: 127° 36' 44.46" E; Alt.: ca 15 m a.s.l. Coll.: Kondratyuk, S. Y., Lőkös, L., Park, C. H. (130759), 28.07.2013 (KoLRI 019401); the same locality, growing together with *Amandinea* sp., (130760), (KoLRI 019402 sub *Amandinea*). – Jeollanam-do, Yeosu-si, Odong-do Island, along the tourist path, on bark of *Camellia japonica*, *Machilus thunbergii*, *Pinus thunbergii*, *Quercus serrata*. Lat.: 34° 44' 37.75" N; Long.: 127° 45' 50.57" E; Alt.: ca 25 m a.s.l. Coll.: Kondratyuk, S. Y., Lőkös, L.,

Park, C. H. (130733), 28.07.2013 (KoLRI 019375). – Additional records to the recently reported species (Aptroot and Moon 2014, Kondratyuk *et al.* 2015a).

**Buellia* cf. *uberior* (Nyl.) Anzi – Republic of Korea, Jeju-do Prov., Cheju Island, Seogwipo-si, Mt Hallasan, Sanghyo-dong, Gwanumsa Trail, on rock, growing together with *Acarospora fuscata*, *Scoliciosporum umbrinum*. Lat.: 33° 21' 39.7" N; Long.: 126° 32' 08.9" E; Alt.: ca 1,923 m a.s.l. Coll.: Oh, S.-O., Jayalal, U., Joshi, S., Park, J. S., Tian, F. H., Hur, J.-S. (121219), 19.06.2012 (KoLRI 016255 sub *Candelariella*). – New for Korea!

Caeruleum heppii (Körb.) K. Knudsen et Arcadia – Republic of Korea, Gyeongsangnam-do, Sancheong-gun, Sancheong-eup, Chiri Mts, at the beginning of the tourist path to Ungseokbong, near the car parking place, on calcareous rock, growing together with *Endocarpon* sp. Lat.: 35° 23' 02.33" N; Long.: 127° 52' 30.55" E; Alt.: ca 193 m a.s.l. Coll.: Kondratyuk, S., Lökös L. (150274), 22.06.2015 (KoLRI 033869); the same locality, growing together with *Endocarpon* sp., (150275), (KoLRI 033870). – Second Korean locality for the recently reported species (Kondratyuk *et al.* 2013 as *Myriospora heppii*).

Caloplaca chejuensis S. Y. Kondr. et J.-S. Hur – Republic of Korea, Jeju-do Prov., Jeju-si, Chuja Island, Chuja-myeon, Yecho-ri, road of Mt Sindea observatory, on rock, growing together with *Candelaria* sp. Lat.: 33° 57' 09.9" N; Long.: 126° 20' 13.08" E; Alt.: ca 56 m a.s.l. Coll.: Joshi, Y., So, J. (site 9) (141069), 21.06.2014 (KoLRI 023627 sub *Candelaria* sp.). – It was described recently from Cheju Island (Kondratyuk *et al.* 2012, 2015a). An additional record from Chuja Island is reported.

Caloplaca chujaensis S. Y. Kondr., L. Lökös et J.-S. Hur – Republic of Korea, Jeollanam-do, Sinan-gun, Heuksan-myeon, Daeheuksan-do Island, Jin-ri, on rock. Lat.: 34° 41' 43.26" N; Long.: 125° 25' 48.60" E; Alt.: ca 5 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110568), 22.06.2011 (KoLRI 013604 sub *Lecanora*). – Jeollanam-do, Wando-gun, Bogil-myeon, Bogil Island, Buhwang-ri, on rock, growing together with *Buellia* sp. Lat.: 34° 07' 30.66" N; Long.: 126° 31' 15.12" E; Alt.: ca 2 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110698), 23.06.2011 (KoLRI 013726 sub *Buellia*). – It was described recently from Chuja and Odong Islands (Kondratyuk *et al.* 2015a). Two additional localities are added from other islands.

**Caloplaca kedrovopadensis* S. Y. Kondr. et J.-S. Hur – Republic of Korea, Jeollanam-do, Gurae-gun, Sandong-myeon, Chiri Mts, Seungsamjae station to Nogodan, on bark. Lat.: 35° 17' 46.50" N; Long.: 127° 31' 27.00" E; Alt.: 1,314 m a.s.l. Coll.: Kondratyuk, S. (21160), Wang, X. Y., Ryu, J. A. (111009), 11.10.2011 (KoLRI 014084). – It was described recently from the Russian Far East (Kondratyuk *et al.* 2014c). New for Korea!

Caloplaca subconcilians S. Y. Kondr., L. Lökös et J.-S. Hur – Republic of Korea, Jeju-do Prov., Cheju Island, Seogwipo-si, Namwon-eup, Wimi-ri, on rock, growing together with *Caloplaca multicolor*, *Dirinaria applanata*, *Buellia*.

Lat.: 33° 16' 13.26" N; Long.: 126° 39' 39.00" E; Alt.: ca 10 m a.s.l. Coll.: Joshi, Y., Wang, X. Y. (091427), 29.05.2009 (KoLRI 011070 sub *Lecanora* sp.); the same locality, growing together with *Lecanora oreinoides*, (091453), (KoLRI 011096 sub *Lecanora oreinoides*). – Gyeongsangnam-do, Namhae-gun, Nam-myeon, Honghyeon-ri, Haebyeon, on rock, growing together with *Pertusaria flavicans*. Lat.: 34° 43' 30.90" N; Long.: 127° 53' 40.68" E; Alt.: ca 16 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110242), 28.04.2011 (KoLRI 013456 sub *Pertusaria flavicans*). – Jeollanam-do, Gurye-gun, Masan-myeon, Chiri Mts, Hwaem Valley, on rock, growing together with *Pertusaria* sp. Lat.: 35° 16' 54.30" N; Long.: 127° 31' 0.18" E; Alt.: ca 816 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091027), 12.10.2009 (KoLRI 010405 sub *Pertusaria*). – Jeollanam-do, Sinan-gun, Palgeum-myeon, Palgeum-do Island, on rock, growing together with *Buellia* sp. Lat.: 34° 47' 47.40" N; Long.: 126° 10' 10.38" E; Alt.: ca 0 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110390), 02.06.2011 (KoLRI 012942 sub *Buellia* sp.). – Jeollanam-do, Wando-gun, Cheongsan-myeon, Cheongsan-do Island, Eup-ri, on rock, growing together with *Buellia* sp. Lat.: 34° 09' 11.22" N; Long.: 126° 52' 49.26" E; Alt.: ca 2 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110714), 23.06.2011 (KoLRI 013742 sub *Buellia* sp.). – Jeollanam-do, Wando-gun, Cheongsan-myeon, Cheongsan-do Island, Guksan-ri, on rock, growing together with *Pertusaria flavicans*. Lat.: 34° 12' 13.08" N; Long.: 126° 54' 21.42" E; Alt.: ca 5 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110757), 23.06.2011 (KoLRI 013781 sub *Pertusaria flavicans*). – It was described recently from Cheju and other three islands (Kondratyuk *et al.* 2013, 2015a). Further localities from the southern archipelago of South Korea and also from the mainland are added.

Caloplaca trassii Galanina *et al.* S. Y. Kondr. – Republic of Korea, Gangwon-do, Chuncheon-si, Buksan-myeon Jogyo-ri, Mt Maebong, on bark, growing together with *Hafellia pseudomultispora* and *Catillaria cf. atomaroides*. Lat.: 37° 54' 47.82" N, Long.: 127° 59' 5.94" E; Alt.: ca 685 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100614), 26.05.2010 (KoLRI 012359 sub *Hafellia pseudomultispora*). – The 4th Korean locality of the recently reported species (Kondratyuk *et al.* 2013, 2015a).

Candelariella coralliza (Nyl.) H. Magn. – Republic of Korea, Jeju-do Prov., Cheju Island, Seogwipo-si, Mt Hallasan, Sanghyo-dong, Gwanumsa Trail, on rock, growing together with *Acarospora fuscata*, *Scoliciosporum umbrium* and *Candelariella* sp. Lat.: 33° 21' 39.7" N; Long.: 126° 32' 08.9" E; Alt.: ca 1,923 m a.s.l. Coll.: Oh, S.-O., Jayalal, U., Joshi, S., Park, J. S., Tian, F. H., Hur, J.-S. (121219), 19.06.2012 (KoLRI 016255 sub *Candelariella*). – Jeollanam-do, Sinan-gun, Bigeum-myeon, Bigeum-do Island, Mt Sunwangsan, on rock, growing together with *Candelariella* sp. Lat.: 34° 44' 13.7" N; Long.: 125° 55' 54.05" E; Alt.: ca 55 m a.s.l. Coll.: Oh, S.-O., Park, J. S., Woo, J. J. (130148), 05.06.2013 (KoLRI 018489 sub *Candelariella*). – Jeollanam-do, Wando-gun,

Bogil-myeon, Bogil Island, Buhwang-ri, Mt Gyeokjasan, between Keungiljae and Suribong, on rock. Lat.: 34° 08' 31.50" N; Long.: 126° 32' 55.98" E; Alt.: ca 346 m a.s.l. Coll.: Joshi, Y., Jeon, H. S., Jeong, M. H. (100143), 05.02.2010, (KoLRI 011641); the same locality, growing together with *Marfloraea corallina*, 100140 (KoLRI 011637 sub *Marfloraea* (= *Pertusaria*) *corallina*). – Jeollanam-do, Wando-gun, Bogil-myeon, Bogil Island, Jeongdong-ri, Haeanga, on rock. Lat.: 34° 10' 54.00" N; Long.: 126° 31' 50.16" E; Alt.: ca 11 m a.s.l. Coll.: Joshi, Y., Jeon, H. S., Jeong, M. H. (100258), 06.02.2010 (KoLRI 011769). – It was reported at first from Chuja Island (Kondratyuk *et al.* 2015a). Four more localities are added from 3 other islands.

Catillaria atomarioides (Müll. Arg.) H. Kilius – Republic of Korea, Jeju-do Prov., Cheju Island, Jeju-si, Mt Hallasan, Hallasan National Park, Gwaneumsa Trail, on tree. Lat.: 33° 23' 37.4" N; Long.: 126° 32' 16.1" E; Alt.: ca 1,072 m a.s.l. Coll.: Oh, S.-O., Jayalal, U., Park, J. S., Hur, J.-S. (121061), 01.06.2012 (KoLRI 015670). – Jeju-do Prov., Cheju Island, Jeju-si, Hangyeong-myeon, Sinchang-ri, seashore road, on rock, growing together with *Protoparmeliopsis chejuensis* and *Psorotichia* sp. Lat.: 33° 20' 31.6" N; Long.: 126° 10' 12.08" E; Alt.: ca 82 m a.s.l. Coll.: Kondratyuk, S. (site 1) (140266-2), 18.06.2014 (KoLRI 022623 sub *Protoparmeliopsis chejuensis*). – Jeju-do Prov., Cheju Island, Seogwipo-si, Namwon-eup, Wimi-ri, on rock. Lat.: 33° 16' 13.26" N; Long.: 126° 39' 39.00" E; Alt.: ca 10 m a.s.l. Coll.: Joshi, Y., Wang, X. Y. (091452), 29.05.2009 (KoLRI 011095 sub *Lepraria*). – Chungcheongbuk-do, Danyang-gun, Daegang-myeon, Sobaeksan, on rock. Lat.: 36° 55' 11.6" N; Long.: 128° 26' 40.9" E; Alt.: ca 1,226 m a.s.l. Coll.: Hur, J.-S. (070324), 25.04.2007 (KoLRI 007476 sub *Ramalina yasuda*). – Gangwon-do, Chuncheon-si, Buksan-myeon Jogyo-ri, Mt Maebong, on bark. Lat.: 37° 54' 47.82" N, Long.: 127° 59' 5.94" E; Alt.: ca 685 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100614), 26.05.2010 (KoLRI 012359 sub *Hafellia pseudomultispora*). – Jeollanam-do, Yeosu-si, Hwayang-myeon, Imok-ri, Beolghaesan, on rock. Lat.: 34° 39' 00.4" N; Long.: 127° 34' 04.7" E; Alt.: ca 12 m a.s.l. Coll.: Jayalal, U. *et al.* (120674), 28.04.2012 (KoLRI 015670 sub *Pertusaria subobductans*). – Jeollanam-do, Yeosu-si, Samsan-myeon, Geomun-do Island, on rock, growing together with *Lecanora campetris*, *Caloplaca multicolor*, *Lecanora* sp. Lat.: 34° 00' 31.98" N; Long.: 127° 19' 17.40" E; Alt.: ca 55 m a.s.l. Coll.: Hur, J.-S. (070068), 23.03.2007 (KoLRI 007055 sub *Lecanora campetris*). – Jeollanam-do, Yeosu-si, Samsan-myeon, Geomun-do Island, on rock, growing together with *Marfloraea amara*. Lat.: 34° 00' 38.2" N; Long.: 127° 19' 07.5" E; Alt.: ca 10 m a.s.l. Coll.: Hur, J.-S. (070117), 24.03.2007 (KoLRI 007104 sub *Marfloraea* (= *Pertusaria*) *amara*). – Several additional records to the recently reported species (Aptroot and Moon 2014, Kondratyuk *et al.* 2015a).

**Catillaria chalybaea* (Borrer) A. Massal. – Republic of Korea, Jeju-do Prov., Cheju Island, Jeju-si, Hangyeong-myeon, Sinchang-ri, seashore road,

on rock, growing together with *Endocarpon* sp. Lat.: 33° 20' 31.6" N; Long.: 126° 10' 12.08" E; Alt.: ca 82 m a.s.l. Coll.: Gagarina, L. (site 1) (140158), 18.06.2014 (KoLRI 022525 sub *Endocarpon* sp.); the same locality. Coll.: Gagarina, L. (site 1) (140162), 18.06.2014 (KoLRI 022529 sub *Pertusaria flavicans*); the same locality, on rock, growing together with *Protoparmeliopsis muralis*, *Caloplaca* cf. *subconcilians*, *Dirinaria*, *Phaeophyscia* spp. Coll.: Kondratyuk, S. (site 1) (140249), 18.06.2014 (KoLRI 022605 sub *Protoparmeliopsis muralis*). – Jeollanam-do, Yeosu-si, Samsan-myeon, Geomun-do Island, on rock, growing together with *Pertusaria* sp. Lat.: 34° 00' 13.3" N; Long.: 127° 19' 29.0" E; Alt.: ca 55 m a.s.l. Coll.: Hur, J.-S. (070069), 23.03.2007 (KoLRI 007056 sub *Pertusaria*). – New for Korea!

**Coenogonium isidiatum* (G. Thor et Vězda) Lücking, Aptroot et Sipman – Republic of Korea, Gangwon-do, Pyeongchang-gun, Jinbu-myeon, Suhang-ri, Mt Dutasan (Mt Bakjisan), on rock. Lat.: 37° 34' 9.84" N; Long.: 128° 35' 20.16" E; Alt.: ca 958 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100752), 27.05.2010 (KoLRI 012454). – Gangwon-do, Taebaek-si, Mungok-sodo-dong, Taebaek Mts, Danggol-Munsubong, on bryophytes. Lat.: 37° 06' 01.1" N; Long.: 128° 56' 50.3" E; Alt.: ca 1,300 m a.s.l. Coll.: Lőkös, L. (050739), 14.10.2005 (KoLRI 003643, BP). – It was reported from North Korea by Vězda (1988 as *Dimerella isidiata*) and Szerdahelyi and Lőkös (1992 as *Dimerella isidiata*). New for South Korea!

Coenogonium luteum (Dicks.) Kalb et Lücking – Republic of Korea, Gangwon-do, Chuncheon-si, Buksan-myeon Jogyo-ri, Mt Maebong, on *Quercus* bark, growing together with *Pertusaria* sp. Lat.: 37° 54' 47.22" N, Long.: 127° 59' 6.72" E; Alt.: 760 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100606), 26.05.2010 (KoLRI 012354 sub *Pertusaria*). – It is known from Korea from several publications (Hur *et al.* 2005, Kondratyuk *et al.* 2013, Moon 1999, 2013 (as *Dimerella lutea*)). An additional locality is added.

Cresonea proximata (Nyl.) Egea et Torrente – Republic of Korea, Jeollanam-do, Jangheung-gun, Gwansan-eup, Okdang-ri, Cheongwansan Mts, along the tourist track No. 2, near the temple, on bark (*Camellia/Diospyros*). Lat.: 34° 32' 55.65" N; Long.: 126° 55' 43.11" E; Alt.: ca 154 m a.s.l. Coll.: Kondratyuk, S., Lőkös, L. (150404), 23.06.2015 (KoLRI 033999); the same locality, growing together with *Sculptolumina* sp. (150405), (KoLRI 034000); the same locality, (150407), (KoLRI 034002 sub *Sculptolumina*). – It was reported from Bogil and Geumon Islands (Joshi *et al.* 2011). The newly found locality is from the mainland.

Dibaeis baeomyces (L. f.) Rambold et Hertel – Republic of Korea, Ulsan-si, Ulju-gun, Samnam-myeon, Mt Ganwolsan, on soil. Lat.: 35° 32' 39.8" N; Long.: 129° 03' 59.9" E; Alt.: ca 701 m a.s.l. Coll.: Hur, J.-S. (070931), 04.11.2007 (KoLRI 012808). – It was known from the Seorak Mts (Moon 1999 as *Baeomyces fungoides*). The second Korean record.

Dibaeis soredata Kalb et Gierl – Republic of Korea, Chungcheongbuk-do, Jecheon-si, Hansu-myeon, Woraksan Mts, on soil. Lat.: 36° 52' 33.30" N; Long.: 128° 06' 21.48" E; Alt.: ca 990 m a.s.l. Coll.: Hur, J.-S. (041236), 19.09.2004 (KoLRI 002028). – Gyeongsangnam-do, Namhae-gun, Seo-myeon, Mt Mangunsan, on soil. Lat.: 34° 51' 6.12" N; Long.: 127° 49' 38.22" E; Alt.: ca 176 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110133), 28.04.2011 (KoLRI 013348). – Incheon-si, Ganghwa-gun, Samsan-myeon, Seogmo-do Island, on rock. Lat.: 37° 44' 31.0" N; Long.: 126° 19' 25.6" E; Alt.: ca 78 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A., Guo, W. (101027), 29.09.2010 (KoLRI 012604). – Jeollanam-do, Jangheung-gun, Gwansan-eup, Okdang-ri, Cheongwansan Mts, along the tourist track No. 2, on acid soil, growing together with *Cladonia* sp. Lat.: 34° 32' 22.93" N; Long.: 126° 55' 11.16" E; Alt.: ca 495 m a.s.l. Coll.: Kondratyuk, S., Lökös, L. (150350), 23.06.2015 (KoLRI 033945 sub *Cladonia*); the same locality, growing together with *Cladonia* sp. (150351), (KoLRI 033946 sub *Cladonia*); the same locality, (150353), (KoLRI 033948); the same locality, (150354), (KoLRI 033949); the same locality, (150355), (KoLRI 033950). – Jeollanam-do, Jindo-gun, Jodomyeon, Hajo-do Island, on soil. Lat.: 34° 16' 59.2" N; Long.: 126° 04' 21.5" E; Alt.: ca 22 m a.s.l. Coll.: Wang, X. Y., Ryu, R. Y. (110857), 23.08.2011 (KoLRI 013857). – Jeollanam-do, Sinan-gun, Sinui-myeon, Sinui-do Island, mountain area, on soil. Lat.: 34° 32' 25.04" N; Long.: 126° 02' 07.09" E; Alt.: ca 30 m a.s.l. Coll.: Oh, S.-O., Park, J. S., Woo, J. J. (130630), 28.06.2013 (KoLRI 018975). – It was reported recently from Mt Juwang Aptroot and Moon (2014). Several additional localities are added.

**Dibaeis yurii* (S. Y. Kondr., L. Lökös, S.-O. Oh et J.-S. Hur) S. Y. Kondr., L. Lökös et J.-S. Hur (Syn. *Ochrolechia yurii* S. Y. Kondr., L. Lökös, S.-O. Oh et J.-S. Hur) – Republic of Korea, Gyeongsangbuk-do, Cheongsong-gun, Budong-myeon, Sangui-ri, Juwangsan National Park, Juwangsan Mts, on soil, growing together with *Endocarpon pusillum*. Lat.: 36° 24' 09.6" N; Long.: 129° 10' 27.1" E; Alt.: ca 380 m a.s.l. Coll.: Lökös, L. (050742), 15.10.2005 (KoLRI 003646 sub *Endocarpon pusillum*, BP). – Gyeongsangnam-do, Hamyang-gun, Baekjeon-myeon, Baekun-ri, Mt Baekunsan, on rock, growing together with *Heterodermia hypoleuca*. Lat.: 35° 36' 37.5" N; Long.: 127° 38' 20.0" E; Alt.: ca 1,251 m a.s.l. Coll.: Hur, J.-S. (060615), 17.08.2006 (KoLRI 004987 sub *Heterodermia hypoleuca*). – Gyeongsangnam-do, Sancheong-gun, Geumseo-myeon, Chiri Mts, Ungseokbong, on rock, growing together with *Lepraria* sp. Lat.: 35° 22' 51.0" N; Long.: 127° 50' 56.1" E; Alt.: ca 587 m a.s.l. Coll.: Hur, J.-S. (070846) 16.10.2007 (KoLRI 007680 sub *Lepraria*). – Gyeongsangnam-do, Sancheong-gun, Sicheon-myeon, Chiri Mts, Jungsan-ri, on soil, growing together with *Endocarpon* sp. Lat.: 35° 19' 30.6" N; Long.: 127° 44' 14.8" E; Alt.: ca 1,317 m a.s.l. Coll.: Hur, J.-S. (060671) 15.09.2006 (KoLRI 005047 sub *Endocarpon*). – It

was described recently from the Russian Far East (Kondratyuk *et al.* 2014c). New for Korea!

Endococcus xanthoparmeliae Y. Joshi, S. Y. Kondr., L. Lőkös et Hur – Republic of Korea, Jeollanam-do, Goheung-gun, Bongnae-myeon, Yenae-ri, Oeraro-do Island, on rock, on *Xanthoparmelia coreana* thalli, growing together with *Buellia spuria*. Lat.: 34° 27' 23.60" N; Long.: 127° 31' 15.30" E; Alt.: ca 8 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110950), 24.08.2011 (KoLRI 013930 sub *Buellia spuria*). – Jeollanam-do, Jindo-gun, Gunnae-myeon, Dunjeon-ri, Haebyeon, on rock, on *Xanthoparmelia coreana* thalli, growing together with *Buellia* sp. Lat.: 34° 32' 54.60" N; Long.: 126° 18' 41.82" E; Alt.: ca 3 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110454), 02.06.2011 (KoLRI 012967 sub *Buellia*). – It was described recently from the coastal area of Cheju and Chuja Islands (South Korea) (Joshi *et al.* 2015). Additional records from another two islands from the southern archipelago are provided.

Fellhanera maritima S. Y. Kondr., L. Lőkös et J.-S. Hur – Republic of Korea, Jeju-do Prov., Jeju-si, Chuja Island, Chuja-myeon, Sinyang-1-ri, around the grave of Hwangkyeonghan, on rock, growing together with *Parmotrema* sp. Lat.: 33° 56' 50.4" N; Long.: 126° 20' 21.05" E; Alt.: ca 116 m a.s.l. Coll.: Oh, S.-O., Park, J. S., Hur, J.-S. (site 8) (140989), 21.06.2014 (KoLRI 023544 sub *Parmotrema* sp.). – The recently described species was known only from the type locality, i.e. Sinui-do island (Kondratyuk *et al.* 2013). It is the second record from Chuja Island.

Graphis* cf. *koreana S. Joshi et Hur – Republic of Korea, Jeollanam-do, Jangheung-gun, Gwansan-eup, Okdang-ri, Cheongwansan Mts, along the tourist track No. 2, on rocks growing together with *Lecanactis subdilleniana* and *Pertusaria* sp. Lat.: 34° 32' 22.93" N; Long.: 126° 55' 11.16" E; Alt.: ca 495 m a.s.l. Coll.: Kondratyuk, S. (SK-82), Lőkös, L. (150357), 23.06.2015 (KoLRI 033952 sub *Lecanactis subdilleniana*); the same locality, growing together with *Fuscidea coreana* and *Halecania subalpiwaga*, (150359) (KoLRI 033954 sub *Fuscidea coreana*). – *Graphis koreana* was described recently by Joshi *et al.* (2013) from Mt Palyeong (Jeollanam-do). Moon *et al.* (2014) studied the holotypes of *G. cervina* (G) and *G. koreana* (KoLRI), and found the two species to be conspecific, according to anatomical and chemical characters. Thus *G. koreana* was reduced to a synonym of *G. cervina*. However, diagnostic characters of our KoLRI specimen fit well with typical *G. koreana* (spore size, septation, etc.). We hope that further molecular genetical studies can help to clear the taxonomic status of *Graphis koreana* in the future.

****Halecania australis*** Lumbsch – Republic of Korea, Gangwon-do, Jeongseon-gun, Yeoryang-myeon, Mt Banonsan (Mt Banronsan), on rock, growing together with *Scoliciosporum umbrinum* and *Endocarpon* sp. Lat.: 37° 26' 37.14" N; Long.: 128° 45' 29.40" E; Alt.: ca 1,064 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S.,

Lü, L., Ryu, J. A. (100855), 28.05.2010 (KoLRI 012533 sub *Endocarpon*). – Gangwon-do, Sokcho-si, Seorak-dong, Seorak Mts, on rock, growing together with *Endocarpon petrolepideum*. Lat.: 38° 09' 58.14" N; Long.: 128° 27' 49.86" E; Alt.: ca 673 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A. (090838), 24.05.2009 (KoLRI 010510 sub *Endocarpon petrolepideum*). – Gyeongsangnam-do, Hadong-gun, Hwagae-myeon, Chiri Mts, Yeonhacheon-Byeoksoryeong, on rock, growing together with *Acarospora* cf. *fuscata*. Lat.: 35° 18' 25.68" N; Long.: 127° 35' 16.20" E; Alt.: ca 1,405 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091286), 14.10.2009 (KoLRI 011248). – New for Korea!

**Halecania lobulata* van den Boom et Elix – Republic of Korea, Jeollabuk-do, Imsil-gun, Deokchi-myeon, Hoemun-ri, Mt Hoemunsan, on rock. Lat.: 35° 30' 46.2" N; Long.: 127° 07' 56.2" E; Alt.: ca 473 m a.s.l. Coll.: Park, J. S., Liu, D., Lee, B. G. (Imsil-13, Imsil-14), 19.06.2015 (KoLRI). – *Halecania lobulata* was described from North Korea with rather limited data on its ecology, based only on label information (van den Boom and Elix 2005). The recent collection of *H. lobulata* in South Korea provided additional set of data on ecology of this species. It was collected on rather steep slope (ca 60%) SW facing slope with mixed forest (*Quercus variabilis* and *Pinus densiflora*, *Fraxinus rynchophylla*, *F. sieboldiana* and *Lespedeza cyrtobotrya*, *Polygonatum odoratum* and *Zanthoxylum piperitum*), where rock surfaces present to 30% of slope surface.

**Intralichen christiansenii* (D. Hawksw.) D. Hawksw. et M. S. Cole – Republic of Korea, Jeju-do Prov., Cheju Island, Seogwipo-si, Namwon-eup, Wimi-ri, on rock, growing together with *Lepraria* sp. Lat.: 33° 16' 13.26" N; Long.: 126° 39' 39.00" E; Alt.: ca 10 m a.s.l. Coll.: Joshi, Y., Wang, X. Y. (091452), 29.05.2009 (KoLRI 011095 sub *Lepraria* sp.). – New for Korea!

**Ivanpisutia oxneri* S. Y. Kondr., L. Lőkös et J.-S. Hur – Republic of Korea, Gangwon-do, Gangneung-si, Wangsan-myeon, Songhyeon-ri, Mt Seokbyeongsan, on *Quercus* bark. Lat.: 37° 34' 29.9" N; Long.: 128° 51' 21.8" E; Alt.: ca 686 m a.s.l. Coll.: Hur, J.-S. (080191), 24.05.2008 (KoLRI 008437). – Gangwon-do, Hongcheon-gun, Nae-myeon, Mt Eungboksan, Tongbalamyegog, on bark, growing together with *Marfloraea amara*. Lat.: 37° 51' 21.54" N; Long.: 128° 30' 58.44" E; Alt.: ca 1,192 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A. (090671), 23.05.2009 (KoLRI 010338 sub *Marfloraea* (= *Pertusaria*) *amara*). – Gangwon-do, Samcheok-si, Singi-myeon, Macha-ri, Gitdaebong, on bark, growing together with *Ochrolechia trochophora*. Lat.: 37° 18' 22.02" N; Long.: 128° 56' 45.96" E; Alt.: ca 1,222 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A., Hur, J. Y. (090392), 15.05.2009 (KoLRI 010108 sub *Ochrolechia trochophora*). – Gyeongsangbuk-do, Cheongsong-gun, Budong-myeon, Sangui-ri, Juwangsan National Park, Juwangsan Mts, on *Carpinus* bark, growing together with *Megalospora* sp. Lat.: 36° 24' 09.6" N; Long.: 129° 10' 27.1" E; Alt.: ca 380 m a.s.l. Coll.: Lőkös, L. (050742), 15.10.2005 (KoLRI 003646 sub *Megalospora*, BP). – Gyeongsangnam-do, Hadong-gun, Hwagae-myeon, Chiri

Mts, Byeoksoryeong-Seseok, on bark, growing together with *Biatora longispora* and *Verseghya klarae*. Lat.: 35° 19' 40.74" N; Long.: 127° 39' 31.32" E; Alt.: ca 1,346 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091380), 15.10.2009 (KoLRI 011300 sub *Verseghya klarae*). – Jeollanam-do, Gurye-gun, Masan-myeon, Chiri Mts, Hwaem valley, on bark, growing together with *Lecidella* sp. Lat.: 35° 16' 54.30" N; Long.: 127° 31' 0.18" E; Alt.: ca 816 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091035), 12.10.2009 (KoLRI 010418 sub *Lecidella*). – This species was described recently (Kondratyuk *et al.* 2015a) from the Russian Far East. New for Korea!

Lecania coreana S. Y. Kondr., Lőkös et Hur – Republic of Korea, Gyeong-sangnam-do, Namhae-gun, Seo-myeon, Mt Mangunsan, on rock, growing together with *Lepraria* sp. Lat.: 34° 51' 4.14" N; Long.: 127° 49' 36.36" E; Alt.: ca 165 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110159), 28.04.2011 (KoLRI 013373 sub *Lepraria* sp.). – Jeollanam-do, Jindo-gun, Gunnae-myeon, Dunjeon-ri, Haebyeon, on rock, growing together with *Pertusaria flavicans*. Lat.: 34° 32' 55.14" N; Long.: 126° 18' 41.64" E; Alt.: ca 2 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110485), 03.06.2011 (KoLRI 013530 sub *Pertusaria flavicans*). – Jeollanam-do, Sinan-gun, Jaeun-myeon, Jaeun-do Island, on rock, growing together with *Lecanora melacarpella*. Lat.: 34° 50' 49.92" N; Long.: 126° 02' 24.30" E; Alt.: ca 5 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110144), 02.06.2011 (KoLRI 013359 sub *Lecanora melacarpella*). – It was described recently from several localities of the western coastal part of South Korea (Kondratyuk *et al.* 2013). The additional records are also from this area.

**Lecania* cf. *olivacella* (Nyl.) Zahlbr. – Republic of Korea, Jeju-do Prov., Cheju Island, Seogwipo-si, Gangjeong-dong, Yeongtto waterfall, on rock, growing together with *Caloplaca* and *Lepraria* spp. Lat.: 33° 16' 01.7" N; Long.: 126° 29' 49.00" E; Alt.: ca 210 m a.s.l. Coll.: Joshi, Y., So, J. (140580), 19.06.2014 (KoLRI 022974 sub *Lecania* sp.). – Jeollanam-do, Goheung-gun, Jeomam-myeon, Mt Palyeongsan, on rock. Lat.: 34° 38' 23.9" N; Long.: 127° 25' 19.5" E; Alt.: ca 85 m a.s.l. Coll.: Joshi, Y., Jeon, H. S., Han, G. S. (100268), 19.02.2010 (KoLRI 011779 sub *Lecania*). – New for Korea!

Lecania rinodinooides S. Y. Kondr., L. Lőkös et J.-S. Hur – Republic of Korea, Jeju-do Prov., Jeju-si, Chuja Island, Chuja-myeon, Yecho-ri, front road of Bokryusu, on rock, growing together with *Amandinea punctata*. Lat.: 33° 57' 07.2" N; Long.: 126° 19' 13.08" E; Alt.: ca 33 m a.s.l. Coll.: Halda, J. P. (site 13) (141110), 21.06.2014 (KoLRI 023671 sub *Amandinea punctata*). – The recently described species was known from two localities (Anjwa and Cheju Islands) (Kondratyuk *et al.* 2013, 2015a). The third record was registered in Chuja Island.

Lecanora imshaugii Brodo – Republic of Korea, Jeollabuk-do, Muju-gun, Seoulcheon-myeon, Mt Deogyusan, on bark. Lat.: 35° 51' 10.7" N; Long.: 127° 44' 56.4" E; Alt.: ca 1,565 m a.s.l. Coll.: Hur, J.-S. (060487), 10.08.2006 (KoLRI

004858 sub *Lecanora*). – It was known from the Seorak Mts (Hur *et al.* 2005, Moon 1999). It is the second Korean record.

**Lecanora lojkahugoi* S. Y. Kondr., L. Lökös et J.-S. Hur – Republic of Korea, Gyeongsangnam-do, Namhae-gun, Seo-myeon, Mt Mangunsan, on rock, growing together with *Pertusaria flavescens*. Lat.: 34° 51' 4.14" N; Long.: 127° 49' 36.36" E; Alt.: ca 165 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110158), 28.04.2011 (KoLRI 013372 sub *Pertusaria flavescens*). – Jeju-do Prov., Cheju Island, Jeju-si, Aewol-eup, Nabeup-ri, subtropical forest, on rock, growing together with *Candelaria concolor*, *Pertusaria* aff. *flavocorallina* and *Phaeophyscia orbicularis*, damaged by *Arthonia epiphyscia*. Lat.: 33° 26' 06.50" N; Long.: 126° 19' 48.50" E; Alt.: ca 90 m a.s.l. Coll.: Kondratyuk, S. Y., Lökös, L., Oh, S.-O., Jayalal, U., Joshi, S., Park, J. S., Hur, J.-S. (121831), 05.07.2012 (KoLRI 016768 sub *Pertusaria*). – Jeju-do Prov., Jeju-si, Chuja Island, Chuja-myeon, Yecho-ri, Mt Dondaesan, on rock, growing together with *Buellia stellulata*, *Pertusaria*, *Candelariella*, *Ramalina* spp. Lat.: 33° 56' 53.9" N; Long.: 126° 19' 26.7" E; Alt.: ca 164 m a.s.l. Coll.: Joshi, Y., So, J. (site 6) (140778), 20.06.2014 (KoLRI 023252 sub *Buellia stellulata*). – Jeju-do Prov., Jeju-si, Chuja Island, Chuja-myeon, Yecho-ri, road of Mt Sindea observatory, on rock, growing together with *Pertusaria subobductans*, *Yoshimuria spodoplaca*, and *Caloplaca* sp. Lat.: 33° 57' 09.9" N; Long.: 126° 20' 13.08" E; Alt.: ca 56 m a.s.l. Coll.: Joshi, Y., So, J. (site 9) (140979-2), 21.06.2014 (KoLRI 023528 sub *Pertusaria subobductans*). – Jeollanam-do, Jindogun, Uisin-myeon, Jeop-do Island, on rock, growing together with *Lecanora oreinoides*. Lat.: 34° 23' 40.80" N; Long.: 126° 18' 15.06" E; Alt.: ca 1 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (110496), 03.06.2011 (KoLRI 013540 sub *Lecanora oreinoides*). – It was described recently from the Russian Far East (Kondratyuk *et al.* 2015a). Now several Korean occurrences are presented. New for Korea!

**Lecanora sulphurea* (Hoffm.) Ach. – Republic of Korea, Jeollanam-do, Goheung-gun, Jeomam-myeon, Yuyeongbong, Mt Palyeongsan, on rock. Lat.: 34° 37' 48.84" N; Long.: 127° 25' 42.18" E; Alt.: ca 485 m a.s.l. Coll.: Joshi, Y., Jeon, H. S., Han, G. S. (100300), 19.02.2010 (KoLRI 011811). – New for Korea!

**Lecidella mandshurica* S. Y. Kondr., L. Lökös et J.-S. Hur – Republic of Korea, Chungcheongbuk-do, Boeun-gun, Songnisan-myeon, Mt Songnisan, on *Pinus* bark, growing together with *Bacidia subincompta*. Lat.: 36° 32' 08.6" N; Long.: 127° 50' 32.0" E; Alt.: ca 491 m a.s.l. Coll.: Hur, J.-S. (060008), 21.04.2006 (KoLRI 004382). – Chungcheongbuk-do, Danyang-gun, Daegang-myeon, Mt Sobaeksan, on bark. Lat.: 36° 54' 56.7" N; Long.: 128° 26' 46.9" E; Alt.: ca 1,139 m a.s.l. Coll.: Hur, J.-S. (070320), 25.04.2007 (KoLRI 007473); the same place, on *Betula* bark. Lat.: 36° 53' 23.3" N; Long.: 128° 25' 57.8" E; Alt.: ca 877 m a.s.l. Coll.: Hur, J.-S. (070399), 10.06.2007 (KoLRI 007262); the same place, on bark. Lat.: 36° 53' 22.5" N; Long.: 128° 25' 56.8" E; Alt.: ca 875 m a.s.l. Coll.: Hur, J.-S. (070405), 10.06.2007 (KoLRI 007268); the same place, on *Quercus* bark. Lat.: 36°

53' 15.5" N; Long.: 128° 25' 47.6" E; Alt.: ca 981 m a.s.l. Coll.: Hur, J.-S. (070409), 10.06.2007 (KoLRI 007271); the same place, on *Quercus* bark. Lat.: 36° 52' 52.9" N; Long.: 128° 25' 47.3" E; Alt.: ca 1,110 m a.s.l. Coll.: Hur, J.-S. (070422), 10.06.2007 (KoLRI 007283); the same place, on bark. Lat.: 36° 52' 49.9" N; Long.: 128° 25' 46.8" E; Alt.: ca 1,125 m a.s.l. Coll.: Hur, J.-S. (070433), 10.06.2007 (KoLRI 007294); the same place, on bark. Lat.: 36° 57' 45.7" N; Long.: 128° 30' 28.6" E; Alt.: ca 1,140 m a.s.l. Coll.: Hur, J.-S. (070489), 11.06.2007 (KoLRI 007340). – Gangwon-do, Hongcheon-gun, Naechon-myeon, Joryeongsan Natural Recreation Forest, on bark, growing together with *Ochrolechia trochophora*. Lat.: 37° 48' 27" N; Long.: 128° 03' 32" E; Alt.: ca 500 m a.s.l. Coll.: Hur, J.-S. (080318), 10.07.2008 (KoLRI 008576 sub *Ochrolechia trochophora*); the same locality, (080320), (KoLRI 008578 sub *Bacidia subincompta*); the same locality, (080328), (KoLRI 008586 sub *Lecidella*). – Gangwon-do, Jeongseon-gun, Jeongseon-eup, Mt Gariwangsan, on bark. Lat.: 37° 27' 27.5" N; Long.: 128° 32' 35.1" E; Alt.: ca 1,205 m a.s.l. Coll.: Hur, J.-S. (080087), 10.05.2008 (KoLRI 008330). – Gangwon-do, Pyeongchang-gun, Jinbu-myeon, Dongsan-ri, Mt Hwangbyeongsan, on *Quercus* bark. Lat.: 37° 44' 44.3" N; Long.: 128° 37' 30.4" E; Alt.: ca 779 m a.s.l. Coll.: Hur, J.-S. (080384), 14.07.2008 (KoLRI 008638). – Gangwon-do, Pyeongchang-gun, Jinbu-myeon, Suhang-ri, Mt Dutasan (Mt Bakjisan), on *Quercus* bark. Lat.: 37° 26' 27.3" N; Long.: 128° 59' 17.7" E; Alt.: ca 855 m a.s.l. Coll.: Hur, J.-S. (080117), 11.05.2008 (KoLRI 008361); the same locality, (080118), (KoLRI 008362); the same place, on bark of *Acer*. Lat.: 37° 34' 23.40" N; Long.: 128° 36' 13.98" E; Alt.: ca 989 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100766), 27.05.2010 (KoLRI 012465). – Gangwon-do, Pyeongchang-gun, Daegwalnyeong-myeon, Byeongnae-ri, Mt Odaesan, on bark. Lat.: 37° 45' 53.5" N; Long.: 128° 36' 34.7" E; Alt.: ca 1,088 m a.s.l. Coll.: Hur, J.-S. (080492), 15.07.2008 (KoLRI 008729); the same place, on *Quercus* bark. Lat.: 37° 46' 12.5" N; Long.: 128° 36' 07.0" E; Alt.: ca 1,391 m a.s.l. Coll.: Hur, J.-S. (080523), 15.07.2008 (KoLRI 008748). – Gangwon-do, Pyeongchang-gun, Yongpyeong-myeon, Mt Gyebangsang, on *Acer* bark. Lat.: 37° 42' 42.1" N; Long.: 128° 28' 12.9" E; Alt.: ca 1,299 m a.s.l. Coll.: Hur, J.-S. (080659), 16.07.2008 (KoLRI 008849). – Gangwon-do, Taebaek Mts, on bark. Coll.: Hur, J.-S. (041026), 12.09.2004 (KoLRI 001815); the same place, on bark (*Acer*), growing together with *Lecanora imshaugii*. Coll.: Hur, J.-S. (041028), 12.09.2004 (KoLRI 001817 sub *Lecanora imshaugii*); the same place, on bark, growing together with *Pertusaria subfallens*, and *Miktomia gordejevii*. Alt.: ca 1,415 m a.s.l. Coll.: Hur, J.-S. (041150), 12.09.2004 (KoLRI 001940 sub *Pertusaria subfallens*). – Gangwon-do, Taebaek-si, Taebaek Mts, Geumcheon-dong, on *Acer* bark. Lat.: 37° 05' 07.7" N; Long.: 128° 57' 27.0" E; Alt.: ca 976 m a.s.l. Coll.: Hur, J.-S. (070551), 18.06.2007 (KoLRI 007398); the same place, on bark. Lat.: 37° 05' 05.4" N; Long.: 128° 57' 13.3" E; Alt.: ca 1,184 m a.s.l. Coll.: Hur, J.-S. (070576), 18.06.2007

(KoLRI 007422). – Gangwon-do, Taebaek-si, Taebaek Mts, Mungok-dong, near Danggol-Manggyeongsa, on bark, growing together with *Lecanora hafelliana*. Lat.: 37° 06' 48.8" N; Long.: 128° 56' 51.0" E; Alt.: ca 910 m a.s.l. Coll.: Lőkös, L. (050707), 13.10.2005 (KoLRI 003611 sub *Lecanora hafelliana*, BP). – Gangwon-do, Yangyang-gun, Seo-myeon, Mt Jeobong, on bark. Lat.: 38° 03' 34.5" N; Long.: 128° 26' 41.6" E; Alt.: ca 830 m a.s.l. Coll.: Hur, J.-S. (041350), 09.10.2004 (KoLRI 002141); the same place, on bark, growing together with *Ochrolechia trochophora*. Lat.: 37° 56' 6.42" N; Long.: 128° 33' 44.82" E; Alt.: ca 980 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A., Hur, J. Y. (090222), 14.05.2009 (KoLRI 009984 sub *Ochrolechia trochophora*), the same locality, growing together with *Bacidia schweinitzii*, (090300), (KoLRI 010039 as *Bacidia schweinitzii*). – Gyeongsangbuk-do, Mungyeong-si, Mungyeong-eup, Mt Juheulsan, on bark. Lat.: 36° 46' 58.5" N; Long.: 128° 05' 21.3" E; Alt.: ca 675 (632) m a.s.l. Coll.: Hur, J.-S. (040162), 29.02.2004 (KoLRI 000930). – Gyeongsangbuk-do, Seongju-gun, Suryun-myeon, Baekun-ri, Mt Gayasan, on bark. Lat.: 35° 48' 11.9" N; Long.: 128° 08' 35.0" E; Alt.: ca 980 m a.s.l. Coll.: Hur, J.-S. (060115), 05.05.2006 (KoLRI 004787). – Gyeongsangnam-do, Hamyang-gun, Seosang-myeon, Mt Baekunsan, on bark. Lat.: 35° 36' 36.84" N; Long.: 127° 39' 37.44" E; Alt.: ca 903 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Han, G. S. (100446), 24.06.2010 (KoLRI 012066); the same place, on *Quercus* bark, growing together with *Rinodina* sp. Lat.: 35° 37' 4.50" N; Long.: 127° 39' 30.42" E; Alt.: ca 1,042 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Han, G. S. (100449), 24.06.2010 (KoLRI 012069). – Gyeongsangnam-do, Hadong-gun, Hwagae-myeon, Chiri Mts, near Yeonhacheon-Byeoksoryeong, on bark. Lat.: 35° 18' 21.30" N; Long.: 127° 35' 12.84" E; Alt.: ca 1,473 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091124), 14.10.2009 (KoLRI 011164); the same locality, on *Kalopanax* bark, growing together with *Rinodina xanthophaea*. (091201), 14.10.2009 (KoLRI 011204); the same place, on bark. Lat.: 35° 19' 42.8" N; Long.: 127° 39' 27.0" E; Alt.: ca 1,405 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091268), 14.10.2009 (KoLRI 011238). – Gyeongsangnam-do, Hadong-gun, Hwagae-myeon, Chiri Mts, near Byeoksoryeong-Seseok, on *Acer* bark, growing together with *Megalospora tuberculosa*. Lat.: 35° 19' 40.74" N; Long.: 127° 39' 31.32" E; Alt.: ca 1,346 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091308), 15.10.2009 (KoLRI 011260); the same locality, (091323), (KoLRI 011269); the same locality, growing together with *Pertusaria subobductans* and *Biatora longispora*, (091348), (KoLRI 011285 sub *Pertusaria subobductans*). – Gyeongsangnam-do, Geochang-gun, Wicheon-myeon, Mt Geumwonsan, on bark. Lat.: 35° 43' 48.00" N; Long.: 127° 46' 31.56" E; Alt.: ca 994 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Han, G. S. (100498), 25.06.2010 (KoLRI 012101); the same place, on bark. Lat.: 35° 43' 43.32" N; Long.: 127° 46' 11.04" E; Alt.: ca 1,153 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Han, G. S. (100504), 25.06.2010 (KoLRI 012105); the same place, on bark, growing together with

Lecanora sp. Lat.: 35° 43' 44.10" N; Long.: 127° 46' 0.72" E; Alt.: ca 1,236 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Han, G. S. (100532), 25.06.2010 (KoLRI 012125). – Gyeongsangnam-do, Sancheong-gun, Geumseo-myeon, Chiri Mts, Ungseokbong, on *Quercus* bark. Lat.: 35° 22' 51.5" N; Long.: 127° 51' 06.7" E; Alt.: ca 688 m a.s.l. Coll.: Hur, J.-S. (070857), 16.10.2007 (KoLRI 012852); the same place, on *Quercus* bark, growing together with *Mikhtomia gordejevii*, and *Lecanora* sp. Lat.: 35° 22' 40.2" N; Long.: 127° 51' 44.0" E; Alt.: ca 856 m a.s.l. Coll.: Hur, J.-S. (070907), 16.10.2007 (KoLRI 012844 sub *Lecidella*). – Gyeongsangnam-do, Sancheong-gun, Chiri Mts, on bark. Lat.: ca 1,125 m a.s.l. Coll.: Hur, J.-S. (060165-2), 16.06.2006 (KoLRI 004539). – Gyeongsangnam-do, Sancheong-gun, Sicheon-myeon, Chiri Mts, Jungsan-ri, on *Quercus* bark, growing together with *Bacidia subincompta*. Lat.: 35° 19' 01.0" N; Long.: 127° 44' 30.1" E; Alt.: ca 1,160 m a.s.l. Coll.: Hur, J.-S. (060640), 15.06.2006 (KoLRI 005011 sub *Bacidia subincompta*); the same place, on *Quercus* bark. Lat.: 35° 19' 09.2" N; Long.: 127° 44' 32.2" E; Alt.: ca 1,253 m a.s.l. Coll.: Hur, J.-S. (060643-2), 15.06.2006 (KoLRI 005016); the same place, on bark, growing together with *Marfloraea amara*. Lat.: 35° 19' 23.4" N; Long.: 127° 44' 27.5" E; Alt.: ca 1,351 m a.s.l. Coll.: Hur, J.-S. (060663), 15.09.2006 (KoLRI 005037 sub *Marfloraea amara*). – Jeju-do Prov., Cheju Island, Jeju-si, on bark (*Salix*). Lat.: 33° 26' 04.4" N; Long.: 126° 34' 01.7" E; Alt.: ca 530 m a.s.l. Coll.: Hur, J.-S. (040870), 29.08.2004 (KoLRI 001654). – Jeju-do Prov., Cheju Island, Jeju-si, Mt Hallasan, Hallasan National Park, Gwanumsa Trail, on *Quercus* and *Acer* bark, growing together with *Caloplaca oxneri*. Lat.: 33° 23' 37.5" N; Long.: 126° 32' 16.6" E; Alt.: ca 1,081 m a.s.l. Coll.: Kondratyuk, S., Oh, S.-O., Kusama, Y. (121611), 08.08.2012 (KoLRI 017065 sub *Lecidella*). – Jeju-do Prov., Cheju Island, Jeju-si, Mt Hallasan, Hallasan National Park, Seongpanak Trail, on bark, growing together with *Pertusaria* sp. Lat.: 33° 22' N; Long.: 126° 34' E; Alt.: ca 1210–1250 m a.s.l. Coll.: Kondratyuk, S., Hur, J.-S., Oh, S.-O., Kusama, Y. (121706), 07.08.2012 (KoLRI 017021 sub *Lecidella*); the same place, on bark, growing together with *Phaeophyscia rubropulchra*. Lat.: 33° 22' 34.1" N; Long.: 126° 34' 12.2" E; Alt.: ca 1,209 m a.s.l. Coll.: Kondratyuk, S., Oh, S.-O., Kusama, Y. (121685), 07.08.2012 (KoLRI 017000 sub *Lecidella*). – Jeollabuk-do, Muju-gun, Seolcheon-myeon, Mt Deogyusan, on bark (*Ginkgo*). Lat.: 35° 53' 25.9" N; Long.: 127° 46' 44.6" E; Alt.: ca 637 m a.s.l. Coll.: Hur, J.-S. (050029), 02.04.2005 (KoLRI 002932); the same locality, growing together with *Lecanora imshaugii*, 050030 (KoLRI 002933 sub *Lecanora imshaugii*); the same place, on bark, growing together with *Lecanora imshaugii*. Lat.: 35° 52' 31.8" N; Long.: 127° 47' 01.3" E; Alt.: ca 675 m a.s.l. Coll.: Hur, J.-S. (060447), 09.08.2006 (KoLRI 004815 sub *Lecanora imshaugii*); the same place, on bark, growing together with *Pertusaria subfallens*, *Biatora longispora*. Lat.: 35° 51' 10.7" N; Long.: 127° 44' 56.4" E; Alt.: ca 1,565 m a.s.l. Coll.: Hur, J.-S. (060488), 10.08.2006 (KoLRI 004859 sub *Pertusaria subfallens*). – Jeollabuk-do,

Namwon-si, Chiri Mts, Nogodan-Baemsagol, on bark. Lat.: 35° 19' 28.8" N; Long.: 127° 35' 27.1" E; Alt.: ca 880 m a.s.l. Coll.: Hur, J.-S. (060363), 18.06.2006 (KoLRI 004735). – Jeollabuk-do, Namwon-si, Chiri Mts, Piagol, Jangteomok, on bark. Lat.: 35° 18' 26.2" N; Long.: 127° 35' 27.5" E; Alt.: ca 1,381 m a.s.l. Coll.: Hur, J.-S. (060807-1), 28.09.2006 (KoLRI 005187). – Jeollanam-do, Gurye-gun, Chiri Mts, Nogodan-Baemsagol, on bark. Lat.: 35° 17' 32.1" N; Long.: 127° 32' 10.4" E; Alt.: ca 1,420 m a.s.l. Coll.: Hur, J.-S. (060196), 17.06.2006 (KoLRI 004573). – Jeollanam-do, Gurye-gun, Masan-myeon, Chiri Mts, Hwaeom valley, on *Zelkova* bark, growing together with *Bacidia*, *Caloplaca*, and *Pertusaria* spp. Lat.: 35° 15' 18.78" N; Long.: 127° 30' 4.68" E; Alt.: ca 266 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (090986), 12.10.2009 (KoLRI 006840 sub *Bacidia*); the same place, on bark, growing together with *Bacidia*, *Biatora*, and *Lecanora* spp. Lat.: 35° 16' 54.30" N; Long.: 127° 31' 0.18" E; Alt.: ca 816 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091021), 12.10.2009 (KoLRI 010390 sub *Bacidia*); the same locality, growing together with *Ivanpisutia oxneri*, (091035), (KoLRI 010418 sub *Lecidella*). – Jeollanam-do, Gurye-gun, Toji-myeon, Chiri Mts, Naedong-ri, Piagol, Jangteomok, on bark, growing together with *Bacidia subincompta*. Lat.: 35° 16' 07.8" N; Long.: 127° 34' 30.2" E; Alt.: ca 504 m a.s.l. Coll.: Hur, J.-S. (060750), 27.06.2006 (KoLRI 005129 sub *Bacidia subincompta*). – Jeollanam-do, Gwangyang-si, Ongryong-myeon, near Donggok-ri, Mt Baekunsan, on bark. Lat.: 35° 06' 37.8" N; Long.: 127° 36' 17.1" E; Alt.: ca 732 m a.s.l. Coll.: Hur, J.-S. (060385), 27.06.2006 (KoLRI 004757); the same place, on bark. Lat.: 35° 06' 55.0" N; Long.: 127° 36' 36.0" E; Alt.: ca 985 m a.s.l. Coll.: Hur, J.-S. (060401), 27.06.2006 (KoLRI 004772); the same locality, on bark. Lat.: 35° 06' 52.1" N; Long.: 127° 36' 43.8" E; Alt.: ca 1,049 m a.s.l. Coll.: Hur, J.-S. (060427), 27.06.2006 (KoLRI 004796), the same locality, on bark. Lat.: 35° 06' 40.3" N; Long.: 127° 36' 55.6" E; Alt.: ca 1,073 m a.s.l. Coll.: Hur, J.-S. (060441), 27.06.2006 (KoLRI 004809). – *Lecidella mandshurica* described recently from the Russian Far East (Kondratyuk *et al.* 2015a) is a widely distributed species in Korea, occurring mostly in montane, woody habitats. Based on the extensive collection of Korean specimens of *Lecidella mandshurica*, some additions to its variation of characters as well as to similar taxa are given. Thallus of *Lecidella mandshurica* may vary from smooth to distinctly verrucose, from white to grey, in both cases K+ pale yellow (typical for atranorin). Violetish reaction of true exciple with K may vary from violetish often washed into solution in thin section to distinctly ink-violet in thicker sections. *Lecidella mandshurica* macroscopically may be similar to *Hafellia pseudosubnexa* and especially to *Amandinea pseudomultispora*, but differs in having prominent golden blackish or brownish-golden own margin (in section K+ ink-violet, distinctly washing in the solution) as well as anatomically in having simple hyaline ascospores and in having *Lecanora*-type of ascus. New to Korea!

**Lichenocodium erodens* M. S. Christ et D. Hawksw. – Republic of Korea, Gangwon-do, Sokcho-si, Seorak Mts, on *Carpinus* bark, on thalli and apothecia of *Verseghya klarae*. Lat.: 38° 09' 58.86" N; Long.: 128° 27' 16.02" E; Alt.: ca 463 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A. (090790), 24.05.2009 (KoLRI 010462 sub *Verseghya klarae*). – New for Korea!

Lichenodiplis lecanorae (Vouaux) Dyko et D. Hawksw. – Republic of Korea, Jeollanam-do, Sinan-gun, Sinui-myeon, Sinui-do Island, Hatae-gil sea-side, on rock, on thallus and apothecia of *Lecanora*, growing together with *Ochrolechia* sp. Lat.: 34° 32' 27.02" N; Long.: 126° 02' 11.01" E; Alt.: ca 11 m a.s.l. Coll.: Oh, S.-O., Park, J. S., Woo, J. J. (130556), 28.06.2013 (KoLRI 018901 sub *Ochrolechia*). – It was reported from Daeheuksan-do Island (South Korea) recently (Kondratyuk et al. 2013). This is the second record from a nearby island in the same region.

Lichenostigma cf. *cosmopolites* Hafellner et Calat. – Republic of Korea, Gangwon-do, Jeongseon-gun, Buk-myeon, Mt Bannonsan, on rock, on *Parmelia sulcata* thalli, growing together with *Endocarpon* sp. Lat.: 37° 26' 37.14" N; Long.: 128° 45' 29.40" E; Alt.: ca 1,064 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100855), 28.05.2010 (KoLRI 012533 sub *Endocarpon*). – It was reported from Cheju Island (South Korea) recently from *Xanthoparmelia coreana* in the sea coast area (Joshi et al. 2015). The second record from a montane habitat in mainland Korea.

**Micarea lithinella* (Nyl.) Hedl. – Republic of Korea, Jeju-do Prov., Cheju Island, Jeju-si, Hangyeong-myeon, Sinchang-ri, around Singaemul Park near-by coast, on rock, growing together with *Pertusaria flavescens*. Lat.: 33° 30' 31.3" N; Long.: 126° 10' 13.1" E; Alt.: ca 19 m a.s.l. Coll.: Kondratyuk, S. Y., Lőkös, L., Oh, S.-O., Jayalal, U., Joshi, S., Park, J. S., Hur, J.-S. (121407), 05.07.2012 (KoLRI 016465 sub *Pertusaria flavescens*). – New for Korea!

**Micarea* aff. *stipitata* Coppins et P. James – Republic of Korea, Jeollanam-do, Yeosu-si, Odong-do Island, along the tourist path, on bark of trees (*Camellia japonica*, *Machilus thunbergii*, *Quercus serrata*), growing together with *Micarea* sp. Lat.: 34° 44' 37.75" N; Long.: 127° 45' 50.57" E; Alt.: ca 25 m a.s.l. Coll.: Kondratyuk, S. Y., Lőkös, L., Park, C. H. (130732), 28.07.2013 (KoLRI 019374 sub *Amandinea multispora*). – New for Korea!

**Muellerella pygmaea* (Körb.) D. Hawksw var. *pygmaea* – Republic of Korea, Gyeongsangnam-do, Tongyeong-si, Yokji-myeon, Yokji-do Island, Seosan-ri, Udong beach, on rock, on thalli of "*Pertusaria subobductans*". Lat.: 34° 37' 05.07" N; Long.: 128° 14' 38.00" E; Alt.: ca 8 m a.s.l. Coll.: Oh, S.-O., Jayalal, U., Park, J. S., Ryu, J. A. (120863), 11.05.2012 (KoLRI 015861 sub "*Pertusaria subobductans*"). – New for Korea!

Mycoblastus japonicus Müll. Arg. – Republic of Korea, Gyeongsangnam-do, Geochang-gun, Wicheon-myeon, Mt Geumwonsan, on rock. Lat.: 35° 43' 44.10" N; Long.: 127° 46' 0.72" E; Alt.: ca 1,236 m a.s.l. Coll.: Wang, X. Y.,

Jeon, H. S., Han, G. S. (100537), 25.06.2010 (KoLRI 012130). – Gyeongsangnam-do, Hadong-gun, Hwagae-myeon, Chiri Mts, Yeonhaceon-Byeoksoryeong, on *Quercus* bark, growing together with *Rinodina xanthophaea*, and *Buellia* sp. Lat.: 35° 18' 21.30" N; Long.: 127° 35' 12.84" E; Alt.: ca 1,473 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091133), 14.10.2009 (KoLRI 011167 sub *Buellia*). – Gyeongsangnam-do, Hamyang-gun, Baekjeon-myeon, Mt Baekunsan, Baekun-ri, on rock. Lat.: 35° 37' 18.5" N; Long.: 127° 37' 51.1" E; Alt.: ca 1,160 m a.s.l. Coll.: Hur, J.-S. (060626), 17.08.2006 (KoLRI 004998 sub *M. sanguinari*) [Joshi et al. 2011 as *M. sanguinari*]. – Gyeongsangnam-do, Sancheong-gun, Sicheon-myeon, Chiri Mts, Jungsan-ri, on *Acer* bark. Lat.: 35° 20' 06.9" N; Long.: 127° 42' 47.1" E; Alt.: ca 1,530 m a.s.l. Coll.: Hur, J.-S. (060735), 16.09.2006 (KoLRI 005114 sub *M. sanguinari*) [Joshi et al. 2011 as *M. sanguinari*]. – *Mycoblastus japonicus* was known from North Korea (Jeon et al. 2009, Ri 2000). The first South Korean record (Seorak Mts) was published by Spribille et al. (2011). Some additional South Korean occurrences are presented. The specimens published by Joshi et al. (2011) as *M. sanguinari* were revised also as *Mycoblastus japonicus*.

Opegrapha calcarea Turner ex Sm. – Republic of Korea, Jeju-do Prov., Cheju Island, Seogwipo-si, on rock, growing together with *Lecanora* sp. Lat.: 33° 13' 58.44" N; Long.: 126° 29' 57.60" E; Alt.: ca 2 m a.s.l. Coll.: Joshi, Y., Wang, X. Y. (091457), 29.05.2009 (KoLRI 011100 sub *Lecanora*). – It was reported from Korea recently (Kondratyuk et al. 2013), from 3 islands along the southwestern sea coast of Korea. It is an additional record from Cheju Island.

**Oxneria alfredii* (S. Y. Kondr. et Poelt) S. Y. Kondr. et Kärnefelt – Republic of Korea, Gangwon-do, Jeongseon-gun, Imgye-myeon, Songgye-ri, roadside trees along road nr 42 (Seodong-ro), on *Zelkova serrata* bark. Lat.: 37° 29' 39.13" N; Long.: 128° 51' 10.06" E; Alt.: ca 503 m a.s.l. Coll.: Kondratyuk, S. (SK-98), Lökös, L. (151243), 10.07.2015 (KoLRI 034476). – New for Korea!

**Oxnerella safavidiorum* S. Y. Kondr., B. Zarei-Darki, L. Lökös et J.-S. Hur – Iran, Razavi Khorasan, Kalat, Ortokand, gardens with fruit trees near waterfall. Lat.: 36° 48' N; Long.: 59° 46' E; Alt.: ca 2,225 m a.s.l. Coll.: Haji Moniri, M., Valikhani, R. 09.10.2012. – Razavi Khorasan, Kadkan, Dafi village. Lat.: 35° 35' 6" N; Long.: 58° 44' 59" E; Alt.: ca 1,925 m a.s.l. Coll.: Hooshmand, F., Haji Moniri, M. 25.04.2015. – Northern Khorasan, 20 km E of Bojnurd, 10 km E of route of Bojnurd-Shirvan, Peighu village. Coll.: Haji Moniri, M. 30.04.2013 (Herb. M. Haji Moniri). – China, Qinghai Prov., Tianjun county, Guanjiaoyakou (entrance), on rock. Lat.: 37° 07' 10.7" N; Long.: 98° 52' 14.4" E; Alt.: ca 3,572 m a.s.l. Coll.: Oh, S.-O., Han, S. K., Hur, J.-S. (CH140262), (KoLRI 024158). – It was recently described from Iran (Kondratyuk et al. 2014d). For the first time recorded from China.

**Pertusaria* aff. *flavocorallina* Coppins et Muhr – Republic of Korea, Jeju-do Prov., Cheju Island, Jeju-si, Aewol-eup, Nabeup-ri, subtropical for-

est, on rock, growing together with *Candelaria concolor*, *Lecanora lojkahugoi* and *Phaeophyscia orbicularis*, damaged by *Arthonia epiphyscia*. Lat.: 33° 26' 06.50" N; Long.: 126° 19' 48.50" E; Alt.: ca 90 m a.s.l. Coll.: Kondratyuk, S. Y., Lőkös, L., Oh, S.-O., Jayalal, U., Joshi, S., Park, J. S., Hur, J.-S. (121831), 05.07.2012 (KoLRI 016768). – New for Korea!

Pertusaria glauca Zahlbr. – Republic of Korea, Jeju-do Prov., Cheju Island, Jeju-si, Mt Hallasan, Hallasan National Park, Gwaneumsa Trail, on bark. Lat.: 33° 24' 02.09" N; Long.: 126° 32' 26.00" E; Alt.: ca 851 m a.s.l. Coll.: Oh, S.-O., Jayalal, U., Park, J. S., Hur, J.-S. (121027), 01.06.2012 (KoLRI 016057). – It was reported from Korea in some papers (Hur *et al.* 2005, Moon 1999, 2013, Moon *et al.* 2002). An additional record from Cheju Island.

Pertusaria nakamurae (Räsänen) Dibben – Republic of Korea, Jeju-do Prov., Cheju Island, Seogwipo-si, Mt Hallasan, Hallasan National Park, Donnaeko Trail, on bark. Alt.: ca 1,200 m a.s.l. Coll.: Oh, S.-O., Jayalal, U., Joshi, S., Park, J. S., Tian, F. H., Hur, J.-S. (121288), 20.06.2012 (KoLRI 016323). – It was reported from Korea in some papers (Hur *et al.* 2005, Moon 1999, 2013, Moon *et al.* 2002). An additional record from Cheju Island.

**Phaeosporobolus alpinum* R. Sant., Alstrup et D. Hawksw. – Republic of Korea, Jeollanam-do, Wando-gun, Bogil-myeon, Bogil Island, Buhwang-ri, Mt Gyeokjasan, between Keungiljae and Suribong, on rock, on thallus of *Pertusaria*. Lat.: 34° 08' 38.76" N; Long.: 126° 33' 0.18" E; Alt.: ca 289 m a.s.l. Coll.: Joshi, Y., Jeon, H. S., Jeong, M. H. (100092), 05.02.2010 (KoLRI 011588 sub *Pertusaria subobductans*). – New for Korea!

**Polycoccum innatum* (Mull. Arg.) D. Hawksw. – Republic of Korea, Jeju-do Prov., Cheju Island, Seogwipo-si, Namwon-eup, Wimi-ri, on rock, on thallus of *Loekoesia austrocoreana*, growing together with *Squamulea squamosa* s. l. Lat.: 33° 16' 13.26" N; Long.: 126° 39' 39.00" E; Alt.: ca 10 m a.s.l. Coll.: Joshi, Y., Wang, X. Y. (091424), 29.05.2009 (KoLRI 011067 sub *Squamulea squamosa* s. l.). – New for Korea! *Loekoesia austrocoreana* is new host for this lichenicolous fungus.

Porina distans Vězda et Vivant – Republic of Korea, Gangwon-do, Chuncheon-si, Buksan-myeon, Jogyo-ri, Mt Maebong, on (*Quercus*) bark, growing together with *Rinodina xanthophaea*. Lat.: 37° 54' 56.58" N; Long.: 127° 58' 51.42" E; Alt.: ca 704 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100652), 26.05.2010 (KoLRI 012388 sub *Pertusaria*). – It was reported recently from Cheju Island (Kondratyuk *et al.* 2015a). It is the second Korean occurrence of this species.

**Porina fluminea* P. M. McCarthy et P. N. Johnson – Republic of Korea, Gyeongsangnam-do, Sancheong-gun, Sancheong-eup, Chiri Mts, at the beginning of the tourist path to Ungseokbong, near the car parking place, on calcareous rock, growing together with *Endocarpon* sp. Lat.: 35° 23' 02.33" N;

Long.: 127° 52' 30.55" E; Alt.: ca 193 m a.s.l. Coll.: Kondratyuk, S., Lőkös L. (150275), 22.06.2015 (KoLRI 033870). – New for Korea!

Porina hirsuta Aptroot et K. H. Moon – Republic of Korea, Gyeongsangnam-do, Sancheong-gun, Sancheong-eup, Chiri Mts, along the tourist path to Ungseokbong, on rock, growing together with *Lecania*, and *Porina* sp. Lat.: 35° 22' 37.25" N; Long.: 127° 52' 16.37" E; Alt.: ca 382 m a.s.l. Coll.: Kondratyuk, S., Lőkös, L. (150266), 22.06.2015 (KoLRI 033861 sub *Lecania*); the same locality, growing together with *Porina* sp., (150270), (KoLRI 033865 sub *Porina*); the same place, on bark, growing together with *Pertusaria* sp. Lat.: 35° 22' 51.15" N; Long.: 127° 52' 32.56" E; Alt.: ca 270 m a.s.l. Coll.: Kondratyuk, S., Lőkös, L. (150229), 22.06.2015 (KoLRI 033824 sub *Porina*). – It was described recently from Cheju Island (Moon and Aptroot 2009). The second record is from the mainland.

Porina mastoidea (Ach.) Müll. Arg. – Republic of Korea, Jeju-do Prov., Cheju Island, Seogwipo-si, Donnaeko-ro, Donnaeko, on rock, growing together with *Gyalideopsis* sp. Lat.: 33° 18' 01.12" N; Long.: 126° 34' 55.56" E; Alt.: 275 m a.s.l. Coll.: Halda, J. P. (site 3) (140387), 19.06.2014 (KoLRI 022758 sub *Gyalideopsis* sp.). – It was reported recently from Supsum Island (Jeju-do) (Moon and Aptroot 2009). An additional record also from Cheju Island.

Rhizocarpon postumum (Nyl.) Arnold [= *R. reductum* s. l.] – Republic of Korea, Gyeongsangnam-do, Sancheong-gun, Sancheong-eup, Chiri Mts, Mt Ungseokbong, on rock. Lat.: 35° 22' 38.16" N; Long.: 127° 52' 16.98" E; Alt.: ca 360 m a.s.l. Coll.: Wang, X. Y., Ryu, J. A. (101334), 11.10.2010 (KoLRI 012685 sub *Pertusaria leucosora*). – It was reported from Korea (Odae and Seorak Mts) recently (Aptroot and Moon 2015 as *R. reductum*). The 3rd record is from the Chiri Mts.

**Rinodina xanthophaea* (Nyl.) Zahlbr. – Republic of Korea, Chungcheongbuk-do, Danyang-gun, Daegang-myeon, Sobaeksan, on bark, growing together with *Lecanora hafelliana*. Lat.: 36° 55' 48.2" N; Long.: 128° 27' 45.4" E; Alt.: ca 1,342 m a.s.l. Coll.: Hur, J.-S. (070352), 25.04.2007 (KoLRI 007493 sub *Lecanora hafelliana*). – Gangwon-do, Chuncheon-si, Buksan-myeon Jogyori, Mt Maebong, on bark, growing together with *Marfloraea amara*. Lat.: 37° 54' 47.82" N; Long.: 127° 59' 5.94" E; Alt.: ca 685 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100613), 26.05.2010 (KoLRI 012358 sub *Marfloraea amara*); the same place, on *Quercus* bark. Lat.: 37° 54' 55.86" N, Long.: 127° 59' 0.48" E; Alt.: 714 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100646), 26.05.2010 (KoLRI 012383 sub *Buellia*); the same locality, on *Quercus* bark, growing together with *Rinodina teichophila*, and *Verseghya klarae*. (100650), 26.05.2010 (KoLRI 012386 sub *Verseghya klarae*); the same place, on *Quercus* bark, growing together with *Ochrolechia trochophora*, *Lecanora* and *Lecidella* spp. Lat.: 37° 54' 56.58" N; Long.: 127° 58' 51.42" E; Alt.: ca 704 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100651), 26.05.2010 (KoLRI

012387 sub *Ochrolechia trochophora*); the same locality, growing together with *Porina distans* and *Pertusaria* sp., (100652), (KoLRI 012388 sub *Pertusaria*); the same locality, growing together with *Pyxine limbulata* and *Biatora chrysantha*, (100661), (KoLRI 012396 sub *Pyxine limbulata*). – Gangwon-do, Sokcho-si, Mt Seorak, on *Quercus* bark, growing together with *Pyxine limbulata*. Lat.: 38° 09' 58.86" N; Long.: 128° 27' 16.02" E; Alt.: ca 463 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A. (090801), 24.05.2009 (KoLRI 010473 sub *Pyxine limbulata* Müll. Arg.). – Gyeongsangnam-do, Hadong-gun, Hwagae-myeon, Chiri Mts, Yeonhaceon-Byeoksoryeong, on *Quercus* bark, growing together with *Marfloraea amara* and *Pertusaria subfallens*. Lat.: 35° 18' 21.30" N; Long.: 127° 35' 12.84" E; Alt.: ca 1,473 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091138), 14.10.2009 (KoLRI 011168 sub *Marfloraea amara*); the same locality, growing together with *Ochrolechia trochophora*, (091218), (KoLRI 011213 sub *Ochrolechia trochophora*). – Gyeongsangnam-do, Hamyang-gun, Baekjeon-myeon, Baekun-ri, Mt Baekunsan, on bark. Lat.: 35° 36' 25.1" N; Long.: 127° 38' 28.4" E; Alt.: ca 1,032 m a.s.l. Coll.: Hur, J.-S. (060592), 17.08.2006 (KoLRI 004964 sub *Pyxine limbulata*). – Gyeongsangnam-do, Hamyang-gun, Seosang-myeon, Mt Baekunsan, on *Quercus* bark, growing together with *Lecanora hafelliana* and *Rinodina* sp. Lat.: 35° 37' 4.50" N; Long.: 127° 39' 24.42" E; Alt.: ca 1,042 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Han, G. S. (100448), 24.06.2010 (KoLRI 012068 sub *Lecanora hafelliana* L. Lü, Y. Joshi et J.-S. Hur). – Gyeongsangnam-do, Sancheong-gun, Sicheon-myeon, Chiri Mts, Jungsan-ri, on bark, growing together with *Ochrolechia trochophora*. Lat.: 35° 19' 50.9" N; Long.: 127° 44' 00.0" E; Alt.: ca 1,700 m a.s.l. Coll.: Hur, J.-S. (060694), 15.09.2006 (KoLRI 005071 sub *Ochrolechia trochophora*). – Jeollabuk-do, Muju-gun, Seolcheon-myeon, Mt Deogyusan, on bark (*Quercus*). Lat.: 35° 51' 30.2" N; Long.: 127° 46' 02.4" E; Alt.: ca 1,040 m a.s.l. Coll.: Hur, J.-S. (050070), 02.04.2005 (KoLRI 002973 sub *Pyxine limbulata*); the same place, on bark, growing together with *Lecanora*. Lat.: 35° 51' 10.7" N; Long.: 127° 44' 56.4" E; Alt.: ca 1,565 m a.s.l. Coll.: Hur, J.-S. (060487), 10.08.2006 (KoLRI 004858 sub *Lecanora imshaugii*). – Jeollabuk-do, Namwon-si, Chiri Mts, Piagol, Jangteomok, on bark, growing on thallus of *Pyxine limbulata*. Lat.: 35° 17' 48.1" N; Long.: 127° 33' 38.2" E; Alt.: ca 1,247 m a.s.l. Coll.: Hur, J.-S. (060779), 27.06.2006 (KoLRI 005158 sub *Pyxine limbulata*). – New for Korea!

**Ropalospora chlorantha* (Tuck.) S. Ekman – Republic of Korea, Gangwon-do, Chuncheon-si, Buksan-myeon Jogyo-ri, Mt Maebong, on *Quercus* bark. Lat.: 37° 54' 55.86" N; Long.: 127° 59' 0.48" E; Alt.: ca 714 m a.s.l. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100639), 26.05.2010 (KoLRI 012378). – Gangwon-do, Yangyang-gun, Seo-myeon, Hwangi-ri, Mt. Jobong, Lat.: 37° 56' 6.42" N; Long.: 128° 33' 44.82" E, ca 980 m a.s.l., on bark, growing together with *Biatora longispora* and *Bacidia* sp. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A., Hur, J. Y. (090218), 14.05.2009 (KoLRI 009981 sub *Bacidia*); the same local-

ity, (090308), (KoLRI 010043 sub *Bacidia*); the same locality, (090308), (KoLRI 010043). – Gyeongsangnam-do, Hadong-gun, Hwagae-myeon, Chiri Mts, Yeonhaceon-Byeoksoryeong, on *Quercus* bark, growing together with *Marfloraea amara*, *Pertusaria subfallens*, *Rinodina xanthophaea*, *Lecanora* sp. Lat.: 35° 18' 21.30" N; Long.: 127° 35' 12.84" E; Alt.: ca 1,473 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091138), 14.10.2009 (KoLRI 011168 sub *Marfloraea amara*). – Jeju-do Prov., Cheju Island, Jeju-si, Nohyeong-dong, Temple Cheonwang, on bark. Lat.: 33° 24' 39.4" N; Long.: 126° 29' 38.05" E; Alt.: ca 681 m a.s.l. Coll.: Kondratyuk, S. (site 5) (140674-2), 20.06.2014 (KoLRI 023109); the same locality. Coll.: Joshi, Y., So, J. (site 5) (140725), 20.06.2014 (KoLRI 023182 sub *Bacidia*); *Bacidia* sp. (+ *Lecanora*). – New for Korea!

Scoliciosporum chlorococcum (Stenh.) Vězda – Republic of Korea, Gangwon-do, Samcheok-si, Hajang-myeon, Mt Sambong, on bark, growing together with *Marfloraea amara*. Lat.: 37° 18' 18.36" N; Long.: 128° 56' 22.08" E; Alt.: ca 930 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A., Hur, J. Y. (090374), 15.05.2009 (KoLRI 010090 sub *Marfloraea amara*). – Gangwon-do Yangyang-gun, Seo-myeon, Galjeongokbong, on bark, growing together with *Lecanora*. Lat.: 37° 52' 47.76" N; Long.: 128° 31' 2.40" E; Alt.: ca 1,020 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Ryu, J. A. (090519), 22.05.2009 (KoLRI 010215 sub *Lecanora*). – Several localities were reported recently (Kondratyuk *et al.* 2013, 2015c). Additional records from montane habitats are added.

Sphinctrina leucopoda Nyl. – Republic of Korea, Jeju-do Prov., Cheju Island, Jeju-si, Hangyeong-myeon, Sinchang-ri, seashore road, on rock, on *Pertusaria* sp. growing together with *Pyxine* sp. Lat.: 33° 20' 31.6" N; Long.: 126° 10' 12.08" E; Alt.: ca 82 m a.s.l. Coll.: Joshi, Y., So, J. (site 1) (140175) 18.06.2014 (KoLRI 022544 sub *Pyxine*). – Gyeongsangnam-do, Hadong-gun, Hwagae-myeon, Chiri Mts, Yeonhaceon-Byeoksoryeong, on *Quercus* bark, on thallus of *Pertusaria* growing together with *Megalospora tuberculosa*. Lat.: 35° 18' 21.30" N; Long.: 127° 35' 12.84" E; Alt.: ca 1,473 m a.s.l. Coll.: Joshi, Y., Wang, X. Y., Hur, J. Y. (091226), 14.10.2009 (KoLRI 0112218 sub *Megalospora tuberculosa*). – *Sphinctrina leucopoda* was reported from Korea at first by Thor *et al.* (2008), but that specimen from Seorak Mts later was revised by Tibell *et al.* (2014) as *S. intermedia*. The K- ascoma, the size of asci and spores of the KoLRI specimens from Cheju Island and Chiri Mts fit well with those of *S. leucopoda*.

**Stigmatidium cladoniicola* Zhurb. et Diederich – Republic of Korea, Jeollanam-do, Sinan-gun, Jaeun-do Island, on soil, on *Cladonia* basal thalline lobes. Lat.: 34° 51' 36.40" N; Long.: 126° 02' 15.48" E; Alt.: ca 45 m a.s.l. Coll.: Park, J. S., Woo, J. J., 07.06.2014 (KoLRI). – New for Korea!

**Stigmatidium epiramalina* (Vouaux) Hafellner – Republic of Korea, Jeju-do Prov., Cheju Island, Jeju-si, Hangyeong-myeon, Sinchang-ri, around Singaemul Park nearby coast, on rock, on thalli of *Ramalina* sp., growing together with *Protoparmeliopsis muralis*, *Squamulea squamosa*, *Lecidella* sp. Lat.:

33° 20' 31.91" N; Long.: 126° 10' 13.00" E; Alt.: ca 2 m a.s.l. Coll.: Kondratyuk, S. Y., Lőkös, L., Oh, S.-O., Jayalal, U., Joshi, S., Park, J. S., Hur, J.-S. (121550), 05.07.2012 (KoLRI 016596 sub *Protoparmeliopsis muralis*), on thalli of *Ramalina* sp., growing together with *Squamulea squamosa*, (121551), (KoLRI 016597 sub *Squamulea squamosa*). – New for Korea!

Stigidium fuscatae (Arnold) R. Sant. – Republic of Korea, Gangwon-do, Jeongseon-gun, Buk-myeon, Mt Bannonsan, on rock, on *Acarospora fuscata* growing together with *Endocarpon* sp. Lat.: 37° 26' 37.14" N; Long.: 128° 45' 29.40" E; Alt.: ca 1,064. Coll.: Wang, X. Y., Jeon, H. S., Lü, L., Ryu, J. A. (100855), 28.05.2010 (KoLRI 012533 sub *Endocarpon*). – It was reported recently from the sea coast of Haei-do island (Jeollanam-do) (Kondratyuk *et al.* 2013). The second record is from montane habitat in the mainland.

Yoshimuria spodoplaca (Nyl.) S. Y. Kondr., Kärnefelt, A. Thell, Elix, J. Kim, A. S. Kondratiuk et J.-S. Hur (Syn. *Caloplaca spodoplaca* (Nyl.) Zahlbr.) – Republic of Korea, Jeollanam-do, Jindo-gun, Jodo-myeon, Hajo-do Island, on rock, growing together with *Buellia prospersa*. Lat.: 34° 19' 05.0" N; Long.: 126° 02' 22.9" E; Alt.: ca 3 m a.s.l. Coll.: Wang, X. Y., Ryu, R. Y. (110903), 23.08.2011 (KoLRI 013895 sub *Buellia prospersa*); the same locality, growing together with *Buellia* sp., (110891), (KoLRI 013884 sub *Buellia*). – It was reported recently from several localities of South Korea (Kondratyuk *et al.* 2012, Moon 2013). The additional records from the same place are added.

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