

## New Estonian records: mosses

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Since 2009 five species new for Estonian bryoflora have been found. These additions raise the total number of species in the list of Estonian bryophytes up to 583 (<http://www.botany.ut.ee/bruuloogia/>).

MICROBRYUM FLOERKEANUM (F. Weber & D. Mohr) Schimp. [Flörke ümarkupar]

1st loc.: Saare Co., Kihelkonna District, Tammese village, on a dry alvar grassland (58,42088N 21,98808E), leg. E. Leppik, 26 Aug 2009, det. M. Leis, L. Kannukene, 5 April 2011 (TAA-4497).

This tiny moss grows on dry calcareous soils, scattered everywhere in Europe (Frey et al. 2006).

PHILONOTIS ARNELLI Husn. [Arneli allikasammal]

1st loc.: Lääne-Viru Co., Vihula District, in a mixed pine forest on a wet sandy ground (59,51386N 26,32080E), leg./det. M. Leis, 23 July 2009 (TAA-4702).

This species is widely distributed in Europe, Siberia and North America, occurring on moist soil in lowlands (Nyholm 1998).

SPHAGNUM PULCHRUM (Lindb. ex Braithw.) Warnst. [kuldne turbasammal]

1st loc.: Tartu Co., Puurmani District, Madise bog, in a wet hollow between hummocks (58°34,343'N 26°10,820'E), leg/det. K. Vellak. 29 Sept 2009, ver. U. Gunnarsson (TU-167754).

2nd loc.: Põlva Co., Ahja District, Valgesoo bog, on a wet edge of a bog pool (59°09'03,4"N 27°03'50,1"E), leg./det. K. Vellak, 29 Sept 2010 (TU-168243). 3rd loc.: Põlva Co., Kõlleste District, in a transitional bog near Pusu village (58°05'01"N 26°44'55"E), leg. M. Kelner, 16 June 2009, det. N. Ingerpuu, Jan 2011 (TU-168257). 4th. loc.: Põlva Co., Kanepi District, north from Mäeküla village, in a wet fen beside

Lokuoja rivulet (58°59'47"N 26°36'20"E), leg. M. Kelner 5 Aug 2009, det. N. Ingerpuu, Jan 2011 (TU-168258).

This species occurs in southern and middle boreal slightly oceanic regions of Europe, mainly in ombro- and mesotropical mires. Due to similar appearance with *S. fallax* this species can easily be overlooked (Laine et al. 2006). In Scandinavia *S. pulchrum* is common, in Latvia and in Lithuania it is rare and included in the red data lists (Ābolina 1994; Rašomavičius 2007).

SYNTRICHIA MONTANA Nees [mägikeerik]

1st loc.: Harju Co., Jõelähtme District, Landscape Reserve of Kolga Bay Islands, Rammu Island, on a stone fence near lighthouse (59°34'17"N 25°13'02"E), leg./det. L. Kannukene, 21 July 2005 (TAM- 31423).

*Syntrichia montana* is growing on alvars or limestone walls and its distribution in Europe is restricted to western and central Europe (Hallingbäck et al. 2008).

ZYGODON STIRTONII Schimp. ex Stirt. [Stirtoni krussik]

1st loc.: Lääne Co., Hanila District, Kesselaid Island, in the western part of island, on a cliff (58°38'13"N 23°25'02"E). 22 May 2010, leg./det. M. Leis (TAA-4721).

This taxon has been accepted at the species level since 2004 (Hill 2006). It grows mainly on rocks in oceanic regions (Smith 2004).

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### REFERENCES

- Ābolina, A., 1994. Latvijas retās un aizsargājamās sūnas. *Vides Aizsardzība Latvijā* 6: 3–24.
- Frey, W., Frahm, J.-P., Fischer, E. & Lobin, W. 2006. *The liverworts, mosses and ferns of Europe*. Heidelberg. Gustav Fischer Verlag, 512 pp.
- Hallingbäck, T., Lönnell, N., Weibull, H., von Knorring, P., Korotynska, M., Reisborg, C. & Birgersson, M. 2008. *Nationalnyckeln till Sveriges flora och fauna. Bladmossor: Kompaktmossor-kapmossor*. Artdatabanken, SLU, Uppsala, 503 pp.
- Hill, M.O., Bell, N., Gruggeman-Nannenga, M.A., Brugges, M., Cano, M.J., Enroth, J., Flatberg, K.I., Frahm, J.-P., Gallego, M.T., Garilleti, R., Guerra,

J., Hedenäs, L., Holyoak, D.T., Hyvönen, J., Ignatov, M.S., Lara, F., Mazimpaka, V., Muñoz, J. & Söderström, L. 2006. An annotated checklist of the mosses of Europe and macaronesia. *Journal of Bryology* 28: 198–267.

Nyholm, E. 1998. *Illustrated Flora of Nordic Mosses. Fasc. 4. Aulacomniaceae-Orthotrichaceae*. Nordic Bryol. Soc. Copenhagen & Lund, pp. 249–405.

Rašomavičius, V. 2007. *Red Data Book of Lithuania*. Ministry of Environment of the Republic of Lithuania. Leidykla Lututė, pp. 290–382.

Smith, A.J. E. 2004. *The moss flora of Britain and Ireland*. Cambridge University Press, 1012 pp.

## New Estonian Records: Pezizales (Ascomycetes)

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GYROMITRA OLYMPIANA (Kanouse) Harmaja – Põlva Co., Kõlleste Comm., Voorepalu Village, Mesikamäe tourist homestead, hiking trail (58°08'57"N 26°53'23"E, alt 97 m), on soil within mosses in mixed forest, 30 Mai 2009 leg. K. Kalamees, det. B. Kullman (TAAM197167). Apiculi of mature spores absent.

### REFERENCES

Kanouse, B.B. 1947. A Survey of the Discomycete Flora of the Olympic National Park and Adjacent Areas. *Mycologia* 39(6): 635–689.

Kuo, M. 2006, December. Gyromitra: The false morels. Retrieved from the MushroomExpert.Com Web site – <http://www.mushroomexpert.com/gyromitra.html>

## New Estonian records and amendments: Lichenized, lichenicolous and allied fungi

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Seventeen species are reported as new for Estonia, of them ten are lichenized, six are lichenicolous fungi and one is non-lichenized fungus. The presence of *Verrucaria submersella*, previously known by literature data only, is confirmed, and *Lecanora epibryon*, previously considered to be extinct from the local lichen flora, was re-discovered. *Lepraria sylvestris* which has earlier been reported in literature as new for Estonia is not confirmed hereby as further chemical analysis is needed, and *Cladonia monomorpha* is excluded from the list of Estonian lichens as a misidentification.

The abbreviations are used as follows, (1) persons: AS – Ave Suija, EL – Ede Leppik, IJ – Inga Jüriado, JL – Jaan Liira, JM – Jurga Motiejūnaitė, KK – Katrin Kolnes, KR – Kadri Runnel, LM – Liis Marmor, LS – Lauri Saag, OV – Olivia Võrk, PL – Piret Lõhmus, TR – Tiina Randlane, TT – Tiiu Tõrra; (2) regions: NW – northwestern part of Estonia, NE – northeastern part, SW – southwestern part, SE – southeastern part, WIs – West-Estonian islands (Randlane & Saag, 1999); (3) frequency classes (Freq.): rr – very rare (1–2 localities), r – rare (3–5), st r – rather rare (6–10), st fq – rather frequent (11–20); (4) protected areas: LR – Landscape Reserve, NR – Nature Reserve, NP – Nature Park. The lichenicolous fungi are marked with # and non-lichenized fungus with +. The specimens which are deposited in the lichen herbarium of the Natural History Museum, University of Tartu (TU) are indicated with the ID-number in brackets (TUxxxx).

AGONIMIA VOUAUXII (B. de Lesd.) M. Brand & Diederich – NW: Harju Co., Pakri peninsula (59.37728333°N 24.04146667°E), shingle alvar. Leg. IJ & AS no. 469, 28 Aug 2009; Lääne Co., Ridala comm., Rohuküla (58.91581°N 23.45659°E), plate alvar. Leg. EL & IJ no. 69, 1 Sept 2010; Noarootsi comm., Osmussaar island, (59.30187°N 23.36595°E), shingle alvar. Leg. IJ & AS no. 550, 4 July 2010; Osmussaar island (59.27533°N 23.40955°E), shingle alvar. Leg. AS & IJ no. 551, 5 July 2010; Wis: Saare Co., Kärla comm., Mönnuste (58.31753°N 22.30346°E), alvar. Leg. EL & KK no. 34, 24 Aug 2009; Orissaare comm., Liigalaskma (58.577116°N 23.00795°E), alvar. Leg. IJ, AS & OV no. 474, 11 Sept 2009; Torgu comm., Ohessaare (58.00171°N 22.02417°E), shingle alvar. Leg. EL & IJ no. 9, 11 July 2009; Pihtla comm., Ilpla (58.30088°N 22.64129°E). Leg. EL no. 62, 29 July 2010; Võrsna (58.38952°N 22.74382°E), alvar. Leg. EL no. 64, 2 Aug 2010; Muhu island, Muhu comm., Nõmmküla (58.66695°N 23.20686°E), plate alvar. Leg. EL & IJ no. 4, 2 July 2009; Hiiu Co., Käina comm., Kassari (58.7678°N 22.81739°E), shingle alvar. Leg. EL & IJ no. 49, 17 June 2010; Pühalepa comm., Soonlepa (58.85712°N 23.02317°E), ryhk alvar. Leg. EL & IJ no. 48, 17 June 2010. Freq.: st fq – All specimens were determined by EL and confirmed by J. Pykälä. The species grows on soil, on plant debris and on mosses.

ARTHONIA ARTHONIOIDES (Ach.) A.L. Sm. – NE: Ida-Viru Co., Puhatu NR, mature oligo-mesotrophic boreal forest (59°10'N 27°48'E), on rough bark of *Fraxinus excelsior*. Leg. PL, 11 Aug 2006, det. JM. Freq.: rr

CATAPYRENIUM DAEDALEUM (Kremp.) Stein – Wis: Saare Co., Lümända comm., Katri pank (58.23972°N 21.96806°E), calcareous grassland, on ground. Leg. EL no. 16, 2 Aug 2009, det. O. Breuss 2010 (TU55239). Freq.: rr.

CLADONIA MAGYARICA Vain. ex Gyeln. – madjari porosamblik – Wis: Saare Co., Lümända comm., Himmiste (58.27261°N 21.96674°E), alvar overgrown with junipers. Leg. EL & AS no. 15, 1 Sept 2009; Atla (58.30098°N 21.93532°E), plate alvar. Leg. IJ & AS no. 21, 7 Aug 2009; Pilguse (58.26346°N 21.9831°E), alvar. Leg. EL & KK no. 28, 20 Aug 2009; Himmiste (58.27261°N 21.96674°E), alvar overgrown with junipers. Leg. EL & AS no. 15, 1 Sept 2009; Kärla comm.,

Karida (58.30788°N 22.33074°E), alvar. Leg. EL & KK no. 29, 21 Aug 2009; Karida (58.30491°N 22.3291°E), alvar overgrown with junipers. Leg. EL & KK no. 32, 23 Aug 2009; Mönnuste (58.31705°N 22.30454°E), alvar. Leg. EL & KK no. 33, 24 Aug 2009; Mönnuste (58.31753°N 22.30346°E), alvar. Leg. EL & KK no. 34, 24 Aug 2009; Pihtla comm., Ilpla (58.301783°N 22.645916°E), shingle alvar. Leg. IJ, AS & OV no. 481, 12 Sept 2009; Kihelkonna comm., Tammese (58.42088°N 21.98808°E), alvar. Leg. EL & KK no. 37, 26 Aug 2009; Vilsandi island (58.39079°N 21.88147°E), overgrown plate alvar. Leg. AS & IJ no. 20, 8 June 2009. Freq.: st fq. – All specimens were determined by EL and confirmed by T. Ahti. The specimens were collected from soil between mosses.

# CLADOSPORIUM LICHENIPHILUM Heuchert & U. Braun – SW: Pärnu Co., Häädemeeste comm., Kabli (58.0169°N 24.4504°E), on *Ramalina fraxinea* on *Fraxinus excelsior*. Leg. JL, July 2011, det. AS (TU46389). Freq.: rr. – This hyphomycetous fungus was described on *Pertusaria alpina* (Heuchert & Braun, 2006), but later confirmed to be common on various epiphytic lichens (Brackel, 2007).

# DIDYMELLOPSIS PULPOSI (Zopf) Grube & Hafellner – SE: Põlva Co., Kõlleste comm., at the river Leevi (58°09'05"N 26°56'17"E), on apothecia of *Collema limosum* growing on moist sandy ground at pathway. Leg. AS, 26 June 2011, det. AS (TU46383). Freq.: rr. – There are two *Didymellopsis* species growing on epigeic *Collema* species. *D. pulposi* differs from *D. collematum* (J. Steiner) Grube & Hafellner by having smaller ascospores – 14–21 × 5–7 µm vs. 20–26 × 5–10 µm (Grube & Hafellner, 1990).

LECANIA SAMBUCINA (Körb.) Arnold – Wis: Saare Co., Kihelkonna comm., Vilsandi, Väike-Vilsandi (58°23'N 21°54'E), mixed forest with birches and pines, on *Populus tremula*. Leg. TR no. 107, 31 May 1981, det. EL 2011 (TU9094); Salme comm., Lõo alvar, Kaugatoma-Lõo LR (58.10258°N 22.19085°E), plate alvar, on dried stems of *Thymus serpyllum*. Leg. IJ & EL no. 13, 14 July 2009, det. EL; SW: Lääne Co., Hanila comm., Virtsu-Laelatu-Puhtu NR, Laelatu study centre, wooded meadow, near the well, on *Fraxinus excelsior*. Leg. & det. IJ nos. 1 & 2, 5, July 1996 (TU4390; TU9102); Freq.: r. – *Lecania sambucina* was synonymised with *Lecania cyr-*

*tella* (Ach.) Th. Fr. (e.g. Santesson et al., 2004), but later confirmed to be a separate species by molecular methods (Reese Næsberg, 2008). This species differs from *L. cyrtella* by having 10–16 spores per ascus, a slightly higher hymenium, and a preference for rough bark of older trees.

LECANIA SYLVESTRIS (Arnold) Arnold – SE: Tartu Co., Kallaste comm., Kallaste Protected Area (58.65630°N 27.16521°E), on sandstone outcrop. Leg. & det. AS, 16 July 2010 (TU46288; TU46310). Freq.: rr.

LECANORA EPIBRYON (Ach.) Ach. – WIs: Saare Co., Muhu island, Nõmmküla (58.66695°N 23.20686°E), plate alvar. Leg. & det. IJ & EL no. 4, 2 July 2009. Freq.: rr. – Until now, this species was reported by Andreas Bruttan from Muhu island in late 19<sup>th</sup> c., and was therefore considered to be extinct from the Estonian lichen flora (Randlane & Saag, 1999), and accordingly included in the category *Regionally Extinct* (RE) in the Estonian Red List (Randlane et al., 2008).

LECANORA ZOSTERAE (Ach.) Nyl. – NW: Lääne Co., Noarootsi comm., Osmussaar island (59.30329°N 23.36649°E). Leg. IJ & AS no. 547, 4 July 2010 (TU46355); WIs: Saare Co., Salme comm., Lõo alvar, Kaugatoma-Lõo LR (58.10558°N 22.18463°E). Leg. IJ & EL no. 52, 12 July 2010 (TU46350); Torgu comm., Sääre (57.91699°N 22.06318°E). Leg. IJ & EL no. 8, 11 July 2009 (TU46351; TU46352); Kihelkonna comm., Abula (58.44441°N 22.1195°E). Leg. IJ & EL no. 58, 15 July 2010 (TU46353a); Muhu comm., Muhu island, Koguva (58.60552°N 23.09292°E). Leg. EL no. 59, 23 July 2010 (TU46354). Freq.: r. – All specimens were collected on dried stems of *Thymus serpyllum* and determined by IJ; the determinations were confirmed by Lucyana Šliwa.

LEPRARIA CELATA Slav.-Bay. – NW: Harju Co., Anija comm. (59.28861°N 25.67303°E), on *Pinus sylvestris*; Rapla Co., Märjamaa comm. (58.99247°N 24.49297°E), on *P. sylvestris*; NE: Lääne-Viru Co., Vihula comm. (59.55411°N 26.01042°E), on *P. sylvestris*; Vinni comm. (59.25056°N 26.63619°E), on *P. sylvestris* and *Picea abies*; (59.23306°N 26.65503°E), on *P. abies*; SE: Põlva Co., Kanepi comm. (57.94417°N 26.66853°E), on *P. sylvestris* and *P. abies*; Tartu Co., Vara comm. (58.53164°N 26.94947°E), on *P. sylvestris* and *P. abies*; Valga Co., Puka comm. (57.99697°N 26.07939°E), on *P. sylves-*

*tris*; SW: Pärnu Co., Saarde comm. (58.14547°N 24.90500°E), on *P. sylvestris*; Viljandi Co., Kõpu comm. (58.32617°N 25.08917°E), on *P. abies*; WIs: Hiiu Co., Kõrgessaare comm. (58.91161°N 22.12947°E), on *P. sylvestris*. All specimens were collected in coniferous forests, leg. LM & TT, 2008–2009, det. LS, 2010. Freq.: st r. – The species was reported for Estonia in Marmor et al. (2011) but without detailed locality data. *Lepraria celata* was separated from *L. jackii* Tønsberg s. lat. by Slavíková-Bayerová and Orange (2006). The species is morphologically similar to *L. jackii* s. str., *L. sylvicola* Orange and *L. toensbergiana* Slav.-Bay. & Kukwa. *Lepraria celata* can be recognized chemically as it contains angardianic/roccelic acid as the only major fatty acid. Fehrer et al. (2008) showed that *L. celata*, *L. jackii* and *L. sylvicola* are clearly distinct on the basis of nuITS rDNA.

LEPTOGIUM INTERMEDIUM (Arnold) Arnold – WIs: Saare Co., Torgu comm., Loodenina (57.97335°N 21.98566°E), shingle alvar. Leg. EL & IJ no. 7, 10 July 2009; Ohessaare (58.00171°N 22.02417°E), shingle alvar. Leg. EL & IJ no. 9, 11 July 2009; Orissaare comm., Kavandi (58.5914°N 22.8343°E), old quarry. Leg. EL no. 66, 3 Aug 2010. Freq.: r. – All specimens were determined by EL.

# MERISMATIUM DISCREPANS (J. Lahm) Triebel – WIs: Saare Co., Lümända comm., Atla (58.30089°N 21.93532°E), alvar, on thallus of *Protoblastenia rupestris* (Scop.) J. Steiner on limestone. Leg. EL, IJ & AS no. 21, 7 Aug 2009, det. AS. Freq.: rr.

# PHAEOSPORA PARASITICA (Lönner) Zopf – WIs: Saare Co., Salme comm., Lõo alvar, Kaugatoma-Lõo LR (58.10258°N 22.19085°E), on *Aspicilia* sp. on limestone, Leg. EL & IJ no. 13, 14 July 2009; Lümända comm., Himmiste (58.27254°N 21.96704°E), ryhk alvar, on unknown lichen. Leg. EL & AS no. 14, 31 July 2009; Pihla comm., Püha (58.31099°N 22.71467°E), on *A. calcarea* (L.) Körb. on limestone. Leg. EL & IJ no. 6, 3 July 2009. Freq.: r. – All specimens were determined by AS.

# PHAEOSPORA RIMOSICOLA (Leight. ex Mudd) Hepp ex Stein – WIs: Saare Co., Kihelkonna comm., Vilsandi island (58.38982°N 21.83217°E), on *Rhizocarpon reductum* Th. Fr. on granite. Leg. EL, IJ & AS no. 17, 5 Aug 2009; Tammese (58.42261°N 21.99381°E), on *R. petraeum* (Wulfen) A. Massal. Leg. EL & KK no. 38, 27

Aug 2009; Lümada comm., Atla (58.30098°N 21.93532°E), on *R. reductum* on granite. Leg. EL, IJ & AS no. 21, 7 Aug 2009; Kärla comm., Karida (58.30788°N 22.33074°E), on *R. umbilicatum* (Ramond) Flagey. Leg. EL & KK no. 29, 21 Aug 2009. Freq.: r. – All specimens were determined by AS.

POLYBLASTIA SENDTNERI Kremp. – NW: Harju Co., Padise comm., Väike-Pakri island, eastern part of the island, Pakri LR (59.34778°N 23.995°E), alvar, on ground, grows together with *Toninia physaroides* (Opiz) Zahlbr. and *Fulgensia* sp. Leg. & det. AS, 28 July 2007, conf. Sanja Savić, 2011 (TU45313); WIs: Saare Co., Lümada comm., Katri pank (58.23996°N 21.9682°E), afforested alvar. Leg. EL & AS no. 16, 2 Aug 2009, det. EL; Salme comm., Lõo alvar, Kaugatoma-Lõo LR (58.10558°N 22.18463°E), plate alvar. Leg. EL & IJ no. 52, 12 July 2010, det. EL. The last two determinations were confirmed by J. Pykälä. Freq.: r.

# STIGMIDIUM CLAUZADEI Cl. Roux & Nav.-Ros. – WIs: Saare Co., Lümada comm., Atla (58.30046°N 21.93086°E), on *Verrucaria* sp. on limestone. Leg. EL & KK no. 27, 19 Aug 2009; Pilguse (58.26346°N 21.9831°E), on *Verrucaria nigrescens* Pers. on limestone. Leg. EL & KK no. 28, 20 Aug 2009; Kihelkonna comm., Tammese (58.42502°N 22.0229°E), on *V. nigrescens* on limestone. Leg. EL & KK no. 35, 25 Aug 2009. Freq.: r. – The specimens were determined by AS.

+ THELOCARPON INTERMEDIELLUM Nyl. – NW: Harju Co., close to Aegviidu, old drained peatland forest (59°19'6"N 25°30'48"E), log of *Picea abies*, on decayed wood. Leg. & det. PL, 27 Sept 2008; NE: Ida-Viru Co., Puhatu NR, mature oligo-mesotrophic boreal forest (59°10'11"N 27°48'29"E), on wood of decayed log of *Pinus sylvestris*. Leg. & det. PL, 15 Sept 2007; close to Agusalu village, mature mesotrophic boreal forest (59°7'26"N 27°36'6"E), log of *P. abies*, on decayed wood. Leg. & det. PL, 16 Sept 2007; close to Ereda village, old drained peatland forest (58°41'51"N 26°13'19"E), log of *P. abies*, on decayed wood. Leg. PL, 6 Sept 2008, det. JM; SE: Tartu Co., close to Tüki village, old drained peatland forest (58°24'31"N 26°32'7"E), snag of *P. abies*, on wood. Leg. & det. PL, 9 June 2008; Laeva forestry, eutrophic boreo-nemoral forest (58°25'6"N 26°32'41"E), cut area with retention trees, snag of *Populus tremula*, on wood. Leg. KR, July 2010,

det. PL & KR; close to Riitemetsa village, mature oligotrophic boreal forest (58°15'N 27°23'E), log of *P. tremula*, on decayed wood and on stump of *Betula* sp., decayed wood. Leg. & det. PL, 21 Nov 2010; Võru Co., Haanja NP, mature oligotrophic boreal forest (57°43'22"N 27°2'24"E), stump of *P. abies*, on decayed wood. Leg. & det. PL, 10 Oct 2006; SW: Viljandi Co., Kõpu forestry, mesotrophic boreal forest (58°22'6"N 25°16'7"E), snag of *P. sylvestris*, on wood. Leg. KR, July 2010, det. PL & KR; Nigula NR, mature drained peatland forest (58°4'59"N 24°44'14"E), log of *Betula* sp., on decayed wood. Leg. & det. PL, 29 Aug 2008; cut area of drained peatland forest with retention trees (58°05'00"N 24°44'22"E), stump of *Alnus glutinosa*, on well decayed wood. Freq.: st fq. – This is probably much overlooked non-lichenized fungus, that has tiny bright yellow ascomata surrounded with algal sheath. The species can be easily recognized by the lack of paraphysis and reactions of hymenial gel I+ red and asci I+ blue (Kocourková-Horáková, 1998).

VERRUCARIA SUBMERSELLA Servit – NW: Rapla Co., Käru comm., Kädva stream, on inundated stones (58°54'N 25°06'E). Leg. AS, 15 July 2004, det. H. Thüs, 2008 (TU57745). Freq.: rr. – This species was previously known based on the literature data (Trass, 1970), but no voucher material is preserved.

### Excluded Species

CLADONIA MONOMORPHA Aptroot, Sipman & Herk – ühetaoline porosamblik (Aptroot et al., 2005) – the samples belong to *Cladonia pyxidata* (L.) Hoffm., det. T. Ahti, June 2010 (TU28247, TU30992a, TU30991).

LEPRARIA SYLVICOLA Orange – The species was tentatively reported from several locations in Estonia (Marmor et al., 2011) but the distinctiveness of these collections from *L. jackii* must be confirmed by further chemical analyses.

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## REFERENCES

- Aptroot A., Czarnota P., Jüriado I., Kocourková J., Kukwa M., Lohmus P., Palice Z., Randlane T., Saag L., Sérusiaux E., Sipman H., Sparrius L., Suija A. & Thüs, H. 2005. New or interesting lichens and lichenicolous fungi found during the 5th IAL Symposium in Estonia. *Folia Cryptogamica Estonica* 41: 13–22
- Brackel, W. von 2007. Weitere Funde von Flechtenbewohnenden Pilzen in Bayern Beitrag zu einer Checkliste III. *Berichte der Bayerischen Botanischen Gesellschaft* 77: 5–25.
- Fehrer, J., Slavíková-Bayerová, Š. & Orange, A. 2008. Large genetic divergence of new, morphologically similar species of sterile lichens from Europe (*Lepraria*, Stereocaulaceae, Ascomycota): concordance of DNA sequence data with secondary metabolites. *Cladistics* 24(4): 443–458.
- Grube, M. & Hafellner, J. 1990. Studien an flechtenbewohnenden Pilzen der Sammelgattung *Didymella* (Ascomycetes, Dothideales). *Nova Hedwigia* 51(3–4): 283–360.
- Heuchert, B. & Braun, U. 2006. On some dematiaceous lichenicolous hyphomycetes. *Herzogia* 19: 11–21.
- Kocourková-Horáková, J. 1998. Distribution and ecology of the genus *Thelocarpon* (Lecanorales, Thelocarpaceae) in the Czech Republic. *Czech Mycology* 50(4): 271–302.
- Marmor, L., Tõrra, T., Saag, L. & Randlane, T. 2011. Effects of forest continuity and tree age on epiphytic lichen biota in coniferous forests in Estonia. *Ecological Indicators* 11(5): 1270–1276.
- Randlane, T., Jüriado, I., Suija, A., Lohmus, P. & Lepik, E. 2008. Lichens in the new Red List of Estonia. *Folia Cryptogamica Estonica* 44: 113–120.
- Randlane, T. & Saag, A. (eds) 1999. Second checklist of lichenized, lichenicolous and allied fungi of Estonia. *Folia Cryptogamica Estonica* 35: 1–132.
- Reese Næsberg, R. 2008. Taxonomic revision of the *Lecania cyrtella* group based on molecular and morphological evidence. *Mycologia* 100(3): 397–416.
- Santesson, R., Moberg, R., Nordin, A., Tønsberg, T. & Vitikainen, O. 2004. *Lichen-forming and Lichenicolous Fungi of Fennoscandia*. Museum of Evolution, Uppsala University, Uppsala, Sweden. 359 pp.
- Slavíková-Bayerová, Š. & Orange, A. 2006. Three new species of *Lepraria* (Ascomycota, Stereocaulaceae) containing fatty acids and atranorin. *Lichenologist* 38(6): 503–513.
- Trass, H. 1970. The elements and development of the lichen-flora of Estonia. *Transactions of Tartu State University* 268. *Pap. Bot.* 9: 5–233 (In Russian, English summary).