

New records of lichens, lichenicolous and allied fungi from Belgium and The Netherlands

Neufunde von Flechten, flechtenähnlichen und flechtenbewohnenden Pilzen von Belgien und den Niederlanden

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Key words: Benelux, lichen checklists, first record, rare species, ecology, morphology, chemistry, conidia, *Micarea curvata*.

Schlagwörter: Benelux-Staaten, Flechten-Checkliste, Neufund, Seltene Arten, Ökologie, Morphologie, Chemie, Konidien, *Micarea curvata*.

Summary: Six lichen species, two lichenicolous fungi and one allied fungus are reported for the first time from Belgium and the Netherlands, as well as *Lichenochora weillii* on *Physconia muscigena* from Italy and a fertile specimen of *Micarea coppinsii* from France. Notes on ecology, distribution, morphology and chemistry are provided.

Zusammenfassung: Sechs Flechten, ein flechtenähnlicher und zwei flechtenbewohnende Pilze werden für Belgien und die Niederlande erstmals nachgewiesen. Die auf *Physconia muscigena* parasitierende *Lichenochora weillii* wird aus Italien gemeldet. *Micarea coppinsii* wird fertil aus Frankreich gemeldet. Die Verbreitung, Ökologie und Morphologie der behandelten Arten werden erläutert.

Introduction

Since the publication of the Belgium and Luxemburg checklist (DIEDERICH & SÉRUSIAUX 2000), many new records have been published (SÉRUSIAUX et al. 2003, 2006). These and the latest checklist of the Netherlands (APTROOT et al. 2004) have been consulted in this study. This paper includes further additional species present in the Netherlands and Belgium and records of comparative material of *Lichenochora weillii* from Italy and *Micarea coppinsii* from France. The chemistry of *Lecidea pycnocarpa* and *M. coppinsii* has been carried out by TLC. *Micarea curvata* has been found lichenicolous on *Acarospora fuscata* when young.

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Specimens mentioned in this study are held in the herbarium of the authors, as indicated after the specimen, except one specimen of *Lemmopsis pelodes* from L.

***Caloplaca verruculifera* (VAIN) ZAHLBR.**

The Netherlands, prov. Noord-Holland, Wieringen, dike in Waddensea, De Oever, opposite Leidam, on basalt, in splash zone, with *Lecanora helicopsis*, grid ref. 9.57.52, 17 September 2005, M. BRAND 51325 (hb BRAND).

C. verruculifera is a maritime species mainly distributed in northern Europe to the British Isles. It is only recorded once from the Iberian Peninsula (LLIMONA & HLADUN 2001) and there are a few specimens from France (Britany) in hb BRAND. It occurs on seashore rocks frequently visited by birds, such as cormorants.

The increasing numbers of cormorants in recent years at the Dutch site is probably the reason why this extremely nitrophilous species has extended its range.

ARUP (1994) provides a detailed description of this species in northern America where it is widely distributed on both the east and west coasts. *C. verruculifera* is new to the Benelux.

***Cladonia prolifica* AHTI & HAMMER**

The Netherlands, prov. Friesland, Terschelling, De Kogelwieck, N slope of dune, terricolous, grid ref. 1.53.41, 22 September 1984, P. VAN DEN BOOM 1618 (hb V.D. BOOM). Prov. Gelderland, 't Harde, small heathland along railway, terricolous, grid ref. 27.23.31, 5 September 2006, M. BRAND 54191 (H, hb V.D. BOOM, hb BRAND).

C. prolifica is new to the Benelux. Previously it was known from Spain and Greece (BURGAZ & AHTI 1994). Earlier it was known from North America, from California to southern British Columbia (northern temperate zone), so it was expected to reach up to the more northern area in Europe (pers. comm. T. AHTI). It is very similar to *C. phyllophora*, but has no melanotic (blackening) bases and likes to "proliferate"

***Lecidea pycnocarpa* (KÖRBER) OHL.**

The Netherlands, prov. Drenthe, Bronniger, megalithic monument D23, open place in low forest, on granite, grid ref. 12.57.41, 30 August 2002, M. BRAND 46904 (hb BRAND). Eext, megalithic monument D14, on granite, grid ref. 12.46.21, 30 August 2002, M. BRAND 46874 (hb BRAND).

Although the lichens and lichenicolous fungi of 54 megalithic monuments in the Netherlands were studied recently (VAN DEN BOOM et al. 1996), *Lecidea pycnocarpa* was not observed. The collection BRAND 46874 contains apothecia, and although the specimen from D23 is sterile, it is chemically identical, con-

taining atranorin and an unidentified fatty acid, probably lichesterinic acid. This species is known from several countries in western Europe (COPPINS 2002, DIEDERICH & SÉRUSIAUX 2000, SANTESSON et al. 2004, SCHULZ 2000), but is new to the Netherlands.

***Lemmopsis pelodes* (KÖRB. ex B. STEIN) ELLIS**

The Netherlands, prov. Zuid-Holland, Wassenaar, Raaphorst, neglected trail along meadow, on soil, grid ref. 30.36.43, 23 August 1980, M. BRAND 9295 (hb BRAND). Prov. Zuid-Holland, Veerse Meer, N of Leiden, Warmond, Joppe, recreation area 'De Strengen', grassy area, on calcareous sandy soil, grid ref. 30.28.31, 22 April 1994, M. BRAND 30969 (hb BRAND) [this area was created in the year 1992]. Prov. Flevoland, Lelystad, E of highway, near viaduct 'Dronterweg', open place, neglected trail, on loamy soil among grass, grid ref. 20.55.45, 10 September 2000, M. BRAND 42149 (hb BRAND, hb v.d. BOOM). Prov. Flevoland, Bremerbergbos, trail in forest, on soil, grid ref. 26.28.34, 15 May 1979, M. BRAND 7951 (hb BRAND). Prov. Zeeland, Veerse Meer, 'Groot Eiland', open grassy place, on calcareous soil, grid ref. 48.15.42, 31 March 1978, M. BRAND 7378 (hb BRAND).

This species is mentioned in ELLIS (1981) from only two 19th century collections (including the type) from Poland. DEGELIUS collected it from a quarry in Sweden, the only record for that country (SANTESSON et al. 2004) and more recently it has been found in Lithuania (JØRGENSEN & MOTIEJUNAITE 2005). Checklists from neighbouring countries report *Lemmopsis arnoldiana* as the only species of the genus (COPPINS 2002, SCHOLZ 2000, DIEDERICH & SÉRUSIAUX 2000). Now a second species of *Lemmopsis* can be added to the Benelux. The very few known records of *L. pelodes* suggest that it must be a rare species. It is a typically pioneer species. In the Dutch collections, it is associated with *Collema crispum*, *C. limosum*, *Peltigera didactyla*, *Steinia geophana* and *Verrucaria bryoctona*.

Additional specimen studied: Körber Lich. Sel. Exs. No. 415 (iso-lectotype, L).

***Lichenochora weillii* (WERNER) HAFELLNER & SANTES.**

The Netherlands, prov. Noord-Brabant, S of Boxtel, Stapelen, area N of monumental castle/monastery, country-seat park, mature mixed trees, on mature *Fagus*, on *Physconia grisea*, grid ref. 51.13.11, 16 July 2007, P. & B. VAN DEN BOOM 38330 (hb v.d. BOOM). Belgium, prov. Oost-Vlaanderen, 17 km E of Gent, Donkmeer, near bridge at E shore of lake, parking lot, on *Salix*, on *Physconia grisea*, IFBL D3.27, 9 April 1999, M. BRAND 39826 (hb BRAND).

According to HAFELLNER (1989), *L. weillii* occurs in Sweden, Spain, and Canada. It is also reported from Germany (KOCOURCOVÁ & VON BRACKEL 2005) and Macaronesia (HAFELLNER 2002). This species is known from several *Physconia* species. It is new to the Benelux.

Additional specimen studied: Italy, region Abruzzo, Gran Sasso, Campo Imperatore, 1 km of S. Egidio, on limestone outcrops on bare N exposed slope, on *Physconia muscigena*, 13° 37.9'E, 42° 24.4'N, 26 May 2001, M. BRAND 43673 (hb BRAND).

Micarea curvata COPPINS

The Netherlands, prov. Drenthe, Roden, Steenberg, megalithic monument D1, along edge of forest, on granite, grid ref. 12.21.14, 28 August 2002, M. BRAND 46843 (hb BRAND). Prov. Drenthe, Rolde, megalithic monument D18, in meadow, on granite, grid ref. 12.44.45, 29 August 2002, M. BRAND 46890 (hb. BRAND, hb V.D. BOOM). Prov. Drenthe, Gasteren, megalithic monument D10, open sandy place in heathland, on granite, grid ref. 12.35.31, 29 August 2002, M. BRAND 46863 (hb BRAND). Prov. Drenthe, Bronniger, megalithic monument D24, small open place in low forest, on granite, grid ref. 12.57.41, 30 August 2002, M. BRAND 46905 (hb BRAND).

M. curvata was not observed during the study of 54 megalithic monuments in the Netherlands (VAN DEN BOOM et al. 1996). BRAND 46890 is the only fertile specimen which has been found with both ascospores and conidia. Pycnidia are immersed, c. 30-60 µm diam., dark brown at the top, conidia bacilli-form, 4-4.5(-7) × 1.4-1.6(-1.8) µm. *M. curvata* is often lichenicolous on *Acarospora fuscata* when young. It is very inconspicuous, but careful examination of *A. fuscata* stands occasionally reveals its tiny pycnidiferous areoles. Most conidia are 4-4.5 × 1.4-1.6 µm, but sometimes they are longer and wider in the same conidiomata, so in our opinion this is a species with dimorphic conidia; however, more material needs to be studied to substantiate this. *M. curvata* is known from several localities in Belgium (DIEDERICH & SÉRUSIAUX 2000), but is new to the Netherlands.

Micarea coppinsii TØNSBERG

The Netherlands, prov. Drenthe, Bronniger, Anloo, Evertsbos, megalithic monument D11, open sheltered place in forest, on granite, grid ref. 12.35.44, 29 August 2002, M. BRAND 46865 (hb BRAND).

This species was not observed during the study of 54 megalithic monuments in the Netherlands (VAN DEN BOOM et al. 1996). In the specimens mentioned here, microconidia 5-5.5 × 0.8-0.9 µm were found and 5-O-methylhiasic acid was detected by TLC. The specimen BRAND 36573 is fertile. *M. coppinsii* is easily confused with *Trapelia corticola*, but this species has larger photobiont cells and a different chemistry (gyrophoric acid). Although *T. corticola* is rather common in Belgium (Ardenne district), it has never been found in the Netherlands. *M. coppinsii* is recorded here as new to the Benelux.

Additional specimens studied: France, Brittany, dept. Finistère, 10 km SSE of Sizun, Riveère de St-Rivoal, WSW of Penn ar Favot, on *Quercus* in a rather open forest, in a narrow valley, 4° 0.6'W, 48° 19.6'N, 110 m, 16 July 1997, M. BRAND 36573 (hb BRAND, hb V.D. BOOM). Ibid., 5 km ENE of Huelgoat, 1.3 km N of La Coudraïne, young open *Quercus* forest on W exposed slope, 3° 41.1'W, 48° 22.4'N, 190 m, 26 April 1999, M. BRAND 38750 (hb BRAND).

***Microcalicium disseminatum* (ACH.) VAIN.**

Belgium, prov. Luxembourg, NW of Arlon, Forêt d'Anlier, Le Gros Chêne-Décke Keus, on wood of a very old hollow *Quercus* tree (c. 800 year old), IFBL L7.26, August 2007, M. BRAND 56073 (hb BRAND).

According to TIBELL (1999), this species is widely distributed in northern Europe, but rare in Denmark, and also known from Asia and North America. It is also mentioned in the checklists of COPPINS (2002), SCHOLZ (2000), LLIMONA & HLADUN (2001) and VĚZDA & LIŠKA (1999). This specimen was found growing directly on wood, not associated with algae, and is new to the Benelux.

***Zwackhiomyces calcariae* (FLAGEY) HAFELLER & NIK. HOFFM.**

The Netherlands, prov. Noord-Brabant, Heeze centre, churchyard, on a tombstone, on horizontal low concrete, on *Aspicilia contorta*, grid-ref. 51.56.44, 2 October 2004, P. VAN DEN BOOM 33739 (hb V.D. BOOM).

This species is new to the Benelux, and indeed western Europe (cf. FEUERER 2008).

Acknowledge

We are grateful to Dr PAUL DIEDERICH for the identification of *Zwackhiomyces calcariae*, to Prof. TEUVO AHTI for the identification of *Cladonia prolifica* and to the curator of L for the loan of the specimen of *Lemmopsis pelodes*. Dr. TASSILO FEUERER and Prof. MARK SEAWARD are warmly thanked for reviewing the manuscript.

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Zeitschrift/Journal: [Sauteria-Schriftenreihe f. systematische Botanik, Floristik u. Geobotanik](#)

Jahr/Year: 2008

Band/Volume: [15](#)

Autor(en)/Author(s): Van den Boom Pieter P. G., Brand Maarten [Abraham Martinus]

Artikel/Article: [Neufunde von Flechten, flechtenähnlichen und flechtenbewohnenden Pilzen von Belgien und den Niederlanden 95-101](#)