

# Further interesting lichens and lichenicolous fungi from Tenerife (Canary Islands, Spain), with the description of two new species

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**Abstract:** Thirty-one taxa of lichens and lichenicolous fungi are recorded from Tenerife for the first time. Nine species are new to the Canary Islands. Two further species, *Catinaria occidentalis* and *Stigidium fellhanerae*, are described as new to science. The newly recorded taxa are presented in an alphabetical list with collection localities, substrate and occasional further annotations.

**Keywords:** Ascomycetes, biodiversity, distribution, substrata, taxonomy, mycobiota of Macaronesia.

## Introduction

The Canary Islands belong to Macaronesia, a phytogeographical region made of five Atlantic volcanic archipelagos; the Azores, Madeira, the Selvagens, the Canary Islands and Cape Verde. Tenerife is the most central island of the Canary Islands archipelago (Fig. 1). It lies between 16.1° and 16.6°W longitudinal and between 28.0° and 28.4°N latitudinal. The surface area covers around 2000 km<sup>2</sup>, for a population of nearly 1 million inhabitants. The vegetation shows a remarkable altitudinal zonation ranging from the coastal region to the summit of the island at 3718 m. The area is characterized by high biodiversity and by a huge array of organisms which are endemic to the region (JUAN *et al.*, 2000). Particularly lichens contribute significantly to its biodiversity with more than 1600 species listed in this archipelago (HERNÁNDEZ-PADRÓN & PÉREZ-VARGAS, 2010). One of the most remarkable features of this area is the existence of an endemic forest, a remnant of Pliocene/Pleistocene forests in Macaronesia that likely underwent changes in their distribution areas during the Pleistocene temperature oscillations (KONDRASKOV *et al.*, 2015).

The lichens and lichenicolous fungi of Tenerife have received considerable attention in recent years. The author (BOOM, 2013) described two new species, *Bacidina pseudoisidiata* van den Boom and *Micarea canariensis* van den Boom, and recorded 88 species new to the island. Further recent publications include GIRALT & BOOM (2011), GONZÁLEZ MONTELONGO *et al.* (2014), GONZÁLEZ SUÁREZ *et al.* (2017) and PÉREZ-VARGAS *et al.* (2014, 2015). They include another species newly described from Tenerife, *Vahliaella isidioidea* Pérez-Vargas, C. Hdez.-Padr., van den Boom & P.M. Jørg. (PÉREZ-VARGAS *et al.*, 2014). The most recent checklist of lichens and lichenicolous fungi can be found in HERNÁNDEZ-PADRÓN & PÉREZ-VARGAS (2010).

The present paper is the result of fieldwork by the author and his wife mainly in the northern part of Tenerife, in the autumn of 2014. The study of this material revealed several interesting additions to the checklists of the Canary Islands and Tenerife. 40 specimens are treated; of these, 31 taxa are recorded for the first time for the island, and 9 species are new to the whole Canary Islands archipelago. Two species, *Catinaria occidentalis* van den Boom and *Stigidium fellhanerae* van den Boom, are described as new to science.

## Material and methods

More than 500 specimens of lichens and lichenicolous fungi were examined, collected by the author and his wife on Tenerife (Canary Islands), on volcanic rock, on soil and on trees and shrubs, in 19 localities, mainly in the northern part of the island. To establish whether a record is new for Tenerife or the Canary Islands, the most recent checklist for lichens and lichenicolous fungi of the Canary Islands, HERNÁNDEZ-PADRÓN & PÉREZ-VARGAS (2010), was consulted. The

following more recent publications were consulted as well: SCHUMM & APTROOT (2013), BOOM (2010a, 2010b, 2013), BOOM & CLERC (2015), BOOM & ETAYO (2017), BOOM *et al.* (2015), GIRALT & BOOM (2011), MONTELONGO *et al.* (2015), PÉREZ-VARGAS & PÉREZ-ORTEGA (2014), PÉREZ-VARGAS *et al.* (2011, 2013, 2014, 2015) and TEHLER *et al.* (2013). Cristina González Montelongo and Israel Pérez Vargas supported this project, they accompanying the fieldtrip to locality 4 and 5.

Preparations were mounted in water. Amyloid reactions in hymenia were observed using Lugol's reagent (MERK 9261). Measurements refer to dimensions in water. Chemistry was studied with standard spot tests (K, C, P, UV) following ORANGE *et al.* (2001). Species marked with \* are new to the Canary Islands. Some specimens were examined by specialists, as noted under the relevant species. The indicated voucher specimens are kept in the private herbarium of P. van den Boom, type specimens and duplicates of specimens new to the Canary Islands are kept in the herbarium of the Universidad de La Laguna (TFC). Nomenclature for lichens follows SMITH *et al.* (2009), with exception of some more recent nomenclatural changes. The nomenclature of lichenicolous fungi follows DIEDERICH *et al.* (2018).

## Visited localities on the Canary Island, Tenerife

1 = SSE of Orotava, WSW of Aguamansa, trail to La Caldera, in sloping forest dominated by *Erica arborea*, a few *Pinus canariensis* trees and a very few *Laurus novocanariensis* trees, 28° 21.5' N, 16° 30.00' W, alt. 1150 m, 16 October 2014.

2 = 2 km W of La Guancha, near Llano Mendez, Los Pablos, S of road TF-342, trail in deep valley with mainly *Erica arborea*, 28° 22.15' N, 16° 40.10' W, alt. 420 m, 17 October 2014.

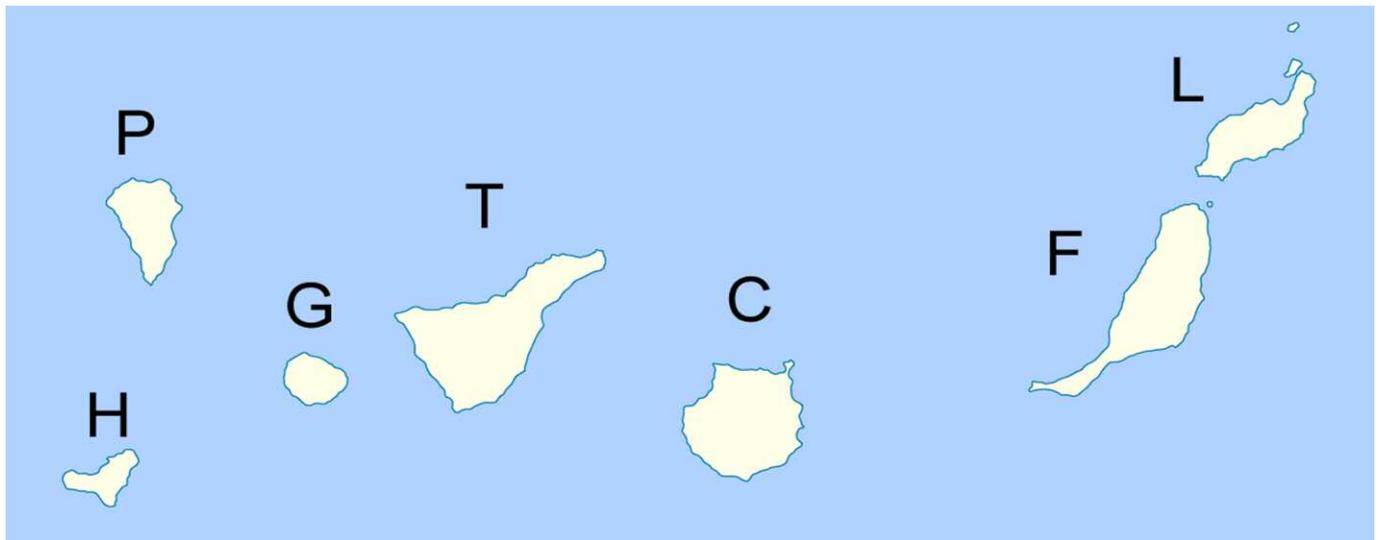
3 = S of La Guancha, El Lagar, picnic area and campsite in *Pinus canariensis* forest with acidic outcrops, 28° 20.5' N, 16° 39.20' W, alt. 1030 m, 17 October 2014.

4 = SSW of Los Realejos, SSW of Las Llanadas, small trail from picnic area Chanajiga, to the north, to Tajinaste, E sloping forest with *Pinus radiata* and many *Erica arborea* shrubs or trees, 28° 20.8' N, 16° 35.30' W, alt. 1200 m, 18 October 2014.

5 = SSW of Los Realejos, SSW of Las Llanadas, wide open trail from Tajinaste to the north, to the area of Risco Miquel, E sloping forest with *Laurus novocanariensis* and *Erica arborea* shrubs or trees, 28° 21.4' N, 16° 35.60' W, alt. 1150 m, 18 October 2014.

6 = E of Puerto de la Cruz, N of Sta. Ursula, El Quinta (E side), trail in small 'park', along valley, with low outcrops, 28° 25.9' N, 16° 29.45' W, alt. 200 m, 19 October 2014.

7 = Teno, S of Los Silos, Barranco de los Cochinos, trail PR TF-54, to Las Moradas, valley with E and W exposed acidic outcrops, 28° 21.3' N, 16° 40.55' W, alt. 300 m, 20 October 2014.



**Fig. 1** – Schematic map of the Canary Islands with the situation of Tenerife (T). The other islands are Gran Canaria (C), Fuerteventura (F), El Hierro (H), La Gomera (G), Lanzarote (L) and La Palma (P).

8 = Teno, E of Las Lagunetas, trail PR TF-52.2, up to trail PR TF-52, along fields and a wall with big acidic stones, 28° 19.95' N, 16° 50.35' W, alt. 715 m, 20 October 2014.

9 = Teno, NE of Las Lagunetas, trail PR TF-52, direction of Erjos, first km in sloping forest with *Erica arborea*, *Myrica faya* and *Laurus novocanariensis*, 28° 20.02' N, 16° 50.2' W, alt. 800 m, 20 October 2014.

10 = S of Orotava, WSW of Aguamansa, along road TF-21, 2.8 km (on road) from crossing with road to La Caldera, up to the mountain, near mirador Matanzos, forest with *Erica arborea*, *Myrica faya* and *Laurus novocanariensis*, 28° 20.98' N, 16° 31.5' W, alt. 1275 m, 21 October 2014.

11 = S of Orotava, WSW of Aguamansa, along road TF-21, margarina de Piedra, small valley with steep walls, 28° 20.97' N, 16° 30.70' W, alt. 1375 m, 21 October 2014.

12 = S of Orotava, SW of Aguamansa, along road TF-21, WSW of Montaña Bermeja, valley of Montaña del alto o de Guamassa, wide open valley with W exposed acidic outcrops, 28° 18.95' N, 16° 33.75' W, alt. 1820 m, 21 October 2014.

13 = S of Orotava, WSW of Aguamansa, along road TF-21, 1.8 km (on road) from crossing with road to La Caldera, up to the mountain, Monte Verde, forest with mainly *Erica arborea* and a few mature *Pinus canariensis* trees, 28° 21.25' N, 16° 31.1' W, alt. 1220 m, 21 October 2014.

14 = S of Orotava, SW of Aguamansa, along road TF-21, opposite the crossing with the small road to La Caldera, trail SL TF-81, to Lomo Chillerero, forest with *Erica arborea*, and a few *Laurus novocanariensis* trees, 28° 21.55' N, 16° 30.3' W, alt. 1115 m, 21 October 2014.

15 = Teno, Monte del Agua, trail PR TF-52, from Erjos to Las Portelas, c. 4 km W of Erjos, near crossing with trail 54 (to Los Silos) in laurisilva, with many mature *Laurus novocanariensis* trees, 28° 19.75' N, 16° 49.4' W, alt. 860 m, 22 October 2014.

16 = Teno, S of Los Silos, Barranco de los Cochinos, southernmost part, just N of trail PR TF-52 (from Erjos to Las Portelas), in laurisilva, with many *Erica arborea* and *Laurus novocanariensis* trees or shrubs, 28° 20.3' N, 16° 49.3' W, alt. 700 m, 22 October 2014.

17 = Teno, S of Los Silos, Barranco de los Cochinos, trail PR TF-54, southern part, just north of trail PR TF-52 (from Erjos to Las Portelas), open area on E slope with mainly *Erica arborea* trees or shrubs, 28° 20.4' N, 16° 49.2' W, alt. 650 m, 22 October 2014.

18 = Teno, trail PR TF-52, to Monte del Agua, from Erjos to Las Portelas, c. 0.5 km W of Erjos, edge of laurisilva, with mainly *Laurus novocanariensis*, 28° 19.73' N, 16° 48.63' W, alt. 1030 m, 22 October 2014.

19 = W of Realejos, SE of Icod el Alto, trail between antenna, from Madre Juana and Mirador El Asomadero, in laurisilva, 28° 22.38' N, 16° 36.00' W, alt. 760 m, 23 October 2014.

## New species

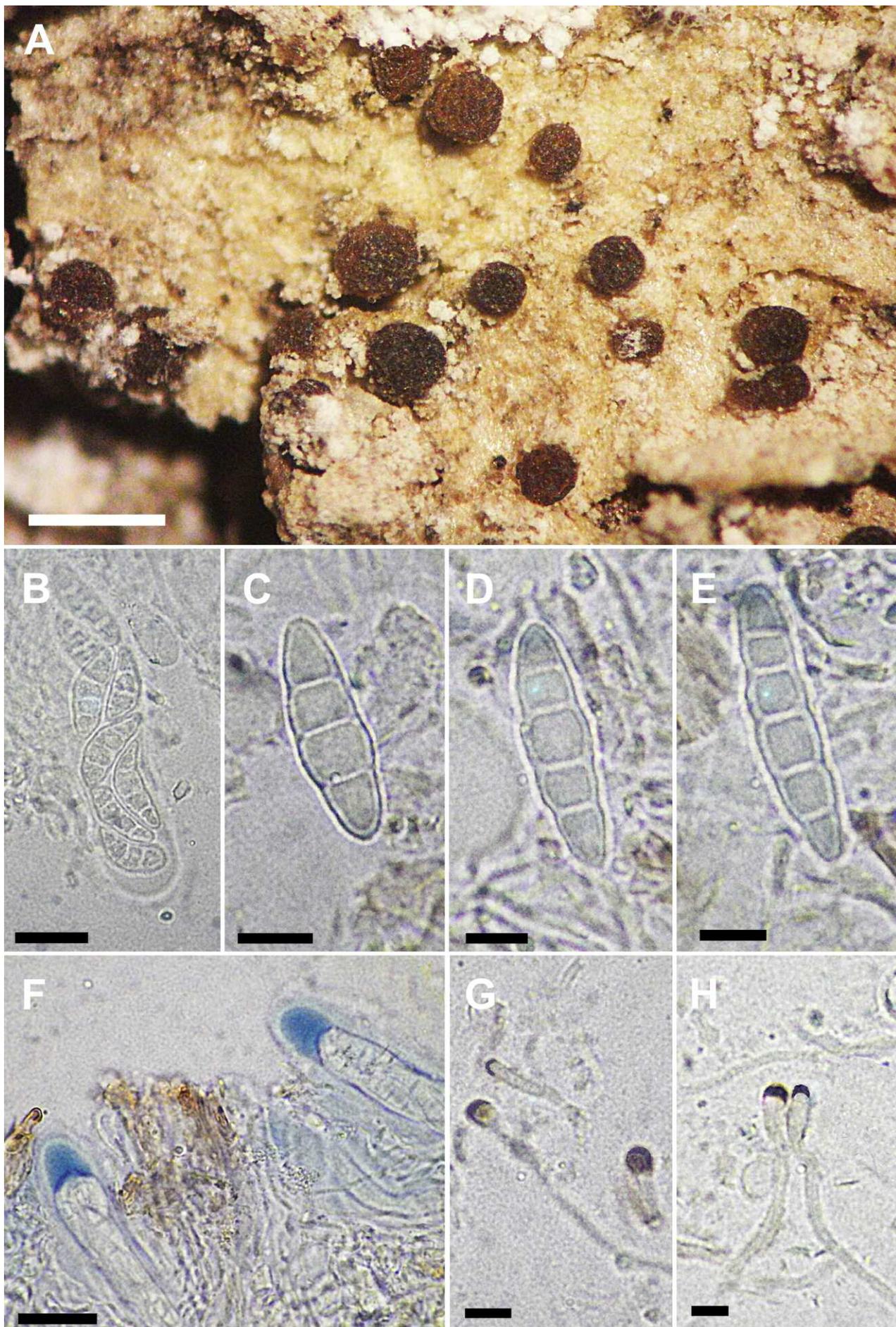
***Catinaria occidentalis*** van den Boom, *sp. nov.* – Fig. 2 – Mycobank MB836451

**Diagnosis:** Thallus immersed to thin, up to 0.15 mm thick, continuous to weakly rimose or areolate, sometimes with flattened knobby granules, with slightly glossy film-like parts. Apothecia 0.15–0.35(–0.4) mm diam., flat to convex; margin conspicuous, concolorous with the disc; disc brown; excipulum dark brown, sometimes with reddish brown pigment; epithecium pale brown to reddish brown; hypothecium hyaline. Ascospores broadly fusiform, 18–27(–30) × 5–7(–8) µm, (1–)3–5(–6)-septate, thin-walled. Pycnidia 40–60 µm diam., black; conidia ellipsoid, hyaline, 5–7 × 2.5–3 µm. No chemical compounds detected.

**Holotype:** BELGIUM, Prov. Namur, SSW of Maffe, Ramezée, S of Somme, sloping forest with *Corylus*, *Fagus* and *Quercus*, 50° 21' N, 5° 19' E, alt. 250 m, 1 March 1995, P. van den Boom 16660 (TFC–holotype; herb. v. d. Boom, herb. Brand, herb. Vězda, LG–isotype).

**Etymology:** The epithet refers to the distribution of the new species in western Europe and the Canary Islands.

**Additional specimens examined:** BELGIUM. Namur, SE of Have-lange, S of Maffe, Somal, near Somme, garden along old castle, with mature trees, 50° 23' N, 5° 14' E, alt. 250 m, 1.III.1995, P. & B. van den Boom 16646 (herb. v. d. Boom); S of Ciney, 1 km E of Chevetogne, Domaine Provincial, countryside, near country house, scattered old trees and small wood, 50° 13' N, 5° 7' E, alt. 280 m, 28.II.1995, P. & B. van den Boom 16604 (herb. v. d. Boom). Luxembourg, W of Houffalize, W of Engreux, SE of La Penne, along Ourthe Occidentale, west bank, near bridge mixed wood with shaded schist outcrop, 50° 8' N, 5° 47' E, alt. 300 m, 31.V.1997, P. & B. van den Boom 18906, 18908 (LG, herb. v. d. Boom). SPAIN. Canary Islands, Tenerife, SSE of Orotava, WSW of Aguamansa, trail to La Caldera, in sloping forest dominated by *Erica arborea*, a few *Pinus canariensis* trees and very few *Laurus novocanariensis* trees, 28° 21.5' N, 16° 30' W, alt. 1150 m, 16.X.2014, P. & B. van den Boom 52056 (herb. v. d. Boom).



**Fig. 2** – *Catinaria occidentalis*, holotype. A = habitus, B = ascus with ascospores, C = ascospore (3-septate), D = ascospore (4-septate), E = ascospore (5-septate), F = asci in I, G = paraphyses, H = paraphyses. Scale: A = 0.5 mm, B = 10  $\mu$ m, C = 5  $\mu$ m, D = 5  $\mu$ m, E = 5  $\mu$ m, F = 10  $\mu$ m, G, H = 5  $\mu$ m.

**Thallus** inconspicuous, thin, up to 0.15 mm thick, continuous and uneven to weakly rimose or areolate, with small, poorly developed, knobby granules, in some parts only 10–20 µm high, somewhat glossy, film-like and visible around the apothecia, pale to medium brown, often with a grey tinge, matt; prothallus not present; photobiont chlorophycean, cells 8–12 µm diam.

**Apothecia** often abundant, 0.15–0.35(–0.4) mm diam., flat, rarely slightly convex; proper margin conspicuous, present as a small rim especially in young apothecia, persistent, becoming less prominent at age, somewhat shiny, dark reddish brown; disc dark reddish brown, matt; excipulum with radiating small hyphae of c. 1–1.5 µm, coherent in K, dark brown or sometimes with reddish pigment mainly towards the outer edge, especially in young apothecia; hymenium 65–80 µm high, without oil droplets; epithecium pale brown to reddish brown, without crystals, K-; hypothecium hyaline, K-, 50–60 µm high; paraphyses simple to rarely sparingly branched, 1–1.5(–2) µm wide, septate, apices slightly widened, 2–3 µm diam., dark brown to blackish. **Asci** of *Catillaria*-type, cylindrical-clavate to clavate, 45–55 × 12–16 µm, 8-spored, with a uniformly blue apical dome in K/I. Ascospores broadly fusiform, 18–27(–30) × 5–7(–8) µm (n=30), (1–)3–5(–6)-septate, thin-walled, smooth, without oil droplets, not or often slightly constricted at the septa, with very thin perispore, < 1 µm.

**Pycnidia** sometimes present, immersed to somewhat erumpent, 40–60 µm diam., hyaline to pale brownish; conidia ellipsoid, hyaline, 5–7 × 2.5–3 µm.

**Chemistry:** No chemical compounds detected with standard spot tests: K-, C-, KC-, P-, UV-. No chromatography tested. No crystals are present in thallus or apothecia.

**Distribution and ecology:** This new species was frequent in the type locality, in Belgium, on bark of a trunk of a mature *Quercus* tree. Additional collections were made in Belgium, from trunks of large *Acer*, *Aesculus*, *Fagus* and *Quercus* trees, often in well-preserved forests. One record is known from the Canary Islands (Tenerife), from *Erica*. Although this phorophyte is rather different from those in Belgium, the thallus is also inconspicuous, it has somewhat the colour of the substrate and is up to 0.1 mm high. Despite many excursions to Belgium and on all Canary Islands by the author, no further records were made, so it must be a rare species. Accompanying lichen species in the Belgian specimens are *Lepraria* sp., *Melanelixia glabratula* and *M. subaurifera*. The Tenerife specimen was collected in a forest and contained as additional lichen species only some material of a *Micarea* sp. The area close to where the *Catillaria* grew was poor in lichens, and on the same phorophyte (*Erica arborea*) mainly *Chrysothrix* sp., *Lepraria* sp., *Pertusaria* sp., *Placynthiella dasaea*, *Tuckermanopsis chlorophylla* and *Usnea articulata* were found.

**Notes:** In the field the species is easily overlooked as *Catillaria atropurpurea* (Schaer.) Vězda & Poelt, but that species has apothecia usually twice as large (up to 0.8 mm) as the new species, but sometimes they appear very comparable as in the new species, the ascospores are much shorter (10–15 µm), 1-septate and the hypothecium is hyaline to pale brownish. The similar *Catillaria neuschildii* (Körb.) P. James has 12- to 16-spored asci. *Lecidea hypnorum* Lib. has a somewhat similar habitus and can occur (rarely) on old tree trunks, it has brown to blackish apothecia, usually bigger (up to 1.2 mm) than in the new species, and it has simple ascospores. Recently two hepaticolous *Catillaria* species have been described from USA and Chile, *Catillaria brodoana* R.C. Harris & W.R. Buck and *C. radulae* R.C. Harris & W.R. Buck, respectively, but they have 1-septate ascospores and an unusual ecology (LENDEMER *et al.*, 2016). The interpretation of *Catillaria* compares favourably with that of SMITH *et al.* (2009). In a modern sense *Catillaria* is restricted to two described species, *C. atropurpurea* and *C. neuschildii*. These species are characterized by its inconspicuous crustose areolate to granular thallus, sometimes very thin, somewhat glossy and film-like, coccoid green algal photobiont, absence of secondary compounds, bia-

torine apothecia with often distinct margins, 1-septate ascospores with a smooth perispore and *Catillaria*-type asci (LENDEMER *et al.*, 2016). *Catillaria* differs also from *Catillaria* by the less wider paraphyse apices, which are less pigmented and wider ascospores of 5–7 µm (usually 2–4 µm in *Catillaria*) (SMITH *et al.*, 2009). Despite the fact our species shows pluriseptate ascospores, we consider it belongs to *Catillaria*.

***Stigmatidium fellhanerae*** van den Boom, *sp. nov.* – Fig. 3 – Mycobank MB836452

**Diagnosis:** Lichenicolous fungus on thallus of *Fellhanera christiansenii*, ascomata perithecioid, globose, immersed to semi-immersed, 30–50 µm diam., perithecia dark brown to black, shiny; hymenium I-; pseudoparaphyses rudimentary (2-cells), of type A, of 6–8 × 2–3 µm; asci of *Squamariae*-type, 25–30 × 8–10 µm, 8-spored; ascospores hyaline, (8–)9–10(–11) × 2–2.5(–2.8) µm, without perispore.

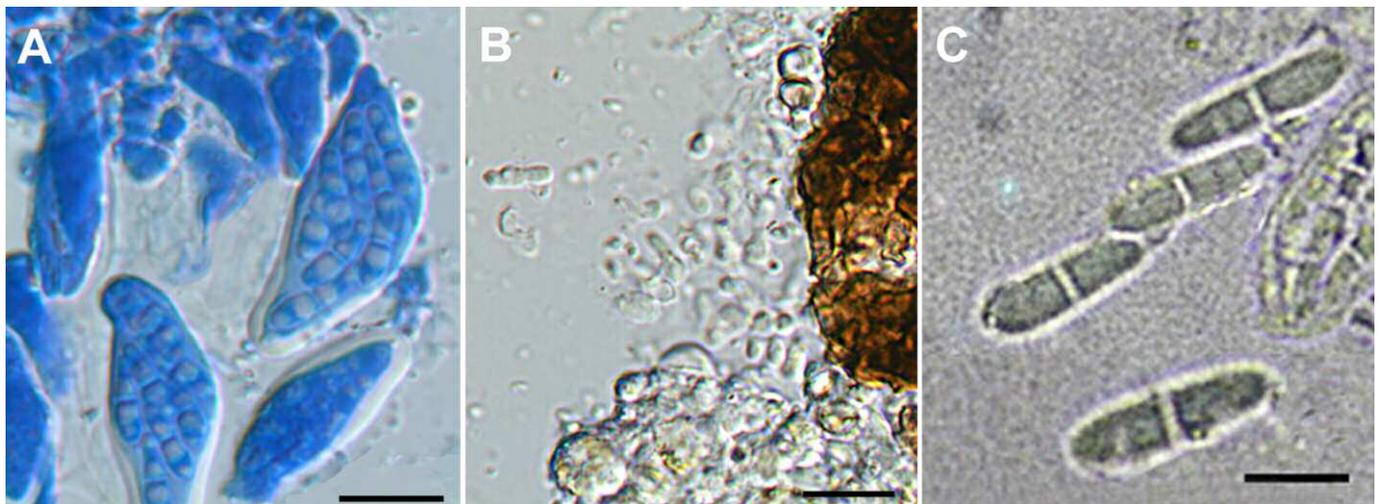
**Holotype:** SPAIN, Tenerife, Teno, Monte del Agua, trail PR TF-52, from Erjos to Las Portelas, c. 4 km W of Erjos, near crossing with trail 54 (to Los Silos) in laurisilva, with many mature *Laurus novocanariensis* trees, 28° 19.75' N, 16° 49.4' W, alt. 860 m, 22 October 2014, P. & B. van den Boom 52358 (TFC–holotype; herb. v. d. Boom–isotype).

**Etymology:** The epithet refers to the host genus.

**Additional specimens examined:** SPAIN, Canary Islands, Tenerife, SSE of Orotava, WSW of Aguamansa, trail to La Caldera, in sloping forest dominated by *Erica arborea*, a few *Pinus canariensis* trees and very few *Laurus novocanariensis* trees, 28° 21.5' N, 16° 30.0' W, alt. 1150 m, 16.X.2014. P. & B. van den Boom 52501 (herb. v. d. Boom); Tenerife, Teno, trail PR TF-52, to Monte del Agua, from Erjos to Las Portelas, c. 0.5 km W of Erjos, edge of laurisilva, with mainly *Laurus novocanariensis*, 28° 19.73' N, 16° 48.63' W, alt. 1030 m, 22.X.2014. P. & B. van den Boom 52502 (herb. v. d. Boom); La Palma, 3 km WSW of Los Sauces, Los Tilos, narrow cleft with path over Bco. del Agua, laurisilva, 28° 47.7' N, 17° 48.0' W, alt. 550 m, 3.V.1999, P. & B. van den Boom 22607 (herb. v. d. Boom).

**Vegetative hyphae** rather well developed, pale to medium brown, smooth, with even pigmentation, composed of elongate cells 2.5–5 µm diam., constricted at the septa, sparsely branched, immersed in the host tissue, I-. **Ascomata** perithecioid, tiny, (brownish-) black, shiny, subglobose to globose, sometimes somewhat conical above, with an ostiole, without appendices or projections, 30–60 µm diam., immersed to semi-immersed in the host thallus, numerous, scattered to sometimes crowded. Peridium brown, evenly coloured, in surface view of *textura angularis*, 4–6 µm thick, composed of dark brown pigmented angular cells of c. 5 × 5 µm or up to 8 × 5–6 µm, K-, I-. Hymenium K/I-. **Pseudoparaphyses** rudimentary, 2-cells, of type A, 6–8 × 2–3 µm. Ostiolar filaments not observed. **Asci** of *Squamariae*-type, broadly cylindrical to saccate, 17–25 × 7–9 µm, often with a distinct short foot, endoascus strongly thickened above, internal apical beak often distinct, 8-spored, I-, K/I-, with external gel BCr+ light blue, a thin exoascus BCr- and endoascus BCr-. Epiplasm BCr+ blue. In the tholus sometimes the “calotte”, BCr+ dark blue, is visible. **Ascospores** hyaline, becoming sometimes pale brown in old ascospores, smooth, without a perispore, narrowly ellipsoid, occasionally narrowly obovate, with the greatest breadth above the middle, (8–)9–10(–11) × 2–2.5(–2.8) µm (n=20), 1-septate, often slightly constricted at the septum, mostly with 2 oil guttules per cell, internal perispore BCr- and cytoplasm BCr+ blue.

**Pycnidia** not observed.



**Fig. 3** – *Stigmidium fellhanerae*, holotype. A = ascus with ascospores, B = pseudoparaphyses (rudimentary), C = ascospores. Scale: A–B = 10  $\mu$ m, C = 5  $\mu$ m.

**Distribution and ecology:** This new species is known from the type locality, two additional localities at higher altitudes in Tenerife and from one locality in La Palma. It is known from trunks of *Laurus novocanariensis* and *Erica arborea*, growing on the thallus and apothecia of *Fellhanera christiansenii*. It occurs in inland, hilly areas, at altitudes of 550 to 1150 m.

**Notes:** So far there is only one species of *Stigmidium* known growing on *Fellhanera* (DIEDERICH *et al.*, 2018), *S. vezdae* Matzer, described from *Fellhanera colchica* (Vězda) Llop (formerly *Bacidia colchica* Vězda), occurring in Transcaucasia and rarely in southern and western Europe. *Stigmidium vezdae* differs in larger perithecia (up to 90  $\mu$ m diam.) which are semi-immersed to sessile on the host thallus, much larger asci of 25–36  $\times$  9–14  $\mu$ m, larger ascospores of 11.5–15  $\times$  2.5–3(–4)  $\mu$ m, not constricted at the septum. *Stigmidium degelii* R. Sant. has also rudimentary pseudoparaphyses, but the perithecia are 80–110  $\mu$ m, pycnidia are often abundant and the host species is *Degelia plumbea* (= *Pectenium plumbea*). A further species with comparable pseudoparaphyses and ascospores of somewhat the same length is *Stigmidium cartilagineae* Calatayud & Triebel, but the ascospores are 60–100(–140)  $\mu$ m, ascospores are clearly wider (3–)3.9–4.5(–5)  $\mu$ m, it grows on *Squamaria cartilaginea* and is known from Spain and Macedonia. *Stigmidium acetabuli* Calatayud & Triebel has also pseudoparaphyses of type A, and ascospores of ca. 8–10.5  $\mu$ m length, but they are wider (3–4(–4.5)  $\mu$ m) than in the new species, clearly constricted at septum and the ascospores are largely immersed in the disc of the host apothecia (*Pleurosticta acetabulum*). *Stigmidium fellhanerae* is very inconspicuous in the field because the perithecia are very small. Even under the binocular it is easily overlooked.

## New records

### Lichens

*Agonimia papillata* (O. Erikss.) Diederich & Aptroot: Specimen examined – Loc. 7, on volcanic rock, 52226.

*Aquacidia viridifarinoso* (Coppins & P. James) Aptroot: Specimens examined – Loc. 4, on volcanic rock, 52132, 52139; 16, on volcanic rock, 52404. All are fertile.

*Athallia cerinella* (Nyl.) Arup, Frödén & Søchting: Specimen examined – Loc. 3, on *Fraxinus*, 52091.

*Bacidina phacodes* (Körb) Vězda: Specimens examined – Loc. 18, on dead *Laurus*, 52433; 19, on *Laurus*, 52488, 52489.

*Caloplaca asserigena* (Lahm.) H. Oliver: Specimen examined – Loc. 10, on *Cistus*, 52288.

*Caloplaca stillicidiorum* (Vahl) Lyngé: Specimen examined – Loc. 12, on volcanic rock, 52327.

*Candelariella placodizans* (Nyl.) H. Magn.: Specimen examined – Loc. 7, on volcanic rock, 52234.

*Cliostomum griffithii* (Sm.) Coppins: Specimen examined – Loc. 9, on *Myrica*, 52258.

\**Fellhanera ochracea* Sparrius & Aptroot: Tenerife (NW), N of Santiago del Teide, Bco. de Cuevas Negras o del Agua, path from Erjos to Los Silos, central part, near the houses of Las Cuevas Negras, laurisilva, with outcrops and walls of stones, on *Erica*, 28° 20.53' N, 16° 48.61' W, alt. 590 m, 15.V.2007, P. & B. van den Boom 37989 (herb. v.d. Boom). *Det.* M. Brand.

*Halecania viridescens* Coppins & P. James: Specimen examined – Loc. 10, on *Cistus*, 52289.

*Lecania inundata* (Hepp ex Körb.) M. Mayrhofer: Specimen examined – Loc. 11, on stone of wall, 52294.

*Lecanora farinaria* Borrer: Specimen examined – Loc. 10, on *Cistus*, 52278.

*Ochrolechia alboflavescens* (Wulfen) Zahlbr.: Specimen examined – Loc. 1, on *Erica*, 52028.

*Ramalina portuensis* Samp.: Specimens examined – Loc. 9, on *Erica*, 52266; 17, on *Erica*, 52423.

*Rinodina vezdae* H. Mayrhofer: Specimen examined – Loc. 4, on volcanic rock, 52203.

\**Scytinium turgidum* (Ach.) Otálora, P.M. Jørg. & Wedin: Specimen examined – Loc. 11, on stone, 52299, TFC.

\**Strangospora microhaema* (Norman) R.A. Anderson: Specimen examined – Loc. 4, on *Erica* (*det.* J. Hafellner), TFC.

*Strigula porinoides* Canals, Boqueras & Gómez-Bolea: Specimen examined – Loc. 16, on *Laurus*, 52400. The specimen keyed out as *S. porinoides* (Roux *et al.*, 2004), but the ascospores are submuriform and c. 20  $\times$  8  $\mu$ m, macroconidia are c. 0.3 mm diam., macroconidia 18–22  $\times$  2.5–3.5  $\mu$ m. It is possible that this specimen represents an undescribed species, because the measurements are somewhat smaller than in the original description of the saxicolous *S. porinoides*.

\**Thelidium pyrenophorum* (Ach.) A. Massal.: Specimen examined – Loc. 11, on stone of wall, 52301, TFC.

*Trinathotrema hierrense* Ertz & van den Boom: Specimens examined – Loc. 1, on *Laurus*, 52000; 3, on *Myrica*, 52093; 10, on *Erica*, 52282.

\**Vezdaea aestivalis* (Ohlert) Tscherm.-Woess & Poelt: Specimen examined – Loc. 11, on stone of wall, on moss, 52295, TFC.

### Lichenicolous fungi

\**Arthonia varians* (Davies) Nyl.: Specimen examined – Loc. 12, on volcanic rock, on *Lecanora rupicola*, 52325, TFC.

*Cystobasidium usneicola* Diederich & Alstrup: Specimens examined – Loc. 1, on *Erica*, 52072, 52073; 9, on *Myrica*; both on *Usnea*.

\**Dactylospora saxatilis* (Schaer.) Hafellner: Specimen examined – Loc. 3, on volcanic rock, on *Pertusaria*, 52103, TFC.

*Endococcus propinquus* (Körb.) D. Hawksw.: Specimen examined – Loc. 11, on stone, on *Verrucaria* sp. 52293.

\**Hawksworthiana peltigericola* (D. Hawksw.) U. Braun: Specimen examined – Loc. 1, terricolous, on *Peltigera*, 52287, TFC.

*Lichenocodium usneae* (Anzi) D. Hawksw.: Specimens examined – Loc. 5, on *Erica*, on *Usnea*, 52156; 17, *Erica*, on *Usnea*, 52412, 52427

*Skyttea lecanorae* Diederich & Etayo: Specimen examined – Loc. 10, on *Cistus*, on *Lecanora farinaria*, 52277.

*Sphaerellothecium pumilum* (Lettau) Nav.-Ros., Cl. Roux & Hafellner: Specimen examined – Loc. 12, on volcanic rock, on *Physcia caesia*, 52323.

*Sphinctrina leucopoda* Nyl.: Specimen examined – Loc. 3, on volcanic rock, on *Pertusaria*, 52106.

\**Stigidium exasperatum* Etayo: Specimen examined – Loc. 12, on *Cistus*, on *Melanohalea exasperata*, 52331, TFC.

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