New species and new records of lichens and lichenicolous fungi from the Seychelles

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Abstract: Diederich, P., Lücking, R., Aptroot, A., Sipman, H. J. M., Braun, U., Ahti, T. & Ertz, D. 2017. New species and new records of lichens and lichenicolous fungi from the Seychelles. – Herzogia **30**: 182–236.

Sixteen species of lichens and lichenicolous fungi from the Seychelles are described as new: *Abrothallus ramalinae* (on *Ramalina*), *Coenogonium beaverae*, *Fissurina seychellensis*, *Fulvophyton macrosporum*, *Graphis lindsayana*, *Nigrovothelium inspersotropicum*, *Opegrapha salmonea*, *Porina morelii*, *Pseudopyrenula media*, *Ramichloridium tropicum* (on sterile lichen with *Trentepohlia*), *Sarcographa praslinensis*, *S. subglobosa*, *Stictographa dirinariicola* (on *Dirinaria picta*), *Stirtonia epiphylla*, *Talpapellis mahensis* (on sterile lichen with *Trentepohlia*) and *Trimmatothele petri*; *Abrothallus ramalinae* is also reported from Australia, New Zealand and Papua New Guinea, and *Nigrovothelium inspersotropicum* from Guyana. The following 29 species are new to Africa: *Acanthothecis asprocarpa*, *Amandinea diorista* var. *hypopelidna*, *Ampliotrema palaeoamplius*, *Anisomeridium leptospermum*, *Aptrootia terricola*, *Chiodecton congestulum*, *Coenogonium saepincola*, *Dictyocatenulata alba*, *Diorygma salvadoriense*, *Epigloea urosperma*, *Fissurina globulifica*, *Graphis diplocheila*, *G. novopalmicola*, *G. oxyclada*, *G. subamylacea*, *Leptogium mastocheilum*, *Leucodecton album*, *Moelleropsis nebulosa*, *Ocellularia ascidioidea*, *O. piperis*, *Polymeridium microsporum*, *Ramonia rappii*, *Sarcographa maculosa*, *S. ramificans*, *Sphaerellothecium cinerascens*, *Spirographa fusisporella*, *Sporopodium flavescens*, *Thalloloma hypoleptum* and *Thelotrema capetribulense*, and the following 18 species are new for the Seychelles: *Cladonia digitata*, *Cryptolechia nana*, *Etayoa trypethelii*, *Fissurina comparilis*, *Glomerulophoron mauritiae*, *Graphis proserpens*, *G. renschiana*, *Julella geminella*, *Leucodecton compunctellum*, *Mazosia phyllosema*, *Opegrapha vermelhana*, *Phaeographis brasiliensis*, *Placynthiella dasaea*, *Porina atrocoerulea*, *Pyrenula nitidula*, *P. sexlocularis*, *Roselliniella cladoniae* and *Trichothelium alboatrum*. A further 83 species are reported from the Seychelles. *Amandinea melaxanthella*, *Cryptolechia subincolorella* and *Leptogium denticulatum* have been removed from the Seychelles checklist.

Zusammenfassung: Diederich, P., Lücking, R., Aptroot, A., Sipman, H. J. M., Braun, U., Ahti, T. & Ertz, D. 2017. Neue Arten und neue Funde von Flechten und lichenicolen Pilzen von den Seychellen. – Herzogia **30**: 182–236.

Sechzehn neue Arten von Flechten und lichenicolen Pilzen werden beschrieben: *Abrothallus ramalinae* (auf *Ramalina*), *Coenogonium beaverae*, *Fissurina seychellensis*, *Fulvophyton macrosporum*, *Graphis lindsayana*, *Nigrovothelium inspersotropicum*, *Opegrapha salmonea*, *Porina morelii*, *Pseudopyrenula media*, *Ramichloridium tropicum* (auf steriler Flechte mit *Trentepohlia*), *Sarcographa praslinensis*, *S. subglobosa*, *Stictographa dirinariicola* (auf *Dirinaria picta*), *Stirtonia epiphylla*, *Talpapellis mahensis* (auf steriler Flechte mit *Trentepohlia*) und *Trimmatothele petri*; *Abrothallus ramalinae* wird auch aus Australien, Neuseeland und Papua Neu Guinea nachgewiesen, und *Nigrovothelium inspersotropicum* aus Guyana. Die folgenden 29 Arten sind neu für Afrika: *Acanthothecis asprocarpa*, *Amandinea diorista* var. *hypopelidna*, *Ampliotrema palaeoamplius*, *Anisomeridium leptospermum*, *Aptrootia terricola*, *Chiodecton congestulum*, *Coenogonium saepincola*, *Dictyocatenulata alba*, *Diorygma salvadoriense*, *Epigloea urosperma*, *Fissurina globulifica*, *Graphis diplocheila*, *G. novopalmicola*, *G. oxyclada*, *G. subamylacea*, *Leptogium mastocheilum*, *Leucodecton album*, *Moelleropsis nebulosa*, *Ocellularia ascidioidea*, *O. piperis*, *Polymeridium microsporum*, *Ramonia rappii*, *Sarcographa maculosa*, *S. ramificans*, *Sphaerellothecium cinerascens*, *Spirographa fusisporella*, *Sporopodium flavescens*, *Thalloloma hypoleptum* und *Thelotrema capetribulense*, und die folgenden 18

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Arten sind neu für die Seychellen: *Cladonia digitata*, *Cryptolechia nana*, *Etayoa trypethelii*, *Fissurina comparilis*, *Glomerulophoron mauritiae*, *Graphis proserpens*, *G. renschiana*, *Julella geminella*, *Leucodecton compunctellum*, *Mazosia phyllosema*, *Opegrapha vermelhana*, *Phaeographis brasiliensis*, *Placynthiella dasaea*, *Porina atrocoerulea*, *Pyrenula nitidula*, *P. sexlocularis*, *Roselliniella cladoniae* und *Trichothelium alboatrum*. Weitere 83 Arten werden von den Seychellen gemeldet. *Amandinea melaxanthella*, *Cryptolechia subincolorella* und *Leptogium denticulatum* werden von der Seychellen Checkliste gestrichen.

Key words: Biodiversity, Palaeotropics, distribution, taxonomy.

Introduction

The Republic of Seychelles, an independent country since 1976, is an archipelago in the Indian Ocean comprising 115 islands. The main island, Mahé, with the capital Victoria, is situated c. 1500 km east of Africa, and 1100 km NNE of Madagascar. Seychelles is composed of several groups of islands, the Inner Islands, the Amirantes, Farquhar and Aldabra. The Inner Islands are all, except two, granitic, and most of the population lives on Mahé, followed by Praslin and La Digue.

Granites of several islands, incl. Mahé and Praslin, have been shown to be pre-Cambrian. As part of Gondwanaland, Seychelles remained attached for a long time to India and became isolated only c. 65 million years ago (Collier et al. 2008). Although most Inner Seychelles Islands have been partly submerged at various times subsequent to their isolation, and most of the current native biota have arrived through overwater or aerial dispersal, it is considered that some higher altitude parts, especially of Mahé, have never been submerged and have conserved some elements of the former flora and fauna, especially caecilian amphibians and sooglossid frogs, and possibly also some ferns (Agnarsson & Kuntner 2012). Little is known yet about the biogeographical affinities of fungi, including lichens, in Seychelles. However, owing to the ability of long-distance dispersal of diaspores of many lichen species, we assume that lichen colonization of Seychelles may have occurred from Africa, Madagascar, Mascarenes, India and eastern Asia, and that many species nowadays present a paleotropical or even pantropical distribution.

The Seychelles present a mild climate, with annual average temperatures around 27 °C and extreme temperatures less than 6 °C from the mean. Annual rainfall in Mahé coastal stations varies between 1750 and 2650 mm, and reaches 3600 mm at higher altitudes. The relative humidity is usually above 70 % (Seaward & Aptroot 2006).

Many botanists and lichenologists have collected lichens in the Seychelles in the past. An important publication (Seaward & Aptroot 2003), based on a collecting trip by M. R. D. Seaward to Silhouette Island (one of the granitic islands), as well as North Island and Mahé, in 2000, resulted in a list of 141 taxa, amongst which 129 were identified to specific level. Seaward et al. (1996) and Seaward et al. (2002) reported 45 species of lichens collected in Aldabra by B. W. Fox, C. Hambler, F. A. Harrington and D. Potter. A subsequent revision of most available Seychelles specimens led to the publication of a preliminary checklist (Seaward & Aptroot 2006), including 219 identified species, 10 provisionally identified, and 13 identified to generic level, recorded from 26 islands (mainly Silhouette, Mahé and Aldabra). A second checklist followed three years later (Seaward & Aptroot 2009), resulting in 376 species from 28 islands. A detailed introduction to the lichenological exploration of Seychelles is presented in Seaward & Aptroot (2003, 2006, 2009) and will not be repeated here. An illustrated "Seychelles Lichen Guide" was published by Schumm & Aptroot (2010),

including hundreds of photographs of lichens collected in the Seychelles, but also of lichens from other origins, supposed to exist in this archipelago.

The first author (P. Diederich) visited Seychelles in 2015 and collected over 300 specimens on Mahé, Thérèse, Praslin and La Digue. The aim of this paper is to present the results of this collecting trip, including the description of species new to science, and the addition of other species to the Seychelles checklist. Previous collectors rarely deposited duplicates of their specimens in the herbarium of the Seychelles Natural History Museum (SEY). To ensure that this herbarium will be able to build up a representative collection of lichens occurring in the country, we deposited duplicates of all our identified specimens in SEY.

Material and Methods

Almost all specimens studied in this paper were collected by the first author in 2015; these are retained in SEY (Seychelles National Herbarium) and in the private herbarium of P. Diederich, with some duplicates in ABL, B, BR, DUKE, HAL, LG and herb. K. Kalb. Additional specimens have been obtained on loan from B, BM, H, herb. Feuerer, herb. Schumm and herb. Seaward. The late Prof. Aino Henssen (University of Marburg, Germany) collected c. 55 specimens of lichens in the Seychelles (La Digue, Mahé, Moyenne, Praslin, Silhouette) in 1981; only a minor part of her collections, kept in Helsinki (H), were identified for this paper.

Macroscopic photographs were obtained using a Canon 40D camera with a Canon MP-E 65 mm lens or a Nikon BD Plan 10× microscope objective, StackShot (Cognisys) and Helicon Focus (HeliconSoft) for increasing the depth of field; or with a Keyence VHX-5000 Digital Microscope and a VH-Z20R/W/T lens (*Fulvophyton*, *Opegrapha*); or Olympus SZX7 and Nikon Coolpix 995 (*Stirtonia*). Hand-made sections of ascomata and thallus were studied in water, 5 % KOH (K), Lugol's reagent (1 % I_2) without (I) or with KOH pre-treatment (K/I), lactophenol-cotton blue (LCB) or phloxine B. Microscopic photographs were prepared using a Leica DMLB microscope with interference contrast, fitted with a Leica EC3 camera; or an Olympus BX51 microscope with interference contrast, connected to an Olympus Color View I digital camera (*Fulvophyton*, *Opegrapha*); or Olympus BX50 with Nomarski and Nikon Coolpix 995 (*Porina*, *Pseudopyrenula*, *Stirtonia*). Chemical spot reactions are abbreviated as K (5 % KOH), C (commercial bleach), KC (K followed by C) and P (paraphenylenediamine), and UV refers to fluorescence at 366 nm. Thin-layer chromatography (Elix 2014) has been undertaken by A. Aptroot (*Nigrovothelium*, *Porina*, *Pseudopyrenula*; solvent A), D. Ertz (*Chiodecton*, *Dichosporidium*, *Enterographa*, *Fulvophyton*, *Glomerulophoron*, *Opegrapha*, host of *Talpapellis mahensis*; solvents B, or B and G), R. Lücking (*Coenogonium*, Graphidaceae; solvent C) and H. Sipman (*Amandinea*, *Lecanora*, *Parmotrema*, *Stirtonia*; solvents A, B' and C).

Collecting localities are cited using a locality number and abbreviation (Table 1), with coordinates and altitudes identified using Google Earth (WGS84) (www.google.com/earth). The four islands visited by the first author are always enumerated in the same order as in Table 1, and not in alphabetical order. The collector of almost all studied specimens, P. Diederich, is abbreviated as Di. Unless otherwise mentioned, all specimens are kept in SEY (Seychelles National Herbarium, Victoria, Mahé) and in the private herbarium of P. Diederich; "dupl. BR" (or similar) means that a duplicate is kept in BR, in addition to SEY and herb. Diederich. Information on previously known occurrences in the Seychelles is based on the most recent checklist (Seaward & Aptroot 2009), unless otherwise specified. Species new to Seychelles (but not new to science) are marked with an asterisk (*).

Table 1: List of main collecting localities (leg. P. Diederich), together with abbreviations used in the text to cite specimens. The last column gives the number of species identified from each locality and, within parentheses, the number of new species.

Loc.	Island	Abbreviation	Locality, coordinates and date	# species
1	Mahé	Jardin du Roi	W of Anse Royale, Le Jardin du Roi, parkland and neighbouring forest, 4.74642° S (± 50 m), 55.50297°E (± 100 m), alt. 150–200 m, 26 July 2015	39
2	Mahé	Grande Anse, mangrove	S of Grande Anse, trail through mangrove 100 m north of 'Avani Seychelles Barbarons Resort & Spa', 4.68214°S (± 20 m), 55.45512°E (± 30 m), alt. 5 m, 28 July 2015	15 (2)
3	Mahé	Sauzier Waterfall	Port Glaud, near Sauzier Waterfall, 4.65847°S (± 50 m), 55.41403°E (± 100 m), alt. 20–70 m, 28 July 2015	9 (1)
4	Mahé	Beauvallon	Beauvallon, Bel Ombre Road, near 'Restaurant La Scala', 4.61923°S, 55.40416° E (± 25 m), alt. 3 m, 29 July 2015	7 (1)
5	Mahé	Sans-Souci-Road, tea factory	E of Port Glaud, along Sans-Souci-Road, glacis east of tea factory, 4.66153°S, 55.43939°E (± 50 m), alt. 415–425 m, 30 July 2015	8 (2)
6	Mahé	Sans-Souci-Road, l'Exil	From Victoria to Port Glaud, along Sans-Souci-Road, l'Exil, 4.65149°S, 55.45085°E (± 100 m), alt. 450 m, 30 July 2015	13 (1)
7	Mahé	Morne Blanc	From Victoria to Port Glaud, Morne Blanc, 4.65722°S (± 100 m), 55.43297°E (± 200 m), 600–680 m, 30 July 2015	28 (2)
8	Thérèse	Thérèse	Thérèse Island, north-west of Mahé, 4.67068°S, 55.40153°E (± 50 m), alt. 2 m, 31 July 2015	9
9	Praslin	Anse Lazio	W end of Anse Lazio, along trail from beach, 4.29598°S (± 30 m), 55.69772°E (± 50 m), alt. 5–25 m, 3 Aug. 2015	15 (1)
10	Praslin	Glacis Noir	Praslin National Park, SE of Vallée de Mai, along trail to Glacis Noir and fire tower, 4.33729°S (± 200 m), 55.74301°E (± 150 m), alt. 250–360 m, 5 Aug. 2015	26 (3)
11	Praslin	Anse Gouvernement	Anse Gouvernement, mangrove, 4.32117°S (± 10 m), 55.76125°E (± 20 m), alt. 5 m, 7 Aug. 2015	2 (1)
12	Praslin	Anse Volbert	Anse Volbert, on bark of a tree near beach, 4.3134°S, 55.74194°E (± 20 m), alt. 5 m, 2 Aug. 2015	2
13	La Digue	Veuve Reserve	La Digue Veuve Reserve, 4.35753°S (± 50 m), 55.83121°E (± 250 m), alt. 10–15 m, 4 Aug. 2015	16 (2)
14	La Digue	Old cemetery	Between Anse La Réunion and Anse Source d'Argent, west and north of old cemetery, 4.36199°S (± 50 m), 55.82482°E (± 20), alt. 2–5 m, 5 Aug. 2015	22 (2)

Results

Abrothallus ramalinae Diederich **sp. nov.** [MycoBank MB820211] (Fig. 1)

Characterized by a K/I+ violet mycelium, relatively small, frequently yellow pruinose ascomata with a narrower base, a K+ aeruginose epihymenium, and small ascospores, mainly 10.8–12.7 × 4.5–5.6 µm.

Type: Seychelles, Praslin, Praslin National Park, SE of Vallée de Mai, along trail to Glacis Noir and fire tower (4.33729°S, 55.74301°E, alt. 250–360 m), on *Ramalina fecunda*, on trees, 5 Aug. 2015, P. Diederich 18227 (BR – holotype; SEY, herb. Diederich – isotypes).

Description: **Mycelium** immersed, I+ and K/I+ violet. **Ascomata** superficial on thallus of *Ramalina* species, blackish, especially when young covered with a yellow pruina, flattened, with a narrower base, (200–)250–350 µm diam., (100–)125–175(–250) µm tall. **Excipulum** reduced. **Hymenium** pale greyish, sometimes becoming greenish in K due to the epihymenial reaction, 55–70 µm tall. **Epihymenium** pale to dark greyish, sometime with a greenish or violaceous tinge, K+ aeruginose green, N+ pale reddish violet. **Hypothecium** light to medium brown, cells polyhedral, 5–9 × 4–7 µm. **Interascal filaments** branched, often anastomosed, c. 2–3.5 µm wide, the tip not or only

slightly widened, rarely up to 4.5 µm wide (measured in K). **Asci** bitunicate, clavate, (30–)40–52 × (8–)10–13.5 µm (measured in K), 8-spored, I–, K/I–. **Ascospores** 1-septate, brown, becoming olivaceous brown in K, verrucose, slightly constricted at the septum, (9.0–)10.8–12.7(–14.0) µm long, upper cell (4.2–)4.5–5.6(–6.5) µm broad, lower cell (3.5–)3.7–4.7(–5.8) µm broad, l/b ratio (1.8–)2.1–2.6(–3.0) (n=116); ascospores not breaking into semi-spores. **Conidiomata** not observed.

Notes: The only hitherto known *Abrothallus* species confined to *Ramalina*, *A. suecicus* (Kirschst.) Nordin, is characterized by 3-septate ascospores, 14–17(–20) × 5–7 µm. It is widespread in Europe and has also been reported from California (Diederich 2003) [a specimen reported by Aptroot et al. (1997) from Papua New Guinea belongs to the new *A. ramalinae*]. The new species readily differs by the constantly 1-septate, much smaller ascospores.

The four specimens of the new species slightly differ by their morphological characters, and we are not entirely sure if they all belong to the same species. More specimens will be needed to answer this question. Three of the specimens have narrower ascospores: 11.0–12.5 × 4.4–5.3 µm (holotype), 11.4–13.4 × 4.5–5.2 µm (Diederich 11715), 10.3–12.2 × 4.4–5.2 µm (Bannister 1607), whilst those of Stevens 2129 are broader, 10.9–12.2 × 5.2–6.2 µm (n=29 for each specimen). The colour of the upper hymenium and epihymenium varies in the material examined from brownish to greenish (probably due to the degree of maturity of the ascomata examined), and they all possess the same K+ aeruginose reaction (presence of abrothalline, see Kotte 1909). The epihymenium of the holotype also shows a violet pigment that has not been observed in the other three specimens. Ascomata may grow on the thallus or on the apothecia of the host, in some specimens on both.

The genus *Abrothallus* includes a large number of taxa (37, fide Lawrey & Diederich 2016), and recent molecular results have shown that the real number of species is much larger than morphology would suggest (Suija et al. 2015). All species studied by Suija et al. (2015) on Peltigerales hosts, and almost all known from other host lichens, are confined to a single host genus, which suggest that the specimens on *Ramalina* studied by us almost surely represent a new species. *Abrothallus ramalinae* differs from all species studied by Suija et al. (2015) in having small, 1-septate ascospores not breaking into semi-spores. Amongst the other species, *A. usneae* Rabenh. differs in having larger ascomata (reaching 500 µm diam.), longer ascospores (9.5–14 µm × 4–6 µm) and grows on *Usnea* (Etayo & Osorio 2004); *A. stroblii* Hafellner has smaller ascospores (8–11 × 4–5 µm) and grows on *Menegazzia terebrata* (Hafellner et al. 2008); *A. prodiens* (Harm.) Diederich & Hafellner has smaller ascomata (130–250 µm diam.), slightly longer ascospores (12–14.5 × 4.5–6 µm) and grows on *Hypogymnia* (Diederich 1990); *A. hypotrachynae* Etayo & Diederich has an I– mycelium, slightly longer ascospores (11–14 × 5–5.5 µm) and grows on *Hypotrachyna* (Etayo 2002); *A. parmotrematis* Diederich has larger ascospores (13–16.5 × 5.5–6 µm), an I– mycelium and grows on *Parmotrema* (Diederich 2011); *A. bertianus* De Not. has larger ascospores (11–17 × 4.5–7 µm) and grows on *Melanelixia* (Kotte 1909); *A. peyritschii* (Stein) Kotte has larger asci (54–61 × 12–16 µm), larger ascomata (300–400 µm diam., 200–250 µm tall) and grows on *Vulpicida* (Kotte 1909).

Many *Abrothallus* species produce pycnidia with hyaline, aseptate, basally truncate conidia, and these asexual morphs have often been included in the genus *Vouauxiomyces* Dyko & D.Hawksw. (Hawksworth 1981), which is now considered as a synonym of *Abrothallus*. None of the four specimens of *A. ramalinae* have such pycnidia. However, in one specimen (Bannister 1607), *Abrothallus* ascomata are intermixed with pycnidia of a fungus described as *Coniothyrium ramalinae* Vouaux, which was eventually treated as a synonym of *Lichenoconium cargillianum* (Linds.) D.Hawksw. (Hawksworth 1977). Interestingly, the genus *Lichenoconium* has recently been found to be phylogenetically very close to *Abrothallus* (Ertz & Diederich 2015). Our observation of a co-occurrence of *Abrothallus ramalinae* and *Lichenoconium cargillianum* in the same specimen, and even on the same host apothecia, might lead to the hypothesis that both represent two stages of the same species, and consequently that both genera need to be considered as synonymous. However, such a hypothesis needs to be tested by molecular tools using fresh material that is currently unavailable.

Distribution and hosts: The new species is known from Seychelles (Praslin: type locality), Australia, New Zealand and Papua New Guinea, on the thallus and apothecia of *Ramalina fecunda*, *R. glau-*

cescens, *R. subfraxinea* and *R. tenella*. The host thallus is frequently black around the lichenicolous ascomata, but this might not be caused by the *Abrothallus*.

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

Paratypes: **Australia**: Queensland, St. Lawrence (22°21' S, 149°32' E), in mangrove, on *Ramalina subfraxinea*, 19 Aug. 1976, N. Stevens 2129 (herb. Diederich). **New Zealand**: North Island, on *R. glaucescens*, J. Bannister 1607 (OTA, herb. Diederich). **Papua New Guinea**: Madang Province, near Bogia, mouth of Boroi River, rivershore opposite N-point of Mangrove island (4°4' S, 144°47' E), on *R. tenella*, 21 July 1992, P. Diederich 11715 (herb. Diederich).

Acanthothecis asprocarpa (A.W.Archer) A.W.Archer (Fig. 2)

Mahé: Sans-Souci-Road, tea factory (Loc. 5), on a tree, Di 17925 (dupl. B 60 0205002) (TLC: no substances detected).

This species was known only from the type collection in the Solomon Islands (ARCHER 2003, as *Graphina asprocarpa* A.W.Archer). It is new to Africa.

As the species is poorly known, we give here a description and illustrations of the Seychelles material:

Thallus crustose, corticolous, epiperidermal, continuous, up to 7 cm diam.; surface smooth to uneven, ecorticate but appearing compact, slightly nitidous, light greenish to yellowish-grey; thallus in section 200–300 µm thick, largely composed of large clusters of calcium oxalate crystals and irregular, disrupted photobiont layer. **Photobiont** *Trentepohlia*; cells rounded to irregular in outline, in irregular groups or lines, 8–12 × 5–10 µm, green. **Ascomata** rounded to irregular or elongate in outline, immersed-erumpent, 1–2(–3) mm long, 0.8–1.5 mm wide; disc exposed, grey-brown but thickly and coarsely white-pruinose; proper margin thin, white, often disrupted and with a split towards the thalline margin; lateral thalline margin fissured to lobulate, recurved, white-pruinose on the inner side. **Excipulum** uncarbonized, 20–30 µm broad, sordid yellowish to greyish brown, difficult to discern. **Periphysoids** present, distinct, 20–30 µm long, unbranched, hyaline, spinulose, finely inspersed and appearing sordid yellowish to greyish brown. **Hymenium** 100–120 µm high, apically finely inspersed and appearing sordid yellowish to greyish brown, otherwise hyaline; epihymenium granular, 10–15 µm high. **Paraphyses** apically spinulose. **Hypothecium** 10–20 µm, hyaline. **Asci** clavate, 100–110 × 18–25 µm. **Ascospores** 8 per ascus, ellipsoid, muriform, 35–50 × 12–15 µm, I–, with thin walls and septa, but with rather thick halo, 2–3 µm thick.

Aderkomyces albostrigosus (R.Sant.) Lücking, Sérus. & Vězda

Mahé: Sans-Souci-Road, l'Exil (Loc. 6), foliicolous on *Cinnamomum verum*, Di 17932h

Previously known from the Botanical Gardens in Victoria, Mahé (SEAWARD & APTROOT 2009).

Agonimia pacifica (Harada) Diederich

Mahé: Sans-Souci-Road, l'Exil (Loc. 6), on a tree, Di 17927 (fertile). Sauzier Waterfall (Loc. 3), on tree, Di 17896 (sub *Coenogonium*), Di 17900 (sub *Lepidocollema*) (sterile).

Previously known from one Mahé locality (SCHUMM & APTROOT 2010).

Alyxoria apomelaena (A.Massal.) Ertz

La Digue: Veuve Reserve (Loc. 13), on trees, Di 17998 (dupl. BR).

Known from Aldabra (ERTZ 2009). New to La Digue.

Amandinea diorista (Nyl.) Marbach var. ***hypopelidna*** (Stirt.) Marbach & Kalb

Praslin: Glacis Noir (Loc. 10), on trees, Di 18065 (dupl. B). TLC: arthothelin, thiophanic acid.

This species abundantly covered many trees along a popular trail in the Praslin National Park. F. Schumm and J.-P. Frahm collected a similar lichen along the same trail and published it as *Amandinea melaxanthella* (Nyl.) Marbach (SCHUMM & APTROOT 2010). Following their descriptions and photographic illustrations, there is little doubt that these authors collected the same species as our recent material. In our opinion, this material does not belong to *A. melaxanthella*, a species with mainly 16, rarely 8, spores per ascus, since all Praslin specimens have 8-spored asci. Furthermore, following

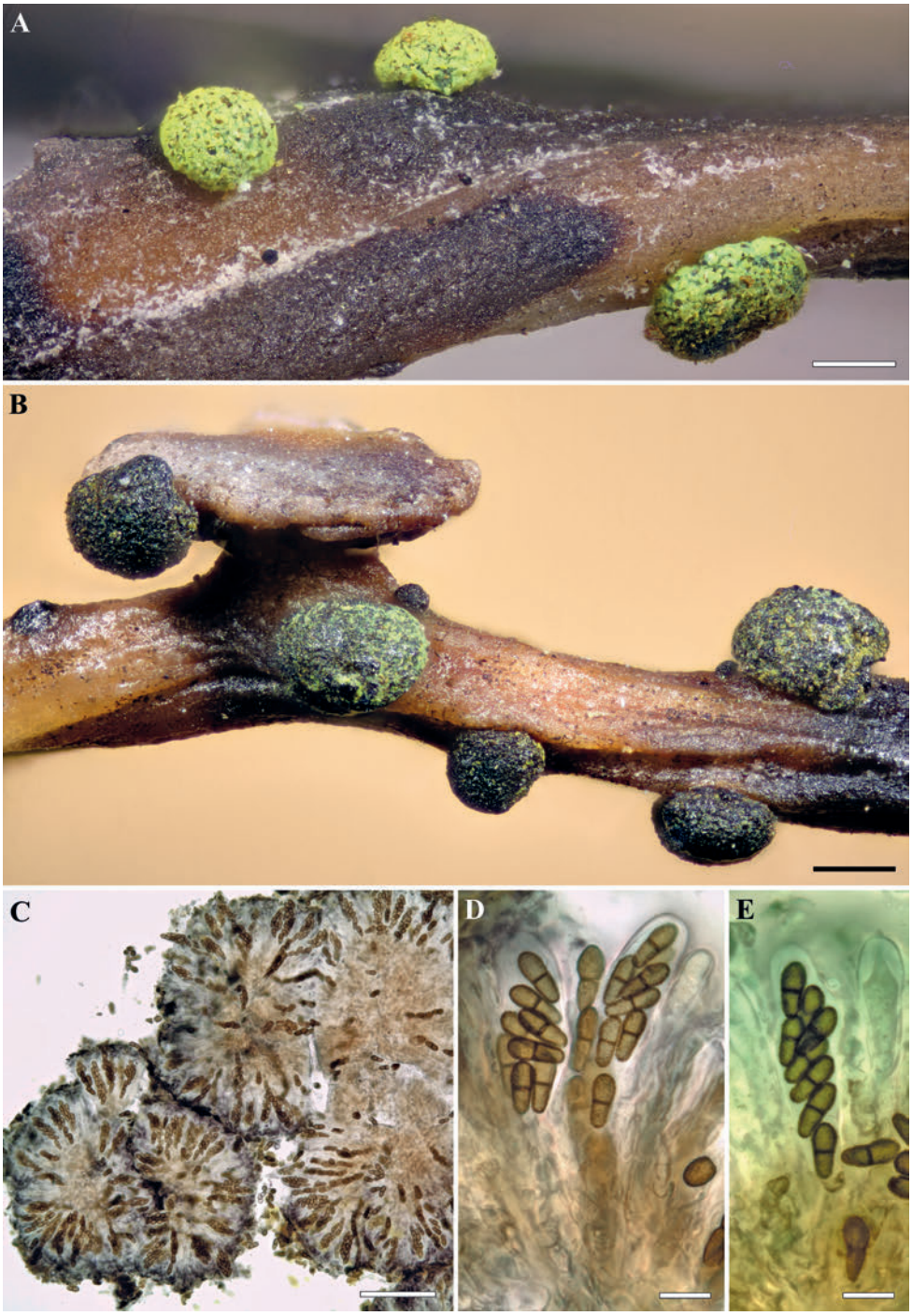

Fig. 1: *Abrothallus ramalinae* (holotype). **A–B** – ascomata on thallus and apothecium of *Ramalina fecunda*, **C** – squash preparation of apothecium in water, **D** – asci and ascospores in water, **E** – asci and ascospores in K. Scale bars: A–B = 200 µm, C = 100 µm, D–E = 10 µm.

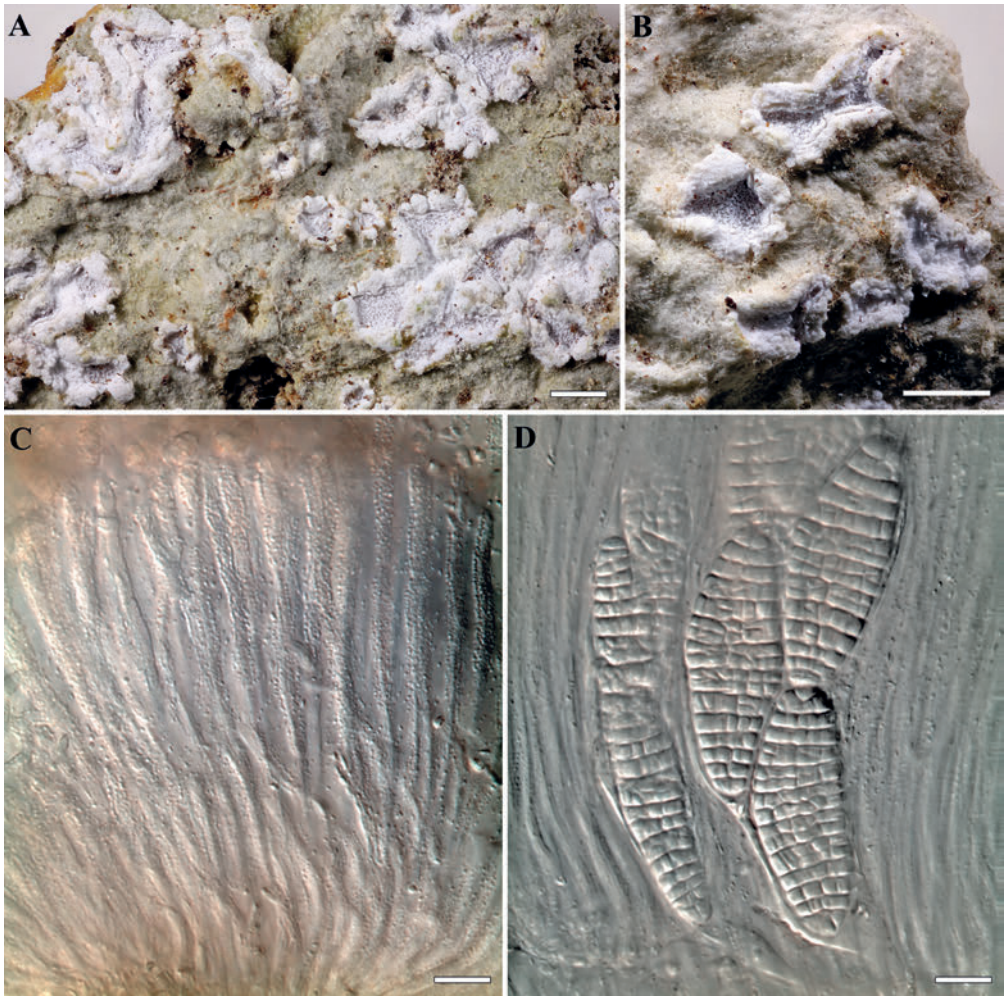

Fig. 2: *Acanthothecis asprocarpa* (Diederich 17925). **A–B** – thallus and ascomata, **C** – paraphyses, **D** – ascospores (C–D in water). Scale bars: A–B = 1 mm, C–D = 10 µm.

Marbach (2000), apothecia of *A. melaxanthella* are much smaller, 0.1–0.2(–0.3) mm, than those of *A. diorista* var. *hypopelidna*, which are 0.3–0.4 mm in diam. Apothecia in our material are 0.2–0.35 mm. Following Marbach (2000), *A. diorista* var. *hypopelidna* mainly contains arthothelin and thuringion, whilst our material contains arthothelin and thiophanic acid, the latter acid being otherwise unknown in *Amandinea*. Despite this small difference in chemistry, in our opinion, our material can be included in *A. d.* var. *hypopelidna*, which is new to Africa; therefore *A. melaxanthella* has to be deleted from the Seychelles checklist.

Amandinea efflorescens (Müll.Arg.) Marbach

Praslin: Glacis Noir (Loc. 10), on stump of dead tree, Di 18090.

Known from many Seychelles islands, incl. Mahé (Seaward & Aptroot 2009) and Praslin (Schumm & Aptroot 2010).

Ampliotrema palaeoamplius (Aptroot & Sipman) Kalb

Mahé: Sans-Souci-Road, tea factory (Loc. 5), on a tree, Di 17917.

A rare species, previously known from Brazil, Hong Kong (type locality) and Thailand (Kalb 2009). New to Africa.

Anisomeridium leptospermum (Zahlbr.) R.C.Harris

La Digue: Veuve Reserve (Loc. 13), on trees, Di 18597.

A common and locally abundant paleotropical species. New to Africa.

Aptrootia terricola (Aptroot) Lücking, Umaña & Chaves

Praslin: Glacis Noir (Loc. 10), on a granitic rock, Di 18063.

A rarely collected tropical species, previously known from Costa Rica and Papua New Guinea (type locality) (Lücking et al. 2007). New to Africa.

Arthonia cyanea Müll.Arg.

Mahé: Sauzier Waterfall (Loc. 3), foliicolous on leaves of a palm tree, Di 17894.

Known from Praslin (Schumm & Aptroot 2010). New to Mahé.

Arthopyrenia majuscula (Nyl.) Zahlbr.

Praslin: Anse Lazio (Loc. 9), on trees in secondary forest, Di 17991, 17992.

Known from Aldabra, Mahé and Silhouette. New to Praslin.

Asterothelium bicolor (Taylor) Aptroot & Lücking (= *Trypethelium nitidiusculum* [Nyl.] R.C.Harris p.p.)

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17836. Sans-Souci-Road, tea factory (Loc. 5), on a tree, Di 17920, Di 17921. Morne Blanc (Loc. 7), on a tree in a cloud forest, Di 17952.

Previously known from Mahé (Seaward & Aptroot 2009) and La Digue (Schumm & Aptroot 2010).

Bacidia medialis (Nyl.) B. de Lesd.

Thérèse: (Loc. 8), on bark of a dead *Artocarpus altilis* near beach, Di 17967. **Praslin**: Anse Lazio (Loc. 9), on trees in secondary forest, Di 17975. **La Digue**: Old cemetery (Loc. 14), on trees close to the sea, Di 18043. Veuve Reserve (Loc. 13), on trees, Di 18022 (sub *Pyrenula sexlocularis*).

Known from several Seychelles islands, incl. Mahé (Seaward & Aptroot 2009) and Praslin (Schumm & Aptroot 2010). New to Thérèse and La Digue.

Bacidina cf. ***sorediata*** Seaward & Lücking

La Digue: Veuve Reserve (Loc. 13), on the bark of a tree, Di 18011.

This species has recently been described from a single foliicolous specimen from Mahé (Lumbsch et al. 2011). It is characterized by a microsquamulose, greenish, corticate thallus with discrete, greenish, mostly roundish soralia, and yellow to orange apothecia. Whether our corticolous specimen is indeed conspecific with the foliicolous type can only be determined when more material on both substrata becomes available, and when the morphological variation of *B. sorediata* is better documented, hence the identification of our specimen is provisional, pending further studies. New to La Digue.

Bactrospora metabola (Nyl.) Egea & Torrente

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17859.

Previously known from Aldabra, Mahé (Seaward & Aptroot 2009) and Praslin (Schumm & Aptroot 2010).

Biatoropsis usnearum Räsänen s. lat.

Praslin: Glacis Noir (Loc. 10), on trees, on *Usnea exasperata* s. lat., Di 18087B, 18087C.

The material collected in this locality represents two morphologically distinct species. Specimen 18087B has been sequenced and found to belong to the yet unnamed "*Biatoropsis* sp. F" (Millanes et

al. 2016); macroscopical and microscopical photos of the Seychelles specimen have been published by those authors in fig. 10 A–C, H. Specimen 18087C has paler moriform basidiomata, but no sequences could be obtained, hence its identity remains unknown.

Schumm & Aptroot (2010: 346) reported *Biatoropsis usnearum* from La Digue on *Usnea dasaea*, and the material shown in their photographs strongly resembles our Seychelles specimen of "*B.* sp. F" (i.e. specimen 18087B). *Biatoropsis usnearum* s. lat. is new to Praslin.

Buellia subdisciformis (Leight.) Jatta

Praslin: Glacis Noir (Loc. 10), on a granitic rock, Di 18062.

This species is known from Mahé (Seaward & Aptroot 2006) and Praslin (Schumm & Aptroot 2010).

Byssoloma leucoblepharum (Nyl.) Vain.

Mahé: Sans-Souci-Road, l'Exil (Loc. 6), foliicolous on *Cinnamomum verum*, Di 17932e.

A widespread and common foliicolous lichen, previously known from Silhouette (Seaward & Aptroot 2003, 2009). New to Mahé.

Byssoloma subdiscordans (Nyl.) P.James

Mahé: Jardin du Roi (Loc. 1), foliicolous, Di 17820 p.p. Sans-Souci-Road (Loc. 5), tea factory, foliicolous on leaves of a palm tree, Di 17924. Sans-Souci-Road, l'Exil (Loc. 6), foliicolous on *Cinnamomum verum*, Di 17932i. Morne Blanc (Loc. 7), foliicolous in a cloud forest, Di 17956b.

A common foliicolous lichen, in Seychelles known from Mahé and Praslin (Schumm & Aptroot 2010, Seaward & Aptroot 2009).

Caloplaca leptozona (Nyl.) Zahlbr.

Mahé: North East Point, on rock, 6 Sept. 1973, A. H. Norkett 16451, 16451A (BM). **Praslin**: Anse Lazio (Loc. 9), on granitic rocks, Di 17996. **La Digue**: Old cemetery (Loc. 14), on granitic rock close to sea, Di 18025.

A widespread, tropical, saxicolous species identified using Wetmore (1996). Previously known from several Seychelles islands, incl. Mahé (Seaward & Aptroot 2009) and Praslin (Schumm & Aptroot 2010). New to La Digue.

****Chiodecton congestulum*** Nyl.

Praslin: Glacis Noir (Loc. 10), on trees, Di 18073 (dupl. BR) (TLC: cf. secalonic acid derivatives, grey spot at Rf 35, fatty acid).

Previously known from Asia, Australasia and Pacific Islands (e.g. Thor 1990). New to Africa.

Chrysothrix xanthina (Vain.) Kalb

Mahé: Jardin du Roi (Loc. 1), on trees, Di 17813, 17823 (dupl. BR). **Praslin**: Praslin National Park, 100 m E of parking at Vallée de Mai, trail to Glacis Noir, on dead stump of a tree, Di 18049 (dupl. BR).

Known from several Seychelles islands, incl. Mahé, Praslin and La Digue (Schumm & Aptroot 2010, Seaward & Aptroot 2009).

****Cladonia digitata*** (L.) Hoffm.

Mahé: Morne Blanc (Loc. 7), on a tree in a cloud forest, Di 17941.

An unexpected discovery of a widespread northern hemisphere species otherwise also known from East African mountains at altitudes above 3100 m (Swinscow & Krog 1988). New to Seychelles.

Cladonia macilenta Hoffm.

Mahé: Morne Blanc (Loc. 7), on a tree in a cloud forest, Di 17940.

Previously known from a single locality in Mahé (Seaward & Aptroot 2009). Our specimen represents the thamnolic acid chemotype of this widespread species.

Cladonia mauritiana Ahti & J.C.David

Mahé: Morne Blanc (Loc. 7), on trees in a cloud forest, Di 17935–37.

Known from Mahé and Silhouette (Seaward & Aptroot 2003, 2006). Widespread along the eastern and northeastern coasts of the Indian Ocean.

Coccocarpia adnata Arv.

Praslin: Glacis Noir (Loc. 10), on trees, Di 18569.

A rather rare paleotropical species, known from Mahé, Praslin, Aldabra and Silhouette.

Coccocarpia erythroxyli (Spreng.) Swinscow & Krog

Praslin: Glacis Noir (Loc. 10), on trees, Di 18568.

A common and widespread, mainly tropical lichen, known from Mahé, Praslin and Aldabra.

Coccocarpia palmicola (Spreng.) Arv. & D.J.Galloway

Praslin: Anse Lazio (Loc. 9), on trees in secondary forest, Di 17976. Glacis Noir (Loc. 10), on trees, Di 18075.

A very common and widespread, mainly tropical lichen, known from several Seychelles islands, incl. Mahé and Praslin.

Coccocarpia smaragdina Pers.

Mahé: Sauzier Waterfall (Loc. 3), on tree, Di 17901.

Known from Mahé, Praslin and Silhouette.

Coenogonium leprieurii (Mont.) Nyl.

Mahé: Morne Blanc, montaner Nebelwald, alt. 450–500 m, auf *Neowormia ferruginea*, 26 Feb. 1981, A. Henssen 26818h p.p. (H 9006802).

A common pantropical species, previously known from Mahé and Silhouette (Seaward & Aptroot 2009).

Coenogonium beaverae Lücking & Diederich **sp. nov.** [MycoBank MB820212] (Fig. 3)

Characterised by relatively broad, though small ascospores, 6–8 × 2.5–3.5 µm, and medium-sized apothecia, 0.5–0.8 mm diam., with an orange disc and a paler, minutely denticulate margin, and a crustose thallus.

Type: Seychelles, Mahé, Port Glaud, near Sauzier Waterfall (4.65847°S, 55.41403°E, alt. 20–70 m), on a tree, 28 July 2015, P. Diederich 17896 (B 60 0205003 – holotype; SEY, herb. Diederich – isotypes).

Description: **Thallus** crustose, corticolous, epiperidermal, continuous, up to 5 cm diam., lacking isidia; surface smooth, greenish grey, nitidous; thallus in section 15–25 µm thick, with cartilaginous corticiform layer and single photobiont layer. **Photobiont** *Trentepohlia*, cells angular-rounded, in irregular plates or short threads, 5–10 µm diam., green. **Apothecia** sessile, rounded, 0.5–0.8 mm diam., 120–180 µm high; disc plane, pale to deep orange; margin thin, slightly prominent, minutely denticulate, pale orange to cream-coloured. **Excipulum** paraplectenchymatous with radiating cell rows, 50–80 µm broad, colourless, I+ sordid yellow-green; cells isodiametric to radially elongate, thick-walled towards the centre, thin-walled towards the periphery, 5–12 µm long, 5–7 µm broad. **Hypothecium** 20–30 µm high, pale yellowish to very pale greyish brown. **Hymenium** 50–60 µm high, colourless, I+ blue then quickly sordid green then reddish brown. **Asci** 45–55 × 4–5 µm. **Ascospores** uniseriate, ellipsoid, 1-septate, 6–8 × 2.5–3.5 µm, 2.5–3 times as long as broad. **Pycnidia** not observed.

Chemistry: Medulla K–, P–. No substances detected by TLC.

Notes: *Coenogonium beaverae* is characterized by relatively broad, though small ascospores and medium-sized apothecia with orange disc and paler, minutely denticulate margin. Among other species with similar ascospore type and medium-sized apothecia keyed out by Rivas-Plata et al. (2006) and

Fig. 3: *Coenogonium beaverae* (holotype). **A** – thallus and apothecia, **B** – apothecium and section through apothecium, **C–D** – hymenium with asci and ascospores in water. Scale bars: A = 500 µm, B = 100 µm, C–D = 10 µm.

Kalb et al. (2016), the neotropical *C. subzonatum* (Lücking) Lücking & Kalb differs by its bright yellow apothecia and foliicolous habit, whereas the also neotropical *C. saepincola* Aptroot, Sipman & Lücking has pale yellow to pale yellow-orange apothecia and a white, lignicolous thallus; finally, *C. frederici* (Kalb) Kalb & Lücking from Hawaii has pale orange apothecia with smooth margin. Other similar species are the pantropical *C. subdentatum* (Vězda & G.Thor) Rivas Plata, Lücking, Umaña & Chaves and the paleotropical *C. kalbii* Aptroot, Lücking & Umaña, both of which have comparatively narrower ascospores (c. 4 times as long as broad); the first also differs in the pale yellow-brown apothecia, whereas the second has a smooth apothecial margin.

Distribution and ecology: Known only from the type locality in Seychelles (Mahé) in a disturbed rainforest, close to a stream and a waterfall.

Etymology: The new species is dedicated to Katy Beaver from the Plant Conservation Action group (PCA), who generously gave support and assistance during the field trip of the first author to several Seychelles islands, and who is extremely active in the protection of the environment in Seychelles.

Coenogonium saepincola Aptroot, Sipman & Lücking

Thérèse: (Loc. 8), on bark of a dead *Artocarpus altilis* near beach, Di 17960.

A rare tropical species, previously known only from Costa Rica (Rivas Plata et al. 2006). New to Africa and to the paleotropics.

Collema rugosum Kremp.

Mahé: Jardin du Roi (Loc. 1), on rock, Di 17807; ibid., on trees, Di 17849, 17862. **Thérèse**: (Loc. 8), on bark of a dead *Artocarpus altilis* near beach, Di 17957. **Praslin**: Anse Lazio (Loc. 9), on granitic rocks, Di 17995. **La Digue**: Old cemetery (Loc. 14), on trees close to the sea, Di 18030, 18047.

A very common species, known from most previously visited Seychelles islands.

Cresponea flava (Vain.) Egea & Torrente

Praslin: Anse Lazio (Loc. 9), on trees in secondary forest, Di 17981.

Known from several Seychelles islands, incl. Mahé and Praslin.

Cresponea proximata (Nyl.) Egea & Torrente

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17816. Grande Anse, mangrove (Loc. 2), on tree along trail through mangrove, Di 17880. **Praslin**: Glacis Noir (Loc. 10), on trees, Di 18050, 18067. **La Digue**: Veuve Reserve (Loc. 13), on trees, Di 18012, 18013, 18018.

Previously known from Aldabra and Praslin (Schumm & Aptroot 2010, Seaward & Aptroot 2009). New to Mahé and La Digue.

Cryptolechia nana (Tuck.) D.Hawksw. & Dibben

La Digue: Veuve Reserve (Loc. 13), on trees, Di 17999. **Silhouette**: E of Belle Vue, 220 m, on tree, 30 July 2000, M. R. D. Seaward 110644 (herb. Seaward).

Chagos Archipelago: Diego Garcia, Palmsville, on *Tabebuia pallida*, 7 March 1996, M. R. D. Seaward 108348 (herb. Seaward). Diego Garcia, on *Hernandia*, 7 March 1996, M. R. D. Seaward 108360 (herb. Seaward). Eagle Island, on *Hernandia*, 15 March 1996, M. R. D. Seaward 107350 (herb. Seaward). Salomon Islands, Île Sepulture, on *Morinda*, 9 March 1996, M. R. D. Seaward 107317 (herb. Seaward).

A key to the species of *Cryptolechia* was published by Kalb (2007). Our specimen from La Digue has 12–16-spored asci and 3-septate ascospores, 14–15 × 4–5 µm, and therefore corresponds either to *C. carneolutea* (Turner) A.Massal. or to *C. nana*. Following this author, both species are distinguished by ascospore characters: 10–20 × 3.5–5 µm, 3(–4)-septate in *C. carneolutea*, and 3.5–6 µm broad, up to 22 µm long, 3–5-septate in *C. nana*. As *C. carneolutea* is a species with a mainly temperate distribution, whilst *C. nana* has a tropical distribution (reported by Kalb 2007 from Cuba, Venezuela, Kenya and Brazil), we tentatively include our specimen in *C. nana*.

Schumm & Aptroot (2010: 106) reported *Cryptolechia subincolorella* (Nyl.) D.Hawksw. & Dibben from Praslin and noted that their specimen has 3-septate ascospores, 14–15 × 4–5 µm. On p. 105, they refer to Kalb (2007) and wrote that this species has 8–16-spored asci. However, this is contrary to Kalb's taxonomy, as Kalb (2007) described *C. subincolorella* as having consistently 8-spored asci and narrower ascospores that are 11–16 µm long and up to 3 µm broad. Therefore, the specimen reported by Schumm & Aptroot (2010) is likely to belong to *C. nana* as well. *Cryptolechia subincolorella* was also reported from Mahé and Praslin (Seaward & Aptroot 2009) and Silhouette (Seaward & Aptroot 2003, 2006); re-examination of a specimen from Silhouette and of several specimens from the Chagos Archipelago has shown these to be conspecific with our specimen.

Cryptolechia nana is new to Seychelles, whilst *C. subincolorella* would appear not to occur there.

Dichosporidium brunnthaleri (Zahlbr.) Thor

Mahé: Sans-Souci-Road, tea factory (Loc. 5), on tree, Di 17918 (TLC: protocetraric acid, trace of norstictic acid). Morne Blanc (close to Loc. 7, 4.65914° S, 55.43672° E, alt. 480 m), on tree in forest, Di 17944 (dupl. BR) (TLC: protocetraric acid, trace of norstictic acid). **Praslin**: Glacis Noir (Loc. 10), on trees, Di 18567 (dupl. BR) (TLC: protocetraric and fatty acids).

Previously reported from at least two Mahé localities, incl. Morne Blanc (Henssen & Thor 1998, Schumm & Aptroot 2010, Seaward & Aptroot 2006, 2009). Our specimen 17944 is sterile and has up to 5 mm long, branched isidia, similar to those from Morne Blanc described by Henssen & Thor (1998), who considered that this population represented an extreme modification of a species otherwise having unbranched isidia up to 1 mm. Thalli of specimen 17918 are young, sterile and bear isidia up to 0.5 mm, similar to those from Morne Blanc photographed by Schumm & Aptroot (2010: 110). Specimen 18567 is abundantly fertile.

A similar species, *Dichosporidium boschianum* (Mont.) Thor has tentatively been reported from Mahé and Praslin (Seaward & Aptroot 2006). Following Thor (1990), both species mainly differ in their thallus colour: greyish with a bluish tinge in *D. brunnthaleri*, and grey with a yellowish green tinge in *D. boschianum*. All our specimens have a yellowish tinge, thus suggesting *D. boschianum*; however, as the Morne Blanc population with long, branched isidia is most probably conspecific with the material from the same locality that Henssen & Thor (1998) called an extreme modification of *D. brunnthaleri*, we provisionally use the latter name for all our material. New to Praslin.

Dichosporidium latisporum G.Thor & A.Henssen

Mahé: Sauzier Waterfall (Loc. 3), on trees, Di 17893 (dupl. BR) (TLC: norstictic and fatty acids). Sans-Souci-Road, tea factory (Loc. 5), on tree, Di 18566. **Praslin**: Glacis Noir (Loc. 10), on trees, Di 18053, 18054 (dupl. BR) (TLC: salazinic, norstictic and fatty acids).

A possibly endemic species to Seychelles, described from Vallée de Mai in Praslin, and known from Mahé and Praslin.

****Dictyocatenulata alba*** Finley & Morris

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17814.

This species is widespread in North America, Eastern Europe and Asia (Diederich et al. 2008). It is new to Africa.

Diorygma hieroglyphicum (Pers.) Staiger & Kalb

Mahé: Grande Anse, mangrove (Loc. 2), on tree along trail through mangrove, Di 17882, 17890. **La Digue**: Veuve Reserve (Loc. 13), on trees, Di 18014.

A pantropical species (Kalb et al. 2004), previously known from Mahé, Praslin and Silhouette. New to La Digue.

Diorygma junghuhnii (Mont. & Bosch) Kalb, Staiger & Elix

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17856. **La Digue**: Veuve Reserve (Loc. 13), on trees, Di 18004.

A pantropical species (Kalb et al. 2004), previously known from Mahé, Praslin and La Digue (Seaward & Aptroot 2009, Schumm & Aptroot 2010).

Diorygma salvadoriense Kalb, Staiger & Elix

Mahé: Sans-Souci-Road, tea factory (Loc. 5), on a tree, Di 17913.

A rare tropical species, previously known only from El Salvador (Kalb et al. 2004). New to Africa and the paleotropics.

Dirinaria applanata (Fée) Awasthi

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17846. **Praslin**: Anse Lazio (Loc. 9), on trees in secondary forest, Di 17993.

Known from several Seychelles islands, incl. Mahé and Praslin.

Dirinaria picta (Sw.) Clem. & Shear

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17829. Grande Anse, mangrove (Loc. 2), on *Cocos* along trail through mangrove, Di 17869. **La Digue**: Old cemetery (Loc. 14), on trees close to the sea, Di 18224. Petite Anse, auf Kokospalme, 4 March 1981, A. Henssen 26845c (H 9006983).

Known from several Seychelles islands, incl. Mahé, Praslin and La Digue.

Enterographa cf. ***multiseptata*** R.Sant. (= *Enterographa seychellensis* Vězda & Ceni)

Mahé: Jardin du Roi (Loc. 1), foliicolous on leaves of a palm tree, Di 17834 (dupl. BR) (TLC using solvents B and G: psoromic acid).

Our specimen differs from typical *E. multiseptata* in having a trentepohlioid photobiont, all hitherto known specimens being associated with *Phycopeltis* (Sparrius 2004). Ascospores are 7(–9)-septate in our specimen, 7–10(–14)-septate in the type of *E. multiseptata*, and 7-septate in the type of *E. seychellensis*, collected from Praslin. More material from Seychelles and a re-examination of the types will be needed to better understand the taxonomic status of these Seychelles populations. *E. multiseptata* is known from Mahé, Praslin, La Digue and Silhouette.

Enterographa pallidella (Nyl.) Redinger

Mahé: Jardin du Roi (Loc. 1), foliicolous, Di 17820b. Beauvallon (loc. 4), on *Cocos* near beach, Di 17907. **La Digue**: Old cemetery (Loc. 14), on trees close to the sea, Di 18026.

We were surprised to collect this usually corticolous species on leaves in one locality (Di 17820b). By TLC, both specimens from Mahé showed three yellow, UV+ greenish spots in solvents B and G, one of which corresponds to gyrophoric or lecanoric acid. The foliicolous specimen is reminiscent of *Enterographa seawardii* Lücking & Henssen, described from the Botanical Garden of Mahé, but the holotype is "C–, P+ yellow (TLC not performed)", following Sparrius (2004).

Known from several Seychelles islands, incl. Mahé. New to La Digue.

Epigloea urosperma Döbbeler

Mahé: Morne Blanc (Loc. 7), on soil in a cloud forest, on the thallus of *Placynthiella dasaea*, Di 18577.

This lichenicolous fungus, known from Europe (e.g. Döbbeler 1994) and Bolivia (Flakus & Kukwa 2012), appears to be restricted to *Placynthiella* species. New to Africa.

Etayoa trypethelii (Flakus & Kukwa) Diederich & Ertz

Mahé: Jardin du Roi (Loc. 1), on the thallus of *Lecanora*, on a tree, Di 17863. **La Digue**: Old cemetery (Loc. 14), on the thallus of *Graphis lindsayana*, on a tree close to the sea, Di 18040 (sub *G. lindsayana*).

Both specimens of this widespread lichenicolous ascomycete (Ertz et al. 2014) represent the asexual stage. New to Seychelles.

Fellhanera subfuscatula Lücking

Mahé: Sans-Souci-Road, l'Exil (Loc. 6), foliicolous on *Cinnamomum verum*, Di 17932d.

Known from Mahé (Schumm & Aptroot 2010) and Silhouette (Seaward & Aptroot 2003).

****Fissurina comparilis*** (Nyl.) Nyl.

Praslin: Anse Lazio (Loc. 9), on trees in secondary forest, Di 17989.

A rarely collected, pantropical species (Staiger 2002), new to Seychelles.

****Fissurina globulifica*** (Nyl.) Staiger

Mahé: Sans-Souci-Road, tea factory (Loc. 5), on a tree, Di 17926.

A rarely collected, tropical species, previously known from eastern Asia, Australia and New Caledonia (Staiger 2002). New to Africa.

Fissurina seychellensis Lücking & Diederich **sp. nov.** [MycoBank MB820213] (Fig. 4)

Characterised by an inspersed hymenium, muriform ascospores, 20–30 × 10–12 µm, and the absence of secondary metabolites.

Type: Seychelles, Mahé, E of Port Glaud, along Sans-Souci-Road, glacis E of tea factory (4.66153°S, 55.43939°E, alt. 415–425 m), on a tree, 30 July 2015, P. Diederich 17914 (B 60 0205004 – holotype; SEY, herb. Diederich – isotypes).

Description: **Thallus** crustose, corticolous, epiperidermal, continuous, up to 10 cm diam.; surface uneven, light greenish to olive-grey, slightly nitidous; **thallus** in section 100–150 µm thick, with prosoplectenchymatous cortex, 20–30 µm, distinct photobiont layer, 70–100 µm, with numerous large clusters of calcium oxalate crystals, and indistinct medulla, 10–20 µm. **Photobiont** *Trentepohlia*, cells rounded to irregular in outline, 8–12 × 6–10 µm, yellowish green. **Lirellae** erumpent, unbranched to sparsely branched, sometimes several short lirellae in a line and eventually confluent, fissurine but with distinct labia covered by thallus layer, distinctly gaping, (0.7–)1–3(–5) mm long, 0.3–0.4 mm wide, 0.3–0.4 mm high; disc partially exposed but deeply immersed, often with irregular excipular remnants resembling a pseudocolumella; labia entire. **Excipulum** uncarbonized, 10–20 µm broad, sordid yellowish to greyish brown, difficult to discern, laterally covered by thallus layer. Short **periphysoids** partially present along the upper part of the excipulum, smooth. **Hymenium** 120–150 µm high, strongly inspersed and appearing pale sordid yellowish to purplish brown; epihymenium indistinct, granular, 5–10 µm high, grey-brown. **Paraphyses** smooth. **Asci** fusiform to clavate, 120–130 × 20–25 µm. **Ascospores** 8 per ascus, muriform, with thin walls and septa, ellipsoid to oblong, 20–30 × 10–12 µm, I–.

Chemistry: Medulla K–, P–. No substances detected by TLC.

Notes: This is only the second species in the genus *Fissurina* with an inspersed hymenium, the only other species being *F. inspersa* Common & Lücking from North America, which clearly differs in its small, 3-septate ascospores, the stictic acid chemistry, and the endoperidermal thallus (Lücking et al. 2011). *Fissurina seychellensis* is morphologically very similar to *F. furfuracea* (Leight.) A.W.Archer, which differs in the 3-septate ascospores and the clear hymenium (Archer 2007).

Distribution and ecology: Known only from the type locality in Seychelles (Mahé) in a recently restored forest (removal of invasive species).

Etymology: Named after Seychelles, where the new species has been discovered.

Flakea papillata O.E.Erikss. (= *Agonimia papillata* [O.E.Erikss.] Diederich & Aptroot)

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17843. **La Digue**: Veuve Reserve (Loc. 13), on a tree, Di 18011 (sub *Bacidina* cf. *sorediata*).

This species was known from Mahé (Seaward & Aptroot 2009) and Praslin (Schumm & Aptroot 2010), and is new to La Digue.

Fig. 4: *Fissurina seychellensis* (holotype). **A–B** – thallus and ascomata, **C** – section through ascoma in water, **D** – inspersed hymenium in water, **E** – partly discharged ascus with muriform ascospores in K. Scale bars: A–B = 1 mm, C = 50 µm, D–E = 10 µm.

Fulvophyton macrosporum Ertz & Diederich **sp. nov.** [MycoBank MB820214] (Fig. 5)

Differs from *Sclerophyton madagascariense* in having 10–14(–16)-septate ascospores (vs. 8–10-septate) and the presence of psoromic acid (*vs.* stictic acid).

Type: Seychelles, Praslin, Praslin National Park, SE of Vallée de Mai, along trail to Glacis Noir and fire tower (4.33729°S, 55.74301°E, alt. 250–360 m), on trees, 5 Aug. 2015, P. Diederich 18082 (BR – holotype; SEY, herb. Diederich – isotypes).

Description: **Thallus** up to c. 5 cm diam., continuous, smooth surface, yellowish white, very thin or up to c. 280 µm thick, distinctly thicker near ascomata, with abundant ± cubic crystals of calcium oxalate (tested with 25 % H_2SO_4) of 1–21 µm diam.; prothallus absent. **Photobiont** *Trentepohlia*. **Ascomata** arranged in lines or groups of 10–100, either closed, punctiform to slightly elongated and 40–135 µm diam. at surface, or with an exposed rounded to slightly elongated hymenium of 110–200 µm diam. at surface, up to c. 200 µm diam. in the centre of the hymenium; hymenial disc dark brown to black, not pruinose; thalline margin indistinct. **Excipulum** very thin, c. 5 µm wide, hyaline to pale brown in section. **Hymenium** hyaline, c. 140–180 µm tall, I+ dark blue and K/I+ dark blue; epihymenium 30–50 µm tall, of brown paraphysoid tips, without crystals; subhymenium hyaline, c. 20 µm tall, difficult to distinguish from the hymenium. **Paraphysoids** 1 µm wide, apices c. 2 µm wide, richly

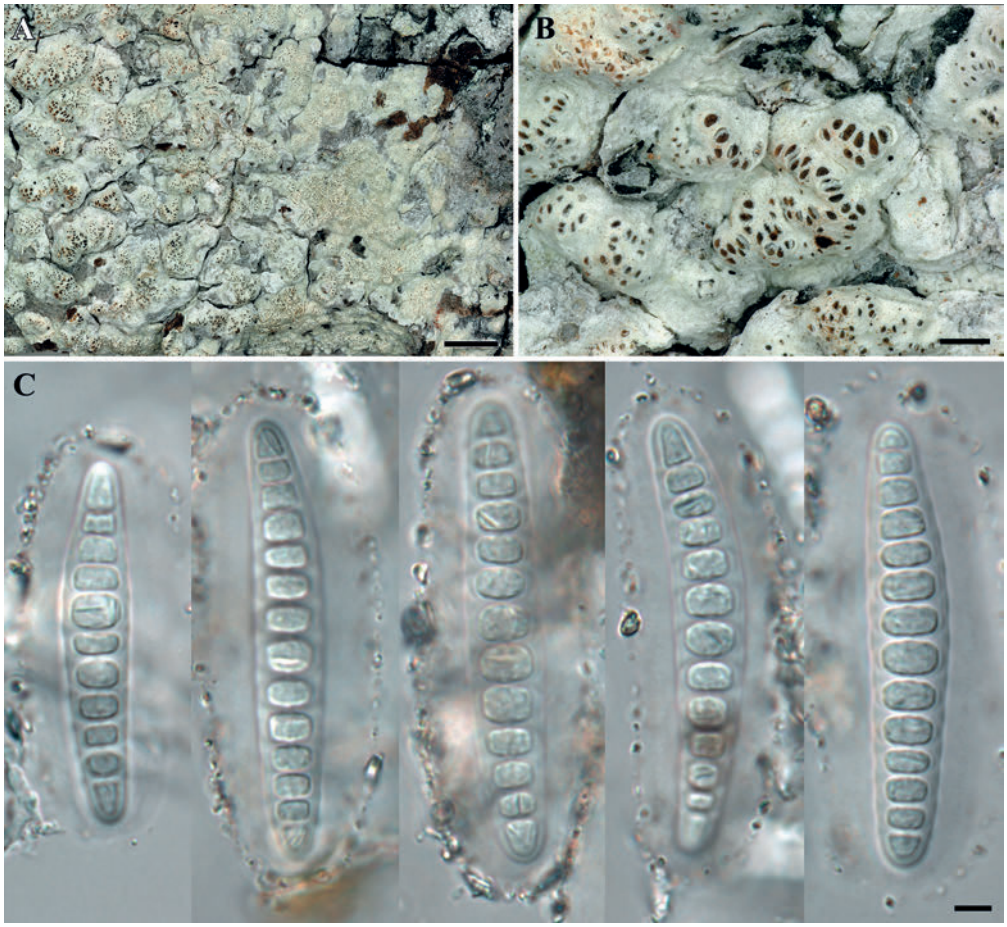

Fig. 5: *Fulvophyton macrosporum* (holotype). **A–B** – thallus and ascomata, **C** – ascospores with distinct perispore in water. Scale bars: A = 2 mm, B = 500 µm, C = 10 µm.

branched and anastomosing. **Asci** cylindrical-clavate, 8-spored, 120–150 × 28–30 µm, I+ red, K/I+ blue (endoascus). **Ascospores** long oblong-fusiform with rounded ends, 35–53(–70) × 6.5–9 µm (n=30), 10–14(–16)-septate, perispore 4–5 µm wide (in water); ascospores and perispore I+ orange, KI–. **Conidiomata** not observed.

Chemistry: Thallus C+ yellow, K+ yellow to brownish, P+ yellow-pale orange, UV+ cream. TLC: psoromic acid (specimens Diederich 18074, 18082 tested in solvent B).

Notes: This species is characterized by the very large spores with many septa, similar to those of *Sclerophyton madagascariense* Sparrius, but the latter differs in slightly less septate ascospores (8–10-septate) and its chemistry: thallus P–, containing stictic acid (Sparrius 2004). *S. madagascariense* was recorded from Seychelles by Schumm & Aptroot (2010) who illustrated three specimens, one of which was collected in the type locality of *Fulvophyton macrosporum* and might belong to the same species, although those authors reported the thallus as K–, C–, KC– and P–. These specimens should be re-examined to determine if they belong to the new species rather than to *S. madagascariense*. *Sclerophyton madagascariense* belongs to *Fulvophyton*, but will be treated later in another paper. The new species is also reminiscent of *Fulvophyton subseriale* (Nyl.) Ertz & Tehler in having

punctiform ascomata and a thallus containing psoromic acid, but *F. subseriale* differs in having an I+ red hymenium, usually less septate ascospores with a thinner perispore (4–7-septate with a perispore < 3 µm thick; some specimens having 7–12-septate ascospores with a thicker perispore were called *F. subseriale* by Sparrius 2004, but should be re-investigated) and a thallus containing several additional substances including norstictic acid as major compound (Sparrius 2004).

Distribution and ecology: Known only from Seychelles: in the type locality on Praslin, on the bark of trees along a trail in a disturbed forest, and on Mahé, on *Cocos* in a mangrove.

Etymology: The epithet refers to the particularly large ascospores.

Paratypes: **Mahé**: Grande Anse, mangrove (Loc. 2), on *Cocos*, along trail through mangrove, Di 18578. **Praslin**: Same locality as type, Di 18074.

Glomerulophoron mauritiae Frisch, Ertz & G.Thor

Praslin: Anse Volbert (Loc. 12), on bark of a tree near beach, Di 17972 (dupl. BR) (TLC: 2-O-methylperlatolic acid).

Previously known only from the type locality in Mauritius. New to Seychelles.

Graphis aff. ***crebra*** Vain.

Thérèse: (Loc. 8), on bark of a dead *Artocarpus altilis* near beach, Di 17963.

This material agrees in important features with *Graphis crebra*, namely the entire labia, laterally carbonized excipulum, inspersed hymenium, transversely septate ascospores, and presence of norstictic acid. It differs, however, from the latter (and its synonym, *G. apertella* A.W.Archer) in the ascoma disc that becomes much more exposed and in the peculiar branching pattern of the lirellae, with larger, supposedly older lirellae branching out in a substellate fashion, and smaller, supposedly younger lirellae. It might represent an undescribed taxon, but the material is insufficient to assess its morphological variation and describe it formally.

Graphis crebra had been reported from Praslin (Schumm & Aptroot 2010) and Aldabra (Seaward & Aptroot 2009).

Graphis diplocheila Vain.

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17851. **La Digue**: Veuve Reserve (Loc. 13), on a tree, Di 18006 (dupl. B 60 0205009).

A paleotropical species (Lücking et al. 2009: 404), new to Africa.

Graphis dupaxana Vain.

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17853.

A pantropical species (Lücking et al. 2009: 429), known from Mahé (Schumm & Aptroot 2010).

Graphis insulana (Müll.Arg.) Lücking & Sipman

Mahé: Sauzier Waterfall (Loc. 3), on a palm tree, Di 17891. **La Digue**: Veuve Reserve (Loc. 13), on trees, Di 17997, 18015.

A pantropical species (Lücking et al. 2009: 403), previously reported from La Digue (Schumm & Aptroot 2010) and Silhouette (Seaward & Aptroot 2009). New to Mahé.

Graphis lindsayana Lücking & Diederich **sp. nov.** [MycoBank MB820215] (Fig. 6)

Characterised by the strongly and radiately branched, 3–10 mm long lirellae, entire labia with a double margin, the thalline margin forming an erect, thin, white rim, pruinose labia with a concealed disc, a completely carbonized excipulum, a clear hymenium, transversely septate ascospores, 25–35 × 5–7 µm, and the presence of stictic acid.

Type: Seychelles, La Digue, between Anse La Réunion and Anse Source d'Argent, W and N of old cemetery (4.36199°S, 55.82482°E, alt. 2–5 m), on trees close to the sea, 5 Aug. 2015, P. Diederich 18031 (B 60 0205007 – holotype; SEY, herb. Diederich – isotypes).

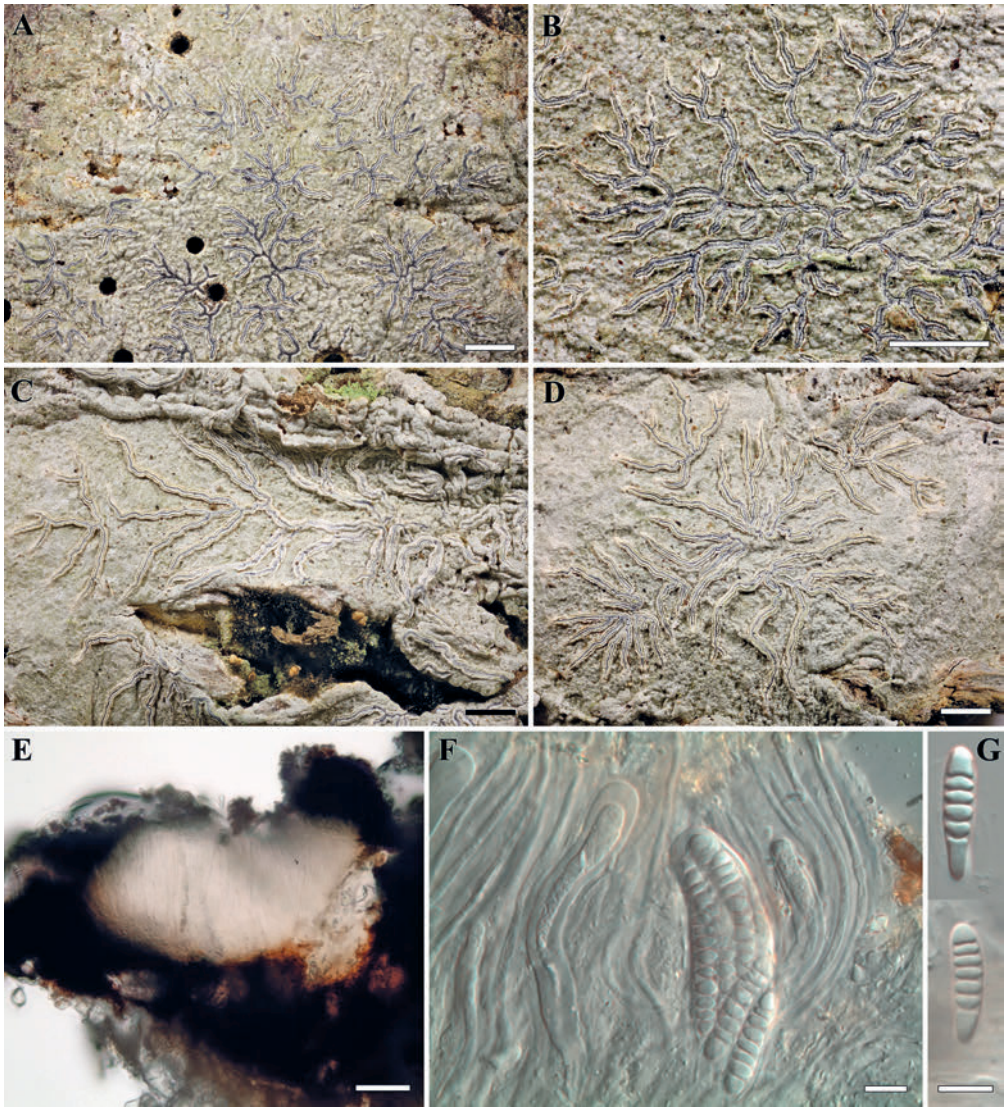

Fig. 6: *Graphis lindsayana* (A–B, E–G – holotype; C–D – Diederich 18003; E–G in water). **A–D** – thallus and ascomata, **E** – section through ascoma, **F** – hymenium and asci, **G** – ascospores. Scale bars: A–D = 2 mm, E = 50 µm, F–G = 10 µm.

Description: **Thallus** crustose, corticolous, epiperidermal, continuous, up to 5 cm diam.; surface verrucose, pale greenish grey to white, slightly nitidous; thallus in section 150–200 µm thick, with prosoplectenchymatous cortex, 20–30 µm thick, and irregular photobiont layer, 20–30 µm thick, dispersed within an irregular medulla strongly encrusted with large clusters of calcium oxalate crystals. **Photobiont** *Trentepohlia*, cells rounded to irregular in outline, 7–12 × 6–10 µm, green. **Lirellae** immersed, strongly and radiately branched, 3–10 mm long, 0.15–0.25 mm wide, 0.15–0.2 mm high; disc concealed; labia entire, black but thinly white-pruinose along the slit and there appearing grey, thickly white-pruinose laterally, with lateral thalline margin and a split between the labia and the thalline margin (double margin), the latter forming an erect, thin, somewhat irregular,

white rim. **Excipulum** completely carbonized, black, 50–80 µm broad, laterally bordered by thallus layer. **Hymenium** 90–100 µm high, clear; epihymenium granular, 10–20 µm high, dark grey-brown. **Paraphyses** smooth. **Asci** clavate, 90–100 × 15–20 µm. **Ascospores** 8 per ascus, 7–11-septate, with thickened septa and lens-shaped lumina (distoseptate), oblong, 25–35 × 5–7 µm, I+ violet-blue.

Chemistry: Medulla and pseudostromatic tissue in microscopic section with K+ persistently yellow efflux, in surface view P+ orange. TLC: stictic acid.

Notes: This new species would key out under Group 8 in the world key to *Graphis* provided by Lücking et al. (2009), with entire labia, completely carbonized excipulum, clear hymenium, and transversely septate ascospores. Notably, there are two other species in this group with concealed disc, double margin, and stictic acid chemistry. *Graphis discarpa* A.W.Archer, described from the Solomon Islands, has a strongly bullate thallus, the lirellae are short and sparsely branched (not radiately branching), the labia are covered by a thick white layer instead of a thin pruina, and the thalline margin does not form an erect, thin rim. *Graphis imshaugii* M.Wirth & Hale, known from the Caribbean including Mexico, has a smooth to uneven thallus, the lirellae are much shorter and irregularly (not radially) branched, the labia are thinly pruinose and appear dark grey throughout, and the thalline margin does not form an erect, thin rim,

Distribution and ecology: Known from two localities on La Digue in Seychelles. At the type locality, the new species grows on a large tree close to the sea near an old cemetery, whilst in the second locality, it grows in an old forest at sea level.

Etymology: The new species is dedicated to Mr Lindsay Chong-Seng, who kindly helped the first author during his collecting trip, and who for his entire career has been engaged in the management and protection of biodiversity in Seychelles.

Paratypes: **La Digue**: Same locality as type, Di 18040. Veuve Reserve (Loc. 13), on trees, Diederich 18003.

Graphis lineola Ach.

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17864b.

A pantropical species (Lücking et al. 2009: 403), known from several Seychelles islands, including Mahé.

Graphis modesta Zahlbr.

Mahé: Grande Anse, mangrove (Loc. 2), on tree along trail through mangrove, Di 17889. Jardin du Roi (Loc. 1), on a tree, Di 17840. **Thérèse**: (Loc. 8), on bark of a dead *Artocarpus altilis* near beach, Di 17966.

A paleotropical species (Lücking et al. 2009: 408), previously known from Aldabra (Seaward & Aptroot 2009). New to Mahé and Thérèse.

Graphis novopalmicola A.W.Archer & Lücking

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17857.

A pantropical species (Lücking et al. 2009: 418), new to Africa.

Graphis oxyclada Müll.Arg.

Mahé: Morne Blanc (Loc. 7), on a tree in a cloud forest, Di 17954.

A pantropical species (Lücking et al. 2009: 411), new to Africa.

Graphis proserpens Vain.

Praslin: Glacis Noir (Loc. 10), on branches of a shrub, Di 18055.

A possibly pantropical species (Lücking et al. 2009: 421, Staiger 2002), new to Seychelles.

Graphis renschiana (Müll.Arg.) Stizenb.

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17865. **Praslin**: Anse Lazio (Loc. 9), on a tree in secondary forest, Di 17987, 17988.

A pantropical species (LÜCKING et al. 2009: 399), new to Seychelles; in Africa previously known from Madagascar (APTROOT 2016).

***Graphis subamylacea** Zahlbr.

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17839.

A species previously known from the neotropics (LÜCKING et al. 2009: 409), new to Africa.

Gyalolechia bassiae (Ach.) Søchting, Frödén & Arup ex Ahti (= *Caloplaca bassiae* [Ach.] Zahlbr.)

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17861. Beauvallon (Loc. 4), on *Artocarpus altilis* near beach, Di 17909. **Thérèse**: (Loc. 8), on bark of a dead *A. altilis* near beach, Di 17958. **La Digue**: Old cemetery (Loc. 14), on trees close to the sea, Di 18037.

A rather common paleotropical species (KÄRNEFELT 2003, WETMORE 2004). The nomenclature and typification of this species was clarified by AHTI et al. (2015). Known from many islands, incl. Mahé, Praslin and La Digue. New to Thérèse.

***Julella geminella** (Nyl.) R.C.Harris

Mahé: Grande Anse, mangrove (Loc. 2), on tree along trail through mangrove, Di 17871.

A rarely reported pantropical species, new to Seychelles.

Lecanora leproplaca Zahlbr.

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17821. Grande Anse, mangrove (Loc. 2), on tree along trail through mangrove, Di 17877. Beauvallon (Loc. 4), on *Cocos* near beach, Di 18213. **Thérèse**: (Loc. 8), on bark of a dead *Artocarpus altilis* near beach, Di 17961. **Praslin**: Glacis Noir (Loc. 10), on stump of dead tree, Di 18088, 18089. TLC (all specimens): atranorin, zeorin, chodatin and demethylchodatin.

This species appears to be one of the most common sterile sorediate lichens with a yellowish thallus in Seychelles. Previously known from Aldabra and Praslin (SEAWARD & APTROOT 2009). New to Mahé and Thérèse.

Lecidopyrenopsis corticola Vain. (Fig. 7)

Mahé: Grande Anse, mangrove (Loc. 2), on *Cocos* along trail through mangrove, Di 17868. **Praslin**: Anse La Blague, beim Hotel La Vanilla (4°19.793' S, 55°47.019' E, alt. 17 m), on *Cocos*, 27 Sept. 2008, F. Schumm 14361 (herb. Schumm). Identification of both specimens confirmed by M. Schultz, based on macroscopical and microscopical photographs.

This species was known only from the type locality in Thailand, until SCHULTZ & APTROOT (2008) published further collections from Costa Rica, French Guyana, Seychelles (St Joseph and Silhouette) and Taiwan. It appears to be a widespread and probably common tropical, corticolous cyanobacterial lichen. It strongly resembles *Leprocollema nova-caledonianum* (see below), from which it is distinguished by a reddish brown (vs. green) thallus and a different, reddish (vs. green) cyanobacterial photobiont with larger cells, 10–18 µm diam. (vs. 4–8 µm). The specimen from Praslin was erroneously identified as *Leprocollema nova-caledonianum* by SCHUMM & APTROOT (2010). New to Mahé and Praslin.

Lepidocollema brisbanense (C.Knight) P.M.Jørg. (= *Parmeliella brisbanensis* [C.Knight] P.M.Jørg. & D.J.Galloway)

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17810.

This species was already known from several Seychelles islands, incl. Mahé, Praslin and La Digue. Following JØRGENSEN (2000), the mainly neotropical *L. stylophorum* (Vain.) P.M.Jørg. might be a later synonym of this species, but both species were retained by EKMAN et al. (2014). The identity of the Seychelles material therefore needs further investigation.

Lepraria arbuscula (Nyl.) Lendemer & B.P.Hodk. (= *Leprocaulon arbuscula* [Nyl.] Nyl.)

Mahé: Morne Blanc (Loc. 7), on a tree in a cloud forest, Di 17942 (accompanied by *Cladonia* squamules with *Sphaerellothecium cinerascens*).

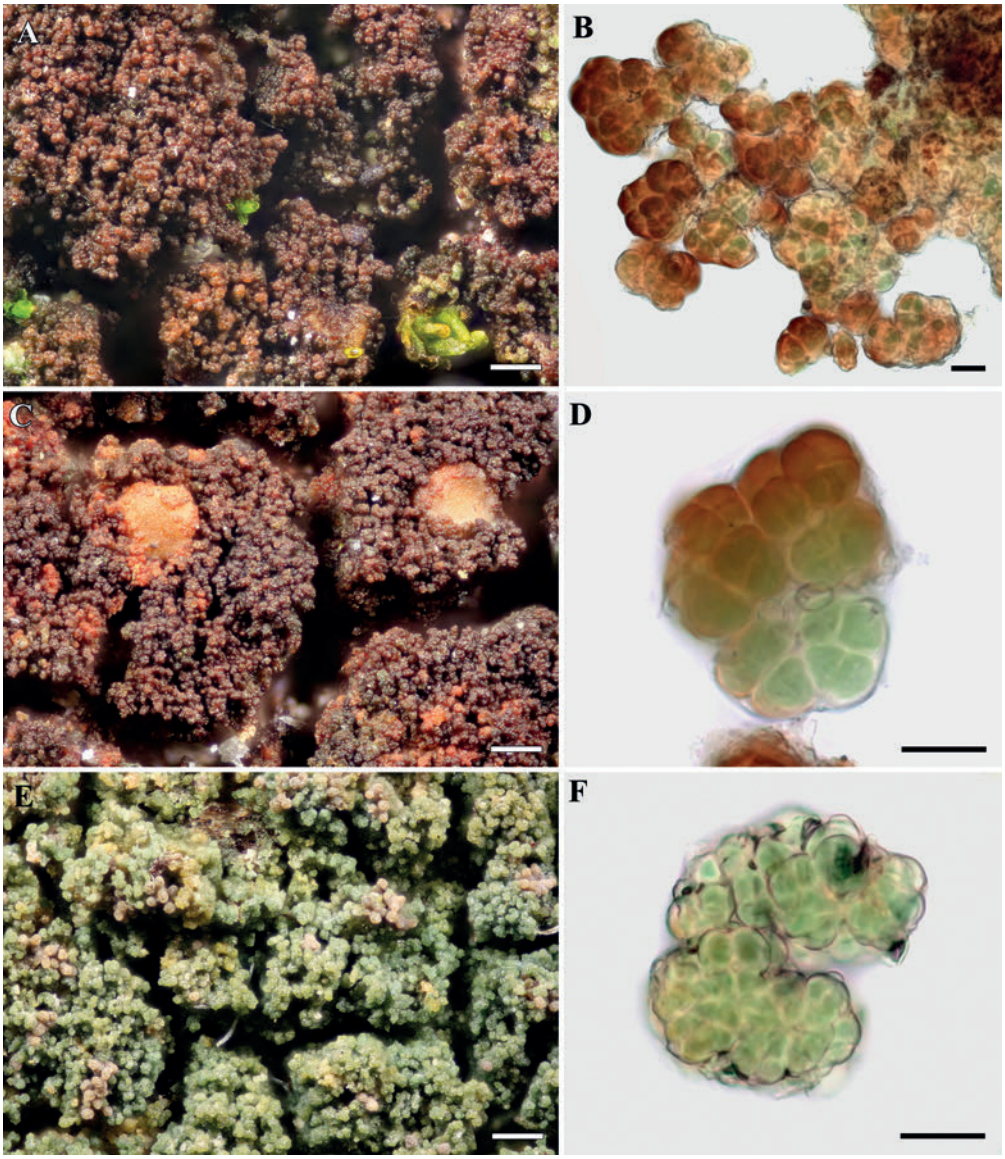

Fig. 7: *Lecidopyrenopsis corticola* and *Leprocollema nova-caledonianum*, macroscopical and microscopical (in water) view of thallus. **A–B** – *L. corticola* (Diederich 17868), **C–D** – *L. corticola* with two apothecia (Schumm 14361), **E–F** – *L. nova-caledonianum* (Seaward 114646). Scale bars: A, C, E = 200 µm, B, D, F = 20 µm.

This species was known from Mahé (Les Trois Frères, alt. 500 m; Seaward & Aptroot 2006) and Silhouette (Mont Dauban, alt. 740 m; Seaward & Aptroot 2003).

Leprocollema nova-caledonianum A.L.Sm. (Fig. 7)

Silhouette: Anse Lascars, on lignum (*Calophyllum*?), 23 July 2000, M. R. D. Seaward 114646 (herb. Diederich, herb. Seaward).

This species is already known from Silhouette (Seaward & Aptroot 2006, incorrectly cited as *L. nova-caledonicum*). Although the corresponding specimen (Seaward 113038) was not seen, we were able to examine another specimen (Seaward 114646) from the same island which perfectly agrees with the description given by Schultz & Aptroot (2008).

The species was further reported and illustrated by Schumm & Aptroot (2010) from Praslin on *Cocos*. We have re-examined this specimen and found it to belong to *Lecidopyrenopsis corticola* (see under that species).

Leptogium azureum (Sw.) Mont.

La Digue: Veuve Reserve (Loc. 13), on trees, Di 18009.

A common, pantropical species, known from Mahé (Seaward & Aptroot 2006, 2009). New to La Digue.

Leptogium cyanescens (Rabenh.) Körb.

Mahé: Sauzier Waterfall (Loc. 3), on rocks along stream, Di 17902.

A common, pantropical species, known from Mahé, La Digue and Silhouette (Schumm & Aptroot 2010, Seaward & Aptroot 2003, 2009).

****Leptogium mastocheilum*** (Vain.) Kitaura & Marcelli

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17850. Mission Lodge an der Strasse von Victoria nach Port Gland, 4°39.305' S, 55°26.657' E, alt. 450 m, corticolous, 7 Oct. 2008, F. Schumm 14565 & J.-P. Frahm (herb. Schumm). Near ruins, Mission, alt. 440 m, corticolous, 2 March 1994, T. Feuerer 60528 (HBG, SEY, herb. Diederich). Port Glaud, tea plantation, alt. 150 m, corticolous, 28 Feb. 1994, T. Feuerer 60566 (HBG, LD, SEY, herb. Diederich, herb. Seaward 111273). **Praslin**: Anse Bois de Rose, on slope of boulder, 15 Oct. 1994, K. Beaver (herb. Seaward 114336); ibid., on side of granite rock, 2 May 1994, K. Beaver (herb. Seaward 114334).

This species has only recently been recognized as distinct from *L. denticulatum* Nyl. (Kitaura et al. 2015). It was previously known from the Society Islands (Tahiti) and Vanuatu. All Seychelles specimens are sterile, but correspond to the description given by Kitaura et al. (2015). However, the morphological variation is much bigger than described by those authors, as lobules, although usually marginal, may be mainly laminal in some specimens (especially in T. Feuerer 60566). Specimen F. Schumm 14565 has been illustrated by excellent photographs in Schumm & Aptroot (2010: 191, as *L. denticulatum*).

Leptogium joergensenii Marcelli & Kitaura is a similar species, in which lobules are both marginal and laminal (Kitaura et al. 2015), but it differs from *L. mastocheilum* by its entirely smooth upper surface, *vs*. smooth to strongly wrinkled. *L. joergensenii* is known only from southwestern North America, where it is common on rocks in the Sonoran Desert, a very different ecology than that of *L. mastocheilum*.

Former reports of *L. denticulatum* from Seychelles probably all refer to *L. mastocheilum*, as in the case of specimens collected by T. Feuerer 60528 and 60566 (Seaward & Aptroot 2006), F. Schumm 14565 (Schumm & Aptroot 2010) and K. Beaver (Seaward & Aptroot 2009) we have examined. We have not seen two specimens collected by A. H. Norkett (Seaward & Aptroot 2009), but these too are likely to be *L. mastocheilum*.

Leptogium mastocheilum is new to Africa, whilst *L. denticulatum* needs to be removed from the Seychelles checklist.

****Leucodecton album*** Sipman & Lücking

Mahé: Morne Blanc (Loc. 7), on a tree in a cloud forest, Di 17947.

A rare species, previously known only from Costa Rica (Sipman et al. 2012). New to Africa and the paleotropics.

Leucodecton compunctellum (Nyl.) Frisch

Mahé: Sauzier Waterfall (Loc. 3), on tree, Di 17895.

A pantropical species keyed out by Rivas Plata et al. (2010). New to Seychelles.

Loflammia gabrielis (Müll.Arg.) Vězda

Mahé: Sans-Souci-Road, l'Exil (Loc. 6), foliicolous on *Cinnamomum verum*, Di 17932b.

Previously known from Mahé and Silhouette (Seaward & Aptroot 2003, 2009).

Malmidea subgranifera (Kalb & Elix) Kalb & Elix

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17817 (dupl. herb. Kalb); ibid., Di 17818 (det. K. Kalb).

Probably a pantropical species, previously known from Praslin and La Digue (Schumm & Aptroot 2010). New to Mahé.

Mazosia phyllosema (Nyl.) Zahlbr.

Mahé: Sans-Souci-Road, l'Exil (Loc. 6), foliicolous on *Cinnamomum verum*, Di 17932c.

A common, pantropical species, reported here as new to Seychelles.

Moelleropsis nebulosa (Hoffm.) Gyeln.

Praslin: Glacis Noir (Loc. 10), on a granitic rock, Di 18060.

The material is sterile, but corresponds perfectly to European *Moelleropsis nebulosa*. New to Africa and the Southern Hemisphere (e.g. Jørgensen 2002).

Mycoporum eschweileri (Müll.Arg.) R.C.Harris

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17835.

A common and widespread, tropical, facultatively lichenized pyrenomycete, known from Mahé (Schumm & Aptroot 2010).

Nigrovothelium inspersotropicum Aptroot & Diederich **sp. nov.** [MycoBank MB820216] (Fig. 8)

Differs from *Nigrovothelium tropicum* by a heavily inspersed hamathecium.

Type: Seychelles, Mahé, E of Port Glaud, along Sans-Souci-Road, glacis E of tea factory (4.66153°S, 55.43939°E, alt. 415–425 m), on a tree, 30 July 2015, P. Diederich 17919 (BR – holotype; SEY, herb. Diederich – isotypes).

Description: **Thallus** corticate, smooth, shiny, continuous, covering areas up to 8 cm diam., less than 0.1 mm thick, olive green to brownish, surrounded by a 0.6–1 mm wide dark to blackish prothallus line. **Photobiont** *Trentepohlia*. **Ascomata** semiglobose, superficial, black, 0.45–0.6 mm diam., solitary or mostly aggregated with 2–6, not immersed in pseudostroma; wall black all around, up to c. 50 µm thick; ostiole apical, not fused, flat, dark brown, often surrounded by a pale reddish brown ring. **Hamathecium** heavily inspersed with round to elongate oil globules of up to 5 µm diam. **Asci** 8-spored. **Ascospores** hyaline, 3-septate, ellipsoid, 20–22 × 6–7 µm, ends rounded, lumina angular, not surrounded by a gelatinous layer. **Pycnidia** not observed.

Chemistry: Thallus C–, K–, KC–, P–, UV–. No substances detected by TLC.

Notes: This species is very similar to one of the two other species known in the genus, viz. *Nigrovothelium tropicum* (Müll.Arg.) Lücking, Nelsen & Aptroot (Lücking et al. 2016). The only difference is the presence of copious oil globules in the hamathecium. The taxonomic importance of hamathecium inspersion has been much neglected in the past, but recent phylogenetic studies have shown that this character, at least within Trypetheliaceae, is species-specific (Aptroot & Lücking 2016, Lücking et al. 2016). As this is a character that in the past has not usually been given much attention, there are doubtlessly many specimens and reports where the new species has not been recognized. It is keyed out as *Nigrovothelium* aff. *tropicum* in the key provided by Aptroot & Lücking (2016).

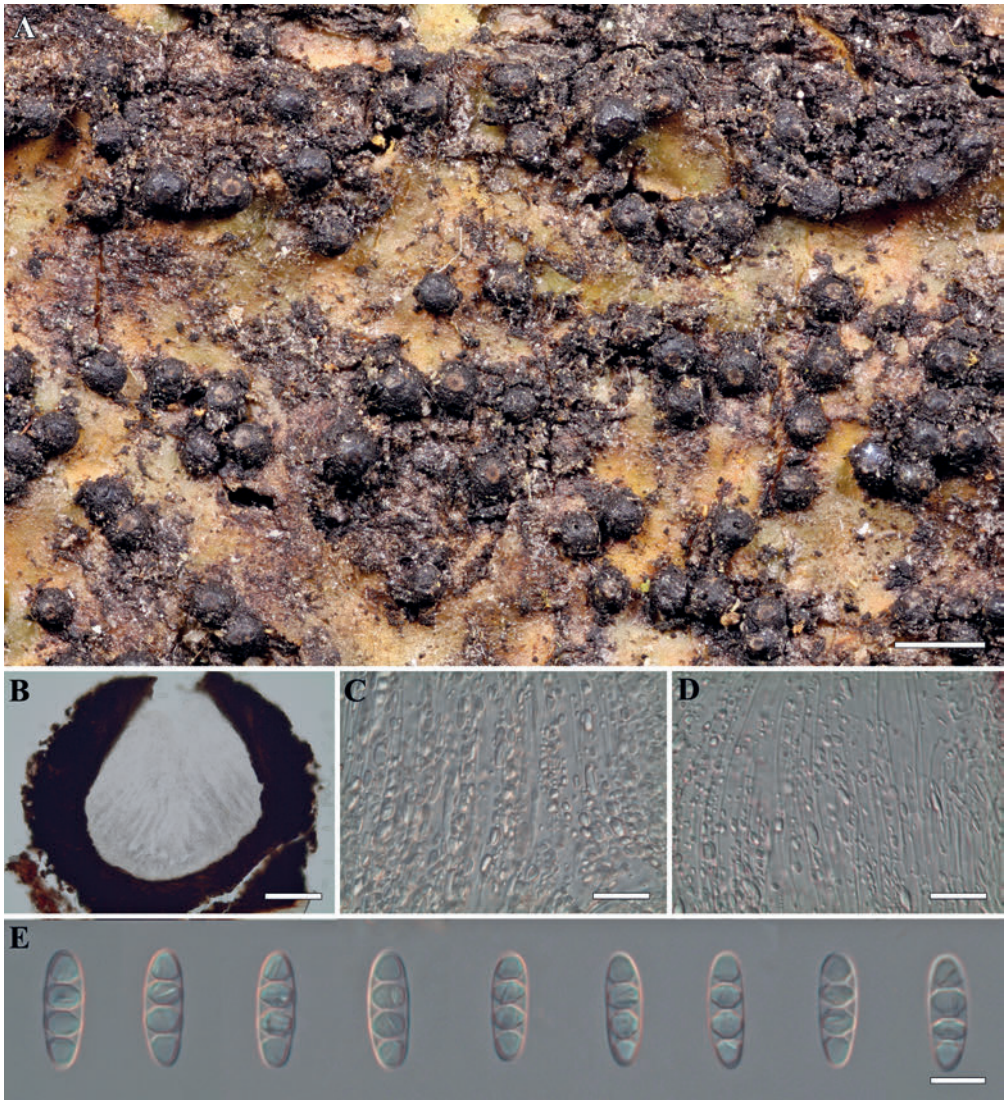

Fig. 8: *Nigrovothelium inspersotropicum* (holotype; B–E in water). **A** – thallus and perithecia, **B** – section through perithecium, **C** – lower part of hamathecium, **D** – upper part of hamathecium, **E** – ascospores. Scale bars: A = 1 mm, B = 100 µm, C–D = 20 µm, E = 10 µm.

Distribution and ecology: On the smooth bark of trees, usually in disturbed tropical forests. Currently known from Guyana and Seychelles, but probably widespread in the tropics.

Etymology: The epithet refers to the heavily inspersed hamathecium and the occurrence in the tropics.

Paratype: **Guyana**: Upper Takutu district, Dadanawa ranch, in savannah, alt. 120 m, 5 Oct.1992, H. J. M. Sipman 57981 (B).

Ocellularia ascidioidea Hale

Mahé: Morne Blanc (Loc. 7), on a tree in a cloud forest, Di 17948.

A rare tropical species, previously known only from eastern Asia (e.g. Wolseley et al. 2002), reported here as new to Africa.

Ocellularia piperis (Vain.) Aptroot

Mahé: Sans-Souci-Road, tea factory (Loc. 5), on a tree, Di 17916 (dupl. B 60 0205010).

A species previously known only from Brazil (Aptroot 2002); new to Africa.

Opegrapha medusulina Nyl.

Mahé: Beauvallon (Loc. 4), on *Cocos* near beach, Di 17904 (dupl. BR). **Thérèse**: (Loc. 8), on bark of a dead *Artocarpus altilis* near beach, Di 17965. **La Digue**: Old cemetery (Loc. 14), on trees close to the sea, Di 18034 (dupl. BR).

Known from several Seychelles islands, incl. Mahé. New to Thérèse and La Digue.

Opegrapha salmonea Ertz & Diederich **sp. nov.** [MycoBank MB820217] (Fig. 9)

Characterized by a corticolous, sterile, sorediate, greyish white thallus, salmon coloured soralia, immersed, punctiform, brownish conidiomata, hyaline, sickle-shaped conidia, 22–25 × 0.8 µm, and the presence of norstictic acid.

Type: Seychelles, La Digue, between Anse La Réunion and Anse Source d'Argent, W and N of old cemetery (4.36199°S, 55.82482°E, alt. 2–5 m), on trees close to the sea, 5 Aug. 2015, P. Diederich 18039 (BR – holotype; SEY, herb. Diederich – isotypes).

Description: **Thallus** up to c. 6 cm diam., very thin, partly endophloeodal, c. 30–100 µm thick, ecorticate, greyish white, continuous, rarely ± rimose, smooth, shining, sorediate; soralia punctiform when young, spreading and often becoming confluent, slightly convex, salmon coloured (colour fading in herbarium after one year), c. 0.5 mm diam. when isolated or up to c. 5 mm diam. when confluent, covering then large parts of the thallus; soredia c. 10–14 µm diam.; hyphae c. 1–1.5 µm diam., covered by tiny crystals dissolving in K (polarized light); prothallus absent, but a narrow dark brown borderline is present when in contact with other crustose lichens. **Photobiont** trentepohlioid; cells c. 6–10 × 5–6 µm. **Ascomata** not observed. **Conidiomata** rare, randomly dispersed over the thallus, isolated, punctiform, pycnidial, immersed in thallus, visible as brown spots of c. 40–60 µm diam. at the surface; c. 70–90 µm diam. in section; wall orange-brown, c. 7–10 µm thick. **Conidiogenous cells** hyaline, simple, cylindrical, c. 4–8 × 1–1.5 µm. **Conidia** hyaline, sickle-shaped, c. 22–25 × 0.8 µm.

Chemistry: Thallus and soralia C–, K+ yellow turning red, P+ yellow, UV–, except soralia that are UV+ dark orange. TLC (solvent B, G): norstictic acid.

Notes: The species is very characteristic by the salmon colour of soralia in fresh specimens; in herbarium specimens this colour fades after one year, but still remains a pale salmon colour. The soralia contain a high concentration of norstictic acid so that many red needle crystals are formed by addition of K (Fig. 9H). While TLC revealed only norstictic acid, the P+ yellow thallus suggests that an additional compound is present, but we could only detect norstictic acid using solvents B and G. *Opegrapha edsonii* Øvstedal & C.Schaefer is similar to the new species due to its pinkish soralia and the presence of norstictic acid, but it differs from *O. salmonea* in having a thicker (up to 1.5 mm), dark brown to brown-grey, strongly rimose to areolate thallus, and a very different ecology: saxicolous in continental Antarctica (Øvstedal & Schaefer 2013). Other sorediate *Opegrapha* species, such as *O. corticola* Coppins & P.James, *O. fumosa* Coppins & P.James and *O. multipuncta* Coppins & P.James, have a different look and a different chemistry (Pentecost & James 2009). The generic placement of the new species is tentative in the absence of ascomata and molecular data (attempts to sequence the species failed), but we are unaware of another similar sorediate species in other genera of lichenized fungi.

A foliicolous specimen similar to *Opegrapha salmonea*, also reacting K+ red and P+ yellow (TLC in solvents B and G: norstictic acid), was collected in Mahé, Jardin du Roi (Loc. 1) (Diederich 17820c). It is distinguished by the discontinuous thallus composed of small areoles, sometimes with strongly convex salmon coloured soredia (Fig. 9I–J). It was found on a leaf with *Byssoloma subdiscordans* and *Enterographa pallidella*. Further studies are necessary to determine if it belongs to the same species.

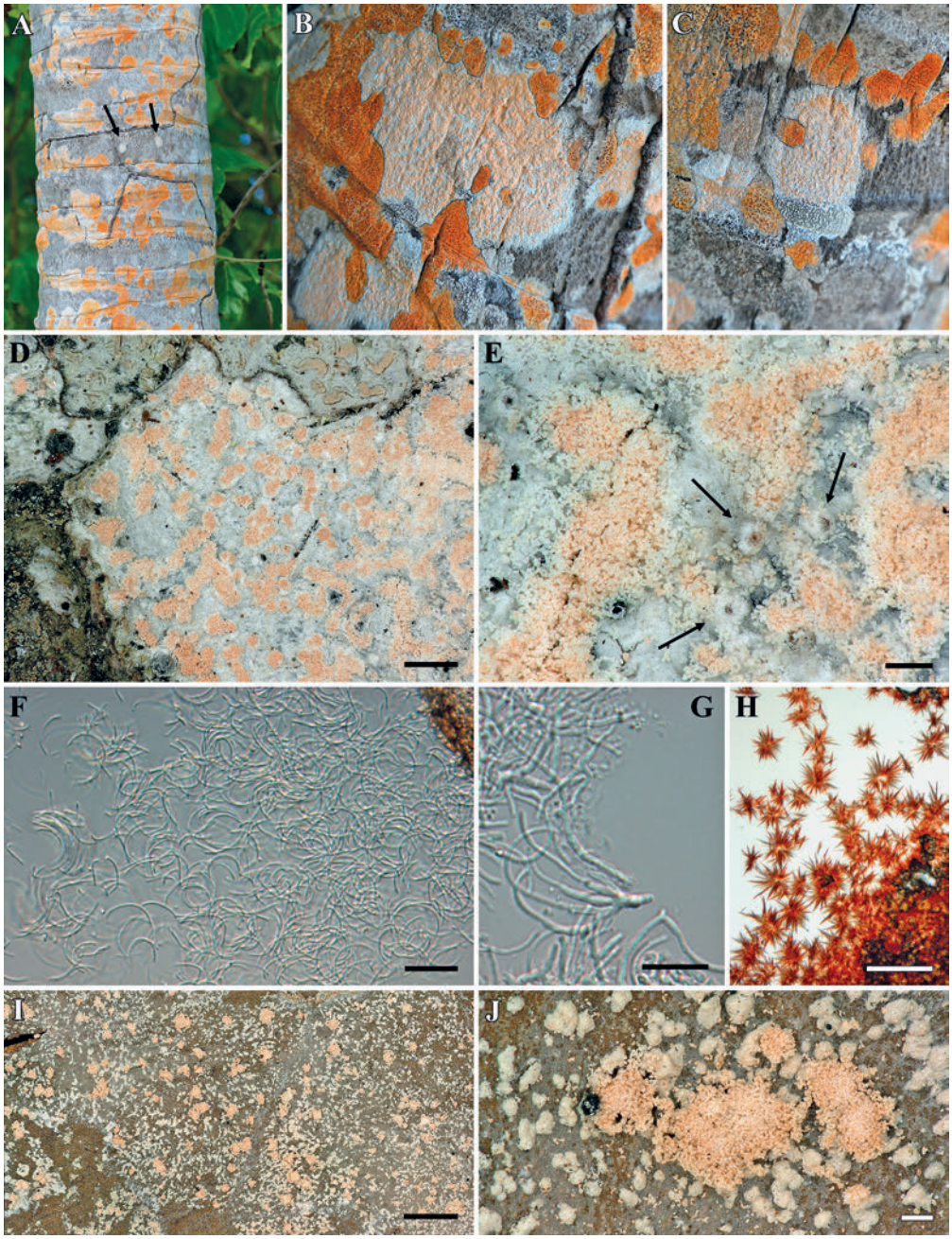

Fig. 9: **A–H –** *Opegrapha salmonea* (A–C – Praslin, Anse La Blague, no specimen; D–H – holotype). **A–C** – habitus on *Cocos* trunk (arrows), **D** – thallus with soralia (colour slightly faded after one year in herbarium), **E** – ibid., with pycnidia (arrows), **F** – conidia, **G** – conidiogenous cells with conidia, **H** – crystals of norstictic acid in K. **I–J** – Foliicolous *Opegrapha* aff. *salmonea* (Diederich 17820c). Scale bars: I = 2 mm, D = 1 mm, E, J = 200 µm, F = 20 µm, G–H = 10 µm.

Distribution and ecology: The new species is known from four localities in Seychelles, where it inhabits the bark of trees in coastal forests or on planted *Cocos* trees. We have collected it in three localities and made photos from a fourth locality (Fig. 9A–C). The species appears to be rather common in Seychelles and should be searched for in other tropical countries.

Etymology: The epithet refers to the salmon colour of the soredia.

Paratypes: **Mahé**: Beauvallon (Loc. 4), on *Cocos* near beach, Di 17906. **Praslin**: Anse Lazio (Loc. 9), on trees in secondary forest, Di 17986 (dupl. BR). **Field observation** (without specimen): **Praslin**: Anse La Blague (4.3294° S, 55.7837° E, alt. 2 m), on *Cocos*, 7 Aug. 2015, obs. P. Diederich (Fig. 9A–C).

Opegrapha vermelhana Vain.

La Digue: Old cemetery (Loc. 14), on trees close to the sea, Di 18042.

Previously known from two African localities (Mozambique and Somalia; Ertz 2009). New to Seychelles.

Pallidogramme chlorocarpoides (Nyl.) Staiger, Kalb & Lücking

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17824.

A paleotropical species, known from Asia and Australia (Staiger 2002). Previously reported from Mahé, Praslin and Silhouette (Seaward & Aptroot 2009, Schumm & Aptroot 2010, as *Hemithecium chlorocarpoides*).

Parmotrema cristiferum (Taylor) Hale

Mahé: Jardin du Roi (Loc. 1), on rock, Di 17808. **Praslin**: Glacis Noir (Loc. 10), on trees, Di 18080. TLC (both): atranorin and salazinic acid.

A common species, known from Mahé, Praslin, La Digue and Silhouette.

Parmotrema subcorallinum (Hale) Hale

Mahé: Morne Blanc (Loc. 7), on a tree in a cloud forest, Di 17946. TLC: atranorin and protocetraric acid.

Previously known from one high altitude Mahé locality (Seaward & Aptroot 2009).

Parmotrema tinctorum (Nyl.) Hale

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17830. E of Port Glaud, along Sans-Souci-Road, parking opposite tea factory, on a tree, Di 17911. **Praslin**: Glacis Noir (Loc. 10), on granitic rock, Di 18057. TLC (all specimens): atranorin and cf. lecanoric acid.

A common species, known from Mahé, Praslin, Silhouette and Aldabra.

Phaeographis brasiliensis (A.Massal.) Kalb & Matthes-Leicht

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17826.

A tropical species, previously known from America, Australia and Réunion (Kalb 2001, Staiger 2002). New to Seychelles.

Phaeographis lindigiana Müll.Arg.

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17864a.

A pantropical species, previously known from the Botanical Gardens in Mahé (Seaward & Aptroot 2009).

Phyllopsora corallina (Eschw.) Müll.Arg.

Mahé: Jardin du Roi (Loc. 1), on rock, Di 17809. Sauzier Waterfall (Loc. 3), on tree, Di 17897. Victoria, Botanischer Garten, auf schattigen Granitfelsen, 23 Feb. 1981, A. Henssen 26802c (H 9006803). Identification of Di 17809 and 17897 confirmed by E. Timdal.

Known from Mahé and Silhouette (Schumm & Aptroot 2010, Seaward & Aptroot 2003, 2006, 2009, Timdal & Krog 2001).

Physcia cf. ***atrostriata*** Moberg

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17860. Beauvallon (Loc. 4), on *Cocos* near beach, Di 17910. **Praslin**: Anse Lazio (Loc. 9), on trees in secondary forest, Di 17978. **La Digue**: Old cemetery (Loc. 14), on trees close to the sea, Di 18221.

Previously reported from several islands, incl. Mahé, Praslin and La Digue. The Seychelles populations differ from typical *P. atrostriata* in possessing a white lower surface (instead of dark striate; see Moberg 1986, 1990, 2004) and therefore need further study.

Physcia sorediosa (Vain.) Lynge

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17847. **Praslin**: Anse Lazio (Loc. 9), on trees in secondary forest, Di 17977. **La Digue**: Old cemetery (Loc. 14), on trees close to the sea, Di 18035B, 18222.

A very common species, known from several Seychelles islands. New to La Digue.

Physma byrsaeum (Ach.) Tuck.

Mahé: Sans-Souci-Road, l'Exil (Loc. 6), on a tree, Di 17931 (dupl. DUKE). Morne Blanc (Loc. 7), on a tree in a cloud forest, Di 17955 (dupl. DUKE).

Seaward & Aptroot (2009) reported this species from several localities from Mahé and Aldabra. Schumm & Aptroot (2010) published an additional specimen from Mahé, illustrated by photographs. A further specimen collected by Schumm was used by Elvebakk et al. (2016) for molecular studies, and this specimen was eventually named *P. radians* Vain. On the basis of our current knowledge, it is not possible to distinguish between both *P. byrsaeum* and *P. radians* using morphological characters. Dr N. Magain obtained an mtSSU sequence of our specimen Di 17931, which is identical to a sequence from Réunion (JX494260) published by Magain & Sérusiaux (2014) as *P. byrsaeum*. Consequently, both *P. byrsaeum* and *P. radians* exist in Mahé in the Morne Seychellois National Park. From our second specimen, Di 17955, no sequences have been obtained; hence this specimen is only provisionally included in *P. byrsaeum*.

Placynthiella dasaea (Stirt.) Tønsberg

Mahé: Morne Blanc (Loc. 7), on soil in a cloud forest, Di 17945.

In Africa, previously known from Réunion (van den Boom et al. 2011). New to Seychelles.

Polymeridium microsporum (Makhija & Patw.) Aptroot

Mahé: Grande Anse, mangrove (Loc. 2), on tree along trail through mangrove, Di 17873.

This species was known from Asia and Oceania (Aptroot & Cáceres 2014). It is new to Africa.

Porina atrocoerulea Müll.Arg.

Mahé: Sans-Souci-Road, l'Exil (Loc. 6), foliicolous on *Cinnamomum verum*, Di 17932f.

A pantropical foliicolous lichen. New to Seychelles.

Porina corruscans (Rehm) R.Sant.

Mahé: Sans-Souci-Road, l'Exil (Loc. 6), foliicolous on *Cinnamomum verum*, Di 17932g.

A foliicolous lichen, previously reported from Praslin. New to Mahé.

Porina morelii Aptroot & Diederich **sp. nov.** [MycoBank MB820218] (Fig. 10)

Characterized by the olive green isidiate thallus, pale greenish brown perithecia, and muriform ascospores, 50–70 × 16–19 µm.

Type: Seychelles, La Digue, Veuve Reserve (4.35753°S, 55.83121°E, alt. 10–15 m), on trees, 4 Aug. 2015, P. Diederich 18020B (BR – holotype; SEY, herb. Diederich – isotypes).

Description: **Thallus** corticate, smooth, continuous, thin, olive green; **isidia** dispersed but locally numerous, simple cylindrical to usually densely branched, up to c. 300 µm high, 25–50 µm thick, surface at lower end of isidia corticate, surface near the tips ecorticate and dull. **Photobiont** *Trentepohlia*.

Ascomata perithecioid, simple, dispersed, semiglobose, emergent, 0.4–0.6 mm diam., entirely covered by a thin, pale greenish brown thallus layer, laterally weakly tomentose; wall not carbonized, with colourless crystals, K–, c. 50 µm thick; ostiole pale, apical. **Hamathecium** hyaline, not inspersed, of thin, simple, c. 1 µm diam. paraphyses. **Asci** cylindrical-clavate, I–, 8-spored. **Ascospores** hyaline, I–, euseptate, muriform, fusiform, 55–70 × 16–19 µm, surrounded by a 2–4 µm tick gelatinous sheath. **Pycnidia** not observed.

Chemistry: Thallus C–, K–, KC–, P–, UV–. No substances detected by TLC.

Notes: This species is characterized by the combination of muriform ascospores and coralloid isidia. McCarthy (1995), when discussing all *Porina* species with muriform ascospores, did not mention any species with isidia. Isidia occur in about a dozen other species of *Porina*, if the genus is taken in a wide sense as is done here. Cáceres et al. (2013), when comparing several tropical species, regarded isidia as a constant character, although McCarthy (1993) accepts at least one species, *P. tetracerae* (Afzel.) Müll.Arg., that has only "occasionally isidioid outgrowths". The new species would belong to the genus *Trichothelium* in the sense of Harris (1995), *Pseudosagedia* in the sense of Hafellner & Kalb (1995), and *Zamenhofia* in the sense of Clauzade & Roux (1986).

Distribution and ecology: On the smooth bark of trees in a primary forest. Known only from Seychelles (La Digue).

Etymology: The new species is dedicated to Mr Charles Morel, Curator of the Seychelles National Herbarium (SEY) in the Natural History Museum, Victoria, who kindly helped the first author during his collecting trip to Seychelles.

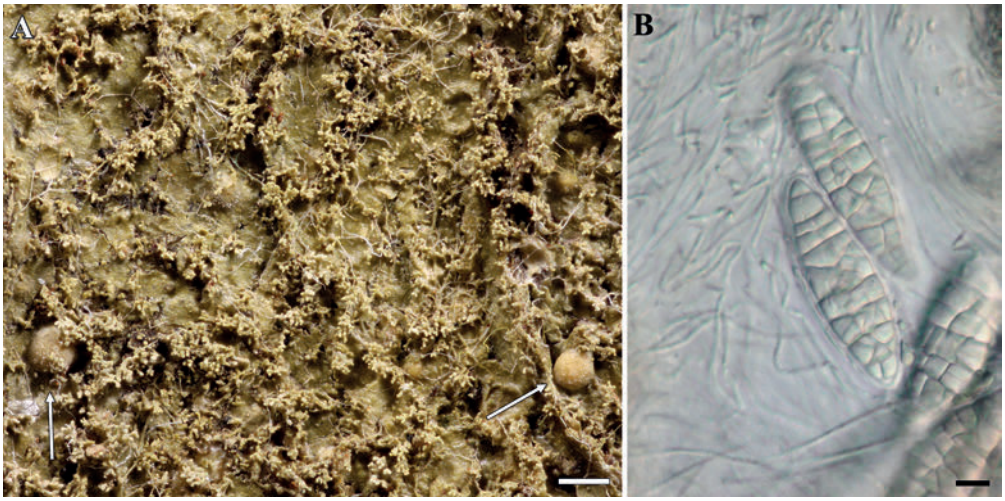

Fig. 10: *Porina morelii* (holotype). **A** – isidiate thallus with two perithecia (arrows), **B** – paraphyses and ascospores in water. Scale bars: A = 500 µm, B = 10 µm.

Porina nucula Ach.

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17852. **La Digue**: Veuve Reserve (Loc. 13), on trees, Di 18019, 18020A.

A rather common species, previously known from Mahé, Praslin, Aldabra and Silhouette. New to La Digue.

Porina rufula (Kremp.) Vain.

Mahé: Morne Blanc (Loc. 7), foliicolous in a cloud forest, Di 17956c.

A common pantropical foliicolous lichen, previously known from Mahé on Morne Seychellois (alt. 800 m) (Seaward & Aptroot 2009).

Pseudocyphellaria argyracea (Delise) Vain.

Mahé: Morne Blanc (Loc. 7), on a tree in a cloud forest, Di 17933.

Known from Mahé and Silhouette (Schumm & Aptroot 2010, Seaward & Aptroot 2003, 2006, 2009).

Pseudopyrenula media Aptroot & Diederich **sp. nov.** [MycoBank MB820219] (Fig. 11)

Similar to *Pseudopyrenula subgregaria*, but with larger ascospores, 25–30 × 7.5–8.5 µm.

Type: Seychelles, Mahé, from Victoria to Port Glaud, Morne Blanc (4.65722°S, 55.43297°E, 600–680 m), on tree twigs in a cloud forest, 30 July 2015, P. Diederich 17951 (BR – holotype; ABL, SEY, herb. Diederich – isotypes).

Fig. 11: *Pseudopyrenula media* (holotype). **A–B** – thallus and perithecia, **C** – ascospores in water. Scale bars: A–B = 500 µm, C = 10 µm.

Description: **Thallus** not corticate, dull, continuous, covering areas up to 4 cm diam., whitish, surrounded by a 0.1–0.2(–1) mm wide black hypothallus line. **Photobiont** *Trentepohlia*. **Ascomata** perithecioid, rounded to ellipsoid, conical, 0.4–0.9 mm diam., single or rarely two fused, emergent from the thallus; wall carbonized, up to c. 80 µm thick; ostiole apical, not fused, flat, black. **Hamathecium** inspersed with yellow, round to elongated oil globules up to 5 µm wide. **Asci** 8-spored. **Ascospores** hyaline, 3-septate, fusiform, 25–30 × 7.5–8.5 µm, ends pointed, lumina diamond-shaped, not surrounded by a gelatinous layer. **Pycnidia** not observed.

Chemistry: Thallus C–, K–, KC–, P–, UV–. No substances detected by TLC.

Notes: The presence of copious yellow oil droplets in the hamathecium is a rare character in lichens (and indeed in Ascomycetes). It is known from three genera in the Trypetheliaceae, viz. *Astrothelium*, *Polymeridium* and *Pseudopyrenula*. In the latter genus it occurs in the common species *P. subgregaria* Müll.Arg. (which was resurrected by Aptroot & Lücking 2016) and in a few rarer species, incl. *P. endoxantha* Vain. *P. subgregaria* s. str. differs in possessing smaller ascospores (21–25 × 6–9 µm), and *P. endoxantha* in its larger ascospores (37–44 × 10–12 µm); hence the name *P. media* for this new species. *P. diluta* (Fée) Müll.Arg. s. str. has ascospores of a similar size, but never a hamathecium inspersed with yellow oil droplets, although yellow oil regularly occurs within the ascus, especially in the ascospores (see Schumm & Aptroot 2013). The new species was already keyed out in the key by Aptroot & Lücking (2016). A yellow hamathecium has been reported from *P. diluta* s. lat. by Harris (1998), but the concept of this species includes a dozen species as currently accepted, including, for example, *P. subgregaria* and other species with smaller ascospores and/or lichexanthone.

Distribution and ecology: On the smooth bark of trees in a primary cloud forest. Known only from the type locality in Seychelles (Mahé).

Etymology: The epithet refers to the ascospores that are intermediate in size between those of *Pseudopyrenula subgregaria* and *P. endoxantha*.

Pseudopyrenula subgregaria Müll.Arg.

Praslin: Glacis Noir (Loc. 10), on trees, Di 18066, 18069.

Known from Praslin (Schumm & Aptroot 2010).

Pyrenula confinis (Nyl.) R.C.Harris

Mahé: Grande Anse, mangrove (Loc. 2), on *Cocos* along trail through mangrove, Di 17879.

Known from Mahé, Praslin, Aldabra and Silhouette.

Pyrenula leucostoma Ach.

La Digue: Old cemetery (Loc. 14), on trees close to the sea, Di 18048.

Previously known from Mahé, Aldabra and Silhouette. New to La Digue.

Pyrenula massariospora (Starbäck) R.C.Harris

Mahé: Morne Blanc (Loc. 7), on a tree in a cloud forest, Di 17950.

Previously known from Silhouette (Seaward & Aptroot 2003). New to Mahé.

Pyrenula microcarpa Müll.Arg.

Mahé: Grande Anse, mangrove (Loc. 2), on tree along trail through mangrove, Di 17872. **Praslin**: Glacis Noir (Loc. 10), on trees, Di 18051.

Known from several Seychelles islands, incl. Mahé and Praslin.

****Pyrenula nitidula*** (Bres.) R.C.Harris & Aptroot

Praslin: Glacis Noir (Loc. 10), on trees, Di 18068.

A pantropical species, new to Seychelles.

Pyrenula ochraceoflava (Nyl.) R.C.Harris

Mahé: Grande Anse, mangrove (Loc. 2), on *Cocos* along trail through mangrove, Di 17867. Beauvallon (Loc. 4), on *Cocos* near beach, Di 17905. **Thérèse**: (Loc. 8), on bark of a dead *Artocarpus altilis* near beach, Di 17959. **Praslin**: Anse Lazio (Loc. 9), on trees in secondary forest, Di 17990. **La Digue**: Old cemetery (Loc. 14), on trees close to the sea, Di 18027, Di 18048B.

A very common pantropical species, known from several Seychelles islands, incl. Mahé, Praslin and La Digue. New to Thérèse.

Pyrenula parvinuclea (Meyen & Flotow) Aptroot

Thérèse: (Loc. 8), on bark of a dead *Artocarpus altilis* near beach, Di 17968. **Praslin**: Anse Volbert (Loc. 12), on bark of a tree near beach, Di 17971.

Known from several Seychelles islands, incl. Mahé and Praslin (Schumm & Aptroot 2010, Seaward & Aptroot 2003, 2006, 2009). New to Thérèse.

Pyrenula pyrenuloides (Mont.) R.C.Harris

La Digue: Old cemetery (Loc. 14), on trees close to the sea, Di 18028.

Previously known from Mahé and Aldabra (Seaward & Aptroot 2009). New to La Digue.

****Pyrenula sexlocularis*** (Nyl.) Müll.Arg.

La Digue: Veuve Reserve (Loc. 13), on trees, Di 18021, 18022.

A pantropical species, new to Seychelles.

Pyxine cocoes (Sw.) Nyl.

La Digue: Old cemetery (Loc. 14), on trees close to the sea, Di 18045.

A common species, known from several Seychelles islands, incl. Mahé. New to La Digue.

Pyxine copelandii Vain.

Thérèse: (Loc. 8), on bark of a dead *Artocarpus altilis* near beach, Di 17962. **Praslin**: Anse Lazio (Loc. 9), on trees in secondary forest, Di 17980. Glacis Noir (Loc. 10), on trees, Di 18072, 18079. **La Digue**: Old cemetery (Loc. 14), on trees close to the sea, Di 18220.

Known from several Seychelles islands, incl. Mahé, Praslin and La Digue. New to Thérèse.

Pyxine retirugella Vain.

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 17829 (sub *Dirinaria picta*). Grande Anse, mangrove (Loc. 2), on *Cocos* along trail through mangrove, Di 17869 (sub *Dirinaria picta*). **Praslin**: Anse Lazio (Loc. 9), on trees in secondary forest, Di 17979, 17994. **La Digue**: Old cemetery (Loc. 14), on trees close to the sea, Di 18046.

Known from several Seychelles islands, incl. Mahé, Praslin and La Digue.

Ramalina fecunda Krog & Swinscow

Praslin: Glacis Noir (Loc. 10), on trees, Di 18086 (dupl. LG). Anse Gouvernement (Loc. 11), on trees in mangrove, Di 18091 (dupl. LG). **La Digue**: Old cemetery (Loc. 14), on trees close to the sea, Di 18036 (dupl. LG). Det. E. Sérusiaux.

A rather common species, known from several Seychelles islands, incl. Mahé and La Digue. New to Praslin.

Ramichloridium tropicum U.Braun & Diederich **sp. nov.** [MycoBank MB820220] (Figs 12–13)

Differs from *Ramichloridium cladoniicola* in having much longer conidiophores, 60–180 µm, usually 4–9-septate, thin-walled throughout (wall c. 0.5 µm), arising from internal hyphae, sometimes with an irregular, geniculate-sinuous base, occasionally arising from a swollen hyphal cell (but not consistently so as in *R. cladoniicola*), and conidia medium brown.

Type: Seychelles, Mahé, from Victoria to Port Glaud, along Sans-Souci-Road, l'Exil (4.65149°S, 55.45085°E, alt. 450 m), on an unidentified crustose lichen on a tree, 30 July 2015, P. Diederich 17930 (BR – holotype; SEY, herb. Diederich – isotypes).

Description: **Colonies** on thalli, effuse or forming small spots, subcircular to irregular, greyish black. **Mycelium** immersed; hyphae straight to sinuous or geniculate-sinuous, sparingly branched, 1–3.5 µm wide, subhyaline, pale olivaceous to medium brown, thin-walled, hyphae near arising conidiophores often smooth or almost so, otherwise smooth to delicately verruculose. **Stromata** not developed. **Conidiophores** solitary, arising from internal hyphae or somewhat swollen hyphal cells, erect, straight to curved or sinuous, often upper part straight and base curved, subcylindrical-filiform or narrowly setiform, usually somewhat attenuated towards the tip, occasionally somewhat swollen at the very base, 60–180 × 1.5–4 µm, outline even to uneven, with small swellings or constrictions (subnodulose), mostly indistinctly 4–9-septate, basal septum at the junction with the mother cell or somewhat elevated, pale to usually medium brown, paler towards the apex, tip usually pale olivaceous or subhyaline, thin-walled (wall c. 0.5 µm wide), smooth, conidiophores occasionally with enteroblastic-percurrent rejuvenation; conidiogenous cells integrated, terminal, 15–40 µm long, with several conidiogenous loci, scattered, minutely denticulate, not very conspicuous. **Conidia** solitary, obovoid, ellipsoid-obovoid, occasionally subglobose, 3.5–7 × 2.5–4 µm, aseptate, medium brown, thin-walled (wall 0.3–0.5 µm), smooth or almost so, apex obtuse, rounded, base rounded to slightly pointed, with a minute, barely visible basal hilum.

Notes: Based on aseptate, brown conidia, polyblastic terminal conidiogenous cells with numerous minute loci and unbranched conidiophores arising from internal hyphae or swollen vegetative cells, the new lichenicolous species from Seychelles can readily be assigned to *Ramichloridium* (Arzanlou et al. 2007). *R. tropicum* is morphologically similar to *R. cladoniicola* U.Braun & Heuchert (Braun et al. 2009), the only other lichenicolous species in this genus, which differs in having much shorter conidiophores 10–70 × 2–5 µm, arising from swollen hyphal cells, only (0–)1–4-septate, with thickened walls, at least in the lower half, 0.5–1 µm wide, and subhyaline to pale olivaceous or pale brown conidia.

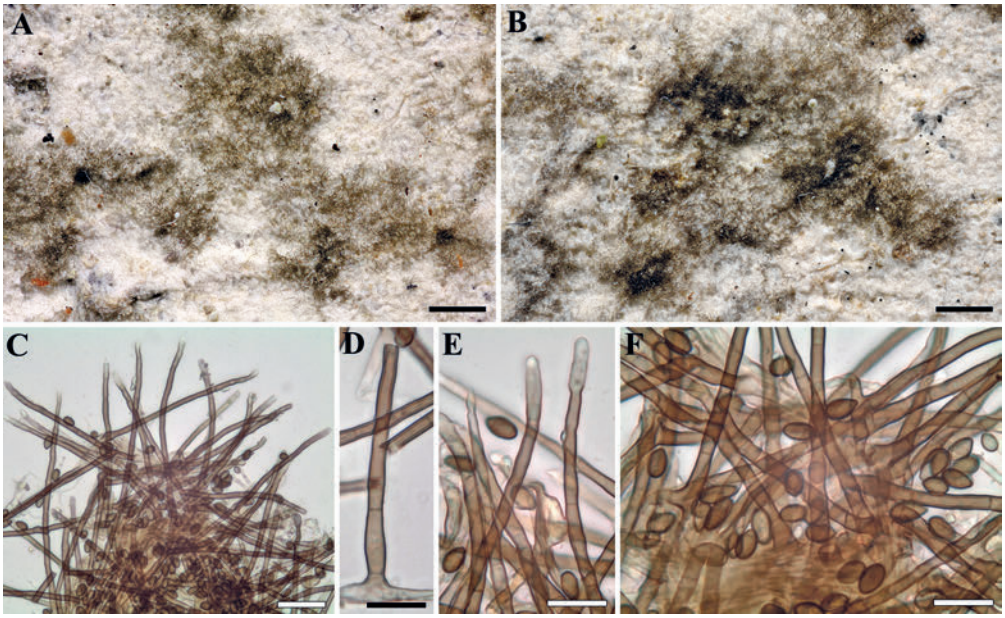

Fig. 12: *Ramichloridium tropicum* (holotype). **A–B** – colonies on thallus of unidentified host, **C–F** – conidiophores, conidiogenous cells and conidia in water. Scale bars: A–B = 500 µm, C = 20 µm, D–F = 10 µm.

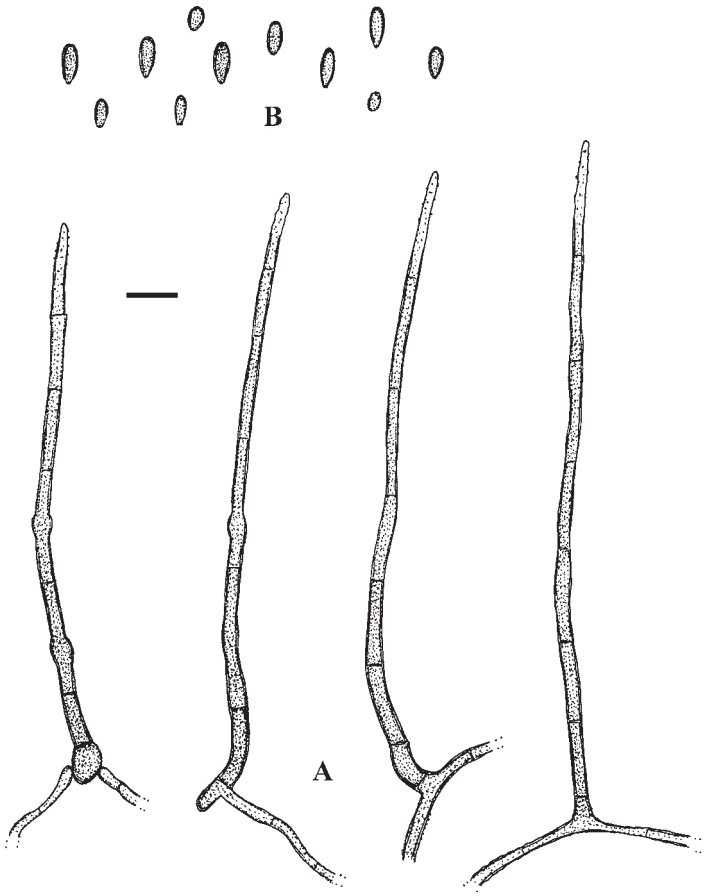

Fig. 13: *Ramichloridium tropicum* (holotype). **A** – conidiophores, **B** – conidia. Scale bar = 10 µm (U. Braun del.).

Among other *Ramichloridium* spp., *R. tropicum* belongs to a group of species close to *R. apiculatum* (J.H.Mill., Giddens & A.A.Forster) de Hoog, the type species of the genus, which have pigmented conidia. The conidiophores of *R. apiculatum* are up to 100 µm long, but only 0–2(–3)-septate, and the conidia are verruculose (de Hoog 1977, Arzanlou et al. 2007). Besides other characters, all other species of this group differ from *R. tropicum*, a species with medium brown conidia, in having pale olivaceous to paler brown conidia. *R. cucurbitae* Mayfield, Batzer & Crous, a North American species on fruits of *Cucurbita maxima*, has similar smooth conidia, but the 0–3-septate conidiophores are much shorter, 3–90 × 2–3 µm (Li et al. 2012). The conidia in *R. anceps* (Sacc. & Ellis) de Hoog (= *Veronaea parvispora* M.B.Ellis) are also smooth, but very small, only 2–3 × 1.5–2 µm (de Hoog & Hermanides-Nijhof 1977). Other comparable species differ in having verruculose conidia combined with additional striking differences: *R. bicellularipes* R.Kirschner (vegetative hyphae verruculose; conidiophores to 235 µm long, 7–16-septate; conidia only 2–2.5 µm wide), *R. brasilianum* Arzanlou & Crous (conidia only 2–2.5(–3) µm wide), *R. eucleae* Crous & van der Linde (conidia 1-septate and much larger, (9–)13–14(–15) × (4–)5 µm), *R. luteum* G.Y.Sun, H.Y.Li & Crous (conidiophores only 2–3 µm wide, 1–3-septate; conidia (6–)7–10(–13) µm long), and *R. punctatum* Mayfield, Batzer & Crous (conidiophores 1–3-septate, conidia (5–)8–10(–12) µm long) (Arzanlou et al. 2007, Kirschner & Chen 2010, Li et al. 2012, Crous et al. 2014). Other species assigned to *Ramichloridium* are not comparable and quite distinct by having colourless, verruculose, and much larger or subglobose conidia.

Distribution and hosts: The new species is known only from the type locality in Seychelles (Mahé), where it has been collected on the white thallus (K+ yellow, C+ red, P–) of an unidentified crustose lichen with *Trentepohlia*, on the bark of an unidentified tree in a disturbed rainforest.

Etymology: The epithet refers to the occurrence of the new species in the tropics.

***Ramonia rappii** Vězda (Fig. 14)

Mahé: Jardin du Roi (Loc. 1), on a tree, Di 18230.

This species was hitherto known only from the type specimen collected in Florida in 1931 (Aptroot et al. 2015, Lendemer & Knudsen 2008a, Vězda 1966). The Seychelles specimen is rather small, but agrees well with the original description: ascomata 250–400 µm diam. (vs. 300–400 in the original description), hymenium 90–110 µm tall (vs. 75–85 µm), ascospores 8/ascus, 3-septate, 13.5–16(–16.5) × 4.5–5.5 µm (vs. 13–15 × 4–5 µm). The similar *R. eungellae* Kalb differs by its much longer ascospores, 18–20 × 4.5 µm (Kalb 2001). New to Africa.

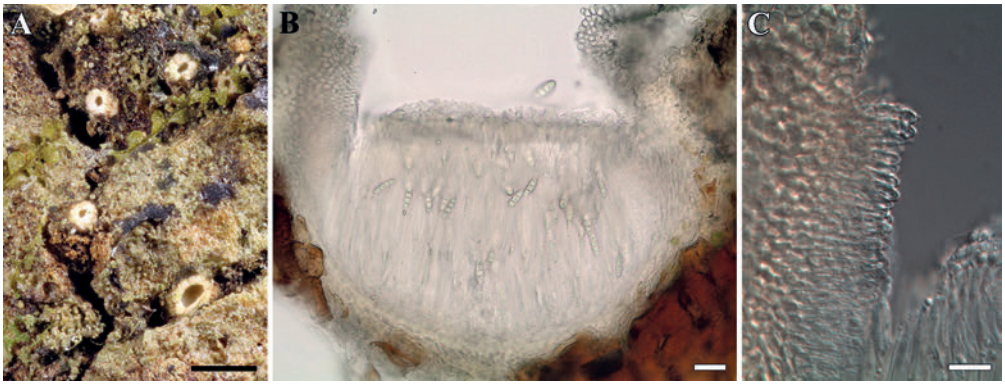

Fig. 14: *Ramonia rappii* (Diederich 17843B). **A** – ascomata, **B** – section through ascoma in water, **C** – periphysoids in water. Scale bars: A = 500 µm, B = 20 µm, C = 10 µm.

***Roselliniella cladoniae** (Anzi) Matzer & Hafellner

Mahé: Morne Blanc (Loc. 7), on *Cladonia mauritiana*, on a tree in a cloud forest, Di 17939.

A common and widespread lichenicolous ascomycete, confined to *Cladonia* thalli. New to Seychelles.

Rubrotricha helminthospora (R. Sant.) Lücking, Sérus. & Vězda

Mahé: Morne Blanc (Loc. 7), foliicolous in a cloud forest, Di 17956a.

A common foliicolous lichen in tropical Africa (Lücking 2008), known from Mahé (Seaward & Aptroot 2009).

***Sarcographa maculosa** Stirt.

Mahé: Sans-Souci-Road, tea factory (Loc. 5), on a tree, Di 17912.

A rare tropical species, previously known from India (type) and Thailand (http://joomlas.ru.ac.th/lichen/index.php/herbarium/checklist). New to Africa.

Sarcographa praslinensis Lücking & Diederich **sp. nov.** [MycoBank MB820221] (Fig. 15)

Characterised by a light olive thallus, ascomata with a massive, carbonized hypothecium and discs divided by transverse fissures, brown, (3–)5-septate ascospores, 20–30 × 7–9 µm, and the absence of secondary metabolites.

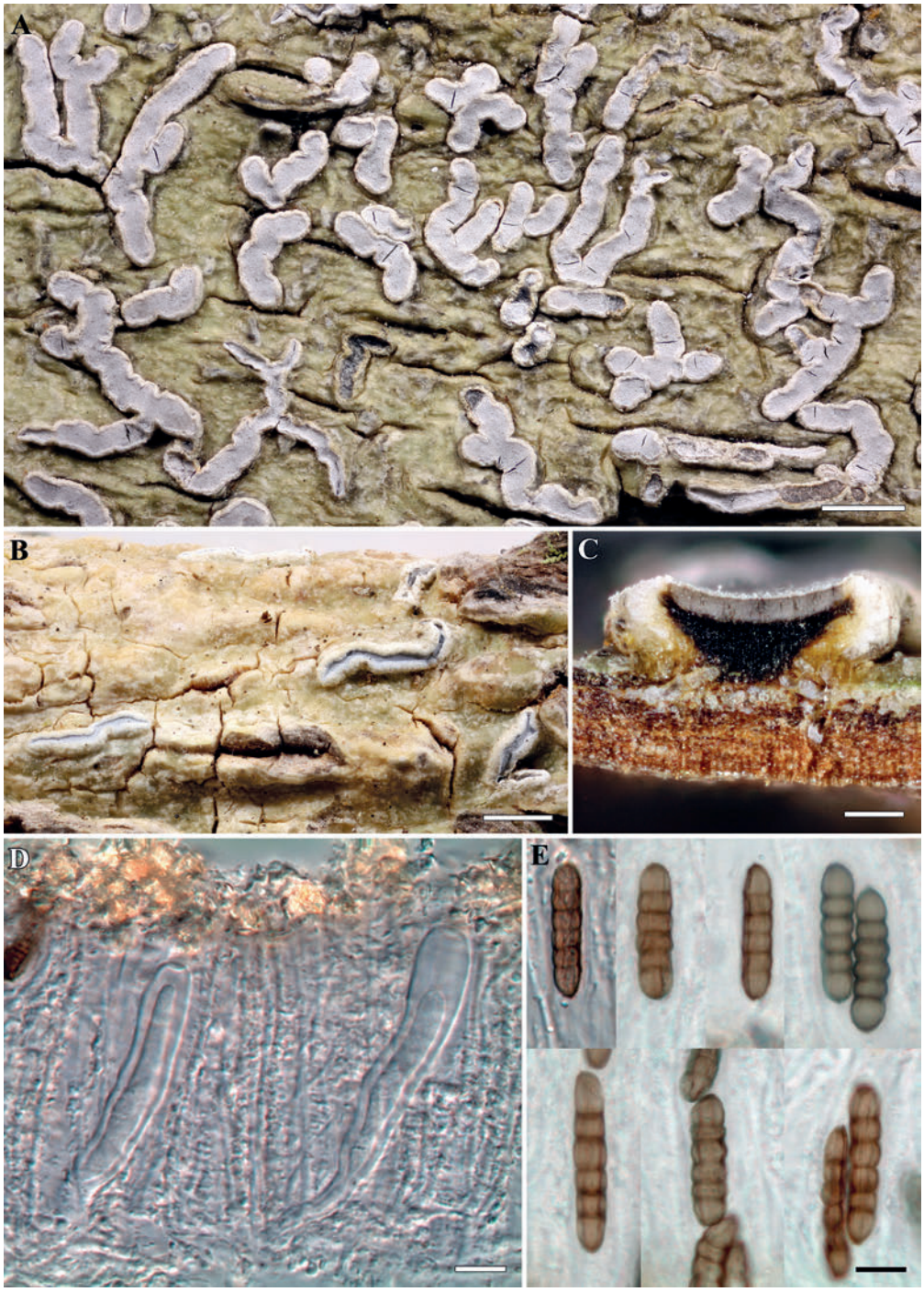

Fig. 15: *Sarcographa praslinensis* (A, C–E, holotype; B, Diederich 18070). **A–B** – thallus and ascomata, **C** – macroscopical section through ascoma, **D** – hymenium and asci, **E** – ascospores (D–E in K). Scale bars: A–B = 2 mm, C = 200 µm, D–E = 10 µm.

Type: Seychelles, Praslin, Anse Gouvernement (4.32117°S, 55.76125°E, alt. 5 m), on trees in mangrove, 7 Aug. 2015, P. Diederich 18092 (B 60 0205008 – holotype; SEY, herb. Diederich – isotypes).

Description: **Thallus** crustose, corticolous, epiperidermal, continuous, up to 10 cm diam.; surface smooth to uneven, light olive-green to olive-yellow, slightly nitidous; thallus in section 100–150 µm thick, with prosoplectenchymatous cortex, 10–20 µm thick, distinct photobiont layer, 20–40 µm thick, and thick medulla, 70–100 µm thick, with large clusters of calcium oxalate crystals. **Photobiont** *Trentepohlia*, cells rounded to irregular in outline, 8–12 × 6–10 µm, green. **Ascomata** lirelliform, prominent to sessile, unbranched to irregularly branched, somewhat flexuous, 3–10 mm long, 0.7–1.1 mm wide, 0.3–0.5 mm high; disc fully exposed, brown-black but thickly white-pruinose and therefore appearing consistently light grey, with scattered transverse fissures; proper margin indistinct, labia formed by thalline margin without algae but with large clusters of calcium oxalate crystals and thick, yellowish white cover. **Excipulum** laterally uncarbonized, 10–20 µm broad, hyaline to pale yellowish brown, laterally covered by massive thalline layer without algae. **Hymenium** 120–150 µm high, strongly inspersed and appearing pale sordid yellowish; epihymenium granular, 10–20 µm high, grey-brown; hypothecium massive and carbonized, 100–300 µm high, brown-black. **Asci** fusiform to clavate, 110–120 × 10–12 µm. **Ascospores** 8 per ascus, brown, (3–)5-septate, with thickened septa and lens-shaped lumina (distoseptate), oblong, 20–30 × 7–9 µm, I+ vine-red.

Chemistry: Medulla K–, P–. No substances detected by TLC.

Notes: This new species is placed in *Sarcographa* on account of the light olive thallus, the ascomata with massive, carbonized hypothecium and discs divided by transverse fissures, and the brown ascospores. Secondary substances are absent, but several other species in the genus lack these as well. *Sarcographa dilatata* (Vain.) Zahlbr., which is not a species of *Leiorreuma* as proposed by Staiger (2002), differs in the flat, more or less immersed, darker ascomata lacking distinct labia and in the 3-septate, smaller ascospores. *Sarcographa megistocarpa* (Leight.) M.Cáceres & Lücking agrees with *S. praslinensis* in the sessile to prominent ascomata with divided discs, but the ascomata are much darker grey-black and have thin, black labia, and the ascospores are 7–9-septate (Cáceres et al. 2012).

Distribution and ecology: Known from only two localities on Praslin. In the type locality, the new species grows on trees in a small mangrove, and in the second locality, on trees along a trail through a much disturbed secondary forest.

Etymology: Named after the Seychelles island Praslin on which the new species has been collected.

Paratypes: **Praslin**: Glacis Noir (Loc. 10), on trees, Di 18070, 18083.

Sarcographa ramificans (Kremp.) Staiger

La Digue: Old cemetery (Loc. 14), on trees close to the sea, Di 18041.

A pantropical species (Staiger 2002), new to Africa.

Sarcographa subglobosa Lücking & Diederich **sp. nov.** [MycoBank MB820222] (Fig. 16)

Characterised by the prominent to sessile, hemispherical to subglobose pseudostromata with numerous individual lirellae. 3–5-septate ascospores, 15–20 × 6–7 µm, and the presence of stictic acid.

Type: Seychelles, Mahé, from Victoria to Port Glaud, Morne Blanc (4.65722°S, 55.43297°E, 600–680 m), on a tree in a cloud forest, 30 July 2015, P. Diederich 17949 (B 60 0205006 – holotype; SEY, herb. Diederich – isotypes).

Description: **Thallus** crustose, corticolous, epiperidermal, continuous, up to 3 cm diam.; surface smooth, light olive-green, nitidous; thallus in section 50–100 µm thick, with prosoplectenchymatous cortex, 10–20 µm thick, distinct photobiont layer, 30–50 µm thick, and indistinct medulla, 10–30 µm thick, with scattered clusters of calcium oxalate crystals. **Photobiont** *Trentepohlia*, cells rounded to irregular in outline, 8–11 × 7–10 µm, green. **Ascomata** aggregate and completely immersed in distinct pseudostromata, rounded to irregular in outline or shortly elongate, 0.1–0.2 mm long, 0.1 mm wide, 0.3–0.5 mm high; disc partially exposed, brown-black, white-pruinose; labia entire, brown-black; pseudostromata prominent to sessile, hemispherical to subglobose, 2–6 mm long, 1–3 mm wide,

0.8–1.2 mm high, white, with numerous (c. 100–300) individual ascomata separated from each other by white, pseudostromatic tissue. **Excipulum** of individual ascomata carbonized, 10–20 µm broad laterally, brown-black; pseudostromatic tissue between excipula formed by compacted hyphae strongly encrusted with numerous grey crystals dissolving in K. **Hymenium** 70–80 µm high, strongly inspersed and appearing pale sordid yellowish brown; epihymenium granular, 5–10 µm high, grey-brown; hypothecium massive and carbonized, 300–500 µm high, brown-black. **Asci** fusiform to clavate, 70–80 × 10–12 µm. **Ascospores** 8 per ascus, pale brown, 3–5-septate, with thickened septa and lens-shaped lumina (distoseptate), oblong, 15–20 × 6–7 µm, I+ vine-red.

Chemistry: Medulla and pseudostromatic tissue in microscopic section with K+ persistently yellow efflux, in surface view P+ orange. TLC: stictic acid.

Notes: The genus *Sarcographa* lacks a modern revision, and its delimitation from other genera, such as *Leiorreuma* and *Phaeographis*, is unresolved (Rivas Plata et al. 2013). While the type of the genus is unique in its morphology and chemistry, species typically assigned to *Sarcographa* s. str. share the olive-green thallus (white in *Leiorreuma*), the pseudostromatic ascomata, often with secondarily divided discs and with massive, carbonized hypothecium, and the stictic acid chemistry. The present species belongs in this core group, but differs from all other known species of the genus by the prominent to sessile, hemispherical to subglobose pseudostromata with numerous individual lirellae. Prominent to sessile pseudostromata are also found in a few other species, such as *S. difformis* (Vain.) Zahlbr. and *S. heteroclita* (Mont.) Zahlbr., but there the pseudostromata consist of single, large ascomata with divided discs. The ascoma pattern of *S. subglobosa* is more reminiscent of that of *S. maculosa* (A.W.Archer)

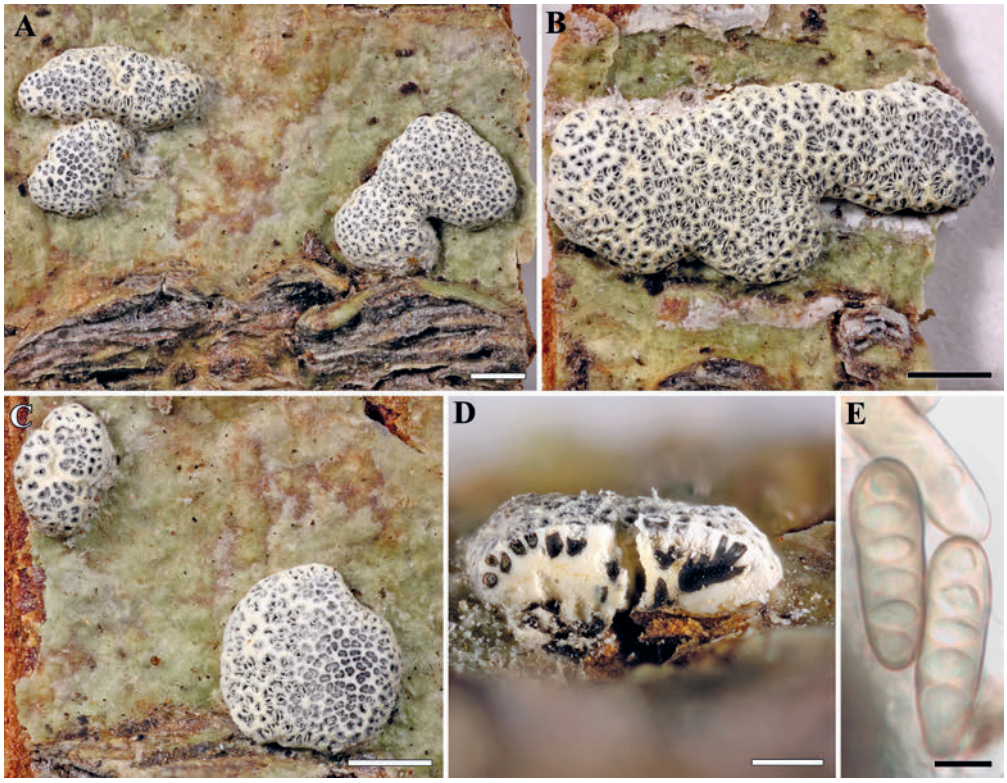

Fig. 16: *Sarcographa subglobosa* (holotype). **A–C** – thallus and pseudostromata with ascomata, **D** – section through pseudostroma, **E** – ascospores in water. Scale bars: A–C = 1 mm, D = 500 µm, E = 5 µm.

Aptroot & Sparrius and other similar species in the *S. labyrinthica* (Ach.) Müll.Arg. aggregate, but the latter species have flat pseudostromata.

Distribution and ecology: Known only from the type locality in Seychelles (Mahé), on the bark of trees in a primary cloud forest.

Etymology: Named after the subglobose pseudostromata.

Sphaerellothecium cinerascens Etayo & Diederich (Fig. 17)

Mahé: Morne Blanc (Loc. 7), on a tree in a cloud forest, on squamules of *Cladonia* sp. on dead wood, Di 17942 (sub *Lepraria arbuscula*).

This lichenicolous pyrenomycete was hitherto known only from Europe, where it appears to be confined to *Cladonia parasitica*, a host species as yet unrecorded from Seychelles. The discovery of this species in a cloud forest, at an altitude above 600 m, is rather unexpected. The host thallus consists of a few minuscule squamules and although it is too small for identification, it is unlikely to belong to *C. parasitica*. New to Africa.

Spirographa fusisporella (Nyl.) Zahlbr.

La Digue: Old cemetery (Loc. 14), on a tree close to the sea, in the hymenium of *Lecanora* gr. *chlarotera*, Di 18228.

A relatively rare lichenicolous ascomycete, originally described from the hymenium of *Graphis* from Cuba, and later reported from other host genera, including *Lecanora* (Giralt & Gómez-Bolea 1988, as *Pleospilis ascaridiella*). New to Africa.

Sporopodium flavescens (R.Sant.) Vězda

Mahé: Morne Blanc (Loc. 7), foliicolous in a cloud forest, Di 17956d.

An eastern paleotropical foliicolous lichen (Lücking 2008). New to Africa.

Sticta cyphellulata (Müll.Arg.) Hue

Mahé: Morne Blanc (Loc. 7), on a tree in a cloud forest, Di 17934A (dupl. LG) (det. E. Sérusiaux).

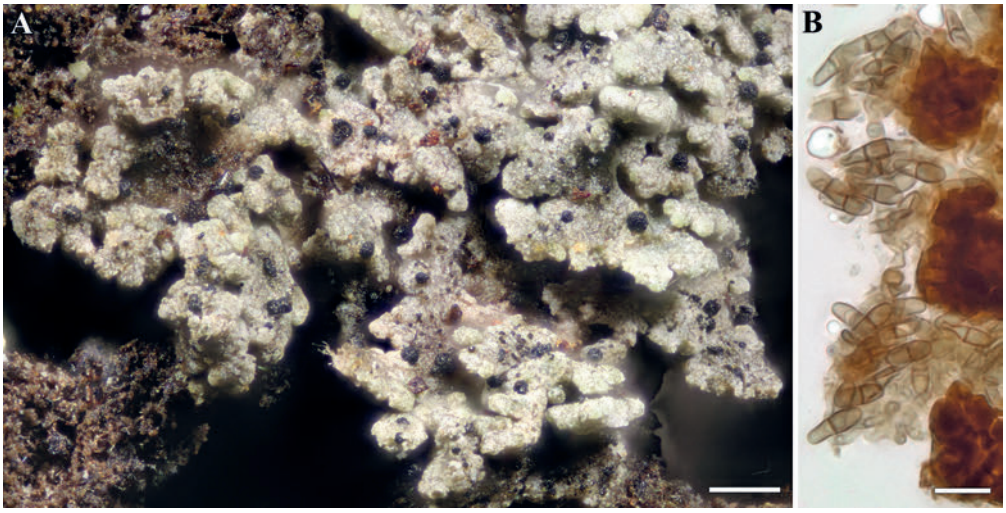

Fig. 17: *Sphaerellothecium cinerascens* (Diederich 17942). **A** – perithecia parasitizing the thallus of *Cladonia* sp., **B** – squash preparation of perithecium with ascospores in water. Scale bars: A = 200 µm, B = 10 µm.

Previously known from Mahé (Morne Blanc, alt. 590 m; Trois Frères, alt. 600–750 m; Schumm & Aptroot 2010, Seaward & Aptroot 2009) and Silhouette (Mon Plaisir, alt. 590 m; Seaward & Aptroot 2003).

Sticta weigelii (Ach.) Vain.

Mahé: Morne Blanc (Loc. 7), on a tree in a cloud forest, Di 17934B (dupl. LG) (det. E. Sérusiaux).

Previously known from Mahé (Trois Frères, alt. 600–750 m; Seaward & Aptroot 2009) and Silhouette (Mont Dauban, alt. 740 m; Seaward & Aptroot 2003).

Stictographa dirinariicola Diederich & Ertz **sp. nov.** [MycoBank MB820223] (Fig. 18)

Characterized by very small ascomata, 100–150 × 75–100 µm, ascospores measuring 15.0–17.8 × 6.3–7.8 µm and the lichenicolous habitat on *Dirinaria*.

Type: Seychelles, Aldabra, Ile Picard (West Island), settlement, coconut bark, on thallus of *Dirinaria picta*, 11 Sept. 1969, J. Taylor (BM 000764907 – holotype).

Description: **Ascomata** lichenicolous, black, short lirelliform, simple, dispersed, immersed when young, later slightly erumpent but never becoming superficial, 100–150(–180) × 75–100 µm, disk slit-like or ellipsoid, margin 20–40 µm. **Mycelium** immersed, colourless, inconspicuous. **Excipulum** well-developed, entire but basally paler, brown, K– (slightly darker and less reddish), laterally dark brown, 17–38 µm thick, basally pale to medium brown, 12–30 µm, of roundish to polyhedral cells, 4–10 µm diam., wall with a granulose pigmentation when old. **Periphyses** not observed. **Hymenium** hyaline or partly brownish, 40–80 µm tall, K–, I–, K/I–; epihymenium and subhymenium indistinct. **Interascal filaments** abundant when young, rare when mature, branched to anastomosed, cells 2.5–3.5 µm thick (up to 4.5 µm thick in K), hyaline. **Asci** clavate, with a narrower base, thick-walled, fissitunicate, wall apically 3–7 µm thick, with a distinct ocular chamber, I– and K/I–, endoascus I+ and K/I+ orange red, 8-spored, 29–47 × 15–18 µm. **Ascospores** 1-septate, strongly constricted at the septum, upper cell more or less roundish, lower cell similar in shape or more often narrower, pale brown, becoming medium brown at maturity, I– and K/I–, (14.3–)15.0–17.8(–18.7) × (5.5–)6.3–7.8(–9.0) µm (n=26), wall smooth, pigmentation uniform or slightly granulose when old, 0.5 µm thick, perispore not observed. **Conidiomata** not observed.

Notes: This species belongs to *Melaspilea* Nyl. in the old sense. Ertz & Diederich (2015) and Ertz et al. (2016) have shown, using nuclear and mitochrondrial markers, that *Melaspilea* s. lat. is polyphyletic, and that *Melaspilea* s. str. comprises a small number of species in the Melaspileaceae (Eremithallales), whilst most other species need to be transferred to other genera in the Asterotexiales. Within the currently described genera, the type species of *Labrocarpon* Etayo & Pérez-Ortega (2010) and *Stictographa* Mudd (1861) are morphologically very similar to our new species, and Ertz & Diederich (2015) even wondered if both genera might be synonyms, although these species did not cluster in their phylogenetic trees. We therefore describe our new species in the older of these two genera, *Stictographa*.

The generic type *Stictographa lentiginosa* (Lyell ex Leight.) Mudd differs from *S. dirinariicola* in having larger ascomata, 100–500 × 100–200 µm, an I+ and K/I+ blue, then turning orange hymenium, smaller asci (25–35 × 8–12.5 µm), smaller ascospores (10–13.5(–16) × 5–7.5 µm), and a different host selection (*Phaeographis dendritica*) (Sanderson et al. 2009). The generic type *Labrocarpon canariense* (D.Hawksw.) Etayo & Pérez-Ortega differs by larger ascomata, 300–400 × 100–150 µm, larger asci (40–60 × 12–25 µm), longer ascospores (17–20 × 6.5–8 µm), and a different host selection (an unidentified saxicolous *Pertusaria* species) (Hawksworth 1982). Both generic types also differ in the presence of periphyses, but these are often hardly visible, especially in mature ascomata and in older herbarium specimens. Flakus et al. (2014) gave a key to the currently known lichenicolous *Melaspilea* s. lat. species, and no other taxon resembles our new species. A further species described from the same host, *Dirinaria picta*, is *Buelliella dirinariae* Diederich & Aptroot (Aptroot et al. 1997), but this species is distinguished by roundish ascomata becoming superficial, a K/I+ bluish hymenial gel, narrower asci (30–37 × 10–12.5 µm), and much smaller, hyaline to pale brownish ascospores (9–11.5 × 3.5–5 µm) with a verruculose wall.

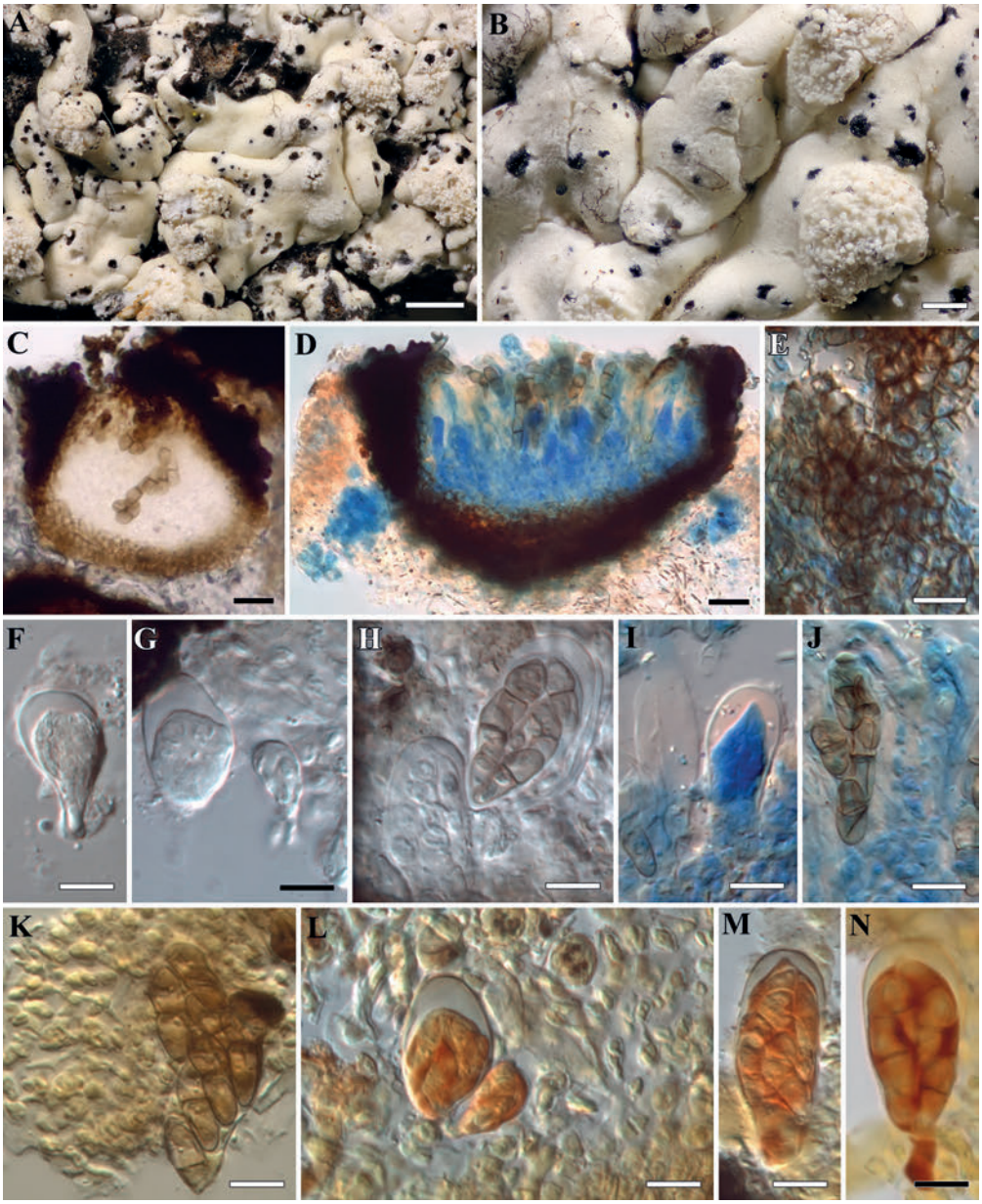

Fig. 18: *Stictographa dirinariicola* (holotype). **A–B** – ascomata on thallus of *Dirinaria picta*, **C** – section through ascoma in water, **D** – section through ascoma in LCB, **E** – surface view of excipular cells in LCB, **F–H** – asci and ascospores in water, **I–J** – asci and ascospores in LCB, **K–N** – asci and ascospores in K/I. Scale bars: A = 500 µm, B = 200 µm, C–D = 20 µm, E–N = 10 µm.

Distribution and host: The new species is known only from the type locality in Seychelles, on the island of Aldabra, on the thallus of *Dirinaria picta*. The host thallus is not visibly damaged by the presence of the fungus.

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

Stirtonia epiphylla Aptroot & Seaward **sp. nov.** [MycoBank MB820225] (Fig. 19)

A foliicolous *Stirtonia* characterised by 4–8-spored asci, 9-septate ascospores, 28–31 × 11–13 µm, and a thallus with confluentic acid.

Type: Seychelles, Mahé, Victoria, Botanical Gardens, alt. 20 m, on palm leaf, 21 Aug. 1973, A.H. Norkett 16153 (BM – holotype; herb. Seaward – isotype).

Description: **Thallus** foliicolous, crustose, up to 7 cm diam., discontinuous, not corticate, whitish, surrounded by a radial, stringy prothallus. **Photobiont** *Trentepohlia*. **Ascigerous structures** similar to thallus colour or creamish to pinkish, consisting of several asci with surrounding tissue, 0.2–0.5 mm diam., c. 0.1 mm high, rounded, low pulvinate, often confluent in groups or irregular lines. **Interascal tissue** consisting of a thin layer of anastomosing paraphysoids surrounding the asci, I+ blue. **Asci** abundant, at maturity visible from above, pale brown, clavate, 4–8-spored, 75–85 × 30–36 µm; wall in upper half c. 4–5 µm thick. **Ascospores** initially hyaline, becoming very pale brown, 9-septate, fusiform, 28–31 × 11–13 µm, I–, septa laterally up to 2 µm thick, middle cells largest. **Pycnidia** not observed.

Chemistry: Thallus C–, K–, P–,UV–; ascigerous structures, C–, K–, P–,UV–. TLC: confluentic acid.

Notes: This species is characterised by the discontinuous thallus with stringy hypothallus and the presence of confluentic acid. It is the first species in the genus known to be foliicolous. However, from morphology and leaf type, it may be facultatively foliicolous only and also occur on bark. It is closest to *Stirtonia rhizophorae* Kalb & Mongkolsuk (Kalb et al. 2012), but that species is distinguished by the much larger ascospores of 60–85 × 25–33 µm. To date, 24 species are known in the genus *Stirtonia* (Aptroot 2009, Xavier-Leite et al. 2013, Aptroot et al. 2014, Seavey & Seavey 2015), but no foliicolous species were recently accepted. A foliicolous species previously described in *Stirtonia* has been redispositioned in *Amazonomyces*, which is characterised by ascospores with a much enlarged median cell (Lücking 2008).

Distribution and ecology: On leathery leaves of palms and unidentified dicotyledonous trees in the Botanical Garden and rain forest. Known only from Seychelles (Mahé).

Paratypes: **Mahé**: Path to Signal Hill, 150 m alt., 30 Oct. 1973, A.H. Norkett 17474A (BM, herb. Seaward). Above Cascade, near waterfall, epiphyllous, 30 Dec. 1973, A.H. Norkett 18315B (BM, herb. Seaward).

Talpapellis mahensis Diederich, U.Braun & Ertz **sp. nov.** [MycoBank MB820227] (Figs 20–21)

Type: Seychelles, Mahé, S of Grande Anse, mangrove 100 m N of 'Avani Seychelles Barbarons Resort & Spa' (4.68214°S, 55.45512°E, alt. 5 m), on an unidentified crustose lichen on a *Cocos* tree along a trail through a mangrove, 28 July 2015, P. Diederich 17870 (BR – holotype; SEY, HAL 3168 F, herb. Diederich – isotypes).

Description: **Colonies** blackish, effuse, loose to dense, covering c. 80 % of the lichen thallus surface, including the marginal zone, macroscopically (at a very high magnification) visible as ± erect blackish

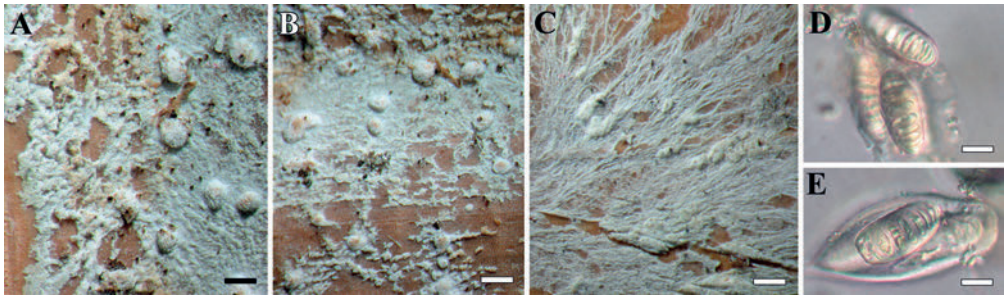

Fig. 19: *Stirtonia epiphylla* (holotype, except C – Seaward 17474A). **A–C** – thallus with ascigerous structures, **D–E** – ascospores in water. Scale bars: A–C = 200 µm, D = 10 µm.

conidiophores, not agglomerated into sporodochia or stromata. **Mycelium** internal; hyphae simple to branched, 1.5–3 µm wide, subhyaline to pale brown, septate, wall thin to slightly thickened, smooth to verruculose-rugose. **Conidiophores** superficial, erect, curved downwards to almost decumbent, arising from internal hyphae or superficial, decumbent, often branched hyphal threads, macronematous or semimacronematous, 10–70 µm long and 3–6 µm wide, simple or sometimes branched, outline usually very irregular, with numerous constrictions and swellings, medium to dark brown, wall smooth or almost so to rugose, wall regularly to irregularly thickened, to 1.5 µm wide, pigmentation uniform or often irregular, with thicker and darker portions, conidiophores occasionally with monopodial, enteroblastic rejuvenation. **Conidiogenous cells** integrated, terminal, little differentiated from other conidiophore cells, or conidiogenous cells terminally formed by enteroblastic proliferation leaving fine annellations, monoblastic or monothalloblastic, conidiogenous loci undifferentiated, truncate to slightly convex, 2–3.5 µm wide, neither thickened nor darkened. **Conidia** in simple or occasionally branched, irregular, acropetal chains, short to oblong ellipsoid-ovoid to subcylindrical, occasionally somewhat irregular in shape, transversely 0–1-septate, ends more or less rounded to subtruncate, c. 5–14 × 3–6 µm, medium brown, portions of the wall thickened and then darker brown, olivaceous brown in K; wall c. 0.5 µm thick, in darker areas up to 1 µm thick, smooth, outline regular to somewhat irregular or rugose; conidiophores occasionally disintegrating into fragments of different sizes, with up to three septa (if these fragment may serve as diaspores is unknown).

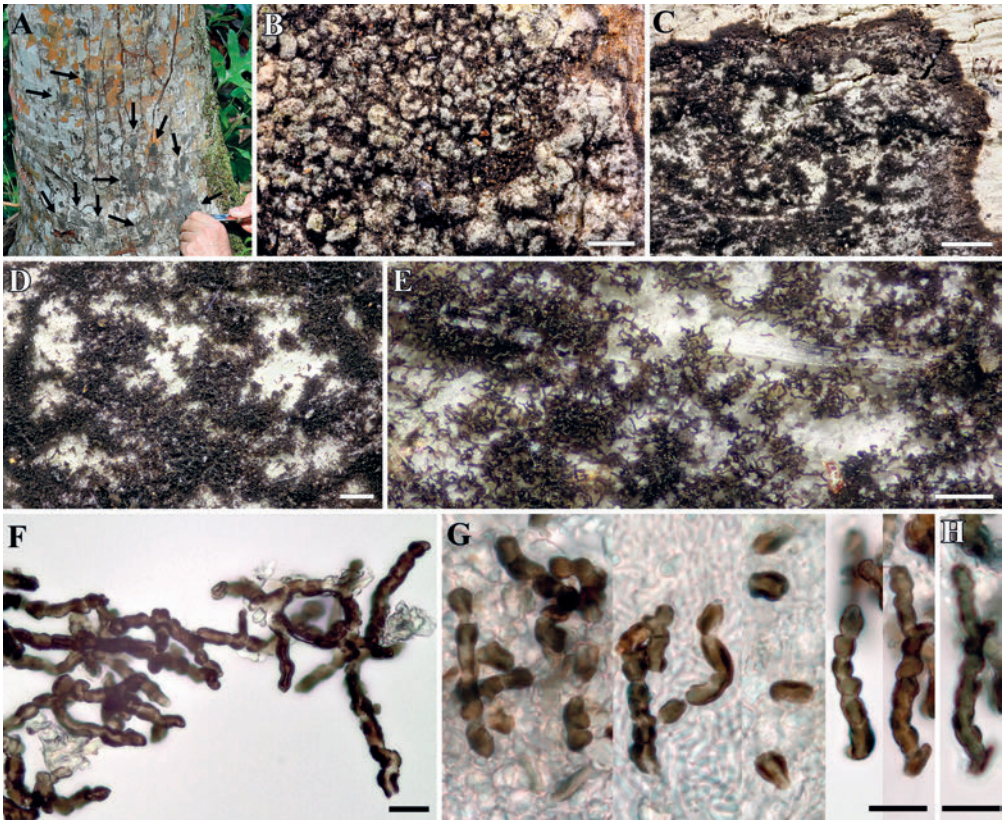

Fig. 20: *Talpapellis mahensis* (holotype). **A** – habitus on *Cocos* trunk (arrows), **B–E** – colonies on unidentified sorediose thallus, **F–G** – conidiophores and conidia in water, **H** – same in K. Scale bars: B–C = 1 mm, D = 200 µm, E = 100 µm, F–H = 10 µm.

Notes: When hyphomycetes with brown conidiophores develop over sterile crustose lichens that cannot readily be identified as a known species, it is often difficult to decide if the hyphomycete is lichenicolous over an unknown lichen, or if both, hyphomycete and lichen, represent the same species. A well-known example is *Reichlingia leopoldii* Diederich & Scheid., initially described as a lichenicolous fungus, but nowadays accepted as a lichenized hyphomycete belonging to the Arthoniales with a *Trentepohlia* photobiont. Similarly, *Milospium deslooveri* Diederich & Sérus. was described as lichenicolous over a crustose lichen with *Trentepohlia*, but we tend now to consider it as lichenized, although no molecular proof has been obtained. The similar *Milospium planorbis* Aptroot & Sipman was described as a lichen, a view that we fully accept. APTROOT & SIPMAN (2001) further suggested that the generic type, *Milospium graphideorum* (Nyl.) D.Hawksw., is lichenicolous when young, but may eventually become lichenized. The new species from Mahé, Seychelles, develops over a sterile, white crustose lichen with *Trentepohlia* that we never observed without the blackish conidiophores. At first glance, the unevenly thickened and pigmented conidiophores and conidia were reminiscent of those of *Milospium* species, which are, however, quite distinct in having lobulate (*M. graphideorum*) or almost helicoid (*M. deslooveri* and *M. planorbis*) conidia. The conidiophores in *M. graphideorum*, the type species, are colourless or pale and do not proliferate percurrently. Hence, the new species is undoubtedly not congeneric and cannot be assigned to *Milospium*, and there is no evidence for lichenization. Unevenly thickened and pigmented conidia are also characteristic for *Trimmatostroma hierrense* Diederich & Ertz, a lichenicolous hyphomycete known from the host *Sparria endlicheri* (Garov.) Ertz & Tehler, but this species is quite different from the new Seychelles species by having micronematous, non-proliferating conidiophores and conidia formed in basipetal, disintegrating chains (DIEDERICH et al. 2010).

The present hyphomycete is very characteristic, unique, and undoubtedly represents a new undescribed species, but the generic affiliation causes problems, especially since all attempts to culture and sequence this hyphomycete unfortunately failed. On the other hand, sequence data for this species would not be helpful to solve this problem, or only to a certain extent, since such data for numerous lichenicolous and other hyphomycete genera are not yet available and prevent making corresponding necessary comparisons. Without phylogenetic background, one should be very cautious with introductions of new anamorph-typified genera. This should rather be avoided, and instead of new genera, existing genera should be taken into consideration and carefully compared. Whenever an appropriate genus is known, which agrees with the basic traits of conidiogenesis and conidia, new species should be assigned to it, at least tentatively, until data for a phylogenetic reassessment will be available. In the present case, three comparable genera have to be taken into consideration: (1) *Xylohypha* (Fr.) E.W.Manson, mainly occurring on wood, is a genus with superficially similar species (ELLIS 1971, 1976, MEL'NIK 2000, SEIFERT et al. 2011). *X. pinicola* D.Hawksw. (ELLIS 1976) has similar conidiophores with irregular outline, i.e. with constrictions and swellings. However, in *Xylohypha* species conidiophores with percurrent-enteroblastic proliferations are not known, and conidia are usually aseptate and formed in rather firm chains, often seceding with difficulty (see key in CROUS et al. 2007). (2) The lichenicolous genus *Verrucocladosporium* K.Schub. et al. is also a superficially comparable genus (CROUS et al. 2007, HEUCHERT et al. 2014) distinguished from the new Seychelles species by cladosporioid conidia, often formed in branched chains with narrow conidiogenous loci on multilocal conidiogenous cells and narrow hila, and lacking percurrent proliferations. (3) *Talpapellis* Alstrup & M.Cole is the third comparable genus to the new species, since HEUCHERT et al. (2014) recently reassessed and emended its circumscription, adding a new variety to its type species, and ZHURBENKO et al. (2015) described the new species *T. solorinae* Zhurb., Heuchert & U.Braun *Talpapellis* is a dematiaceous hyphomycete genus characterised by a combination of conidiophores with monoblastic to polyblastic conidiogenous cells formed at the apex by percurrent proliferations leaving annellations, and usually 0–1-septate conidia formed in acropetal chains. These basic features agree well with those of the new Seychelles species. *T. solorinae* is a species with similarly irregular conidiophores, with swellings and constrictions. The phylogeny of *Talpapellis* is unknown. The hyphomycete from Seychelles is of course quite distinct from all species of the latter genus by its very irregularly shaped conidiophores, sometimes branched, and

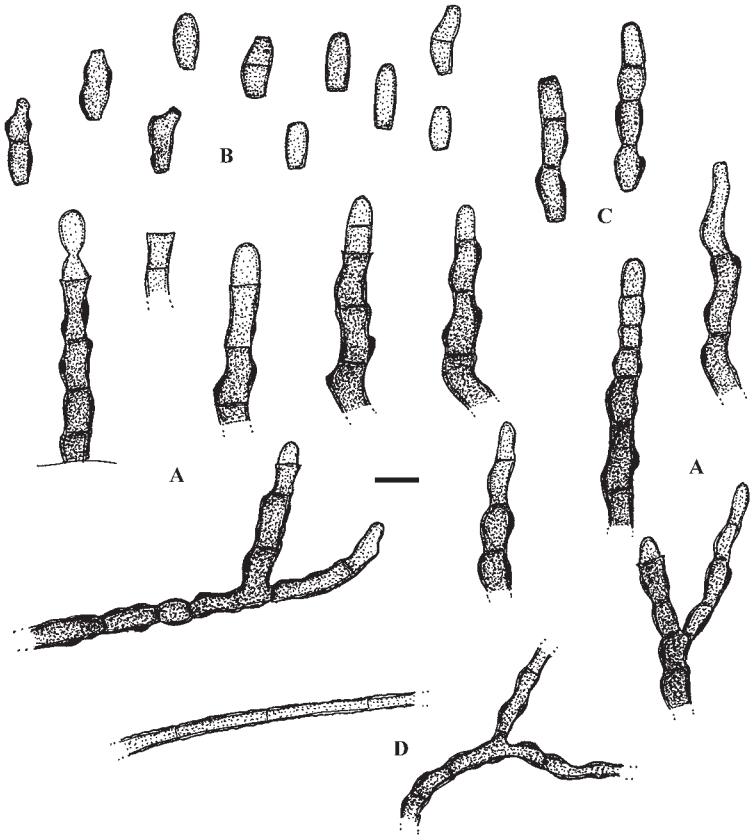

Fig. 21: *Talpapellis mahensis* (holotype). **A** – conidiophores, **B** – conidia, **C** – disintegrated conidiophores fragments, **D** – hyphae. Scale bar = 10 µm (U. Braun del.).

uneven walls with thicker and darker portions. Percurrent-enteroblastic proliferations are less common and evident in comparison with other *Talpapellis* species, but they are present. Therefore, the new species is, at least tentatively, assigned to this genus, although we cannot exclude that a new, undescribed genus might be involved, but to disentangle this complex of morphologically similar species, cultures and molecular analyses of the whole complex are needed.

Distribution and ecology: The new species is known only from the type locality in Seychelles (Mahé), on a *Cocos* tree along a trail through a mangrove. It was abundantly present on the lower part of the trunk, from the base up to almost 1 m above ground, almost entirely covering all thalli of an unidentified lichen with a pale sorediose, crustose thallus, with *Trentepohlia* as the photobiont. TLC of the thallus in solvent B revealed the presence of psoromic acid, norstictic acid (minor) and possibly a fatty acid of low Rf (below norstictic acid).

Etymology: Named after the Seychelles island Mahé on which the new species has been discovered.

******Thalloloma hypoleptum*** (Nyl.) Staiger

Mahé: Sans-Souci-Road, tea factory (Loc. 5), on a tree, Di 17915.

This species, hitherto known from Florida, South America and Hawaii (Elix & McCarthy 1998, Lendemer & Knudsen 2008b, Staiger 2002), is new to Africa.

Thelotrema capetribulense Mangold

Praslin: Glacis Noir (Loc. 10), on trees, Di 18052.

A rare species, previously known only from Australia (Queensland) (LUMBSCH et al. 2008), is new to Africa.

Thelotrema monosporum Nyl.

Praslin: Glacis Noir (Loc. 10), on trees, Di 18071.

A common and widespread, pantropical species (FRISCH 2006). Previously known from Praslin (SCHUMM & APTROOT 2010).

Trichothelium alboatrum Vain.

Mahé: Sans-Souci-Road, l'Exil (Loc. 6), foliicolous on *Cinnamomum verum*, Di 17932a

A foliicolous lichen known from the neotropics and the eastern paleotropics (LÜCKING 2008). New to Seychelles.

Trimmatothele petri Diederich **sp. nov.** [MycoBank MB820228] (Fig. 22)

Characterised by a discontinuous, squamulose, brown thallus, immersed perithecia of 100 µm diam., a pale excipulum and a poorly developed involucrellum, and ascospores 32–64 per ascus, 6.6–7.9 × 3.3–3.8 µm.

Type: Seychelles, Mahé, "Forêt Noire Road, Paß", alt. c. 500 m, auf temporär feuchten Felsrinnen, 24 Feb. 1981, A. Henssen 26808b (H 9006978 – holotype).

Description: **Thallus** epilithic, discontinuous, squamulose, pale to medium brown, smooth, mat to slightly shiny; squamules ± roundish, ellipsoid to polyhedral, with a slightly constricted base, 0.1–0.4 mm diam., each containing a single perithecium; central part of squamules becoming strongly convex with the maturation of the perithecium. **Photobiont** chlorococcoid. **Perithecia** entirely immersed in the thallus, c. 100 µm diam. (impossible to measure without sectioning), with only the dark brown, flat to convex ostiole, 50–80 µm diam., protruding. **Excipulum** pale brown. **Involucrellum** poorly developed, hardly distinguishable from the thallus covering perithecia, laterally 30–40 µm thick, apically 20–30 µm. **Centre** I–, K/I–. **Paraphyses** present between between asci, anastomosed, 1.5–2.5 µm, probably disappearing in overmature perithecia. **Periphyses** not observed. **Asci** of the *Verrucaria*-type, subcylindrical to clavate, multispored, 42–63 × 13–20 µm, wall I–, K/I–. **Ascospores** aseptate, hyaline, oblong, smooth, without a visible perispore, 32–64 per ascus, (6.0–)6.6–7.9(–8.8) × (3.0–)3.3–3.8(–4.0) µm, ratio length/breadth (1.7–)1.8–2.2(–2.5) (n=24), wall c. 0.5 µm thick. **Pycnidia** not observed.

Chemistry: Thallus C–, K–, P–, UV–.

Notes: Microscopically, this species is reminiscent of *Trimmatothele perquisita* (Norman) Zahlbr., the generic type and currently only accepted species in the genus (ERTZ & DIEDERICH 2004). In that species, asci are similar in size, 40–65 × 10–18 µm, and each contains 36–64 ascospores, 5.6–7.9 × 2.6–3.4 µm, l/b 1.9–2.6. In the new species, interascal filaments were present, in contrast to *T. perquisita*, but they are probably present in each young perithecium and disappear with age; from both species, only old herbarium specimens have been studied by us, making a more accurate study of the hamathecial filaments more difficult. Macroscopically, both species are, however, clearly distinct. In *T. perquisita*, the thallus is endolithic and inconspicuous, rarely epilithic and areolate, generally pale grey to brownish black; perithecia consequently often become almost completely superficial and exposed when mature, and they are much larger (250–500 µm diam.) than in *T. seychellensis*. A further difference is the ecology, *T. perquisita* growing exclusively on calcareous rocks, while the new species has been collected from siliceous rocks.

Based on morphological characters, ERTZ & DIEDERICH (2004) combined *Trimmatothele perquisita* in *Verrucaria* s.lat., as *V. perquisita* (Norman) Ertz & Diederich. Sequences from this species have been included by SAVIĆ et al. (2008) in a molecular phylogenetic analysis, where they grouped with those of an unidentified specimen of *Verrucaria* s. lat., and both are only remotely related to the type of

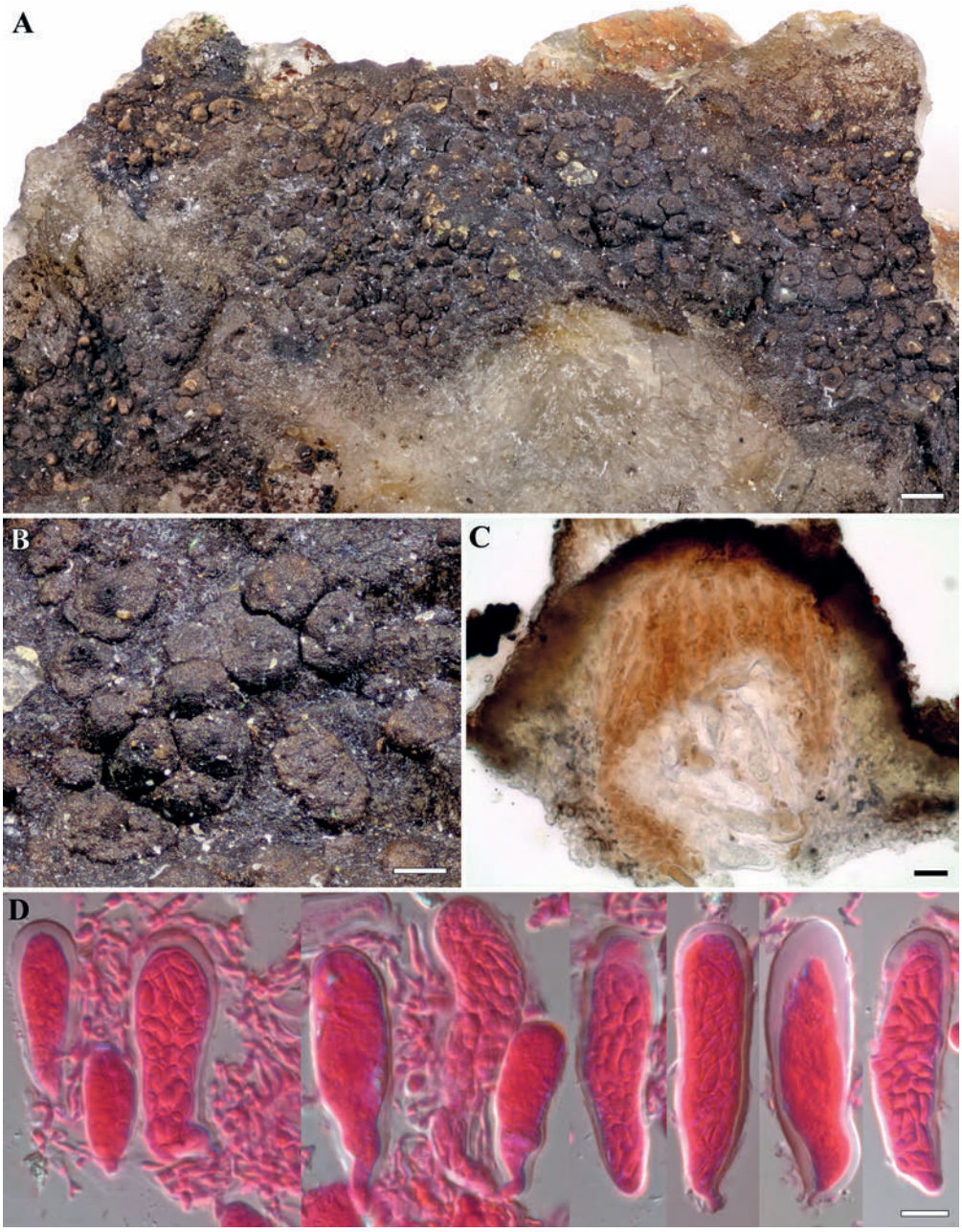

Fig. 22: *Trimmatothele petri* (holotype). **A–B** – thallus with immersed perithecia, **C** – section through ascoma in water, **D** – asci, interascal filaments and ascospores in phloxine B. Scale bars: A = 500 µm, B = 200 µm, C = 20 µm, D = 10 µm.

Verrucaria. Hence, the genus *Trimmatothele* has been accepted by Savić et al. (2008) and subsequently by Gueidan et al. (2009) as a distinct genus. The new species is included in *Trimmatothele*, based on multispored asci and ascospores similar in form and size to *T. perquisita*.

Distribution and ecology: Known only from the type locality in Seychelles (Mahé), on siliceous rocks along a road, at an altitude of c. 500 m. The herbarium label says "Seychellen, Mahé, Foret Noire Road". This is the same road called "Sans-Souci-Road" elsewhere in this paper.

Etymology: The first author dedicates this species to his father Pierre (Latin: *Petrus*) Diederich, to thank him for his enormous help, support and encouragements during his entire life. At the same time, the epithet refers to the saxicolous habitat of the new species (Latin: *petra* = rock).

Usnea exasperata (Müll.Arg.) Motyka s.lat.

Praslin: Glacis Noir (Loc. 10), on trees, Di 18087 (det. P. Clerc).

Previously known from Mahé, La Digue and Silhouette. New to Praslin.

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