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NEW SPECIES AND NEW RECORDS OF CERCOSPOROID HYPHOMYCETES FROM BRAZIL, NEW ZEALAND AND VENEZUELA

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Abstract: Four new species of cercosporoid hyphomycetes are described, viz. *Passalora majewskii* on *Sparattanthelium botocudorum* and *Pseudocercospora avicenniae* on *Avicennia geminans* both from Brazil, *P. hilliana* on *Helmholtzia glaberrima* from New Zealand and *P. urerae* on *Urera baccifera* from Venezuela. New records encompass *Cercospora apii* on the new host *Helmholtzia glaberrima* in New Zealand, *C. caleifolii* on *Calea* sp. new to Venezuela, *Pseudocercospora namae* new to Brazil on the new host *Hydrolea spinosa* and *P. struthanthi* in Brazil on the new host *Tripodanthus* sp.

Key words:*Cercospora*, *Passalora*, *Pseudocercospora*, new taxa, host range, distribution

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INTRODUCTION

Cercosporoid hyphomycetes are anamorphs of the ascomycete genus *Mycosphaerella* Johanson and belong to the largest groups of mitotic fungi worldwide (Crous & Braun 2003). More than 3000 species names have been referred to as *Cercospora* Fresen. and about 550 to *Passalora* Fr. (Crous & Braun 2003). About 1450 species have been assigned to *Pseudocercospora* Speg. and 220 to Stenella Syd. (see Mycobank database). Nevertheless the inventory of the diversity of cercosporoid fungi is far away from being complete, above all in tropical and subtropical countries. Braun et al. (1999) and Braun & Freire (2002, 2004, 2006) published a series of contributions to cercosporoid hyphomycetes of Brazil. Braun & Hill (2002, 2004, 2008), Braun, Hill & Dick (2003) and Braun et al. (2006) dealt with the diversity of *Cercospora* and allied genera in New Zealand, and Braun & Urtiaga (2008) examined collections of this fungal group from Venezuela. Some additional new cercosporoid collections from these countries are described and recorded in this contribution. The specimens from New Zealand were among a final set of fungi sent by C.F. Hill (†) who passed away last year. Therefore, this paper is dedicated to C.F. Hill and T. Majewski on the occasion of his 70th anniversary.

MATERIAL AND METHODS

Material was mounted in distilled water and examined using 100× oil immersion objectives (bright field and phase contrast), but without any staining, using standard light microscopy. For each collection, 30 measurements (× 1000 magnification) of conidia and other structures were made in water, with the extremes given in parentheses. Collections are deposited in the Herbarium of Martin-Luther-University, Halle (Saale), Germany (HAL).

NEW SPECIES AND NEW RECORDS

Cercospora apii Fresen. s. lat.

Beitr. Mykol. 3: 91. 1863.

Specimen examined. On *Helmholtzia glaberrima* (Hook. f.) Caruel (Philydraceae): NEW ZEALAND. Auckland, Manurewa, Hill Road, Auckland Botanic Gardens, 25 Jan. 2009, *leg. C.F. Hill* 438-B, HAL 2343 F.

This is the first record of a *Cercospora* species on *Helmholtzia* and a host of the Philydraceae in general (Crous & Braun 2003). The morphology agrees well with the *C. apii* s. lat. complex as defined by Crous & Braun (2003): Leaf spots subcircular to somewhat irregular, dingy grey or greyish white; mycelium internal; stromata lacking or only with a few brown swollen hyphal cells in the substomatal cavity; conidiophores in divergent fascicles, 1–12, emerging through stomata, erect, straight, subcylindrical to usually distinctly geniculate-sinuous, unbranched, 30–160 × 3–7 µm, (0–)1–7-septate, pale to medium brown, thin-walled, smooth or almost so; conidiogenous cells integrated, terminal and intercalary, conidiogenous loci conspicuous, thickened and darkened, 2–3 µm wide; conidia formed singly, acicular, hyaline, 60–320 × 2.5–4 µm, pluriseptate, thin-walled, smooth, hilum thickened and darkened, 2.5–3 µm wide. Following the advice of Crous & Braun (2003), this collection is assigned to *C. apii* s. lat. since cultures, molecular sequence analyses or results of inoculations tests are not available.

Cercospora caleifolii Bat., J. Upadhyay & Netto

Mycopathol. Mycol. Appl. 29: 172, 1966.

Specimen examined. On *Calea* sp. (Asteraceae): VENEZUELA. LARA STATE: Villanueva, Nov. 2008, leg. *R. Urtiaga*, HAL 2350 F.

Notes: This species is only known from the type collection in Brazil, which has been re-examined (on *Calea pinnatifida* (R. Br.) Less., Brazil, Pôrto Alegre, 26 Apr. 1961, A.S. Romeu, IMUR 40585). Batista et al. (1966) described conidiophores 30–120 µm long and acicular conidia 16.5–100 × 1.5–3 µm. The type collection is in poor condition. Only a few conidia up to 85 × 4 µm have been found. Shorter conidia are narrowly obclavate. In the collection from Venezuela, the conidiophores and conidia are much longer, up to 350 µm and 250 µm, respectively. Longer conidia are also somewhat wider, 2.5–5 µm. However, the length of conidiophores and conidia in *Cercospora* spp. is often rather variable and strongly depend on environmental influences, e.g. humidity and temperature. Therefore, the new collection from Venezuela is tentatively assigned to *C. caleifolii*.

Passalora majewskii U. Braun & F. Freire, **sp. nov.** Fig. 1

MycoBank, No. xxxxxxx.

Etym.: Epithet dedicated to T. Majewski, Polish mycologist, on the occasion of his 70th anniversary.

Maculae amphigenae, subcirculares vel plerumque angulares-irregulares, 2–20 mm diam., interdum confluentes, stramineae, bruneolae vel griseo-brunneae. Margine indistincto vel margine tenui atriore, interdum leniter elevato cinctae, interdum cum zona diffusa discolorata. Mycelium immersum. Stromata 10–60 µm diam., substomatalia vel intraepidermalia, medio- vel atro-olivaceo-brunnea, ex cellulis inflatis composita, 2–7 µm diam. Caespituli amphigeni, punctiformes, dispersi, medio-, atro- vel griseo-brunnei. Conidiophora dense fasciculata, pauca vel numerosa, ex cellulis stromatibus oriunda, per stoma emergentia vel erumpentia, cylindracea-conica, recta vel modice geniculata-sinuosa, non-ramosa, 5–35 × 2–5 µm, 0–1(–2)-septata, pallide olivacea vel olivaceo-brunnea, laevia vel dilute verruculosa. Cellulae conidiogenae integratae, terminales vel conidiophoris in cellulis conidiogenis reductis, 5–20 µm longae; cicatrices conidiales conspicuae, 1–2 µm diam., leniter incrassatae et fuscatae. Conidia catenata, interdum ramicatenata, ellipsoidea-fusiformia vel cylindrica, 8–55 × 2.5–4.5

µm, 0–3(–4)-septata, subhyalina vel pallide olivacea, tenuitunicata, laevia, utrinque truncata vel leniter attenuata, hila leniter incrassata et fuscata.

Specimen examined. On *Sparattanthelium botocudorum* Mart. (Hernandiaceae): BRAZIL. STATE OF CEARÁ: Guaramiranga City, alt. 910 m, 10 Jan. 2007, leg. *F. Freire*, HAL 2346 F, **holotype**.

Foliicolous, leaf spots amphigenous, subcircular to usually angular-irregular, 2–20 mm diam., sometimes confluent and larger, straw-coloured, brownish to greyish brown, margin indefinite or with a narrow dark border, occasionally slightly raised, sometimes with a diffuse discoloured halo. Mycelium internal. Stromata almost lacking or substomatal to intraepidermal, 10–60 µm diam., medium to dark olivaceous-brown, composed of swollen hyphal cells, 2–7 µm diam. Caespituli amphigenous, punctiform, scattered, medium to dark brown or greyish brown. Conidiophores in small to large, mostly moderately large fascicles, usually rather dense, arising from stromata, emerging through stomata or erumpent, cylindrical-conical, straight to moderately geniculate-sinuous, unbranched, 5–35 × 2–5 µm, 0–1(–2)-septate, pale olivaceous to olivaceous-brown, thin-walled, smooth to faintly rough-walled. Conidiogenous cells integrated, terminal or conidiophores reduced to conidiogenous cells, 5–20 µm long; conidiogenous loci conspicuous, cicatrized, 1–2 µm wide, slightly thickened and darkened. Conidia catenate, in simple or occasionally branched chains, ellipsoid-fusiform to cylindrical, 8–55 × 2.5–4.5 µm, 0–3(–4)-septate, subhyaline to pale olivaceous, thin-walled, smooth, ends truncate to somewhat attenuated, hila slightly thickened and darkened, 1–2 µm wide.

Notes: On account of its thickened and darkened conidiogenous loci and conidial hila and pigmented conidiophores and conidia, this species has to be assigned to *Passalora* (Crous & Braun 2003). Due to conidia formed in chains, this hyphomycete is phaeoramularioid, i.e. it belongs to a morphological group within *Passalora* which was previously treated as separate genus, viz. *Phaeoramularia* Munt.-Cvetk. Species of *Passalora* are host specific, confined to single host species, hosts of a single genus or at most of a few closely allied host genera. There is no comparable species. This is the first member of *Passalora* on *Sparattanthelium* and the Hernandiaceae in general.

Pseudocercospora avicenniae U. Braun & F. Freire, **sp. nov.** Fig. 2

MycoBank, No. xxxxxxx.

Etym: Epithet derived from the host genus.

Pseudocercosporae blechi similis, sed laesionibus valde divergentibus, conidiophoris brevioribus, 5–60 µm longis et conidiis brevioribus et leniter latioribus, 20–40 × 3–6 µm, saepe curvatis vel sigmoideis.

Specimens examined. On *Avicennia geminans* (L.) Stern. (Acanthaceae, Avicennioideae [= *Avicenniaceae*]: BRAZIL. STATE OF CEARÁ, Fortaleza City, 20 Aug. 2008, leg. *M. Alves Souza* (HAL 2347 F), **holotype**.

Leaf spots amphigenous, at first indistinct, later angular-irregular, oblong, size very variable, often vein-limited, dingy grey-olivaceous to brown, margin indefinite. Caespituli hypophyllous, effuse, loose to dense, greyish olivaceous to grey-brown. Mycelium internal, Stromata lacking or small, 10–25 µm diam., olivaceous-brown, substomatal to somewhat erumpent. Conidiophores in small to moderately large fascicles, arising from stromata, emerging through stomata, erect to decumbent, straight, subcylindrical to distinctly geniculate-sinuous, simple or often branched, some decumbent threads with lateral branchlets growing like and confusable with superficial hyphae with solitary conidiophores, 5–60 × 2.5–5 µm, 0–7-septate, pale to medium olivaceous or olivaceous-brown, thin-walled, smooth.

Conidiogenous cells integrated, terminal or conidiophores sometimes reduced to conidiogenous cells, 5–20 µm long, conidiogenous loci inconspicuous, unthickened, not darkened. Conidia formed singly, short clavate, obclavate-cylindrical, straight to mostly curved-sigmoid, 20–40 × 3–6 µm, 0–4-septate, pale olivaceous, thin-walled, smooth, apex rounded, base short obconically truncate, hilum 1–2 µm wide, unthickened, not darkened.

Notes: This is the first *Pseudocercospora* species on *Avicennia* and the Avicennioideae (= *Avicenniaceae*) in general. Based on new phylogenetic results, *Avicennia* is now placed in the Acanthaceae [www.mobot.org/MOBOT/Research/APweb/welcome.html ("Angiosperm Phylogeny Webside")]. *P. avicenniae* differs from all other *Pseudocercospora* spp. on hosts of the Acanthaceae in having characteristically short, broad, mostly curved-sigmoid conidia with few septa. *P. blechi* U. Braun, Crous & N. Pons (Braun et al. 2002) has similar, relatively short conidia, up to 60 µm long and 2–4 µm wide, but the small leaf spots, 0.5–3 mm diam., are quite distinct and the conidiophores are longer, up to 90 µm. All other *Pseudocercospora* spp. on hosts of this family are quite different by having much longer conidiophores and longer, pluriseptate conidia, up to about 125 µm [*P. barleriae* (J.M. Yen & Lim) U. Braun, *P. baphicacanthi* Goh & W.H. Hsieh, *P. consociata* (G. Winter) Y.L. Guo & X.J. Liu, *P. justiciae* (F.L. Tai) Y.L. Guo & X.J. Liu (Guo & Hsieh 1995, Hsieh & Goh 1990, Yen & Lim 1980) or at least the conidia are much longer, narrower and pluriseptate (*P. acanthi* Deighton, *P. adenosmae* Y.L. Guo, *P. lepidagithidis* U. Braun & Crous, *P. odontonematis* (Chupp) U. Braun & Crous, *P. rhinacanthi* (Höhn.) Deighton, *P. thunbergiicola* (J.M. Yen) Deighton (Braun & Crous 2005, Chupp 1954; Crous & Braun 2003; Deighton 1976, 1987; Guo 2001, Yen & Lim 1980)].

Pseudocercospora hilliana U. Braun, **sp. nov.** Fig. 3

MycoBank, No. xxxxxxx.

Etym.: Epithet derived from C.F. Hill, mycologist in New Zealand, passed away in 2009.

Pseudocercosporae pancratii similis, sed maculis foliorum nullis, stromatibus ad 60 µm diam., conidiis variantibus, basi truncata vel leniter obconice truncata. Differt a P. asphodelina maculis foliorum nullis, conidiis longioribus, ad 110 µm, 1–10-septatis.

Specimens examined. On *Helmholtzia glaberrima* (Hook. f.) Caruel (Philydraceae): NEW ZEALAND. Auckland, Manurewa, Hill Road, Auckland Botanic Gardens, 25 Jan. 2009, leg, *C.F. Hill* 438-A, HAL 2342 F, **holotype**.

Foliicolous, definite leaf spots lacking, caespituli on necrotic leaves, necrotic portions of leaves or discoloured, necrotic areas of green leaves, amphigenous, punctiform, scattered, greyish to dark brown. Mycelium internal, occasionally with a few pale, superficial hyphae arising from stromata, 1–3 µm wide, septate, thin-walled, smooth. Stromata substomatal or intraepidermal, immersed to slightly erumpent, 10–60 µm diam., subglobose to irregular, dark olivaceous-brown or brown, composed of swollen hyphal cells, circular to irregular in outline, 2–8 µm diam. Conidiophores arising from stromata, through stomata or erumpent, in small to moderately large fascicles, loose to usually rather dense, subcylindrical to conical, straight to slightly geniculate-sinuous, unbranched, 5–25(–30) × 2–4 µm, sometimes up to 5.5 µm wide at the very base, subhyaline to pale olivaceous or olivaceous-brown, 0–2-septate, thin-walled, smooth. Conidiogenous cells integrated, terminal or conidiophores reduced to conidiogenous cells, 5–20 µm long, conidiogenous loci truncate or subtruncate, about 1–2 µm wide, unthickened, not darkened. Conidia formed singly, narrowly obclavate-subcylindrical to acicular-filiform, 25–110 × 2–4 µm, indistinctly 1–10-septate, subhyaline to pale olivaceous or olivaceous-brown, thin-walled, smooth, apex subacute, base truncate to slightly obconically truncate, basal hilum 1.5–2.5 µm wide, neither thickened nor darkened.

Notes: Species of the genus *Pseudocercospora* are host specific, usually confined to a single host species, host genus or sometimes a few closely allied host genera within a particular family. *P. helmholtziae* is the first species of *Pseudocercospora* on a host of the monocot family Philydraceae. There are only few comparable species on hosts belonging to other monocot families. All of them are distinguished from *P. helmholtziae* by forming distinct leaf spots. *P. pancratii* (Ellis & Everh.) U. Braun & R.F. Castañeda on various hosts of the Amaryllidaceae is morphologically rather similar, but differs in having variable stromata, up to 125 µm diam., and conidia with long obconically truncate bases (Chupp 1954, Braun & Castañeda 1991). *P. asphodelina* (Sacc.) U. Braun (Braun 1993) on *Asphodelus* spp., Asphodelaceae, has also a certain resemblance, but its conidia are much smaller, (15–)20–50(–60) µm, only 0–4-septate and very pale. The conidia of *P. dianellae* U. Braun & C.F. Hill (Braun & Hill 2003) on *Dianella nigra*, Phormiaceae, in New Zealand are very close to those of *P. helmholtziae*, but superficial hyphae with solitary conidiophores are formed. *P. libertiae* U. Braun & C.F. Hill (Braun, Hill & Dick 2003) on *Libertia ixioides*, Iridaceae, also known from New Zealand, has smaller stromata, up to 30 µm diam., and the conidia are consistently acicular-filiform. The conidia of *P. pallidissima* (Chupp) Deighton (Chupp 1954) on *Smilax* spp., Smilacaceae, are shorter, up to 70 µm, and always obclavate-cylindrical with distinctly obconically truncate base. *P. rhapisicola* (Tominaga) Goh & W.H. Hsieh (Hsieh & Goh 1990, Guo & Hsieh 1995) on *Rhapis* spp., Arecaceae, differs by it colourless conidia which are often abruptly bent at septa. *P. copernicae* U. Braun & Freire (Braun & Freire 2002) on *Copernica prunifera*, Arecaceae, in Brazil has much shorter conidia, (10–) 15–50(–60) µm, with few septa. *P. manusensis* Matsush. (Matsushima 1993) on rotten petioles of an unknown member of the Arecaceae in Peru is very similar, but the conidia are densely pluriseptate. Other species are easily distinguished by their much longer conidiophores [e.g. *P. arecacearum* U. Braun & C.F. Hill (Braun & Hill 2006), *P. dendrobii* Goh & W.H. Hsieh (Goh & Hsieh 1990)], lacking stromata [e.g. *P. carbonacea* (Miles) Pons & B. Sutton (Pons & Sutton 1988)], much broader conidia [e.g. *P. dioscoreae* U. Braun, Mouch. & McKenzie (Braun et al. 1999), *P. contraria* (Syd. & P. Syd.) Deighton (Pons & Sutton 1988), *P. cordylines* U. Braun (Braun 1998), *P. musae* (Zimm.) Deighton (Chupp 1954), *P. pycnidioides* (Chupp) U. Braun & Crous (Chupp 1954), *P. roystoniae* U. Braun & Crous (Braun, Crous & Kamal 2003)], consistently cylindrical conidia with obtuse apex [e.g. *P. eumusae* Crous & Mour. (Crous & Mourichon 2002), *P. assamensis* Arzanlou & Crous, *P. indonesiana* Arzanlou & Crous and *P. longispora* Arzanlou & Crous (Arzanlou et al. 2008)] or percurrent conidiogenous cells [*P. concentrica* (Cooke & Ellis) U. Braun & Crous (Chupp 1954, Braun & Crous 2002)].

Pseudocercospora namae (Dearn. & House) U. Braun & Crous

in Crous & Braun, *Mycosphaerella* and its anamorphs: 1. Names published in *Cercospora* and *Passalora*. *CBS Biodiversity Series* 1: 288, 2003.

Specimens examined. On *Hydrolea spinosa* L. (Hydrophyllaceae): BRAZIL. PIAU STATE: Picos City, 30 Jul. 2009, leg. *F. Freire*, HAL 2344 F.

Notes: This species is known from the USA on *Hydrolea ovata* Nutt. ex Choisy (Chupp 1954, Crous & Braun 2003). It is new to Brazil on a new host species.

Pseudocercospora struthanthi U. Braun, F. Freire & N. Pons

Cryptog. Mycol. 23: 316, 2002.

≡ *Cercospora struthanthi* Chupp & A.S. Muller., Bol. Soc. Venez. Ci. Nat. 8: 57, 1942, nom. inval.

Specimens examined. On *Tripodanthus* sp. (Loranthaceae): BRAZIL. STATE OF CEARÁ, Guaraccaba do Norte City, 980 m alt., 3 Mar. 2009, leg. *M. Alves Souza*, HAL 2348 F.

Notes: *P. struthanthi* is known from Brazil, USA (Florida) and Venezuela on *Phoradendron flavescens*, *P.serotium*, *Phoradendron* sp. and *Struthanthus* sp. (Chupp 1954, Braun et al. 2002, Braun & Freire 2004). The collection on *Tripodanthus* sp. agrees well with *P. struthanthi* (stromata 10–50 µm diam., conidiophores densely fasciculate, 5–25 × 2–5 µm, 0-1-septate, conidia narrowly obclavate to subacicular, 35–110 × 2–3.5 µm, 3–10-septate, pale olivaceous). *Tripodanthus* is a new host genus for this species.

Pseudocercospora urerae U. Braun & R. Urtiaga, **sp. nov.** Fig. 4

MycoBank, No. xxxxxxx.

Etym.: Epithet derived from the host genus.

Pseudocercosporae pouzolziae valde similis, sed conidiophoris solitariis vel saepe laxe fasciculatis, brevioribus, 5–35 µm, interdum cum hyphis superficialibus.

Specimens examined. On *Urera baccifera* (L.) Gaudich. ex Wedd. (Urticaceae); VENEZUELA. LARA STATE, Villanueva, 1100 m alt., Nov. 2008, leg. *R. Urtiaga*, HAL 2349 F, **holotype**.

Leaf spots amphigenous, subcircular to irregular, 2–10 mm diam., occasionally confluent, ochraceous, brown to greyish brown, later dingy greyish brown to grey, margin indefinite or narrow, darker. Caespituli amphigenous, rather inconspicuous to punctiform, greyish brown. Mycelium internal, occasionally with some superficial hyphae, 1.5–3 µm wide, sparingly branched, subhyaline to pale olivaceous, septate, thin-walled, smooth. Stromata lacking or small, 10–30 µm diam., substomata, occasionally intraepidermal, olivaceous-brown. Conidiophores solitary to fasciculate, fascicles small to moderately large, mostly loose, erect, straight, subcylindrical or narrower towards the apex to strongly geniculate-sinuous, simple or branched, 5–35 × 2–5 µm, 0–3-septate, pale olivaceous to medium olivaceous-brown, thin-walled, smooth. Conidiogenous cells integrated, terminal or conidiophores sometimes reduced to conidiogenous cells, 5–20 µm long, conidiogenous loci inconspicuous, neither thickened nor darkened. Conida solitary, obclavate-cylindrical, 20–80 × 2.5–5 µm, 1–10-septate, occasionally constricted at the septa, subhyaline to pale olivaceous, thin-walled, smooth, apex obtuse to subacute, base short obconically truncate, 1–1.5 µm wide, hila neither thickened nor darkened.

Notes: Several species of the genus *Pseudocercospora* are known on hosts of the Urticaceae. *P. pouzolziae* (Syd.) Y.L. Guo & X.J. Liu on *Pouzolzia* spp. (Chupp 1954, Guo & Hsieh 1995) is morphologically very close to *P. urerae*, but is distinguished by its large, densely fasciculate, longer conidiophores and lacking superficial hyphae. Furthermore, the two genera, *Urera* and *Pouzolzia*, are not closely allied and belong to different tribes of the Utricaceae, viz. Urticeae and Boehmerieae, respectively. *P. boehmeriigena* U. Braun (≡ *Cercospora boehmeriae* Peck, *Pseudocercospora boehmeriae* (Peck) Y.L. Guo & X.J. Liu, non *P. boehmeriae* Goh & W.H. Hsieh) is also similar, but differs in having large stromata, 25–65 µm diam., usually with large, dense fascicles of longer conidiophores, up to 75 µm (Chupp 1954, Guo & Hsieh 1995). Other species quite distinct by very long and narrow conidia, 60–110 × 1.5–3 µm [*P. fukuii* (Yamam.) W.H. Hsieh & Goh (Chupp 1954, Hsieh & Goh 1990)], very long conidiophores and much wider conidia [*P. mysorensis* (Thirum. & Chupp) Deighton, *P. pipturi* (F. Stevens & Glick) U. Braun & Crous, *P. pipturicola* U. Braun & McKenzie (Chupp 1954, Guo & Hsieh 1995, Braun et al. 1999)] or very long conidiophores arising from superficial hyphae [*P. pileae* P.N. Singh, S.K. Singh & S.C. Tripathi, *P. urticacearum* R.K. Verma, Kamal & Budathoki (Budathoki et al. 1989, Singh et al. 1996)].

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Fig. 1. *Passalora majewskii* sp. nov. on *Sparattanthelium botocudorum* (based on type material). a – conidiophore fascicles, b – conidiophores, c – conidia. Scale bars: 10 µm. U. Braun del.

Fig. 2. *Pseudocercospora avicenniae* sp. nov. on *Avicennia geminans* (based on type material). a – conidiophores fascicles, b – conidiophores, c – conidia. Scale bars: 10 µm. U. Braun del.

Fig. 3. *Pseudocercospora hilliana* sp. nov. on *Helmholtzia glaberrima* (based on type material). a – conidiophores fascicles, b – conidiophores, c – conidia. Scale bars: 10 µm. U. Braun del.

Fig. 4. *Pseudocercospora urerae* sp. nov. on *Urera baccifera* (based on type material). a – superficial hyphae, b – conidiophores fascicles, c – conidiophores, d – conidia. Scale bars: 10 µm. U. Braun del.