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Abstract
Novel species of microfungi described in the present study include the following from South Africa: Cariotula dolichandrae from Dolichandra unguis-cati, Seridium podocarpae from Podocarpus latifolius, Psuedocereospora parapseudarthriae from Pseudarthria hookeri, Naeotereira corneae from Coryne thwaitesii var. olivacea on leaves of Allocasuarina falcata, Ramichloridium eucalyti from Eucalyptus undulata and Stachybotrys aleoidea from Aloe sp. (South Africa), as novel member of the Stachybotriaceae fam. nov. Several species were also described from Zambia, and these include Chaetomium zambiensis on unknown Fabaceae, Schizoparmella paeoniflora of Terminalia stuhlmannii, Diaportha isoboriniae from Isoboria aragonesis, Pterocephora convoluta from Combretum mossambicense, Zamadium rothmanniae and Pheaeocorynce rothmanniae from Rothmannia brenchiifolia (South Africa) and members of the Gomphidrium, Venturia, Phaeosphaeria, Cercospora, Flammulina, Chondrostereum, Pseudocercospora and Neofigopara genera, from the following species: Ficus carica (Mediterranean Basin), Eucalyptus camaldulensis (Australia), Diospyros mombasana (East Africa), Cercospora beticola (Europe), and members of the Pseudoareae, Neoareae from members of the Sapotaceae family. All species described are new and novel, and their descriptions are based on the analysis of ITS DNA sequences.

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**Dematiocladium celtidicola** Crous, M.J. Wingf. & Y. Zhang ter, *sp. nov.*

**Etymology.** Named after the host genus from which it was collected, *Celtis*.

Setae unbranched, flexuous, 200–400 × 12–20 μm, arising from pseudoparenchymatous cells in a basal stroma or microsclerotia (ascomatal initials?), adjacent to cells that give rise to conidiophore stipes; setae yellow-brown, smooth to finely roughened, thick-walled, basal cell rounded and well-defined; stipe becoming thinner walled towards the acute apex; apical cell sometimes becoming fertile, setae extending beyond the conidiophores. **Conidiophores** consisting of a stipe, a penicillate arrangement of fertile branches, and rarely, an extension of the stipe, signifying continued growth and eventual branching of the stipe and secondary penicillate conidiophores. Stipe septeate, hyaline, smooth, arising from slightly arranged pale to medium brown pseudoparenchymatous cells in a basal stroma, 40–150 × 4–5 μm. **Conidiogenous apparatus** 30–40 μm long, 40–50 μm wide; branches hyaline, smooth, 1–2-septate; primary branches subcylindrical to more swollen and doliform to ellipsoid, 10–15 × 5–10 μm; additional branches (up to 2), 10–15 × 5–7 μm; terminal branches producing 1–6 phialides. **Phialides** elongate doliform to reniform or subcylindrical, straight to slightly curved, aseptate, 10–20 × 3–4 μm; apex with minute periclinal thickening and inconspicuous collarette. **Conidia** cylindrical, rounded at both ends, straight, hyaline, (31–)35–38(–43) × 3(–3.5) μm, 1-septate, lacking a visible abscission scar, held in parallel clusters by colourless slime. **Chiamydonosporales** globose, 15–25 μm wide, thick-walled, red-brown, forming microsclerotia.

Culture characteristics — Colonies reaching 50 mm diam after 2 wk at 22 °C. On MEA spreading, with sparse aerial mycelium and smooth, even margins; surface with concentric circles of orange and ochreous, reverse apricot. On OA orange. On PDA surface and reverse orange, outer region amber.

**Typus. China.** Beijing, Great Wall of China, N40°21′36.8″ E116°00′52.2″, on leaves of *Celtis bungeana* (Ulmaceae), 1 Sept. 2013, P.W. Crous, M.J. Wingfield & Y. Zhang (holotype CBS H-21716, culture ex-type CPC 23617 = CBS 138002; ITS sequence GenBank KJ869157, LSU sequence GenBank KJ869214, MycoBank MB808941).

Notes — The genus *Dematiocladium* was introduced to accommodate a cylindrocladium-like fungus growing on *Celtis tala* in Argentina, characterised by having pigmented setae (Crous et al. 2005). Due to its penicillate conidiophores and cylindrical, hyaline conidia, the genus *Dematiocladium* resembles *Calonectria* (= *Cylindrocladium*) (Lombard et al. 2010) and genera in the *Cylindrocarpon* complex (Chaverri et al. 2011, Cabral et al. 2012), but is distinct in that it has dematiaceous stipes dispersed among its conidiophores. Although *D. celtidis* was collected from leaf litter of *Celtis tala* in Argentina, *D. celtidicola* was associated with leaf spots on living leaves of *Celtis bungeana* in China, suggesting that it could be a potential plant pathogen. Inoculation studies would be required, however, to prove this assumption.

**ITS.** Based on a megablast search of NCBIs GenBank nucleotide database, the closest hits using the ITS sequence are *Heliscus submersus* (GenBank HQ897796; Identities = 524/559 (94 %), Gaps = 13/559 (2 %)), *Gliocneuctria tenius* (GenBank EF495240; Identities = 519/556 (93 %), Gaps = 21/556 (3 %)) and *Gliocladopsis sagarienss* (GenBank JQ666063; Identities = 505/541 (93 %), Gaps = 21/541 (3 %)).

**LSU.** Based on a megablast search of NCBIs GenBank nucleotide database, the closest hits using the LSU sequence are *Dematiocladium celtidis* (GenBank AY793438; Identities = 869/876 (99 %), no gaps), *Gloeophalotrichum bulbillum* (GenBank JQ668076; Identities = 891/903 (99 %), no gaps) and *Neo-nectria rhamulanaea* (GenBank HM042435; Identities = 878/890 (99 %), no gaps).

Colour illustrations. Symptomatic *Celtis bungeana* next to the Great Wall, China; conidiophores, setae and conidia in culture. Scale bars = 10 μm.
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**Neocamarosporium** Crous & M.J. Wingf., *gen. nov.*

*Etymology.* Named after its morphological similarity to the genus *Camarosporium*.

*Conidiomata* brown to black, immersed, becoming erumpent, globose with papillate apex and central ostiole; wall of 3–6 layers of brown textura angularis. *Conidiophores* reduced to conidiogenous cells. *Conidiogenous cells* lining the inner layer of conidioma, separate, hyaline, smooth, ampulliform; proliferating several times percurrently near apex, or at the same level, giving rise to prominent periclinal thickening. *Conidia* solitary, initially hyaline, aseptate, thick-walled, developing a central septum and then becoming muriformly septate, shape variable from globose to obvoid to ellipsoidal, golden brown, finely roughened, thick-walled.

*Type species:* *Neocamarosporium goepapense.* MycoBank MB808949.

**Neocamarosporium goepapense** Crous & M.J. Wingf., *sp. nov.*

*Etymology.* Named after the Goepap Nature Reserve, where this fungus was collected.

*Conidiomata* brown to black, immersed, becoming erumpent, globose with papillate apex and central ostiole, up to 300 µm diam; wall of 3–6 layers of brown textura angularis. *Conidiophores* reduced to conidiogenous cells. *Conidiogenous cells* lining the inner layer of conidioma, separate, hyaline, smooth, ampulliform, 7–9 × 5–6 µm; proliferating several times percurrently near apex, or at the same level, giving rise to prominent periclinal thickening. *Conidia* solitary, initially hyaline, aseptate, thick-walled, developing a central septum and then becoming muriformly septate, shape variable from globose to obvoid to ellipsoidal, golden brown, finely roughened, thick-walled, (15–) 20–22(–24) × 15–17(–19) µm.

Culture characteristics — Colonies reaching 55 mm diam after 2 wk at 22 °C. On MEA flat, spreading, with sparse aerial mycelium and feathery margins. On MEA surface grey-olivaceous, reverse umber. On OA grey-olivaceous. On PDA grey-olivaceous with patches of citrine, reverse greenish black in middle, citrine in outer region.

*TYPUS.* SOUTH AFRICA, Northern Cape Province, Springbok, Goepap Nature Reserve, on dying leaves of *Mesembryanthemum* sp. (Aizoaceae), Sept. 2013, M.J. Wingfield (holotype CBS H-21722, culture ex-type CPC 23676 = CBS 138008; ITS sequence GenBank KJ869163, LSU sequence GenBank KJ869220, MycoBank MB808950).

Notes — The genus *Camarosporium* (based on *C. quaternatum*) presently contains several hundred species, and is accepted as in urgent need of revision. *Camarosporium* is characterised by having pycnidial conidiomata, conidiophores reduced to conidiogenous cells that are hyaline, and line the inner cavity, proliferating percurrently, giving rise to brown, smooth, muriformly septate conidia (Sutton 1980, Crous et al. 2006). A morphologically similar genus is *Camarosporiellum*, though the latter appears to have holoblastic conidiogenesis. Phylogenetically, *Neocamarosporium* is allied to a clade containing taxa accommodated in *Phoma, Chaetosphaeroma* and *Pleospora*, and is thus morphologically quite distinct.

**ITS.** Based on a megablast search of NCBIs GenBank nucleotide database, the closest hits using the ITS sequence are *Phoma betae* (GenBank KC460811; Identities = 464/486 (95 %), Gaps = 2/486 (0 %)), *Ascochyta obiones* (GenBank GU230752; Identities = 471/496 (95 %), Gaps = 3/496 (0 %)) and *Phoma schachtii* (GenBank FJ427066; Identities = 419/447 (94 %), Gaps = 7/447 (1 %)).

**LSU.** Based on a megablast search of NCBIs GenBank nucleotide database, the closest hits using the LSU sequence are *Phoma betae* (GenBank EU754179; Identities = 846/848 (99 %), Gaps = 1/848 (0 %)), *Chaetosphaeroma hispidulum* (GenBank EU754145; Identities = 845/847 (99 %), no gaps) and *Pleospora bioterlingii* (GenBank AY849954; Identities = 805/807 (99 %), Gaps = 1/807 (0 %)).

*Colour illustrations.* *Mesembryanthemum* sp. growing in Goepap Nature Reserve, South Africa; conidiomata, conidiophores and conidia in culture. Scale bars = 10 µm.

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Acervuloceptoria Crous & Jol. Roux, gen. nov.

Etymology: Named after its acervular-like conidiomata and its morphological similarity to the genus Septoria.

Plant pathogenic, foliicolous. Conidiomata black, amphiogenous, exuding a creamy-white conidial cirrus, subepidermal, erumpent, multicellular, with upper layer breaking open irregularly and leaving conidioma to have acervular appearance; wall of 3–6 layers of brown texture angularis to texture intricata, basal layers pale brown, roof of conidioma dark brown; in culture conidiomata acervular with elements of conidiomatal roof remaining like brown strands along the sides of conidioma. Conidiophores subcylindrical, straight to once geniculate, pale brown, verruculose, septate, branched or not. Conidiogenous cells terminal and lateral, subcylindrical, pale brown to subhyaline, verruculose to smooth, proliferating sympodially and percurrently. Conidia narrowly obclavate to subcylindrical, flexuous, guttulate, smooth, hyaline, apex subacutely rounded, base obconically truncate, septate.

Type species, Acervuloceptoria ziziphicola. MycoBank MB808951.

Acervuloceptoria ziziphicola Crous & Jol. Roux, sp. nov.

Etymology: Named after the host genus from which it was collected, Ziziphus.

Leaf spots amphiogenous, subcircular, 2 mm diam, grey-brown in middle with raised red-brown border and diffuse chlorotic margin. Conidiomata black, amphiogenous, exuding a creamy-white conidial cirrus, subepidermal, erumpent, up to 500 µm diam, up to 100 µm high, multicellular, with upper layer breaking open irregularly and leaving conidioma to have acervular appearance; wall of 3–6 layers of brown texture angularis to texture intricata, basal layers pale brown, roof of conidioma dark brown; in culture conidiomata acervular with elements of conidiomatal roof remaining like brown strands along the sides of conidioma. Conidiophores subcylindrical, straight to once geniculate, pale brown, verruculose, 1–3-septate, branched or not, 15–40 × 3–4 µm. Conidiogenous cells terminal and lateral, subcylindrical, pale brown to subhyaline, verruculose to smooth, proliferating sympodially and percurrently, 8–12 × 3–4 µm. Conidia narrowly obclavate (frequently subcylindrical in culture), flexuous, guttulate, smooth, hyaline, apex subacutely rounded, base obconically truncate, (40–)55–75(–80) × 3(–4) µm, (3–5)-septate.

Culture characteristics — Colonies reaching 5 mm diam after 2 wk at 22 °C. On MEA surface flat, spreading with even margins, lacking aerial mycelium; surface salmon, reverse umber. On OA surface umber. On PDA surface salmon with patches of umber, reverse similar.


Notes — Two species of Septoria have been described from Ziziphus, namely S. zizyphi (conidia 15 × 1 µm, Michelia 1: 173. 1878) and S. capensis (conidia 30–50 × 2–2.5 µm, Hedwigia 24: 33. 1885). Both species differ from the present collection, however, in their conidium dimensions.

The genus Septoria and allied genera were recently treated by Quaedvlieg et al. (2013). Acervuloceptoria differs from these genera in that it has peculiar conidiomatal morphology, with black, erumpent conidioma, from which the top layer disintegrates, leaving a conidiomatal body that appears acervular. The conidiophores are also somewhat different in that they are slightly pigmented and verruculose in their lower part. Phylogenetically, Acervuloceptoria also appears distinct from those genera presently known in this generic complex (Quaedvlieg et al. 2013, Verkley et al. 2013).

ITS. Based on a megablast search of NCBI’s GenBank nucleotide database, the closest hits using the ITS sequence are Circospora virgaureae (GenBank GU214658; Identities = 506/537 (94 %), Gaps = 11/537 (2 %)), Mycosphaerella areola (GenBank DQ459084; Identities = 501/532 (94 %), Gaps = 9/532 (1 %)) and Septoria protearum (GenBank KF251235; Identities = 484/525 (92 %), Gaps = 20/525 (3 %)).

LSU. Based on a megablast search of NCBI’s GenBank nucleotide database, the closest hits using the LSU sequence are Circospora virgaureae (GenBank GU214658; Identities = 844/855 (99 %), no gaps), Caryophylloceptoria lychnidis (GenBank KF251791; Identities = 800/812 (99 %), no gaps) and Septoria dynerteriae (GenBank GU253866; Identities = 840/855 (98 %), no gaps).

Colour illustrations: Ziziphus mucronata in South Africa; leaf spot, conidiomata, conidiophores and conidia in culture. Scale bars = 10 µm.

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**Pseudolachnella guaviyunis** Marinc., T.A. Duong, M.J. Wingf. & C.A. Perez, sp. nov.

_Eymology_ A common name of the host plant in Uruguay, Guaviyú. 

*Conditionata* scattered, oval to rounded in outline, up to 688 µm long, up to 416 µm wide, up to 199 µm deep, cupulate with the edge slightly curved-in in sectional view, filled with agglutinated conidial mass, olivaceous-black; basal stroma well-developed, subepidermal, up to 85 µm thick, of _textura angularis_ or _epidermoidea_, cells thick-walled, subhyaline when intercellular to pale brown, cells bordering the lateral wall becoming darker and thicker; lateral walls consisting of cells of _textura porectata_ in a few strata, cells thin-walled, pale brown to brown, marginal cells of each strata becoming darker. *Conditionata* setae absent. *Conidiophores* arising in the concavity of the conidium, septate and branched at the base, pale brown, smooth. *Conidiogenous cells* phialidic, discrete, subhyaline to pale brown, cylindrical, with conspicuous collarate, often showing percurrent proliferation, 15–26 × 2–3 µm. *Conidiogenous hyaline when young and becoming pale brown with age. Fusiform, straight or slightly curved, gradually tapering towards the apex, with an obtuse, truncate base, smooth or verruculose with age, bearing cellular appendages at both ends, (26.5–)33–36–43.5 × (2–)1.5–3–3.5 µm, aseptate when young, developing 3 septa with age, germinating from any of 4 cells; _apical appendages_ 5.5–14 µm long, centric; _basal appendages_ 4.5–13 µm long, excentric, both appendages 0.5–1 µm wide at the base and tapering towards the apex.

_Culture characteristics_ — The cultures on 2 % malt extract agar showing optimum growth at 25 °C in the dark, reaching 22 mm after 22 d, sterile, above iron-grey, reverse fuscous-black (Rayner 1970), growing circular, radially striated with lobate edge, mycelia flat, velvety, medium dense, exuding dark brown pigment around the colony in 2 mm width. 


Notes — Cupulate fruiting structures were found on the bark of _Mycianthes pungens_ in Uruguay. The morphological features of this isolate best match those of the genus _Pseudolachnella_, other than the absence of noticeable _conditionata_ setae. Currently there are eight _Pseudolachnella_ species recognised worldwide from herbaceous stems or leaves of monocotyledonous host plants, mostly palm trees in Asia (Nag Raj 1993, Zhao et al. 2004, Sato et al. 2008). The Uruguayan collection introduced as the new species _P. guaviyunis_, is recognised here primarily based on conidial morphology and DNA sequence data.

Both _Pseudolachnella_ and _Pseudolachnnea_ are closely related to _Dinemasporium_. When Sutton (1980) limited _Dinemasporium_ to the species with asepate conidia, he restricted the species with septate conidia to _Pseudolachnnea_. Nag Raj (1993) further limited _Pseudolachnnea_ to the species with 1-septate conidia and _Pseudolachnella_ to those with multisepaate conidia. No sexual state is known for _Pseudolachnella_ and _Pseudolachnnea_, whereas as one species of _Dinemasporium_ is known based on its sexual state, _Phomatospora dinemasporium_ (Xylariales). However, the identity of the sexual state in this case is considered to be doubtful (Duan et al. 2007).

A recent study applying ribosomal DNA sequence data revealed the phylogenetic placement of _Pseudolachnnea_ and _Dinemasporium_ within the chaetospheralean clade. However, the phylogenetic position of _Pseudolachnella_ could not be determined due to the lack of cultures (Crous et al. 2012b). The present study suggests that _Pseudolachnella_ resides in the _Chatosphaeriales_ but that it is distantly related to _Pseudolachnnea_, thus consistent with the views of Nag Raj (1993).

A case study of _Dinemasporium_ and related genera by Crous et al. (2012b) suggested that the appendage morphology could be a useful characteristic in species delimitation but not in generic separation. _Pseudolachnella_ species are heterogeneous in terms of appendage morphology: short (to 4 µm) or long (47 µm) in length, simple or branched, single or multiple in number. _Pseudolachnella guaviyunis_ can be distinguished by its simple appendages at both ends of the conidia, measuring up to 14 µm in length.

A megablast search of the NCBI GenBank nucleotide sequence database using the ITS sequence of _Pseudolachnella guaviyunis_ showed that its closest relatives are _Pseudolachnnea fraxini_ (GenBank JQ 889287; Identities = 464/533 (87 %); Gaps = 23/533 (4 %)) and _Dinemasporium strigulos_ (GenBank JQ889283; Identities = 495/579 (85 %); Gaps = 34/579 (5 %)). A megablast search using the LSU sequence of _Pseudolachnella guaviyunis_ showed that it was most similar to _Pseudolachnnea fraxini_ (GenBank JQ889301; Identities = 810/839 (97 %); Gaps = 1/839 (0 %)) and _Dinemasporium strigulos_ (GenBank JQ 889299; Identities = 807/841 (96 %); Gaps = 3/841 (0 %)).

Colour illustrations. _Mycianthes pungens_ trees growing at the ‘Quebrada de los Cuervos’ in Uruguay; conidium in sectional view (bar = 100 µm) and on the host substrate (350 µm), germinating conidium (25 µm), branched conidiophores and phialidic conidiogenous cell with conspicuous collarate (arrows) (20 µm); conidia from young to mature (5 µm).


