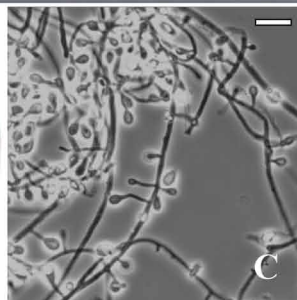
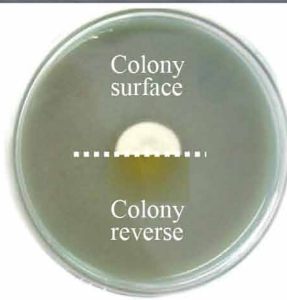
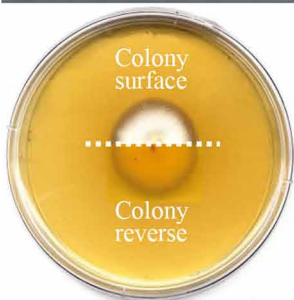
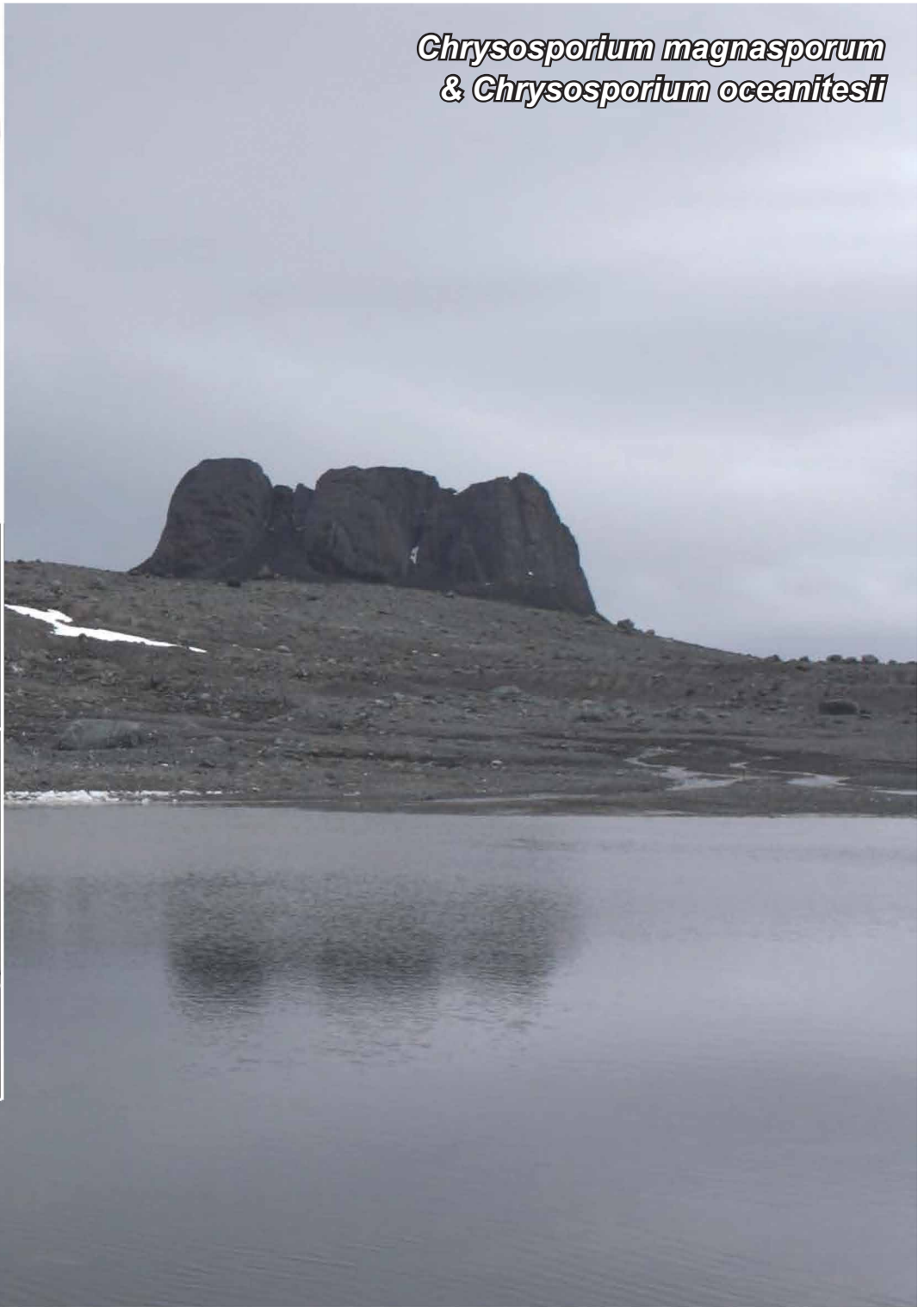
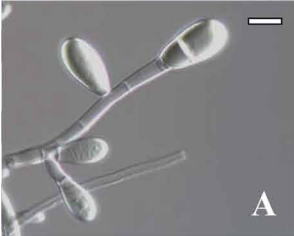
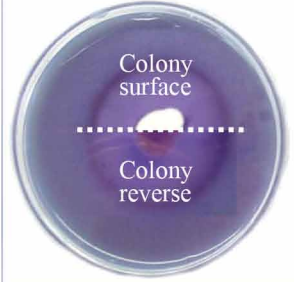
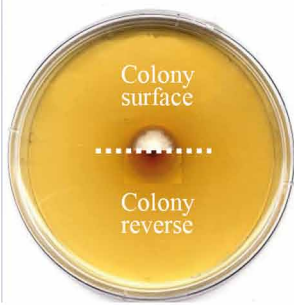


Chrysosporium magnasporum
& *Chrysosporium oceanitesii*



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***Chrysosporium magnasporum* Stchigel, Cano, Mac Cormack & Guarro, sp. nov.**

Etymology. From the Latin *magna-*, big, and *-sporum*, spore, referring to the big size of the conidia.

Hyphae hyaline, septate, smooth-walled, 3–9 µm wide, straight, branched. *Conidia* hyaline, thin- and smooth-walled, terminal and lateral over the main hyphae or developing on right-angled side branches of variable length, sessile or on often swollen protrusions, solitary, obovate, clavate, nearly ellipsoid or obpyriform, commonly 1–2-celled, rarely 3-celled, 10–27 × 7–12 µm, with a broad basal scar measuring 3–9 µm. Intercalary conidia absent. *Chlamydospores* absent. *Sexual morph* not observed.

Culture characteristics — Colony on phytone yeast-extract agar (PYE) attaining 14–16 mm diam at 15 °C after 4 wk, white, downy, slightly raised, margins defined; reverse brownish orange (M. 5A7) (Kornerup & Wanscher 1984), producing a diffusible pigment of the same colour. On OMA, colony attaining 11–13 mm diam at 15 °C after 4 wk, similar as on PYE, but greyish yellow (4B4) at the centre and a reverse concolorous with agar medium. At 5 °C on PYE, colonies 8–10 mm diam after 4 wk, white, cottony, reverse light orange (5A4). Not growing above 20 °C.

Physiology — Keratinolytic. Sensitive to cycloheximide (0.1 %). The fungus grows on bromocresol purple-milk solids-glucose (BCP-MS-G) agar (Kane et al. 1997) alkalising the medium, with hydrolysis of milk solids. Lipase activity not detected on Tween® 80 opacity test medium (TOTM) (Slifkin 2000).

Typus. ANTARCTICA, South Shetland Archipelago, King George Island, Potter Cave, from pellet of *Catharacta skua* Brunnich, 11 Nov. 1996, *W.P. Mac Cormack* (holotype CBS H-20944, culture ex-type FMR 11770 = CBS 132551, ITS sequence GenBank HG329727, LSU sequence GenBank HG329728, MycoBank MB804874).

Notes — *Chrysosporium* (*Onygenales*) is a large polyphyletic genus (Vidal et al. 2000) with more than 80 species. *Chrysosporium magnasporum* is only morphologically comparable to *C. keratinophilum* (sexual morph and current name *Aphanoascus keratinophilus*; Cano & Guarro 1990), because of its large (3.5–22 × 3–11 µm) and smooth-walled (or nearly so) conidia. However, *C. magnasporum* produces conidia with up to two septa (always aseptate in *C. keratinophilum*) and they are larger (10–27 × 7–12 µm) than in *C. keratinophilum*. Furthermore, whereas *C. keratinophilum* can grow above 30 °C, *C. magnasporum* is a psychrotrophic species, showing a maximum growth temperature of around 20 °C.

***Chrysosporium oceanitesii* Stchigel, Cano, Archuby & Guarro, sp. nov.**

Etymology. From *Oceanites*, referring to substratum from which the fungus was isolated.

Hyphae hyaline, septate, smooth-walled, 1–5 µm wide, straight, branched. *Conidia* hyaline, yellowish in mass, thick-walled, asperulate to verrucose, terminal and lateral, borne over the main hyphae or developing on right-angled side branches of variable length, sessile or on often swollen protrusions, rarely intercalary, solitary, obovate, clavate, nearly ellipsoid or obpyriform, commonly aseptate, 7–17 × 4–10 µm, with a basal scar measuring 1–5 µm. *Chlamydospores* absent. *Sexual morph* not observed.

Culture characteristics — Colony on PYE attaining 30–35 mm diam at 15 °C after 4 wk, white but light yellow (4A4) at the centre, downy, raised, margins defined; reverse orange (5A7) without production of a diffusible pigment. On OMA, colony attaining 27–30 mm diam at 15 °C after 4 wk, hairy and powdery (by conidia production), margins not defined, pale yellow (3A3), reverse vivid yellow (3A8) due to the production of a diffusible pigment of the same colour. Colonies on PYE at 5 °C and 25 °C, white, cottony, reaching 23–26 mm and 10–13 mm diam after 4 wk, respectively. Not growing above 30 °C.

Colour illustrations. Potter Cave and Three Brothers Hill, King George Island, South Shetland Archipelago, Antarctica; *Chrysosporium magnasporum* (left column) and *C. oceanitesii* (row) colonies on PYE and BCP-MS-G agar, conidiophores and conidia. Scale bars: A, B, D = 10 µm; C = 25 µm.

Physiology — Keratinolytic. Sensitive to cycloheximide (0.1 %). The fungus grows on BCP-MS-G agar acidifying the medium, with no hydrolysis of milk solids. Lipase activity not detected on TOTM.

Typus. ANTARCTICA, South Shetland Archipelago, King George Island, Three Brothers Hill, from a dead juvenile of *Oceanites oceanicus*, 10 Jan. 2011, *A. Archuby* (holotype CBS H-20945, culture ex-type FMR 11771 = CBS 132552, ITS sequence GenBank HG329729, LSU sequence GenBank HG329730, MycoBank MB804875).

Notes — The *Chrysosporium* asexual morph of *Renispora flavissima* shows morphological similarities with *C. oceanitesii*. However, *C. oceanitesii* produces slightly larger conidia, which are never globose (as in *R. flavissima*) and grow well at 5 °C (*R. flavissima* does not grow below 20 °C). *Chrysosporium* asexual morphs of *Arthroderma* spp. are easily distinguishable from *C. oceanitesii* because they produce smaller conidia (up to 7 × 3 µm). *Chrysosporium vollenarense* (van Oorschot & Piontelli 1985) bears some resemblance, because of the ellipsoid to ovoid, verrucose to tuberculate conidia. However, *C. vollenarense* is resistant to cycloheximide (*C. oceanitesii* is sensitive), produces colonies on PYE with a brown reverse due to the production of a diffusible pigment (absent in *C. oceanitesii*) and the conidia are smaller (5–10 × 4–6 µm) than those of *C. oceanitesii*.

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