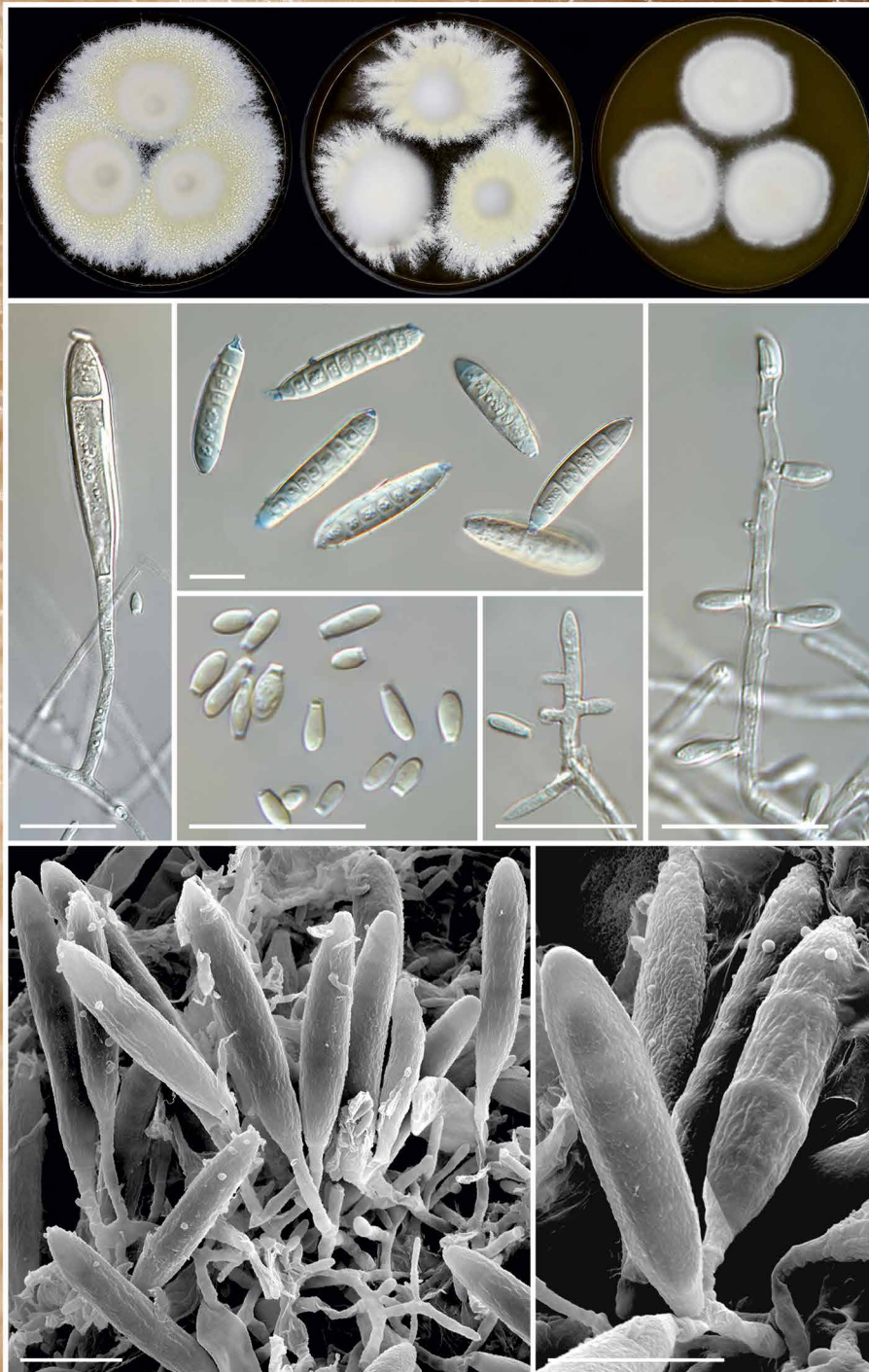


Paraphyton cutaneum



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***Paraphyton cutaneum* Hubka, Kucerova, Gibas, Kubátová & Hamal, sp. nov.**

Etymology. N.L. neut. adj. *cutaneum*, pertaining to the human skin (cutaneous), from which the fungus was isolated.

Classification — *Arthrodermataceae*, *Onygenales*, *Eurotiomycetes*.

Micromorphology (on malt extract agar (MEA), 25 °C, 2 wk): *Mycelium* consisting of branched, septate, hyaline, smooth, 1.5–3.5 mm diam hyphae; racquet hyphae, spiral hyphae and peridial hyphae not observed. *Conidiophores* simple, usually poorly differentiated from vegetative hyphae; conidiogenous hyphae unbranched or sparsely laterally branched. *Microconidia* sessile, borne laterally or terminally, clavate or pyriform, truncate, aseptate, smooth-walled, 3.5–7.5 × 1.5–2.5 µm (mean ± standard deviation: 5.1 ± 0.9 × 2.3 ± 0.3 µm), L/W 1.6–3.7. *Macroconidia* borne singly or on sparsely and irregularly branched conidiophores, fusiform or clavate with rounded apex (less frequently slightly acuminate) and truncate base, straight or slightly to strongly curved, multi-celled, thick-walled, usually with 4–7(–9) septa (median = 6), smooth-walled, hyaline to pale yellow *en masse*, 35–70(–80) × 9–14 µm (54 ± 9.6 × 12.2 ± 1.2 µm), L/W 2.8–6.2. *Chlamydospores* globose, subglobose to irregular, usually 5–10 µm diam. *Sexual morph* unknown.

Culture characteristics — Colonies on Sabouraud glucose agar (SGA) at 25 °C 33–40 mm diam after 1 wk, covering dish after 2 wk, flat, centrally raised to umbonate, granular, pale yellow (4A3; Kornerup & Wanscher 1978) to yellowish white (4A2), margins filamentous, reverse light brown (5D6) to orange yellow (4B7). Colonies on MEA at 25 °C 25–35 mm diam after 1 wk, covering dish after 2 wk, flat with elevated centre, granular (with or without cottony centre), pale yellow (4A3) to pinkish white (7A2), pink (13A4) sectors or concentric zone may be present in old cultures, margins filamentous, serrate to irregular, reverse greyish orange (5B4) to orange white (5A2), bright red pigment inconstantly exuded into the medium. Colonies on potato dextrose agar (PDA) at 25 °C 17–21 mm diam after 1 wk, 42–48 mm diam after 2 wk, centrally raised to raised, downy to delicately granular, pale yellow (4A3) to yellowish white (4A2), margins filamentous, reverse light brown (5D5) to greyish yellow (4B4). Colonies on MEA at 30 °C after 1 wk 24–29 mm diam, covering dish after 2 wk; no growth on MEA 37 °C.

Colour illustrations. Human skin. Fourteen-day-old cultures of *Paraphyton cutaneum* grown at 25 °C on SGA, MEA and PDA (left to right); conidiophores bearing multi-celled macroconidia and one-celled microconidia, free macro- and microconidia, macroconidia in SEM. Scale bars = 20 µm.

Typus. SOUTH AFRICA, skin scrapings from human patient, before 1977, unknown collector (holotype PRM 951591, isotype PRM 951592, cultures ex-type UAMH 4027 = CCF 6192; ITS, LSU, β-tubulin and *tef1α* sequences GenBank MT192521, MT192523, MT210641 and MT210643, MycoBank MB835001).

Additional material examined. CZECH REPUBLIC, skin scales, heel, 50-yr-old woman with suspected dermatophytosis, 16 Oct. 2017, *P. Hamal*, culture CCF 6334; ITS, LSU, β-tubulin and *tef1α* sequences GenBank MT192521, MT192524, MT210640 and MT210642.

Notes — BLAST analyses with the ITS and β-tubulin sequences of *Paraphyton cutaneum* showed the following similarities with currently accepted *Paraphyton* species (De Hoog et al. 2017): *P. cookei* (94.8 % and 95.6 %, respectively), *P. mirabile* (92.0 % and 90.8 %, respectively) and *P. cookiellum* (89.0 % and 92.9 %, respectively); LSU and *tef1α* sequences are not available for all accepted species.

Paraphyton cookei and *P. cookiellum* have echinulate to verrucose macroconidia and can be easily distinguished from *P. cutaneum* having smooth-walled macroconidia. Additionally, macroconidia of *P. cookiellum* are oval (18–34 × 16–18 µm) and predominantly 4-celled (Currah 1985). *Paraphyton mirabile* is a slow-growing species compared with *P. cutaneum*; its colonies attain approximately 24 mm diam after 2 wk on SGA (Choi et al. 2012).

Both isolates of *P. cutaneum* were isolated from patients with skin lesions suggestive of dermatophytosis but its pathogenicity is questionable because the detailed anamnestic data are not available. The strain from the Czech patient was isolated from a skin lesion on the heel (direct microscopic examination not performed due to insufficient amount of material). A complete clinical healing was observed after 1 mo treatment with topical oxiconazole. The species probably naturally occurs in soil, similarly to the remaining *Paraphyton* species which are also occasionally isolated from clinical material (Choi et al. 2012).

Supplementary material

FP1100 A best scoring maximum likelihood (ML) tree based on the β-tubulin gene and the ITS region sequences.

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