©Institut für Biologie, Institutsbereich Geobotanik und Botanischer Garten der Martin-Luther-Universität Halle-Wittenberg

Second collection of *Tilletia avenastri* discovered in type material of *Trisetum imberbe*

Uwe BRAUN, Alexandra WÖLK & Bettina HEUCHERT

Abstract: Braun, U., Wölk, A. & Heuchert, B. 2014: Second collection of *Tilletia avenastri* discovered in type material of *Trisetum imberbe*. Schlechtendalia **27**: 15–16.

In the course of phylogenetic-taxonomic studies on *Helictotrichon* and related oat-like grasses, type material of *Trisetum imberbe* has been re-examined. Distorted inflorescences with smut sori in ovaries have been observed, examined and identified as *Tilletia avenastri*. This is the second record of this smut fungus, which has recently been described from Lesotho.

Zusammenfassung: Braun, U., Wölk, A. & Heuchert, B. 2014: Zweiter Fund von *Tilletia avenastri* im Typusmaterial von *Trisetum imberbe* entdeckt. Schlechtendalia **27**: 15–16.

In Verlauf von phylogenetisch-taxonomischen Arbeiten über *Helictotrichon* und verwandte haferartige Gräser wurde Typusmaterial von *Trisetum imberbe* untersucht. Deformierte Infloreszenzen mit Brandsori in den Ovarien wurden gefunden, untersucht und als *Tilletia avenastri* identifiziert, was den zweiten Fund dieses Brandpilzes darstellt, der erst jüngst aus Lesotho beschrieben worden ist.

Key words: smut fungi, *Tilletiaceae*, South Africa

Published online 25 Feb. 2014

In the course of molecular phylogenetic and taxonomic-morphological examinations of *Helictotrichon* Besser and allied oat-like grasses, Wölk & Röser (2013) introduced the new genus *Trisetopsis* Röser & Wölk and reallocated several species of the former *Helictotrichon* complex to this genus, including *Avena turgidula* Stapf (≡ *Trisetopsis turgidula* (Stapf) Röser & Wölk, *Avenastrum turgidulum* (Stapf) Stapf). Syntype material of *Trisetum imberbe* Nees, deposited at HAL (South Africa, Cape, Leeuwenspruit, between Kraairivier and Witbergen, 4500' alt, J. F. Drège, January 1826–1834, HAL 0107178), an older synonym of *A. turgidula*, has been examined and exhibited distorted inflorescences with infected ovaries. Sevenster & Veldkamp (1983) mentioned an infection of type material of *Trisetum imberbe* by a *Tilletia* causing monstrous spikelets, and Schweickerdt (1937) referred to *Tilletia* in inflorescences of *Helictotrichon turgidulum*, but in both papers without exact identification of the causal agent. A detailed microscopic examination revealed infections by a smut fungus later identified as *Tilletia avenastri* Vánky recently described from Lesotho on *Avenastrum turgidulum* (Vánky 2011). *T. avenastri* was hitherto only known from the type collection. The present collection found in type material of *T. imberbe* is the second record of this smut fungus.

Smut spores in type material of *Trisetum imberbe* agree morphologically well with the original description of *T. avenastri*. Sori occur in infected ovaries as ellipsoid swellings, 0.5–1.5 mm diam., within the floral envelop, covered by a brown pericarp surrounding the brownish spore mass (Fig. 1). The individual smut spores are characterised as follows: Shape globose to subglobose, composed of pigmented spores, yellowish or with an olivaceous tinge, 15–20 µm diam., wall thin, up to about 1 µm, surrounded by a thick, firm, hyaline sheath, 3–5 µm wide, combined diameter of spore and sheath 20–28 µm, spinulose, spines coarse, arising from the spore wall, permanently embedded in the hyaline sheath, conical, 2–3(–4) µm high and up to 2 µm wide at the very base, colourless.

Literature

Schweickerdt, H. G. W. J 1937: A revision of the South African species of *Helictotrichon* Bess. ex Schultes. Bothalia **3**: 185–203.

Sevenster, J. G. & Veldkamp, J. F. 1983: A revision of *Helictotrichon* (Gramineae) in Malesia. Blumea **28**: 329–342.

Vánky, K. 2011: Seven new species of smut fungi (*Ustilaginomycotina*). Mycologia Balcanica **8**: 97–104.

Wölk, A. & Röser, M. 2013: The new genus *Trisetopsis* and new combinations in oat-like grasses (Poaceae). Schlechtendalia **25**: 57–61.

©Institut für Biologie, Institutsbereich Geobotanik und Botanischer Garten der Martin-Luther-Universität Halle-Wittenberg



Fig. 1: *Tilletia avenastri*, infected inflorescences in syntype material of *Trisetum imberbe* (HAL 0107178).

Addresses of the authors

Uwe Braun, Alexandra Wölk and Bettina Heuchert, Martin-Luther-Universität, Institut für Biologie, Bereich Geobotanik und Botanischer Garten, Herbarium, Neuwerk 21, 06099 Halle (Saale), Germany. (E-Mail: uwe.braun@botanik.uni-halle.de; alexandra.woelk@botanik.uni-halle.de; bettina.heuchert@botanik.uni-halle.de)

©Institut für Biologie, Institutsbereich Geobotanik und Botanischer Garten der Martin-Luther-Universität Halle-Wittenberg

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: Schlechtendalia

Jahr/Year: 2014

Band/Volume: 27

Autor(en)/Author(s): Braun Uwe, Wölk Alexandra, Heuchert Bettina

Artikel/Article: Second collection of Tilletia avenastri discovered in type material of Trisetum imberbe 15-16