

Stegocintractia capitata sp. nov. (*Ustilaginomycetes*) from Germany

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Abstract. After a short revision of the genus *Stegocintractia*, a new species, *S. capitata* on *Juncus capitatus* is described and illustrated. A key to the six known species of *Stegocintractia* is presented.

Key words: *Juncaceae*, new species, smut fungi, *Stegocintractia*, *S. capitata*, taxonomy

Introduction

The genus *Cintractia* s. lat. was revised by Piepenbring *et al.* (1999). Based on molecular and morphological data it was split into four genera: *Cintractia* Cornus s. str., *Gymnocintractia* M. Piepenbr., Begerow & Oberw. (= *Ustanciosporium* Vánky), *Leucocintractia* M. Piepenbr., Begerow & Oberw., and *Stegocintractia* M. Piepenbr., Begerow & Oberw. Two further genera were added: *Pilocintractia* Vánky (2004) and *Portalia* V. González, Vánky & G. Platas (González *et al.*, 2007).

The genus *Stegocintractia* is characterised by sori on plants in *Juncaceae*, in all spikelets or around pedunculi of an infected inflorescence forming black, agglutinated spore masses, powdery on their surface. Young sori are covered by a fungal peridium, sterile stroma is lacking. Infection systemic. Spores single, pigmented (brown), ornamented, without appendages. Host-parasite interaction by intracellular hyphae, coated by an electron-opaque matrix. Mature septa poreless. Five species of *Stegocintractia* are known: 1. *S. hyperborea* (Blytt) M. Piepenbr., on *Luzula* spp. in Europe, Asia, Greenland, 2. *S. junci* (Schwein.) M. Piepenbr., on *Juncus* spp., N & S America, 3. *S. lidii* (Liro) M. Piepenbr., on *Juncus biglumis*,

N. Europe, 4. *S. luzulae* (Sacc.) M. Piepenbr., Begerow & Oberw., on *Luzula* spp., Europe, E. Asia, N. America, and 5. *S. spadicea* (Liro) M. Piepenbr., Begerow & Oberw., on *Luzula alpinopilosa*, Europe.

Smuted *Juncus capitatus* were collected only a few times in Germany: In four cases they were infected by *Tolyposporium junci* (J. Schröt.) Woronin as shown by H. & I. Scholz and H. Jage (comp. Scholz & Scholz 1988: 320). A recent collection of smuted *J. capitatus* turned out to be infected by an unknown species of *Stegocintractia*, which is described below.

Materials and Methods

Sorus and spore characteristics were studied using dried herbarium specimens. Spores were dispersed in a droplet of lactophenol on a microscope slide, covered with a cover glass, gently heated to boiling point to rehydrate the spores, and examined by a light microscope (LM) at 1000× magnification. For scanning electron microscopy (SEM), dry spores were placed on double-sided adhesive tape, mounted on a specimen stub, sputter-coated with gold-palladium, c. 20 nm, and examined in a SEM at 10 kV.

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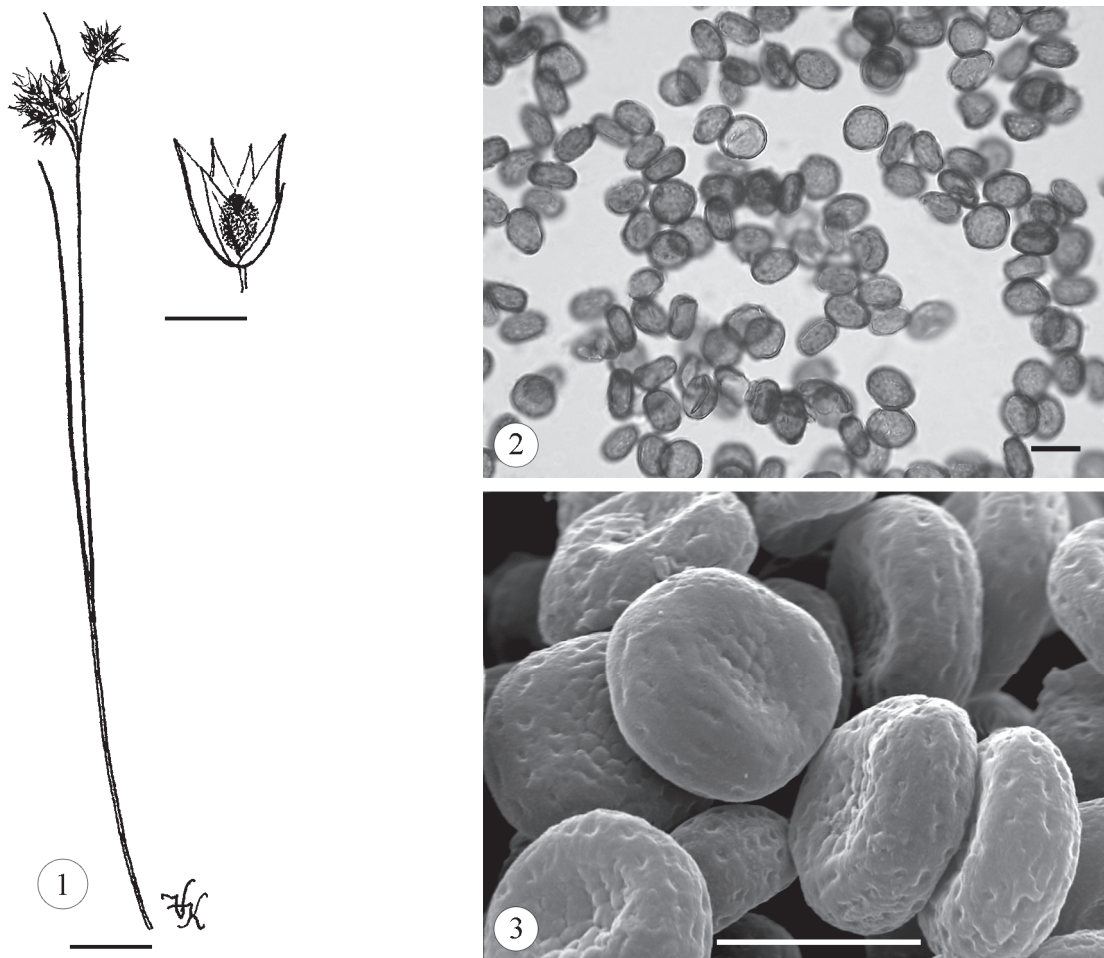


Fig. 1. Sori of *Stegocintractia capitata* in all spikelets of an inflorescence of *Juncus capitatus* (type). Habit and enlarged an infected spikelet. Bars = 1 cm for habit, and 2 mm for detail drawing. Figs 2-3. Spores of *Stegocintractia capitata* on *Juncus capitatus*, in LM and in SEM (from holotype). Bars = 10 μ m

Results

Stegocintractia capitata Vánky, Jage, U. Schlüter & Sluschny, sp. nov.

Mycobank # MB 511453.

Sori in spiculis omnibus inflorescentiae matricis conglomeratae massas nigras, globoideas, agglutinatas, 0,5-1 mm diam., sororum superficie pulvereas, glumis plus-minus occultas formantes. *Sporae* singulares, depressae, in visu laterali ellipticae, 5-6,5 μ m latae, in visu latitudinali circulares, ovatae usque ad parum irregulares, 7-10,5 \times 8,5-11,5 μ m, flavido-brunneae; pariete cca. 0,5 μ m crasso, leniter moderate dense foveolato excepto parte centrali lateris depressis, ubi verrucoso (sicut in SEM conspicuo). Foveolae in marginibus saepe in seriebus 2-4 parallelis ordinatae.

Typus in matrice *Juncus capitatus* Weigel, Germany, Mecklenburg, Ludwigslust, Motodrom, 14.VII.2007, leg. U. Schlüter & H. Sluschny, comm. B. Schurig to H. Jage. Holotypus H.U.V. 21 504, isotypus TUB 019 014.

Sori (Fig. 1) in all spikelets of a congested inflorescence, forming black, globoid, agglutinated spore masses with powdery surface, 0.5-1 mm in diam., more or less hidden by the glumes. *Spores* (Figs 2-3) single, flattened, in side view elliptic, 5-6.5 μ m wide, in plane view circular, ovate to slightly irregular, 7-10.5 \times 8.5-11.5 μ m, yellowish brown; wall c. 0.5 μ m thick, finely, moderately densely foveolate excepting the central part of the flattened sides where it is verrucose as seen in SEM. Foveolae on the rims are often arranged in 2-4 parallel rows.

On Juncaceae: *Juncus capitatus*; Europe (Germany). Known only from the type locality.

Key to the species of *Stegocintractia*

1	On <i>Juncus</i>	2
1*	On <i>Luzula</i>	4
2	Sori around floral pedicels, only rarely in the spikelets	<i>S. junci</i>
2*	Sori in the spikelets	3
3	Spores 15-21 μm long	<i>S. lidii</i>
3*	Spores 8.5-11.5 μm long	<i>S. capitata</i>
4	Spores verruculose-echinulate	<i>S. hyperborea</i>
4*	Spores foveolate	5
5	Spores 20-30 (-32) μm long	<i>S. luzulae</i>
5*	Spores 13-21 μm long	<i>S. spadicea</i>

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References

- González, V., Vánky, K., Platas, G. & Lutz, M. 2007. *Portalia* gen. nov. (*Ustilaginomycotina*). – Fungal Diversity 27: 45-59.
- Piepenbring, M., Begerow, D. & Oberwinkler, F. 1999. Molecular sequence data assess the value of morphological characteristics for a phylogenetic classification of species of *Cintractia*. – Mycologia 91: 485-498.
- Scholz, H. & Scholz, I. 1988. Die Brandpilze Deutschlands (*Ustilaginales*). – Englera 8: 1-691.
- Vánky, K. 2004. *Pilocintractia* gen. nov. (*Ustilaginomycetes*). – Mycologia Balcanica 1: 169-174.