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A new *Tilletia* species (Tilletiales) on *Ischaemum* (Gramineae)

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A new smut fungus, *Tilletia ischaemi* on *Ischaemum rugosum* from India is described and illustrated.

Key words : *Tilletia ischaemi* sp. nov.

INTRODUCTION

The junior author collected in Jabalpur (M.P., India) several specimns of *Ischaemum rugosum*, infected by a *Tilletia* which turned out to be a new species, which is described as.

Tilletia ischaemi K. Va'nky & N.D. Sharma, sp. nov.

Typus in matrice *Ischaemum rugosum* Salisb., India, Madhya Pradesh, Jabalpur, Agricultural University Campus, 23° 10' N, 79°57'E, alt. cca. 410 m, 4.XI. 1992, leg N.D. Sharma. Holotypus in Herbario Ustil. Va'nky (HUV 17453), isotypi in HCIO 43237 et in BPI.

Sori (Fig. 1) in ovariis nonnullis eiusdem inflorescentiae, tumefacti, subcylindracei, 1-1. 5 x 4-8 mm, inter involucra floralia protrusi, primo membrana crassa, origine plantae nutrientis (pericarpium) cooperti, qua irregulariter rupta massam nigram, pulveream sporarum cellulis sterilibus intermixtam ostendentes. *Sporae* (Figs. 2, 3) globosae , subglobosae usque late ellipsoidales, 17.5-24(–28) x 18–26 (–30) µm, atro-rufobrunneae usque paene opacae, verrucis densis, 1–2 (–2. 5) mm altis, conicis usque complanatis, in visu superficiali sicut areae atrae, parvae, polygonales spparentibus instructae. *Cellulae steriles* (Figs. 2, 3) subglobosae, ovoideae, ellipsoidales usque parum irregulares, 15–22x 16–26 (30) µm, pallide flavidobrunneae; pariete 1. 5–2. 5 mm crasso, saepe stratis 2 vel nonnullis instructo, levi.

Sori (Fig. 1) in some ovaries of an inflorescence, swollen, subcylindrical, 1–1.5 x 4–8 mm, protruding between the floral envelopes, first covered by a thick membrane of host origin (pericarp) which ruptures irregularly disclosing the black, powdery mass of spores intermixed with sterile cells. *Spores* (Figs. 2, 3) globose, subglobose to broadly ellipsoidal, 17.5–24 (–28) x 18–26 (–30) µm, dark reddish-brown to almost opaque, provided with densely situated, 1–2 (–2.5) µm high conical to flattened warts, in surface view appearing as dark, small polygonal areas. *Sterile cells* (Figs. 2, 3) subglobose, ovoid, ellipsoidal to slightly irregular, 15–22 x 16–26 (–30) µm, light yellowish-brown; wall 1.5–2.5 µm thick, often with two or several layers, smooth.

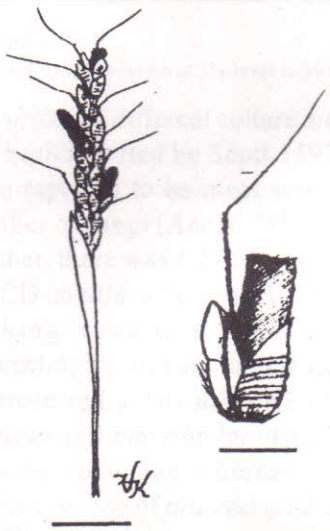
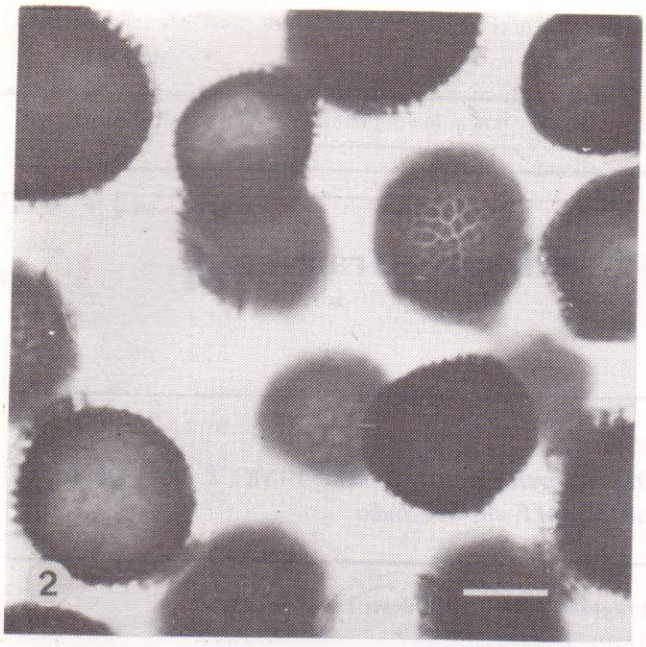
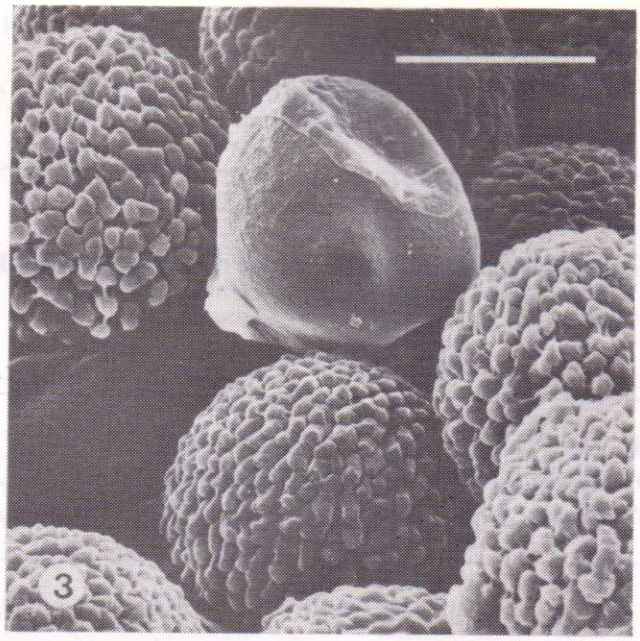


Fig. 1 Sori of *Tilletia ischaemi* K. Va'nky and N. D. Sharma in some ovaries of an inflorescence of *Ischaemum rugosum* Salisb. (type). (Bars = 1 cm, and for the detail picture 2.5 mm)





Figs. 2, 3. Spores of *Tilletia ischaemi* K. Va'nky and N. D. Sharma on *Ischaemum rugosum* Salisb., in LM and in SEM (type). (Bars = 10 μm)

On *Ischaemum rugosum* Salisb. Known only from the type collection.

DISCUSSION

No *Tilletia* (or *Neovossia*) is known on *Ischaemum*. *T. ischaemi* belongs to that group of *Tilletia* (often considered as *Neovossia*) in which the spores are ornamented with peculiar, coarse, conical or flat verrucae ("scale like projections"), and spore germination results in a great number or acicular basidiospores which do not fuse. A paper about the generic delimitation of these species is in work. Because of small differences in size, colour ornamentation, wall thickness, etc. of the spores and sterile cells, often it is rather difficult to assign a certain collection to one or anothor species. Small but constant differences can be demonstrated only by a careful comparison of the spores in a microscope, including SEM (scanning electron microscope). Having seen a great number of smut fungi of this group, the senior author concludes that these *Tilletia* species are often restricted to a certain host plant genus or even species.

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