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Microbotryum vivipari sp. nov. and *Anthracoidea mulenkoi* new to China

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Abstract — A new species, *Microbotryum vivipari* on *Polygonum viviparum*, which was collected from Gansu Province, is described. *Anthracoidea mulenkoi* on *Kobresia cuneata*, new to China, is also reported.

Key words — *Microbotryales*, smut fungi, taxonomy

A new species of *Microbotryum* on *Polygonum viviparum* was discovered in the Herbarium of the Institute of Botany, Chinese Academy of Sciences (PE) by Mr. Cao Ziyu. It was collected from Gansu Province in northwestern China in 1964. No collector was recorded for the specimen. Its sori infect all of the flowers in an inflorescence as well as parts of the leaves. We describe the new species as:

Microbotryum vivipari S.H. He & L. Guo, **sp. nov.** **Figs. 1-4**

MycoBank MB 511674.

Sori saepe in floribus omnibus eiusdem inflorescentiae evoluti, 1.5–6 mm longi, 1–2 mm lati, raro in foliis, primum membrana cooperti, deinde rupti. Massa sporarum atropurpurea, pulverulenta. Ustilosporae subglobosae ovoideae, ellipsoideae vel leniter irregulares, 11–20(–30) x 9–15(–17.5) µm, brunneopurpurea; pariete 0.5–1 µm crasso, dense verruculoso.

Sori usually in all flowers in an inflorescence, swollen, with remnants of host tissue resembling a columella, 1.5–6 mm long, 1–2 mm wide, rarely also in parts of leaves, at first covered by a pale brown membrane, which later ruptures.

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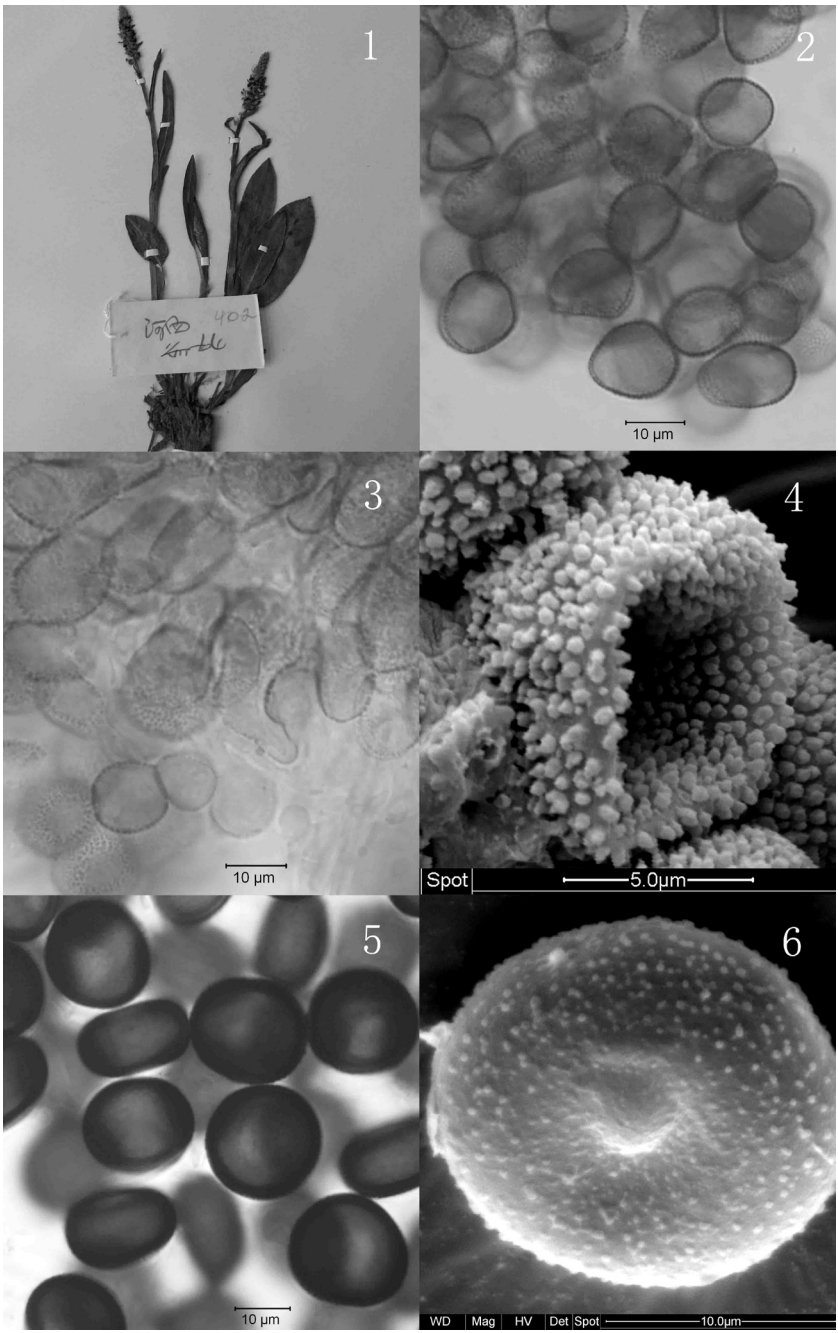
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Spore mass blackish-violet, powdery. Ustilospores subglobose, ovoid, ellipsoidal or slightly irregular, 11–20(–30) x 9–15(–17.5) µm, brownish-violet; wall 0.5–1 µm thick, densely verruculose.

Specimens examined—On *Polygonum viviparum* L. (*Polygonaceae*), China: Gansu, Tianzhu, Yongfengtan, Zhalongtang, alt. ca. 3150-3950 m, 1. VII. 1964, Hexi no 402, HMAS 163790 (**holotypus**), isotypi in PE 0904217, HUV 21514.

Microbotryum vivipari is similar to *M. bistortarum* (DC.) Vánky (Vánky 1998) from which it mainly differs in having larger ustilospores, 11–20(–30) x 9–15 (–17.5) µm, while *M. bistortarum* has smaller ustilospores, 9–16 x 8–13 µm (Vánky 1994).

A specimen of *Anthracoidea* on *Kobresia cuneata* was collected from Sichuan Province, in southwestern China at 4700 m altitude by Prof. Yang Zhuliang in 2006. The host plant, in the section *Elyna* of the genus *Kobresia*, is an endemic Chinese species distributed in Xizang Autonomous Region, Gansu, Qinghai, Sichuan and Yunnan Provinces (Dai & Liang 2000). To date, five species of *Anthracoidea* are known on the sect. *Elyna* throughout the world, namely *Anthracoidea elynae* (Syd.) Kukkonen (Kukkonen 1963, Guo 1994), *A. xizangensis* L. Guo (Guo 2006a), *A. bistaminatae* L. Guo (Guo 2006b), *A. mulenkoi* (Piątek 2006) and *A. setschwanensis* L. Guo (Guo 2007). The recently collected *Anthracoidea* species from China is identified as *A. mulenkoi* according to its original description (Piątek 2006). *A. mulenkoi* was known only from the type locality in Pakistan, on *Kobresia capillifolia* (Decne.) C.B. Clarke. *A. mulenkoi* is new to China and the host plant, *Kobresia cuneata* is a new host for this species.

Anthracoidea mulenkoi Piątek, Nova Hedw. 83: 110, 2006. **Figs. 5-6**

Sori in ovaries, subglobose, 2–3 mm in diam., at first covered by a grayish fungal membrane, later becoming exposed. Spores mass black, semi-agglutinated. Ustilospores subglobose, broad ellipsoidal, ovoid, 16–23.5 x (12.5–)16–21 µm in plan view, 11–15 µm in side view, brown; wall evenly thickened, 1–2.5 µm, with hyaline caps on the flat sides, no internal swellings, no light reflective areas, surface minutely and sparsely verruculose.

Specimen examined—On *Kobresia cuneata* Kük. (*Cyperaceae,* det. S.R. Zhang), China: Sichuan, Xinlong, alt. 4700 m, 20. VIII. 2006, Z.L. Yang 4844, HMAS 180704.

Figs. 1-4. *Microbotryum vivipari* on *Polygonum viviparum*. Fig. 1. Sori (PE 0904217, isotype). Figs. 2-3. Ustilospores as seen by LM (HMAS 163790, holotype). Fig. 4. Ustilospores as seen by SEM. (HMAS 163790, holotype). Figs. 5-6. *Anthracoidea mulenkoi* on *Kobresia cuneata* (HMAS 180740). Fig. 5. Ustilospores as seen by LM. Fig. 6. Ustilospores as seen by SEM.

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