

Gerhard Bedlan

Sphaceloma plantaginis-lanceolatae sp. nov., a new pathogen on *Plantago* L.

Sphaceloma plantaginis-lanceolatae sp. nov.,
ein neues Pathogen
an *Plantago* L.

Abstract

Sphaceloma plantaginis-lanceolatae sp. nov., a new species collected on *Plantago lanceolata* L., differs from *Sphaceloma plantaginis*, Jenkins & Bitanc., in the diameter of the acervuli and in length and width of the conidia.

Key words: *Sphaceloma plantaginis-lanceolatae* sp. nov., *Plantago lanceolata*, symptoms, systematics, new species

Zusammenfassung

Sphaceloma plantaginis-lanceolatae sp. nov., eine neue Art an *Plantago lanceolata* L., unterscheidet sich von *Sphaceloma plantaginis*, Jenkins & Bitanc., in den Maßen der Acervuli und in Länge und Breite der Konidien.

Stichwörter: *Sphaceloma plantaginis-lanceolatae* sp. nov., *Plantago lanceolata*, Symptome, Systematik, neue Art

Introduction

On plantain (*Plantago* spp.) we know hitherto from the genus *Sphaceloma* only *Sphaceloma plantaginis*, Jenkins and Bitanc., 1946. On stalks of *Plantago lanceolata* originating from a field of cultivated plantain as medicinal plant at Alberndorf in Upper Austria a *Sphaceloma* species was identified. It differs in the size of the acervuli,

length and width of conidia to *Sphaceloma plantaginis*, Jenkins & Bitanc.

Methods

For the determination of the fungus the usual mycological routine methods of light microscopy were adopted. Acervuli and conidia of the fungus were stained with Wittmann's Blue (WITTMANN, 1970). Both have been measured using the programme labSens by Olympus.

Results

In 1938 a specimen of *Sphaceloma* on *Plantago formosana* Tateishi & Masam., collected on May 16, 1928, was sent to A. JENKINS by K. SAWADA (JENKINS and BITANCOURT, 1946). The specimen showed abundant leaf and peduncle spotting. In 1939 JENKINS and BITANCOURT found the same type of spotting on *Plantago rugelii* Decne. in Washington D.C., subsequently the same fungus on plantain in New Jersey, Michigan, Indiana and Illinois. O.C. BOYD collected on 14 September 1940 this *Sphaceloma* on *Plantago major* L. (JENKINS and BITANCOURT, 1946).

JENKINS and BITANCOURT (1946) described this *Sphaceloma* on *Plantago formosana* and *Pl. major* as *Sphaceloma plantaginis*. They described this new species as follows: acervuli circular to elliptical, 15–65 µm in diameter, may be confluent, hyaline to brown, conidiophores closely grouped, pointed, 8–10 × 2.6–3.3 µm, hyaline to coloured,

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conidia spherical to elliptical or oblong, often biguttulate, usually $5\text{--}10 \times 2\text{--}4 \mu\text{m}$ (with an average of $2,5 \mu\text{m}$), swelling and becoming 2-celled and coloured.

Recently *Sphaceloma plantaginis* was found in the phyllosphere of *Plantago lanceolata* in Poland by ZIMOWSKA (2013).

The conidia of the new species differ in length and width from *Sphaceloma plantaginis*, Jenkins & Bitanc. The conidia are $5.55\text{--}11.43 \mu\text{m}$ long (average $8.12 \mu\text{m}$) and $1.28\text{--}2.91 \mu\text{m}$ wide (average $1.96 \mu\text{m}$).

The acervuli of the new species are roundish to oblong-oval, $183\text{--}434 \mu\text{m}$ long with an average of $296 \mu\text{m}$ and $80\text{--}160 \mu\text{m}$ wide with an average of $116 \mu\text{m}$. They are not swelling and not becoming 2-celled.

Sphaceloma plantaginis-lanceolatae Bedlan sp. nov.

On stalks elongate dark brown to black-brown spots. Conidiomata (acervuli) on all sides of the stalks slightly amphigenous, viewing from above with a circular to elliptical ostiole-like hyaline opening. The acervuli on the stalks measure $183\text{--}434 \times 80\text{--}160 \mu\text{m}$ (average $296 \times 116 \mu\text{m}$) (Fig. 1–3).

The conidia are hyaline, oblong-cylindrical, rounded at the ends, $5.55\text{--}11.43 \mu\text{m}$ long with an average of

$8.12 \mu\text{m}$ and $1.28\text{--}2.91 \mu\text{m}$ wide with an average of $1.96 \mu\text{m}$ (Fig. 4–5).

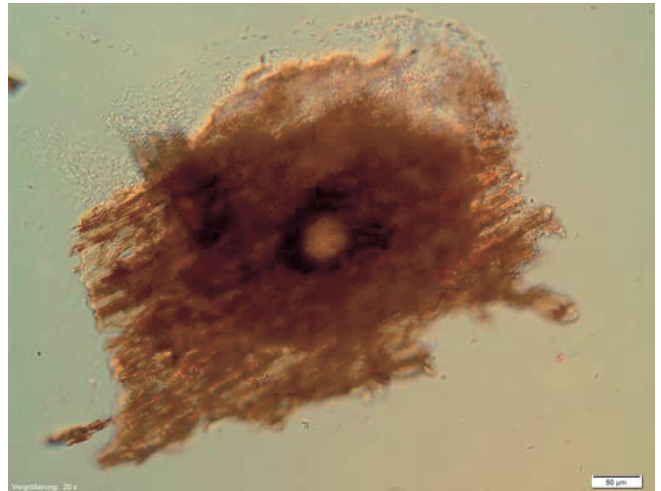


Fig. 3. Acervuli on a stalk of *Plantago lanceolata* (transmitted light) showing an ostiole like opening.



Fig. 1. Acervuli on a stalk of *Plantago lanceolata*.

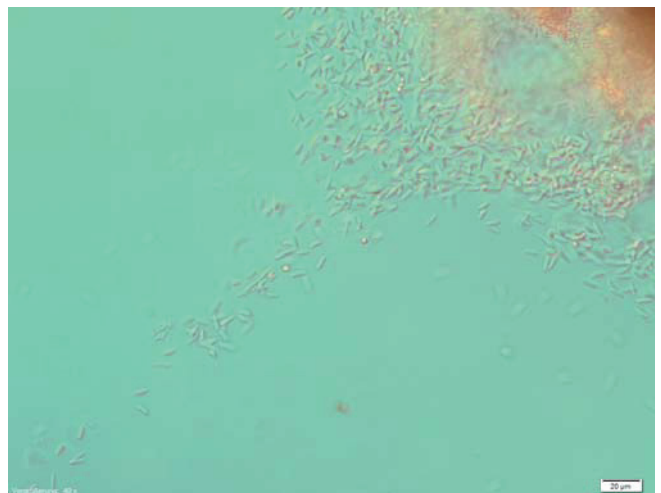


Fig. 4. Conidia of *Sphaceloma plantaginis-lanceolatae*.

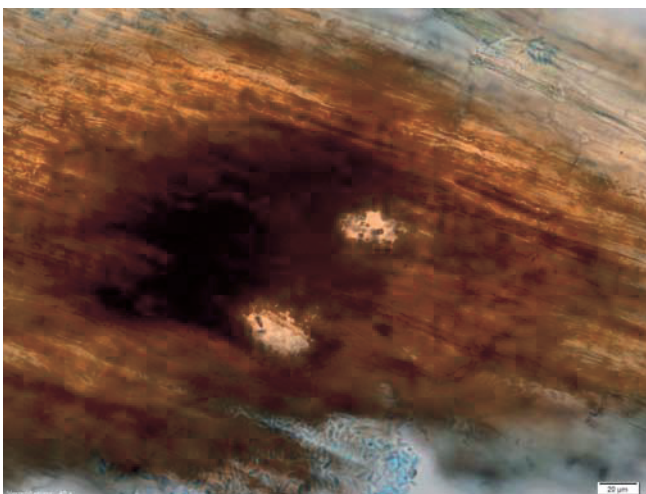


Fig. 2. Acervuli on a stalk of *Plantago lanceolata* (transmitted light).

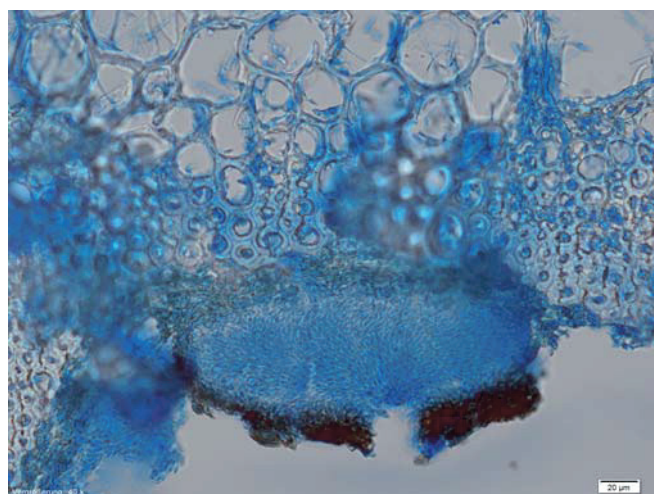


Fig. 5. Transversal section of a stalk with an acervulus (stained with Wittmann's Blue).

On stalks of *Plantago lanceolata* L.

Type: Austria, Alberndorf, local centre Hadersdorf (Upper Austria). On stalks of *Plantago lanceolata* L., 21 October 2005, submitted by (leg.) H. KÖPPL, det. G. BEDLAN (holotype, hb W).

The type specimen has been deposited at the department of Botany, Natural History Museum, Vienna (hb W).

References

- JENKINS, A.E., A.A. BITANCOURT, 1946: A new species of *Sphaceloma* causing scab of plantain (*Plantago*). Journal of the Washington Academy of Sciences Vol. **36**, No. 7, 225-227.
- WITTMANN, W., 1970: Ein neues Rezept zur Herstellung mykologischer Präparate. PflSchber., Bd. **41**, Heft 5/6/7, 91-94.
- ZIMOWSKA, B., 2013: Diversity of fungi colonizing and damaging selected parts of ribwort (*Plantago lanceolata* L.). Acta Sci. Pol., Hortorum Cultus **12** (3), 91-103.