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Sebacina allantoidea sp. nov. [a]

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Résumé – *Sebacina allantoidea* sp. nov. a été recoltée sur troncs morts de *Spiraea* sp. (Rosaceae), sur ascocarpes stromatiques et dans des sporodochies de *Cheirospora botryospora* se développant également sur troncs de *Spiraea* sp. *Sebacina allantoidea* se caractérise par des basidiocarpes minuscules, des basides de petite taille et des basidiospores de forme allantoïde. Elle est comparée aux espèces du genres *Efibulobasidium, Microsebacina* et *Serendipita* ; son rôle écologique éventuel est discuté.

Auriculariales / heterobasidiomycetes / Sebacinaceae

Abstract – A new species of *Sebacina, S. allantoidea*, was found on the base of dead stems of *Spiraea* sp. (Rosaceae) and on stromatic ascocarps as well as within sporodochia of *Cheirospora botryospora* also growing on the plants. *S. allantoidea* is characterised by minute, hardly visible basidiocarps, small basidia, and allantoidal basidiospores. It is compared with similar species of the genera *Efibulobasidium, Microsebacina*, and *Serendipita*, and possible ecological implications are discussed.

Auriculariales / heterobasidiomycetes / Sebacinaceae

INTRODUCTION

During a long period, the circumscription of *Sebacina* Tul. & C. Tul. was not clear and led on the one hand to confusion with other genera, especially *Exidiopsis* (Bref.) A. Möller, and on the other hand to the segregation of small new genera, like *Ceratosebacina* P. Roberts, *Microsebacina* P. Roberts, and *Serendipita* P. Roberts (Roberts, 1993). The status of these new genera was, however, questioned (Weiß & Oberwinkler, 2001; Wells & Bandoni, 2001). Several species assigned to these genera are difficult to detect in the field, because they develop minute basidiocarps and sometimes grow cryptically within the hymenia of corticioid basidiomycetes (Oberwinkler, 1964; Roberts, 1993). New species are, therefore, expected to be discovered and described in the future. An undescribed species of *Sebacina* developing inconspicuous basidiocarps was included in recent analyses of partial nuclear 28 S rDNA sequences of representative species of the Auriculariales (Weiß & Oberwinkler, 2001). These analyses supported the concept

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of the Sebacinaceae, which was mainly based on the absence of clamps in contrast to the presence of clamps in other groups of the Auriculariales (Bandoni, 1984; Wells & Oberwinkler, 1982), and confirmed the position of the undescribed species within the Sebacinaceae (Weiß & Oberwinkler, 2001).

MATERIALS AND METHODS

Specimens were collected on dead stems of an ornamental species of *Spiraea* L. (Rosaceae) planted in containers on the campus of the University of Tübingen, Germany. The specimens were detected using a hand-lens with 10 x magnification, a dissecting microscope, or a light microscope. For measurements and drawings using light microscopy, specimens were mounted in 5% phloxine and 5% KOH.

RESULTS

With the naked eye, only a slight pale discoloration was visible on the wood and bark on the base of dead stems of *Spiraea* sp. as well as on ascocarps of a black, stromatic ascomycete probably belonging to the Diaporthales. Using a dissecting microscope, scattered hyaline hyphae slightly crowding at the erumpent apical parts of the ascocarps were found. Using light microscopy, the hyaline fungus was also detected accidentally within sporodochia of the deuteromycete *Cheirospora botryospora* (Mont.) Berk. & Br. that also grew on the stems of *Spiraea* sp., and in all substrates revealed to lack clamps and to produce longitudinally septate basidia. These characteristics justify accommodating the fungus in the genus *Sebacina*, but the species could not be identified and is, therefore, described as a new taxon.

Sebacina allantoidea R. Kirschner & Oberw. sp. nov. Fig. 1

Basidiomata nulla vel insconspicua, in ligno vel cortice mortuo vel in fructificationibus fungorum. Hyphae hyalinae, tenuiter tunicatae, efibulatae, 2-3 µm diam. Cystidia hyphidiaque absentia. Basidia globosa, cruciatim longitudinaliter septata, sine fibulis basalibus, 10-11 µm diam., sterigmatibus approx. 8-16 µm × 2-3 µm. Basidiosporae allantoideae, utrinque obtuse rotundatae, 10-16 × 2.5-4 µm, sporas secundarias parientes.

Holotypus: Germany, Baden-Württemberg, Tübingen, Auf der Morgenstelle, container with ornamental plants, on bark of dead stems of *Spiraea* sp. and on ascocarps of a species probably belonging to the Diaporthales, 20.11.1997, R. Kirschner 281 (TUB).

Paratypus: Germany, Baden-Württemberg, Tübingen, Auf der Morgenstelle, container with ornamental plants, on wood and bark of dead stems of *Spiraea* sp. and on ascocarps of a species probably belonging to the Diaporthales, 26.11.1997, R. Kirschner 282 (TUB).

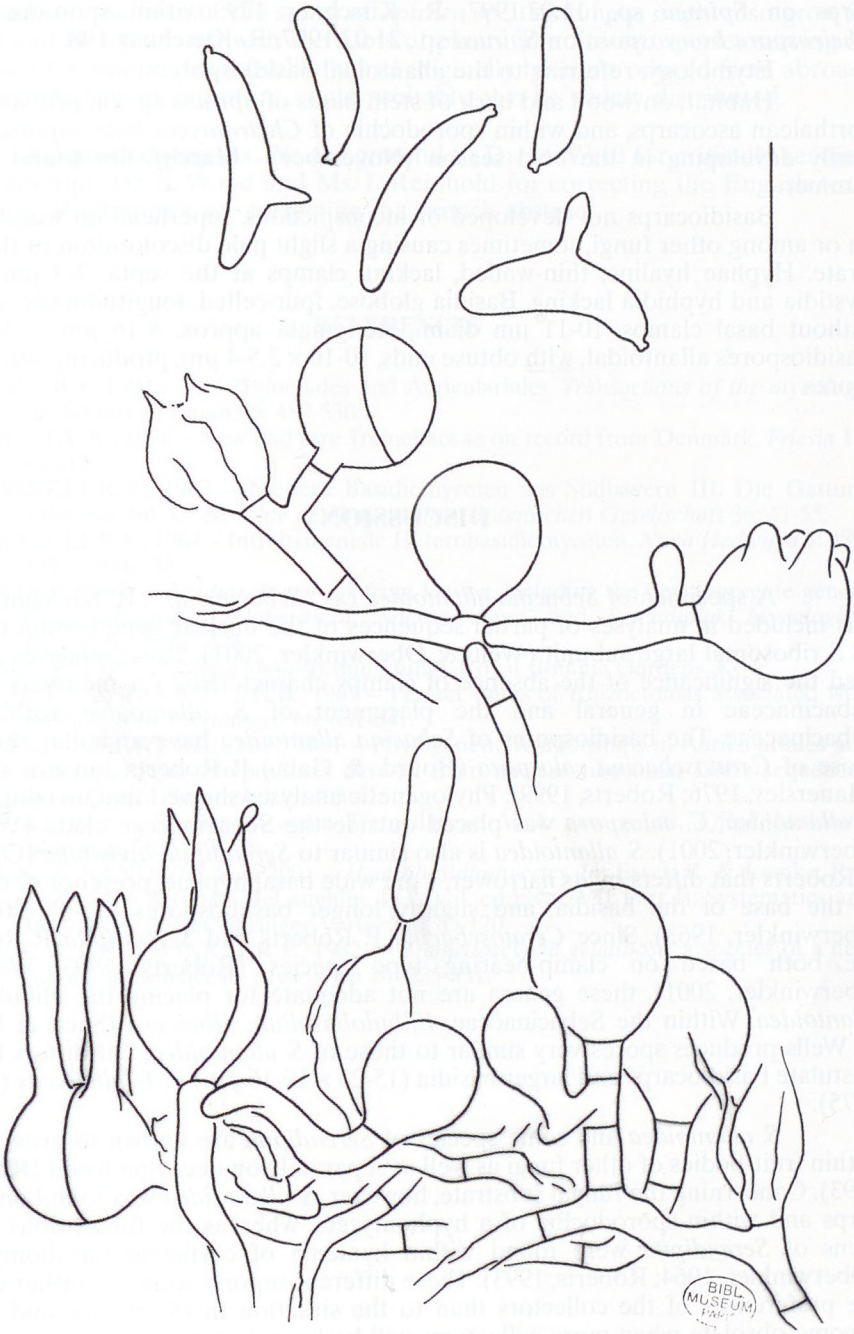

Fig. 1. Basidia and basidiospores of *Sebacina allantoidea* (R. Kirschner 179). Scale bar = 10 µm.

Further specimens: in the same locality as above, on diaporthalean ascocarps on *Spiraea* sp., 11.02.1997, R. Kirschner 179; within sporodochia of *Cheirospora botryospora* on *Spiraea* sp., 21.03.1997, R. Kirschner 198.

Etymology: referring to the allantoidal basidiospores.

Habitat: on wood and bark of stem bases of *Spiraea* sp., on probably diaporthalean ascocarps, and within sporodochia of *Cheiromyces botryospora*, apparently developing in the cold season (November – March), not found in the summer.

Basidiocarps not developed or inconspicuous, superficial on wood, bark, on or among other fungi, sometimes causing a slight pale discoloration of the substrate. Hyphae hyaline, thin-walled, lacking clamps at the septa, 2-3 µm diam. Cystidia and hyphidia lacking. Basidia globose, four-celled, longitudinally septate, without basal clamps, 10-11 µm diam., sterigmata approx. 8-16 µm x 2-3 µm. Basidiospores allantoidal, with obtuse ends, 10-16 × 2.5-4 µm, producing secondary spores.

DISCUSSION

A specimen of *Sebacina allantoidea* (as "*Sebacina* sp.", R. Kirschner 179) was included in analyses of partial sequences of the nuclear gene coding for the 28 S ribosomal large subunit (Weiß & Oberwinkler, 2001). These analyses confirmed the significance of the absence of clamps characteristic for members of the Sebacinaceae in general and the placement of *S. allantoidea* within the Sebacinaceae. The basidiospores of *Sebacina allantoidea* have a similar shape as those of *Ceratosebacina calospora* (Bourd. & Galz.) P. Roberts, but are shorter (Hauerslev, 1976; Roberts, 1999). Phylogenetic analyses showed that, in contrast to *S. allantoidea*, *C. calospora* was placed outside the Sebacinaceae clade (Weiß & Oberwinkler, 2001). *S. allantoidea* is also similar to *Serendipita invisibilis* (Oberw.) P. Roberts that differs by its narrower, 1 µm wide basal hyphae, presence of clamps at the base of the basidia, and slightly longer basidiospores (15-17(-20) µm, Oberwinkler, 1963). Since *Ceratosebacina* P. Roberts and *Serendipita* P. Roberts are both based on clamp-bearing type species (Roberts, 1993; Weiß & Oberwinkler, 2001), these genera are not adequate for placing the efibulate *S. allantoidea*. Within the Sebacinaceae, *Efibulobasidium albescens* (Sacc. & Malr.) K. Wells produces spores very similar to those of *S. allantoidea*, but differs by the pustulate basidiocarps and larger basidia (15-25 × 10-16 µm) in *E. albescens* (Wells, 1975).

S. allantoidea and some species of *Serendipita* are known to grow on or within fruit-bodies of other fungi as well as separately on decaying wood (Roberts, 1993). Concerning the fungal substrate, however, *S. allantoidea* was found on ascocarps and within sporodochia of a hyphomycete, whereas the fungicolous specimens of *Serendipita* were found within hymenia of corticioid basidiomycetes (Oberwinkler, 1964; Roberts, 1993). These different reports could be rather due to the preferences of the collectors than to the situation in the nature and might become obsolete when more collections will be known in the future.

In the phylogenetic analyses by Weiß & Oberwinkler (2001), *S. allantoidea* appeared close to *S. vermifera sensu* Warcup & Talbot that is known to form mycorrhizas (Warcup & Talbot, 1967); other species of the Sebacinaceae might

also develop mycorrhizas (Weiß & Oberwinkler, 2001). Since *S. allantoidea* was found only on the base of the stems of *Spiraea* sp., this fungus might also grow in the soil and be associated with the roots of plants. The *Spiraea* species serving as substrate of *S. allantoidea* most likely had originally been introduced from abroad. The associated fungi, therefore, could probably also be widely distributed.

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