

ON SPORIDESMIUM TRIGONELLUM SACC.

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(With five Text-figures)

The genus *Oncopodiella* Arn., which was published without a Latin diagnosis, is validated. Its type species is identified with *Sporidesmium trigonellum* Sacc. and the new combination *Oncopodiella trigonella* (Sacc.) Rifai is proposed. This species is redescribed and illustrated from the type material and from a recent British collection.

During the 1963 Spring Foray of the British Mycological Society which was held at Cambridge, a collection of a hysteriaceous fungus was made on the bark of a fallen tree of *Ulmus* sp. When this collection was scrutinized under a low-power binocular microscope it was noticed that a curious hyphomycete was also present, growing on the innerside of the bark and forming barely visible colonies. It had dark brown dictyospores which were more or less trigonal in outline and each conidium bore 2-4 distinctive hyaline papillae. These conidia were produced singly as blown out ends of the short slender conidiophores which elongate by producing new growing points subapically causing the scars or the short cylindrical pegs left by the previous conidia to be pushed sideways. Therefore the apices of the mature conidiophores can be seen to bear several of these pegs, which are disposed rather irregularly.

It appears that this interesting fungus, which is new to the Hyphomycetes flora of Britain, has quite a wide distribution. Its occurrence in Belgium and Italy was recorded by Saccardo (1882, 1886) and more recently Arnaud (1954) reported it from France. The scarcity of records or collections of this species is probably due to its small size and rather inconspicuous colonies which make it rather difficult to discern in the field.

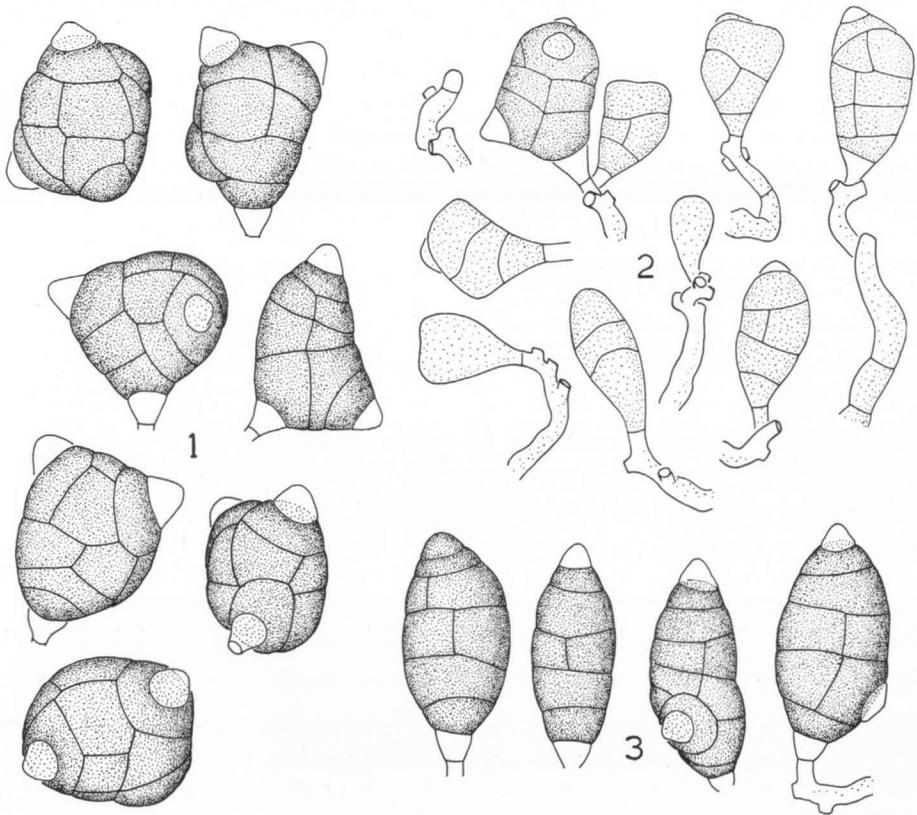
This species was first described by Saccardo (1882) as *Sporidesmium trigonellum* Sacc., based on a collection made in Belgium by Libert. The type species of the genus *Sporidesmium* Link ex Fr., however, has phragmosporous conidia (Ellis, 1958). Consequently, *S. trigonellum* and many other brown dictyosporous species included in *Sporidesmium* by Saccardo and other mycologists who followed him, cannot be retained here.

In an attempt to disentangle the taxonomic and nomenclatural confusions that exist in this complex of fungi, Moore (1959b) transferred a large number of species formerly classified as *Sporidesmium* to the genus *Piricauda* Bub. In emending the last named genus, however, Moore (1959a, 1959b, 1960) ignored the method of conidial development as well as the structure of the conidiophores of these fungi, two

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characters which in recent years have been found to be of paramount importance in the classification of Hyphomycetes (Hughes, 1953; Tubaki, 1958; Subramanian, 1963). Therefore it is not surprising that Moore's emendation of the genus *Piricauda* has not been accepted and most of the species which he transferred to it have subsequently been redistributed in several different genera such as *Monodictys* Hughes (Hughes, 1958; Jones, 1963), *Pithomyces* Berk. & Br. (Ellis, 1960), *Acrodictys* M. B. Ellis (Ellis, 1961) and probably some other genera. *Sporidesmium trigonellum* cannot also be considered to be congeneric with *Piricauda paraguayensis* (Speg.) Moore, the type and only species of the genus *Piricauda* (Hughes, 1960), because the conidia of these two species are produced by morphologically different kinds of conidiophores and in entirely different ways.

In 1954 Arnaud described and illustrated *Oncopodiella tetraedrica* Arn. gen. et spec. nov. which, however, was not validly published since no Latin diagnosis was



Figs. 1-3. *Oncopodiella trigonella*. — 1. Conidia. — 2. Young conidia and conidiophores. — 3. Abnormal conidia (from *Libert* 432, $\times 1250$).

given either for the genus or for the species. The type specimen of this species (*G. Arnaud no. 767*) has not been available for comparison, but except for the slightly longer conidiophore measurement, Arnaud's brief French description and his illustration of its conidiophore and conidia wholly agree with Saccardo's original specimen of *S. trigonellum* and also with the more recent British collection. Since there seems to be no other genus that can accommodate *S. trigonellum*, in the following the generic name *Oncopodiella* is validly published by providing the necessary Latin diagnosis.

The monotypic genus *Oncopodiella* can be easily distinguished from the other brown dictyosporous Hyphomycetes genera by its peculiar type of conidiophore.

Oncopodiella Arn. ex Rifai, *gen. nov.*

Oncopodiella Arn. in Bull. Soc. mycol. Fr. **69**: 296. 1954 (sine diagnose latina).

Fungi imperfecti, hyphomycetes, saprophytici. Coloniae effusae vel punctiformes, atro-brunneae. Mycelium immersum ex hyphis septatis, brunneis, ramosis compositum. Conidiophora dispersa vel densa, simplicia, subhyalina vel pallide brunnea, 0-1-septata, gracilia, curta, recta vel flexuosa, per proliferationes successivas subapicales elongascentia. Conidia singula in apice conidiophori oriunda, subtrigona, obovoidea vel subglobosa, levia, breviter hyalino-papillata, sicca. — Species generis typica: [*Oncopodiella tetraedrica* Arn. =] *Sporidesmium trigonellum* Sacc.

Oncopodiella trigonella (Sacc.) Rifai, *comb. nov.*—Figs. 1-5.

Sporidesmium trigonellum Sacc. in *Michelia* **2**: 641. 1882 (ut *Sporodesmium*), basionym.—
Piricauda trigonella (Sacc.) Moore in *Rhodora* **61**: 105. 1959.

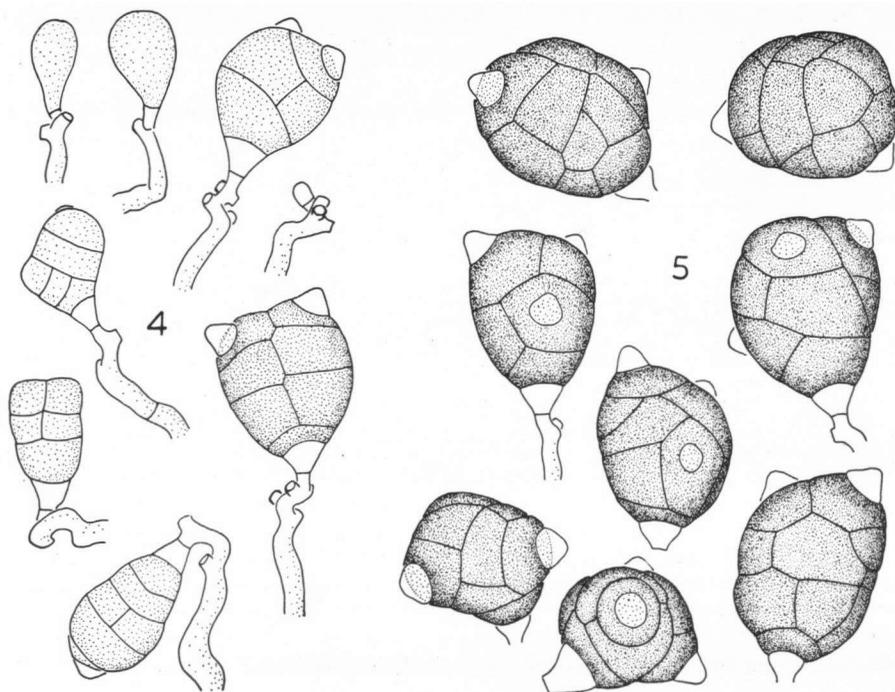
Oncopodiella tetraedrica Arn. in Bull. Soc. mycol. Fr. **69**: 296. 1954 (sine diagnose latina).

The colonies are blackish brown, effused but restricted, or minutely punctiform, often inconspicuous or appear only as dispersed black dust.

The mycelium is mostly immersed in the substrate, composed of pale brown to brown, branched, septate and smooth-walled hyphae 1.5-4 μ in diameter.

The conidiophores are solitary and dispersed or rather crowded, arising terminally or occasionally laterally from the immersed hyphae. They are short and delicate, smooth, thin-walled, unbranched, 0-1-septate, mostly flexuous, very rarely also straight, pale brown below, becoming paler to almost hyaline towards their apices, slender, 3-4 μ diameter at the base, gradually diminishing in width to about 1.2-2 μ diameter at the apex, and up to 25 μ long. These conidiophores elongate by subapical proliferation, producing new growing points which develop to one side of the previous conidium-producing apex. Ultimately the apical portion of each conidiophore may bear up to five or more conspicuous flat-topped short subcylindrical pegs, to which formerly conidia have been attached. No noticeable swelling takes place in this conidium-producing area.

The conidia are produced singly as blown out ends of the successively developed growing points of conidiophores. At first an obovoid conidial initial is blown out at the tip of the conidiophore and soon its rounded distal end flattens slightly and the future papillae begin to take their shape. In the meantime 2-5 transverse and longitudinal or oblique septa are formed and often there is a slight constriction at each septum. The originally colourless conidial initials gradually turn darker with



Figs. 4-5. *Oncopodiella trigonella*. — 4. Young conidia and conidiophores. — 5. Conidia (from Webster & Rifai s.n., $\times 1250$).

age until ultimately they are dark reddish brown; under reflected light the mature conidia appear blackish brown or opaque and shining. At the distal end of the conidia two or four, mostly three prominent papillae can be observed which unlike the rest of the conidia usually remain hyaline or subhyaline. They are conical, $2.5-4.5 \mu$ wide at the base and up to 4μ high. The mature conidia are subtrigonal, broadly obovoid, subglobose or subangular, sometimes turbinate with a rounded base and flattened end, smooth-walled and excluding the papillae they measure $13.5-19 \times 12-16 \mu$, occasionally with their width exceeding their length. They become detached rather easily, leaving behind the flat-topped short subcylindrical pegs.

Some abnormal conidia which are broadly fusiform, and with only one or two papillae have also been observed.

HABITAT.—On dead bark of *Ailanthus*, *Ulmus*, and other trees.

DISTRIBUTION.—Belgium, France, Great Britain, Italy.

ILLUSTRATIONS.—Arnaud in Bull. Soc. mycol. Fr. **69**: fig. 13 Q, R. 1954; Moore in *Rhodora* **61**: pl. 1241, fig. 16. 1959.

SPECIMENS EXAMINED.—BELGIUM: Malmédy, on the bark of *Ailanthus glandulosa*, s. dat., *Libert 432* (PAD, type of *Sporidesmium trigonellum* Sacc.). — GREAT BRITAIN: Cambridgeshire, Devil's Ditch (near Stetchworth), on the innerside of the bark of a fallen tree of *Ulmus* sp., 18 May 1963, Webster & Rifai s.n. (Herb. Mycol. Sheff. Univ. no. 2687, IMI, BO).

For making available the type specimen of *Sporidesmium trigonellum* I am indebted to Professor C. Cappelletti (Padua). I would like to thank Drs M. B. Ellis (Kew) and J. Webster (Sheffield) for their most valuable advice and helpful criticism during the preparation of the manuscript and to Mr A. O. Hulton (Sheffield) for kindly correcting the Latin diagnosis. This work was supported by a grant from the British Council (The Colombo Plan Technical Assistance Cooperation Scheme), to which acknowledgement is also made.

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