

Dictyoporthe bipapillata* - a new combination and a key to the species of *Dictyoporthe

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Abstract: The new combination *Dictyoporthe bipapillata* is proposed for *Valsa bipapillata* in the *Diaporthales*. A key to the five species recognized in the genus *Dictyoporthe* is given.

Zusammenfassung: Für *Valsa bipapillata* wird die Neukombination *Dictyoporthe bipapillata* (*Diaporthales*) vorgeschlagen. Ein Schlüssel für die fünf in der Gattung *Dictyoporthe* anerkannten Arten wird angeführt.

Diaporthalean taxa having muriform ascospores are rare, and all such species are included in the genus *Dictyoporthe* PETRAK (1955). The original species, *D. ahmadii* PETRAK in branches of *Spiraea* from Pakistan, forms valloid groupings of ascomata beneath a small darkened, prosenchymatous, ectostromatic disc, and has hyaline ascospores for which neither gel coating nor terminal appendages were described. MÜLLER (1961) described *D. appendiculata* E. MÜLLER from twigs of *Acer opulus* L. in southern France. The beaks of valloid ascomata penetrate a small pallid, ectostromatic disc. Asci are four-spored, and the hyaline ascospores are surrounded by a wide gel coating that protrudes at both ends as appendages. The third species, *D. acerophila* M. E. BARR, develops in branches of *Acer saccharum* MARSH., in New Hampshire, USA, with its *Coryneum*-like anamorph (BARR 1978). Ascomata and octosporous asci are similar to those of previously described species, but the ascospores are light brown, distoseptate, and bear wide pulvinate appendages at each end.

Another variation within the genus is exemplified by *D. canadensis* (ELLIS & EVERH.) M. E. BARR, described from *Carpinus caroliniana* WALTER in Ontario, Canada. The valloid ascomata, minute ectostromatic disc, and *Coryneum* anamorph, are similar to those of *D. acerophila*, although the light brown ascospores differ in pallid end cells, no appendages, and in not being notably distoseptate (BARR 1983). This small species has a counterpart in branches of *Carpinus betulus* L., whose light to dull brown ascospores are quite conspicuously distoseptate, with elongate hyaline end cells.

***Dictyoporthe bipapillata* (TUL. & C. TUL.) W. M. JAKLITSCH & M. E. BARR, comb. nova, Figs. 1-3**

Basionym: *Valsa bipapillata* TUL. & C. TUL., Sel. Fung. Carp. 2: 206. 1863.

Synonyms: = *Fenestella bipapillata* (TUL. & C. TUL.) SACC., Syll. Fung. 2: 327. 1883.

= *Pseudovalsa macrospora* TUL. & C. TUL. var. *fenestrata* FLAG. & CHEN. in CHENANTAIS, Bull. Soc. Mycol. France 35: 124. 1919.

Description

Stromata: small pulvinate pustules in various configurations below the epidermis of the host, consisting of valsoid groups of perithecia, which are covered by an ectostromatic disc; basal diameter up to 2 mm.

Ectostromatic disc: generally inconspicuous, but highly variable, sometimes lacking, diameter mostly smaller than 0.5 mm, few up to 1.5 mm, whitish to light brown or greyish-brown, in older material also dark brown or decomposed; exposed through longitudinal fissures in the bark, dotted by black ostiola. The ectostromatic substance has a rather loose powdery appearance and consists of a combination of numerous minute subhyaline to yellowish-brown, rodshaped or cuboid crystals (mostly smaller than $6 \times 3 \mu\text{m}$) and sparse loosely interwoven thickwalled hyaline hyphae, $2-3 \mu\text{m}$ thick.

Ascomata: in valsoid groups of up to 8 per stroma or single, globose, $300-450 \mu\text{m}$ diameter, in upper part united by the ectostroma, densely aggregated, often laterally compressed by mutual pressure, in lower part frequently fused laterally, embedded in bark, no entostroma present.

Ostiola: generally minutely papillate to short conical, arising centrally, $50-80 \mu\text{m}$ diameter, up to $200 \mu\text{m}$ long, sometimes slightly elongated, cylindrical, and convergent to a central point, especially if the ectostroma is reduced; emerging in the disc in more or less regular distances, not or very slightly ($50 \mu\text{m}$) protruding beyond the level of the ectostromatic disc. Interior packed with numerous hyaline periphyses.

Peridium: a textura angularis in surface view, approximately $20-40 \mu\text{m}$ thick, consisting of a thin hyaline inner layer and a broad dark (reddish)brown outer layer, cells strongly compressed, $6-20 \mu\text{m}$ in diameter.

Paraphyses: numerous, hyaline, distantly septate, $2-5 \mu\text{m}$ thick, in gelatinous matrix.

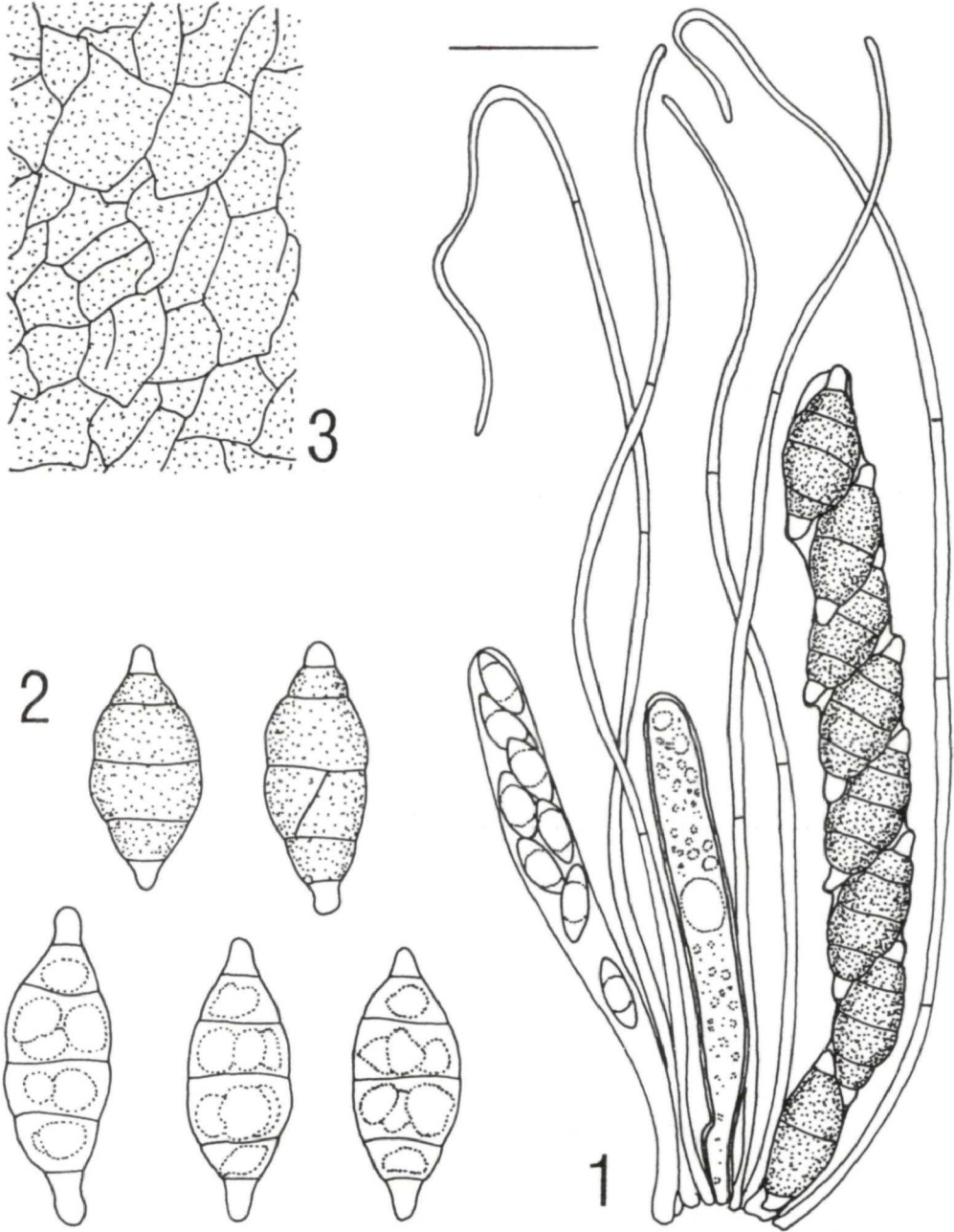
Asci: cylindrical to narrowly clavate, unitunicate, rather thickwalled, wall apically thin, without an apical ring, octosporous, $130-200 \times 18-25 \mu\text{m}$.

Ascospores: $(28-)32-43(-44) \times (12-)13-16(-18) \mu\text{m}$, obliquely uniseriate to partially biseriate in the ascus, broadly fusoid, at first hyaline, early becoming light to dull (olive to reddish-)brown with a hyaline cell at both ends, muriform, distinctly distoseptate, $(3-)5(-7)$ transverse pseudosepta which become true septa during maturation, one rather irregularly arranged longitudinal septum on 0-2 central cells, guttulate, smooth, the end cells are thickwalled, apically $3-4 \mu\text{m}$ and at the septum $6-8 \mu\text{m}$ wide, $3-6(-12) \mu\text{m}$ long, always separated by a euseptum; no sheath, no appendages visible (see Fig. 2).

Habit: in thin dead branches of *Carpinus betulus*.

Distribution: Europe (Austria, France, Sweden). The occurrence in Sweden is deduced from ERIKSSON (1992: 44).

Material examined: **France:** "*Valsa bipapillata* TUL./*Fenestella bipapillata* (TUL. & C. TUL.) SACC., in Carpino Paris; Herbar cryptogamique donné par M. L.-R. TULASNE, en 1873", holotype (PC).



Figs. 1-3. *Dictyoporthe bipapillata*. 1. Part of the hymenium, 2. Ascospores, 3. Section of the peridium in surface view. Bars: 1 = 30 μ m; 2, 3 = 20 μ m.

Austria: Kärnten, St. Margareten im Rosental, grid square 9452/4, 600 m s. m., on thin branches of *Carpinus betulus* on the ground, 15. 5. 1996, W. JAKLITSCH (WU 16965), a part of this collection deposited at DAOM; - - St. Margareten im Rosental, a few hundred meters from the first collection site, grid square 9452/4, on *Carpinus betulus*, 14. 9. 1996, W. JAKLITSCH (WU 16966).

Notes

Dictyoportha bipapillata is most closely related to *D. canadensis*. The latter differs basically in spore characteristics: smaller, not distoseptate, end cells not elongated.

The type collection of *Valsa/Fenestella bipapillata* is in good agreement with the collections from Austria, showing predominantly scattered ascomata, but also a few small stromata with loosely aggregated, circinate arranged or laterally fused ascomata are present. An illustration of *Fenestella bipapillata* is shown by BERLESE (1895-1899), Pl. CVIII, 2.

Type material of *Pseudovalsa macrospora* var. *fenestrata* was not available, but from the original description conspecificity seems obvious, although spore width is given as 16-18 µm. However, spores up to 18 µm broad are also present in the type of *Fenestella bipapillata*. Also the cellular nature of the hyaline "appendages" was noted by CHENANTAIS (1919) in the description of *Pseudovalsa macrospora* var. *fenestrata*. WEHMEYER (1941: 98) excluded this species from *Pseudovalsa*.

Key to the species recognized in *Dictyoportha*

- | | | |
|----|--|---|
| 1 | Ascospores showing appendages or gel coating | 2 |
| 1* | Ascospores different | 3 |
| 2 | Asci 4-spored, spores hyaline, (4-)7(-8) septa, few longitudinal septa, with gel coat and appendages, 31-60 x 13-26 µm, on <i>Acer opulus</i> in France | |
| | <i>D. appendiculata</i> | |
| 2* | Asci 8-spored, spores brown, (3-)5(-6) septa, 1 vertical septum in mid cells, with appendages, 28.5-40 x 13-17.5 µm, on <i>Acer saccharum</i> in North America | |
| | <i>D. acerophila</i> | |
| 3 | Spores hyaline, 3-5 septa, 1 incomplete vertical septum, 17-26 x 10-12 µm, on <i>Spiraea</i> in Pakistan | |
| | <i>D. ahmadii</i> | |
| 3* | Spores brown, (3-)5(-7) septa, 1 vertical septum in mid cells, longer, on <i>Carpinus</i> spp. | 4 |
| 4 | Spores brown with hyaline end cells, (22-)25-30 x 9-10(-12) µm, on <i>Carpinus caroliniana</i> in Canada | |
| | <i>D. canadensis</i> | |
| 4* | Spores brown with elongated hyaline end cells, 28-43 x 13-16(-18) µm, on <i>Carpinus betulus</i> in Europe | |
| | <i>D. bipapillata</i> | |

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