

Dendrocorticium and Dentocorticium, gen. nov. (Aphyllorphales, Corticiaceae) as segregates from Laeticorticium

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On the basis of basidial ontogeny, the genera *Dendrocorticium* gen. nov. and *Dentocorticium* gen. et stat. nov. are segregated from *Laeticorticium*. New combinations are: *Dendrocorticium jonides*, *D. lilacinoroseum*, *D. lundellii*, *D. polygonioides* (type species), and *Dentocorticium sulphurellum*, *D. ussuricum* (type species).

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When Donk (1956) introduced *Laeticorticium*, he circumscribed the genus (and the species he transferred to it from '*Corticium*') by the following primary taxonomic criteria:

- 1) 'Upper (basidial) layer. . . composed of upright, more or less sparingly branched (often with short side-branches), thin-walled, nodulose [clamped] hyphae (hyphidia . . .)
- 2) . . . and basidia originating deeply and traversing the layer of hyphidia.
- 3) Gloeocystidia and cystidia lacking.
- 4) Basidia at first swollen, ovoid to pear-shaped, elongating, cylindrical-clavate when fully developed, flexuous (and often somewhat ventricously swollen at base), rather large (45–100 μ long);
- 5) Spores ovoid, ellipsoid, somewhat flattened adaxially . . . (7–17 μ long); smooth . . . non-amyloid.'

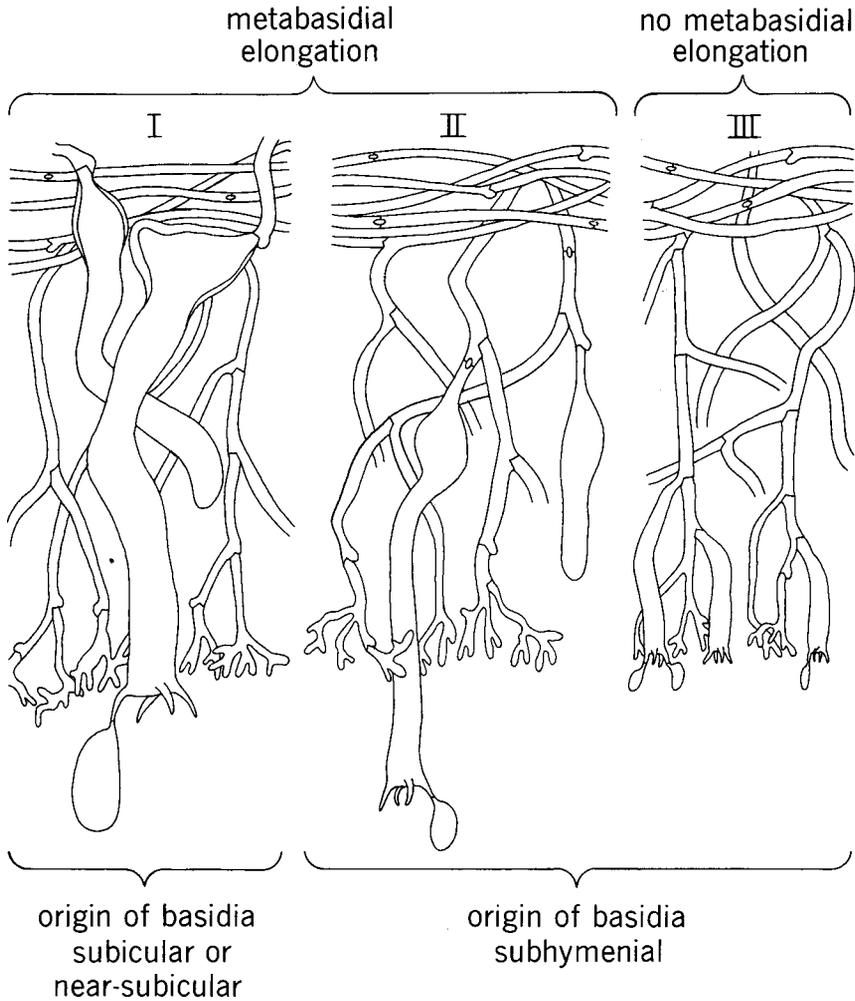
Donk (1956) typified the genus by *Laeticorticium roseum* (Pers. per Fr.) Donk.

The concept of *Laeticorticium* has been recognized wholly or in part by Pilát (1926), Bourdot & Galzin (1928), Donk (1941), and

Jackson (1950). The genus was formalized by Donk (1956) and subsequently accepted and applied by Eriksson (1958), Lemke (1964), Parmasto (1965, 1968), Boidin et al. (1968), and others.

OBSERVATIONS AND SEGREGATION

From a critical study of species that are currently assigned to the genus, we have concluded that in *Laeticorticium* there are three distinct modes of basidial ontogeny. In the first (Fig. 1, I), as exemplified by *L. roseum* (generic nomenclatural type), the life-cycle entails the formation of a sessile to near-sessile thick-walled probasidium, with subsequent, but usually delayed, metabasidial elongation. The probasidia are normally formed directly adjacent to or in the subicular tissue. In the second (Fig. 1, II), the probasidium is formed in the subhymenium as a napiform to sphaeropedunculate structure, followed immediately by metabasidial elongation. This kind of basidium and associated ontogeny appears to be homologous to the '*Coniophora*-type'



LAETICORTICIUM DENDROCORTICIUM DENTOCORTICIUM

Fig. 1. Longitudinal sections of basidiocarps representative of *Laeticorticium*, *Dendrocorticium*, and *Dentocorticium* illustrating comparative positional and ontogenetic relationships of basidia in the three genera (diagrammatic).

as proposed by Lentz (1957). We propose the name *Dendrocorticium* to accommodate those species that demonstrate this mode of basidial ontogeny.

Conversely, there are species now in *Laeticorticium* that do not undergo metabasial elongation in the ontogeny of their basidia, but instead form basidia in the conventional homobasidiomycetous fashion (Fig. 1, III),

and to this group Parmasto's (1968) sectional name *Dentocorticium* is applied, but at the generic level.

The basidial ontogeny of *Laeticorticium roseocarneum* (Schw.) Boid. appears to be intermediate between types II and III. A basidial form is sometimes observed that may be interpreted to represent type II, but the phenomenon is not consistent.

The disposition of *Laeticorticium pilatii* Parm. is also uncertain, but is due to the lack of precise morphological data on basidial ontogeny. Therefore, we choose to retain this species in *Laeticorticium* for the present.

Due to the apparent fundamental taxonomic diversity that exists in the genus, a new genus *Dentocorticium* is proposed to accommodate those species that do not possess probasidia, thus restricting *Laeticorticium* and the newly described *Dendrocorticium* to the probasidial forms. A key to the three genera in question is provided as follows:

1. Probasidia absent *Dentocorticium*
1. Probasidia present 2
 2. Thick-walled probasidia formed directly adjacent to, or barely in, the subiculum; basidia normally greater than 8 μm in diameter and frequently 75–100 μm + long; basidiospores normally 12 μm or more long *Laeticorticium* s. str.
 2. Probasidia not noticeably thick-walled, formed in the subhymenium; basidia normally less than 8 μm in diameter and less than 75 μm long, frequently projecting noticeably above the catahymenium when mature; basidiospores rarely longer than 12 μm *Dentocorticium*

DENDROCORTICIUM M. J. Larsen & Gilbertson, *gen. nov.* (Aphyllophorales, Corticiaceae).

Laeticorticium Donk sect. *Laeticorticium* Parm., *pro parte*, Consp. Syst. Cortic., p. 151, 1968.

Basidiocarpis annuis, resupinatis, effusis; hymenio superficie laevi; dendrohyphidiis adsunt; hyphis fibulatis; probasidiis adsunt; basidiis sinuosis clavatis, plerumque distentis basi; cystidiis et gloeocystidiis nullis; basidiosporis subglobosis, ovoideis vel ellipsoideis, non amyloideis vel dextrinoideis.

Typus: *Dendrocorticium polygonoides* (Karst.) M. J. Larsen & Gilbertson.

Basidiocarps annual, resupinate, effused; hymenial surface smooth and undulating; hyphal system monomitic; subicular hyphae normally septate with clamp connections and with some wall thickening; dendrohyphidia present, with or without a distinct and well

defined catahymenium; probasidia present and formed in the subhymenium; mature basidia formed by intrusive metabasidial growth, 4-sterigmate, 30–50 (–70) μm long, frequently projecting noticeably above the catahymenium; basidiospores rarely exceeding 12 μm in any dimension, subglobose, ellipsoid, broadly ovoid, hyaline, not reacting with Melzer's reagent.

The proposed new combinations to *Dendrocorticium* are as follows:

Dendrocorticium jonides (Bres. ex Brinkm.) M. J. Larsen & Gilbertson, *comb. nov.*

(basionym: *Corticium jonides* Bres. ex Brinkm., Jahresber. Westfal. Prov. Ver. Wissen. und Kunst. 26: 128. 1898).

Dendrocorticium lilacinoroseum (Pat.) M. J. Larsen & Gilbertson, *comb. nov.* (basionym: *Hypochnus lilacinoroseus* Pat., Catal. Raisonné Plant. Cellul. Tunis., p. 62. 1897).

Dendrocorticium lundellii (Erikss.) M. J. Larsen & Gilbertson, *comb. nov.* (basionym: *Laeticorticium lundellii* Erikss., Symb. Bot. Upsal. 16(1): 74. 1958).

Dendrocorticium polygonioides (Karst.) M. J. Larsen & Gilbertson, *comb. nov.* (basionym: *Corticium polygonioides* Karst., Medd. Soc. Fauna Fl. Fenn. 6:12. 1881).

DENTOCORTICIUM (Parm.) M. J. Larsen & Gilbertson, *gen. et stat. nov.* (Aphyllophorales, Corticiaceae).

Laeticorticium Donk sect. *Dentocorticium* Parm., Consp. Syst. Cortic., p. 151. 1968.

Basidiocarpis annuis, effusis, resupinatis; hymenio superficie dento; dendrohyphidiis adsunt; hyphis fibulatis; probasidiis nullis; basidiis clavatis; cystidiis et gloeocystidiis nullis; basidiosporis ellipsoideis vel cylindratis, plerumque allantoideis, non amyloideis vel dextrinoideis.

Typus: *Dentocorticium ussuricum* (Parm.) M. J. Larsen & Gilbertson.

Basidiocarps annual, effused; hymenial surface smooth and undulating or dentate; subicular hyphae normally clamped and with some wall thickening; dendrohyphidia present, with or without a distinct and well defined catahymenium; probasidia absent; basidia clavate, 4-sterigmate, 30–50 μm long; basidiospores rarely exceeding 5 μm in any dimension, ellipsoid or cylindrical, allantoid hyaline, not reacting with Melzer's reagent.

The proposed new combinations to *Dentocorticium* are as follows:

Dentocorticium sulphurellum (Pk.) M. J. Larsen & Gilbertson, *comb. nov.* (basionym: *Hydnum sulphurellum* Pk., N. Y. State Mus. Rept. 31: 38. 1879).

Dentocorticium ussuricum (Parm.) M. J. Larsen & Gilbertson, *comb. nov.* (basionym: *Laeticorticium ussuricum* Parm., Eesti NSV Tead. Akad. Toimet., Biol. Seer. 14: 229. 1965).

OTHER RELATIONSHIPS

Not only do the two genera, *Laeticorticium* and *Dendrocorticium*, appear to be closely related to each other through various similar morphological features, but there is an apparent closer relationship between *Laeticorticium* (in the restricted sense) and what Lemke (1964) originally called *Aleurocorticium* Lemke [which he later (1965) placed in synonymy with *Dendrothele* Hoehn. & Litsch.]. Lemke's (1964) original account of *Aleurocorticium* - typified by *A. acerinum* (Pers. per Fr.) Lemke - encompassed a form of basidial ontogeny which involved a pro-basidial cell with subsequent metabasidial elongation; a phenomenon that is similar to that in *Laeticorticium*.

The genus *Dendrothele* Hoehn & Litsch. - typified by *D. papillosa* Hoehn. & Litsch., which is *D. griseocanum* (Bres.) Lemke - consequently becomes a point of interest. *Dendrothele griseocanum* (see Lemke 1964 and Oberwinkler 1972) does not appear to possess the same or similar basidial phenomena as those which occur in *Aleurocorticium* (as typified by *A. acerinum*). Further detailed study of the two genera may provide evidence on basidial ontogeny to separate the two taxonomically.

Recently, Hjortstam (1973) proposed *Globulicium* to encompass *Corticium hiemale* Laurila and other forms that possess non-amyloid, globose to subglobose basidiospores and hymenial 'paraphysoid hyphae'. It appears from Lemke's (1964) analyses and Hjortstam's (1973) illustration that *Globulicium* is an integral part of the subfamily

Aleurodiscoideae and referable to the tribe *Laeticorticieae* (see Parmasto 1968). Basidial ontogeny and form, however, clearly separate *Globulicium* from the genera proposed here.

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