THE TAXONOMY OF CORTICIUM SALMONICOLOR

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RALAT

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Intisari

Dalam kajian yang telah dilakukan, didapatkan adanya lima stadium dalam kehidupan jamur upas, yaitu: 1. stadium jaring laba-laba; 2. stadium bongkol semu; 3. stadium teleomorf; 4. stadium bongkol; dan 5. stadium anamorf.

Kajian perbandingan antara stadium-stadium dan juga daur hidup jamur tersebut dengan Corticium dengan marga lain dari Basidiomycetes yang resupinat menunjukkan bahwa jamur ini harus digolongkan dalam marga baru yaitu Upasia. Selanjutnya jamur ini dinamakan Upasia salmonicolor.

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I. Introduction

In the majority of phytopathological literatures, the causal agent of the tropical pink disease has been classified as *Corticium salmonicolor* Berk. & Br. More reccently, however, some authors have classified this fungus as *Pellicularia salmoniccolor* (Berk. & Br.) Dast., *Botryobasidium salmoniccolor* (Berk. & Br.) Venk., or *Phanerochaete salmonicolor* (Berk. & Br.) Julich (Mundkur, 1959 ; Semangun, 1971). In a recent study (Harsojo-Tjokrosoedarmo, 1984) on the biology of this species, it was shown that the morphology, anatomy, development and function of the fungus stages on the pathogenecity as well as the complicated life cycle of the fungus are so different from its supposedly closely related species. Consequently the pink fungus cannot be accommodated in the existing genera of resupinate Basidiomyccetes, and hence a new genus is proposed for this species.

Upasia Harsojo-Tjokrosoedarmo & Rifai, gen, nov.

Carposoma effusum, resupinatum, membranaceum. Hymenium laeve, salmonicoloris, vel in sicco cremeum. Systema hypharum monomiticum. Hyphae hyalinae, non fibulatae, plurinucleatae. Cystidiae vel gloeocystidiae nullae. Basidia tetraspora, longa, plus minusve cylindracea vel saepae clavatae. Sporae hyalinae, inamyloideae. Typus: *Corticium salmonicolor* Berk. & Br.

ɛd, resupinate, membranous, occurs as pink
n smooth, pink salmon in colour or cremeus
m monomitic. Hyphae hyaline, multicucleate,
tion. Cystidiae or gloeocystidiae absent.
clavate to cylindric. Spore hyaline, inamyloid.
onicolor Berk. & Br.

ts five developmental stages on the surface of
ɛb stage; II. *Pseudonodular stage;* III. *Teleo-*
r basidioma, *Corticium* stage); IV. *Nodular*
Vecator stage = Aseksual stage).

Upasia is derived from the local name of the
meaning noxious fungus.

ɛrk. & Br.) Harsojo-Tjokrosoedarmo, comb.

iccolor Berk. & Br., J. Linn.
ym. -- *Pellicularia salmonicolor* (Berk. & Br.)
3, 1946 -- *Botryobasidium salmonicolor* (Berk.
Phytopath. 3: 82, 1950. -- *Phanerochaete salmonicolor* (Berk. & br.) Julich, Persoonia 8: 294, 1975.
Corticium javanicum Zimm., Zbl. Bakt. 7: 103, 1901.
Corticium zimmermanni Sacc. & Syd., Syll, Fung. 16: 1117, 1902 (Cunningham, 1963).

Teleomorph (Basidiocarp, basidioma) (III)

The basidiocarp occcurs as pink incrustation or pink pustules, resupinate over the bark or substrate, generally situated on the lower or shady side of a brancch or encircling a shaded stem. Hyphal system monomitic, without clamp-connection, composed of four layers : a) **basal layer,** as thin and loose hyphal layer, creeps over the bark or substrate, originating from cobweb stage mycelia, composed of 2 – 3 well-spaced layers of hyphae, branching horizontally and vertically; b) **intermediate layer,** composed of loosely arranged perpendicular branches arising from the basal layer, each giving rise

to dichotomous or irregular branches, 5 – 24 × 3 – 6 μm; 3) **subhymenial layer** (*subhymenium*), ccomposed of moniliform chains of short sterile cells, arising as branches of intermediate layer, compactly arranged, divergent below, but with their apices always perpendicular to the basal layer; 4) **hymenial layer** (*hymenium*) composed of holobasidia without cystidia or gloeocystidia; the **holobasidia** are hyaline, subsclavate to cylindric, thin-walled, 12 – 24 × 4, 5 – 9 μm, and bear 2 – 4 hyaline sterigmata; the **sterigmata** are slender and conical, straight or slightly curved inward, 4,5 – 9 μm long; the *basidiospores* are hyaline, globose to ovoid, thin-walled, smooth, inamyloid, 6 – 7,5 × 4,6 – 6 μm. The basidiospores are formed more abundantly at night at about 24h00 to 05h00, with the maximum basidiospore formation being recorded from midnight to 05h00. Following germination in appropriate situations the basidiosores give rise to the cobweb stage.

The other four stages are:

A. Cobweb stage (I)

The cobweb stage is a thin, white, cobweb or netlike hyphal layer which creeps over the host surface, sometimes with parallel terminal hypae, consisting of 2 – 3 layers of 3 – 14 μm diam. hyphae; hyphae hyaline, anastomose freely, the hypha cells contain one, two, three, or for nuclei. At maturity this stage will develop into teleomorph as pink incrustation by producing perpendicular branches.

The cobweb stage represents the weakest but the most important form for the fungus and disease development, since it may form the other four tages. The entrance of the pink fungus into the host tissue occurs in the cobweb stage throught cracked epidemis or lenticells. The cobweb stage is developed following the germination of basidiospores or conidia.

B. Pseudonodular stage (II)

The pseudonodular stage is manifested by conical or hemispherical white pustules, 0,2 – 0,5 mm diam., occuring only on lenticells or cracked epidermis, on the lower or shady side of a branch, and never occurs on an intact surface. At maturity the colour becomes pink after developing into teleomorph stage as pink pustules; its tissue consists of irregular rounded cells, of 8 – 20 × 6 – 15 μm in size, the surface cells of which are slightly flattened and at maturity will act as basal layer of the teleomorph pustules. The pseudonodular stage is an adventitions stage, and is formed by the cobwed stage through symphogenous aggregation of its mycelia.

C. Nodular stage (IV)

The nodular stage is manifested by globose white pustules relatively bigger than pseudonodular pustule, 0.5 – 1.5 mm diam., situated on the exposed surface or the upper side of a stem or branch, occuring chiefly on the intact surface of the bark, but my also on lenticells or cracked epidermis; the tissue of this stage is composed of a compact flattened cells; young pustules are white in colour, covered by a mantle of interwooven hyphae. At maturity the mantle breaks open and the colour changes to orange after developing into the anamorph stage. The nodular stage is formed by the cobweb stage through compound meristogenous aggregation of its mycelia.

D. Anamorph (V)

The necator stage or the anamorph is manifested by small orange red sporodochia of 0.5 – 1.5 mm diam., situated on the exposed surface or upper side of a branch or stem, occuring chiefly on the intact surface of the bark, but my also on lenticells or cracked epidermis; the sporodochia consist of stroma, conidiogenous cells, and basipetally holothallic conidial chains; conidia hyaline when viewed singly, but appear orange red in mass, of various shapes, ovate, rectangular, or irregular, relatively thick-walled, 11.4 – 20.7 × 12.20 μm. The anamorph which represents an asexual form of the fungus, is chiefly developed from nodular stage, but my also be formed by cobweb stage mycelia directly, by forming one-cell-layer stroma acting as conidiogenous cells. Upon germination the conidia will form also the cobweb stage.

Culture: the colony of pink fungus isolated on PDA at first white and changes to pink after more than five days old; the hyphae are hyaline, thin-walled, anastomose easily with each other, posses perpendicular branches, provided with dolipore septa, and their cells are uninucleate, binucleate, trinucleate, and tetranucleate, 2 – 9 μm in diameter.

Habitat: Paracitic on stems, branches, and twigs oi 144 species of woody plants (Rant, 1912; Harsojo-Tjokrosoedarmo, 1984).

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Naskah dapat ditulis dalam bahasa Indonesia atau bahasa Inggris, diketik pada satu muka, dengan kertas putih ukuran kwarto, dengan jarak 1½ spasi, kecuali: Ringkasan, Abstrak. Tabel, Keterangan gambar, Daftar pustaka, dan keterangan lain, diketik dengan 1 spasi.

Naskah diserahkan rangkap 2 (dua), harus dibuat yang jelas dan rajin dengan diberi ruang tepi (margin) yang cukup.

Gambar, grafik, lukisan-lukisan lain, digambar dengan tinta Cina, paling besar sama dengan ukuran majallah ini (kwarto).

Gambar potret, jika ada, harus pada kertas mengkilat, jelas dan tidak kabur. Untuk menghemat mahalnya ongkos penerbitan, harap jumlah potret dibatasi melulu untuk hal-hal yang perlu sekali.

Gambar-gambar (lukisan atau potret) dan tabel diberi nomer urut dalam naskah itu dan letaknya gambar perlu diberi petunjuk pada tepi (margin) kertas tersebut. Tabel, gambar, potret, diberi judul, keterangan singkat, satuan ukuran, dan nomer urut.

Nama Latin (binomial) diberi garis bawah.

Jika tidak memakai mesin tik khusus, maka rumus-rumus dan persamaan ilmu pasti, dapat ditulis tangan asal jelas.

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