Phyllactinia yarwoodii sp. nov. from India.

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With Plate XXXIII.

During the cold months of 1960—61, the writer collected a powdery mildew in conidial as well as perithecial states parasitising leaves of *Dalbergia volubilis* Roxb. and *Dalbergia lanceolaria* L., at Khandala (elevation 677 m.) near Poona (India). The perithecial state was characteristic of the genus *Phyllactinia*, a brief report of which has already been made by the writer (1962). The semi-endophytic habit of the fungus (*Ovulariopsis* state) and the formation of conidiophores with a sub-spiral base bearing solitary conidia narrow basally and broader apically and their dimensions fairly agreed with the description of *Phyllactinia subspiralis* (Salm.) Blumer. The occurrence of a perithecial (*Phyllactinia*) state along with the endophytic (*Ovulariopsis*) habit in this mildew, had not been previously noted on these two species of *Dalbergia* (excepting the one recently reported by the writer — 1962) and was, therefore, of special interest.

Salmon (1905) originally reported a mildew on *Dalbergia sissoo* L. as a variety of *P. corylea* (Pers.) Karst. and described it as *P. corylea* var. *subspiralis* Salm. on the basis of distinctive conidial (*Ovulariopsis*) state but without a perithecial state. Sawada (1914) collected an *Ovulariopsis* of the „*sub-spiralis*" type on *Celtis* sp. and considering it to be similar to the mildew earlier described by Salmon (1905) on *Dalbergia*, raised Salmon's variety to a specific rank and described it as *P. subspiralis* (Salm.) Sawada. He (1916), however, discovered later that his fungus had perithecial appendages of uncinate type and therefore established a new genus *Uncinulopsis* to accommodate this *Unicula*-like mildew with an *Ovulariopsis* conidial state of the „*subspiralis*" type describing it as *Uncinulopsis subspiralis* comb. nov. (Salm.) Sawada. Blumer (1933) in his monograph of these fungi raised Salmon's variety to a specific rank and named the fungus as *P. subspiralis* (Salm.) Blumer. The variety described by Salmon (1905) and the species of Sawada (1914) and of Blumer (1933) were based on the conidial (*Ovulariopsis*) state with a distinctive „subspiral" base and not on the perithecial state of this mildew.

These observations would indicate that as the original variety of Salmon (1905) and species of Sawada (1914) and Blumer (1933) have been described on the basis of conidial state and not the perfect state, all the three names are invalid in accordance with Art.

59 of the International Code which clearly lays down that „the type species of a name applied to a particular state must show the characteristics of that state".

Since the variety and new species described by Salmon (1905) and Sawada (1914) and the species later described by Blumer (1933) are thus invalidated and considered illegitimate, the position raises important nomenclatural as well as taxonomic considerations similar to those pointed out by Kimbrough and Korf (1963) in connection with another similar mildew. The entire position may, therefore, be summed up as follows with reference to this mildew collected by the writer on the two species of *Dalbergia*.

1. The two new combinations made by Sawada (1914) and Blumer (1933) are homonyms.

2. The variety described by Salmon (1905) is a basionym, as the type does not indicate the perfect state and

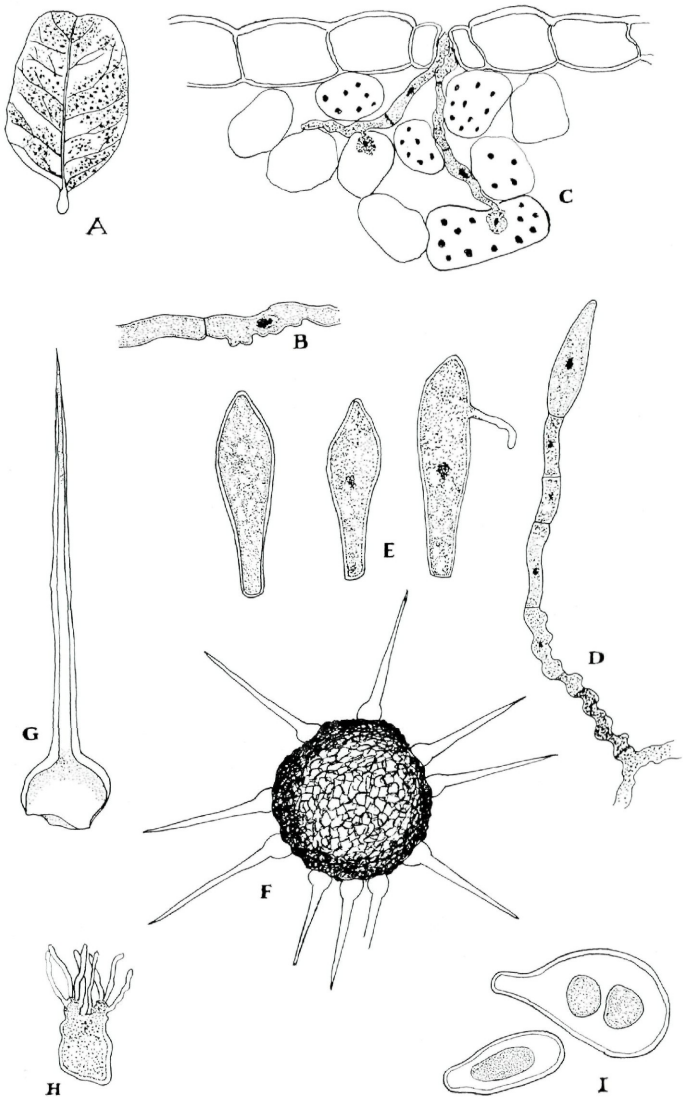
3. The two combinations as well as the original variety *P. corylea* var. *subspiralis* Salm. are not validly described.

It is, therefore, proposed to get over the nomenclatural and taxonomic problem by describing the writers collection on *Dalbergia volubilis* Roxb. and *D. lanceolaria* L. as a new species of *Phyllactinia* in view of the discovery of the perithecial state and its distinctive nature from *P. corylea* (Pers.) Karst.

Phyllactinia yarwoodii Patwardhan sp. nov.

Infection spots hypophyllous, diffuse, later covering entire surface. Mycelium ectophytic, sending short hyphae with haustoria into sub-stomatal tissue (*Ovulariopsis* type). Conidiophores arising from ectophytic mycelium, simple, solitary, erect, 1—3 septate, hyaline, spirally twisted at base, bearing a solitary conidium. Conidia clavate, obtuse at apex, hyaline, 1-celled, solitary, 48—85 × 10—19 μ. Perithecia hypophyllous, profuse, scattered, dark brown to black in colour, globose, 130—200 μ. Perithecial appendages acicular, pointed, bulbous at base, 6—11 in number, hyaline, non-septate, never gelatinous, 105—152 μ. Penicillate cells globular to oblong, hyaline, one-celled, 20—28 × 8—10 μ, bearing 10—15 hairy outgrowths apically 18—25 μ in length. Asci stalked, ovate, 5—9 in number, always bi-spored, 40—60 × 19—30 μ. Ascospores, 1-celled, sub-hyaline, globular to oblong, 16—30 × 12—16 μ.

Maculae hypophyllae, diffusae, postea saepe totam folii superficiem occupantes; mycelium superficiale, hyphis brevibus, haustoriis praeditis inter matricis cellulas penetrans; conidiophora in mycelio superficiali orta, simplicia, solitaria, recta, 1—3-septata, hyalina, ad basin spiraliter eurvula; conidia clavata, utrinque plus minusve attenuata, tunc subfusoidea, antice obtusa, postice plus minusve truncata, recta, raro inaequilatera, continua, hyalina, 48—85/10—19 μ;



perithecia hypophylla, dispersa, obscure brunnea vel nigrescentia, globosa, 130—200 μ; appendices 6—11, aciculares, paulatim acuminatae, basi vesiculoso-inflatae, continuae nec gelatinosae, 105—152 μ longae; cellulae penicillatae subglobosae vel late oblongae, hyalinae, 20—28/8—10 μ, antice filis brevibus, rectiusculis vel parum curvulis, tenuissimis, 18—25 μ longis praeditae; asci 6—9 in quoque perithecio, bispori, antice late rotundati, postice abruptiuscule in stipitem crassiusculum contracti, 40—60/10—30 μ; sporae subglobosae vel late ovoideae, continuae, subhyalinae, 16—30/12—16 μ.

On living leaves of *Dalbergia volubilis* Roxb. and *Dalbergia lanceolaria* L. collected by P. G. Patwardhan at Khandala, India, in Dec. 1960, M. A. C. S. No. 261 (Type).

The species has been named after Dr. C. E. Yarwood for his outstanding contributions to the physiology of this interesting group of fungi.

It may further be stated that the writer's collection is distinct from the genus *Pleochaeta* Sacc. & Spreg. which according to Kimbrough and Korf (1963) is characterised by gelatinous appendages, uncinate at maturity, becoming deliquescent at the apices in contact with water. No such phenomenon was noticed by the writer in any of his two collections.

The type is being deposited at Herb. Orientalis, New Delhi, India and Commonwealth Mycological Institute, Kew, England.

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Explanation of Plate

A — Habit. × Natural size. — B — External mycelium. × 400. — C — Internal mycelium, with haustoria. × 400. —D — Conidiophore with subspiral base. × 40. — E — Conidia. × 40. — F — Entire perithecium. × 40. — G — Single appendage. × 80. — H — Penicillate cell. × 130. — I — Asci with ascospores. × 100.