NOTES ON FUNGI FROM NORTH-EAST INDIA

XVII. *Menisporella assamica* Gen. *et* Sp. Nov.

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Several interesting fungi were recorded in course of our investigations on the etiology of the condition of tea bushes locally known as "Hattialli Disease". In the following paper is described a new member of the Dematiaceæ which was very often encountered in association with *Chalara terrestris* Agnihothrudu *et* Barua (1962) and *Thozetellopsis tocklaiensis* Agnihothrudu (1958) on incubated segments of tea roots.

The growth of the fungus becomes apparent on the roots at laboratory temperature (10–26° C.) after a month and is at first dirty white, later on becoming olivaceous to black. The colonies are effuse, velutinous and the aerial mycelium is rather scanty. The sterile, repent mycelium on the substratum is dark brown, ramose, and septate and the conidiophores are produced as unbranched, erect laterals. They arise from bulbous, basal cells which are up to 8 μ in diameter and measure up to 400 μ long. The conidiophores are deep fuscous below, 4–5 μ wide in the middle and slightly swollen at the apex, measuring 5–6 μ in diameter and dilute brown, 5 to 12-septate. Very rarely one or two branched conidiophores were observed. The ultimate cell of the conidiophore has a distinct collarette at the apex and the conidia are produced singly, terminally and successively. They are often seen in *Cephalosporium*-like aggregations. The conidia are typically elliptic to sub-allantoid, very rarely lunate, smooth-walled, hyaline, continuous, measuring 10–16 μ by 1 to 3 μ with a flexible cilium at either end measuring 8–12 μ long.

In several instances the conidiophore was observed proliferating through the apical phialide, producing successive crops of conidia. In some of the conidiophores four such proliferations were noticed with remnants of the collarette of the phialide attached to the conidiophore wall.

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In attempting to establish the identity of this fungus it was compared with the genera of Moniliales which produce amerosporous, hyaline, setulate conidia.

In genera *Ellisiella* Saccardo (1886, p. 375) *emend* Batista (1956), *Ellisiellina* Da Camara (1949) and *Ellisiopsis* Batista (1956), all of them bear dark-coloured, sterile setæ and are characterized by conidia that are setulate at one end with the exception of *Ellisiellina biciliata* Da Camara (1949). *Pestaloziella* Saccardo *et* Ellis (Saccardo, 1884, p. 737) has conidia with a ramose awn at the apex, while *Eriosporella* von Höhnel (1916) possesses three divergent setæ.

Thozetellopsis Agnihothrudu (1958) is distinct from the fungus occurring locally in having sporodochia with ramose conidiophores interspersed by peculiar awn-shaped sterile setae.

Menisporopsis Hughes (1952) described from Gold Coast is similar to the fungus described here in having setulate conidia and proliferating phialides, but the latter are aggregated into typical synnemata with a long, sterile seta included in the synnema. The nearest ally appears to be *Menispora* Pers. *ex* Chev. (Saccardo, 1886, p. 325) which has distinctly branched conidiophores. Amongst the three species of this genus with ciliate conidia, in *Menispora tortuosa* Corda (1839) and *M. ciliata* Corda (1837), two common wood and bark inhabiting fungi of Britain, the phialides are borne singly or in small groups on short stalks towards the bases of erect conidiophores which may be coiled or flexuous above. The phialides are cylindrical or oval and recurved at the narrowed apex so that the collarette is directed towards the base. The phialospores are, however, 3-septate in *M. tortuosa* and continuous in *M. ciliata* forming slimy fascicles lying alongside the phialide from which they develop. *Menispora minuta* Tubaki (1958) described from Japan on dead leaves of *Lithocarpus edulis* has conidiophores which are dichotomously branched.

The fungus occurring locally on tea roots is characterized by the very long, unbranched conidiophores which often proliferate through the apical phialide, and the sub-allantoid, ciliate conidia.

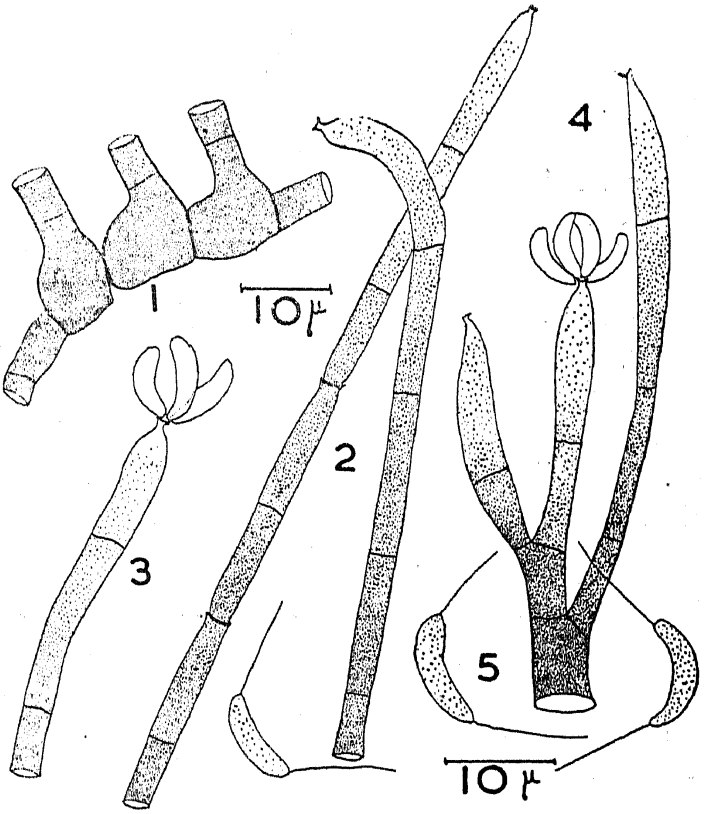
***Menisporella* gen. nov. Agnihothrudu**

Pertinet ad Fungos Imperfectos, ad Moniliales, Dematiaceas, amerosporas.

Coloniæ effusæ, velutinæ, ex olivaceis nigræ, mycelio æreo sparso. Conidiophori usque ad 400 μ longi, subulati, non-furcati, erecti, brunnei, septati, crassis parietibus infra, supra vero tenuibus parietibus prædíti et dilute brunnei, ornati ad apicem collariolo conidia producente successive

et terminaliter. Conidiophori proliferant per phialidem terminalem, et productant messem successivam sporaram. Conidia ex ellipticis sub-allantoidea, raro lunata, hyalina, continuata in cilium flexuosum ad utrumque apicem.

Species typica sequens.



FIGS. 1–5. *Menisporella assamica* Agnihothrudu. Fig. 1. The bulbous bases of the conidiophores. Fig. 2. Conidiophores showing the terminal phialide and the collarette. Fig. 3. Phialide showing the *Cephalosporium*-like aggregation of the conidia. Fig. 4. A branched conidiophore. Fig. 5. Conidia.

***Menisporella assamica* sp. nov. Agnihothrudu**

Coloniæ in radicibus incubantibus effusæ, sordide albæ primo evadentes argenteo-griseæ vel olivaceæ et tandem nigræ, velutinæ. Mycelium sterile sparsum, brunneum, repens, septatum, ramosum, 3–5 μ latum, supportans conidiophoros singulos vel fasciculatim aggregatos usque 4, qui emergunt erecti laterales e mycelio repenti, basi nonnihil bulbosa usque ad 8 μ diam., 130–400 μ longi, subulati, 4–5 μ diam. ad medium, aliquantum tumescentes ad apicem, 5–6 μ diam., 5–12-septati, non-ramosi, rarissime producentes ramos laterales unum duosve, alte fusci infra, dilute brunnei vel subhyalini supra. Ultima cellula sporas efformans conidiophori ornata est collariolo

distincto ad apicem producente sporas singulas est successivas. Conidia hyalina, continua, levibus parietibus prædita, elliptica vel suballantoidea, raro lunata magnit. vulgo $12\times2\,\mu$, mediet. 10–15 (–16)×1·5–2 (–3) μ uno cilio flexuoso ad utrumque apicem posito 8–12 μ longo. Conidiophori sæpe proliferant per phialides et producunt messes successivas conidiorum.

Typus in radicibus incubantibus *Camelliæ sinensis* (L.) O. Küntze infectis morbo Hattialli dicto, in Hazel Bank Tea horto in Assamia superiore, lectus a V. Agnihothrudu die 16–1–1958 et positus in Herbario Mycologico Stationis ad Cinnamara, in Asssamia sub numero 170.

***Menisporella* gen. nov. Agnihothrudu**

Fungus imperfectus, Moniliales, Dematiaceæ, amerosporæ. Colonies effuse, velutinous, olivaceous to black with scanty aerial mycelium. Conidiophores long, up to 400 μ long, subulate, unbranched, erect, brown, septate, thick-walled below, thin-walled and dilute brown above with a typical collarette at the apex producing conidia terminally and successively. The conidiophore proliferates through the terminal phialide and bears successive crops of spores. Conidia elliptic to sub-allantoid, rarely lunate, hyaline, continuous with one flexuous cilium at either end.

***Menisporella assamica* sp. nov. Agnihothrudu**

Colonies on incubated roots effuse, dirty white at first becoming silver-grey to olivaceous and finally black, velutinous. Sterile mycelium scanty, brown, repent septate, branched, 3 to 5 μ wide bearing conidiophores singly or in groups up to 4 in number, arising as erect laterals of the repent mycelium with a somewhat bulbous base measuring up to 8 μ in diam., 130 to 400 μ long, subulate, 4–5 μ in diam. in the middle, somewhat swollen apically measuring 5–6 μ in diam., 5–12-septate, unbranched, very rarely producing 1 or 2 lateral branches, deep fuscous below, dilute brown to sub-hyaline above. The ultimate spore-forming cell of the conidiophore has a distinct collarette at the apex producing spores singly and successively. Conidia hyaline, continuous, smooth-walled, elliptic to sub-allantoid, rarely lunate measuring mostly 12 by 2 μ, range: 10–15 (–16)×1·5–2 (–3) μ with a flexible cilium at either end measuring 8 to 12 μ long. The conidiophore often proliferates through the phialide and bears successive crops of conidia.

Type on incubated roots of Tea [*Camellia sinensis* (L.) O. Küntze] affected by the so-called Hattialli Disease, Hazel Bank Tea Estate, Upper Assam, collected by V. Agnihothrudu, dated 16–1–1958, deposited in the Mycological Herbarium, Tocklai Experimental Station, Cinnamara, Assam, under No. 170.

The generic name, *Menisporella*, is chosen to denote its affinity to *Menispora*. We have recently noticed the same fungus on incubated roots of *Anacardium occidentale* L. growing in association with *Dendrosporium lobatum* Plakidas and Edgerton.

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