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Some New Records of Synnematous Fungi imperfect - *Phaeoisariopsis* Ferr. from India

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ABSTRACT

An interesting Dematiaceous Hyphomycetous three species belonging to the genus *Phaeoisariopsis* Ferraris viz. ***Phaeoisariopsis armillata*** Jong and Morris, ***P. cassiae*** (P. Henn.) von. Arx, and ***P. tetrapanasis*** Sawada have been illustrated and described. These species have been recorded for the first time in India. It makes new records to the Fungi of India and the hosts on which these species recorded become an additional host records.

Key words: Hyphomycetes, Dematiaceae, ***Phaeoisariopsis armillata, Phaeoisariopsis cassiae, Phaeoisariopsis tetrapanasis,*** new to India.

INTRODUCTION

In continuation of taxonomical studies on fungi, the author came across an interesting collections belonged to the genus *Phaeoisariopsis* Ferraris. The genus is close to *Cercospora* in all respects, and can only be distinguished by the formation of small synnemata and by less thickened and darkened, but bulging scars. The genus is known by its 71 species and varieties (*htpp://www.indexfungorum.org/Names/Names.asp,* 25 Nov., 2021) which are infecting to vascular plants and distributed all over the world. In India, the genus is known by its 17 species (Ellis, M.B. 1971, 1976; Bilgrami, et al., 1991; Sarbhoy, et al., 1996; Jamaluddin, et al., 2004). The present materials collected on different hosts well matched with existing species viz. ***Phaeoisariopsis armillata*** Jong and Morris, ***P. cassiae*** (P. Henn.) von. Arx and ***P. tetrapanasis*** Sawada hence referred to those, and become new records to the Fungi of India.

Herbarium specimens were deposited in the Herbarium Cryptogamae Indiae Orientalis (HCIO) New Delhi and Fungi of Western India (WIF) Shivaji University, Kolhapur (M.S.).

RESULT AND DISCUSSION:

Key to the species of the geuns *Phaeoisariopsis* studied

1. Conidiophores with apical hypal appendage ---------- *P. tetrapanacis*

1'. Conidiophores without hypal appendage ----------2.

2. Synnemata upto 800-1150 µm long ---------- *P. armillata*

2'. Loose Synnemata or Caespitose upto 80-300 µm long ---------- *P. cassiae*

Phaeoisariopsis armillata Jong and Morris, Text Plate No. -I, figs. 1-4,

Colonies hypophyllous; synnemata dark, upto 800-1150 µm tall, 50-135 µm wide near the base; conidiophores, brown, mostly 5 µm wide, slightly geniculate with prominent conidial scars; conidia brown, up to 4-12 septate, 50-60 x 5-7 µm.

Habit: On the living leaves of *Mallotus philippinensis* Muell. (Fam.: Euphorbiaceae), Chaloba (Tal.-Ajara, Dist.- Kolhapur, M.S.), 2-1-2000, Shri. Milind Gurav, H.C.I.O. 45570, W.I.F. – 2029.

P. cassiae (P. Henn.) v.Arx, Text Plate No. I, figs. 9-11.

Basio.: *Cercospora cassiae* P. Henn., Bull. Herb. Boissier 1: 121, 1893.

= *Cercosporidium cassiae* (P. Henn.) Deighton, Mycol. Pap. 112: 1-80, 1667.

Colonies hypophyllous, olivaceous-brown to black, upto 2-5 mm; conidiophores loose synnematous, caespitose, arising from small stromata, golden brown, slightly geniculate with prominent conidial scars; upto 230 x 4-5 µm; conidia obclavate, brown, 0-3 septate, 30-62 x 8-11 µm.

Habit: On the living leaflets of *Cassia fistula* Linn. (Fam.: Caesalpinaceae), Dewarde (Tal.-Ajara, Dist.-Kolhapur, M.S.), 16-10-2001, T. R. Kavale, H.C.I.O. – 45567 and W.I.F. – 2032.

P. tetrapanasis Sawada, Text Plate No. I, figs. 5-8

Colonies amphigenous, mostly hypophyllous, synnemata dark upto 650 µm long, 15-25 µm wide near the base; conidiophores brown, becoming paler towards tips, mostly 3 µm wide, some conidiophores with hypal appendage, appendages 1-5 septate, conidial scars on conidiophores not prominent; conidia acrogenous, hyaline to subhyaline, obclavate, to fusoid, 3-10 septate, 30-50 x 5-7 µm.

Habit: On the living leaves of *Eugenia lanceolata*, Lam. and *Eugenia jambolana*, Lam. (Fam. : Myrtaceae), Gavase (Tal.-Ajara, Dist.-Kolhapur, M.S.), 13-2-2003, T. R. Kavale, H.C.I.O. Nos. - 45571, 45572 and W.I.F. Nos.- 2034, 2035 respectively.

CONCLUSION:

The species ***Pheaoisariopsis armillata*** has been recorded by E. F. Morris and S. C. Jong (1968) on dead herbaceous stems from Drayton Trail, Barro Colorado Island, Panama Canal Zone. The present material collected on the living leaves of *Mallotus philippinensis* Muell. matched well in all morphological respect except smaller conidia and thus, referred to it. It makes new record to the Fungi of Inida and *Mallotus philippinensis* Muell. is an additional host record.

Hennings, P. (1893) has recorded *Cercospora cassiae* on *Cassia* species from America which was revised and studied by Deighton (1967) and assigned to *Cercosporidium cassiae* (P. Henn.) Deighton. von Arx (1983) during his studies of the genus *Mycosphaerella* and its anamorphs also revised *Cercosporidium cassiae* (P. Henn.) Deighton and transferred to *Phaeoisariopsis cassiae* (P. Henn.) van Arx as a new combination recorded on different species of the host genus *Cassia* making *Berteromyces aeneus* Ciferi as a synonym. The genus *Phaeoisariopsis* is characterized by formation of either synnemata or loose long conidiophores, conidia many septate, obclavate, rostrate or acicular, conidial scars thicken, dark and bulging and parasitic on members of the family Leguminoseae. The present material collected on *Cassia fistula* Linn. is matched well in all morphological respects and thus, referred to *Phaeoisariopsis cassiae* (P. Henn.) von Arx. This makes new record to the Fungi of India.

The species *Phaeoisariopsis tetrapanacis* has been reported by K. Sawada (1921) on *Tetrapanax papyrifera* (Fam.: Araliaceae) from Taipai, Formosa, National Taiwan University (TAI). The present collections collected on two species of the genus *Eugenia* viz. *E. lanceolata* Lam. and *E. jambolana* Lam. well matched in all morphological respects to *Phaeoisariopsis tetrapanacis* Sawada hence, referred to it. It makes new record to the Fungi of Inida and *E. lanceolata* and *E. jambolana* are additional host records.

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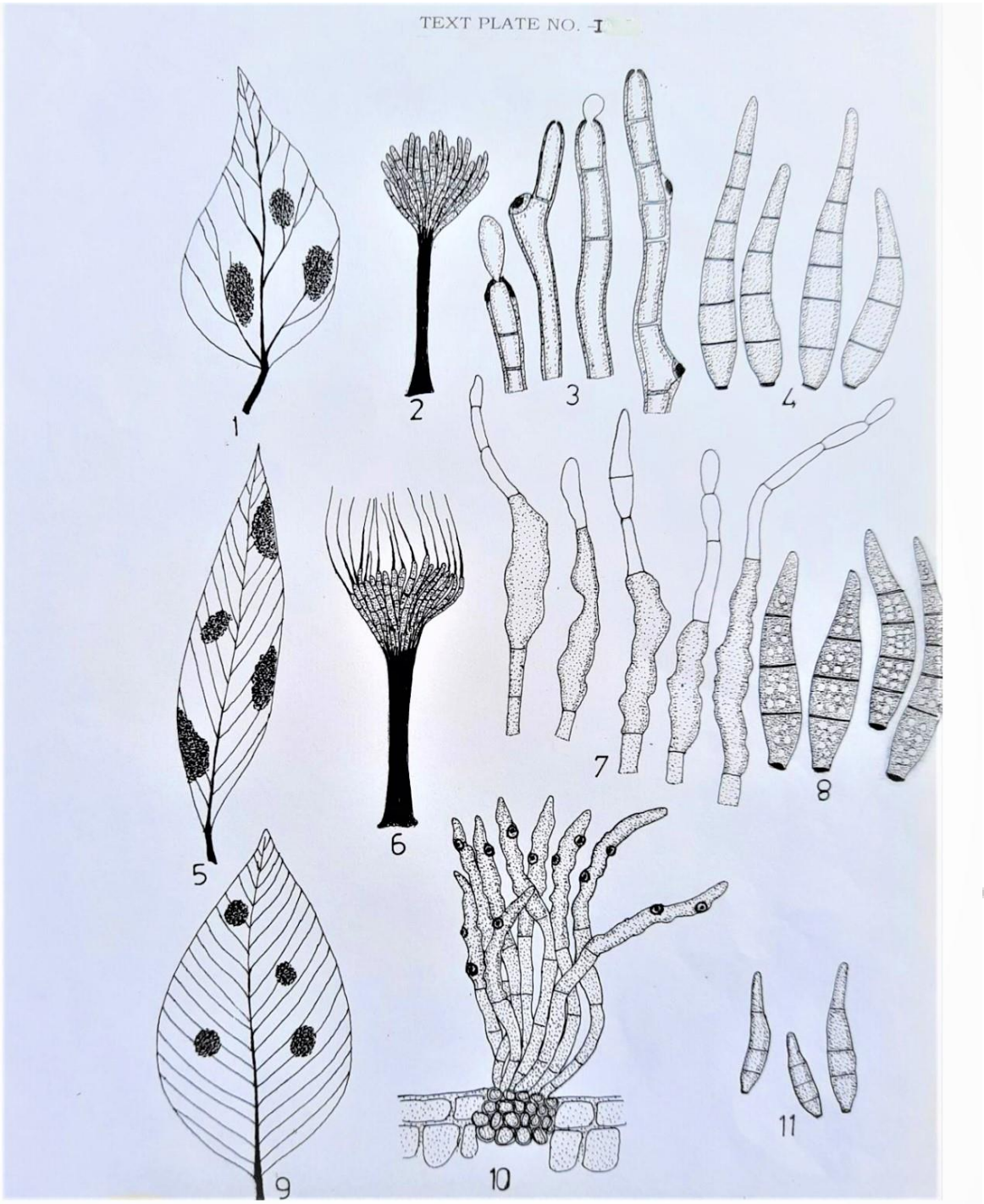

Figs. 1-4 ***Phaeoisariopsis armillata*** Jong and Morris Fig.1- Habit-Infected leaf showing colonies on lower surface, Fig. 2- Synnemata, Fig. 3- Conidiophores, Fig. 4- Septate conidia; **Figs. 5-8** ***Phaeoisariopsis tetrapanasis*** Sawada Fig.5- Habit-Infected leaf showing colonies on lower surface, Fig. 6- Synnemata, Fig. 7- Conidiophores with hypal appendage, Fig. 8- Septate conidia; **Figs. 9-11** ***Phaeoisariopsis cassiae*** (P. Henn.) v.Arx Fig.9- Habit-Infected leaf showing colonies on lower surface, Fig. 10- Conidiophores loose synnematous, Fig. 11- Septate conidia.