

The genus *Dysrhynchis* in India

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Abstract: Two species of the genus *Dysrhynchis*, namely, *D. palmicola* and *D. uncinata* collected on the leaves of *Elaeis guineensis* and *Ochlandra travancorica* from Kerala state are described and illustrated in detail.

Keywords: *Dysrhynchis*, Arecaceae, Poaceae, Kerala
Introduction

The genus *Dysrhynchis* Clemens has been classified under the family Parodiellinaceae (Arnaud, 1918; Hansford, 1946; Arx & Muller, 1975). This includes the family Parodipsidaceae (Luttrell, 1951) and Perisporiopsidaceae (Muller & Arx, 1962). Kirk *et al.* (2001) have placed it under Parodipsidaceae. These are leaf parasites, having brown, septate, branched mycelium, penetrate the host by stomopodia. Mycelial setae present. Perithecia born on the hyphae, urniform, non-ostiolate but forming wide opening at the apical portion, wall composed of thick, dark cells, often become translucent and asci visible at maturity; asci clavate to spherical, bitunicate; ascospores hyaline, brown at maturity, uniseptate. Type species, *D. pulchella* (Sacc.) Clemens.

This genus differs from other genera of Parodiellinaceae in absence of appressoria and hypostromata (Arx & Muller, 1975, Hosagoudar, 2004). It represents seven species in the world on members of the host families, Malpighiaceae (*D. Pulchella* (Sacc.) Clemens), Oleaceae (*D. confusa* (Doidge) Arx), Moraceae (*D. amazonica* (Hohn.) Muller), Zinziberaceae (*D. amomi* (Berk. & Broom) Arx), Arecaceae (*D. palmicola* (Syd.) Arx) and Poaceae (*D. oligotricha* (Mont.) Arx, *D. uncinata* (Syd.) Arx).

In India, Hosagoudar (2002) made its generic report from Kerala on *Ochlandra travancorica*. Subsequently, we could collect another species of this genus on *Elaeis guineensis* from Kerala state. Hence, we felt to present

the detailed study of this rare fungal genus.

Taxonomy

1. *Dysrhynchis palmicola* (Sydow) Arx, Beitr. Kryptog. Flora Schweiz 11: 192, 1962. *Balladynella palmicola* Syd., Ann. Mycol. 37: 205, 1939. *Meliolinella elaeidis* Hansf., Mycol. Pap. 15: 69, 1946. (Fig. 1, Plate 1)

Colonies hypophyllous, dense, velvety, run parallel along the veins, up to 2 mm in diam., confluent and cover an entire lower surface of the leaves. Hyphae substraight to flexuous, branching irregular at wide angles, closely reticulate, cells 18-24 x 2-4 µm. Appressoria absent. Mycelial setae numerous, carbonaceous black, scattered, simple, straight, acute to obtuse at the tip, up to 200 µm long. Perithecia closely scattered, stipitate, globose, ovate, ostiolate, up to 100 µm in diameter; asci visible in mature perithecia, 2-4 in numbers, ovate to globose, octosporous, 30-60 µm in diameter; ascospores conglobate, oblong, pale brown, 1- septate, constricted at the septum, broadly rounded at both ends, 24-34 x 9-11 µm, wall smooth.

Materials examined: On the leaves of *Elaeis guineensis* Jacq. (Arecaceae), on the way between Athirappally to Chalakkudy, Thrissur, Kerala, India, Aug. 21, 2007 HClO 48255, TBGT 2994.

This species was known on the same host from Africa and is reported here for the first time from India (Muller & Arx, 1962; Bilgrami *et al.* 1991).

2. *Dysrhynchis uncinata* (Sydow) Arx in Muller & Arx, Beitr. Kryptogamenflora der Schweiz 2 : 191, 1962; Hosag., Persoonia 18: 125, 2002.

Ballydyna uncinata Sydow, Ann. Mycol. 12: 546, 1914. *Meliolinella uncinata* (Sydow) Hansf. Sydowia 9: 85, 1955.

Kusanobotrys bambusae Hino & Katumoto, Bull. Yamaguti Univ. 5: 218, 1954.

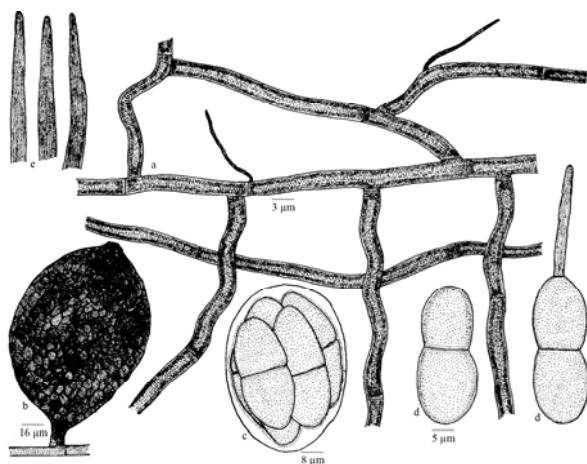


Fig.1. *Dysrhynchis palmicola* (Sydow) Arx.

a. Branched mycelium, b. Stipitate Perithecium, c. Ascus, d. Ascospores, e. Apical portion of the mycelial setae

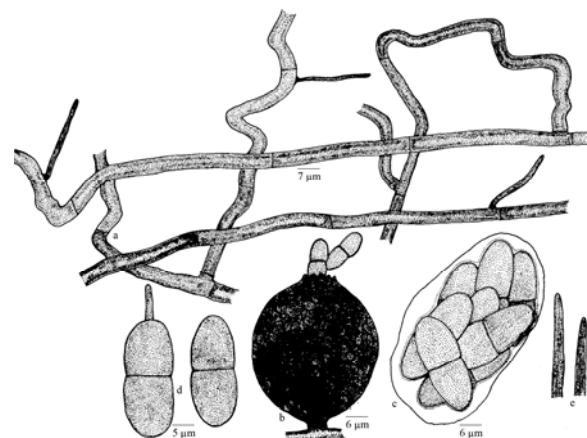


Fig.2. *Dysrhynchis uncinata* (Sydow) Arx.

a. Branched mycelium, b. Stipitate Perithecium, c. Ascus, d. Ascospores, e. Apical portion of the mycelial setae

Neoballadyna butleri Boedijn, Persoonia 1: 398, 1961.

Kerala state as a new generic record (Hosagoudar, 2002)

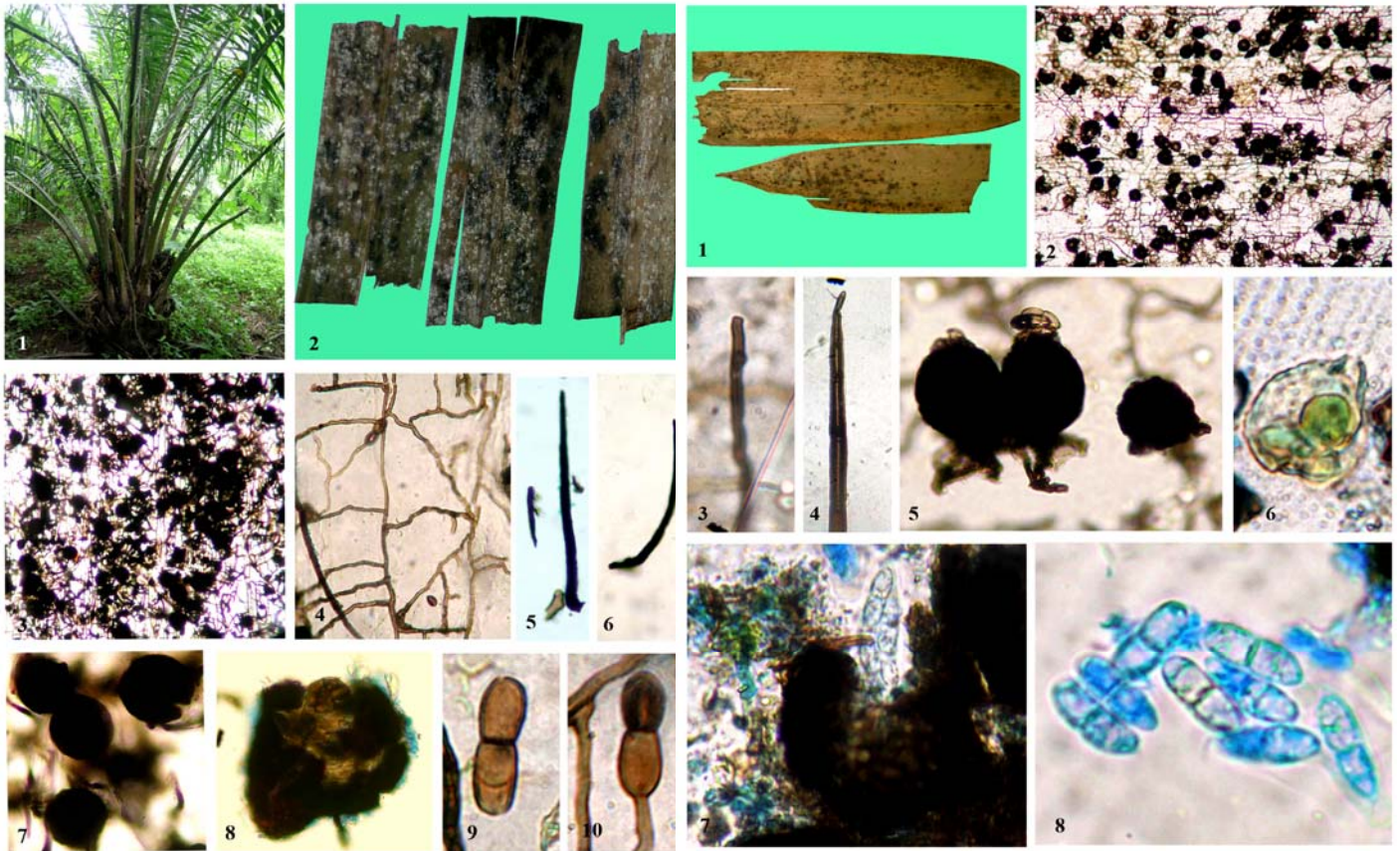


Plate-1. *Dysrhynchis palmicola* (Sydow) Arx

1. Habit of the plant, 2. Infected leaves, 3. Mycelium with perithecia
4. Mycelium with scattered perithecia, 5. Branched mycelium, 5-6. Mycelial setae, 7. Perithecia, 8. Broken perithecia showing asci, 9-10. Ascospores

(Fig. 2, Plate-2)

Colonies hypophyllous, dense, run parallel along the veins, up to 5 mm long and 2 mm broad, confluent and cover larger leaf area. Hyphae straight to crooked, branching irregular at acute angles, loosely to closely reticulate, cells 14-29 x 2-5 µm. Appressoria absent. Mycelial setae numerous, simple, straight, flexuous, uncinatae, subacute to obtuse, up to 120 µm long. Perithecia slightly stipitate, globose, ovate, ostiolate, 33-38 µm in diameter; asci visible in mature perithecia, 1-2 in numbers, ovate to globose, octosporous, 28-36 µm in diameter; ascospores conglobate, oblong, brown, uniseptate, constricted at the septum, broadly rounded at both ends, 24-29 x 7-10 µm, wall smooth in young.

Materials examined: On leaves of *Ochlandra travancorica* Benth. ex Gamble (Poaceae), Attayar, Trivandrum, Kerala, March 20, 1997, V.B. Hosagoudar HClO 43966, TBGT 470.

This species was known on *Schizostachyum* sp., *Bambusa* sp. and *Gigantochloa* sp. from Philippines (Muller & Arx, 1962). This species was reported from

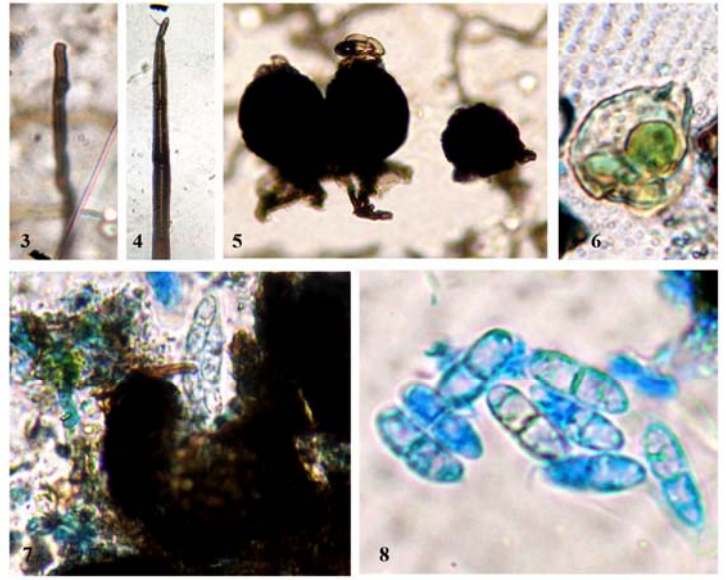


Plate-2. *Dysrhynchis uncinata* (Sydow) Arx

1. Infected leaves, 2. Mycelium with scattered perithecia, 3-4. Apical portion of the mycelial setae, 5. Perithecia (one developing), 6. Ascus, 7. Ascus emerging from the perithecium, 8. Ascospores

but the description and illustrations were lacking.

References

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