Journal on New Biological Reports **3**(1): 01 – 03 (2014) **ISSN 2319 – 1104 (Online)**

First Report of *Ardhachandra critaspora* (Matsush.) Subram. & Sudha on *Leea indica* (Burm. f.) Merr. and *Syzygium cumini* Skeels. Lam. from Western Ghats, India

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(Received on: 14 January, 2014; accepted on: 11 Feburary, 2014)

ABSTRACT

One of the surveys in evergreen patches of Western Ghats of Maharashtra occasioned in the collection of an uncommon folicolous dematiaceous hyphomycete *Ardhachandra critaspora* from leaves of *Leea indica* (Burm. f.) Merr. and Syzygium cumini Skeels. Lam. which subsequently determined to be the new host record for India. This review presents some data on microbial diversity of Western Ghats.

Key Words: *Ardhachandra***,** Crest, Lonavala, Selenoids and Western Ghats.

INTRODUCTION

Western Ghats is one of the unique biodiversity niches with varied flora, fauna and landscapes. In 2011-12, mycologists of Botanical Survey of India, Western Regional Centre, Pune carried out comprehensive explorations of Folicolous fungi in Western Ghats region of Maharashtra. The substrates of the collected samples of fungi have been searched for the presence of anamorphic fungi. Among diverse fungi examined, one fungus was identified as *Ardhachandra critaspora* (Matsush.) Subram. & Sudha (1978) from the leaves of two important medicinal plants i.e. *Leea indica* (Burm. f.) Merr. and Syzygium cumini Skeels. Lam., which constitutes the new host records for India. The plant is having analgesic, anti-inflammatory, CNS depressant, antibacterial, antifungal properties. The whole plant is used traditionally for headache, body pains and skin complaints. Similarly *Syzygium cumini* (S. cumini) (L.) Skeels is one of the widely used medicinal plants in the treatment of various diseases in particular diabetes (Prajapati et al. 2003).

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The genus *Ardhachandra* was erected by Subramanian & Sudha in 1978 from dead leaves of *Ixora parviflora* from Tambaram (India) with *A. selenoides* as a type species. The authors found the specimens as congeneric with a fungus described by Pirozynski (1972) as *Rhinocladiella critaspora* Mat. (1971) from Taiwan, but latter on *R. cristospora* was included in *Ardhachandra* as *A. cristaspora* (Matsush.) Subram. & Sudha (1978) (misspelled as *A. critaspora*) and the new name was adopted by Matsushima (1980). Latter on Pasqualett et al 2005 clearly described that the two species *A. critaspora* and *A. selenoides* can be reduced to one and since the first findings can be attributed to Matushisma (*Rhinocladiella critaspora*, 1971), the valid species should be named *Ardhachandra critaspora* also as type species. For better understandings, the genus description of *Pasqualetti* et al. (2005) is reported here.

The taxonomic description of the genus is as follows: Conidiophores macronematous, mononematous, erect, clear brown to brown. Conidiogenous cells polyblastic, integrated, terminal, sympoidal with prominent denticles, clear brown.

Conidia solitary, in aspect frontali fusiform, ellipsoidal, in *aspectu laterali* solenoid or lenticular, pointed at the ends, with lateral crest or bands, aseptate, clear brown or light yellow. A review of pertinent literature indicates that the genus *Ardhachandra* Subram. & Sudha comprises five species on leaf litter of broad leaved trees in Africa, Asia and South America viz. *A. selenoides* (de Hoog) Subram. & Sudha (1978), *A. cristaspora* (Matsush.) Subram. & Sudha (1978), *A. aequilatera* Matsush (1987), *A. chumrungensis* (B. Sutton) Keates & Carris (1994), *A. porlatofusiformis* Chen & Tzean (1995) and *A. vietnamensis* Melnik (2012). *A. cristaspora* is also morphologically closely related with *A. prolatofusiformis* and two other *Ardhachandra* species (Chen and Tzean 1995), but it is readily separated from these fungi on the basis of small but conspicuous acuminate apices.

MATERIAL AND METHODS

Fresh samples collected during the course of field trips in Lonavala and Bhimashankar possess the symptoms of sooty mold disease, which covered the entire leaf surfaces. The infected samples were dried at room temperature. Both the materials were examined and photographed using Digital color CCD Camera (Nikon DS Fi1) attached to a Nikon eclipse 50i microscope with interference optics in Lab. The type specimens (holotype) have been deposited at Botanical Survey of India, Herbarium, Pune (MH), India.

Fig.1. ***Ardhachandra critaspora*** **(A)** Shoolty molds of *Leea indica* L., **(B)** Shooty molds of *Syzygium cumini* Skeels. Lam, **(C&D)** Conidia and conidiophores, **(E&F)** front view of conidia, **(G-I)** Lateral view of conidia.

RESULTS AND DISCUSSION

Ardhachandra critaspora (Matsush.) Subram. & Sudha (1978). (Fig.1)

Rhinocladiella cristospora Matsush. Matsushima 1971.

Conidiophores solitary, erect, straight or flexous, subhyaline to brown, simple, septate, bearing one to several conidia mostly in apical fertile denticulate portions successively, 40-60 µm tall, 2–3µm wide. Conidiogenous cells polyblastic, terminal, integrate, sympoidal, denticulate, clear brown. Conidia solitary with pointed ends, in *aspectu frontali* broadly fusiform, 19 – 23 x 6–8µm; in *aspectu laterali* selenoid, 5-6 µm wide, with lateral crest, clear brown, apiculate, spindle shaped, often unequal sided, granulate, apex 2–3µm long.

Material examined: Collected by R. Dubey on living leaves of *Syzygium cumini* Skeels. Lam (Fam. Myrtaceae) from Lonavala (Maharashtra) and on living leaves of *Leea indica* (Burm. f.) Merr. (Fam. Vitaceae) from Bhimashankar (MH) on 26.9.2011 and 29.9.2011 respectively. The holotype has been housed in Herbarium of Botanical Survey of India, Western Regional Centre, Pune with collection No. 199568 and 199654 respectively.

Review of pertinent literature reveals (Bilgrami et al. 1991 and Jamaluddin et al. 2004) that *Syzygium cumini* and *Leea indica* constitutes a new host record for *A. cristaspora* from India.

ACKNOWLEDGEMENT

The author is highly thankful to Director, Botanical Survey of India for providing laboratory facilities. She is also thankful to Head, BSI, Western Regional Centre, Pune for his kind support. Ministry of Environment and Forests, New Delhi is also thankfully acknowledged for financial assistance.

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