



STUDIES IN TELIOMYCETOUS FUNGI

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ABSTRACT:

Two taxa viz. *Sporisorium tranzchelianum* (Lavrov) Karatygin and *Maravalia achroa* (H. and P. Syd.) Arthur and Cummins on *Arthraxon* spp. (Poaceae) and *Dalbergia volubilis* Roxb.(Fabaceae) respectively have been collected, identified and described. *Sporisorium tranzchelianum* (Lavrov) Karatygin is addition to fungi of India and *Maravalia achroa* (H. and P. Syd.) Arthur and Cummins is reported on a new host species.

Keywords : Mycotaxonomy, Teliomycetes, *Sporisorium*, *Maravalia*.

INTRODUCTION:

The present paper is a continuation of the studies in Rust and Smut fungi (Patil, Anjali R., T. M. Patil and M. S. Patil, 2004-06; Patil, Anjali R. and C. R. Patil, 2009; Patil, Anjali R., 2009; A. R. Patil, T. R. Kawale and M. S. Patil, 2011; Anjali Patil, B. T. Dangat and M.S.Patil.,2014) from S.W. parts of Maharashtra during rainy and post-rainy season. Two taxa viz. *Sporisorium tranzchelianum* (Lavrov) Karatygin and *Maravalia achroa* (H. and P. Syd.) Arthur and Cummins on *Arthraxon* spp. (Poaceae) and *Dalbergia volubilis* Roxb.(Fabaceae) respectively have been collected, identified and described. *Sporisorium tranzchelianum* (Lavrov) Karatygin is addition to fungi of India and *Maravalia achroa* (H. and P. Syd.) Arthur and Cummins is reported on a new host species.

MATERIAL & METHODS:

The present materials were collected from Shenawade, Tal. Gaganbawda, Dist. Kolhapur, M.S., India during the month of September every year from 2015 till date. Host plants were identified using the flora of Kolhapur district. The fungi were collected and preserved in dry form in the Mycological herbarium, Department of Botany, Rajaram College, Kolhapur and Herbarium Cryptogamiae Indiae Orientalis (HCIO) IARI, New

Delhi. The fungi were studied using Lawrence and Mayo research microscope. Field photography was done with the help of Nikon Coolpix P520 camera and SEM was done at Department of Physics, Savitribai Phule Pune University, Pune. For identification of fungi up to date literature was sited.

RESULTS & DISCUSSION:

Sporisorium tranzchelianum (Lavrov) Karatygin, Lidia 6(4):109-110, 2005. Plate no. II

(a-e)

=*Sorosporium tranzchelianum* Lavrov, *Definitorium fungorum* URSS, p 81,1989.

Sori entirely destroying the inflorescence, long, cylindrical, 0.2 x 3-7cm, enclosed by the uppermost leaf sheath, initially covered by greyish-brown peridium which ruptures irregularly from its apex downward, exposing the blackish-brown, semi-agglutinated to powdery mass of spore balls, spores and sterile cells surrounding a central flagiform or bifurcate columella. Spore balls sub-globose, ovoid, oblong to irregular, 27-45 µm in diam. Or 32-60 x 50-60 µm, reddish brown. Spores sub-globose, ellipsoidal, ovoid or sub-polyhedral, 10-12.5 µm in diam. Or 12.5 x 15 µm, yellowish brown, thick walled, but wall slightly unevenly thick, finely, densely verrucose-

echinulate. Sterile cells in short chain or in small irregular groups, thick walled, glossy-white, smooth and smaller than fertile spores.

Habit: in the inflorescence of *Arthraxon* sp. (Poaceae), Shenawade, (Tal. Gaganbawda, Dist. Kolhapur, M.S.), 06/09/2015, Anjali R. Patil, deposited in Herbarium Cryptogamiae Indiae Orientalis (HCIO) IARI, New Delhi under accession number 52126.

Remarks: This smut was collected and reported as *Sporisorium tranzchelianum* Lavrov(1989) from Russia. Vanky, K. (2004) collected it on *A. micans* (Nees.) Hochst. He studied, revised and proposed it as *Sporisorium tranzchelianum* (Lavrov) Karatygin, a smut new to Africa (Ethiopia) on a new host species. Present collection when compared, was found to be identical to *Sporisorium tranzchelianum* in all respects, except the sori which are longer and spore balls that are smaller. This makes a new record to the fungi of India.

***Maravalia achroa* (H. and P. Syd.) Arthur and Cummins, *Phillipp. J. Sci.* 61:468, 1936. Plate no. I (a-d).**

= *Uromyces achroa* H. and P. Syd., *Ann. Mycol.* 5:491, 1907.

Habit: on the leaflets, petiole and branches of *Dalbergia volubilis* Roxb. (Fabaceae), Shenawade, (Tal. Gaganbawda, Dist. Kolhapur, M.S.), 6/ 9/ 2015, Anjali R. Patil, deposited in Herbarium Cryptogamiae Indiae Orientalis (HCIO) IARI, New Delhi under accession number 52125.

Remarks: There are two species of *Marvalia* recorded on the host genus *Dalbergia*. As per analytical and host based keys by Ono, Y. (1984) present collection matches well to *Maravalia achroa* (H. and P. Syd.) Arthur and Cummins and this species is characterized by non- paraphysate basidiosori, pedicels of pro-basidia longer than 10m, pro-basidia shorter than 40m and

uredospores measure 13 x 15 m, hyaline and finely echinulate and thus referred to it. This species has been recorded on *Dalbergia sisoo* Roxb. from Pusa, Bihar, India, *D. sympathetica* Nimmo from Mahabaleshwar and Kolhapur, Maharashtra, India and *Dalbergia* spp. from China.

CONCLUSION:

After a thorough study of the collections and literature it was found that *Sporisorium tranzchelianum* (Lavrov) Karatygin has not been previously reported from India, thus it makes a new record to the fungi of India. And, *Maravalia achroa* (H. and P. Syd.) Arthur and Cummins has never been recorded on *Dalbergia volubilis* Roxb., thus a new host record.

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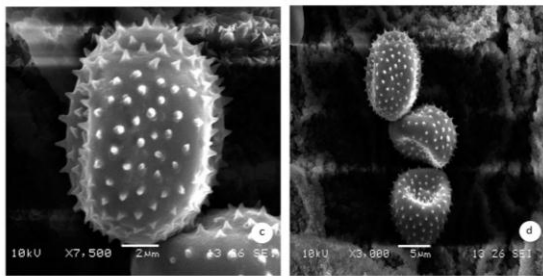
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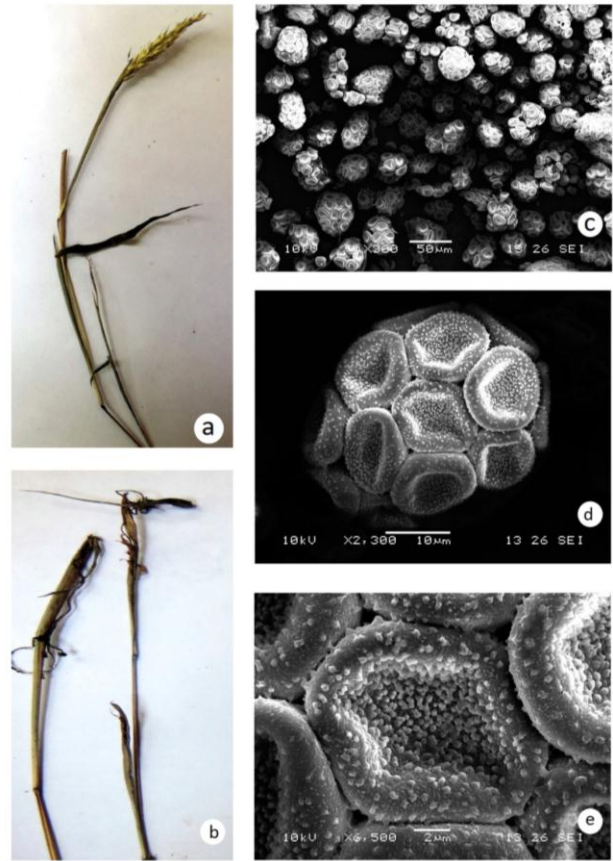
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PLATE NO. I



Maravalia achroa (H. and P. Syd.) Arthur and Cummins: a, b- Infected plant of *Dalbergia volubilis* Roxb.; c, d- Uredospores

PLATE NO. II



Sporisorium tranchelianum (Lavrov) Karatygin: a- Healthy inflorescence of *Arthraxon* spp.; b- Infected inflorescence; c-Sporeballs; d- Single sporeball; e- Spores.