

***Biscogniauxia mediterranea* - a wood rotting pathogen**

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Biscogniauxia mediterranea is a xylariaceous fungus of Phylum Ascomycota. It was collected from different localities of Allahabad from year 2004 to year 2011 on different host trees viz., *Azadirachta indica*, *Butea monosperma*, *Citrus limon*, *Delonix regia*, *Ficus racemosa*, *Mangifera indica*, *Shorea robusta* and *Tamarindus indica* belonging to family Anacardiaceae, Caesalpiniaceae, Dipterocarpaceae, Fabaceae, Meliaceae, Moraceae and Rutaceae. It was found to be dangerous pathogen for *Citrus limon* which ultimately killed the host plant. In this paper description, illustration and reporting of the fungus are presented.

Key words: Allahabad, host, pathogen, Xylariaceae.

INTRODUCTION

Fungus *Biscogniauxia mediterranea* (De Not.) Kuntze. is a member of family Xylariaceae, order Xylariales of Phylum Ascomycota (Hawksworth *et al.*, 1995). Due to suitable climate of Allahabad *B. mediterranea* is found throughout the year in different host plants. It is a white rot fungus that decays wood by breaking down the cellulose and lignin. It was found to be a dangerous pathogen ultimately killing the plant, especially *Citrus* plants.

MATERIALS AND METHODS

Macroscopic study was based upon fresh specimens collected from the different naturally forested areas and wooded areas such as gardens and parks of Allahabad.

For microscopic study, temporary and semipermanent mounts of specimen were prepared by crushing and teasing a small piece of ascocarp beneath a cover slip, along with free hand sections in cotton blue and lactophenol. Further material was mounted in water in order to make critical measurement and to observe true colours.

Identification of the *B. mediterranea* was done by the following authentic literature of Alexopoulos *et al.*

(1996) and Hawksworth *et al.* (1995). Specimen was deposited in Mitter Mycology Laboratory, Department of Botany, University of Allahabad, Allahabad.

OBSERVATIONS

Description

Stromata widely effuse and crust-like, applanate to slightly convex, surface light to dark brown, hard and brittle, densely aggregated and connected by stromatic tissue; perithecia entirely surrounded by a peridial wall, dark brown, ostiolate, oval shaped, 270 μm long and 230 μm wide; asci cylindrical with thin single membrane, stipitate, arranged in hymenium, eight spored, 52.5-87.5 μm x 5-6.25 μm ; ascospores ellipsoid, dark brown, uniseriately arranged with longitudinal germ slit, 8.7-12.5 μm wide.

B. mediterranea was collected from bark, trunk, living and dead or dying branches, fallen twigs, decaying logs of number of host trees from different localities viz., Allahabad University campus (Arts faculty, Roxburgh Botanical garden, Womens hostel), Company garden, Hathi Park, Medical college, Naini, Tagore Town from year 2004 to 2011 (Table 1, Figs. 1 & 2).

Table.1: Hosts of *Biscogniauxia mediterranea* recorded from Allahabad

Host	Family	Locality	Year	Plant Part
<i>Citrus limon</i> (L.)Burm.f	Rutaceae	Tagore Town	2004, 2005	Living branches
<i>Butea monosperma</i> (Lam.)Taub.	Fabaceae	Roxburgh Botanical garden	2006	Fallen twigs
<i>Tamarindus indica</i> (L.)	Fabaceae	Hathi Park	2006	Dead branch
<i>Shorea robusta</i> G. f.	Dipterocarpaceae	Company garden	2007	Dead twigs
<i>Delonix regia</i> (Bojer ex Hook.) Raf.	Caesalpiniaceae	Company garden	2008	Log
<i>Azadirachta indica</i> (A.Juss.)	Meliaceae	Arts faculty, Naini woodland area	2009	Log
<i>Ficus racemosa</i> (L.)	Moraceae	Medical college	2010	Fallen branches
<i>Mangifera indica</i> (L.)	Anacardiaceae	Womens hostel, Company garden	2011	Fallen branches

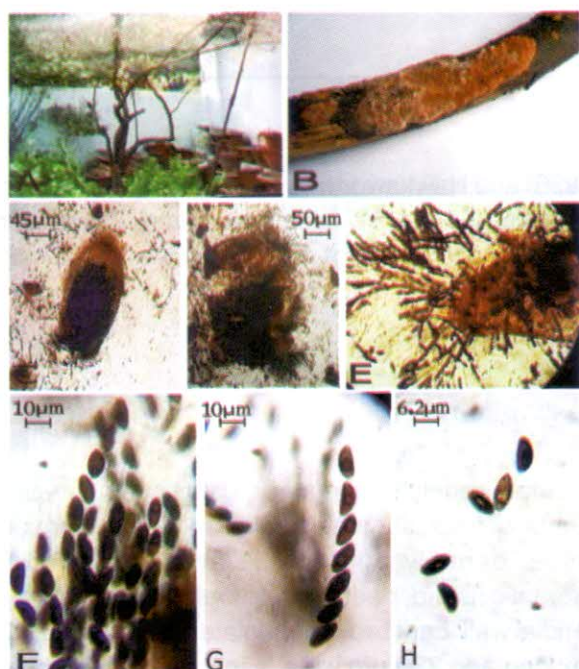


Fig. 1: A. *Citrus limon* plant infected with *B. mediterranea*., B. Stromata of *B. mediterranea* on *Citrus limon* twig., C. Perithecium., D. Ruptured perithecia with asci., E. Asci liberated from ostiole of perithecium., F. Asci in group showing mature ascospores., G. Ascus., H. Ascospores.

DISCUSSION

B. mediterranea was earlier reported from Africa, Europe, Russia and U.S.A. (Vasilyeva *et al.*, 2007). From India *B. nummularia* was reported as a saprophytes from dead branches of *Shorea robusta* and *Syzizium commune* from Central India in 2008 (Soni *et al.*, 2008) but *B. mediterranea* is being reported here for the first time.

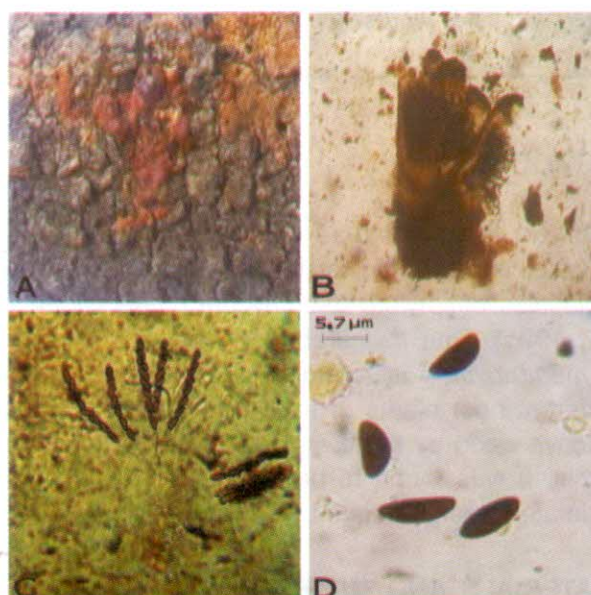


Fig. 2: A. *Tamarindus indica* plant infected with *B. mediterranea*., B. Ruptured perithecia with asci., C. Asci in group., D. Ascospores.

Though detected from a number of host trees, *Citrus limon* was found to be more susceptible to the fungus which ultimately kill the plants. The ten species so far reported are either saprophytes or weak parasites except *B. marginata* which was also found to be a serious parasite for apple trees in North America (Jong and Benjamin, 1977; San Martin Gonzalez and Rogers, 1993).

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REFERENCES

- Alexopoulos, C.J., Mims, C.W. and Blackwell, M. 1996. *Introductory Mycology*. John Wiley & Sons, Inc. pp 869.
- Hawksworth, D.L., Kirk, P.M., Sutton, B.C. and Pegler, D.N. 1995. Ainsworth Bisby's Dictionary of the Fungi 8thed. By Commonwealth International Mycological Institute. CAB International. U.K. pp 616.
- Jong, S.C. and Benjamin, C.R. 1971. North American species of *Nummularia*. *Mycologia*. **63**: 862-876.
- San Martin Gonzalez, F. and Rogers J.D. 1993. *Biscogniauxia* and *Camillea* in Mexico. *Mycotaxon*. **47**: 229-258.
- Soni, K.K., Jamaluddin, Sharma, N. and Verma, R.K. 2008. *Forest Fungi of Central India*. International Book Distributing Company, Lucknow. pp 418.
- Vasilyeva, L.N. Stephenson, S.L. and Miller, A.N. 2007. Pyrenomycetes of the Great Smoky Mountains National Park. IV. *Biscogniauxia*, *Camaropella*, *Camarops*, *Camillea*, *Peridoxylon* and *Whalleya*. *Fungal Diversity*. **25**: 219-231