

FIRST RECORD OF *XYLARIA VASCONICA* J. FOURNIER & M. STADLER FROM BANGLADESH

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Xylariaceae is one of the largest and most widely distributed families of Xylariales (division-Ascomycota) with approximately 85 genera and at least 1340 species (Chen *et al.* 2013). *Xylaria*, a cosmopolitan genus, reaching the zenith of its diversity in various tropical and subtropical regions of the world (González and Rogers, 1989). There is a very few report on the genus *Xylaria* in Bangladesh. Shayesta and Rahman (1992) reported the genus *Xylaria* as *Xylaria* sp. from Chittagong Hill Tracts on *Swintonia floribunda* causing white spongy rot. A few years later Shayesta *et al.* (1999) again reported the presence of another *Xylaria* sp. from some unidentified wood logs from Sylhet forest. However, the species of the genus remained unsolved. Later on, Siddiqui *et al.* (2007) reported *Xylaria hypoxylon* from the forests of Dhaka, Chittagong, Sylhet as well as in village grooves of Bangladesh.

Recently, the authors first time recorded a species of *Xylaria*, namely *X. vasconica* J. Fournier & M. Stadler growing on rotten bamboo poles from Jahangirnagar University campus. Macro and microscopic features along with anamorphic and mycelial characters proved that the newly recorded fungus was *X. vasconica* as all the findings greatly corroborated with the report of Fournier *et al.* (2011). Fresh fruiting bodies of *X. vasconica* were collected in June 2015, properly processed and deposited at the Phytochemistry and Herbal medicine research facilities at the Department of Botany, Jahangirnagar University with accession no. *Jahan 2* as representative voucher specimen.

***Xylaria vasconica* J. Fournier and M. Stadler (2011).**

(Figs 1 & 2).

Stromata ranged between 55-110 mm tall, where the fertile part is 2-4 mm broad and 30-50 mm high. Fertile part shape was cylindrical to slightly fusiform, terete to flattened, solitary, simple to branched from the base by coalescence of the stipe. The apex of stromata is always flattened to mucronate and sterile. Stromata whitish at immature state, gradually turning into black at matured fertile state. In well-developed stromata the outer crust is peeling, furrowed longitudinally, deeply wrinkled, pale brown to dark black covering creamy, cheesy and solid interior.

Asci cylindrical, stipitate, unitunicate in structure, 8 spored. Spore bearing part 78.2-101.2 μm long \times 4.6-8.05 μm broad with wedge shaped operculum bluing in Melzer's iodine reagent. Paraphysis sparse, hyaline, slender, sterile, filamentous thread like with oil droplets, 119.9-136.6 μm length \times 2.3-3 μm broad that surround the fertile spore bearing apparatus. Ascospore ellipsoid-inequilateral, uniseriate overlapping in ascus, light to dark brown, 11.5-16.1 μm long \times 4.6-6.9 μm broad, two guttules at matured spore, conspicuous straight germ slit three-fourths to nearly equal a spore length at the flattened side. Mycelium white, velvety with fine lobed margins on PDA medium at 30° C and pH 6. Mycelia covers 9 cm plate after two weeks. After 3 weeks the colony become greyish with black patches. The anamorphic stromata appeared as brownish grey bearing white powdery apices.

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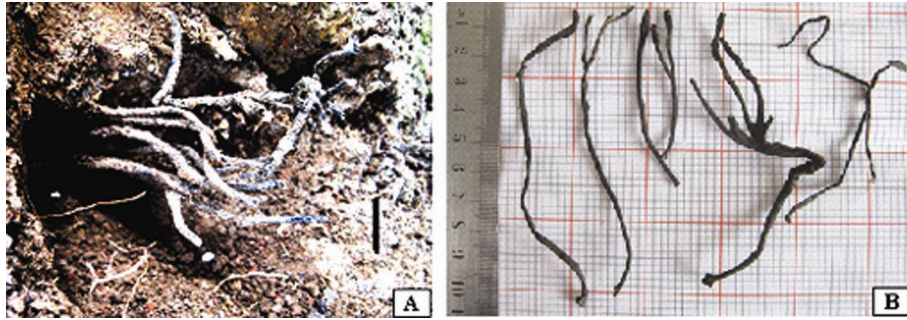


Fig. 1. Macroscopic teleomorphic features of *X. vasconica*. A. Mature stromata on natural substrate. B. Morphological variation of the stromata of *X. vasconica*. Bar (A = 25 mm).

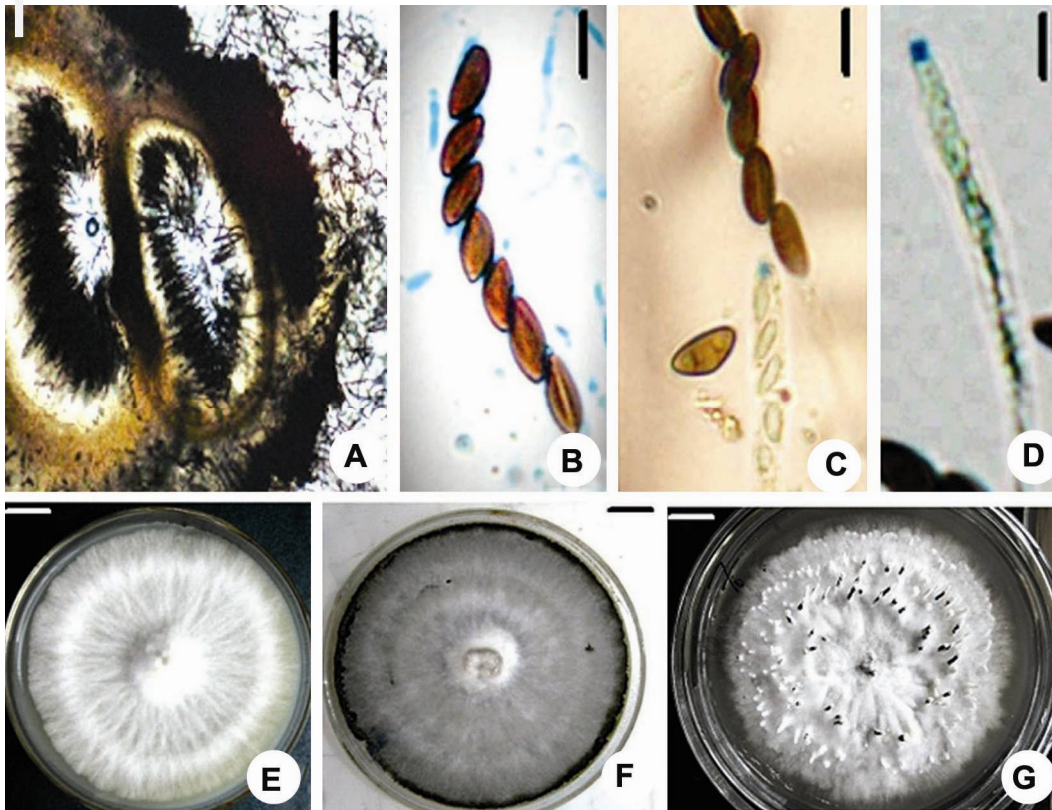


Fig. 2. Microscopic morphological and culture features of *X. vasconica*. A. Perithecia (391-506 μm) containing asci in the locule. B. Uniseriate overlapping ascospore (11.5-16.1 μm long \times 4.6-6.9 μm broad) chain showing straight germ slit. C. Biguttulate ascospore with mature and young asci. D. Ascus apical amyloid wedge shaped operculum bluing in Melzer's reagent. E-G. Mycelial colony (9 cm plate) in OA medium. E. Mycelial colony with finely lobbed margin. F. Matured colony become grayish after 4 weeks of culture. G. Anamorphic stromata in PDA medium. Bars (A = 80.35 μm , B = 12.14 μm , C = 6.56 μm , D = 12.2 μm , E, F = 15.5 mm, G = 13 mm).

References

- Chen, J., Zhang, L.C., Xing, Y.M., Wang, Y.Q., Xing, X.K., Zhang, D.W., Liang, H.Q. and Guo, S.X. 2013. Diversity and Taxonomy of Endophytic Xylariaceous Fungi from Medicinal Plants of *Dendrobium* (Orchidaceae). PLoS ONE **8**(3): e58268. doi:10.1371/journal.pone.0058268.
- Fournier, J., Flessa, F., Peršoh, D. and Stadler, M. 2011. Three new *Xylaria* species from Southwestern Europe. Mycol Progress. **10**: 33-52.
- González S.M.F. and Rogers, J. D. 1989. A preliminary account of *Xylaria* of Mexico. Mycotaxon **34**(2):283-373.
- Shayesta, B. and Rahman, M.A. 1992. Wood decay fungi on forest trees and timbers of Bangladesh. Bulletin 2, Forest pathology series. Bangladesh Forest Research Institute, Chittagong. pp. 1-13.
- Shayesta, B., Rahman, M.A. and Khisha, S.K. 1999. Checklist of host index of parasitic algae, bacteria, fungi and mistletoes on forest trees and timber in Bangladesh. Bulletin 6, Forest Pathology Series. Bangladesh Forest Research Institute, Chittagong. pp. 39-44.
- Siddiqui K.U., Islam M.A., Ahmed J.U., Begum Z.N.T., Hassan M.A., Khondoker M., Rahman M.M., Kabir S.M.H., Ahmad M., Ahmed A.T.A., Rahman A.K.A. and Haque E.U. (Eds). 2007. Encyclopedia of Flora and Fauna of Bangladesh. Cyanobacteria, Bacteria and Fungi. Asiatic Society of Bangladesh, Dhaka. **2**: 360-361.

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