

**Identification of Conidial Fungi species firstly reported from the Lotic water bodies of
Pachmarhi District Hoshangabad M.P India.**

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ABSTRACT

During the investigation period of (2014-2015) study on the conidial fungi from the lotic water bodies of Pachmarhi District Hoshangabad has been done for the first time. During the course of the study different forms of conidial fungi belonging to different orders has been isolated Viz *Schytalidium*, *Fusarium*, *Verticillium* , *Microsporium* ,*Aspergillus*,*Alternaria*, *Zalerion* from the lotic water bodies of Pachmarhi.

INTRODUCTION

The Pachmarhi Biosphere Reserve is a conservation area in the Satpura Range of Madhya Pradesh state, India. It was created on March 3, 1999 by the Indian government and covers parts of Hoshangabad, Betul, and Chindwara districts. Pachmarhi is famous for number of its tourists places and different lotic water bodies. Besides lotic water bodies Pachmari is famous for its high mountains and its climate. During summer thousands of tourists visit different places in pachmarhi inorder to have frolic of different places and especially of the lotic water bodies and falls Like B-fall, Dauches fall, where the water comes from the high mountains. These water bodies are used by villagers and tourists for bathing and different other pusposes. There are places that people may enjoy a picnic with an amazing mountain top view. There are even spots for mountain climbers; Lanjee Giri is a prime example of an attraction for rock climbing.

Pachmarhi is actually one of the more popular places to visit, as it has fairly good weather all year-round. It is about 3500 feet above sea level, and gets about 785.84mm of annual rainfall, mostly during the monsoon season. The summer months have nice weather due to its elevation. The temperature doesn't exceed 35 degrees Celsius during the day, and makes for an ideal place to vacation. Winter months can get down to 4 degrees Celsius at night, which is good considering the bone-numbing temperatures in the Himalayan foothills, which are usually shut down during the winter.

Water borne conidial fungi, previously known as Hyphomycetes represent the major microbial elements of decaying leaves in running fresh water. These fungi are characterized by their magnificent conidial types. These fungi bears different types of conidia that makes them more beautiful that's why some mycologists said that these fungi are beautiful to look at, but one must have scientific eye to appreciate their beauty as the creation of the nature. Submerged plant litter serves as the substrates for nutrition of these fungi.

ISOLATION, IDENTIFICATION AND PRESERVATION:

Water sample along with decaying leaves, roots, twigs, leaflets and soil were collected at monthly intervals. Special Baiting Technique was used to isolate particular group of fungi from various habitats. Foam and scum are also collected as this foam and scum traps the spores that are carried by the water currents. Aerator : water filtration method of Iqbal & Webster (1973) was also followed. During the tenure of our study, different sites of Denwa River, Panar pani, Bade Mahadev, B –fall were studied and different forms of conidial fungi belonging to different orders was isolated. Collection, Isolation, preservation has been done by the methods of Webster and Descals(1981), Iqbal and Webster(1973), Agarwal and Hasija(1986). Identification was done up to species level with the help of camera lucida drawings along with the measurement. Water borne conidial fungi were identified with the help of various books, reviews, manuals, monographs, research papers and published books on taxonomy of fungi by various authors like Ingold (1975), Gilman(1959), Ellis (1971,1976), Barnett and Hunter(1972), Sutton (1980). Identification of these fungi was also done by the help of the experts of the mycological field. Preservation of samples was done by F.A.A (1:1:1).

DESCRIPTION:

1. *Scytalidium lignicola* Pesante (Fig.1)

Colonies effuse, hyphae smooth, narrow, cylindrical, colourless,

Pale to mid brown with occasional darker swollen cells and often thick brown septa. The hyphae often lie parallel to each other forming bundles. Conidiophores branched or unbranched.

2. *Fusarium oxysporum* Schlecht (Fig. 2)

Mycelium extensive and cottony in culture, often with some tinge of pink, purple or yellow colour; Conidiophores variable, slender or simple or stout short, branched irregularly or bearing a whorl of phialides, single or grouped into sporodochia; macroconidia several celled slightly curved or bent at the pointed ends.

3. *Verticillium albo-atrum* Reinke & Berthold. (Fig. 3)

Colonies effuse, variously coloured. Conidiophores scattered, smooth or verruculose stipe with branches and Phialides commonly in verticils beneath the septa near the apex. Conidia aggregated to slimy masses simple, allantoid, rounded at the ends, colourless to pale brown.

4. *Microsporum* Gruby (Fig, 4)

Colonies hyaline, glabrous, downy, Woolly or powdery, yellow to red brown. Conidiophores branched producing both micro & macro conidia multiseptate, borne on conspicuous stalk cells, fusiform to obovate, thin or thick walled.

5. *Aspergillus fumigatus* Fresen. (Fig. 5)

Conidia heads radiate to columnar Blue green, fawn Conidiophores smooth, coloured; Vesicles globose to flask shaped; Phialides uniseriate, crowded; Conidia globose or subglobose, rarely elliptical; cleistothecia present or absent.

6. *Alternaria tenuissima* (Kunze ex Pers.) Wilts. (Fig. 6)

Colonies effuse usually grey, dark blackish brown or black. Conidiophores macronematous, mononematous, simple or irregularly and loosely branched, pale brown or brown. Conidia catenate or solitary, dry, typically ovoid or obclavate, with transverse and frequently also oblique or longitudinal septa.

7. *Zalerion maritima* (Linder) Anastasiou. (Fig. 7)

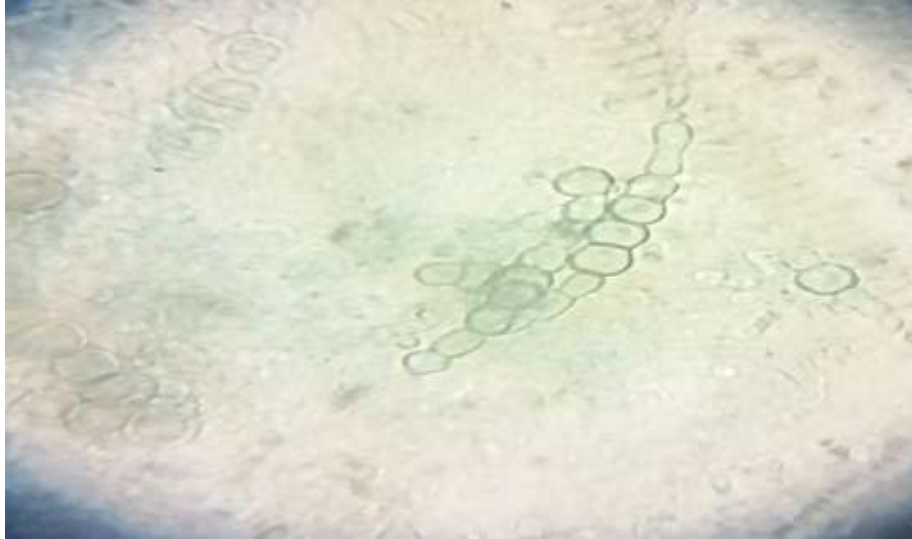
Colonies effuse, mostly dark Greyish olive or olivaceous brown, velvety. Conidiophores loosely branched or unbranched, colourless or brown smooth or verruculose. Conidia solitary, dry, multiseptate, mid to dark brown, coiled irregularly, often in several planes and sometimes forming a knot or ball of cells.

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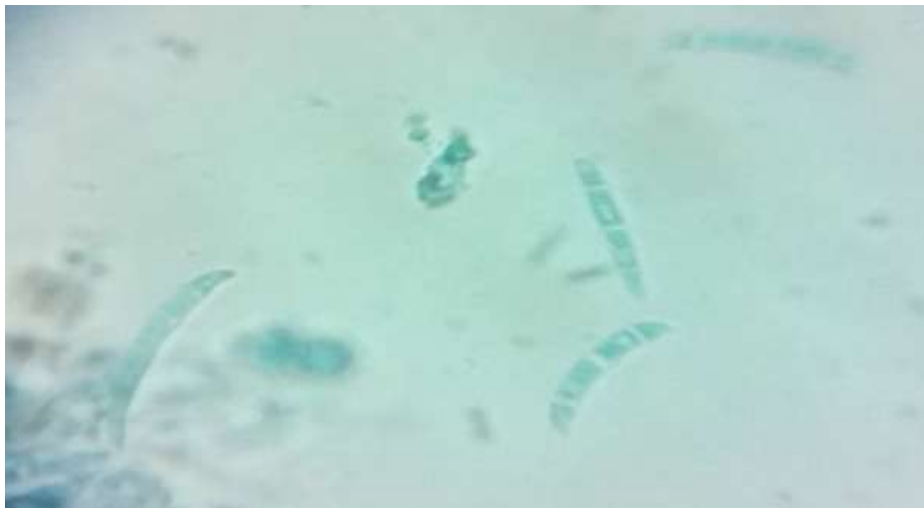
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DIAGRAMS .



(Fig. 1) *Scytalidium lignicola*.



(Fig 2) *Fusarium oxysporium*



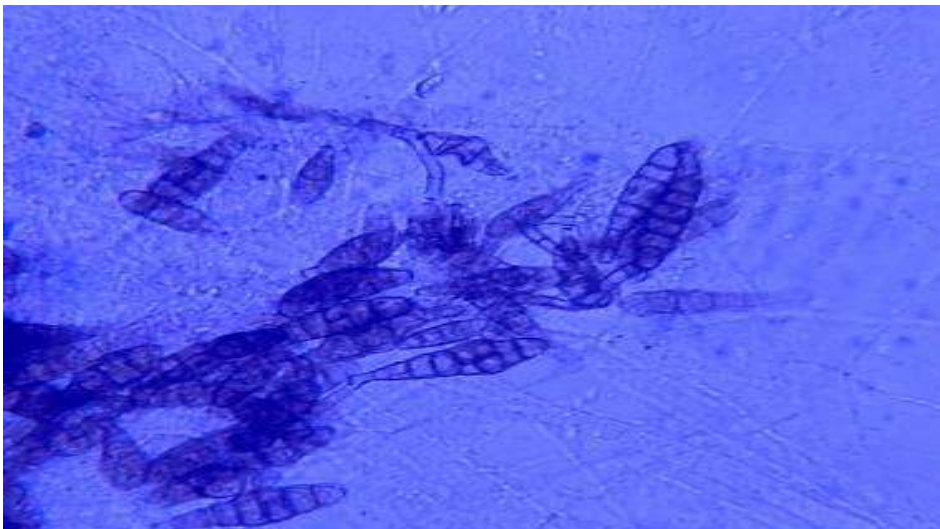
(Fig. 3) *Verticillium albo-atrum*



(Fig. 4) *Microsporium Graby*



(Fig. 5) *Aspergillus fumigatus*



(Fig. 6) *Alternaria tenuissima*



(Fig. 7) *Zalerion maritima*