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A New Ascomycetes fungi *Parodiella madhucae* spec. nov. from Marathwada

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ABSTRACT

The taxonomic study of Ascomycetes fungi since during last few years has been neglected and no studies have been extensively done in Marathwada region, therefore the work under taken to investigate Ascomycetes fungi from Udgir region. The Ascomycetes is largest group of fungi which are highly diverse and versatile organisms adapted to all kinds of environment. The Marathwada region has been found rich in fungi, since for a gap of long time this region has been found neglected in exploring to the Ascomyctes fungal flora. The taxonomic studies of Ascomycetes fungi were carried out in Udgir region belongs to Latur district of Marathwada (M.S.). In the present paper comprises of detailed investigation on the taxonomic studies of *Parodiella madhucae* spec. nov. recorded on dead stem of *Madhuca indica* Gmel. The taxonomic and critical morphological examination. The present collection of *Parodiella madhucae* spec. nov. differs from the species described earlier, hence *Parodiella madhucae* spec. nov. is new species of Ascomycetes fungi and which is new to science.

Keywords: Taxonomy, Ascomycetes, Pleosporales, Pleosporaceae, Parodiella madhucae.

INTRODUCTION

The Ascomycetes fungi with richness of their pattern and highly heterogeneous nature, have posed a difficult task to taxonomists. The ascomycetes fungi are the largest group and they are saprophytic and parasitic in nature adapted to all kinds of environment. The Taxonomy and classification of ascomycete's fungi and the pattern of treatment of different group by different workers are widely divergent, depending upon their concept of origin of these fungi and evolutionary characters of various taxonomic criteria considered for delimiting families, order and subclasses. It is the admitted fact that a single characters as taxonomic criteria always create more difficulties than solving the problem. Modern studies indicate that the ways in which organized and the structural features of its contents provides some of the most constant morphological criteria for the classification of ascomycetes.

These criteria include the morphology of ascus, ascus opening, arrangement and development of asci in the stroma, its nature, colour of the ascocarp, presence and absence of paraphyses and the mechanism of dehiscence of the asci. The modern trend of classification is greatly influenced by the work of several workers (Luttrell,1955; Muller, 1958; Tilak, 1970) who have contributed much to the understanding of this group. The variations and climate have provided a suitable base for the luxuriant growth of innumerable species of fungi which survive either saprophytic or parasitic on the plant parts.

The genus *Parodiella* was established by Spazzini, Ainsworth (1971) described only one species. . The investigation of ascomycetes fungi were mainly from temperate region and work on Indian ascomycetes was scantly. Tilak (1966) described *Parodiella indica* on *Atylosia sacaraboeides* Benth. with the inclusion of a present species . The work on ascomycetes from Marathwada region neglected until (Dhaware, 1975; Gaikwad 1974; Kale 1970; Khot 1985; Talde 1974) made valuable contribution from this region. The investigation in to this region has clearly shown that is rich in ascomycetes fungi. It was therefore felt to investigate some species which would further stimulate the workers. The Marathwada region has been found rich in fungi since for a gap of long time, this region has been found neglected in exploring the fungal flora. It was therefore thought to undertake this type of work so as to explore the fungal flora from Udgir region, Latur district of Maharashtra.

MATERIAL AND METHODS

The method of collection of infected plant material and identification of ascomycete's fungi has been completed through following steps.

- Collection of infected plant material
- Laboratory work
- Identification of fungi

The collection of infected plant material was made for every week or fortnightly at Udgir region, Latur district, of Marathwada (M.S.). The collection of plant material and identification of the host was carefully recorded. In the laboratory, the hand sections of the infected plant material were carefully taken. The slides were prepared by using lactophenol as mounting medium and cotton blue as a stain, and then slides were sealed. These slides were carefully observed under the calibrated research microscope. The measurement of pseudothecia, asci and ascospore was taken. The identification of the genus was done with the help of book 'Genera of Fungi' by Clements and Shear (1931).

RESULTS AND DISCUSSION

The genus *Parodiella* (Speg.) is characterized by perithecia crust on the epidermis and rupturing the epidermal cell. Perithecia gregarious or single, globose, non-ostilate and stroma thick develop on dead stem.

Matrix Studied:

Parodiella madhucae spec. nov. collected on dead stem of *Madhuca indica* Gmel. in the month of August 2001 at Nidebean, Udgir region Leg. V. S. Nagpurne. The fungal bodies are epiphyllous, scattered and black in colour. Perithecia globose, non- ostiolate forming crust with the epidermis, rupturing the epidermal cells and placed on wedge shaped, subiculum gregarious or single measuring from 333.2- 380µ. Stroma 3-4 celled thick, peridial layer distinct and consisting of rectangular parenchymatous cells. Asci in the basal layer numerous, bitunicate, cylindrical, obovate at the apex and gradually tapering at the base, distinctly pedicellate and measuring from 99.9- 125µ x 10-16µ.

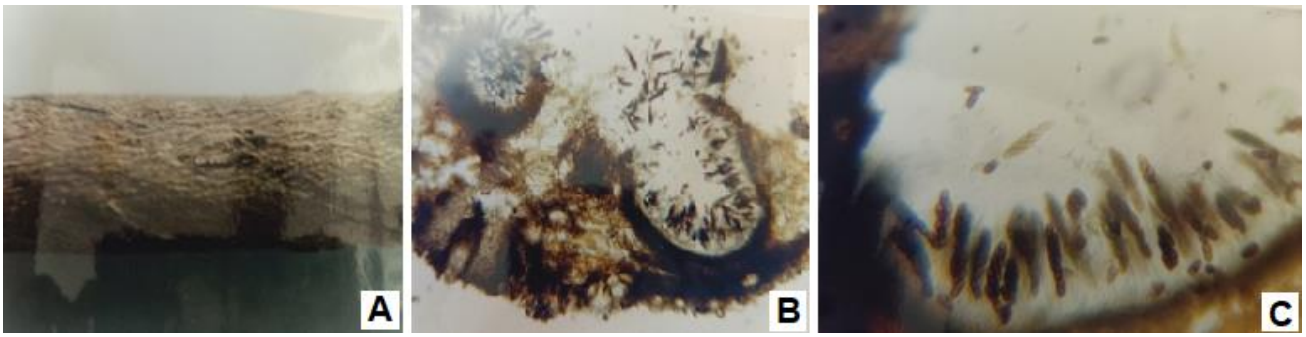

Figure 1: A: Dead stem of *Madhuca indica* Gmel; **B:** Perithecia; **C:** Asci with Ascospores

Pseudoparaphyses filiform, originating from top the pericarp and growing downward. Ascospore 8, biseriate, 2 celled, slightly constricted at septum, elliptic to biconvex, thick walled, yellow to red, measuring from 16.6-26.2µ x 6-8µ and gradually tapering at the apical ends.

CONCLUSION

The genus *Parodiella madhucae* spec. nov. recorded on dead stem of *Madhuca indica* Gmel. The present work basis on critical morphological examination. The present collection differs from the species described earlier. Hence *Parodiella madhucae* spec. nov. has been described a new species to science.

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