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Changing Pattern of *Mycena polygramma* in Pakistan

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Abstract

There are number of factors which influence the natural vegetation of any area. These include rapid industrialization and developing infrastructure along with environmental problems which disturbed the natural habitat of the native species. Such factors also influence the entrance of new biodiversity in the ecosystem. The recent study attempts to report such phenomenon for the genus *Mycena* (Family Tricholomataceae).

Keywords: Macromycetes, *Mycena polygramma*, Rapid Industrialization, environmental influence.

Introduction

Quid-e-Azam Campus of University of the Punjab is a small Lush green tract in Lahore city in Temperate Thorn Forest of Pakistan. It is spread over an area of more than 1,700 acre with variety of vegetation. A canal running through campus adds more beauty and vegetation to surroundings. The geographical location of the Quid-e-Azam Campus is 31°33'N-074°20'E. A great variety of natural vegetation consisting of herbs, macromycetes and old trees are still present in different areas of Quid-e-Azam Campus. Agricultural fields are located in some area of Campus. Most of the vegetation is influenced by human activities especially by the development of infrastructure. Many fungi and grasses are also disappearing from Campus.

Macrofungi serve as in important source of food for men, animals and insects. Some mashrooms are deadly poisonous, causing deaths. Macrofungi play an important role in the biodeteioration of cellulosic materials, as wood products, fibers, as cotton leathers, paints, and electric equipments. (Wells, 1994). (Alexopoulos *et al.,* 2000).

Major macromycetes are being threatened by the environmental changes and growing industries. Due to change in habitat of different macromycetes many native species are extinct and new species replace the old ones (Nasim, 2006; Nasim, 2008).

The majority of genus *Mycena* are slender, delicate fungi, often with conical caps, and so typical is this appearance that the adjective "mycenoid" is much used in mycology. *Mycena* species have white spores (actually colourless, but appearing white in a spore print). This character instantly distinguishes them from "mycenoid" brown-spored genera such as *Conocybe* or *Galerina* or from similar dark-spored genera such as *Psilocybe* or *Panaeolus*. Such *Mycena* species are litter decomposers, on dead leaves, dead grass and similar substrates. There are, however, more robust species in the genus and many of these are wood decomposers.

Materials and Methods:

Sampling

The Quid-Azam Campus, University of the Punjab, Lahore Pakistan was visited regularly in the rainy season during July to Early September and a number of macromycetes were sampled

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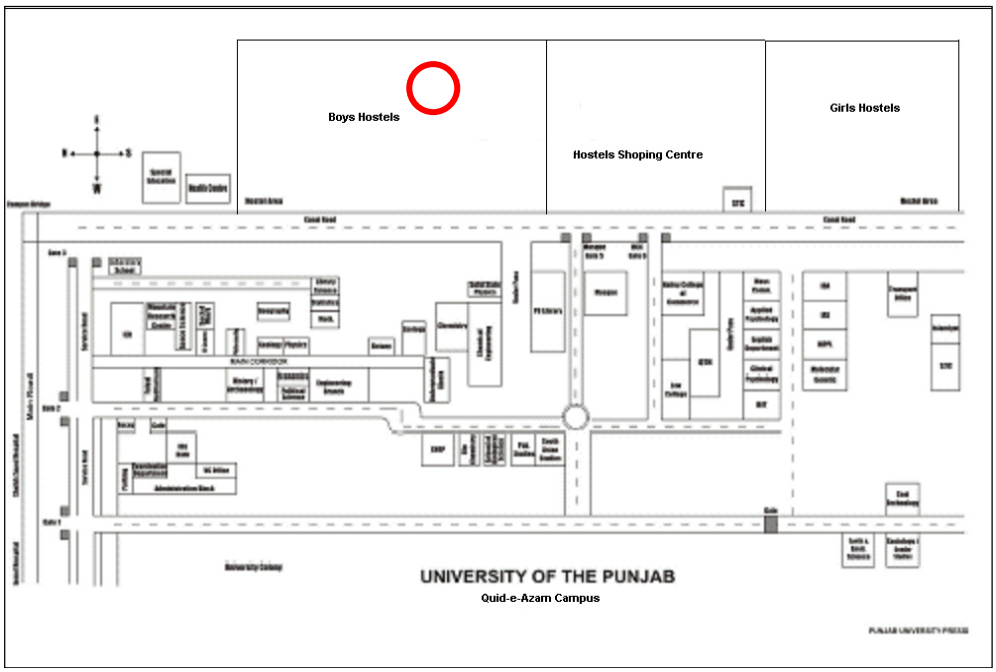

Fig. 01. Map of Quid-e-Azam Campus, University of the Punjab, Lahore, Pakistan

= Sampling Site

Isolation and identification

Morpho-anatomical studies of the collected samples were carried out on the basis of basidiocarp shape, color, type, attachment and shape of gills, Pileus and Stripe with the aid of available authentic literature and expert guidance (Peterson and Olexia, 1967; Peterson, 1969, 1972, 1974, 1975). A systemic key of newly reported specie was developed with already reported Species of Genus *Mycena.*

Results:

The descriptions of four species of Genus *Mycena* were already reported from Pakistan. Now one other specie has been reported as new records from the vegetation of Quid-Azam Campus, University of the Punjab, Lahore Pakistan.

Al Ready Reported species of *Mycena*

1. ***Mycena epiptergia.*** (Khalid & Iqbal, 1999)
   - Pileus is egg, open to cenvex or conical, gray usually, with striations.
   - Stipe is fairly tough, slimy yellow in color.
   - Gills are adnate, broad, well-spaced, and off white in color.
2. ***Mycena galericulata.*** (Ahmad., 1980)
   - Pileus bell suaped, umbonate to convex, pale brown in wlor with furrows & wrinkles.
   - Stipe is extremely tough, hallow and pale brown in color.
   - Gills are adnexed often interveined or forked, medium spaced, white to gray in color at young stages while pale pink at maturity.
3. ***Mycena heamatopus.*** (Iqbal & Khalid , 1996)
   - Pileus is more or less bell-shaped with toothed, margins red brown in color.
   - Stipe exudes blood-red liquid when broden, typically joined at base. Red brown in color.
   - Gills are adnexed, medium spaced, Red brown in color.
4. ***Mycena pura*** (Iqbal & Khalid , 1996)
   - Pileus umbonate to conical, pink in color.
   - Stipe is yollow, similar to pileus in color or paler in some cases.
   - Gills are adnexed to adnate, fairly crowded, and similar to pileus in color.

Newly recorded Species:

Mycena polygramma.

- Pileus is unbonate pale gray to gray-brown in color, wrinkle when dry.
- Stipe show grooves with silvery appearance, off- white in color.
- Gills are adnexed fairy crowded, white to pale gray in color and pink with maturity.

Key to the Species of *Mycena*:

- Pileus egg shaped, convex to conical---------- ***Mycena epiptergia***
- Pileus umbonate or bell shaped
  - ❖ Blood red exudates from stipe when bruised---------- ***M. heamatopus***
  - ❖ Stipe without any exudates when bruised
    - o Pileus surface with furrows and wrinkles---------- ***M. galericulata***
    - o Pileus smooth and umbonate
      - ▪ Stipe show silvery grooves, off-white in color ---------- ***M. polygramma***
      - ▪ Stipe show no grooves, pink colored & paled in some cases--- ***M. pura***

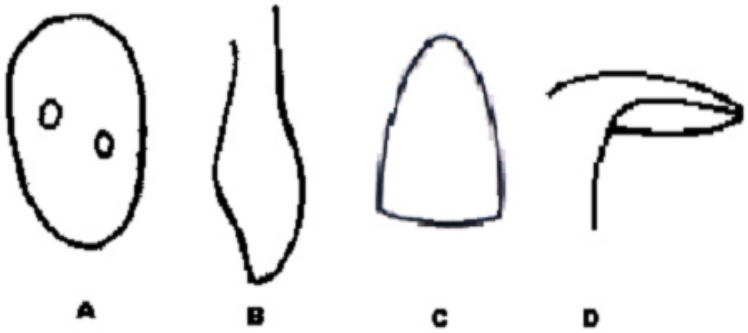

Fig. 02 Sketched details of *Mycena polygramma* basidiocarp.
A: Eliptical spore **B**: Stipe with slightly tapering end **C**: Conical pileus **D**: Adnate gills

Discussion

In many areas of the world, biodiversity is being minimized by mankind through changes in land cover and use, pollution, invasions of exotic species and possibly climate change (Kappelle, 2006). Climate change is going to directly impact biodiversity. Sensitivity to climate change depends on a species' or habitat's capacity to change. Those species most at risk are the most vulnerable which have nowhere to go, that have a restricted range, that have poor dispersal capacity and/or are extreme specialists (Mike Jones, 2007).
Changes in global vegetation cover and in the boundaries of the world's biomes are expected to occur in response to global climate change (McNeely et al. 1990; Peters and Lovejoy 1992; Heywood and Watson 1995). Changes in climate may affect the physiology, phenology and interspecific interactions between individual species, and as a consequence, shifts in geographic distributions may occur (Ford 1982).

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(Bar = 2cm)

Fig. 02: ***Mycena polygramma***

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