

Two new records of mushrooms from Kashmir Valley

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Abstract

During surveys in 2008-2009 for exploring the mushroom flora of southern Kashmir Himalyas, two species of mushrooms, *Sarcoscypha coccinea* (Jacq.) Sacc. and *Scutellinia scutellata* (L.) Lamb. were reported for the first time from the Kashmir Valley. These two species of mushroom were identified on the basis of morphological, reproductive and other characteristics like colour variation in fruiting bodies, habitat, puffing sound of spore dispersal, etc.

Key words: New record of mushrooms, *Sarcoscypha coccinea*, *Scutellinia scutellata*, Southern Kashmir.

Introduction

Kashmir valley is rich in mushroom biodiversity due to its favourable habitat and climate. But little work has been carried out for exploration of mushroom flora from Kashmir Himalya. Therefore, a survey was carried out during 2008-2009 for exploration of mushroom flora of Southern Kashmir valley. During the survey two new species, *Sarcoscypha coccinea* and *Scutellinia scutellata* were reported. The *Sarcoscypha coccinea* commonly known as the scarlet elf cup or the scarlet cup fungus, is a fungal species belonging to Sarcoscyphaceae family of the order Pezzizales. The specific epithet, *coccinea* is derived from Latin word meaning deep red. It is saprobic growing on decaying branches in damp spots of forest floor and its fruiting bodies are usually found in cooler months like winter and early spring. The fungus has a widespread distribution and is found in Africa, Asia, Europe, Oceania and North America (Harrington, 1998, Miller and Miller, 2006). *Scutellinia scutellata* commonly known as the eyelash cup or the Molly eye winker, the scarlet elf cup, the eyelash fungus or the eyelash pixie cup is a small saprophytic fungus of the genus *Scutellinia*. It is a type species of *Scutellinia* and is most common and wide spread. It is common in North America and Europe and reported on every continent (Douanla-Meli and Langer, 2005, Dogan, 2006). *S. scutellata* is found on rotting wood and in other damp habitats, typically growing in small groups sometimes forming clusters. The specific name *Scutellata* is from Latin for "like a small shield" (Evenson, 1997). Common names include the eyelash fungus (Phillips, 1981), the eyelash cup (Evenson, 1997), the scarlet elf cap (Zwinger, 2002) and the eyelash pixie cup (Arora, 1986).

The *Scutellinia* genus is currently placed in the Pyronemataceae family. However, genera of Pyronemataceae lack unifying macroscopic or microscopic characteristics. This lack of uniting characters has led various authors to propose a variety of classification schemes (Kimbrough, 1989; Eckblad, 1968 and Korf, 1972).

The above two species of mushrooms such as, *Sarcoscypha coccinea* and *Scutellinia scutellata* have been reported in many parts of the world but have not been reported from Kashmir Himalaya. Therefore, objective of the present study was to explore different areas of Southern Kashmir for these mushroom species and to identify these species of mushrooms on the basis of important morphological and reproductive characteristics.

Material and Methods**Mushroom collection**

A survey was carried out to observe and collect mushroom species from different areas of southern Kashmir, by the method described by Hailing (1996). These mushroom specimens have been deposited in the fungal collection of KASH Herbarium of Plant Taxonomy, Division of Botany, Kashmir University.

Microscopic features

Spore prints of mushroom were taken by the procedure given by Kuo (2004). Then their morphology such as shape and size of spores was recorded with the aid of Olympus BH₂ microscope. Macroscopic characters such as shape, size and colour of fruiting body, presence of structures like hairs, stipe, etc. were also

recorded. Final identification was made on the basis of microscopic and macroscopic characteristics.

Results and Discussion

During the survey from different areas of southern Kashmir Himalayas, two new species of mushroom, *Sarcoscypha coccinea* (Jacq.) Sacc. and *Scutellinia scutellata* (L.) Lamb were reported. The microscopic and macroscopic features on the basis of which these two species were identified are as under:

Scutellinia scutellata (L.) Lamb.

Scutellinia scutellata commonly known as Eye lash Peziza. It belongs to class, Ascomycetes; Order, Pezizales; and Family, Pyrenomataceae. The mushroom had a disc shaped sessile fruiting body. The carpophore was orange red in color on its upper fertile side. Lower side was pale brown. Upper margin of the disc bears dark brown hairs, resembling eyelashes of an eye. It is very minute in size measuring 0.5-1.5 cms in diameter; Spore print: White in color, spore shape elliptical. Gregarious on damp and decomposed wood of *Salix* and Fir; Season: Spring; Edibility: In edible

Sarcoscypha coccinea. (Jacq.) Sacc.

Sarcoscypha coccinea is known as Scarlet cup or Scarlet elf cup. It belongs to class, Ascomycetes; Order, Pezizales; and Family, Sarcoscyphaceae. Carpophore cup shaped, 2-4 cm in diameter, initially closed, at maturity cup opens to reveal the scarlet colored inside but outer side of the cup light red. Margins were curved outside as the mushroom dries and a waxy consistency develop in the flesh. Stipe 2-5 cm in length, straight and whitish in color; spore print white; spore color transparent; spore spindle shaped. Saprophytic on twigs of broad leaf trees at high altitudes growing in spring edible.

It was thus revealed from the study that in southern Kashmir, two species of mushroom *Sarcoscypha coccinea* and *Scutellinia scutellata* were found growing on rotted woods as well as on the soil either singly or clustered in groups. Similar species of *Sarcoscypha* like *S. dudleyi*, *S. austriaca* and *S. occidentalis* have been reported in the literature (Harington, 1990). *S. occidentalis* has smaller cups, a more pronounced stalk and smooth exterior surface. This species is said to edible or inedible (Arora, 1986; Samuelson, 1975).

The species of *Sarcoscypha* reported in the present study was first described in 1774 and is type species of the genus *Sarcoscypha*. The species was originally named as *Peziza coccinea* by NJV Jaquin (1774). It was given its current name by JPE Lambotte in 1889. A variety *S. coccinea* var. *furana* with more orange colored fruit body and with flattened or blunt-ended ascospores was described by Boudier in 1903. Today this species is known as *S. furana* (species synonym).

Likewise, *Scutellinia scutellata* reported in the present study is also common and wide spread. It is also type species of genus (Bi *et al.*, 1993). It was differentiated from other by its larger size, its distinctive eye lashes. Other species like *S. erinaceus*, *S. pennsylvanica* which differentiates from *S. scutellata* in different features like size and presence of eye lashes have also been reported from other parts of the world (Arora, 1986; Schalkwijk, 1991).

S. scutellata was described in 1753 by Carl Linnaeus in his book *Species Plantarum* as *Peziza scutellata* and it was given its current name by Jean Baptiste Emil Lambotte in *Memoires societe royale des science de Liege* in 1887. It was named *Patella scutellata* in 1902. A 1996 study of British specimen of *Scutellinia* revealed that the species *S. crinita* originally described as *Peziza crinita* in 1789 by French Botanist Jean Baptiste Francois Pierre Bulliard was synonymous with *S. scutellata* (Yao and Spooner, 1996).



Fig. 1. *Scutellinia scutellata* , a: fruiting body, b: ascospore



Fig. 2. *Sarcoscypha coccinea*, **a:** fruiting body, **b:** ascospores

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