

RED CAGED FUNGUS

New record of *Clathrus ruber* from the southern Western Ghats of Tamil Nadu, India



Clathrus ruber in Nilgiri Biosphere Reserve, Tamil Nadu: a - egg stage, b - habit of young fruiting body, c - developing stage, d - colour change after five to ten days

IUCN Red List: Not assessed

Agaricomycetes [Class of fungi]

Phallales [Order of fungi]

Phallaceae [Family of stinkhorn mushrooms]

Clathrus ruber [Red Caged Fungus]

Species described by C.H. Persoon in 1801

Clathrus ruber was originally described by Micheli (1729) from Italy. It was first described by the 16th Century botanist Charles de l' Escluse, better known as Carolus Clusis. The species is commonly called Latticed Stinkhorn (Stijve 1997; Tattersfield 2016), Basket Stinkhorn (Phillips 2011), or Red Cage Fungus (McKnight & McKnight 1987). The genus *Clathrus* is characterized by having a latticed clathrate receptacle composed of hollow, tubular arms that arise from the basal tissue within the volva (Miller & Miller 1988). The deliquescent gleba usually develops on the inner side of the receptacle and the basidiospores are elliptical and smooth (Dring 1980). The unpleasant odour produced by the gleba attracts flies and other insects, contributing to basidiospore

dissemination (Maldonado-Ramírez & Torres-Pratts 2005). The latticed forms of the Red Cage Fungus appear in different colours, including pink, red, orange, yellow, and white, making them particularly conspicuous in forests (Pegler & Gomez 1994). *Clathrus* comprises 16 species that are mainly found in subtropical and tropical regions (Kirk et al. 2008).

Previous literature refers no more than three species of *Clathrus* recorded so far from India, which include *C. concellatus*, *C. pusillus* Berkeley, and *C. delicates* in West Bengal (Roy 1948; Pradhan et al. 2012), Meghalaya (Kumar et al. 2015), and Karnataka (Swapna 2010), *C. cancellatus* (synonym: *C. ruber*) in West Bengal (Pradhan et al. 20122013), *C. delicates* in Assam (Gogoi & Parkash 2014; Gogoi & Vipin 2015) and Gujarat (Patel et al. 2018), and *C. pusillus* Berkely in Kerala (Leelavathy et al. 1981; Hosagoudar et al. 1996).

Detailed information of the species is provided based on a recent field collection from Nilgiri Biosphere Reserve, southern Western Ghats of Tamil Nadu, India. There was no publication, literature survey, or report on *C. ruber* from the state of Tamil Nadu. Hence, in this present study, we collected and identified for the first time from the state the specimens of *C. ruber* in Nilgiri Biosphere Reserve in the southern Western Ghats from different localities in longwood shola, Kothagiri North Division (11° 25.95'N & 76° 52.51'E). The altitude of the hills ranges from 1350m to 2040m. Our collected specimens show similarity with the specimens found in Costa Rica, Indonesia, Philippines, Japan, and Srilanka in having the tendency to arise in pairs from the egg. In this regard, the collected specimens concord with earlier reports (Pradhan et al. 2012; Kumar et al. 2015).

Character observation of Clatherus ruber

Habitat

Grows in soil rich in humus or on decaying wood.

Egg

Spheroid shape, diameter up to 5cm from the soil, white with rhizomorphs at the base. Carpophore globose, 5–10 cm x 5cm, red with netlike lacunose arms delimiting, polygonal holes, spores greyish, elliptical, smooth, 4–6 μ m x 1.7–2 μ m.

Edibility status

The edibility of this species is not well understood because of previous confusing reports. According to Marchand (1976), the eggs are edible. The report of Ramsbottom (1953), however, suggests that this species causes cancer; in parts of France, it is said to produce cutaneous eruptions or convulsions.

Distribution

India: West Bengal (Pradhan et al. 2012), Meghalaya (Kumar et al. 2015).

Specimen examined

India, West Bengal, Bangura, Chougan, 23^o 02' 953'N & 087^o 19.518"E; 79m, on soil mixed with wood debris, 9.viii.2009, coll. P. Pradhan, AMFH 423; Mindapur District, RamNagar-II Block, Kasaphaltala 21^o 43' 322"N & 087^o & 31'192"E, 11m, on forest soil mixed with leaf litter wood chips, 24.vii. 2010, coll. K. Archarya, A.K. Dutta & P. Pradhan, AMFH 341. S.Santhoshkumar et al. 16 (KCMS) longwood shola, Kotagiri from 1350m, 27.vi.2017; coll. S. Santhoshkumar et al. 21 (KCMS) Sholur beat, North Division of Nilgiris from 1700m, 24.vi.2018.

Key to the genera and species of Clathrus

Arms slender, more or less circular in transaction, meshes without gleba forming a crown ------**C. pusillus**

Receptacle red or pink composed of columns free at the base fused above, arms with spongy texture, not breaking into fragments above downwards, composed of more or less isodiametric meshes, meshes are not surrounded 'Corona'------ *C. ruber*

Receptacle white, slender, very small, up to 2.5cm high with two or more columns united above but not anastomonishing, texture spongy, arms fused at the base to form a short stipe, gleba restricted to well-defined small glebifers at the intersections without setae------ *C. delicatus*

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