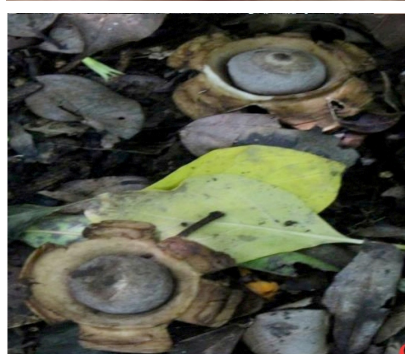
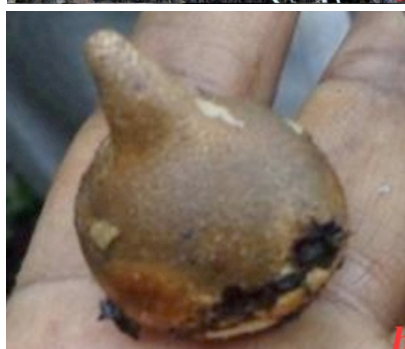
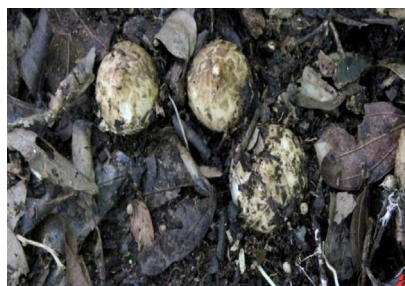


New distribution record of Fringed Earthstar Fungus from the Western Ghats of Nilgiris, Tamil Nadu, India

Elias Magnus Fries described *Geastrum fimbriatum*, as *Geastrum fimbriatus* Fries, 1829 belonging to the family Geastraceae. The family Geastraceae was first described by Corda (1842) as the Geastrideae and subsequently classified in the Lycoperdales (Kruger & Chagas 2008).

It is commonly known as the Fringed Earthstar or the Sessile Earthstar (Verma et al. 2018). The species '*fimbriatum*' means "fringed" referring to the characteristic of spore sac. The fruit bodies are roughly spherical and hypogaeous. When the fruiting body pushes up through the soil and the other layer of the spore sac (exoperidium) splits open to form 5–8 rays that curve downward. *Geastrum fimbriatum* is similar to *Geastrum saccatum*, but this species is larger up to 5cm across and has a clearly delimited ring-like area around the pore opening.



Stages of *Geastrum fimbriatum*:
a—young globose basidiomata |
b—matured globose basidiomata |
c—split exoperidium | d—specimen
preserved in KASC-M.

Although it was listed in field guides as inedible (Roody 2003), it was reported to be eaten by the tribal people of Madhya Pradesh (Roman 2010).

The genus *Geastrum* was distributed in different continents except Antarctica and is more frequently abundant in the temperature zones as well as in the tropics (Ponce de Leon 1968).

In view of the family Geastraceae, which totally have eight genera, *Geastrum*, *Myriostoma*, *Trichaster*, *Geasteropsis*, *Phialastrum*, *Pyrenogaster*, *Radiigera*, and *Terrostella*, the genus *Geastrum* has the largest number of species with 50 accepted taxa worldwide (Kirk et al. 2008). According to the Mycobank database, so far, approximately 334 records of *Geastrum* have been reported from all over the world.

In India, several interesting Geasters are studied by various investigators in different states. Gogoi & Vipin (2015) reported that *Geastrum schweinitzii* (Berk & M.A. Curtis) Zeller, *G. lloydianum* Rick, *G. saccatum* Fr., *G. coronatum* Pers. were collected in the state of Maharashtra, whereas, *G. fimbriatum* was reported in Nagpur District. Cunningham (1942) reported *G. fimbriatum* growing on the ground in Himachal Pradesh. Karun & Sridhar (2014) reported the occurrence of *Geastrum fimbriatum* in Kerala Western Ghats. Soosairaj et al. (2012) reported the species was found in Kodaikanal Hills, Tamil Nadu.

To my knowledge, this is the first scientific documentation of *Geastrum fimbriatum* from the Nilgiris, southern Western Ghats of Tamil Nadu.

Habit: The Geaster is a saprophytic fungus.

Habitat: *G. fimbriatum* is a saprobic species, and its fruit body grows on the ground in solitary or cluster, usually near the stumps of hardwood trees of shola forest of the Nilgiris.

Distribution: The restricted distribution of *Geastrum fimbriatum* found in India in the states of Karnataka, Kerala, Tamil Nadu, and in central India.

Key to the species of *Geastrum* sp.

1. Pseudoparenchymatous layer breaking down at maturity, leaving a conspicuous collar around the endoperidium *G. triplex*
2. Basidiomata without such aspect, mycelial

layer without longitudinal ridges, outer mycelial layer with simple-septate hyphae *G. saccatum*

3. Exoperidium with involute rays at maturity, endoperidium smooth (without hyphal pegs) *G. fimbriatum*

Basidiospores

Basidiomata epigeous when young, globose to depressed-globose, 1.7cm diam. x 2cm high, epigeous maturity, 2–2.4 cm broad, 0.4–0.6 cm high. Exoperidium non-hygroscopic, saccate, splitting into 3–6 rays; mycelial layer dark blond; fibrous layer adherent, greyish-yellow; pseudoparenchymatous layer brown. Endoperidium sessile, globose to subglobose, 0.8–1.5 cm diam., brown. Peristome absent in fibrillose. Gleba dark brown; columella present. Basidiospores 3–3.5µm in diameter, globose, ornamentation columnar. Capillitial hyphae thick walled, with surface debris and verrucose, 3.2–4µm diameter.

Specimen examined: TF 4050, 19.vii.2018, under *Delonix rigia* tree, TFRl campus, Jabalpur specimen deposited in Mycology Herbarium, Tropical Forest Research Institute, Jabalpur, coll. Verma et al.; S. Santhoshkumar et al. 16 (KCMS) Longwood shola, Kotagiri from 2,040m, 27.vi.2017; S. Santhoshkumar et al. 21 (KCMS) Sholur beat, North Division of Nilgiri's from 1,700m, 24.vi.2018.

Edibility: Unknown

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