

6.8. FAIRY RINGS

Fairy rings are naturally occurring rings or arcs of mushrooms found in the forest floors, lands, lawns etc. in rainy season. They are otherwise known as **fairy circle** or **elf circle** or **elf pixing ring**. [Fig. 6.16(a), (b)]



FIG. 6.16(a). Fairy Ring of mushroom.

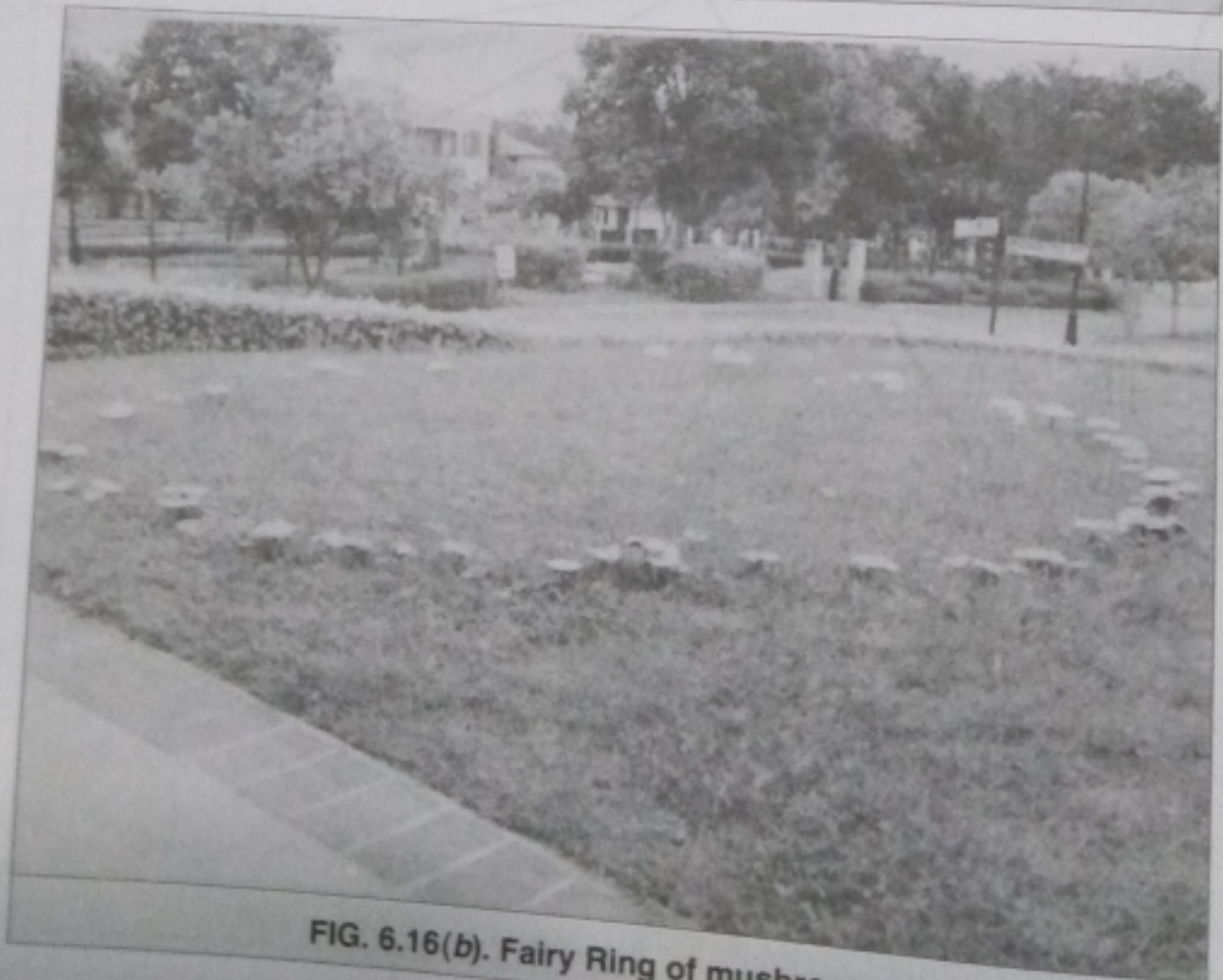


FIG. 6.16(b). Fairy Ring of mushroom.

Occurrence of fairy rings are associated with folklores of European cultures believing that they represent different things. According to the myths and folklores these rings symbolize a place where elves, pixies or fairies appear to dance and play. As fun as it sounds most of the cultures believe them as dangerous places for human beings. Better to avoid them than to be caught in this magical belief. Let us see the real science about fairy rings.

Fairy rings are the result of a particular pattern of a fungal mycelial growth. The mycelia remain inside soil and produces the fruiting bodies (or mushrooms) above the soil in circular manner.

How it is formed ?

In case of a ring, the mycelium starts as in single point and grows in a circular shape. It grows outwards in circular shape to consume more nutrients. As it exhausts the nutrients on the inner side of the circle, it widens further and further as it looks for the new food source.

This process results in an evergrowing circle that does not to grow back inwards or cross- over itself as there is no food on the inner side of the circle.

Sometimes one can find a ring of dark green grass or a ring of dry dead grass. This depends on the type of fungus growing and how it grows.

The dark circle occurs when the mycelia breakdown the organic materials releasing nitrogen. As the grass needs nitrogen to grow, the added nutrient of nitrogen in the soil causes it to grow taller and darker than the grass around.

A dead area is called **necrotic zone**. It is a region of discoloured plant life caused by the fungi depleting the nutrients especially the nitrogen.

Occurrence: Fairy rings are not found everywhere. Multiple factors influence the circular pattern of growth including soil types, soil composition, amount of soil nutrients, soil composition and obstructions underground. The ground needs to be even and well composed for which they are found in lawns.

They are only visible when they produce the fruiting bodies but the underground circular mycelia is always there and growing.

Types of Rings

Fairy rings appear in two different types: **free** and **tethered** depending on how the fungus feeds itself.

Free rings are usually seen in meadows, fields, lawn. They are called free as they are not connected with any other organisms. They are purely saprotrophs feeding on the dead organic matters.

Tethered rings are found in the forest usually with one or more trees in the center. The fungus here is mycorrhizal which remains in symbiotic association with the roots of the tree.

Species of fungus that form Fairy Rings

Nearly 60 species of fungi belonging to Basidiomycota phylum form fairy rings. The most common fairy ring mushroom is *Marasmius oreades* (Scotch bunnet). This is an edible fungus and famous for fairy rings and causes the grass to grow and become greener.

Some common species are

- (i) *Amanita muscaria* (poisonous toad stool)
- (ii) *Amanita phalloides* (poisonous)
- (iii) *Calvatia cyathiformis* (edible)
- (iv) *Chlorophyllum molybdites* (poisonous)
- (v) *Clitocybe nuda* (edible)
- (vi) *Tricholoma matsutake* (edible)

Both poisonous and edible mushrooms form fairy rings.

The rings continue to grow overtime resulting in a pattern that can be thousands of feet wide and hundreds of years old. One such ring was found in France and was 2000 feet wide and 700 years old. The ring expands 3 to 19 inches per year depending on the soil and the weather.