

# LICHENS

Lichens are Symbiotic association between algae and fungi. Phycobiont [algae] may belong to Cyanophyceae or Chlorophyceae. The mycobiont is mostly an ascomycetes or rarely it is basidiomycetes.

## Classification of Lichens

They are classified on the nature of mycobiont:-

(a) Ascolichens → The fungal component is an ascomycete. They are further divided into →

(i) Gymnocarpae → Fruiting body apothecium

(ii) Pyrenocarpae → ascocarp in perithecium

(b) Basidiolichens → Fruiting body basidiocarp.

## Habit and occurrence

They grow in a variety of habitats. They grow on water, rock, leaves, bark, bare earth and barren surface of rock.

Lichens are sometimes distinguished as -

1. Sarcocoles → those growing on rocks
2. Corticocoles → those growing on barks
3. Terricocoles → those growing in soil, in hot areas in scanty rain.

## Types of Thallus

<u>Crustose</u>	<u>Foliose</u>	<u>Fruticose</u>
<p>Increasingly lobate Thallus appears as a thin layer Eg. Rhizoglyphon</p>	<p>Leafy lichens derivative Eg. → Parmelia</p>	<p>Shrubby lichens Eg. - Usnea Alectoria</p>

## Internal Structure

On the basis of distribution of algal component - the thalli of lichens are divided into -

## Homomerous

Here algal cells & fungal hyphae are more or less uniformly dispersed throughout the thallus.

Eg. Collema, Leptogium

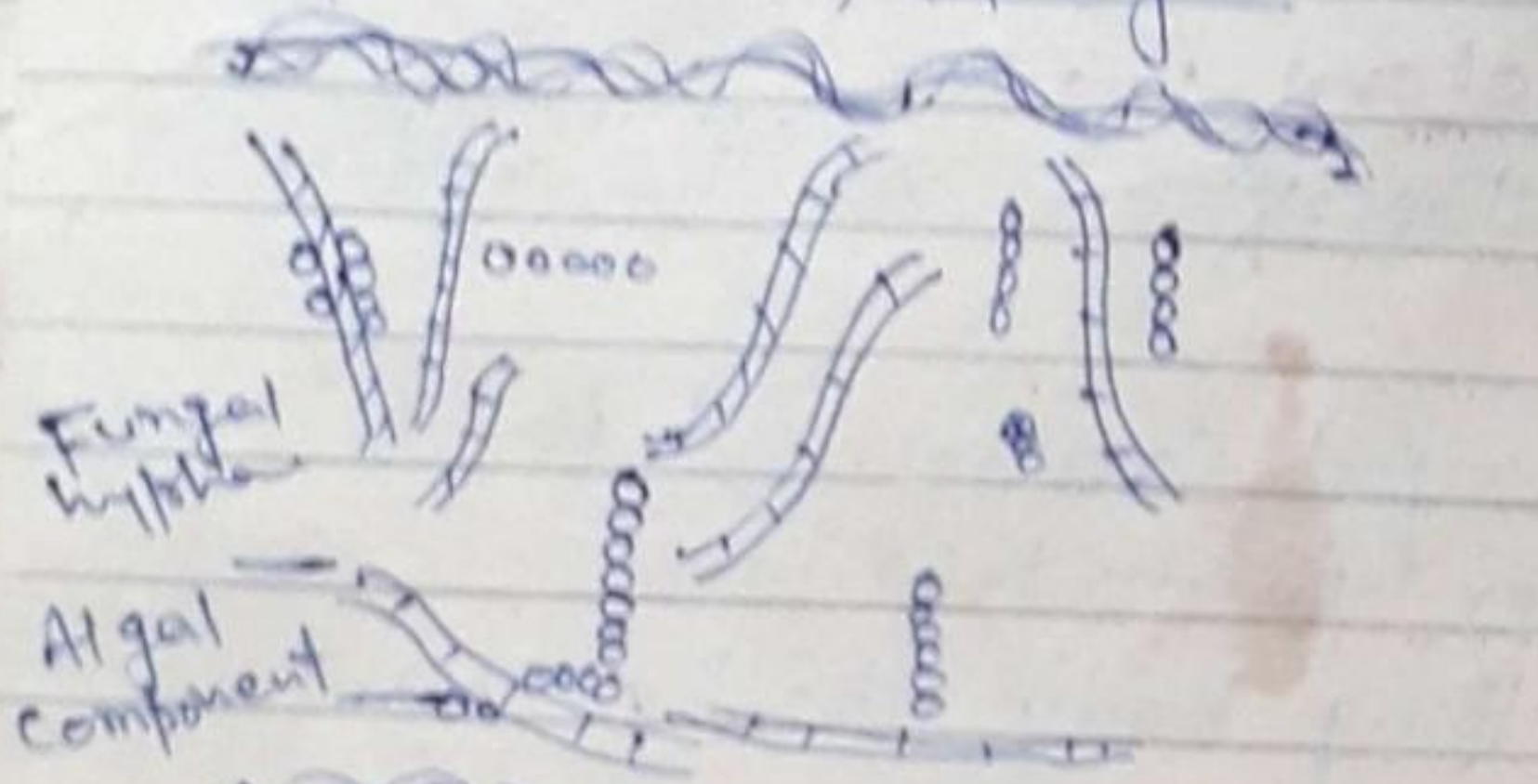


Fig. Internal str. of homomerous thallus

upper cortex  
Algal layer  
medulla  
Lower cortex  
Rhizomes

## Heteromerous

Here algal component is restricted to a distinct layer, usually towards the upper side of thallus. Bulk of thallus is made up of fungal hyphae. Thallus is differentiated into distinct layers as cortex, algal zone and medulla.

Eg. Parmelia

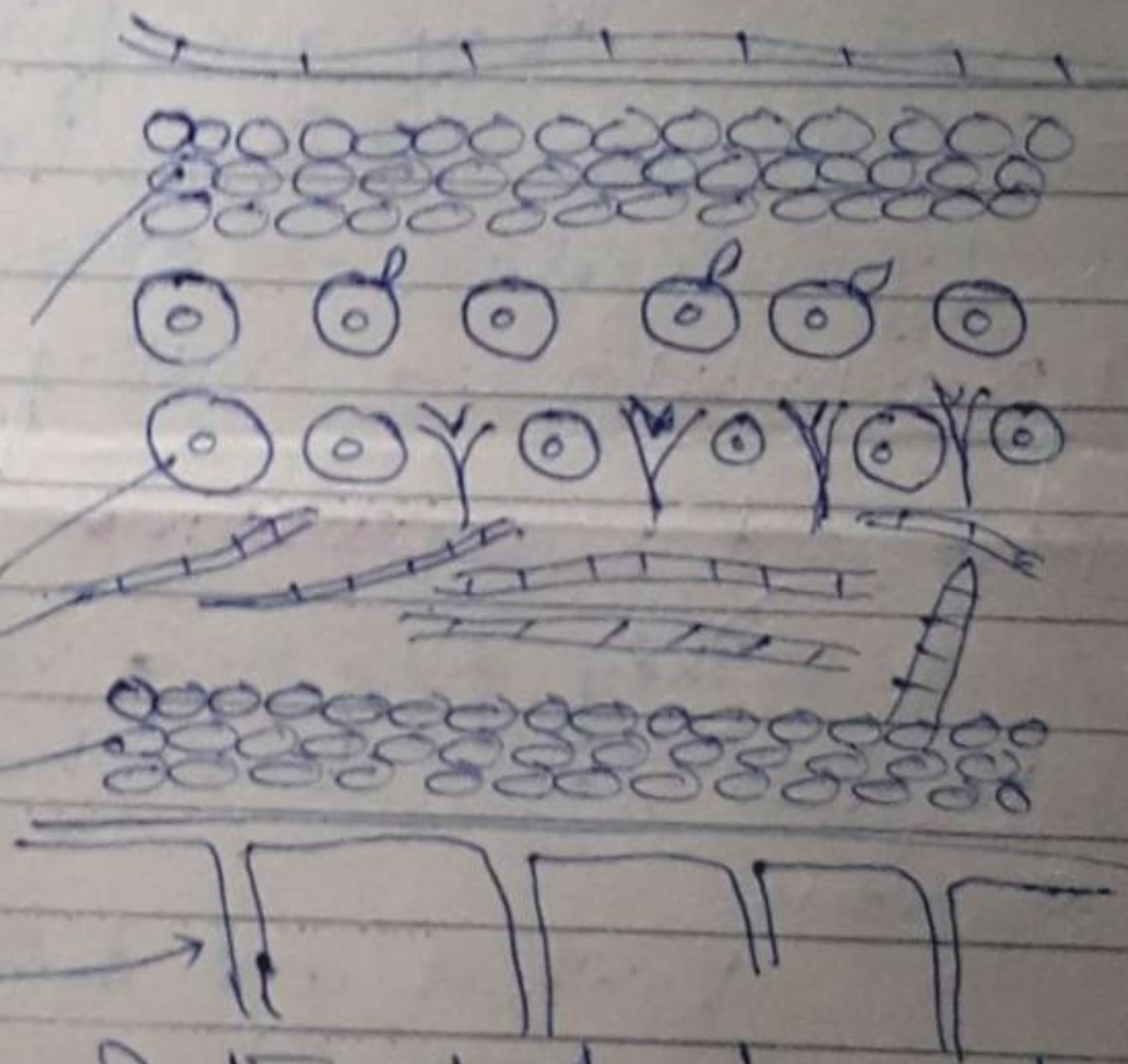


Fig. Internal structure of heteromerous thallus

## Structures associated with thallus →

1) Breathing pores → To help in aeration the upper cortex is interrupted at several places by breathing pores in foliose forms.

2) Cyphellae → They are cuplike spots on thallus for aeration. Eg. Stricta.

3) Cephalodia → They appear as small, hard, dark, gall like outgrowths generally on upper cortex of Leptogium.

4) Isidia → They are small coral like simple or branched outgrowths on the upper surface of thallus. They increase the photosynthetic surface of thallus.

5) Soredia → They are bud like outgrowths in extensive patches. Each soredium contains one

few algal cells closely enveloped by a little mat of fungal hyphae.

Sometimes soredia develop in more organised manner occurring in localised pedunculate like areas of the thallus. In these situations they are known as sorobola

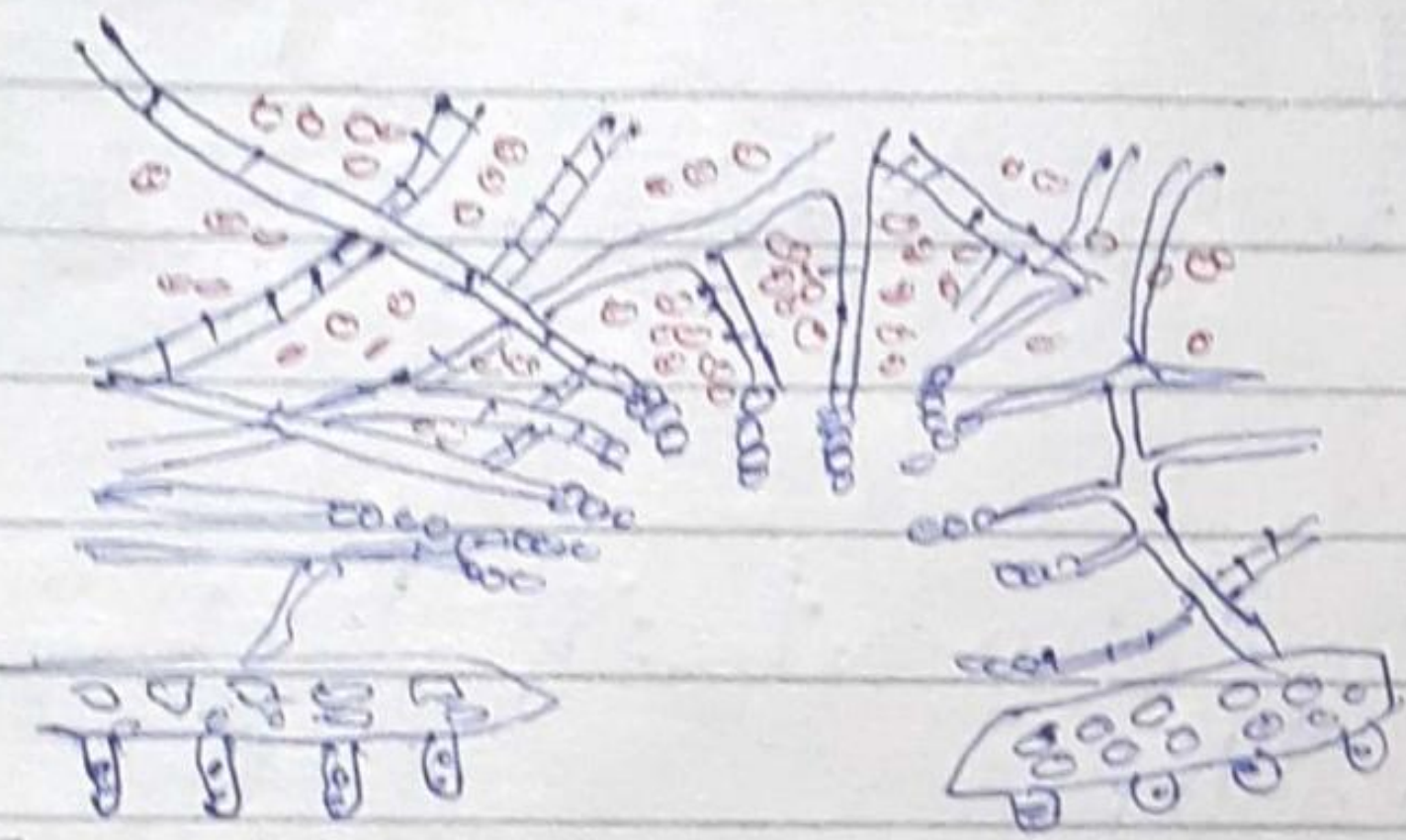
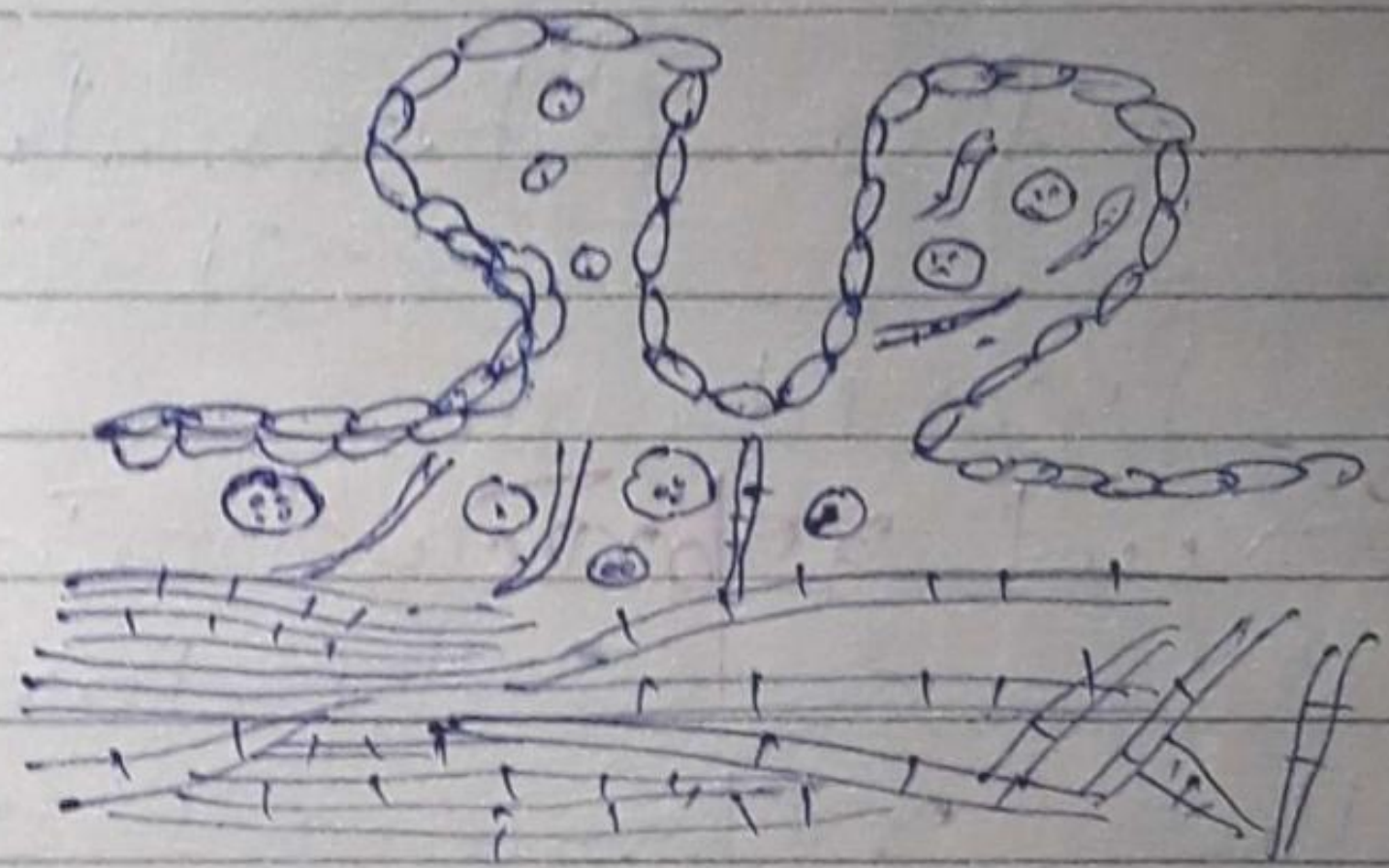
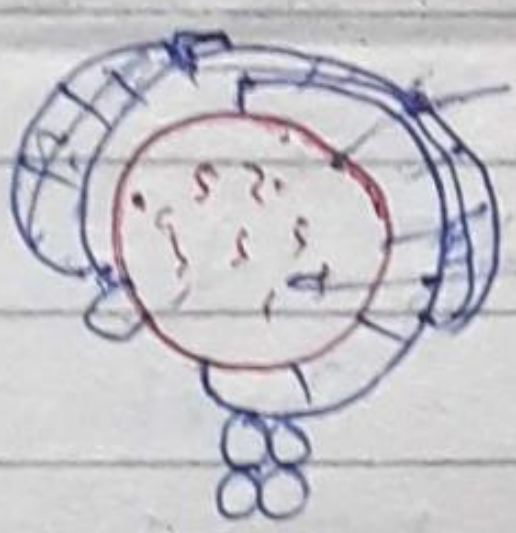


Fig → CYPHELLA

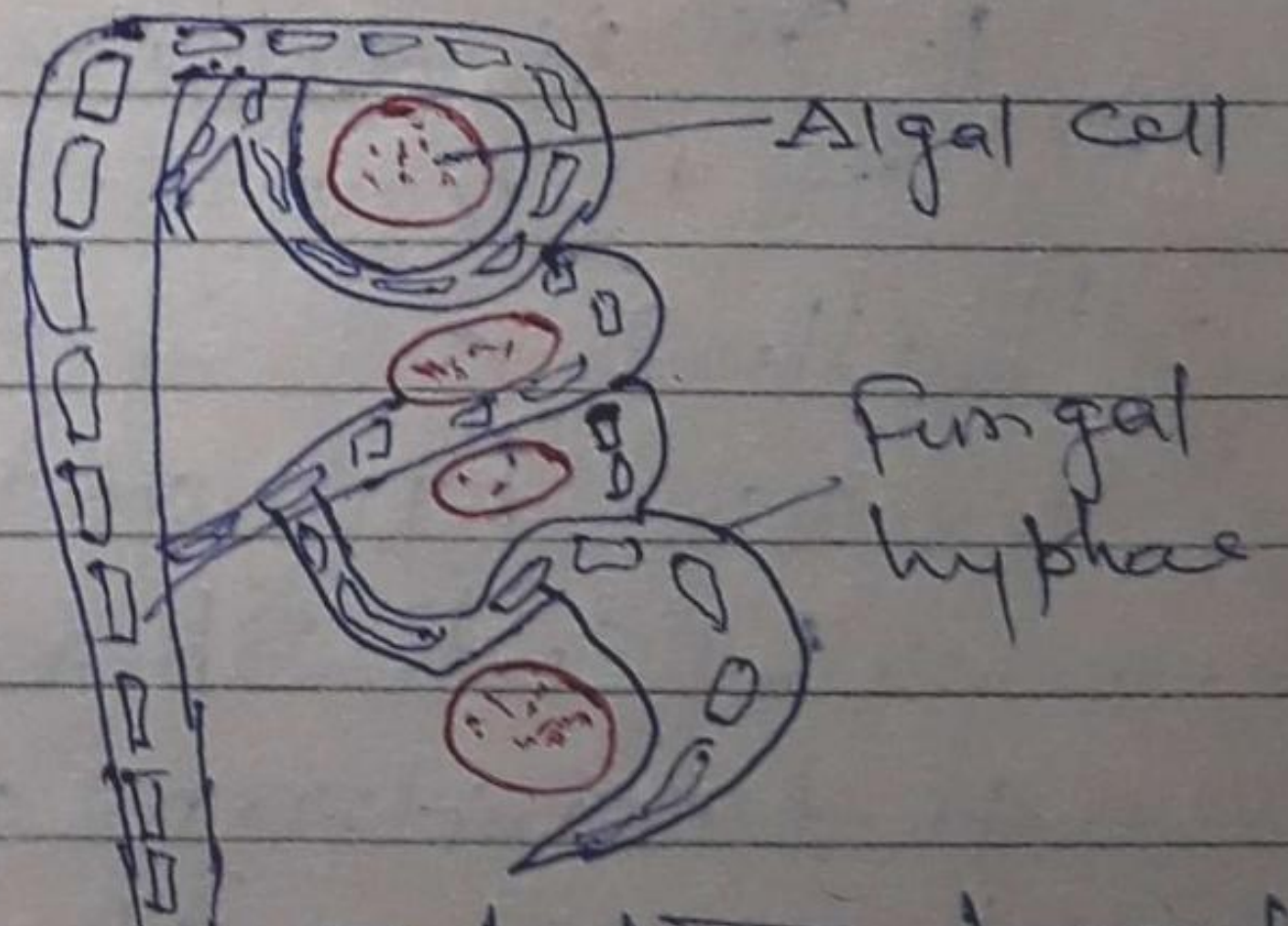


Sorobola



Fungal hyphae  
Algal cells

Soredium



Association between fungal hyphae and algal cell.

Fig → Specialized structures associated with lichen thalli