

Location and Development of Apothecia on *Usnea florida/subfloridana*

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(Interesting Lichen Group, post LAB)



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Summary of Presentation

- Apothecia are found growing laterally although they appear to be apical
- Development of apothecia go through three stages
 - Small crater develops part way along a branch, with a few short fibrils
 - As the disc grows the branch starts to bend away from the disc
 - When the disc is larger, the branch bends right back in the direction it came from
- A single branch is found growing out of the back of most apothecia
- There is clear evidence of the original branch axis continuing under the hypothecium
- More than one apothecium can develop on a branch leading to daisy-chains of them
- See BLS Bulletin No. 132 Summer 2023

Apothecium Features

(*Usnea florida*)



- Large disc
- up to 25mm diameter
- Rough hymenium surface
- Fibrils around periphery
 - Simple or branched
 - Up to 10mm long
 - In 2 rows

Apothecia (*U. florida*)

Terminal branch



Supporting branch

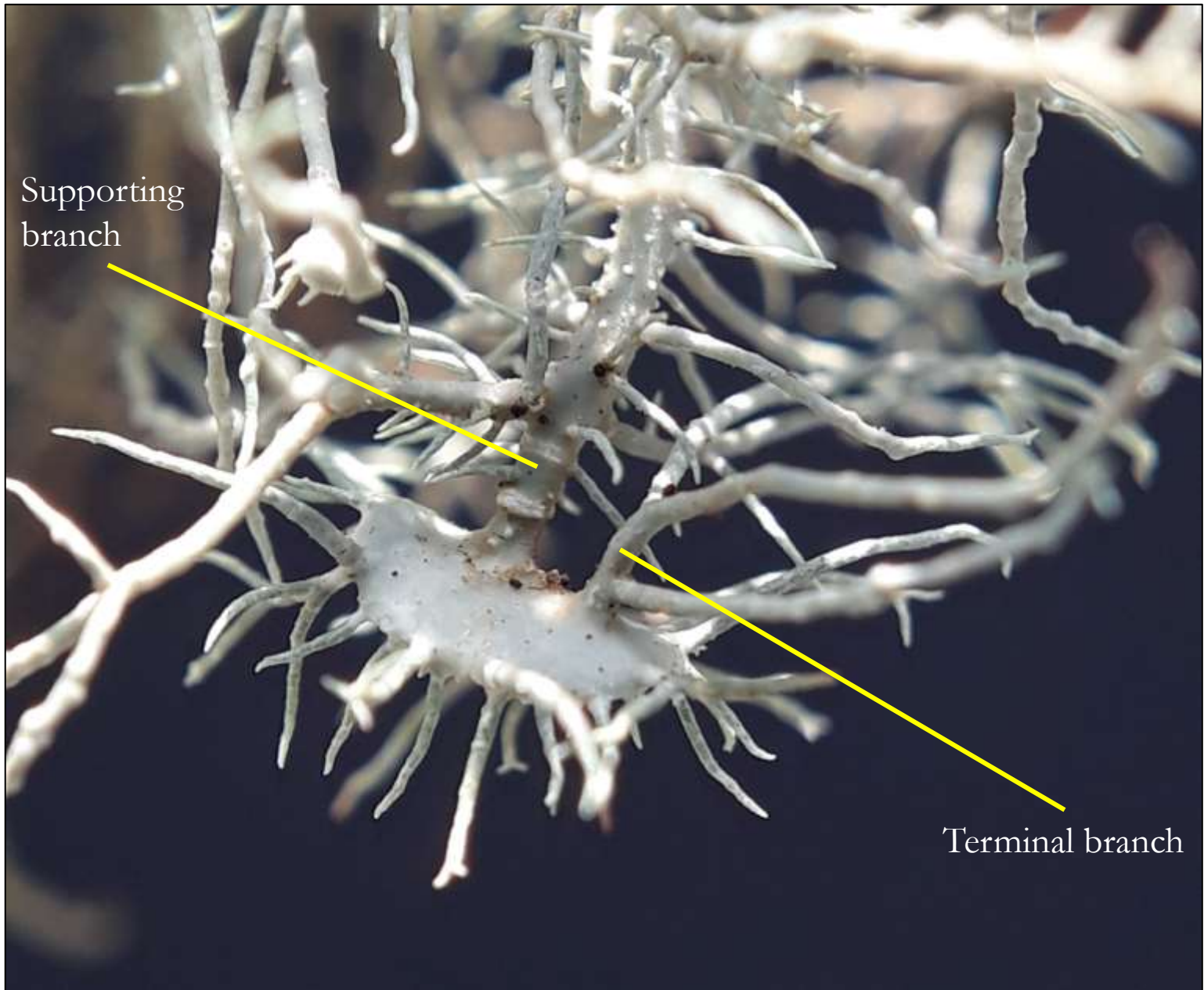
Rear of apothecium (*U. florida*)



Supporting branch

Terminal branch

Papillae



Supporting
branch

Terminal branch

Apothecia (*U. florida*)



S- Supporting branch
T -Terminal branch





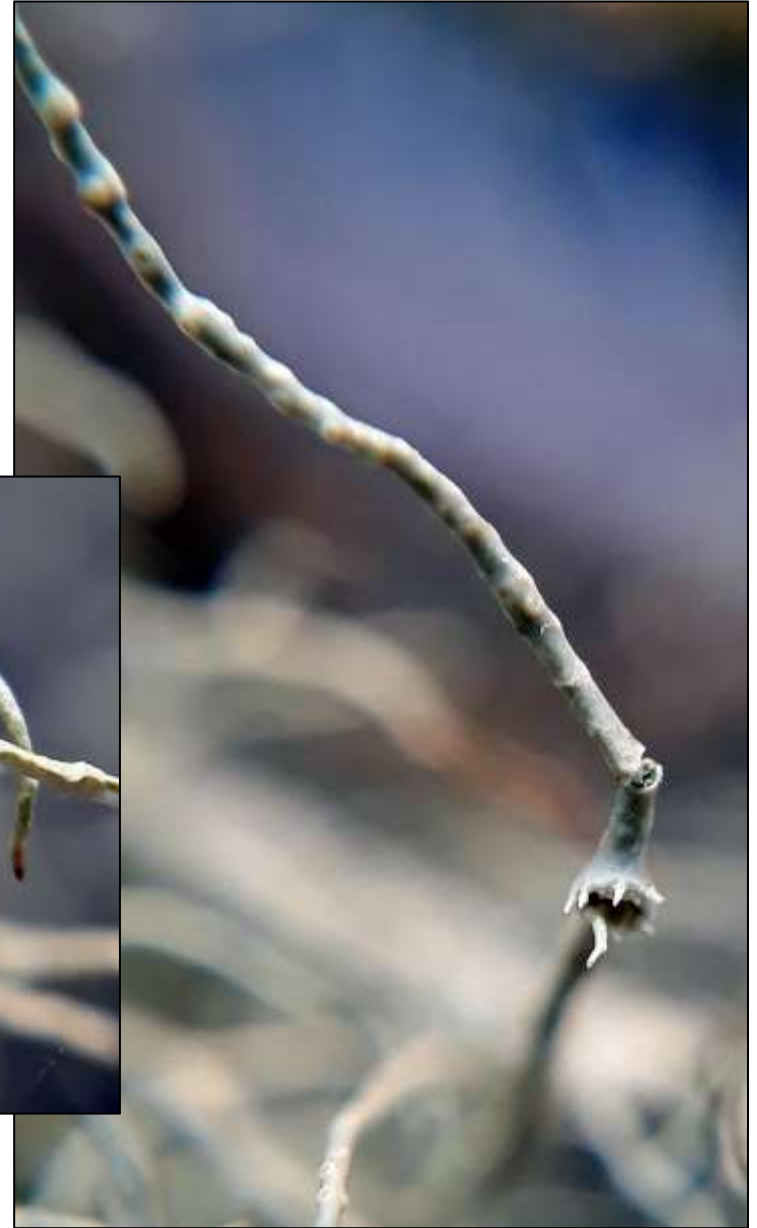
Young apothecium – front view
(*U. florida*)



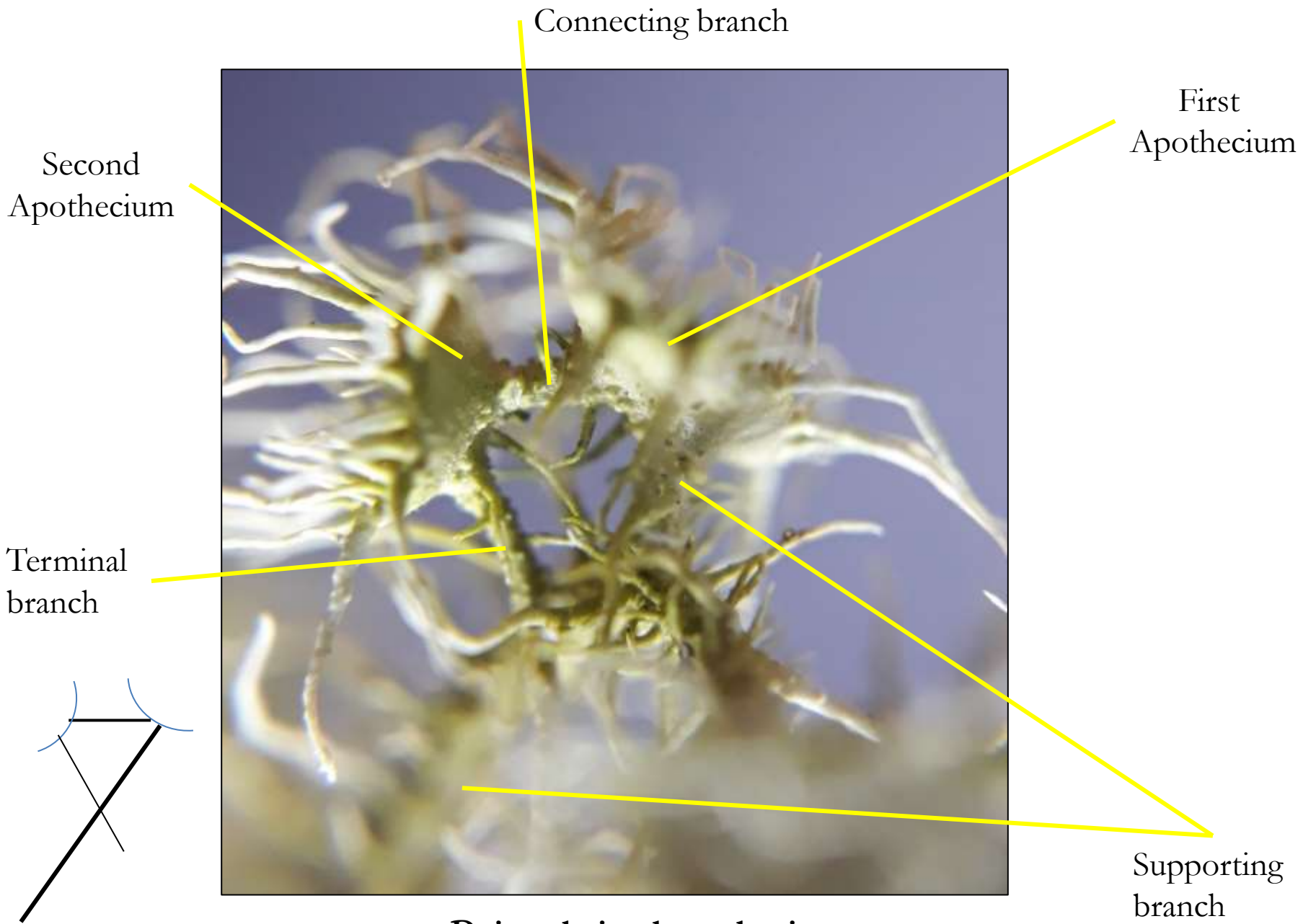
Young apothecium – side view
(*U. florida*)



Young apothecium – rear view
(*U. florida*)



Young lateral apothecia
(before branch bent)
(*U. florida*)



Daisy-chained apothecia

(U. florida)

Amphithecium – Back of the Apothecial Disc

(*U. florida*)



Confounding features

Amphithecial fibrils

- Grow from papillae
- Not true branches
- Usually shorter than disc diameter in younger specimens
- May be longer than disc diameter, papillate and branching in older specimens



Lichenicolous Fungus

(can be confused with young apothecia)

Biatoropsis usnearum
parasitising on *Usnea subfloridana*

Key differences:

- Lack of circum-fibrils
- Convex top
- No central crater

Rear of apothecium (*U. subfloridana*)

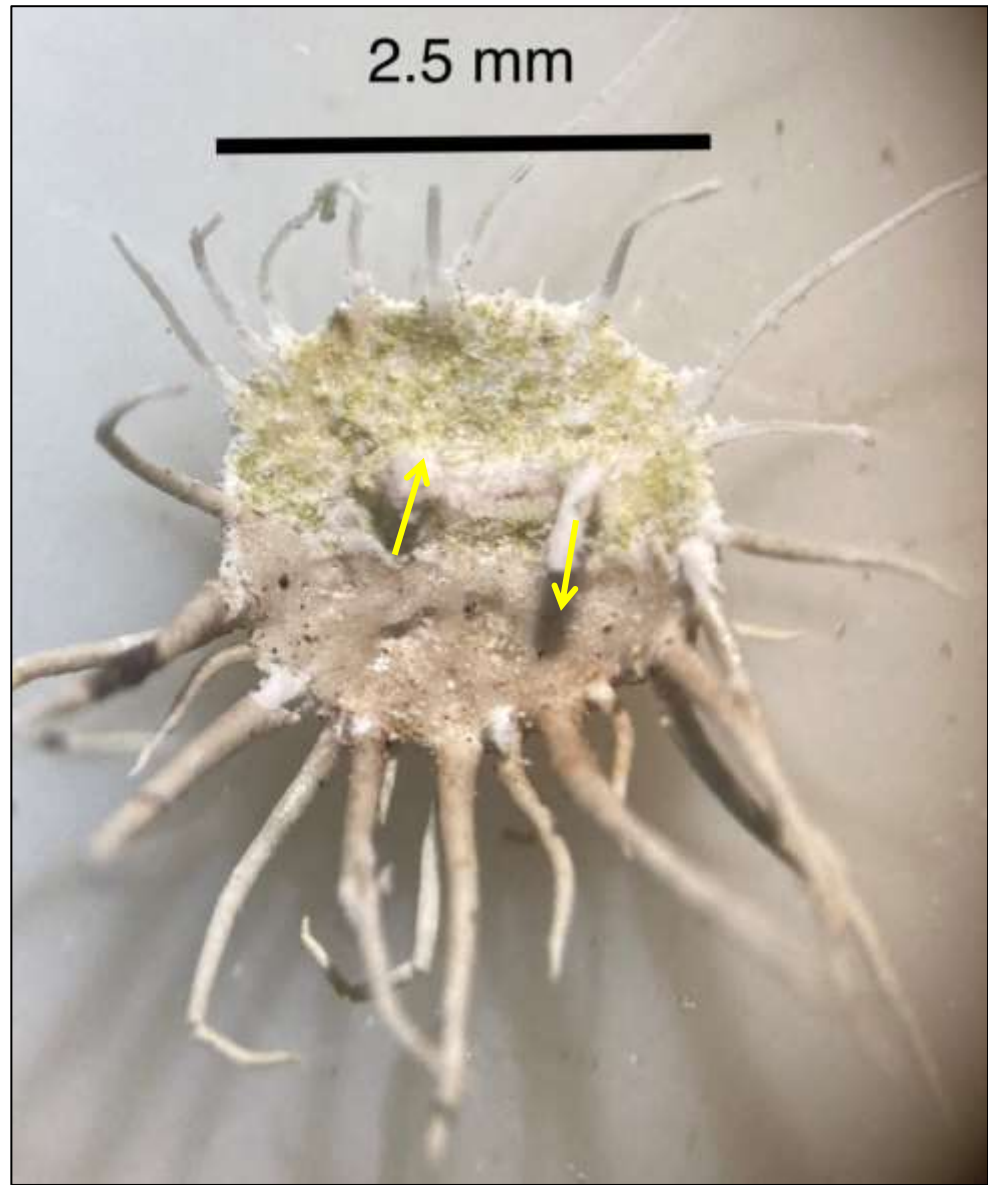


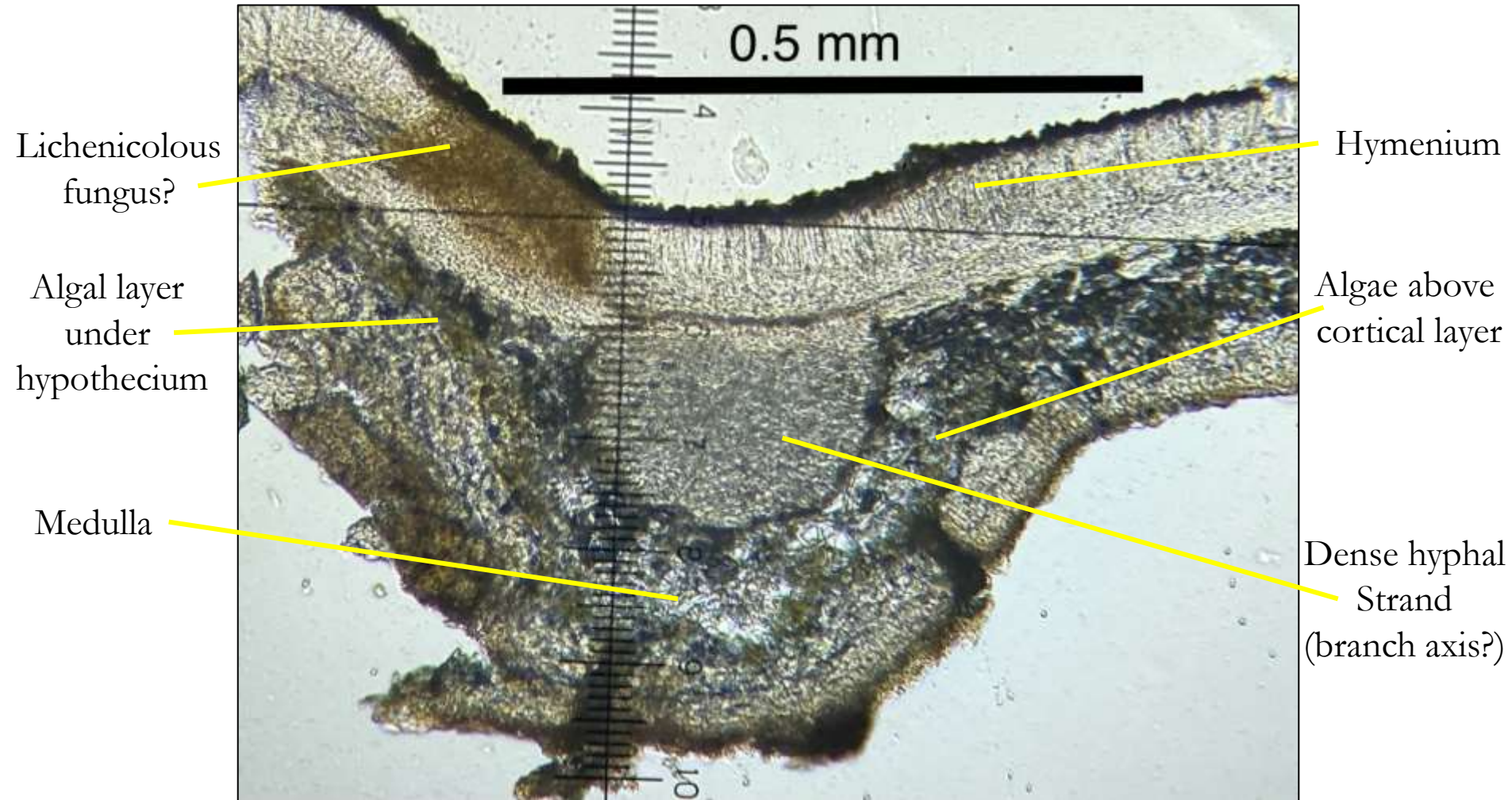
Supporting
branch

Terminal
branch

Cortex and medulla removed from : part of
back of apothecium, supporting and
terminal branches, upper circum-fibrils

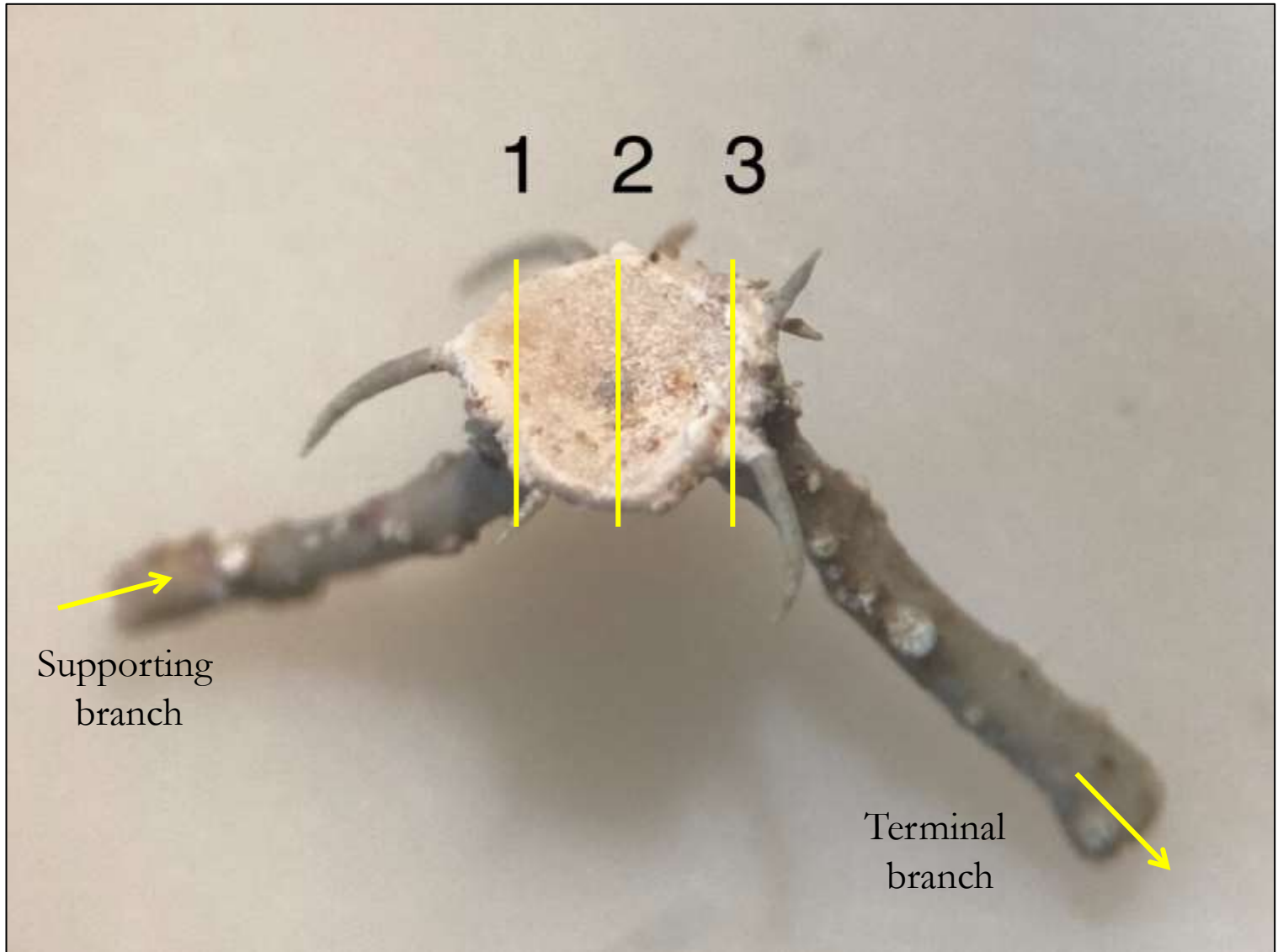
NOTE: trace of axis of original branch
between supporting and terminal branches
Also very tough layer above medulla, and
fibril axes joined to this layer



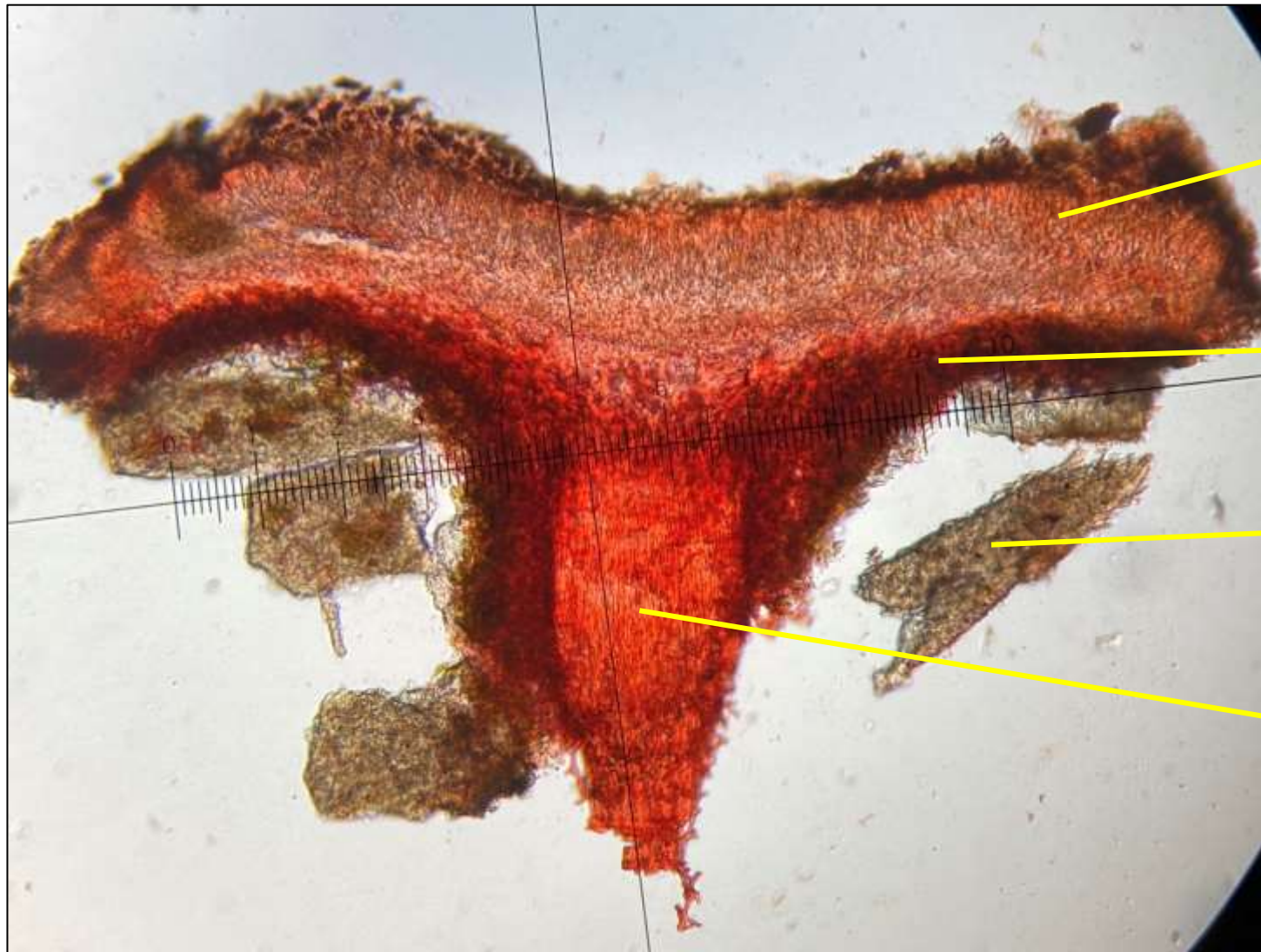


**Cross section of mature apothecium (*U. subfloridana*)
between supporting and terminal branches**

Young apothecium (*U. subfloridana*)



Cross-section through apothecium: Position 1



Hymenium
with asci
and spores

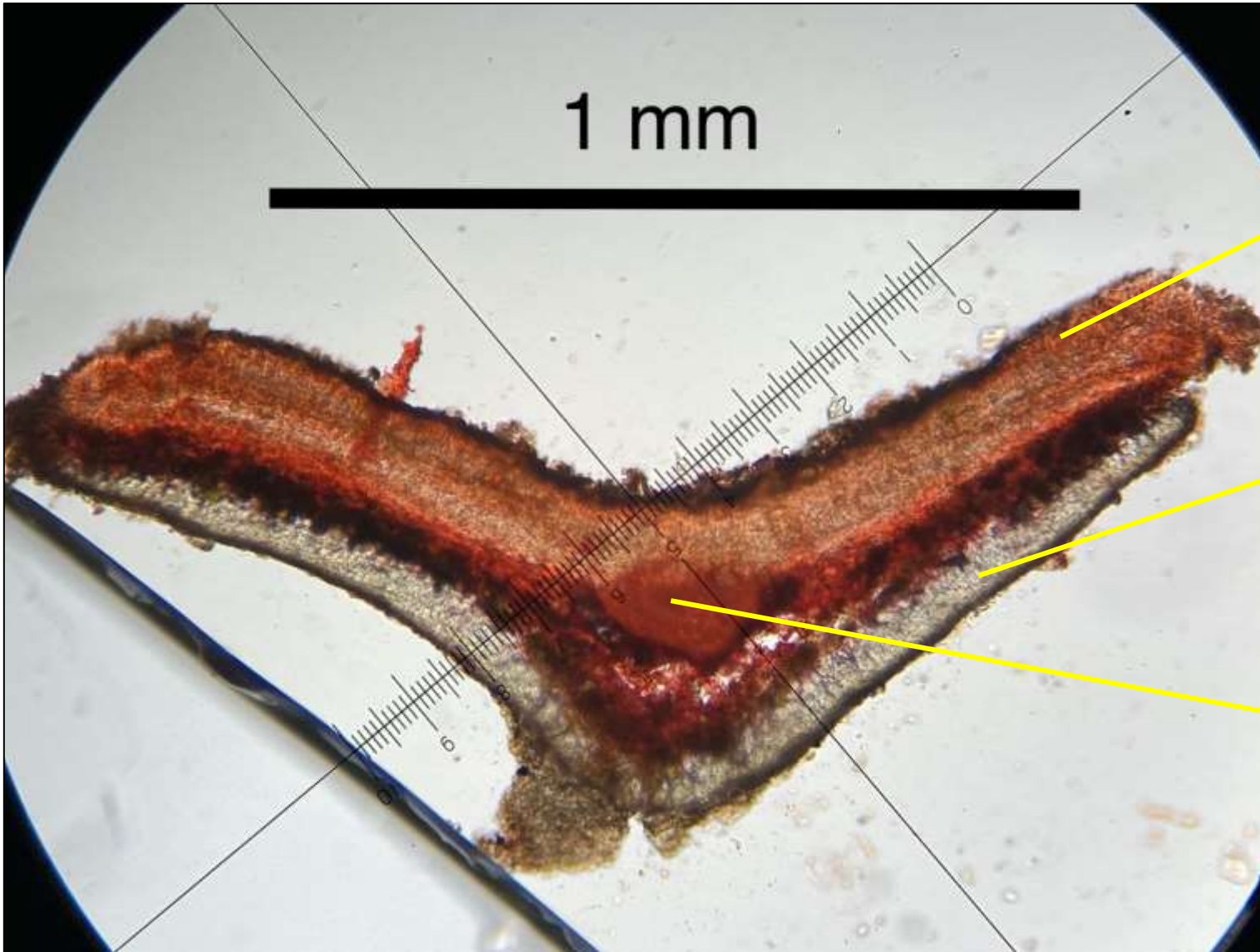
Amphithecial
medulla

Fragment of
amphithecial
cortex

Axis of incoming
supporting branch

Stained with Congo red

Cross-section through apothecium: Position 2



Hymenium
with asci
and spores

Amphithecial
cortex

Axis of original
branch

Stained with Congo red

Cross-section through apothecium: Position 3



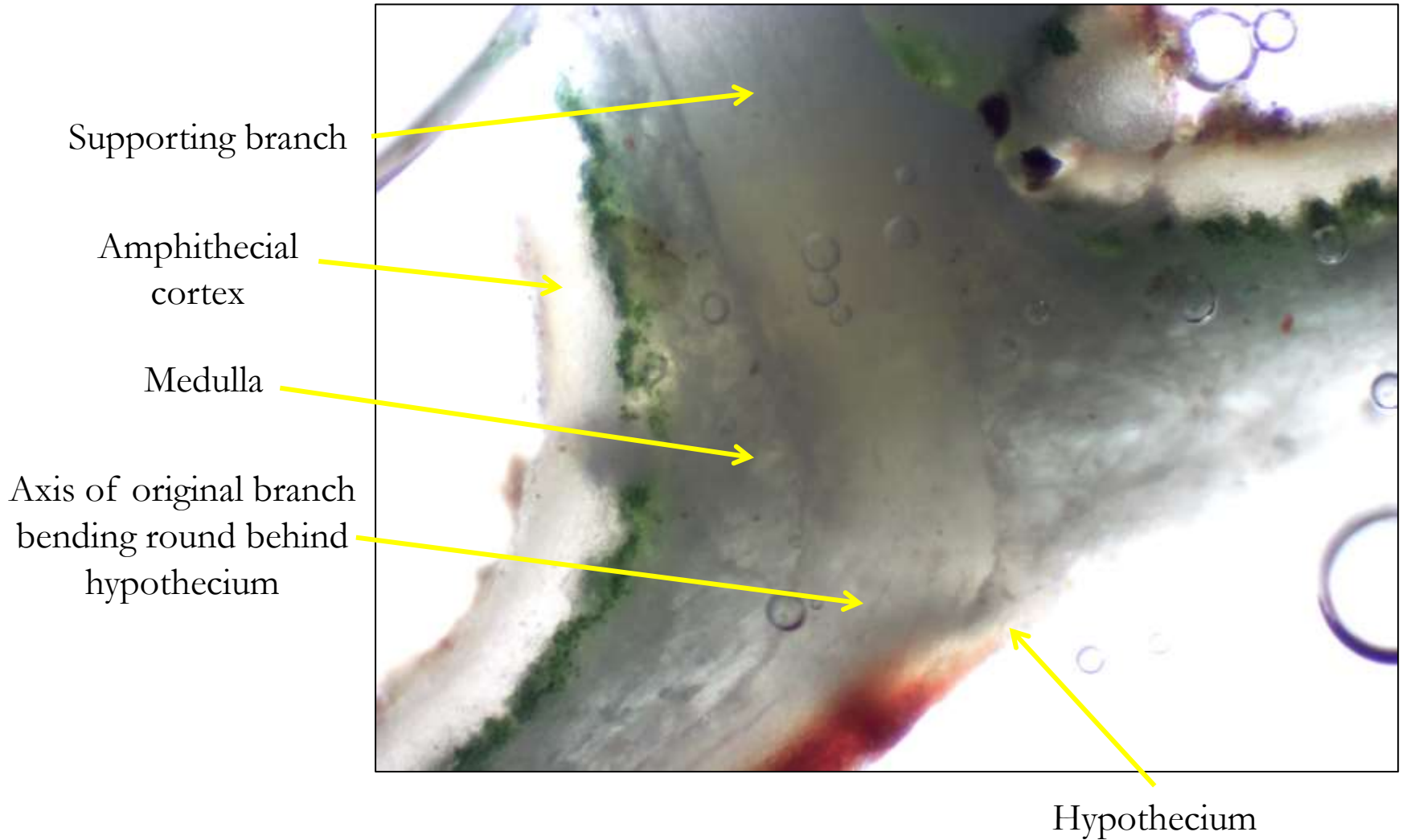
Hymenium
with asci
and spores

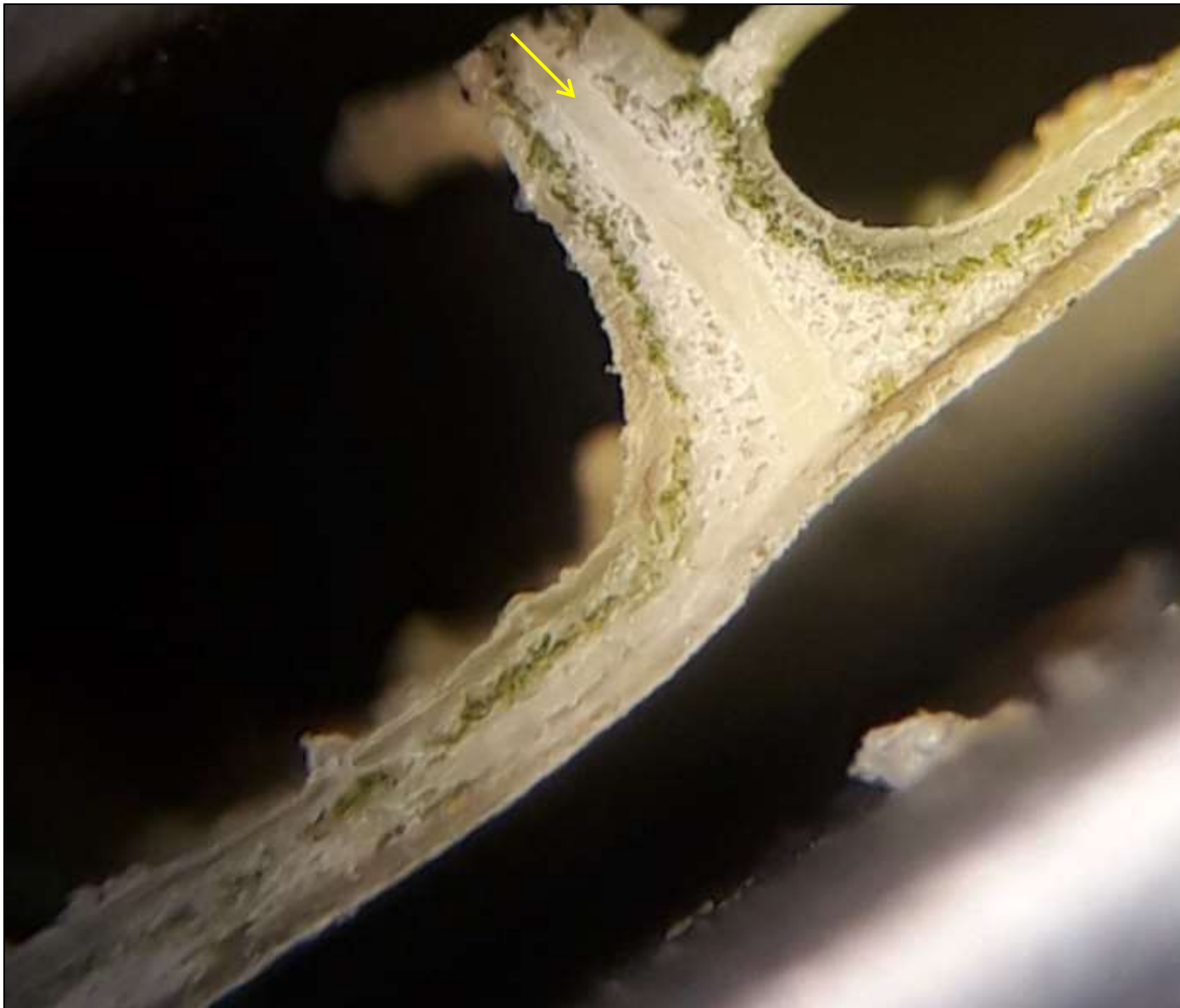
Fragment of
amphithecial
cortex

Axis of
outgoing
terminal branch

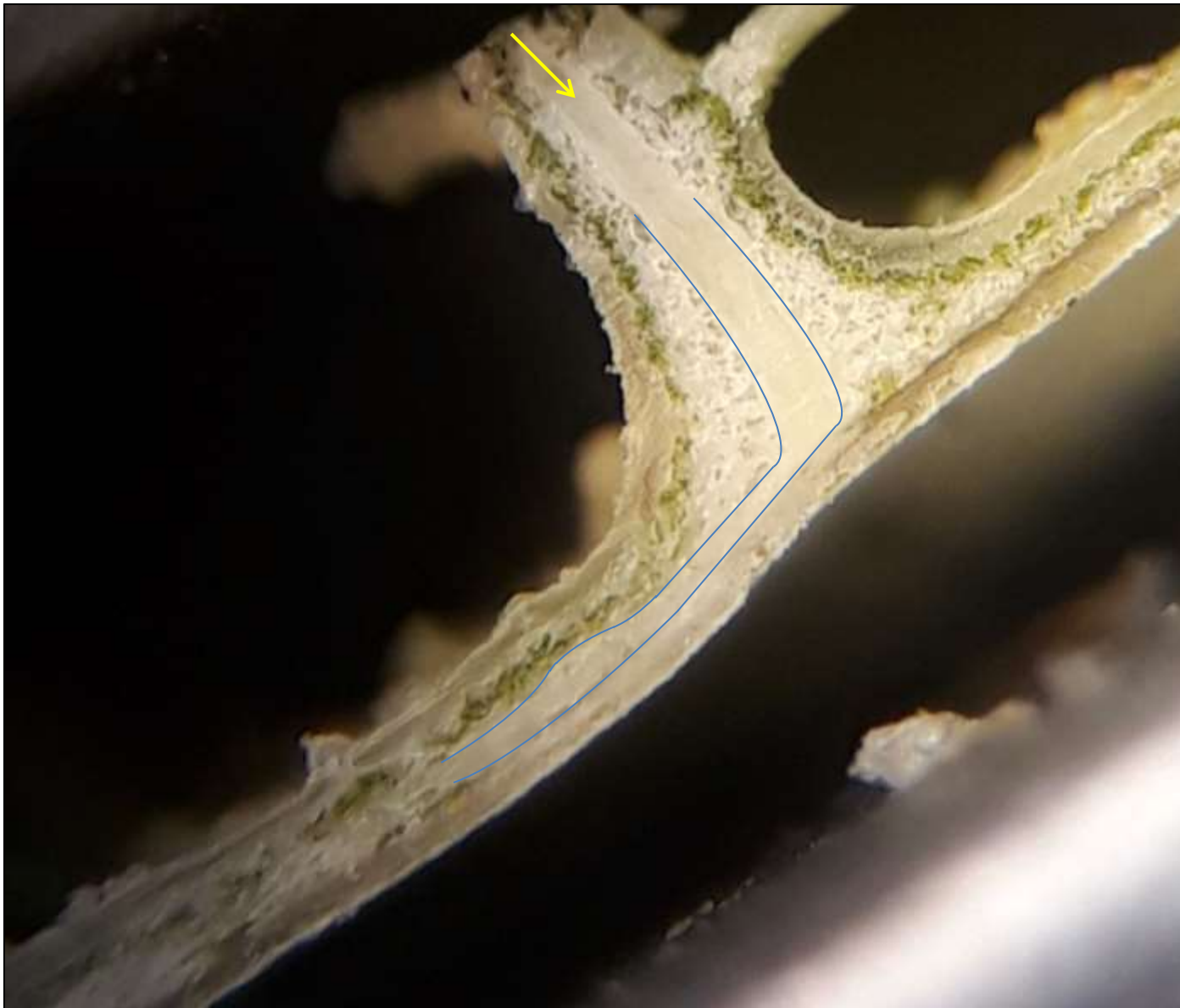
Stained with Congo red

Longitudinal section through supporting
branch and apothecium (*U. florida*)

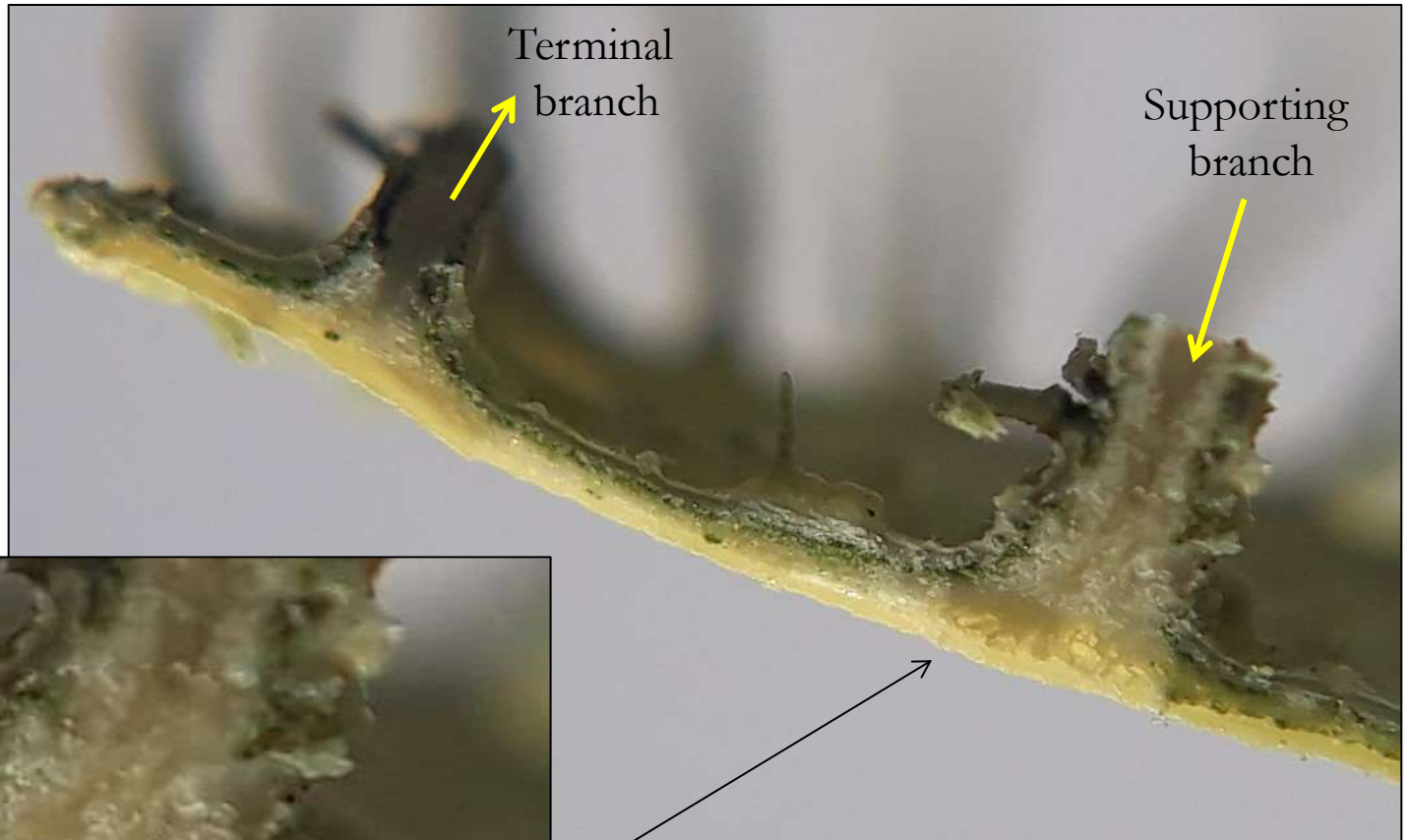




Axis of supporting branch bends behind
hypothecium towards terminal branch



Axis of supporting branch bends behind
hypothecium towards terminal branch



Axis spreading under hypothecium
(*U. florida*)