PhyscoHunt

Welcome to the PhyscoHunt, a Citizen Science initiative integrated in a project that explores genome duplication in plant evolution. The goblet moss (*Physcomitrium pyriforme*) is our model organism. If you want to contribute to our research: **FIND**, **REPORT**, and **SEND** samples. Here is all you need to know:

1. Find

You will identify this moss by its pear or goblet-shaped capsules growing on top of the leafy generation. A hand lens will be helpful.

Physcomitrium pyriforme
"Goblet moss" or "bladder moss"

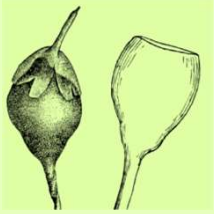
Calyptra a delicate pointed hood that covers each young capsule

Capsule Symmetrical, green and pear-shaped when young, turning brown and goblet-shaped when they ripen, open, and release spores

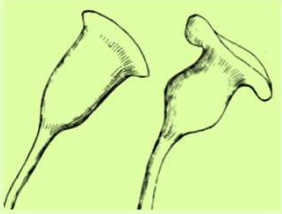
Stalk ¼ to ¾ inches (0.5 to 2 cm)

Leafy generation small tuft of leaves low on the ground

Young capsules



Ripe capsules



Actual size

Where? The goblet moss grows in a variety of habitats, often next to populated areas. Pay attention to disturbed moist soil near croplands, pastures and orchards. During 2021 we will welcome your finds from anywhere in Europe.

When? This moss has a short life cycle and is only noticeable during part of the year, starting late winter, up to early summer, but usually during a few weeks only. Timing is crucial to spot it!

2. Report

ID your observations as "goblet moss", "bladder moss", or *Physcomitrium* and they will be added to the PhyscoHunt project

A this stage of the project, the best thing to do is to contact us directly (email: rafael.medina@ucm.es or twitter: @bryomedina) to confirm ID. Record date, locality and coordinates. If you are a member of the iNaturalist community, you can also add the observation to the project:

Getting started with iNaturalist
https://www.inaturalist.org/pages/getting+started

PhyscoHunt project
https://www.inaturalist.org/projects/physcohunt

3. Send

To complete your contribution you should **send** your samples (including ideally at least 10 capsules) for us to culture and include in our research project. The samples need to be collected at **this developmental stage**.

Too early! Try again after a few days, when the capsules are older.

Too late! Capsules are open and spores have been released. Can you find younger colonies around?

Right on time! Collect samples when capsules are about to be ripe, yellowish or golden, not green nor dark brown.

Preparing a sample: (1) Collect the whole colony, including soil (ideally 10+ capsules) annotating date and coordinates, (2) allow it to air-dry indoors for 48 hours, (3) wrap it in a paper towel, (4) place it in an envelope, and (5) mail it to the address shown below.

Not just goblet moss

You will likely find other species in the goblet moss habitats

Bonfire moss (*Funaria hygrometrica)* belongs to the same family of goblet moss, but its capsules are asymmetric and pendant, and their stalks longer

Silver bryum (*Bryum argenteum)* has a leafy generation with a whitish or silver shine that is not seen in the goblet moss colonies

Redshank (*Ceratodon purpureus)* develops spindle-like capsules with bright red stalks and calyptrae

With more than 12,000 extant species, mosses are the most diverse plant group after flowering plants, and they are key components in many ecological processes. Despite their small size, they are approachable to all nature enthusiasts

Contact info

For questions, feedback, and reports, contact Rafael Medina:

rafael.medina@ucm.es

@bryomedina

Send your samples to our lab at Universidad Complutense de Madrid

Rafael Medina (UD Botánica)
Dto. Biodiversidad, Ecología y Evolución
Calle José Antonio Novais 12
28040 Madrid, Spain

Funariaceae Research Group website: http://funariaceae.uconn.edu

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This document was prepared by Mary Ade and Rafael Medina

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