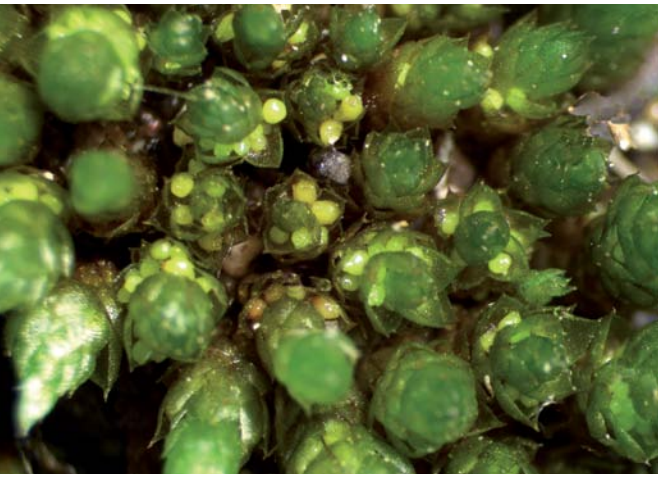

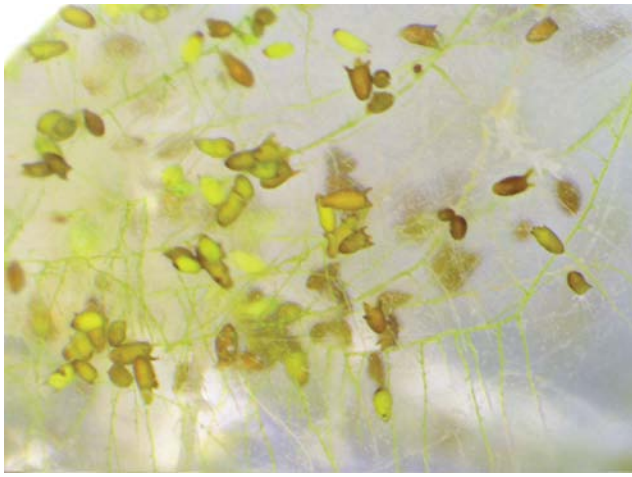

△ *B. gemmilucens in vivo* (left) and *in vitro (right).* *J.D. Sleath*

Bryum gemmilucens in vivo and *in vitro*

Bryum gemmilucens is an uncommon member of the *B. dichotomum* complex, characterised by limoniform yellow/green bulbils (originally described as '*pallido-flava ad citreo-flava*') with rudimentary or no leaf primordia. I first came across it in December 2021, when John Norton showed me a site by the road to Ocknell campsite, New Forest. The bulbils were few but the plants were better developed the following month, although I could find no shoots in April 2022.

The shoots were a few millimetres tall with concave and julaceous leaves. The bulbils were formed in the lower leaf axils and were initially hidden, but when better developed their bright colour was striking. Under the microscope I could see no leaf primordia. When squashed under a cover slip they released copious lipid droplets which may be responsible for the colour.

I started cultures from bulbils and a stem on gellan gum gel. The cultures were heavily contaminated when moved outside in May and were abandoned. In September, I looked again and found that they had produced numerous bulbils on the protonemata. They had the yellowish colour of the axillary bulbils but small leaf primordia. Protonemal bulbils within the *B. dichotomum* complex are known *in vitro*, especially in old cultures (Awasthi *et al.*, 2016). Bulbils looking very similar to those of *Bryum gemmilucens* have also been seen in nature on persistent protonema in Zimbabwe (During, 2007).

In Europe, *B. gemmilucens* grows in disturbed sites and seems not to be too fastidious in its habitat requirements. Although the bulbils are distinctive, detection is more difficult if they are only produced in the axils for a few months each year. I suspect that finding protonemal bulbils in the absence of bulbiliferous shoots is a challenge to which few will rise.

References

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