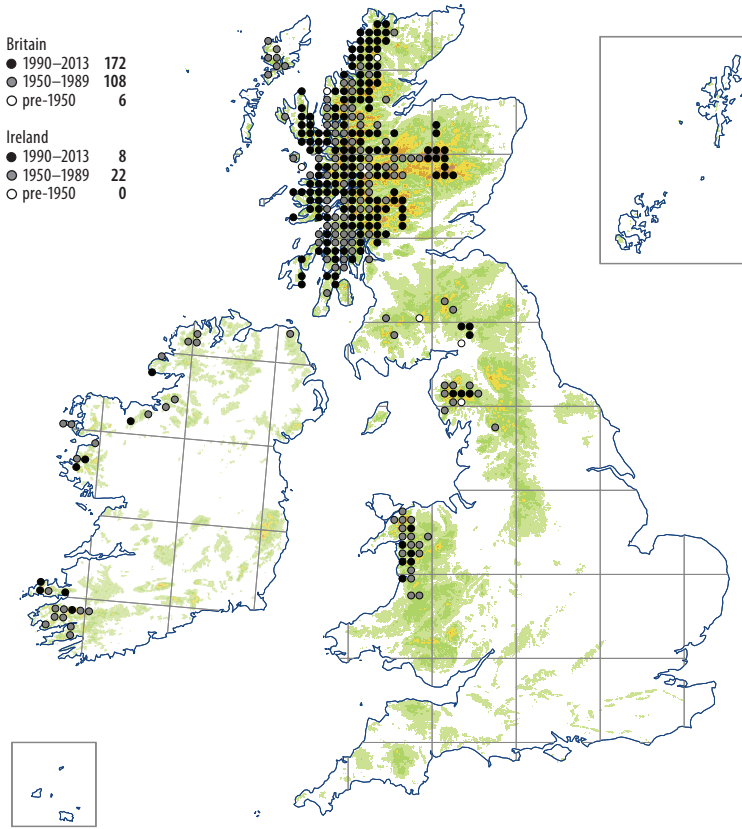


Hylocomiastrum umbratum



A species of base-deficient or slightly basic substrates including bare rock, mineral soil, raw humus and shallow peat. It occurs frequently in natural or semi-natural deciduous woods (mainly birch, oak, pine-birch or birch-hazel), either in moss mats on dry shaded boulders with *Hylocomium splendens*, *Rhytidiadelphus loreus*, *Thuidium delicatulum* and *T. tamariscinum* or on the ground in humid rocky glens with other bryophytes including *Anastrepta orcadensis* and *Plagiothecium undulatum*. Outside woodland it is mainly found under heather and other dwarf shrubs on steep north- to east-facing block-strewn slopes in corries and below cliffs, associated with *Hymenophyllum wilsonii*, *Dicranodontium uncinatum* and several large leafy liverworts such as *Herbertus hutchinsiae*. It also occurs on shaded mossy ledges in low-lying wooded ravines, often near waterfalls, with *Hymenophyllum wilsonii*, *Lepidozia cupressina* and

Dicranodontium denudatum, between boulders in stable block litters, and on cliff ledges, especially on north- to east-facing slopes. In its more easterly Scottish localities it occurs mainly in situations where there is prolonged snow cover. Altitudinal range: 30–1100 m.

Dioicous; capsules are very rare, mature in autumn.

European Boreal-montane. In Europe north to N Fennoscandia and the N Urals (not in Iceland) and widespread in mountains further south, to N Spain, C Italy and Serbia. Caucasus to Kazakhstan, S Siberia, Korea, Russian Far East, Japan. Western N America (Alaska, British Columbia), eastern N America (from Michigan and Labrador south to Tennessee and North Carolina).

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