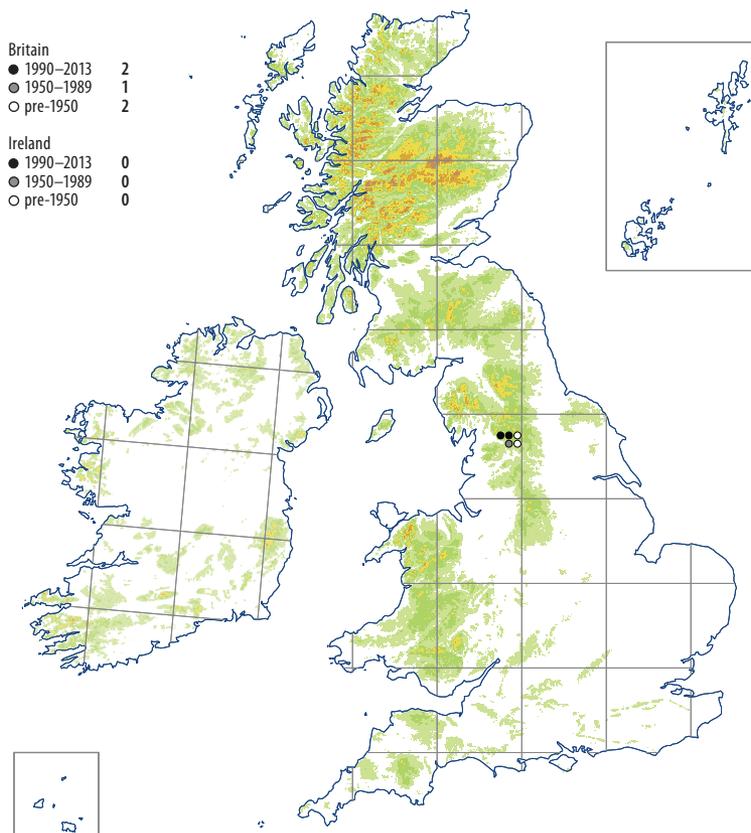


## Zygodon gracilis



Most of the sites for this species are on exposed or lightly shaded dry-stone walls of Carboniferous Limestone, often facing north or north-west, at altitudes where rain and mist occur regularly. It grows in more or less pure tufts on rock surfaces and in crevices, adjacent to other limestone species, such as *Neckera crispa*, *Tortella tortuosa* and, confusingly, *Zygodon viridissimus*. Occurrences on natural rock are rare, but there is a good population on stable scree on Pen-y-ghent hill, and there are a few older records from rocks and limestone pavement (Shaw, 1962). Altitudinal range: 310–510 m.



It has been lost from many of its old sites, especially those at lower altitudes, but intensive surveys in 2002–2003 revealed some new populations, though in a more restricted area than formerly occupied. Porley (2013) suggests that the 'Little Ice Age' in the 19th century may have promoted its occurrence at lower altitudes at that time. If so it may be at risk from climate warming. Galvanised wire along wall tops reduces or eliminates growth of the species on the upper parts of walls.

Diocious; capsules are very rare, found by John Nowell, its discoverer, in October 1866 and not seen again until 2002, when A. Headley and F. Rumsey found young capsules on Pen-y-ghent. Headley & Rumsey also found that male plants are much rarer than female and often spatially separated from them. Gemmae are produced on the protonema in culture (Whitehouse, 1987; Duckett *et al.*, 2004).

European Temperate. Widely disjunct in Europe, with scattered localities on limestone in the Alps (Switzerland, Italy, Bavaria, Austria) and Carpathians (Poland). Reported from N America (British Columbia) and C America (Guatemala), but C American plants, at least, apparently belong to *Z. campylophyllus* Müll. Hal.

M.C.F. Proctor, rev. T.L. Blockeel

◀ Trow Ghyll, Mid-west Yorkshire, 2013. Fred Rumsey