These four species – of which *Z. viridissimus* is the commonest – are difficult to reliably distinguish from each other without checking under a microscope. They all form small (usually up to 1 cm tall), light green tufts and patches. The shortly pointed leaves are held at a wide angle from the stem when moist, giving the plants a characteristically neat appearance. Dry leaves become lightly twisted and appressed to the stem, considerably altering the appearance of shoots. Leaves are typically 1.5–2 mm long, nerved, widest near the middle, and narrow rather abruptly at the tip. Gemmae are normally produced amongst the leaf axils, but only become discernible under a microscope. Capsules are infrequent, except in *Z. conoideus*. They are pale yellowish-brown, egg-shaped, borne on a seta 6–10 mm long, and produced in spring and summer.

*Z. stirtonii* differs from *Z. viridissimus* in its less acutely pointed leaves, with the nerve widest in the upper part of the leaf and excurrent in a stout point.

*Z. rupestris* is typically more yellow-green than *Z. viridissimus*. Its shoots tend to be straight when dry, whereas those of *Z. viridissimus* often curve upwards.

*Z. conoideus* is usually more slender than *Z. viridissimus*, and forms patches of shoots up to 5 mm tall, and differs further in the tip of its leaves being straight (rather than recurved) when moist. It also produces capsules more frequently than other *Zygodon* species, the seta of which is usually noticeably curved, whereas the setae of *Z. viridissimus*, and even more so *Z. stirtonii*, are straighter and slightly more robust. A very rare form, *Z. conoideus* var. *lingulatus*, has leaves with a rounded tip.

Photos David Holyoak (top) & Ian Atherton (bottom) Drawings Jonathan Graham Text Mark Lawley
Z. viridissimus var. viridissimus = Z. viridissimus
Z. viridissimus var. stirtonii = Z. stirtonii
Z. baumgartneri = Z. rupestris

Similar species
Z. gracilis (p. 645) is taller than other Zygodon species. Z. forsteri (p. 644) is dark green and has capsules that are widest above the middle, whereas other Zygodon species have capsules that are widest at or near the middle. Amphidium mougeotii (p. 641) is also slightly darker green, and forms deep (usually more than 1.5 cm), mid-green cushions on rocks in humid places. Orthotrichum gymnostomum and O. obtusifolium (p. 649) have a rounded leaf tip.

Habitat
Z. viridissimus grows on lightly shaded, base-enriched bark, especially ash (Fraxinus excelsior), elder (Sambucus nigra), field maple (Acer campestre), sycamore (Acer pseudoplatanus) and willow (Salix), and particularly favours tree trunks. It is also very common on shaded walls, as well as growing occasionally on base-rich rocks and concrete.

Z. stirtonii grows on lightly shaded rocks, especially limestone, and is sometimes found on walls of stone or brick, especially on or near mortar. It may occur with Z. viridissimus, but rarely grows on trees or shrubs.

Z. rupestris particularly favours the bark of old trees, especially ash and oak (Quercus) at the edges of woods and in parks. Occasionally it grows on shaded, base-rich rocks, but is commonest on bark, thus belying its specific Latin epithet.

Z. conoideus is the commonest member of the genus in humid woods in valleys in westernmost Britain, where it sometimes clothes the trunks of ash, sycamore and willow trees. Further east, it is commonest on elder, and also occurs on apple trees (Malus domestica), ash, willows, and other species.

Photos Sean Edwards (left) & David Holyoak (right)