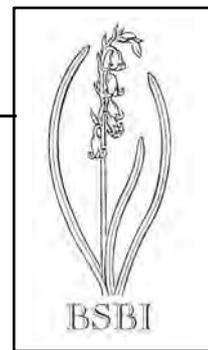


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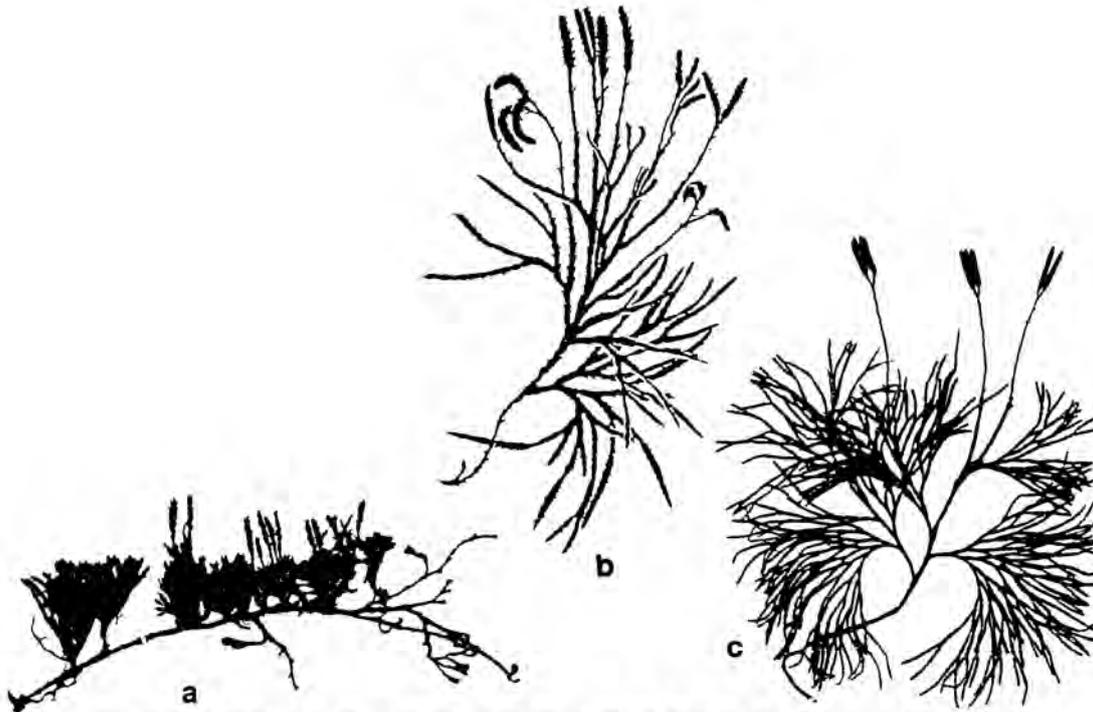
DIPHASIASTRUM ALPINUM* / *D. ISSLERI* / *D. COMPLANATUM

There are two alpine clubmosses in Britain, *Diphasiastrum alpinum* and *D. complanatum* subsp. *issleri* (*D. issleri* (Rouy) Holub). The latter is the less common, being found also at lower altitudes, and during the last century on English heathland (Jermy 1989). From both morphological and ecological characters it appears intermediate between *D. alpinum* and *D. complanatum* subsp. *complanatum* and may well have arisen as a hybrid between those taxa. There is, however, uncertainty about the identification of the lectotype specimens of Rouy's basionym and the name *issleri* is given to a different taxon in N. America (Wagner & Beitel 1993), namely to the putative hybrid between *D. complanatum* subsp. *complanatum* and *D. tristachyum* (Pursh) Holub.

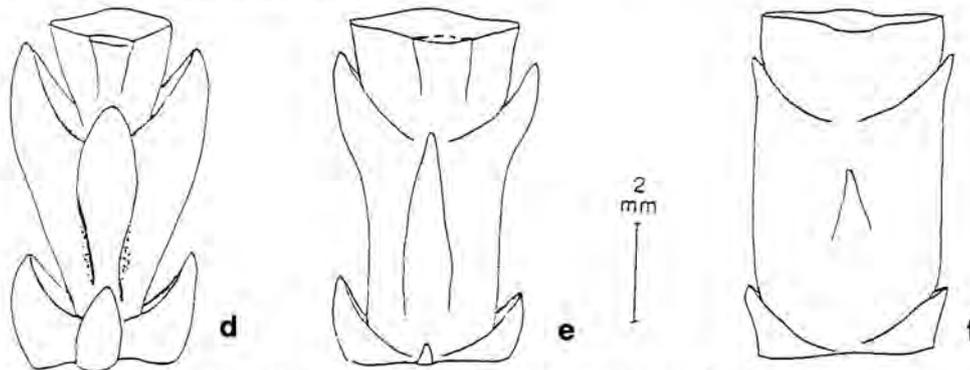
	<i>Diphasiastrum alpinum</i> (L.) Holub	<i>D. complanatum</i> L. subsp. <i>issleri</i> (Rouy) Jermy	<i>D. complanatum</i> subsp. <i>complanatum</i>
Habit	Main stem underground (or deep in moss or litter)	Main stem above ground (or rarely in moss or litter)	Main stem above ground (or rarely in moss or litter)
Upright shoots (Figs a, b & c)	Glaucous and resembling a cypress tree, up to 20 cm; secondary branches ± square in cross-section throughout, close together, often overlapping and compact, up to 8cm long	Distinctly yellow-green, up to 35 cm; secondary branches ± square in cross-section at apex (new growth area) becoming flat and blade-like in ageing, up to 12 cm long, usually more open than <i>D. alpinum</i> and fan-like	Yellow- to mid-green, up to 40 cm; secondary branches flat in cross-section and narrowly blade-like, up to 18 cm long, open and fan-like
Lateral leaves (Figs d, e & f)	Mid to lower part of the keels of opposite pairs tapering into the stem	Middle part of the keels of opposite pairs parallel, curving abruptly at the base into the stem	Middle part of the keels of opposite pairs parallel, curving abruptly at the very base into the stem
Median leaves on the lower (ventral) side (Figs d, e & f) (Best viewed on branches of the previous year's growth)	3.5–4.0 mm long, trowel-shaped, with a rounded apex and an angled petiole holding it away from, but parallel to, the stem (the blade often appearing skewed in dried specimens)	3.5–4.0 mm long, narrowly linear-triangular, with an acute apex, petiole lacking	c. 1 mm, narrowly triangular with an acute apex, petiole lacking
Cones	1-2 cm long, grouped at ends of leafy branches.	1.5-2.5 cm long, borne on an erect, elongated	1.0-3.2 cm long, borne on an erect, elongated

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	with a short, almost non-existent peduncle bearing a few leaves intermediate in shape and texture between those of the cone and the leafy stem	peduncle bearing few ovate-elliptic, scale-like leaves	branched peduncles with only occasional scale-like leaves
Sporophylls	Apices gradually tapering	Apices abruptly tapering	Apices abruptly tapering



Diphasiastrum branching form: (a) *D. alpinum*, (b) *D. complanatum* subsp. *issleri*, (c) *D. complanatum* subsp. *complanatum*.



Diphasiastrum mature shoots from beneath: (d) *D. alpinum*, (e) *D. complanatum* subsp. *issleri*, (f) *D. complanatum* subsp. *complanatum*.

Populations of *D. alpina* subsp. *issleri* in NW Scotland and the Grampians are well established and producing what appear to be good spores and the taxon can be expected on rock-strewn glacial debris now bearing open *Calluna* heath, or along the western seaboard on similar soils with *Arctostaphylos* heath.

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D. complanatum subsp. *complanatum* has not been established for the British Isles, earlier records being subsp. *issleri*. It could occur possibly in ancient pine woodland in NW Scotland.

References Jermy, A. C. (1989). *Fern Gazette* **13**: 257-265.
Wagner W. H. & Beitel, J. M. (1993). *Diphasiastrum*. Pp. 28-32 in *Flora North America north of Mexico* **2**. Oxford University Press, New York.

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