

# IDENTIFICATION OF SELECTED LIVERWORT SPECIES

- *Jungermannia*, etc
- *Barbilophozia*, etc
- *Lophozia*, etc
- *Scapania*
- *Cephalozia*
- *Calypogeia*
- Large thalloid liverworts

These tables were produced by Ben Averis, and include data from:

Paton, J.A. (1999); *The liverwort flora of the British Isles*; Harley Books, Colchester, Essex

Atherton, I., Bosanquet, S. & Lawley, M. (2010); *Mosses & Liverworts of Britain & Ireland: a field guide*; British Bryological Society

**Jungermannia & similar species** (all with roundish leaves overlapping in succubous manner). Spp. omitted: *Jungermannia leiantha/polaris/caespiticia*, *Nardia insect/breidleri*, *Jamesoniella undulfolia*, *Odontoschisma macounii* (all v. rare).

This table includes data from Paton, J.A. (1999); *The liverwort flora of the British Isles*; Harley Books, Colchester, Essex, & Atherton, I., Bosanquet, S. & Lawley, M. (2010); *Mosses & Liverworts of Britain & Ireland: a field guide*; British Bryological Society.

	General colour	Rhizoid colour	Max shoot length (cm)	Shoot width (mm)	Max leaf length (mm)	Leaf insertion: width	Leaf insertion: orientation	Under-leaves?	Arom-atic?	Dioicous or Monoicous	Habitat acidity	Other notes		
<i>Nardia scalaris</i>	Varied. Pale green to dk brown/purple.	?	8.0	to 1.5	1.0	Wide	Oblique	Y	Y	Dioicous (m+f on separate shoots)	A	Very common. Mainly on soil but also on rock.		
<i>Jungermannia gracillima</i>	Varied. Pale green to rusty red.	Colourless, yellowish or pale brown	5.0	0.4-1.5	0.75			Slightly	Very common. Mainly on soil but also on rock. <b>Leaf has border of thick-walled cells.</b>					
<i>Jung. atrovirens</i>	Bright to dark/dull green.	Colourless	4.0	0.5-4.0	1.0			Y			Common on rock & soil.			
<i>Jung. pumila</i>			2.5	0.5-2.0				N	Monoicous (m just below f)	A-N				
<i>Jung. hyalina</i>	Varied. Bright green to brown/purplish.	Mostly brown to purple-red	2.0	0.8-3.0	1.0			Medium	Transv.	N	Y	Dioicous (m+f on separate shoots)	A-N	Fairly common on rock & soil. Perianth has pair of bracts reaching 1/2 way up.
<i>Jung. paroica</i>	Bright green		2.0	2.0-4.0								Monoicous (m just below f)	A-B	
<i>Jung. obovata</i>	Dark/brownish gr.		8.0	1.5-3.0		1.5	Dioicous (m+f on separate shoots)					A		
<i>Jung. exsertifolia ssp. cordifolia</i>	Varied. Brownish-green to reddish or purplish.	Colourless	8.0	1.5-5.0	2.0	Narrow	Transverse to oblique	N	Slightly	Monoicous (m just below f)	A-B	Common. <b>Lush swollen soft-textured patches in upland springs &amp; flushes.</b>		
<i>Jung. sphaerocarpa</i>	Bright to dull green		3.0	0.5-2.0	1.0							More or less transverse	A-N	Fairly common. Upland rock/soil.
<i>Nardia compressa</i>	Varied. Green to red/purple.	Rhizoids scarce	12.0	1.0-3.0	1.8	Medium	Oblique	Y	Y	Dioicous (m+f on separate shoots)	A	Fairly common. Wet upland rock/soil; springs/flushes. <b>Shoot flattened; leaf comma-shaped.</b>		
<i>Jamesoniella autumnalis</i>	Green to red-brown	Colourless	3.0	0.5-2.7	1.0	Wide	Oblique-Longit.	Y or N	N			Locally common in western woods.		
<i>Mylia taylorii</i>	Green, red, brown or purple	Colourless to pale brown	10.0	1.0-5.0	1.5		Oblique	Y				Common in W. <b>Dense cushions. Youngest leaves folded in lines above spreading lvs.</b>		
<i>Mylia anomala</i>	Green to brownish	Colourless to pale brown	3.0	1.5-5.0	2.0		Oblique	Y				<b>Bogs. Some upper leaves narrow/pointed + green gemmae.</b>		
<i>Odontoschisma sphagni</i>	Orange-brown to brownish-green	?	8.0	to 3.0	1.3		Oblique-Longit.	Y (tiny)				<b>Bogs &amp; wet heaths. Thread-like branches on underside.</b>		
<i>Odontoschisma denudatum</i>	Green to brownish	?	2.0	to 1.8	0.9		Oblique	Y (tiny)				<b>Peat/humus + logs. Pale gemmae on attenuate shoots.</b>		
<i>Jungermannia borealis</i>	Grey-green to brown	Colourless	1.5	0.3-1.5	0.8		Narrow-medium	Transverse to oblique		N	Slightly	Dioicous (m+f on separate shoots)	N-B	Scarce & montane. <b>Some leaves with hooded tips. On soil/rock.</b>
<i>Jungermannia onfertissima</i>	Bright to brownish green	Colourless, yellowish or pale brown	2.0	to 1.5	1.0	Narrow	More or less transverse	B	Rare & montane. On rock & soil.					
<i>Jungermannia subelliptica</i>	Varied. Pale green to brown or red-purple.	Colourless, pale brown, pink or darker red-purple	1.0	0.4-1.5	0.7	Medium	Transverse	Y	Perianth has pair of bracts reaching 1/2 way up. Scarce/upland soil/rock.					
<i>Nardia geoscyphus</i>	Varied. Pale green to dark brown or purple.	?	2.0	0.5-1.5	1.0	wide	Oblique	Y	N	Monoicous (m just below f)	A-B	<b>Many leaves shallowly notched.</b> Scarce. Mainly on soil (also on rock).		
<i>Odontoschisma elongatum</i>	Dark green/brown to blackish	?	3.0	to 1.8	0.9	wide	Oblique	Y tiny)	N			Dioicous (m+f on separate shoots)	A	Scarce on wet ground, esp. by lochs in NW.

## Barbilophozia & similar species (small to quite large; most leaves with 3-4 lobes)

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	Max. shoot width (cm)	Leaf insertion	No. of leaf lobes	Lobe tips	Cilia at leaf base?	Under-leaves?	Gemmae	Other notes
<i>B. attenuata</i>	1.5	Oblique	3	Pointed	N	N	Common (green > red-purple)	Widespread & common, esp. in upland areas. Common on <b>trees, stumps &amp; logs</b> ; less so on rock (other spp. mainly on rock/soil). Gemmae on distinctive <b>narrow upright attenuated shoots</b> .
<i>B. atlantica</i>	2.5	Oblique	2-3	Pointed	N (or v. poorly developed)	Y or N	Common (green > red-purple)	Occasional in upland areas S to mid Wales. Shoots with gemmae can be slightly narrowed/slightly attenuate. Gemmae & lack of leaf base cilia separate it from the slightly larger <i>B. floerkei</i> . Upper leaves lacking gemmae can have raggedy edges (smoother-edged in <i>B. floerkei</i> ).
<i>B. floerkei</i>	3.0	Oblique	3-3	Pointed	Y	Y	Absent	Widespread & common in upland areas. Leaf base cilia & lack of gemmae separate it from the slightly smaller <i>B. atlantica</i> .
<i>B. hatcheri</i>	4.0	Very oblique	4	<b>Sharply pointed</b>	Y	Y	Common (green > red-purple)	Fairly common in E Scotland; rare elsewhere.
<i>B. barbata</i>	4.0	Very oblique	3-4	<b>Blunt or bluntly pointed</b>	N	Y or N	Absent	Widespread & fairly common in upland areas.
<i>Tritomaria quinquedentata</i>	4.0	Oblique	3	Pointed	N	N	Scarce (green/brown > red / yellow / brown / purple)	Widespread & common, mainly in upland areas. <b>Leaf very asymmetrical</b> .
<i>B. lycopodioides</i>	4.0	Very oblique	4	Sharply pointed	Y	Y	Absent	Rare montane calcicole. <b>Leaf insertions extend across middle of upper surface of stem</b> (not so in <i>B. hatcheri</i> ).
<i>B. quadriloba</i>	2.3	Slightly oblique	4	Pointed	Y	Y	Absent	Rare montane calcicole. <b>Leaf lobes deeply cut</b> (>50% of the way down toward the leaf base).
<i>B. kunzeana</i>	2.0	Oblique	2	Pointed or blunt	Y or N	Y	Common (yellow green > pale brown)	Rare in upland acid habitats. <b>Looks like a Lophozia but has distinct underleaves</b> (these being 2-lobed).
<i>Tritomaria polita</i>	3.0	Transverse	3	Blunt	N	N	Absent	Scarce montane calcicole (Scottish Highlands - mainly Breadalbane flushes). <b>Lobes only shallowly cut</b> (to 20% of way down leaf, which is less than for the other spp. In this table)
<i>Tetralophozia setiformis</i>	1.0	Transverse	4 (but can be 3 or 2 on some leaves)	Pointed or blunt	Y or N	Y	Absent	Scarce on acid rocks in E Highlands (& rare in Cheviot). Can form dense patches. <b>Leaves densely packed &amp; overlapping around (hidden) stem &amp; concave/folded so all lobes point forwards toward stem tip. Leaf lobes deeply cut</b> (>50% of the way down toward the leaf base).

## Common Lophozia, Leiocolea, Lophocolea, Marsupella, etc (small to quite large; leaves incubous and with 2 lobes)

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	Max. shoot length (cm)	Max. shoot width (mm)	Leaf insertion	Lobes cut to X%	Lobe tips	Colour	Gemmae	Under-leaves?	Aromatic?	Other notes	Habitat
<i>Lophozia ventricosa</i>	2.0	2.5	Trans-Obl	25%	Pointed or blunt	Bright green	Y (pale green)	N	N	V. distinctive with very pale green gemmae on lobe tips.	Acid rock, soil, logs, etc. Very common.
<i>Lophozia longidens</i>	1.5	1.8	Trans-Obl	20-40%	Pointed/blunt; can be elongated/horn-like	Mid or bright green	Y (yellow-green > reddish)	N	N	Like <i>L. ventricosa</i> but redder gemmae and at least some leaves with longer lobes.	Acid bark, rock & humus in N.
<i>Lophozia sudetica</i>	2.5	2.0	Oblique	12-25%	Pointed or blunt	Brownish-green	Y (yellow, brown or reddish - can be sparse)	N	N	Duller/browner than <i>L. ventricosa</i> ; leaves less deeply cut; gemmae browner.	Acid soil & rock in uplands.
<i>Lophozia excisa</i>	1.0	2.5	Oblique	12-37%	Pointed or blunt	Mid green	Y (mainly reddish)	N	N	Like <i>L. ventricosa</i> but with redder gemmae.	Acid to neutral soil in lowlands & uplands.
<i>Lophozia bicrenata</i>	1.0	1.0	Trans-Obl	16-33%	Pointed	Brownish-green	Y (orange-brown)	N	Y crushed > sweet cedar-wood scent	Duller than <i>L. excisa</i> with browner gemmae + scent.	Acid soil in lowlands & uplands.
<i>Lophozia incisa</i>	2.0	2.0	Trans-Obl	25-50%	Pointed	Pale or glaucous green	Y (green)	N	N	Irregularly jaggy 2-4-lobed leaves.	Moist acid ground & logs.
<i>Lophozia opacifolia</i>	2.0	3.0	Oblique	25-50%	Pointed	Pale or glaucous green	Y (green)	N	N	Irregularly jaggy 2-4-lobed leaves. Stem 0.35-0.8 mm wide (0.25-0.65 mm in <i>L. incisa</i> ).	Wetish montane ground.
<i>Leiocolea bantriensis</i>	5.0	4.5	Oblique	20-25%	Blunt or slightly pointed	Translucent green or brownish	N	Y	Y	Leaf base shortly decurrent down upper side of stem.	Damp basic habitats.
<i>Leiocolea alpestris</i>	2.5	3.0	Oblique	10-33%	Pointed or blunt	Translucent green or brownish	N	Y	Y	Leaf base not/hardly decurrent down upper side of stem.	Damp basic habitats.
<i>Leiocolea heterocolpos</i>	2.0	2.0	Oblique	20-33%	Pointed or blunt	Translucent pale brownish green	Y (brown, on attenuated shoot tips)	Y	Y		Uncommon on moist base-rich shaded rocks.
<i>Leiocolea badensis</i>	1.2	1.5	Obl-Longit	16-33%	Blunt	Translucent pale green	N	N	N		Damp basic habitats; mainly in lowlands.
<i>Leiocolea turbinata</i>	1.0	1.5	Obl-Longit	25-33%	Blunt	Translucent pale green	N	N	N	Leaf narrowed toward base.	Damp basic habitats; mainly in lowlands.
<i>Gymnocolea inflata</i>	1.5	2.0	Oblique	25-40%	Blunt	Dark green/brown or blackish	N	N	N	Smooth inflated perianth common.	Damp acid habitats.
<i>Lophocolea bidentata</i>	6.0	4.0	Longit.	25-40%	Tapering to long fine points	V. translucent pale green	N	Y	Y		Acid-neutral soil, rock, logs, etc. V. common.
<i>Lophocolea heterophylla</i>	2.0	3.0	Longit.	0-33%	Blunt to pointed (or unlobed)	Translucent pale green	N	Y	Y	Leaves unlobed & roundish-oblong near shoot tip. Leaves lower down are bilobed.	Acid-neutral soil, rock, logs, bark, etc. Common in lowlands..
<i>Lophocolea fragrans</i>	1.5	1.6	Longit.	16-25%	Pointed (quite narrow)	Translucent dull/dark green	N	Y	Y	Leaves 2-3-lobed + irregularly jaggy/toothed edges.	Scarce on moist, shaded, sheltered neutral-basic rocks in W.
<i>Marsupella emarginata</i>	8.0	3.5	Transverse	20-33%	Pointed or blunt	Dull/glossy green to red/purple/blackish.	N	N	N	Recurved margins to sides of leaves.	Damp to wet acid rocks & stony ground.
<i>Marsupella sphacelata</i>	5.0	3.0	Transverse	25-50%	V. blunt / broad-round	Dull green/brown to brown/blackish.	N	N	N	Leaf margins not recurved.	Wet acid upland / montane habitats
<i>Marsupella funckii</i>	1.0	0.6	Transverse	33-50%	Pointed	Dark red-brown or brown-green.	N	N	N	Leaf margins not recurved.	Moist acid soil, roads & dist. ground in N&W.
<i>Harpanthus scutatus</i>	1.6	1.5	Obl-Longit	33-50%	Pointed	Pale green	Y (green or reddish)	Y (large)	N		Acid rocks, logs & peat; mainly in W.

## Commoner *Scapania* and similar species (small leaf lobe folded across upper surface of large leaf lobe)

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	Max. shoot length (cm)	Max. shoot width (mm)	Lobe margins	Lobe shape	Lobes more or less equal in size?	Colour	Gemmae	Stem	Other notes	Habitat
<i>S. gracilis</i>	5.0	4.0	Many small teeth	Broadly round-oval	N	Mostly olive or ochre green-brown	Y (pale green)	Pale or dark	Front & back lobes commonly diverge away from each other.	Rocks, trees, logs & humus/peat in W
<i>S. nemorea</i>	6.0	5.5	Many distinct, very neat, narrow teeth	Broadly round-oval	N	Mostly green	Y (dark brownish)	Dark		Rocks, logs, soil...
<i>S. undulata</i>	10.0	5.0	Smooth, or with v. small shallow teeth	Broadly round-oval	N	Green, brown, red or purple	Y (green or pink/red/purple)	Dark	Large size & wet habitats are good pointers to this species	Wet acid to basic habitats, esp. springs, flushes & watercourses
<i>S. uliginosa</i>	10.0	4.5	Smooth, or a few v. small shallow teeth	Broadly round-oval	N	Green to purple	N	Dark	Large & like <i>S. undulata</i> but lobes distinctly decurrent down stem.	Montane springs & flushes
<i>S. umbrosa</i>	2.0	2.5	Distinctly toothed	Oval & pointed	N	Pale green to brownish	Y (red)	Dark		Mainly logs & acid rocks in woods
<i>S. irrigua</i>	2.5	4.0	Smooth, or a few v. small shallow teeth	Broadly oval with pointed tip	N	Pale green to brownish	Y (green, but can be sparse)	Pale or dark	Like <i>S. scandica</i> but generally larger, with more pointed tip to large lobe & base of small lobe bulging out more across stem.	Damp ground
<i>S. scandica</i>	0.8	2.5	Smooth to irregularly toothed	Broadly oval; small lobe has pointed tip	N	Green to brownish	Y (pale green)	Pale or dark	<i>S. curta</i> = very similar	Damp ground, esp. as a pioneer on disturbed or crumbling acid soil.
<i>S. degenii</i>	5.0	5.5	Wavy or shallowly toothed	Broadly round-oval; can have blunt points at tips	N	Mostly golden brown or dark brown	Y (brown or red)	Dark	Robust & rich brownish colour, with reddish or brown gemmae.	Scarce upland calcicole on rock & soil.
<i>S. aspera</i>	6.0	4.5	Many small teeth	Broadly round-oval; can have points at tips	N	Green to brownish-green	Y (green)	Dark	Branches arise from back of stem (same side as that with larger leaf lobe)	Basic rocks and soils
<i>S. aequiloba</i>	4.0	3.5	Smooth, or a few v. small shallow teeth	Broadly oval with pointed tip	Y	Green to brownish-green	Y (green)	Pale or dark	Front & back lobes commonly diverge away from each other.	Basic rocks
<i>S. subalpina</i>	3.0	3.5	Many tiny teeth	Broadly round-oval	Y	Brownish green	Y (green, pink or purple)	Red-brown or dark	Small lobes can bend away from large lobe.	Gritty/rocky acid ground
<i>S. compacta</i>	2.5	4.0	Smooth, or a few v. small shallow teeth	Broadly round-oval	Y	Mostly brownish-green to ochre or brown	Y (pale green but not prominent)	Red or brown		Rocks
<i>S. cuspiduligera</i>	1.5	2.5	Smooth	Broadly round-oval; can have point at tip	Y	Pale green (can be very pale)	Y (brown or red)	Pale or dark	Front & back lobes commonly diverge away from each other.	Damp basic rock soil, esp. in uplands
<i>Diplophyllum albicans</i>	6.0	3.5	Shallowly toothed	Narrow with bluntly pointed tips	N	Green to brown; can be very pale	Y (green to brown or red)	Pale or dark	Pale line along centre of each lobe (like a broad nerve).	Acid rocks, banks & logs
<i>Douinia ovata</i>	1.5	1.9	Mostly smooth	Narrow & pointed	N	Pale bluish-green	N	Pale		Acid rock and bark

## Commoner *Scapania* and similar species (small leaf lobe folded across upper surface of large leaf lobe)

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	Max. shoot length (cm)	Max. shoot width (mm)	Lobe margins	Lobe shape	Lobes more or less equal in size?	Colour	Gemmae	Stem	Other notes	Habitat
<i>S. gracilis</i>	5.0	4.0	Many small teeth	Broadly round-oval	N	Mostly olive or ochre green-brown	Y (pale green)	Pale or dark	Front & back lobes commonly diverge away from each other.	Rocks, trees, logs & humus/peat in W
<i>S. nemorea</i>	6.0	5.5	Many distinct, very neat, narrow teeth	Broadly round-oval	N	Mostly green	Y (dark brownish)	Dark		Rocks, logs, soil...
<i>S. undulata</i>	10.0	5.0	Smooth, or with v. small shallow teeth	Broadly round-oval	N	Green, brown, red or purple	Y (green or pink/red/purple)	Dark	Large size & wet habitats are good pointers to this species	Wet acid to basic habitats, esp. springs, flushes & watercourses
<i>S. uliginosa</i>	10.0	4.5	Smooth, or a few v. small shallow teeth	Broadly round-oval	N	Green to purple	N	Dark	Large & like <i>S. undulata</i> but lobes distinctly decurrent down stem.	Montane springs & flushes
<i>S. umbrosa</i>	2.0	2.5	Distinctly toothed	Oval & pointed	N	Pale green to brownish	Y (red)	Dark		Mainly logs & acid rocks in woods
<i>S. irrigua</i>	2.5	4.0	Smooth, or a few v. small shallow teeth	Broadly oval with pointed tip	N	Pale green to brownish	Y (green, but can be sparse)	Pale or dark	Like <i>S. scandica</i> but generally larger, with more pointed tip to large lobe & base of small lobe bulging out more across stem.	Damp ground
<i>S. scandica</i>	0.8	2.5	Smooth to irregularly toothed	Broadly oval; small lobe has pointed tip	N	Green to brownish	Y (pale green)	Pale or dark	<i>S. curta</i> = very similar	Damp ground, esp. as a pioneer on disturbed or crumbling acid soil.
<i>S. degenii</i>	5.0	5.5	Wavy or shallowly toothed	Broadly round-oval; can have blunt points at tips	N	Mostly golden brown or dark brown	Y (brown or red)	Dark	Robust & rich brownish colour, with reddish or brown gemmae.	Scarce upland calcicole on rock & soil.
<i>S. aspera</i>	6.0	4.5	Many small teeth	Broadly round-oval; can have points at tips	N	Green to brownish-green	Y (green)	Dark	Branches arise from back of stem (same side as that with larger leaf lobe)	Basic rocks and soils
<i>S. aequiloba</i>	4.0	3.5	Smooth, or a few v. small shallow teeth	Broadly oval with pointed tip	Y	Green to brownish-green	Y (green)	Pale or dark	Front & back lobes commonly diverge away from each other.	Basic rocks
<i>S. subalpina</i>	3.0	3.5	Many tiny teeth	Broadly round-oval	Y	Brownish green	Y (green, pink or purple)	Red-brown or dark	Small lobes can bend away from large lobe.	Gritty/rocky acid ground
<i>S. compacta</i>	2.5	4.0	Smooth, or a few v. small shallow teeth	Broadly round-oval	Y	Mostly brownish-green to ochre or brown	Y (pale green but not prominent)	Red or brown		Rocks
<i>S. cuspiduligera</i>	1.5	2.5	Smooth	Broadly round-oval; can have point at tip	Y	Pale green (can be very pale)	Y (brown or red)	Pale or dark	Front & back lobes commonly diverge away from each other.	Damp basic rock soil, esp. in uplands
<i>Diplophyllum albicans</i>	6.0	3.5	Shallowly toothed	Narrow with bluntly pointed tips	N	Green to brown; can be very pale	Y (green to brown or red)	Pale or dark	Pale line along centre of each lobe (like a broad nerve).	Acid rocks, banks & logs
<i>Douinia ovata</i>	1.5	1.9	Mostly smooth	Narrow & pointed	N	Pale bluish-green	N	Pale		Acid rock and bark

***Calypogeia* species (round to oval leaves overlapping in incubous manner) (M = microscopic features)**

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	Max. shoot length (cm)	Max. shoot width (mm)	Colour	Opacity	Leaf shape	Leaf tip	Underleaf cut to XX%	No. of tiers of cells between sinus & base of underleaf (M)	Underleaf decurrent? (M)	Underleaf lobes with additional side lobes? (M)	Habitat
<i>C. integristipula</i>	3.0	3.0	Dull pale to yellowish green; leaves have pale margins	Rather opaque	Mostly longer than wide	Broad & rounded	0-5%	8-14	N or slightly	N	Uncommon on acid rock & soil, esp. in woods
<i>C. neesiana</i>	2.5	1.8 (narrow)	Dull pale to yellowish green; leaves have pale margins	Rather opaque	About as wide as long	Mostly blunt & slightly narrowed; rarely with notch + 2 teeth	Mostly 0-10% but less commonly up to 33%	7-14	Y (distinctly)	N	Uncommon on acid soil & soil, esp. in open upland habitats
<i>C. muelleriana</i>	3.0	3.5	Greenish to brownish	Translucent	As long as wide to longer than wide	Broad & rounded	33%	4-6	Y (distinctly)	N	Very common on acid soil & rocky banks
<i>C. fissa</i>	8.0	3.5	Pale green to pale brownish green	Translucent	Mostly longer than wide	Narrow + small notch	50-66%	2-4	Y (distinctly)	Y or N	Very common on soil, rocks, logs, among mosses, ec.
<i>C. azurea</i>	5.0	3.5	Greenish; mostly bluish towards shoot tips	Rather translucent	About as wide as long	Mostly blunt & slightly narrowed	33-75%	3-6	Slightly	Y or N	Uncommon on upland acid soils
<i>C. sphagnicola</i>	3.0	1.5 (narrow)	Pale green to pale brownish green	Translucent	Mostly longer than wide	Narrow & blunt, with or without small notch	33-75%	2-5	N or slightly	Mostly N	Uncommon; mainly among <i>Sphagnum</i> in bogs
<i>C. suecica</i>	1.5	1.8 (narrow)	Pale green to pale brownish	Rather translucent	About as wide as long	Broad & rounded; rarely with slight broad notch	33-75%	2-6	Y (distinctly)	Y or N	Rare on logs in W Highand woods; also (v. rarre) on burned peat
<i>C. arguta</i>	2.0	2.5	Pale green to pale brownish green	Translucent	Longer than wide	2 distinct narrow, horn-like teeth	>75% down middle; each of 2 side lobes also deeply cut in 2	1-2	Y	Y	Common on acid soil and rock in woods, esp. in W

## Larger thalloid liverworts

This table includes data from Paton, J.A. (1999); *The liverwort flora of the British Isles*; Harley Books, Colchester, Essex, & Atherton, I., Bosanquet, S. & Lawley, M. (2010); *Mosses & Liverworts of Britain & Ireland: a field guide*; British Bryological Society.

	Max. length (cm)	Max. width (mm)	Colour	Opacity	Surface texture	Midrib well-defined?	Aromatic?	Notes	Habitat
<i>Pellia epiphylla</i>	5	12	Green. Can have red or purple tinge.	Rather translucent	Smooth	N	N	M & F on same plant. F covered by flap.	Acid-neutral wet/moist rocks, banks, etc
<i>Pellia neesiana</i>	5	12	Green. Commonly has red or purple tinge.	Rather translucent	Smooth	N	Y	M & F on different plants. F in untoothed tube.	Moist to wet acid ground
<i>Pellia endiviifolia</i>	5	10	Green. Can be dark.	Rather translucent	Smooth	N	N	<b>Frippy edges in autumn.</b> M & F on different plants. F in toothed tube.	Moist to wet basic rocks/banks
<i>Moerckia hibernica</i>	3.5	7	Yellowish-green	Rather translucent	Smooth	N	Y (fish)	<b>V. wavy-edged.</b> M & F incl. many small scale-like structures.	Moist basic gravelly/soily ground in uplands; also lowland fens & dune slacks
<i>Pallavicinia lyellii</i>	4	7	Yellow-green to dark green	<b>Very translucent</b>	Smooth	Y (thick)	Slightly	<b>Tranlucent wavy-edged thallus contrasts with thick, well-defined midrib.</b> Can have scales or perianths on midrib.	Scarce in Molinia mires in N & W and rock/soil in woods in SE
<i>Dumortiera hirsuta</i>	12	2	Dullish green	Rather translucent	Smooth	N	Y	<b>Scattered hairs on margin &amp; underside.</b> M & F stalked (F with bristles).	Rare on wet rocky banks in woods/ravines in W
<i>Blaisia pusilla</i>	2.5	5	Green + <b>tiny black dots</b>	Rather translucent	Smooth	N	N	Can have very wavy edges + lots of pale gemmae	Damp acid-neutral soil
<i>Conocephalum conicum</i>	12	20	Green	Opaque	<b>Shiny. Pale pores more obvious than intervening darker lines.</b>	N	Y	Can form very extensive patches.	Damp neutral-basic soil, banks, etc, esp. in woods
<i>Conocephalum salebrosum</i>	?	12	Green	Opaque	<b>Matt. Pale pores less obvious than intervening darker lines.</b>	N	Y		Damp neutral-basic soil, banks, etc, esp. in woods
<i>Preissia quadrata</i>	3	10	Dull green + <b>purplish edges &amp; undersides</b>	Opaque	Matt + tiny pale pores.	N	N	M & F umbrella-like & stalked. <b>Thallus hot-tasting.</b>	Basic rocks/banks, esp. in upland areas
<i>Reboulia hemisphaerica</i>	4	7	Pale or glaucous green + <b>purple/red edges</b>	Opaque	Glossy or matt + tiny pale pores.	N	Slightly	F stalked; M unstalked	Basic rocks/banks, esp. at low altitudes in W & S
<i>Targionia hypophylla</i>	2.5	5	green to blue-green + <b>purplish edges</b>	Opaque	Glossy. Dotted with small pale pores.	N	Y (strongly)	Rolls up & blackish when dry. Commonly with <b>blackish involucre at thallus tip</b> (around F).	Dry basic soil/rock, esp. in open at low altitude in W & S
<i>Lunularia cruciata</i>	4	12	Pale or bright green	Opaque	Glossy. Dotted with tiny pores.	N	N	<b>Crescent-shaped gemmae 'cups'</b>	Damp neutral-basic soil & rocks at low altitude
<i>Marchantia polymorpha</i>	15	20	Pale green to brown or purplish	Opaque	Dull. Dotted with tiny pale pores.	Y or N	N	M & F umbrella-like & stalked. Also has <b>round gemmae 'cups'</b> .	Damp to wet neutral to basic ground, esp. at low altitude