

Key to the African species of *Jungermannia*

Jiri Vána, translated and updated from Vána (1974, 1975) by Eva Leck and Nick Hodgetts.

Key to fertile plants

1a	Paroecious	2
1b	Dioecious	8
2a	Cells of perianth elongate, longer and narrower than the leaf cells; perigynium present	3
2b	Perianth cells of the same appearance as the leaf cells, almost isodiametric; perigynium either completely absent or very low (with only a single bract joined to perianth)	4
3a	Shoots decumbent; cells at leaf margin 30-40 x 25-30 μm ; perigynium low (only one pair of bracts joined to perianth). Réunion, Madagascar	<i>J. onraedtii</i>
3b	Shoots ascending; cells at leaf margin 20-32 μm ; perigynium high (2-3 pairs of bracts joined to perianth). North Africa	<i>J. obovata</i>
4a	Perianth fusiform, gradually tapering to acuminate apex; leaves ovate to broadly ovate, not circular; leaf cells without or almost without trigones	<i>J. pumila</i>
4b	Perianth ovate or cylindrical, abruptly narrowing to apex, which is often beaked; leaves circular, reniform or lingulate, rarely broadly elliptical; leaf cells usually with small or large trigones	5
5a	Perianth cylindrical, smooth, with beaked mouth; leaves obliquely inserted, lingulate. Macaronesia	<i>J. leiantha</i>
5b	Perianth ovate, shortly cylindrical or pear-shaped, plicate at least towards mouth; leaves circular or reniform, rarely broadly elliptical, never lingulate	6
6a	Rhizoids arising from leaf cells, as well as from the ventral side of the stem, clearly arranged in clusters, decurrent down stem	<i>J. abyssinica</i>
6b	Rhizoids coming only from ventral side of stem, not in clusters	7
7a	Perigynium present or low; leaves weakly plagiocylindroid, ovate, ovate-broadly elliptical or ovate-lingulate; cells at leaf margin 35-50 μm	<i>J. pocsii</i>
7b	Perigynium absent; leaves not plagiocylindroid, circular, broadly elliptical or broadly cordate; cells at leaf margin 15-30 μm	16
8a	Perianth cells similar to leaf cells, almost isodiametric; perigynium absent or very low (with only a single bract joined to perianth)	9
8b	Cells of perianth elongate, longer and narrower than the leaf cells; perigynium always present	13
9a	Perianth ovate to broadly ovate, gradually narrowed to apex, not beaked	<i>J. atrovirens</i>
9b	Perianth shortly cylindrical, ovate or pyriform, abruptly narrowing to apex, often with a beaked mouth	10
10a	Rhizoids in purple clusters, decurrent down ventral side of stem	<i>J. perloi</i>
10b	Rhizoids spreading \pm at right-angles with stem, not arranged in clusters	11
11a	Leaf cells without trigones; some leaves with a border of larger cells	<i>J. gracillima</i>
11b	Leaf cells with trigones; leaf border absent	12
12a	Mid-leaf cells 20-27 μm ; androecium intercalary; perianth ovate or pyriform, with a beaked mouth; perigynium absent. Kerguelen, Marion Island	<i>J. coniflora</i>
12b	Mid-leaf cells 30-45 μm ; androecium terminal, rarely intercalary; perianth shortly cylindrical, almost always without a beaked mouth; short perigynium present	<i>J. borgenii</i>
13a	Shoots decumbent, rhizoids spreading \pm at right-angles with stem	14
13b	Shoots ascending or erect, rhizoids decurrent down stem	15

14a	Leaves broadly elliptical to ovate, longer than broad	<i>J. renauldii</i>
14b	Leaves semi-circular, broader than long. North Africa, Macaronesia	<i>J. hyalina</i>
15a	Rhizoids in clusters, decurrent down stem; mid-leaf cells 28-35 µm, with rather large trigones; androecium formed by 4-6 bracts	<i>J. balfourii</i>
15b	Rhizoids not in clusters; mid-leaf cells 30-50 x 25-35 µm, with trigones very small or absent; androecium formed by 6-25 bracts	<i>J. dusenii</i>
16a	Shoots ascending to erect, with rhizoids decurrent down stem, but not arranged in clusters; flagelliform shoots absent	<i>J. sphaerocarpa</i>
16b	Shoots decumbent with rhizoids spreading ± at right-angles; flagelliform shoots often present	<i>J. mildbraedii</i>

Key to sterile plants

1a	Shoots decumbent; rhizoids spreading ± at right-angles with the stem	2
1b	Shoots ascending or erect; rhizoids decurrent down stem	11
2a	Leaves broadly elliptical, ovate, cordate or lingulate, always longer than broad	3
2b	Leaves circular, reniform to semicircular, only occasionally broadly elliptical	7
3a	Leaf cells with trigones very small or absent	4
3b	Leaf cells with large to nodose trigones	6
4a	Cells in mid-leaf 40-50 x 25-30 µm; rhizoids mostly purple to brownish. Réunion, Madagascar	<i>J. onraedtii</i>
4b	Cell in mid-leaf 25-35 x 20-30 µm; rhizoids mostly colourless	5
5a	Leaves mostly broadly elliptical, broadest in the middle. Central African mountains	<i>J. pumila</i>
5b	Leaves mostly cordate to broadly ovate, broadest at the base. North Africa, Macaronesia	<i>J. atrovirens</i>
6a	Leaves broadly elliptical to ovate	16
6b	Leaves lingulate. Macaronesia	<i>J. leiantha</i>
7a	Leaves semicircular, always broader than long. Macaronesia, North Africa	<i>J. hyalina</i>
7b	Leaves circular, only occasionally reniform to broadly elliptical	8
8a	Leaf cells always without trigones; some leaves with a border of larger cells. North Africa, Macaronesia	<i>J. gracillima</i>
8b	Leaf cells with small or large trigones; leaves unbordered	9
9a	Cells in mid-leaf 30-45 µm	<i>J. borgenii</i>
9b	Cells in mid-leaf 20-30 µm	10
10a	Plants green, often with a purple tinge. Kerguelen, Marion Island	<i>J. coniflora</i>
10b	Plants brownish, occasionally green-brown to green	<i>J. mildbraedii</i>
11a	Rhizoids on the ventral side of the stem in distinct clusters, decurrent down stem	12
11b	Rhizoids decurrent down stem but not in clusters	14
12a	Rhizoids also arising from leaf cells	<i>J. abyssinica</i>
12b	Rhizoids arising only from the ventral side of the stem	13
13a	Leaves almost circular; cells in mid-leaf 18-25 µm	<i>J. perloi</i>
13b	Leaves broadly elliptical to ovate; cells in mid-leaf 28-35 µm	<i>J. balfourii</i>
14a	Leaves broadly elliptical, ovate or lingulate; cuticle verruculose	15
14b	Leaves circular; cuticle mostly smooth	<i>J. sphaerocarpa</i>
15a	Leaves broadly elliptical, longly ovate or lingulate; leaf cells without trigones. Cameroon, Sao Tomé	<i>J. dusenii</i>
15b	Leaves broadly elliptical, broadly ovate or almost circular; leaf cells with small trigones. North Africa	<i>J. obovata</i>
16a	Cells at margin of leaf 22-30 µm, 25-33 µm in mid-leaf	<i>J. renauldii</i>
16b	Cells 35-50 µm at margin of leaf and in mid-leaf	<i>J. pocsii</i>

References

- Vána, J. 1974.** Studien über die Jungermannioideae (Hepaticae) 5. Jungermannia subg. Plectocolea und subg. Solenostoma: Afrikanische Arten. *Folia Geobot. Phytotax.* **9**: 277-312.
- Vána, J. 1975.** Studien über die Jungermannioideae (Hepaticae) 9. Jungermannia subg. Plectocolea und subg. Solenostoma in Hawaii; Ergänzungen und Synopsis der Gattung Jungermannia. *Folia Geobot. Phytotax.* **10**: 357-382. [Includes description of the African species *J. pocsii*.]

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