

Key to *Viscum* of Madagascar (Balle 1964)

1. Plants monoecious [with flowers of both sexes] (1)
2. Bibracteal cupules containing, in general, several flowers (very rarely one).
3. Internodes subcylindrical or flattened, never at the same time regularly obconic and deeply 6-furrowed; cymules often accompanied by female 3-flowered cymules, exceptionally cymules of other types (2).
4. Branches subcylindrical the greater part of their length, sometimes \pm flattened at the extremity; berries smooth or, rarely, with a few warts spaced and not prominent.
 5. Cymules mostly with male as central flower of triad (rarely with 1, 2, or 3 flowers of the same sex); Madagascar. 1. *V. tsiafajavonense*
 - 5'. Cymules predominantly 3-flowered unisexual; Comoros. 7. *V. triflorum*.
4. Branches flattened most of their length; wider nodes at the top than at the base; Berries with numerous and highly protruding warts.
 6. Plant blackening upon drying; Center. 2. *V. tsaratananense*.
 - 6'. Plant remaining yellow in dry state; West. 3. *V. ambongoense*.
- 3'. Internodes obconic with 6 strong ribs \pm winged; cymules of various types: uni-pluri-flowered, uni- and bisexual. 12. *V. hexapterum*.
- 2'. Flowers naked, lacking bibracteal cup, fasciculated at the nodes, those of the two sexes mingled; leaves generally oblanceolate, rarely oblong, elliptic or obovate. 21. *V. echinocarpum*.
- 1'. Plants dioecious.
 7. Male specimens (3).
 8. Leafy plants (4).
 9. Cymules with a bibracteal cupule.
 10. Cymules pluri-flowered
 11. Flowers 1.5-3.5 mm long.
 12. Branches subcylindrical most of their length: see the following species, better distinguished by their female reproductive organs and possibly by their habit (see Figures IX and X). 8. *V. cuneifolium* p. 73; 9. *V. radula* p. 77; 14. *V. multiflorum* p. 84; 15. *V. Perrieri* p. 85.
 - 12'. Branches flattened most of their length.
 13. Plants generally robust, large-leaved; blades (1.6) 5-9 (14) cm on (8) 30-40 (70) mm. 10. *V. lophiocladium*.
 - 13'. Plants small, leafless; leaf blades 0.6-1.6 cm by 2-3 mm. 19. *V. vohimavoense*.
 - 13''. Plants neither particularly robust nor slender; blades 1-2.5 (4) cm by 6-15 (25) mm. 9. *V. radula*.
 - 11'. Flowers of 4.5-6.5 mm long; lanceolate or narrowly elliptical leaves. 11. *V. longipetiolum*.
 - 10'. Cymules uni-flowered.
 14. Leaves with 1-7 sub-basal veins.
 15. Leaves not exceeding 1 cm in length and 6 mm in width; flowers about 2 mm long. 17. *V. Roncartii*.
 - 15'. Leaves 4-10.5 cm by 10-50 mm; flowers 3-4 mm long. 16. *V. multicoatum*.
 - 14'. Leaves with many fine parallel veins; lanceolate or narrowly elliptic, sometimes linear, often falciform. 23. *V. Decaryi*.
 - 9'. Flowers bare, lacking bibracteal cup, isolated or fasciculated; leaves of very diverse shapes.
 16. Branches subcylindrical over most of their length. 24. *V. myriophlebium*.

- 16'. Branches flattened over most of their length. 25. *V. apiculatum*.
- 8'. Plants aphyllous (5).
17. Cymules 1-3 (5) -flowered, provided with a bibracteal cup; branches flattened over the greater part of their length, sometimes bearing on the last nodes small deciduous leaves not exceeding 1.5 mm in length. 13. *V. Tieghemii*.
- 17'. Flowers naked, devoid of bibracteal, isolated or fasciculated cupules.
18. Branches subcylindrical for the greater part of their length. 26. *V. trachycarpum*.
- 18'. Branches flattened most of their length.
19. Plants neither pruinose [white or waxy bloom] nor pink glaucous.
20. Male flowers \pm 1.5 mm long, with 3 tepals; anthers with 3.5 locules; Center (north-east). 29. *V. Coursii*.
- 20'. Male flowers \pm 3.5 mm long, with (3) 4 tepals; anthers with 30-50 locules; Center (north-west and middle). 27. *V. rhipsaloides*.
- 20''. Male flowers with 4 tepals; unknown in the adult state; Middle and West Center. 28. *V. calcaratum*.
19. Plants pruinose, pink glaucous, with stiff fastigiated branches, totally devoid of leaves; Center (south). 30. *V. fastigiatum*.
- 7'. Specimens females (6).
22. Plants leafy (7).
23. Cymules with a bibracteal cup.
24. Cymules pluri-flowered.
25. Flowering and fruiting pedicel more than $\frac{1}{2}$ mm long.
26. Leaves thin, lanceolate or ovate, with acute or subacute apex. 5. *V. pentanthum*.
26. Leaves thick, elliptic or obovate, with obtuse or rounded apex. 4. *V. multipedunculatum*.
25. Flowers and berries sessile, or with pedicel not exceeding $\frac{1}{2}$ mm long.
27. Branches subcylindrical most of their length.
28. Berries smooth. 8. *V. cuneifolium*.
28. Berries warty. 9. *V. radula*.
27. Branches flattened most of their length.
29. Berries smooth. 10. *V. lophiocladium*.
29. Berries warty. 9. *V. radula*.
24. Cymules uni-flowered.
30. Leaves with 1-7 veins.
31. Branches subcylindrical for the greater part of their length.
- 32'. Leaves not exceeding 2 cm long and 12 mm wide.
33. Leaves thick, elliptic, more rarely ovate or obovate, 0.7-2 cm by 4-11 mm. 18. *V. itrafanaombense*.
33. Leaves thin, oblanceolate, 0.6-1.6 cm by 2-3 mm; plant small. 19. *V. vohimavoense*.
- 32'. Leaves over 2 cm by 12 mm.
34. Leaves thin, lanceolate or sub-rhombic or more rarely ovate or elliptic, with obtuse or acute apex and wedge-shaped or gradually narrowed base; blade 1-4.5 cm by 2.5-17 mm with 3-5 fine ribs; tepals 1-1.3 mm long. 15. *V. Perrieri*.
- 34'. Leaves with blade ovate or lanceolate-elliptic, rarely oblong or obovate, 4-10 cm by 10-50 mm; tepals 1.5-2 mm long. 16. *V. multicoatum*.
31. Branches flattened over most of their length (8). 20. *V. semialatum*.

- 30'. Leaves with numerous fine parallel veins, lanceolate or narrowly elliptic, sometimes sublinear, often falciform. 23. *V. Decaryi*.
23. Flowers naked, devoid of bibracteal cup, the young generally (9) scaly.
35. Leaves with 1-7 veins.
36. Flowers with a smooth receptacle, arranged in 3 at the end of a common peduncle; leaf oblanceolate, narrowly elliptic or oblong, more rarely obovate, 0.8-4 cm by 2-5 mm. 6. *V. Boivinii*.
- 36'. Flowers isolated, never grouped at the end of a common peduncle.
37. Receptacle smooth.
38. Leaves thin, lanceolate or sub-lozenge [thin rhombic], more rarely ovate or elliptic, with obtuse or acute apex and base cuneiform or gradually narrowed; blade 1-4.5 cm on 2.5-17 mm with 3-5 fine veins; berries about 6 X 5 mm. 15. *V. Perrieri*.
38. Leaves thick and brittle, broadly elliptical or ovate, with rounded, cuneate or obtuse apex and largely cuneiform or rounded base; blade from 1-6 cm by 8-45 mm, with 5-7 veins; berries of 8-10 mm by about 8. 14. *V. multiflorum*.
- 37'. Receptacle warty. 22. *V. ceibarum*.
- 35'. Leaves with numerous fine veins.
39. Branches subcylindrical most of their length. 24. *V. myriophlebium*.
39. Branches flattened most of their length. 25. *V. apiculatum*.
- 22'. Plants aphyllous (10).
40. Branches subcylindrical most of their length. 26. *V. trachycarpum*.
40. Branches flattened most of their length.
41. Plants not pruinose nor pink glaucous.
42. Berries warty, sessile or subsessile; flowers with 4 tepals; leaves small deciduous; Middle and West Center. 28. *V. calcaratum*.
- 42'. Berry smooth or rough (see also *V. calcaratum*).
43. Berries subspherical about 3 mm in diameter with a pedicel about 1 mm long and ½ in diameter; flowers with 4 (3) tepals; leaves small, deciduous; Center (Northwest and Middle). 27. *V. rhipsaloides*.
- 43'. Berries subspherical about 5 mm in diameter, quite sessile; flowers with 3 tepals; no leaves; Center (Northeast). 29. *V. Coursii*.
- 41'. Plants pruinose and pink glaucous with fastigiated stiff branches, totally devoid of leaves; flowers with 4 tepals; berry verrucose with pedicel 0.5-1.5 mm long. Center (South). 30. *V. fastigiatum*.

(1) With age, monoecious species may appear dioecious when all male flowers have fallen.

(2) See also *V. vohimavoense* with insufficiently known inflorescences.

(3) The male flowers of the following species are not yet known: 6. *V. Boivinii*, 22. *V. ceibarum*; 18. *V. itrafanaombense*; 4. *V. multipedunculatum*; 5. *V. pentanthum* and 20. *V. semialatum*.

(4) Carrying persistent leaves at all nodes.

(5) Occasionally, at the nodes of the extremities of the branches, reduced leaves are rapidly deciduous, usually not exceeding a few millimeters in length (up to 18 mm in *V. trachycarpum* fa. *Humbertii*).

(6) Female flowers of the following species are not yet known: 11. *V. longipetiolatum*; 17. *V. Roncartii* and 13. *V. Tieghemii*.

(7) Carrying persistent leaves on all nodes.

(8) See also, possibly, *V. vohimavoense* inflorescences still insufficiently known.

(9) The scale leaves being deciduous, some species where they have not yet been observed may bear them.

(10) Sometimes, at the nodes of the extremities of the branches, reduced leaves are rapidly deciduous, generally not exceeding a few millimeters in length (up to 18 in *V. trachycarpum* fa. *Humbertii*).