

## THE GENUS *RHYNCHARRHENA* (ASCLEPIADACEAE)

K. L. WILSON

(Accepted for publication 11.9.1979)

### ABSTRACT

Wilson, K. L. (National Herbarium of New South Wales, Royal Botanic Gardens, Sydney, Australia 2000) 1980. The genus *Rhyncharrhena* (Asclepiadaceae). *Telopea* 2 (1): 35–39.—The nomenclatural history and the relationships of *Rhyncharrhena* are discussed. The genus is regarded as an Australian endemic and the new combination *R. linearis* (Decne.) K. L. Wilson is made for the single species recognized.

The genus *Rhyncharrhena* F. Muell. was described in 1859 but has since been regarded by most authors as a synonym of *Pentatropis* Wight & Arn. or (erroneously) as a synonym of *Doemia* R. Br. (*Daemia* sphalm. auct.). Even Mueller himself apparently had doubts about its status: he (1882a) accepted the synonymizing of the genus under *Pentatropis* by Bentham (1869) and named a new species *Pentatropis kempeana* F. Muell., at the same time remarking that the species was 'with the other species of this genus readily transferable to *Daemia*.' Later that same year he (Mueller 1882b) transferred to *Doemia* the four species that he recognized. In this he was again following Bentham, who (in Bentham & Hooker 1876) commented that *Pentatropis* (including *Rhyncharrhena*) was scarcely distinct from *Doemia*. However, as pointed out by Brown (1907), *Doemia* R. Br. is a synonym of *Pergularia* L., which is a genus quite distinct from both *Pentatropis* and *Rhyncharrhena*.

The main distinguishing features of these three genera are set out in Table 1. The species of all three are herbaceous twining perennials.

Most Australian Flora-writers up to the present time have used *Pentatropis*, as did Bentham (1869) in *Flora Australiensis*, although some, e.g. Moore & Betche (1893), have used *Doemia*. The writing of the *Flora of Central Australia*, under the auspices of the Australian Systematic Botany Society, called for reconsideration of the status of *Rhyncharrhena* and the four species that have been recognized therein.

Such an examination had already been undertaken by the late Dr S. T. Blake in his studies of the family Asclepiadaceae. He concluded that *Rhyncharrhena* deserved recognition as a genus separate from *Pentatropis* and annotated material accordingly in various Australian herbaria, but unfortunately he never published on the subject.

Bullock (1955) gave a resumé of the nomenclatural history of *Pentatropis*, stating that he considered that genus to consist of two species, *P. capensis* (L. f.) Bullock (*P. microphylla* (Roxb.) Wight & Arn.) and *P. spiralis* (Forssk.) Decne., and that 'several Australian species and one from New Guinea . . . should be referred to another genus'. That other genus is *Rhyncharrhena*, as shown by his subsequent comments (Bullock 1965), when he selected *R. atropurpurea* as the lectotype for the genus.

Despite its lack of recognition in Australian Floras, *Rhyncharrhena* seems a well-characterized genus within the Asclepiadaceae, readily distinguished from the Afro-Asian *Pentatropis* by the linear-revolute leaves (as pointed out by Bentham, 1869) and by the form of the corona, as well as by the other characters set out in Table 1. It seems to be confined to Australia, despite Bullock's mention of a New Guinea species of *Rhyncharrhena*. I have seen no specimens of *Pentatropis novoguineensis* Valetton but, from the corona features mentioned in the brief diagnosis given by Valetton (1907), this species belongs in *Pentatropis* rather than in *Rhyncharrhena*, and so has not been considered further here.

As well as reviewing the generic status of *Rhyncharrhena*, it has been necessary to consider specific limits within the genus. Four supposed species that may be assigned to *Rhyncharrhena* have been described: *R. atropurpurea* F. Muell., *R. quinquepartita* F. Muell., *Pentatropis linearis* Decne., and *P. kempeana* F. Muell. These were based on specimens from Queensland, New South Wales, Western Australia, and the Northern Territory respectively, so there has been little attempt by regional Flora-writers to compare them, apart from Black (1957) who considered three of them and then commented that 'better acquaintance with these desert plants may prove that they are forms of a variable species'. Separation of the species of *Rhyncharrhena* has been on the basis of degree of division of the corolla, pubescence of the corolla lobes, follicle size, and slight differences in the corona. These characters (especially the degree of development of the inner corona appendages) do vary slightly in the specimens I have seen, but there is no clear or coherent pattern of variation. I consider this variation to be consistent with what could be expected in a single widespread but scattered species. Vegetatively, specimens from all parts of the range are very similar.

Accordingly, I am treating *Rhyncharrhena* as consisting of one rather variable species, *R. linearis*, which is spread throughout the drier regions of mainland Australia. The necessary specific combination is here made.

All specimens cited have been seen unless otherwise stated.

TABLE 1  
Distinguishing features of *Pentatropis*, *Pergularia* and *Rhyncharrhena*.

Feature	<i>Pentatropis</i>	<i>Pergularia</i>	<i>Rhyncharrhena</i>
Leaves ..	ovate with acute or obtuse apex (mucronate); base rounded or subcordate; somewhat fleshy; margins not revolute.	ovate with acute to acuminate apex; base cordate; not fleshy; margins not revolute.	linear to oblong, with acute apex; base long-tapering; not fleshy; margins usually revolute.
Stems ..	pubescent, becoming glabrous with age.	pubescent, prickly or hispid.	glabrous to minutely pubescent.
Unit inflorescences.	umbel-like; subsessile.	umbel-like to raceme-like; long-pedunculate.	umbel-like; short-pedunculate.
Corolla ..	rotate.	salver-form to funnel-form.	broad-campanulate to rotate.
Corolla-lobes ..	puberulous within.	densely pilose within.	glabrous to puberulous within.
Corona ..	single.	double.	double.
Follicle ..	fusiform; glabrous.	ovoid; echinate with long soft bristles.	fusiform; glabrous.
Distribution ..	Africa to Asia and New Guinea.	Africa to Indo-China.	Australia.
Illustrations ..	fig. 1a,b.	fig. 1c,d.	fig. 2a,b.

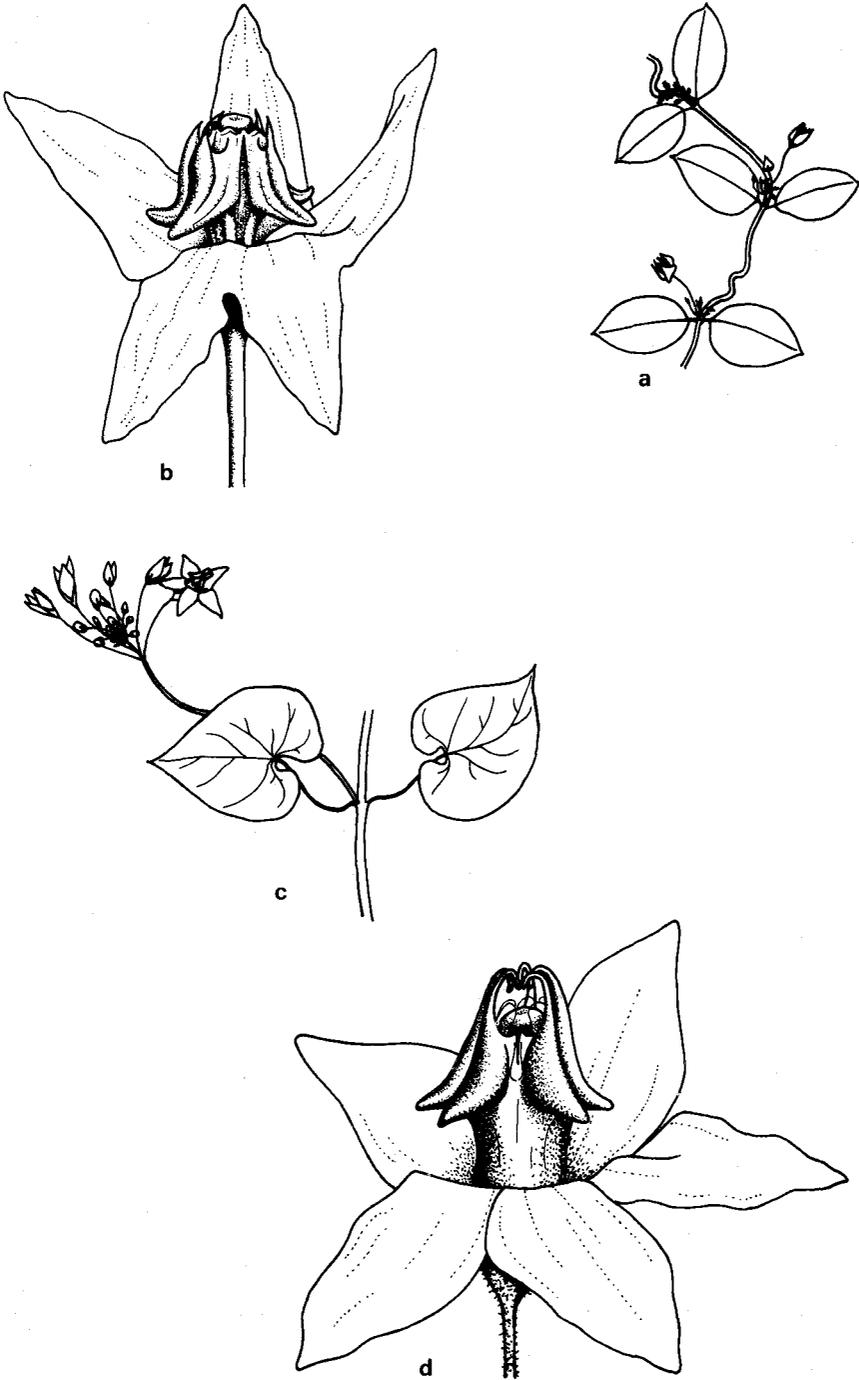


Fig. 1—*Pentatropis capensis* (L. f.) Bullock. (a) Portion of a branch  $\times \frac{3}{4}$ ; (b) Flower  $\times c. 8$ ; from *Wight 1545*. *Pergularia daemia* (Forssk.) Chiov. (c) Portion of a branch  $\times \frac{3}{4}$ ; (d) Flower  $\times c. 3$ ; from *Scheffler 21*.



Fig. 2—*Rhyncharrhena linearis* (Decne.) K. L. Wilson. (a) Portion of a branch  $\times \frac{1}{3}$ ; (b) Corona  $\times$  c. 8; from McKee 8674.

***Rhyncharrhena linearis* (Decne.) K. L. Wilson, comb. nov.**

**BASEONYM:** *Pentatropis linearis* Decne. in Candolle, Prodr. 8: 536 (1844).

**HOLOTYPE:** Swan River, Drummond 667 (G—not seen). **ISOTYPE:** MEL.

**SYNONYMY:** *R. atropurpurea* F. Muell., Fragm. 1: 128 (1859).—Holotype: 'in virgultis ad flumina Suttor et Dawson', Mueller 11.1856 (MEL 87148).

*R. quinquepartita* F. Muell., Fragm. 1: 128 (1859).—Holotype: 'in fruticatis [sic] deserti ad flumina Murray et Darling', Dallachy 10.1858 (MEL 87149).

*Pentatropis kempeana* F. Muell., S. Sci. Rec. 2: 172 (1882).—Holotype: 'near the Finke River,' Kempe 1882 (MEL 87146).

**SELECTED SPECIMENS SEEN:** QUEENSLAND: **Mitchell:** 16 miles [26 km] NW. of Longreach, Davidson 308, 12.1952 (BRI); Springvale, Clemens 5.1946 (BRI 216825); "Warrillilaba", Edwards (BRI 216826). **Warrego:** Charleville, Silcock S111, 4.1969 (BRI); 3 km NNW. of "Hillview", Purdie 6430, 5.1977 (BRI); "Gilruth Plains", Cunnamulla, McKee 10342, 4.1963 (NSW). **Maranoa:** "Bendena", W. of Bollon, Holland SWQS 1283, 7.1952 (CANB).

**NEW SOUTH WALES:** **North Western Plains:** Yathong Nature Reserve, Canning 3677, 11.1973 (NSW); Nyngan, Boorman NSW 143632, 8.1903 (NSW); Double Peak, Bäuerlen 3085, 2.1904 (BRI, NSW). **South Western Plains:** "Morton Court", 1 km W. of Euabalong West, Cunningham & Milthorpe 5373, 2.1978 (NSW). **North Far Western Plains:** "Ravendale", NE. of Broken Hill, Cunningham 733, 5.1973 (NSW). **South Far Western Plains:** c. 58 km NNW. of Balranald, Crisp 1731, 11.1975 (NSW).

VICTORIA: McCrackens Paddock, 2½ miles [4 km] NNE. of Red Cliffs, *Henshall* 5.1968 (MEL).

NORTHERN TERRITORY: 65 km SSW. of The Granites, *Latz* 704, 7.1970 (BRI, NT); 7 miles [11 km] S. Yuendumu, *Peterson NT* 36181, 4.1972 (NT); Haasts Bluff Reserve, *Cleland* 9.1957 (AD 97215152); Stuart Highway, 53 miles [85 km] N. of Alice Springs, *Nelson* 1671, 4.1968 (NT); Finke R., *Kempe* 1883 (MEL 87145); 2 miles [3 km] ENE. Ayers Rock, *Latz* 4121, 8.1973 (AD, NT); c. 20 km W. of Curtin Springs, *Munir* 5120, 8.1973 (AD).

SOUTH AUSTRALIA: Ernabella, *Tindale & Hackett* 6.1933 (BRI 216827); c. 3 km N. of Carl Dam tank, Commonwealth Hill Station, c. 120 km WNW. of homestead, *Lay* 530, 8.1971 (AD); Malbooma Outstation, c. 1 km S. of Lyons railway siding, *Weber* 2754, 9.1971 (AD); c. 25 km NE. of Maralinga, *Shearer* 10, 2.1972 (AD); Curriewerloo, *Anderson* (BRI 216829); Morroo Mine, c. 20 miles [30 km] W. of Lake Frome, *Greenwood NSW* 143629, 10.1915 (NSW).

WESTERN AUSTRALIA: 1.5 km N. of Sandy Point Outcamp, Dirk Hartog I, *George* 11540, 9.1972 (PERTH); "Mt Augustus" Station, *Wittwer* 1113, 8.1973 (PERTH); "Woolen", c. 345 km SE. of Carnarvon, *Ashby* 2565, 8.1968 (AD); 14 Mile Creek, Lake Violet, *Bennet* 7.1941 (BRI, PERTH); near White Cliffs HS., E. of Laverton, *George* 4533, 6.1963 (PERTH); near Elder Creek, 2 miles [3 km] W. of Warburton Mission, *George* 3926, 8.1962 (PERTH); 8 miles [13 km] SW. of Three Springs on Eneabba road, *Chapman* 10.1978 (PERTH); Coolgardie, *Gardner* 1746, 9.1922 (BRI, PERTH); 3-4 miles [5-6 km] above Northam, *Salasoo* 438, 10.1949 (NSW); Fraser Range, *Helms NSW* 143625, 10.1891 (NSW).

#### ACKNOWLEDGEMENTS

I am indebted to the Directors of the following herbaria for sending specimens on loan or for making facilities available to me whilst visiting their institutions: AD, BRI, CANB, MEL, NT, PERTH.

Dr Jocelyn Powell kindly made a preliminary examination of specimens in MEL. The figures were drawn by Mr David Mackay.

#### REFERENCES

- Bentham, G. (1869). 'Flora Australiensis.' Vol. 4. (Lovell Reeve & Co.: London).
- Bentham, G., & Hooker, J. D. (1876). 'Genera Plantarum.' Vol. 2, pt 1. (Lovell Reeve & Co.: London).
- Black, J. M. (1957). 'Flora of South Australia.' Second edition, pt 4. (Govt. Printer: Adelaide).
- Brown, N. E. (1907). The Genus *Pergularia*. *Kew Bull.*: 323-325.
- Bullock, A. A. (1955). Notes on African Asclepiadaceae VI. *Kew Bull.* 10: 265-292.
- Bullock, A. A. (1965). Nomenclatural Notes XVI. *Kew Bull.* 19: 199-204.
- Moore, C., & Betche, E. (1893). 'Handbook of the Flora of New South Wales.' (Govt. Printer: Sydney).
- Mueller, F. (1859). 'Fragmenta Phytographiae Australiae.' Vol. 1. (Govt. Printer: Melbourne).
- Mueller, F. (1882a). Definitions of some new Australian plants. *S. Sci. Rec.* 2: 171-172.
- Mueller, F. (1882b). 'Systematic Census of Australian Plants.' Vol. 1. (McCarron, Bird & Co.: Melbourne).
- Valeton, T. (1907). *Plantae novae papuanae*. *Bull. Dép. Agric. Indes Néerl.* 10. 72 pp.