Wurmbea calcicola (Colchicaceae), a new species from Cape Naturaliste, south western Australia

T.D. Macfarlane

Western Australian Herbarium, C/- Manjimup Research Centre, Department of Conservation and Land Management, Brain Street, Manjimup, Western Australia 6258

Abstract

Macfarlane, T.D. *Wurmbea calcicola* (Colchicaceae), a new species from Cape Naturaliste, south western Australia. Nuytsia 9 (2): 233-236 (1993). The new species is described and illustrated with a line drawing. It has a very restricted distribution, occurring only on limestone, and is officially listed as endangered.

Introduction

In 1986 during a survey of the flora of a national park, S.D. Hopper and A.P. Brown discovered a species of *Wurmbea* in fruit which did not match any known Western Australian species. Although tentatively identified with the central and South Australian *W. centralis*, flowering plants collected the following season showed the species to be new, so it is formally described here.

Wurmbea calcicola T. Macfarlane, sp. nov. (Figure 1)

Folia 3, infima 2 basalia conferta 10-18 mm lata, folia superiora parva approximata vel distantia. Flores 2-5, bisexuales. Tepala angusta, per quartem longitudinis connata, alba; nectaria 2, vix discreta, nec pegmatoidea, ad medium tepali attingentia, rosea. Stamina nectaria aequantia vel eis breviora. Antherae c. 1 mm longae purpureae. Styli discreti. Ovula 6-12 per loculum.

Typus: Cape Naturaliste area, Western Australia, 33° 32' S, 115° 01' E, 19 June 1987, *S.D. Hopper* 5871 (holo: PERTH; iso: CANB, PERTH). [Precise locality withheld.]

Illustration. Hopper *et al.* (1990), fig. 235, p. 81.

Plant 8-18 cm tall. *Leaves* 3, lower 2 basal, close together, upper one slightly to much higher, separated by an exposed internode (not enclosed by leaf sheaths); lowest leaf ascending, tapering, 10-18 mm wide, flat to somewhat conduplicate, not dilated basally, glossy; middle leaf similar, not or only slightly dilated basally; upper leaf erect, exceeding the flowers, dilated and concave in the lower half, the upper half narrow, tapering. *Inflorescence* open, the rachis zig-zag; growing well

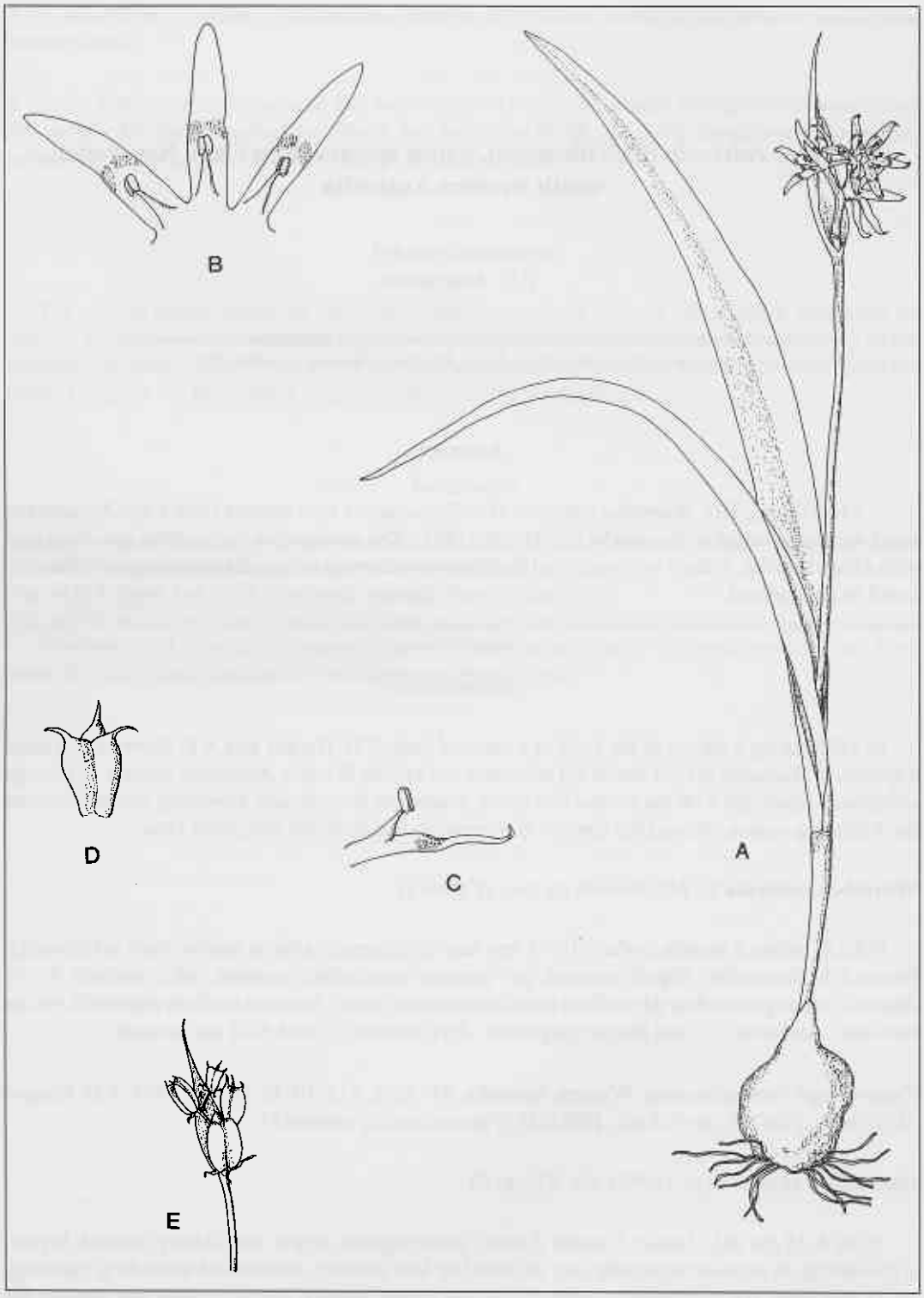

Figure 1. *Wurmbea calcicola.* A - habit (tunics of corm removed); B - perianth and stamens, in part, (nectaries shown by mottling); C - tepal and stamen, lateral view; D - gynoecium; E - immature capsules. Drawn by S.J. Patrick from the type.

beyond leaves, erect in flower, decumbent in fruit. *Flowers* 2-5, bisexual. *Perianth* 11-15.5 mm long; tepals 6, narrow, narrowly ovate to narrowly elliptical or almost linear, connate for 1/4 of their length into a well developed tube, white except for the nectary; nectaries 2 per tepal, scarcely separate, only narrowly separated in young flowers by a central longitudinal groove (sometimes appearing undivided in dried material), more widely separated by spreading of the groove in older flowers, at or slightly below the middle of the tepal, each rhomboidal in outline, together forming a curved slightly interrupted band, not shelf-like (i.e. not rising abruptly at lower margin with the remainder more or less flat and horizontal) but with a distinct thickened lower margin and indistinct upper margin, pink. *Stamens* about half as long as tepals, reaching to slightly below or to slightly above the nectaries; anthers c. 1 mm long, oblong, purple. *Styles* free, abruptly delimited from the ovary; ovules 6-12 per locule.

Other specimens examined. WESTERN AUSTRALIA: Cape Naturaliste area, *S.D. Hopper* 5509 (PERTH); *G.S. McCutcheon* 1816 (PERTH).

Distribution. Known only from a very restricted area in the Cape Naturaliste area, Leeuwin-Naturaliste National Park, Western Australia.

Habitat. Occurs in small colonies in brown loam in pockets on coastal limestone cliffs, in open or shaded places in low shrubland of *Melaleuca huegelii*, *M. acerosa*, *Spyridium globosum*, *Beyeria viscosa*, *Olearia axillaris*, *Guichenotia ledifolia*, *Templetonia retusa*, *Acacia* sp. and *Acanthocarpus preissii*.

Flowering and fruiting periods. Flowering June-July. Fruiting July-August.

Discussion. The new species resembles variants of *Wurmbea centralis*, indeed the fruiting plants which were first found were originally identified as that species. However *W. calcicola* differs in having white flowers (other than the nectaries) instead of pink, less shelf-like (i.e. without an abrupt rise at proximal margins) and less separated nectaries, and narrower tepals with a tube more than twice as long. Some variants of *W. centralis* differ further in one or more of the following features: more flowers per inflorescence; the leaves all separated by exposed internodes (see above) and different from one another in shape; styles basally connate.

The key to the species of *Wurmbea* in Flora of Australia (Macfarlane 1987) can accommodate *W. calcicola* by the following changes.

Modified couplet:

20 Nectaries usually above middle of tepals ..... *W. graniticola*

20: Nectaries at or below middle of tepals

New couplet to follow the first lead of couplet 26 (from which *W. biglandulosa* should be deleted):

26a Lowest leaf usually 1-2.5 mm wide; perianth tube c. 1/10 of perianth length ..... *W. biglandulosa*

26a: Lowest leaf 10-18 mm wide; perianth tube c. 1/4 of perianth length ..... *W. calcicola*

The new species conforms well to the current generic descriptions (Macfarlane 1987, Nordenstam 1986) in all respects except ovule number, for which it has an unusually low number. Australian *Wurmbea* species have previously been recorded as having 10-25 ovules per locule (Macfarlane 1987). Apparently the situation is similar in African species, where one species has been recorded as having an exceptionally low number, 4-6 ovules per locule (Sterling 1973).

Wurmbea pygmaea (*Hopper* 5872) grows nearby in similar soil conditions to *W. calcicola*. *W. monantha*, another coastal, limestone inhabiting species could also be expected, although it has not so far been collected at the type locality of *W. calcicola*. Two other species often found on limestone, although occurring several hundred kilometres further north, are *W. inframediana* and *W. odorata*.

Conservation status. Wurmbea calcicola was declared rare in September 1987 as *Wurmbea* sp., Cape Naturaliste, *S.D. Hopper* 5871, and currently has the conservation code R (Declared Rare Flora, Atkins 1992). No further populations have been discovered since then. All the known plants are in the Leeuwin-Naturaliste National Park. Consequently, although its restricted distribution in an area subject to human recreational usage places the species at risk, it has legal and management protection.

Etymology. The epithet is from the Latin *calcium*, calcium or lime and *-cola*, dweller referring to its growing over limestone.

Acknowledgements

I am grateful to S.D. Hopper for bringing the species to my attention, for taking trouble to provide fresh plants for study and for making the illustration available. Knowing that the species was rare from the results of the regional survey which led to its discovery, he also ensured that it was promptly declared rare. S.J. Patrick is thanked for her skilful drawing. Paul G. Wilson kindly translated the description into Latin.

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