

## ***Lomandra nutans* (Xanthorrhoeaceae or Dasypogonaceae), a new species from the Stirling Range area, Western Australia**

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### **Abstract**

Macfarlane, T. D. *Lomandra nutans* (Xanthorrhoeaceae or Dasypogonaceae), a new species from the Stirling Range area, Western Australia. Nuytsia 5(1): 171-175 (1984). *Lomandra nutans* is described and illustrated. A map of its distribution on the plain south and south-east of the Stirling Range is provided. The species is unique in the genus in possessing a nutant panicle but is assigned to Section *Lomandra*, Group A of Stevens.

### **Introduction**

The species described here has been known for some years only from male plants. The recent acquisition of good material of both sexes and of field observations now allow it to be fully described.

***Lomandra nutans*** T. D. Macfarlane, sp. nov. (Figures 1, 3-4)

Folia 9-30 cm x 0.5-1 mm, semi-teretia vel superne parum V-formia; supra papillosa ad puberula, subtus laevia, papillosa vel puberula. Folia basi margine lacerata, pallida. Paniculae masculae et femineae parum vel omnino nutantes; rami pro parte maxima verticillati, simplices. Pedicelli alterni crassi recti erecto-patentes, omnes bractea et bracteola minore laterali suffult; bractea cum bracteola pedicellum semicingentes. Flores masculi globosi, 2-3 mm longi. Perianthium segmentis exterioribus minoribus membranaceis rubris, segmentis exterioribus carnosis cremeis. Stamina plus minusve aequalia; filamenta pro parte maxima libera, prope basin segmenti inserta. Flores feminei ellipsoidei, 3.2-4 mm longi. Perianthium segmentis exterioribus minoribus tenacibus, viridi- vel rubri-cremeis, segmentis intimis carnosis mollibus cremeis rubro suffusis. Stylus brevissimus.

*Typus*: 22 km E of Ellen Peak, Stirling Range (Bremer Bay 1:250 000 sheet), 8 October 1982, K. Newbey 9672 (holo: PERTH (male); iso: CANB (male, female), K (male, female), NSW (male, female), NY (male, female), PERTH (female). [This locality is c. 300 m along Boundary Road from Chillinup Road (see Figure 5), Newbey pers. comm.]

*Perennial* tussock-forming plants growing from a small irregular rhizome. *Stems* several, ascending, up to 10 cm long, 3-6 mm diameter, branching several times to form compact tufts of several leaf fascicles. *Leaves* 9-30 cm x 0.5-1 mm, lamina



Figure 1. Habit of *Lomandra nutans*. Type locality. Figure 2. Habitat of *Lomandra nutans* at type locality. Open mallee of *Eucalyptus decipiens* and *E. tetragona*. *Lomandra* plants occur in the low shrub areas between the mallees. Figure 3. Male inflorescence of *Lomandra nutans*. Type collection. Figure 4. Part of female inflorescence of *Lomandra nutans*. Type collection. Photographs by K. R. Newbey.

bright green beneath, somewhat glaucous above, semi-terete or upper surface shallowly V-shaped, upper surface minutely papillose to puberulent, lower surface smooth, minutely papillose or puberulent; leaf base-margins shredding early into pale, usually fine, fibres; leaf apex blunt to acute, rather thin and often eroding irregularly. Male inflorescence a panicle  $1/3-1/2$  as long as leaves, peduncle slightly bent to completely recurved so that panicle is slightly inclined from the vertical to completely pendent, the bend sharp or smoothly curved, usually occurring in upper part of peduncle but sometimes within the panicle and involving the main axis, branches and some pedicels. Peduncle smooth to papillose, slightly to markedly flattened, with up to 10 cm exposed above leaf bases. Panicle up to 3 cm long, compact; branches usually whorled, 2-4 per node, sometimes solitary (especially at proximal

node) or several nodes crowded so that several branches superficially appear to be whorled at one node; each branch subtended by a conspicuous triangular to narrowly triangular bract, 2.5-6 mm long at proximal nodes; branches bearing alternately arranged pedicels, the branches themselves straight or rather zig-zag and then superficially appearing to be dichotomously branched, pedicels in distal part of panicle inserted directly on main axis. *Pedicels* stout, stiff, erect, 0.5-3.9 mm long, each subtended by a bract and bracteole, *bract* triangular to narrowly triangular, 0.6-1.5 mm long, shorter than to about as long as pedicel, *bracteole* shorter and narrower, lateral to the bract and partly overlapping it, bract and bracteole together only half encircling the pedicel at its base. *Female inflorescence* similarly a panicle with partly or fully recurved peduncle, shorter and with fewer flowers than the male, often inconspicuous among the leaf bases. *Flowers* conspicuously articulated at base, not scented. *Male flowers* globular, 2-3 mm long; *perianth segments* free, incurved at anthesis; *outer segments* dull purplish red, elliptical to oblong with acute to rounded apex, 1/2-2/3 as long as inner segments, narrower, membranous; *inner segments* cream sometimes with a central band of mottled red on exterior, cream with purple at base on interior, broadly ovate to orbicular, fleshy; *stamens* all nearly equal in length, with each filament free from perianth for most of its length. *Female flowers* ellipsoidal, 3.2-4 mm long; *perianth segments* free, their apices slightly parted at anthesis; *outer segments* green below, dark reddish-green above, ovate with obtuse apex, c. 3/4 as long as inner segments and of similar thickness but tougher; exterior of *inner segments* pale greenish cream tinged with red especially in middle and toward apex, interior cream with purple at base, rather fleshy but soft; *ovary* 3-locular with 1 ovule per locule; *stigmas* borne on a very short style. Only immature *capsules* seen, flattened-spherical, smooth, purplish green with pale yellow vertical stripe along middle of valves.

*Other specimens examined.* WESTERN AUSTRALIA: 1.7 km along Kuch Rd from Gnowellen Rd (9 km direct NE of Ellen Peak, Stirling Range), 34°19'S, 118°25'E, T. D. Macfarlane 1080 (NSW, PERTH); 2 km inside southern boundary of Stirling Range National Park along Red Gum Pass Road, 34°25'S, 117°44'E, T. D. Macfarlane 1160 (PERTH); 1 km N of southern boundary of Stirling Range National Park along Chester Pass Road, 34°28'S, 118°04'E, T. D. Macfarlane 1162 (PERTH); Type locality, T. D. Macfarlane 1167 (CANB, MEL NSW, PERTH); South Stirling Nature Reserve, 34°35'S, 118°8'30"E, Nov. 1982, A. V. Milewski (PERTH, 2 specimens); 9 km ESE of Ellen Peak, K. Newbey 4337 (PERTH); near type locality, K. Newbey 9673 (PERTH); E of Ellen Peak near Chililup [actually just outside E boundary of Stirling Range National Park E of Ellen Peak—Wittwer, pers. comm.], E. Wittwer 2094 (PERTH).

*Flowering period.* September to mid-December.

*Habitat.* (Figure 2) *Lomandra nutans* grows on pale grey to white loamy sand, sometimes containing gravel, and on reddish clayey sand, in well-drained sites on almost flat to undulating terrain in mallee of *Eucalyptus falcata* or open mallee of *E. decipiens* and *E. tetragona*. The new *Lomandra* has been found almost exclusively at sites where the tall shrubs (taller than 1 metre) have a canopy cover (sensu Muir 1977) of less than 20% or where low shrubs (shorter than 1 metre) have a canopy cover of less than 35%. It usually grows in the open intermixed with sedges, rarely actually under shrubs or mallees. Plants of *L. nutans* recover well after fire and their density of flowering seems to be improved subsequently. The foregoing observations are based mainly on information provided by K. R. Newbey (pers. comm.) and Newbey (1979).

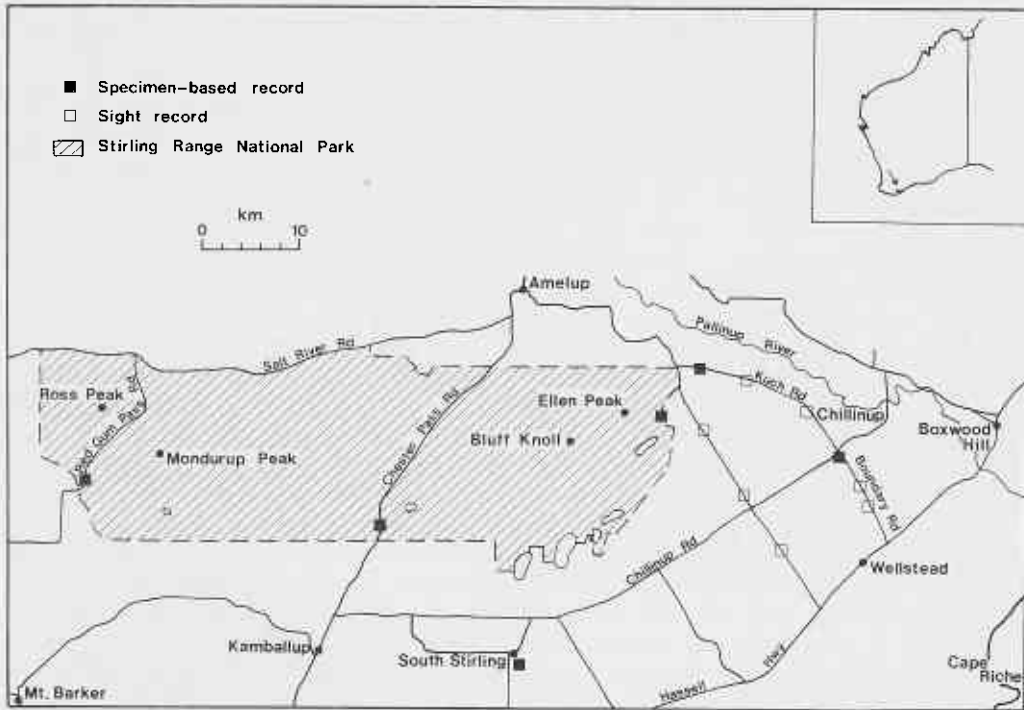


Figure 5. Distribution of *Lomandra nutans*. Sight records supplied by K. R. Newbey (pers. comm.).

*Distribution.* (Figure 5) The plain south and east of the Stirling Range, north-west of Hassell Highway (Albany-Jerramungup road) and south of the Pallinup River.

*Conservation status.* *Lomandra nutans* is a species of very restricted distribution, coded 2RC (according to the criteria of Leigh, Briggs & Hartley 1981) with a geographic range of only 80 km. Two collections have been made in the Stirling Range National Park, another from close to the eastern boundary of the Park, and two from the South Stirling Nature Reserve. Thus, although the species is not highly endangered, its long-term survival in the agricultural area outside of the reserves mentioned is doubtful owing to its dependence there on the maintenance of road-verge habitats.

*Discussion.* *Lomandra nutans* is unique in the genus in having nutant panicles. It belongs to Section *Lomandra*, Group A of Stevens (1978) in that the inflorescence is paniculate and each flower is subtended by a bract and a much narrower, laterally placed bracteole which together do not encircle or ensheath the flower or pedicel.

Although no species can be confused with *Lomandra nutans*, the following seem to be its closest relatives: *L. pauciflora* (R. Br.) Ewart and *L. brittanii* Choo in Western Australia and the *L. filiformis* complex (Lee 1961) in eastern Australia. The three western species share globular male flowers with fleshy inner perianth segments. In addition, *L. nutans* shares papillose leaf surfaces with *L. brittanii* and elongated stems with *L. pauciflora*. However, *L. brittanii* is a much smaller plant with a usually

spicate inflorescence and *L. pauciflora* has much longer, decumbent stems, very different leaves (softer and usually shorter), a racemose inflorescence and yellow flowers.

Members of the *Lomandra filiformis* complex resemble *L. nutans* in flower form and arrangement but their inflorescences appear different because the branches are stout compared to the slender, usually recurved pedicels. In contrast, *L. nutans* has short erect pedicels similar to the branches in thickness and somewhat divergent, which lend the panicle the superficial appearance of being dichotomously branched. Taxa in the *L. filiformis* complex have short stems and elongated subterranean rhizomes whereas in *L. nutans* the rhizome is compact and the stems are elongated.

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