

LAMIACEAE

RABDOSIELLA LEEMANNII, A NEW SPECIES FROM THE LIMPOPO PROVINCE OF SOUTH AFRICA

Rabdosiella leemannii *N.Hahn*, sp. nov., affinis *R. calycinae* sed ab illa habito perenne fruticoso, foliis minoribus, angustioribusque, ellipticis vel trullatis, (57–)59–66(–70) × (25–)27–36(–38) mm, perianthio maiore (6.9–)7.0–9.4(–9.7) mm, tubo (3.6–)3.7–4.9(–5.2) × 2.9–3.1 mm mediante differt.

TYPE.—Limpopo, 2329 (Polokwane) [Pietersburg]: Soutpansberg, Lejuma, 23°01'22.584"S, 29°25'57.180"E, 1 638 m, (–AB), 13-04-2005, in flower, *N. Hahn 2086* (ZPB, holo.; PRE!, PRU!, iso.).

Phanerophyte, single or multi-stemmed shrub up to 2 m tall, usually not exceeding 1.5 m. *Seedlings* with distinctly succulent roots. *Main stem* up to 50 mm diam., showing multiple year rings, not ribbed in fresh mate-

rial; young stems pubescent, pale brown. *Bark* grey to grey-brown, glabrous. *Leaves* decussate, rarely ternate; lamina shortly petiolate; petiole (1.1–)1.9–3.4(–4.0) mm; blade ovate to elliptic to trullate, size of mature leaf, (57–)59–66(–70) × (25–)27–36(–38) mm, upper surface pale green, strigose, lower surface grey, tomentose; main veins 5–8, venation reticulate; margins crenate to dentate, teeth 10–15 per side. *Inflorescence* a terminal thyrses, 50–100 mm long. *Flowers* in pedunculate dichasia, 20 mm long; peduncles 2–4 mm; pedicel (3.6–)3.7–4.9(–5.2) mm long. *Calyx* equally 5-toothed, tubular, 2.2–4.9(–5.2) mm long in flowering stage extending to 1 × 6 mm in fruiting stage, green, glandular hairy, lobes 5, (1.1–)1.2–1.4 mm long, tinged purple at apex, at fruiting (4.0–)4.2–5.0(–5.1) mm long. *Corolla* (6.9–)7.0–9.4(–9.7) mm long; tube (3.6–)3.7–4.9(–5.2) × 2.9–3.1 mm,



FIGURE 13.—*Radosiella leemannii*. A, flowering branch, $\times 1$; B, infructescence, $\times 1$; C, persistent calyx encasing nutlet, $\times 5$; D, nutlet, $\times 15$; E, habitat, much reduced. Artist: G. Condy.

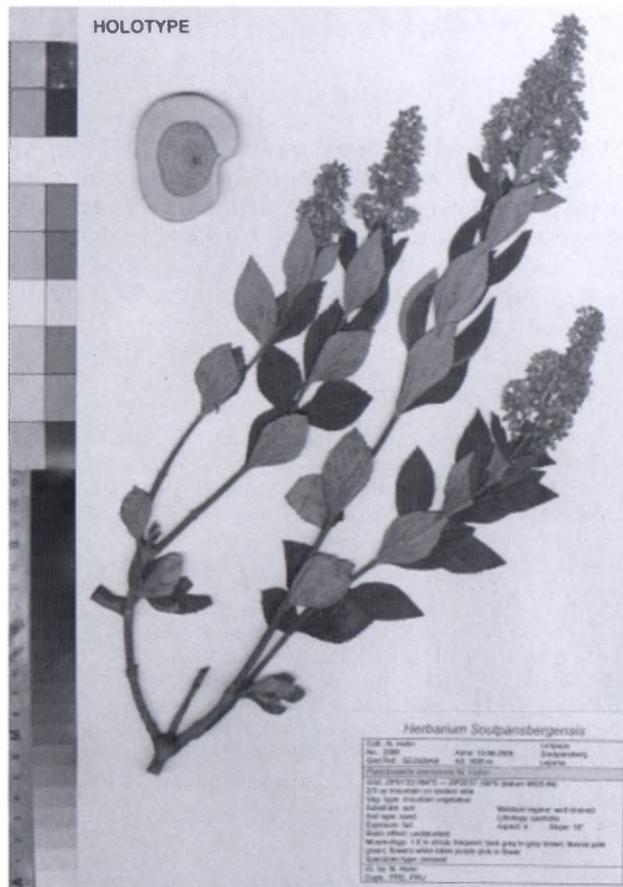


FIGURE 14.—Holotype of *Rabdosiella leemannii*.

white-hairy; upper lobe (1.3–)1.4–1.9(–2.0) mm, inside tinged purple-pink, outside densely glandular hairy; lower lobe navicular, (3.2–)3.1–4.3(–4.5) mm, white on outside, tinged purple-pink on inside. *Stamens* antrorse, 5.4–7.5 mm long, attached to tube. *Style* antrorse, shorter than stamens, 5.4–7.2 mm long, bifid. *Fruit* a small, brown, rounded nutlet, 0.9 × 0.7 mm. Figures 13, 14.

The genus *Rabdosiella* Codd was described in 1984 with two species, the widespread grassland suffrutex, *R. calycina* (Benth.) Codd from South Africa, and *R. ternifolia* (D. Don) Codd from India, Burma, Thailand and China. *Rabdosiella leemannii* represents the third South African species, and clearly belongs to *Rabdosiella*. *Rabdosiella* can be distinguished from *Plectranthus* L. Hér. by its woody growth, ternate leaves and leaf-like bracts, as well as its distinctly 10-nerved calyx (bearing subequal teeth) becoming erect with maturity. Although the delimitation of the genus *Plectranthus* is not clear, it is at present best to uphold *Rabdosiella* as a separate genus until a thorough multidisciplinary investigation of *Plectranthus* and its relatives can be undertaken.

Rabdosiella leemannii is a distinct species and differs from *R. calycina* in several features such as its habitat, habit and the vegetative and floral features (Table 1). It is distinguished by its erect, shrubby nature (Figure 15), woody stems, smaller leaves and flowers. The leaves of *R. leemannii* are only rarely ternate, smaller, narrower (ovate to elliptic or trullate), never becoming broadly ovate as those found in *R. calycina*. The leaves of *R.*

calycina are often ternate. The inflorescences and flowers are also considerably smaller than those of *R. calycina*. *R. leemannii* is endemic to the Soutpansberg and Blouberg Afromontane mist-belt open bushland (Figure 16) above 1 400 m, where it forms perennial shrubs with woody stems reaching 50 mm in diameter at the base and displaying up to 10 clearly defined year rings. The habitat consists of Soutpansberg Summit Sourveld and a mosaic of the latter and Soutpansberg Mountain Bushveld (Mucina *et al.* 2005). Hahn (2002) has pointed out the importance of mist precipitation on the endemic flora of the Soutpansberg. In times of drought, mist precipitation is the only source of moisture available in this habitat. However, total precipitation can almost be doubled if mist precipitation is added to rainfall. On herbarium sheets its habitat is occasionally stated as grassland—this is an error as the ‘grassy component’ is in fact the sedge, *Coleochloa setifera* (Ridl.) Gilly. The habitat of *R. leemannii* is quite sheltered from fire with a maximum period of five years. In the absence of fire, *R. leemannii* forms single-stemmed shrubs, however, plants exposed to fire do resprout forming multi-stemmed shrubs. *Rabdosiella calycina* is clearly a herbaceous suffrutex, annually burnt. It is commonly associated with grassland of the eastern escarpment of South Africa occurring as far north as the Soutpansberg.

Both *Rabdosiella leemannii* and *R. calycina* have been cultivated at the Kirstenbosch National Botanical Gardens (E.J. van Jaarsveld pers. comm.). In spite of being cultivated under similar conditions, each retained their characteristic growth form. Seed of *R. leemannii* germinates readily within three weeks, immediately forming distinctly fleshy roots.

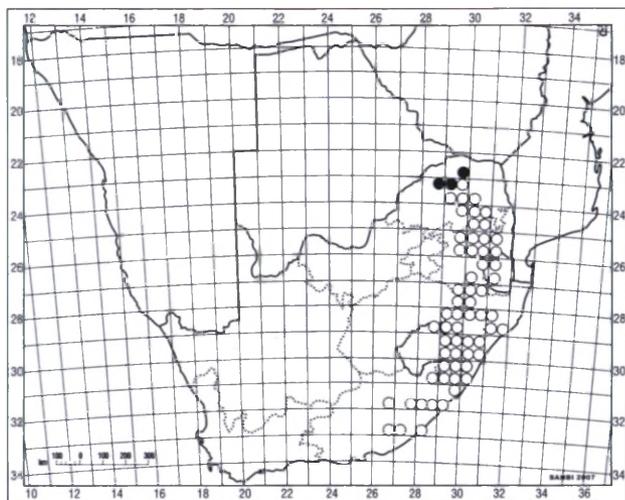


FIGURE 15.—Plant from which type specimens were collected.

TABLE 1.—Comparison of selected characters of *Rabdosiella leemannii* and *R. calycina*

	<i>R. leemannii</i>	<i>R. calycina</i>
Lithology	quartzite	usually basalt or dolerite
Soil	sand	clay
Habitat	open mountain mist-belt among rocks	grassland
Growth form	phanerophyte	hemicytophyte or suffrutex
Above-ground stems	perennial	annul
Stems	branching	not branching
Leaf		
shape	ovate-elliptic to trilobate	ovate to broadly ovate
colour	grey green	green
Inflorescence length	50–100 mm	100–300 mm

The species is named after the great uncle of the first author, Albert Conrad Leemann (misspelt Leeman in Gunn & Codd 1981), who in 1933 was the first to collect a specimen while on an excursion to the Blouberg. His findings were published in *Vegetationsbilder* (Leemann 1935). In this article he made mention of the wholesale destruction of the environment at the foot of the mountain. He stressed the importance of conserving mountains such as the Blouberg which act as refugia of undisturbed

FIGURE 16.—Distribution of *Rabdosiella leemannii*, ●, and *R. calycina*, ○, in South Africa.

habitat. These refugia are of immense importance to our understanding of vegetation changes caused by man.

ACKNOWLEDGEMENTS

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Other specimens examined

LIMPOPO.—2229 (Waterpoort): Soutpansberg, Farm Wellington, northern side of farm, 1 400 m, (–DC), 25-03-1994, *Rossouw 208* (PRE); northern slopes of Hanglip near summit, (–DD), 02-04-1957, *Meeuse 10164* (PRE); Farm Buckworth (Dr Bird's farm), southern slope north of Bird's cottage near summit, (–DD), 12-05-1957, *Meeuse 10243* (PRE). 2328 (Baltimore): Blouberg, mountain grassland, aspect south, shrub, 23°04'37.922"S, 28°59'10.506"E, 1 990 m, (–BB), 11-05-1999, *Hahn 1574* (ZPB); in kloof leading to beacon, 5 600 ft [1 847 m], 29-04-1954, (–BB), *Codd 8759* (PRE); alt. 6 000 ft [1 968 m], (–BB), 10-03-1933, *Leemann 118* (PRE); kloof near top, 4 ft [1.3 m], (–BB), 26-06-1961, *Strey & Schlieben 8517* (PRE); kloof below beacon, (–BB), 26-4-1961, *Van der Schyff 5416* (PRE). 2329 (Polokwane): Soutpansberg, Farm Lejuma, Mt Lejuma, 23°01'22.584"S, 29°25'57.180"E, 1 636 m, 22-05-1982, (–AB), *Venter 7855* (PRE); Lejuma south of Mt Lejuma, (–AB), 23-05-1982, *Venter 8754* (PRE).

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