

## Two new *Plectranthus* species (Lamiaceae) and new distribution records from the Pondoland Centre of Plant Endemism, South Africa

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### ABSTRACT

Two newly discovered species of *Plectranthus* L'Hér. are described from the Pondoland Centre of Plant Endemism, on the eastern seaboard of South Africa. *P. brevimentum* and *P. stylesii* are exceedingly narrow endemics known only from their type localities. The known distribution ranges of two other narrow endemics of the region, *P. ernstii* and *P. praetermissus*, are expanded with new distribution records.

### INTRODUCTION

The genus *Plectranthus* L'Hér. shows high levels of diversity along the eastern seaboard of South Africa. Speciation in the Pondoland Centre of plant diversity is especially pronounced and is probably the product of stable forest refugia which existed in the deep gorges that slice through the weather-resistant sandstones of the Msikaba Group [South African Committee for Stratigraphy (SACS) 1980]. Their stability is probably mediated by the maritime climate. These gorges are flanked by seasonal sourveld grasslands of high productivity (and the correlated incidence of seasonal fire). Part of the diversity of herbaceous forest species is driven by the truncation of forest habitat and ensuing allopatric speciation which contributes to one of the most important centres of plant diversity and endemism in Africa (Davis *et al.* 1994). The inability of many *Plectranthus* species to escape these enclaves is the product of desiccation intolerance, susceptibility to fire and the lack of long distance dispersal. This suite of limitations makes the subgenus *Plectranthus* a prime candidate for allopatric speciation and consequently the concentration of neo-endemic species in the Pondoland Centre is not surprising (Van Jaarsveld & Edwards 1991, 1997; Van Wyk & Smith 2001).

***Plectranthus brevimentum*** T.J. Edwards, sp. nov., accedit *Plectrantho hilliardiae* labio corollae brevi postico et labio corollae antico obrullato, tubo corollae moderate elongato, compresso lateraliter. Differt glandibus plurimis multicellulosis rubropunctatis in partibus omnibus, tubo corollae multo brevioris, floribus bicoloribus, albis et magenteis.

**TYPE.**—Eastern Cape, 3129 (Port St Johns): Lupatana River Gorge, ± 1.5 km from mouth, ex hort. Edwards, Styles, Crouch, Belstedt & Potgieter 3210 (NU holo.; PRE, iso.).

Semi-succulent, erect, decumbent or scandent herb, 0.1–0.5 m tall. *Stems* purple to dark green, sparsely branched, densely strigose; trichomes purple; capitate glands red or colourless, sessile. *Leaves* semisucculent, obovate, 30–65 × 10–30 mm, dark green; midrib densely strigose, rubro-punctate, colourless glands near midrib and margins; apex round to notched; base cuneate; margin

rubro-strigose, serrate in upper two thirds, teeth in 6 or 7 pairs; petiole purple, 8–12 mm long. *Synflorescence* terminal, 100–170 mm long, paniculate to secund; cymes 3-flowered; verticels often alternately 3- and 6-flowered; rhachis rubro-strigose; lower bracts persistent, elliptical, 8–12 × 4–6 mm, upper bracts lanceolate, 3–4 × 0.5–1.0 mm, rubro-punctate above, rubro-strigose and rubro-punctate below; margins entire, rubro-ciliate; pedicels purple, 4–5 mm long. *Calyx* green to purple, sparsely rubro-strigose and rubro-punctate; upper sepal ovate, 4.0–4.5 × 2.5–3.0 mm; lower sepals fused, 5 mm long, lobes lanceolate, 3 mm long; tube 2–3 mm long. *Corolla* 25–30 mm long; tube laterally compressed, 10–12 × 3.5–4.0 mm, white with dense erect glandular trichomes; upper lip 4-lobed, obrullate 9–10 × 11–12 mm, white with 2 deep magenta central nectar guides, sparsely glandular-strigose outside, lateral auricles 4 mm long; lower lip navicular, 4 mm long, dark pink, sparsely glandular. *Stamens* 4; filaments free, 2–3 mm long, adnate to corolla throat. *Style* white, filiform, 13 mm long; stigma purple, shortly bifid, upper lobe 1.0–1.5 mm long, lower lobe 0.5 mm long. *Nutlets* glabrous. *Flowering time*: January to March. Figure 1.

This species is only known from material collected by David Styles during a joint botanical expedition to the Lupatana River Gorge in the Eastern Cape (Figure 2). Vegetative material was grown at the University of KwaZulu-Natal Botanical Gardens from which the flowering type specimens were derived.

Plants occur in steep sandstone gorges and flower in late summer. The short lower lip, from which the specific epithet is derived, and the broadly obrullate upper lip are distinctive characteristics (Figure 1) seen also in *Plectranthus hilliardiae* Codd.

***Plectranthus stylesii*** T.J. Edwards, sp. nov., similis *P. verticillato* sed plantae erectae caulibus rigidis crassis, foliis multo maioribus, et corolla ad faucem manifeste contracta.

**TYPE.**—Eastern Cape, 3129 (Port St Johns): Msikaba River Gorge, ± 4 km from the mouth, (–BA), initially collected by D. Styles, ex hort. Edwards 3259 (NU, holo.; E, GRA, K, NH, PRE, iso.).

Semisucculent, erect, decumbent or scandent herb, 0.4–0.6 m tall. *Stems* rigid, 10–15 mm thick below, ini-

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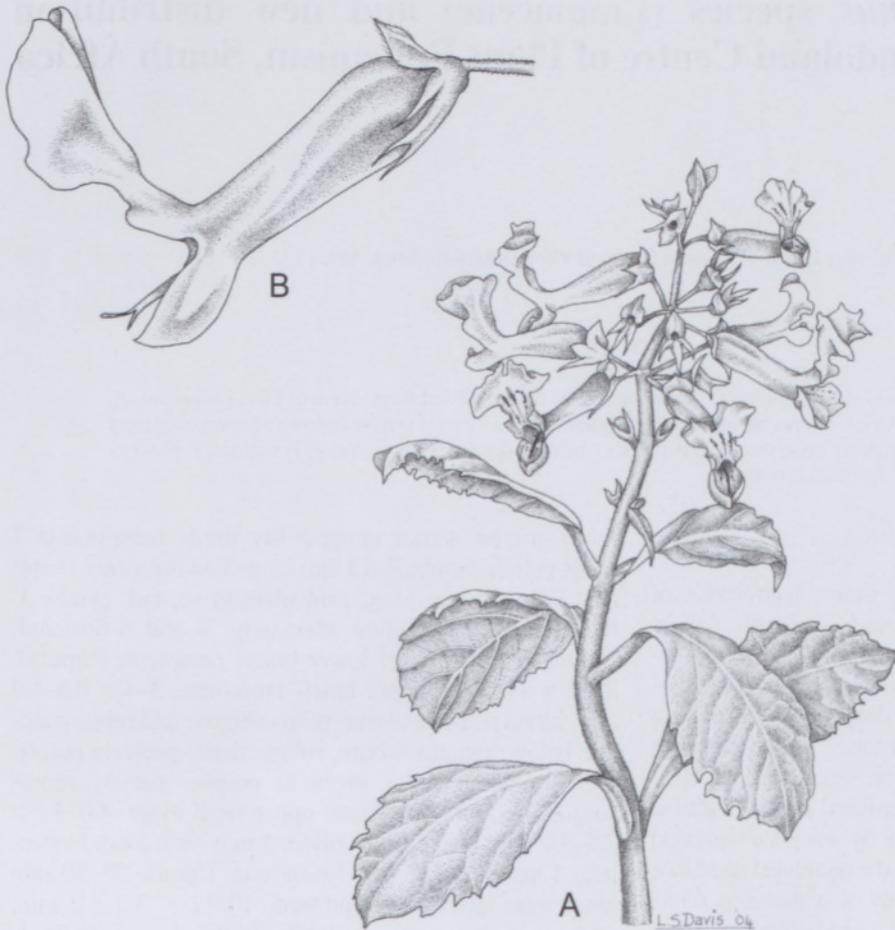


FIGURE 1.—*Plectranthus brevimentum*. A, flowering stem,  $\times 1$ ; B, lateral view of a single flower,  $\times 3.4$ . Artist: Linda Davis.

tially pale green becoming dark purple; sericeous, rubropunctate; nodes prominently ciliate. *Leaves* semisucculent, round to ovate,  $50\text{--}80 \times 40\text{--}80$  mm, base obtuse to cordate, adaxial surface sparsely rubropunctate, sessile colourless glands dense, filiform trichomes erect; abaxial surface densely rubropunctate, filiform trichomes erect; midrib purple; margin serrate in upper two thirds, teeth in 5–8 pairs; petiole purple, 15–25 mm long, rubropunctate. *Synflorescence* terminal, 150–250 mm long; cymes 3-flowered; basal branches 2–4, verticels often secund, alternately 3- and 6-flowered; rhachis strigose, rubropunctate; bracts persistent, lanceolate,  $4\text{--}5 \times 1\text{--}2$  mm, glabrescent above, sparsely strigose and rubropunctate below; margins entire, ciliate; pedicels purple, 3–4 mm long. *Calyx* green to purple, rubropunctate; upper sepal ovate,  $3\text{--}4 \times 3\text{--}5$  mm; lower sepals partially fused, 4 mm long, lateral lobes subulate, 1 mm long, posticous lobes 2–3 mm long; tube 1–2 mm long. *Corolla* 9–11 mm long, white, with dense, erect, glandular trichomes outside; tube laterally compressed,  $8\text{--}9 \times 3.5\text{--}4.0$  mm, broadest in the proximal third, throat constricted, 2 mm wide; upper lip 4-lobed, obovate  $8\text{--}9 \times 7\text{--}8$  mm, white with pale mauve nectar guides, sparsely rubropunctate outside, lateral auricles 4 mm long; lower lip navicular with inrolled sides,  $4\text{--}5 \times 2$  mm, white, densely rubropunctate outside. *Stamens* 4; filaments free, 2.5–3.0 mm long, adnate to corolla throat; anthers 1 mm long, purple, connective rubropunctate. *Ovary* 4-lobed, glabrous; style white, filiform, 8–9 mm long; stigma shortly bifid. *Nutlets* ovoid,  $1.0\text{--}1.25 \times 0.8\text{--}1.0$  mm, glossy, pale to dark brown. *Flowering time*: March to May. Figure 3.

*Plectranthus stylesii* strongly resembles *P. verticillatus* but is distinguished from this procumbent species by its thick, rigid, erect stems and bushy habit; plants grow up to 0.6 m tall without support from adjacent vegetation. The leaves of *P. stylesii* are much larger ( $50\text{--}80 \times 40\text{--}80$  mm) than those of *P. verticillatus* ( $16\text{--}40 \times 12\text{--}40$  mm). The corolla of the new species is distinctly constricted at the throat, whereas that of *P. verticillatus* is only slightly narrowed.

*Plectranthus stylesii* is known only from the Msikaba River Gorge (Figure 2) where it grows in rocky forested habitats.

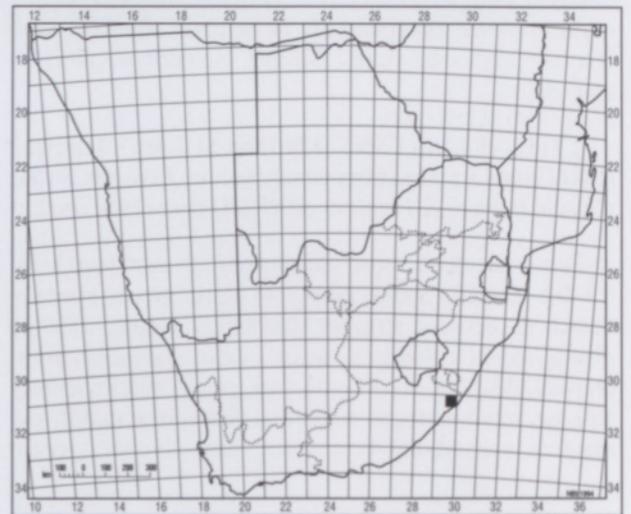


FIGURE 2.—Known distribution of *Plectranthus brevimentum*, ■, and *P. stylesii*, ■.



FIGURE 3.—*Plectranthus stylesii*.  
A, flowering stem,  $\times 0.6$ ; B,  
lateral view of a single  
flower,  $\times 3.3$ . Artist: Linda  
Davis.

### *Plectranthus ernstii*

*Plectranthus ernstii* Codd was described in 1982 from material collected at Oribi Gorge (Van Jaarsveld 3812) and the species was presumed to be an endemic to that gorge system, rather like *P. oribiensis* Codd. This assumption seemed plausible due to the succulent, aerial stems of the species which appear to be susceptible to burning. Recent collections, however, extend the known distribution of *P. ernstii* to Umtamvuna Gorge (Potgieter 85) and to Msikaba River (Edwards 3221). It seems probable that the species occurs in the intervening gorge systems as well (Figure 4).

#### Material examined

KWAZULU-NATAL.—3030 (Port Shepstone): Mtamvuna Nature Reserve, (–CC), ex hort. T. Edwards s.n. Potgieter 85 (NU). Oribi

Gorge, view site at Fairacres Farm, (–CA), Potgieter 84 (NU); Van Jaarsveld 3876 (PRE).

EASTERN CAPE.—3129 (Port St Johns): Msikaba River,  $\pm 1$  km upstream from the mouth in peripheral forest, (–BA), Edwards 3221 (NU).

### *Plectranthus praetermissus*

*Plectranthus praetermissus* Codd was described in 1979 after a number of localized collections had been made in the moist subtropical forests which surround Port St Johns. Recently, large populations of *P. praetermissus* were recorded from the Sakombe Forest near Mbotyi (Edwards & Potgieter 3248) (Figure 4). Here the species occurs in shallow lithosols in south-facing scarp forest in seasonally dry niches.

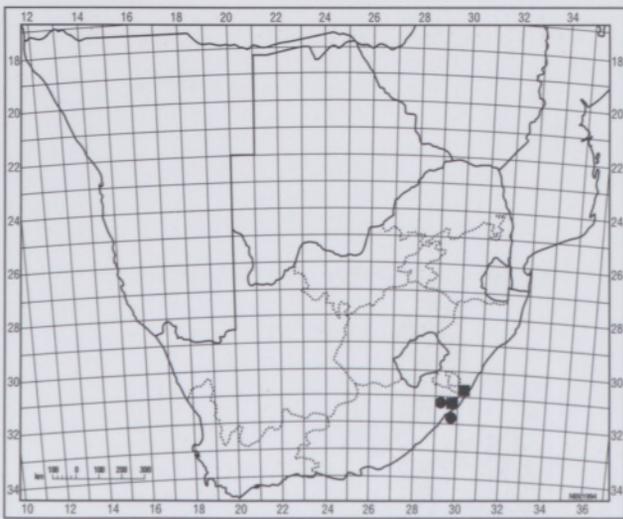


FIGURE 4.—Known distribution of *Plectranthus ernstii*, ■, and *P. praetermissus*, ●.

#### Material examined

EASTERN CAPE.—3129 (Port St Johns): Bulowe River, (–DA), Edwards 1556 (NU); Van Jaarsveld 3812 (PRE); Mbotyi, Sakombe Forest, (–BD), Edwards & Potgieter 3248 (NU).

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#### REFERENCES

- CODD, L.E. 1979. *Plectranthus praetermissus*. *The Flowering Plants of Africa* 45: t. 1791.
- CODD, L.E. 1982. *Plectranthus ernstii*. *The Flowering Plants of Africa* 47: t. 1855.
- CODD, L.E. 1985. Lamiaceae. In O.A. Leistner, *Flora of southern Africa* 28,4: 113–116. Botanical Research Institute, Pretoria.
- DAVIS, S.D., HEYWOOD, V.H. & HAMILTON, A.C. (eds). 1994. *Centres of plant diversity. A guide and strategy for their conservation*, vol. 1: Europe, Africa, South West Asia and the Middle East.
- SOUTH AFRICAN COMMITTEE FOR STRATIGRAPHY (SACS) 1980. *Stratigraphy of South Africa Part 1* (comp. L.E. Kent), Lithostratigraphy of the Republic of South Africa, South West Africa/Namibia and the Republics of Bophuthatswana, Transkei and Venda. *Handbook of the Geological Survey of South Africa* 8. Government Printer, Pretoria.
- VAN JAARSVELD, E.J. & EDWARDS, T.J. 1991. *Plectranthus reflexus*. *The Flowering Plants of Africa* 51: t. 2034.
- VAN JAARSVELD, E.J. & EDWARDS, T.J. 1997. Notes on *Plectranthus* (Lamiaceae) from southern Africa. *Bothalia* 27: 1–6.
- VAN WYK, A.E. & SMITH, G.F. 2001. *Regions of floristic endemism in southern Africa: a review with emphasis on succulents*. Umdaus Press, Pretoria.