

## Short communication

# *Pittosporum serpentinum* (de Lange) de Lange (Pittosporaceae), a new species combination for an ultramafic endemic from North Cape, New Zealand

P. J. de LANGE

Science & Research Unit  
Department of Conservation  
Private Bag 68908  
Newton  
Auckland, New Zealand  
Email: pdelange@doc.govt.nz

**Abstract** A new combination at the rank of species for *Pittosporum ellipticum* subsp. *serpentinum* is made. The species is distinguished from *P. ellipticum* sens. str. by its smaller stature, smaller vegetative parts, fewer seeds, distinctive seed morphology, and restriction to ultramafic rocks.

**Keywords** Pittosporaceae; *Pittosporum serpentinum*; *P. ellipticum*; *P. ellipticum* subsp. *serpentinum*; *P. fairchildii*; *P. ralphii*; New Zealand flora

## INTRODUCTION

De Lange (1998) recognised a new subspecies, *Pittosporum ellipticum* subsp. *serpentinum*, as endemic to the serpentinised peridotite rocks of the Surville Cliffs portion of the North Cape Peninsula. In that paper it was stated that “the rank of subspecies is conservatively chosen in preference to that of species, because it has not yet been conclusively determined whether these admittedly minor morphological differences are genetic or result from the influence of the ultramafic substrate on which it [*P. ellipticum* subsp. *serpentinum*] naturally grows”. In particular, I was then concerned with the fact that so few plants had been seen (<500 individuals), and

that all attempts to cultivate the plant had failed. Because of this lack of evidence I felt I could not be certain that the various distinguishing characters used were truly diagnostic.

Subsequent field work during 1998 and 2000 discovered many more plants (1000–1500 individuals) than those reported by de Lange (1998). These occur widely scattered over the cliff and scree habitat that this plant evidently prefers. Although I have still failed to raise plants from seed, cuttings, small layered pieces taken directly from the wild, or using tissue culture, I have been able to confirm the uniformity of the population. Further, I can confirm that the additional fruiting specimens seen do, indeed, have markedly fewer seeds ((2–)10(–15)) than either *P. ellipticum* subsp. *ellipticum* ((24–)27(–38)) or *P. crassifolium* ((20–32(–38)), taxa to which subsp. *serpentinum* had been most frequently referred in the past.

The seed size is given further taxonomic significance by the statements made about the seed morphology of subsp. *serpentinum* in Webb & Simpson (2001).

These authors provided a description of the seeds (lacking in de Lange 1998) and observed that “from the limited material we have seen, the seeds are much more like those of *P. fairchildii* and *P. ralphii*, rather than *P. ellipticum*”. Subspecies *serpentinum* has smaller (3.5–4.5 mm), circular (sometimes broadly elliptic) seeds, with the dorsal surface rounded while the ventral surface has 1–6 slightly flattened, concave or dimpled faces, whose angles are rounded. In contrast the seeds of *P. ellipticum* sens. str. are larger ((3.5–)4.0–6.0 mm), broadly elliptic or irregular, with the dorsal surface rounded, sometimes adorned with ridges or tubercles, and the ventral surface with 2–6 irregularly flattened to concave faces, the angles of which are obtuse to rounded. The seeds of subsp. *serpentinum* are frequently coloured red-brown, while those of *P. ellipticum* sens. str. are more usually black-brown or black. These observations are important, especially as Cayzer et al. (2000) have shown that differences in seed morphology have major taxonomic significance in the genus.

I had initially placed subsp. *serpentinum* with *P. ellipticum* on account of its distinctive dark orange-brown indumentum, an unusual feature and potential synapomorphy diagnostic of these two taxa. The seed morphology described by Webb & Simpson (2001) clearly places subsp. *serpentinum* away from *P. ellipticum*, and closer to *P. fairchildii* and *P. ralphii*. Nevertheless, these are very distinct species from which subsp. *serpentinum* differs markedly (see de Lange 1998, table 1) in its stature, leaf shape and size, orange-brown indumentum and consistently 2-valved capsules. Furthermore, the failure to cultivate the subspecies may also be significant, as it suggests that subsp. *serpentinum* may well be one of the very few obligate ultramafic endemics of the Surville Cliffs flora.

Therefore, as the discovery of further plants has confirmed their uniformity with respect to the characters I had used originally to distinguish the taxon, and as the seed morphology and in particular the number of seeds does not place subsp. *serpentinum* within the range offered for *P. ellipticum*, *P. ellipticum* subsp. *serpentinum* should be elevated to species rank. Accordingly, the necessary change in rank for *P. ellipticum* subsp. *serpentinum* is here made.

## TAXONOMIC TREATMENT

*Pittosporum serpentinum* (de Lange) de Lange, comb. et stat. nov.

≡ *Pittosporum ellipticum* subsp. *serpentinum* de Lange, *N.Z. Jour. Bot.* 36, 390 (1998).

HOLOTYPE: New Zealand, North Island, North Cape Scientific Reserve, Surville Cliffs, *P. J. de Lange*, 15 Jan 1996, AK 227266.

ISOTYPE: BISH, CHR, K.

## ACKNOWLEDGMENTS

I thank Michael Bayly, Peter Heenan, and Joshua Salter for their comments on a draft of this manuscript.

## REFERENCES

- Cayzer, L.; Crisp, M. D.; Telford, I. R. H. 2000: Revision of the genus *Pittosporum* (Pittosporaceae) in Australia. *Australian Systematic Botany* 13: 845–902.
- de Lange, P. J. 1998: *Pittosporum ellipticum* subsp. *serpentinum* (Pittosporaceae)—a new ultramafic endemic from the Surville Cliffs, North Cape, New Zealand. *New Zealand Journal of Botany* 36: 389–397.
- Webb, C. J.; Simpson, M. J. A. 2001: Seeds of New Zealand gymnosperms and dicotyledons. Christchurch, Manuka Press.