A new species of *Putterlickia* (Celastraceae) from southern Natal and Pondoland

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*Putterlickia retrospinosa* Van Wyk & Mostert, a woody forest climber endemic to the sandstone region of southern Natal/Pondoland is described. It is allied to *P. verrucosa* (E. Mey. ex Sond.) Szyszyl. from which it differs in its exclusively climbing habit, reflexed spines, much larger leaves which are broadly elliptic to broadly obovate with entire margins, and relatively large inflorescences. Hitherto the genus *Putterlickia* Endl. has been characterized by up to six ovules per locule. The new species usually has 8 – 10 ovules per locule. Up to 8 (– 10) ovules were also occasionally recorded in the other species. Although the geographical distribution of *P. retrospinosa* falls within the range of *P. verrucosa*, the two species are mutually exclusive with the latter not transgressing onto the sandstone. No evidence of clinal variation or introgression between these two species was found.

*Putterlickia retrospinosa* Van Wyk & Mostert, 'n houtagtige woud-klimplant endemies tot die sandsteengebied van Suid-Natal/Pondoland word beskryf. Die spesie is naverwant aan *P. verrucosa* (E. Mey. ex Sond.) Szyszyl. waarvan dit verskil ten opsigte van die uitsluitlik klimmende groeivorm, teruggebuigde stingseldoringe, aansienlik groter loofblare wat breed-ellipties tot breed-omgekeerdeierrond en gaafandig is en relatief groot bloeiwyses. Tot dusver is die genus *Putterlickia* Endl. deur die aanwesigheid van tot ses saadknoppe per vrughok gekenmerk. Die nuwe spesie het gewoonlik 8 – 10 saadknoppe per vrughok. Tot 8 (– 10) saadknoppe is in enkele gevalle ook by die ander spesies gevind. Alhoewel die geografiese verspreiding van *P. retrospinosa* binne die verspreidingsgebied van *P. verrucosa* geleë is, is dit drie spesies onderling-uitsluitend met laasgenoemde wat nie die sandsteengebied binnedring nie. Geen aanduiding van 'n klien of introgressie tussen die twee spesies is gevind nie.

Keywords: Celastraceae, endemism, *Maytenus, Putterlickia*, taxonomy

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Introduction

The genus *Putterlickia* Endl. is confined to southern Africa and comprises a variable assemblage of closely related forms. It is distinguished from *Maytenus* Molina essentially by having (4–6) – 8 (– 10) ovules compared to two per locale, with the placentaion axile and axile-basal respectively. Despite the apparent lack of marked differentiating characters, two species of doubtful distinction, namely *P. pyracantha* (L.) Endl. and *P. verrucosa* (E. Mey. ex Sond.) Szyszyl., have been recognized in recent years. Current work on the group has now confirmed the specific status of at least one clearly circumscribed infrageneric taxon. In the present paper this long recognized but hitherto unnamed species is formally described.

Description

*Putterlickia retrospinosa* Van Wyk & Mostert, sp. nov., *P. verrucosae* affinis, a qua primipim differt habitu semper scandenti, spinis retrospectantibus, foliis multo grandioribus et late ellipticis ad late obovatus atque exhibentibus margines infragenicis, et inflorescentis grandioribus.


*Putterlickia* sp. no. 1 in Coates Palgrave 504 (1977).

Evergreen woody climber with long and short shoots, glabrous and armed with spineose branchlets. *Long shoots* slender, terete, climbing or trailing, up to c. 10 m long. *Short shoots* axillary, 5 – 12 mm long, densely covered with dried stipules. *Spines* axillary, ± straight and conspicuously reflexed (vertical angle of divergence from axis usually 130 – 160°), (15) – 90 (– 80) mm long, well developed on older stems and frequently absent from young 'canopy' branchlets, leafless or with a pair of subopposite reduced leaves towards the tip. *Bark* on long shoots and spines reddish-brown, becoming dark grey to blackish, striated and prominently dotted with numerous white lenticels with age. *Leaves* alternate on long and ± rosulate on short shoots; lamina usually broadly elliptic to broadly obovate, rarely elliptic or ovate (the latter state only observed in leaves subtending spines), (25) – 80 (– 120) (– 150) mm long, (15) – 60 (– 70) mm wide, base rounded or shortly attenuate, apex rounded or retuse, margin entire, thick and coriaceous, dark green and shiny above, pale green and dull below; venation brochidodromous; midrib narrowly keeled or slightly raised above, raised below where it terminates apically or subapically in a minute mucro; principal lateral veins slightly raised or obscure above, slightly raised below; petiole 8 – 15 mm long; stipules linear, c. 2 mm long, marcescent, densely arranged and persistent on short shoots. *Inflorescences* consisting of many-flowered subdichasial cymes, terminal or single in the axils of foliage leaves, or in clusters of 1 – 6 on short shoots, usually 80 – 140 mm long; peduncle 30 – 50 mm long; bracts minute, deltoid, persistent. *Flowers* bisexual, 4 – 5-merous; pedicels c. 3 – 5 mm long, articulated at or very near the base, gradually widening into the receptacle. *Sepals* green, ± equal, fleshy, cucullate, subrotund with rounded apices, c. 1 mm long, 1.5 mm wide, margin short and irregularly ciliate. *Petals* white, oblong with obtuse apices, c. 3.5 mm long, 2 mm wide, erect or ± spreading, margin minutely erose. *Stamens* ± erect; filaments c. 1.5 mm long, suberete, situated opposite shallow sinuses in (and inserted below) the margin of the disc; anthers c. 0.5 mm long, basifixed, slightly versatile, ± latrorse, dehiscing by longitudinal slits. *Disc* slightly concave with margin shallowly lobed. Ovary c. 1/3 immersed in and adnate to the disc. 3 – 4-locular with (6) – 80 (– 10) ovules per locale, placentaion axile with ovules ventral hypotropous and arranged in two rows; style absent or very short (c. 0.25 mm); stigma with 3 – 4 spreading and ± linear lobes. *Fruit* capsular with a woody pericarp, pendulous, whitish-green, often tinged with purple or rarely red, dehiscing loculicidally, usually 3 – 4-locular, obovoid, lobed between the locules, apex slightly concave, c. 30 mm long, 20 mm in diam. Seeds usually 1 – 3
Figure 1 Putterllica retrospinosa. 1. flowering branchlet, ×1; 2. flower, ×5; 3. fruit, ×1; 4. seed enveloped by an aril, ×3.5; 5. seed with aril removed, ×3.5; 6. embryo, ×3.5 (1 & 2 from Van Wyk 5281; 3 - 6 from Van Wyk 3336).
per locule, ellipsoid, dark brown, postchalaral vascular branches not observed, c. 8 mm long, 5.5 mm wide; aril orange with a glabrous but wrinkled surface, completely enveloping the seed; endosperm abundantly present, fleshy, embryo erect and fleshy (Figure 1).

Flowering mainly October - December. Fruits usually ripening between January and April.

**Distribution**

*Putterlickia retrospinosa* is a forest climber endemic to the southern Natal/Pondoland sandstone (Natal Group) region (Figure 2). The species usually grows in rocky places and is found mainly along forest margins (particularly those in exposed situations) and in short shrub forest. It is fairly common throughout most of the sandstone region and therefore is a useful indicator species for the flora of this well-known centre of endemism.

*Putterlickia verrucosa* has been recorded from the areas surrounding the southern Natal/Pondoland sandstone 'island'. The distribution range of *P. retrospinosa* therefore falls within the range of *P. verrucosa* but, curiously, the two species are mutually exclusive without any evidence of clinal variation or introgression.

[Figure 2: The known distribution of *Putterlickia retrospinosa*.]

**Discussion**

*Putterlickia retrospinosa* is a distinctive and easily recognized species. It seems to be most closely allied to *P. verrucosa* which also has abundant prominent whitish lenticels on the stems. Diagnostic characters include its exclusively climbing habit, reflexed spines, entire margined and broadly elliptic to broadly obovate leaves which are the largest in the genus, and relatively large inflorescences. *P. verrucosa* and *P. pyracantha* are usually shrubs or small trees, although the former species may occasionally assume a somewhat scandent habit, particularly in northern Natal. In both these species the spines are slightly apically directed or arranged more or less perpendicular to the stem axis and the relatively small leaves are usually obovate to oblanceolate-spathulate. In addition, the blade margin is often spinulose-denticulate, particularly in *P. verrucosa*.

The specific epithet of the new species refers to the distinctive backward-pointing spinescent branches which are particularly well developed on older stems. These spines are clearly an adaptation to the climbing habit of the species. Plants are very sparsely branched and once out in the light, sprawl across shrubs and trees in a straggling manner. Ultimate branchlets occasionally display much smaller and even, more or less perpendicular spines, or may be spineless. In the absence of support, the stems are usually procumbent. All plants observed in the field were clearly not shrubby or tree-like as described by Coates Palgrave (1977) under *Putterlickia* sp. no. 1. At least three other forest scramblers/climbers, often associated with *P. retrospinosa* also grow upward with the aid of reflexed and often spinose branchlets. These are *Cassine tetragona* (L.f.) Loes. (Celastraceae), * Diospyros simii* (Kuntze) De Wint. (Ebenaceae) and an undescribed species of *Rhus* (Anacardiaceae).

It has been widely claimed that *Putterlickia* is characterized by up to six (more rarely reduced to three or perhaps two) ovules per locule (Davison 1927; Loesener 1942; Robson 1965, 1966). The present study has shown that *P. retrospinosa* contains (6–8–10) ovules per locule. Up to eight (rarely ten) ovules per locule have also been found in forms falling within the concept of *P. pyracantha* and *P. verrucosa*. Six ovules per locule nevertheless seem to be the prevailing state over most of the distribution range of the genus. This also applies to the small-leaved Karoo form which, under the name *Gymnosporia saxatilis* (Burch.) Davison, was described as having two ovules per locule (Davison 1927). Reduction of ovule number to five or four per locule has so rarely been encountered that figures of less than six ovules per locule should be considered aberrant.

**Specimens examined**

- 3030 (Port Shepstone): Izotsha Waterfall (– CB), Nicholson 398 (Herb. Nich., NH); Icwaka River Gorge (– CC), Van Wyk 7179 (PRU); Umtamvuna Nature Reserve [UNR], Aerodrome (– CC), Abbott 1416 (NH, PRU); UNR, Beacon Hill (– CC), Nicholson s.n. (Herb. Nich.), Strey 7205 (NH, PRE), 8291 (PRE), 8325 (NH), Van Wyk 1336 (PRE, PRU), 4205 (PRU), 5137 (PRE, PRU), 5291 (PRU, holotype, PRE), 5286, 5292 (PRU); UNR, Erica Kloof (– CC), Abbott 1642 (NH, PRU); UNR, Smidmore Forest (– CC), Abbott 1518 (NH, PRU); UNR, The Crocodile (– CC), Van Wyk & Lowrey 6776 (PRU); Along a tributary of the Uvongo River on the farm of Mr H. Wichmann (– CD), Nicholson s.n. (Herb. Nich.); Mgongongo Kloof (– CD), Strey 7143, 7708 (NH, PRU).
- 3129 (Port St. Johns): Goss Point (– BD), Strey 10127 (NH); Lupatana (– BD), Strey 10224 (NH, PRU); South edge of Miskaba River Gorge (– BD), Acocks 13261 (PRU).

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**References**


