

FABACEAE

NOTES ON THE GENUS *ARGYROLOBIUM* (CROTALARIEAE) INCLUDING A NEW SPECIES FROM SOUTHERN AFRICA

Argyrobium rupestre (E. Mey.) Walp. comprises 'small slender-stemmed few-flowered prostrate or shortly ascending plants from mountainous areas the length of eastern Africa' (Polhill 1968). Tropical representatives of *A. rupestre* have been 'loosely subdivided' into four subspecies by Polhill (*l.c.*). The complex is notoriously difficult to classify due to the poor resolution of characters and Polhill (*l.c.*) concedes that 'some of the forms may possibly have evolved separately from more robust local species but whatever their origin only slight differences in habit and indumentum distinguish them'. Whereas his revision covered high altitude specimens from South Africa, no mention was made of the lowland element discussed here and routinely included within *A. rupestre*.

Argyrobium rotundifolium T. J. Edwards, sp. nov., *A. rupestri* affinis sed habitu prostrato; foliis suborbiculatis cum pilis rufo-tomentosis; corolla alis sine sculptura differt.

TYPE.—Natal, 2930 (Pietermaritzburg): between Peacevale & Drummond, (–DD), Edwards & Ackermann 329 (NU, holo.; K, E, PRE, iso.).

Herbaceous perennial, up to 150 mm tall, but usually prostrate, well branched, stems shortly rufous-tomentose, becoming glabrous. Leaves moderately tomentose above, densely tomentose beneath; leaflets broadly ovate to suborbicular 14–32 × 10–25 mm, petiole tomentose, 10–30 mm long; apex obtuse to rounded, apiculate; margins densely rufous-tomentose; stipules free, setaceous to lanceolate, up to 10 × 1.5 mm. Inflorescence pseudo-umbellate, 1–4(–6)-flowered, initially terminal but becoming leaf-opposed; peduncle (30–)40–150 mm long; bracts linear or narrowly elliptic, up to 6 × 1 mm, bracteoles linear, up to 3 mm long. Flowers dimorphic. Calyx sparsely to densely pilose; upper lobes 8–10 mm long, lower lip 8–10 mm long, lobes 3–4 mm long. Corolla bright yellow becoming russet; standard suborbicular, 11–14 × 12–14 mm, adaxial surface sericeous, base cordate, claw 1.0–1.5 mm long; wings obovate, 9–12 × 4.5–6.0 mm, distally pilose, without sculpturing, claw 1.5–2.0 mm long; keel cymbidiform, 8–10 × 4.5–5.5 mm, pilose on lower margin, claw 1.5–2.5 mm. Stamens monadelphous, sheath fused above. Pistil narrowly oblong; ovary 6–8 × 1–2 mm; style 3–4 mm long. Fruit rufous-pilose, compressed, up to 45 × 5 mm. Seed subglobose, laterally compressed, 2.5–3.0 mm in diameter, yellow to light brown, hilar rim raised.

Floral dimensions in the description refer to chasmogamous flowers. Cleistogamous flowers are of no use in species delimitation.

A. rotundifolium (Figure 9) is allied to *A. rupestre* but is distinguished by its consistently prostrate habit (*A. rupestre* is better described as ascending or decumbent), broadly elliptical to orbicular leaflets, shortly rufous-tomentose indumentum and the lack of sculpturing on its wing petals. This species is predominantly coastal in

distribution whereas *A. rupestre* is limited to inland areas (Figure 10). In southern Natal *A. rupestre* approaches the coast on the high lying areas around Kokstad and Harding, however, no contact zones with *A. rotundifolium* have been observed.

NATAL.—2731 (Louwsburg): Itala Nature Reserve, (–CA), *Germis-huizen* 2232 (PRE). 2831 (Nkandla): Ngoye, (–DC), *Huntley* 852 (NU). 2832 (Mtubatuba): Hluhluwe Game Reserve, Mbhombe, (–AA), *Hichins* 598 (NH, NU). 2931 (Stanger): Nonoti Lagoon, (–AD), *Ward* 9121 (PRE). 3030 (Port Shepstone): Oribi Gorge, Riverview, (–CA), *Van Wyk* 5064 (PRE). 3130 (Port Edward): 7 km from Port Edward on the Izingolweni Rd, (–AA), *Hilliard* 1738 (NU).

CAPE.—3228 (Butterworth): The Haven, (–BA), *Gordon-Gray* 557 (GRA). 3229 (Talemofu): Hole in the wall, (–AA), *Germis-huizen* 1860 (PRE).

Argyrobium lotoides Harv. in *Flora capensis* 2: 595 (1862). Type: Transkei, *H. Bowker* 366 (TCD, holo.!!; K!, PRE! iso.). Figure 11.

A. variopile N.E. Br.: 18 (1906); B-E. van Wyk: 395 (1987) synon. nov. Syntypes: Natal, Volksrust, hillside near Charlestown, *Wood* 5693 (BOL!, K!, NH!, PRE!), *Wood* 6355 (K!, NH!, SAM!).

A. hirsuticaule Harms: 179 (1917) synon. nov. Type: Transkei, Zuurbergen, *Schlechter* 6571 (B†, holo.; BOL, lecto.! selected here).

A. leptocladum Harms: 180 (1917) synon. nov. Type: Kokstad, around Clydesdale, *Tyson* 1256 pro parte (B†, holo.; BM!, icono. selected here).

A. thodei Harms: 184 (1917) synon. nov. Type: Witzieshoek, *Thode* 20 (B†, holo.; BM!, icono. selected here).

Lotononis magnistipulata Dümmer: 299 (1913). Type: Faku's Territory (probably Transkei), *Sutherland s.n.* (K, holo.).

Early collections of this species, made by Drège, bear the name *Chasmosyne pilosissima* but no published description was traced. The three names published by Harms were based on differences in vestiture and leaf dimensions. These highly variable characters form a continuum and are thus unsuitable for delimiting species. The specimens from which *A. leptocladum* and *A. hirsuticaule* were described were destroyed in Berlin. The drawings of these specimens at BM are therefore selected

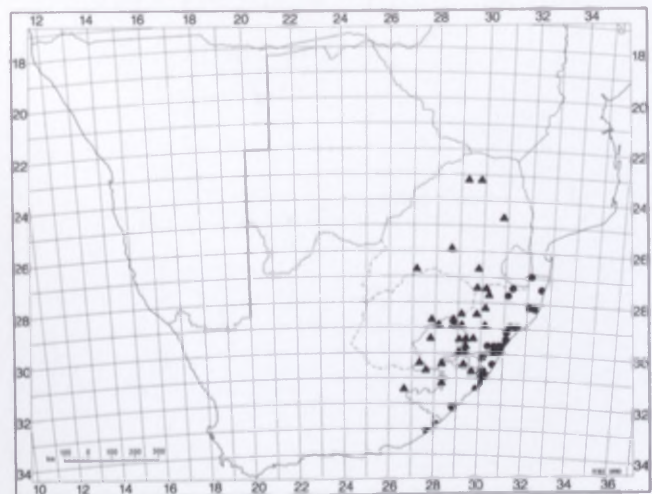


FIGURE 10.—The known distribution of *Argyrobium rotundifolium*, ●; and *A. rupestre*, ▲, in southern Africa.



FIGURE 11.—*Argyrolobium lotoides*, Browning 183 (NU). A, habit; B, dissected calyx, inner surface; C, standard, adaxial surface; D, wing; E, keel; F, androecium. Scale bars: A = 10 mm; B–F = 1 mm.

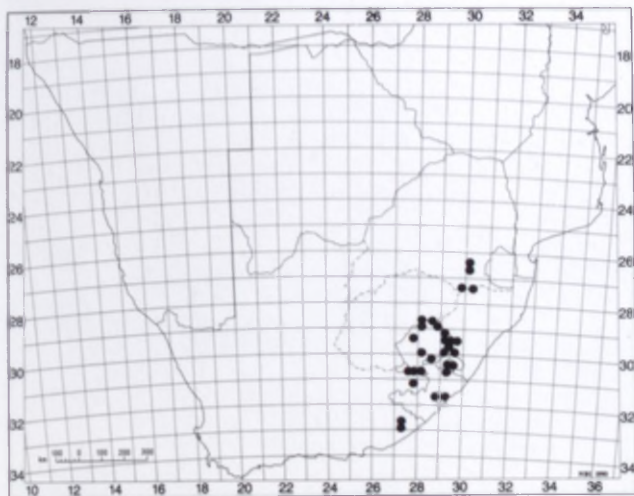


FIGURE 12.—The known distribution of *A. lotoides*, ●.

as iconotypes. The type of *A. leptocladum* is part of a mixed collection (*Tyson 1256*); unfortunately only specimens of *A. amplexicaule* remain from this gathering (these are listed below under additional specimens examined).

The species (Figure 12) occurs commonly in highland sourveld and is frequently associated with rocky outcrops.

TRANSVAAL.—2630 (Carolina): Chrissiemer, (–AC), *Theron 2383* (PRE). 2729 (Volksrust): hillside near Charlestown, (–BD), *Wood 5693* (BOL, K, NH, PRE), *Wood 6355* (K, NH, SAM).

ORANGE FREE STATE.—2828 (Bethlehem): Generaalskop, (–DA), *Roberts 3298* (PRE).

NATAL.—2730 (Vryheid): Naauwhoek, (–AD), *Devenish 2124* (E, K, NU, PRE, S). 2929 (Underberg): Sani Pass, (–CB), *Hilliard & Burt 15534* (E, NU, PRE); *Browning 183* (NU). 3029 (Kokstad): Zuurburg near Weza, (–BC), *Hilliard & Burt 8070* (E, MO, NU, PRE).

LESOTHO.—2927 (Maseru): Molmo Ntuse mountain road, (–BD), *Schmitz 7248* (PRE). 2928 (Marakabei): Semonkong, (–CC), *Jacot*

Guillarmod 1812 (PRE). 3027 (Lady Grey): Ben McDhui, (–DB), *Galpin 6607* (PRE).

CAPE.—3028 (Matatiele): Quachasnek, hillside facing Maluti Hotel, (–BA), *Gordon-Gray 4042* (E, NU).

Additional specimens examined

Argyrolobium amplexicaule

NATAL.—3029 (Kokstad): in hills around Clydesdale, (–BD), *Tyson 1256* (BM, BOL, K, SAM, UPS).

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REFERENCES

- BROWN, N.E. 1906. II. Diagnoses Africanæ, XIV. *Kew Bulletin* 1906: 15–30.
- DÜMMER, R. A. 1913. A synopsis of species of *Lotononis* Eckl. & Zeyh., and *Pleiospora* Harv. *Transactions of the Royal Society of South Africa* 3: 275–335.
- HARMS, H. 1917. Weitere Beobachtungen über Kleistogamie bei afrikanischen Arten der Gattung *Argyrolobium*. *Berichte der Deutschen Botanischen Gesellschaft* 35: 175–186.
- HARVEY, W.H. 1862. Leguminosæ. *Flora capensis*, Vol. 2. Hodges Smith, Dublin.
- POLHILL, R.M. 1968. *Argyrolobium* Eckl. & Zeyh. (Leguminosæ) in tropical Africa. *Kew Bulletin* 22: 145–168.
- VAN WYK, B-E. 1987. Taxonomic notes on *Argyrolobium variopile* (Fabaceæ), and the status of *Lotononis magnistipulata*. *South African Journal of Botany* 53: 395–397.

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