

POLEVANSIA DE WINTER, GEN. NOV.

Polevansia *De Winter*, gen. nov. (Gramineae-Chlorideae) *Willkommiae* Hack. affinis, sed lemmate fertili exaristato, lemmate paleaque subcoriaceis (haud membranaceis), anthoecii callo brevi obtuso differt.

Spiculae a latere visae anguste oblongae, exaristatae, dorsaliter compressae, adaxiales, solitariae, distichae, alternae, contiguae, oblique vel demum horizontaliter patentes; rhachilla inter glumam superiorem et anthoecium disarticulans, supra anthoecium haud producta. *Anthoecium* 1, hermaphroditum; callus brevissimus, obtusus, minute pilosus. *Glumae* persistentes, inaequales; inferior circiter $\frac{1}{2}$ superiorem aequans,

explanata, lanceolata vel anguste ovata, obtusa, enervis, membranacea; superior lemma aequans, explanata oblongo-lanceolata, obtusa, tenuiter coriacea, dorsaliter rotundata, 1-nervis. *Lemma* spiculam aequans, dorsaliter plus minusve rotundatum, marginibus incurvis, explanatum, lanceolatum vel anguste ovatum, obtusum, tenuiter coriaceum, 3-nerve, nervibus lateralibus in triente superiore evanescentibus, nervo medio in mucrone brevissimo excurrente, prope margines infra medium breviter pubescens, ceterum glabrum. *Palea* lemma fere aequans, a dorso visa lanceolata, membranacea, 2-nervis, nervibus ciliatis. *Lodiculae* 2, oblique cuneatae truncatae, glabrae. *Stamina* 3. *Ovarium* glabrum; styli terminales, liberi; stigmata plumosa, albida, e anthoeciis lateraliter exserta.

Gramen perenne humile, mattam rhizomatibus et stolonibus ramosis brevibus formans; culmi graciles, erecti vel geniculati, simplices, paucinodosi; ligulae brevissimae, truncatae, membranaceae, glabrae; laminae lineares, in apicem obtusum gradatim attenuatae, breves, planae, rigidiusculae, marginibus cartilagineis; racemi plures, in axi primario inflorescentiae contractae orti.

Type species: *P. rigida* De Winter.

A monotypic genus known only from Basutoland.

This genus is named in honour of Dr. I. B. Pole Evans well known for his valuable contributions to South African botany. The spelling *Polevansia* is preferred to the more unwieldy alternative *Pole-Evansia*.

The position of *Polevansia* as a member of the tribe Chlorideae can be well substantiated. Certain characters, however, such as the single floret which usually is devoid of a prolongation of the rhachilla, and the adaxially positioned lower glume, can be regarded as somewhat unusual for this tribe. These characters it has in common with several other genera of the Chlorideae. *Willkommia* Hack., *Microchloa* R. Br. and *Catalepis* Stapf et Stent exhibit both one-flowered spikelets and adaxially placed lower glumes, while *Craspedorhachis* is one-flowered but has the glumes laterally appressed to the rhachis. The other characters of *Polevansia* are typical of the Chlorideae. A study of the leaf anatomy has supplied additional evidence confirming its position in the tribe. The silicified cells of the epidermis are suborbicular to squarish in shape and the alternate cells are deeply ripple-walled. The epidermal hairs are two-celled and club-shaped and typical especially of the Chlorideae and Zoiseae (Fig. 3). The cross-section of the leaf shows a radially arranged chlorenchyma, one layer of cells thick. The motor cells, which are characteristic in shape, occupy at least half the thickness of the leaf (Fig. 3). For comparison of its anatomy with that of other genera in the Chlorideae, the figures given by Prat. in Ann. Sc. Nat. bot. Ser. 10, 18: 165-258 (1936) can be used.

***Polevansia rigida* De Winter, sp. nov.** Gramen perenne, humile, infra 10 cm alta, mattam rhizomatibus et stolonibus ramosis brevibus formans; culmi graciles, erecti vel geniculati, simplices, paucinodosi; innovationes intra-vaginales, breves, dense foliosi; vaginae leves, glabrae, marginibus tenuiter membranaceae; ligulae brevissimae, truncatae, membranaceae; laminae lineares in apicem obtusam gradatim attenuatae, breves, planae. *Inflorescentia* contracta, racemis spiciformis secundis breviter pedicellatis. *Spiculae* a latere visae angustae oblongae, exaristatae dorsaliter compressae adaxiales, solitariae, alternatim distichae, contiguae. *Anthoecium* 1, hermaphroditum callus obtusus, minute pilosus. *Glumae* persistentes, inaequales; inferior enervis; superior 1-nervis. *Lemma* spiculam aequans, 3-nerve, prope margines infra medium, breviter pubescens, ceterum glabrum. *Palea* lemma fere aequans, a dorso visa lanceolata, membranacea, inter carinas dorsaliter ciliata. *Lodiculae* 2. *Stamina* 3. *Ovarium* glabrum. (Fig. 2).

Type: Basutoland, near top of Lekhalabatesi Valley, *Pole Evans* 12 (PRE, holo.).

Perennial, about 10·0 cm high, matforming with a branched system of relatively slender rhizomes; culms ascending or prostrate, densely sheathed, rooting at the nodes; innovations arising from the underground rhizomes and the prostrate culms, intravaginal, short, densely leafy, ascending to erect. *Leaf-sheaths* chartaceous, pallid, rather loose, 1·0–1·5 cm long, striate, glabrous; margins thinly membranous, glabrous. *Auricles* rounded, brownish, glabrous or scabrid. *Collar* glabrous. *Ligule* a short membranous minutely fimbriate rim. *Leaf-blade* linear, 1·0–3·0 cm long, 1·5–2·0 mm broad, flat, tapering to an obtuse apex, with a few scattered long hairs above, glabrous below; nerves numerous, arranged closely together, raised below, slightly raised above, midnerve more or less prominent below; margin narrow, cartilaginous, scabrid. *Inflorescence* rigid, oblong, spikelike, consisting of a number of short, dense, appressed, secund racemes, arranged alternately on the axis, 2·0–3·0 cm long and 0·8–1·5 mm wide; rhachis and branches triangular in cross-section, scabrid on the angles, otherwise glabrous. *Spikelets* 3·5–4·5 mm long, solitary, dorsally compressed, pedunculate, alternate, lower glume always adaxial to the rhachis; peduncles 0·5–1·5 mm long, triangular in cross-section, scabrid on the angles; rhachilla disarticulating above the glumes, not produced beyond the base of the floret. *Floret* solitary, hermaphrodite; callus short, obtuse, shortly hairy. *Glumes* persistent, unequal; lower 1·5–2·5 mm long, lanceolate to narrowly ovate, subhyaline, subcoriaceous, nerveless, apex obtuse truncate or emarginate; upper 3·5–4·5 mm long, lanceolate (when flattened), greenish, subcoriaceous, one-nerved, slightly keeled towards the apex, scaberulous on the keels

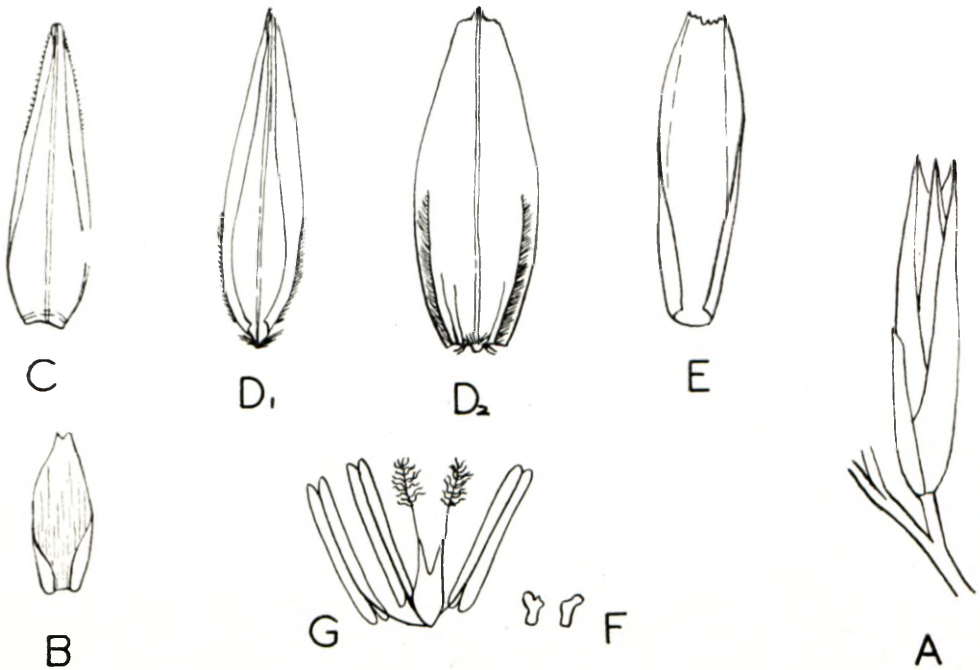


FIG. 2.—*Polevansia rigida*. A, Side view of spikelet showing adaxial lower glume, $\times 10$; B, lower glume, $\times 10$; C, upper glume, $\times 10$; D, lemma, $\times 10$; E, palea, $\times 10$; F, lodicules, $\times 10$; G, stamens and gynoecium, $\times 10$ (*Pole Evans* 12).

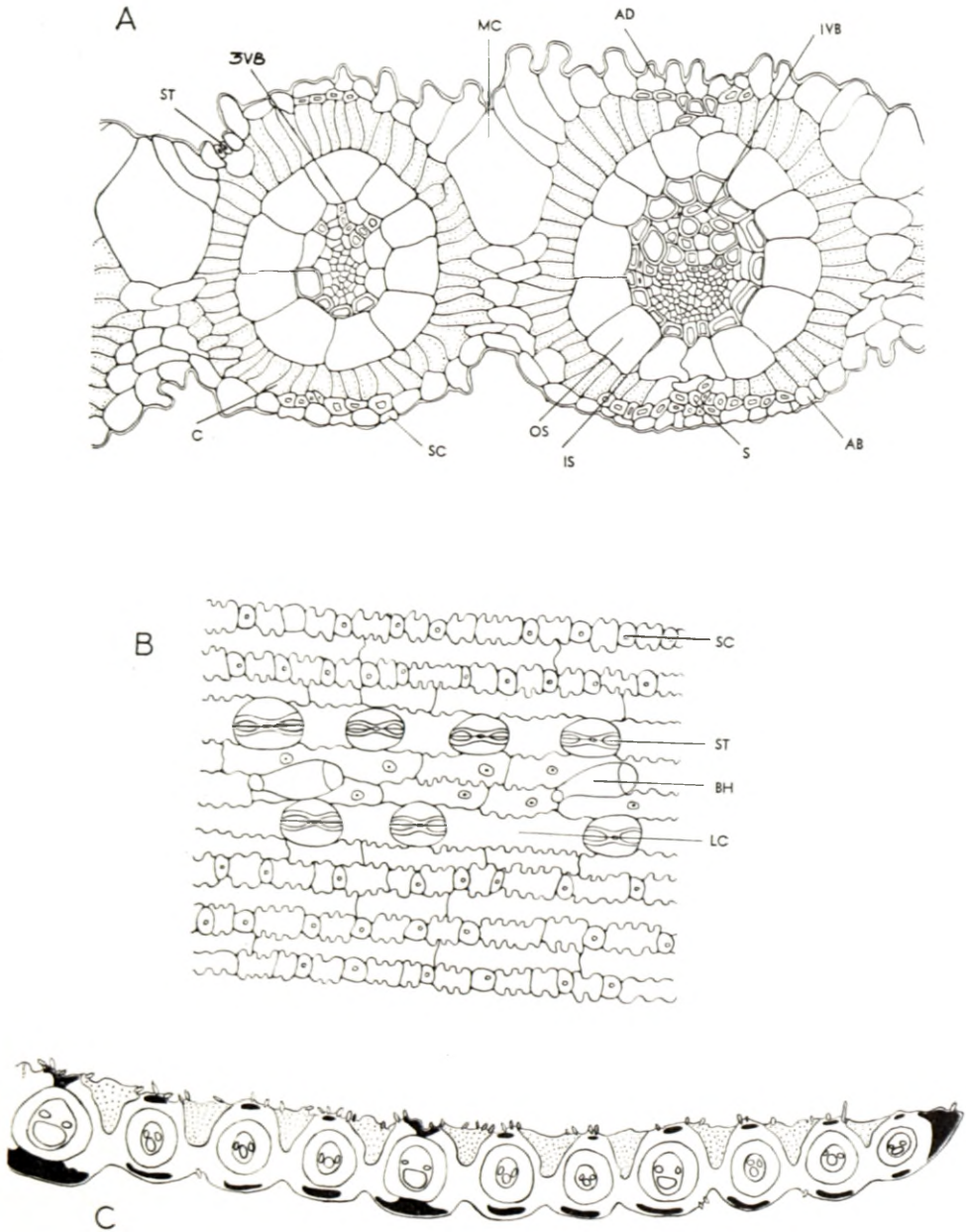


FIG. 3.—*Plevansia rigida*: A, cross section of the leaf; B, abaxial epidermis of the leaf; C, diagram of the cross section of a leaf. AB, abaxial epidermis; AD, adaxial epidermis; BH, two-celled hair; C, chlorenchyma; LC, long ripple-walled cell; MC, motor cell; SC, silicified cell; S, mechanical tissue or stereome; ST, stoma: 1 VB, first order vascular bundle; 3VB, third order vascular bundle (*Pole Evans 12*).

by a thin layer of soil. The extremely tough fibrous bases of these plants form a thick mat so resistant that a pickhandle is easily broken in trying to lift it. Some of the stands are several acres in extent. It is found mainly at high altitudes usually between 5,000–6,000 ft. above sea level. At Millers Falls in Swaziland and the nearby Namaacha in Mozambique the altitudes are 4,500 and 2,000 ft. above sea level respectively. The rainfall in the greater part of its range exceeds 880 mm p.a.

SOUTH AFRICA. TRANSVAAL.—Ermelo: *Pont* s.n. (K). Barbeton: Kaapsche Hoop, *Pole Evans* 1022. Lydenburg: Steenkampsberg, 29 miles W. of Kydenburg, shallow moist seepage area over quartzite slabs, *Codd* 8219. Pietersburg: Blaauberg on way to Trig. Beacon, *Codd & Dyer* 9071. Pilgrim's Rest: 7 miles from Graskop on road to Vaalbank, *De Winter & Codd* 220; Mariespkop, plateau near beacon, *Van der Schijff* 6344; Driekop Gorge near Graskop, *De Winter & Codd* 211.

NATAL.—Bergville: Cathedral Peak Forest Research Station, *Killick* 1013; 1237; 1248; 1548; 1565; 1789. Impendhle: along streambank, *Huntley* 481; 798. Utrecht: farm Naauwhoek, *Devenish* 935; 172.

SWAZILAND. Mbabane: Millers Falls, *Compton* 26188.

MOZAMBIQUE. SUL DO SAVE.—Lourenco Marques: Namaacha, *Myre & Carvalho* 300; 1312.

RHODESIA. Melsetter: Chimanimani, rocks west of airfield, *Goodier & Phipps* 20.

S. gynoglossa is extremely closely allied to the Madagascan *Redfieldia hitchcockii* A. Camus and the latter may on further investigation prove to belong to the genus *Styppeiochloa*. It certainly does not belong to the monotypic American genus *Redfieldia* Vasey, from which it differs in several important points.