

The *Oxygonum dregeanum* complex (Polygonaceae)

G. GERMISHUIZEN*

Keywords: new status, new taxa, *Oxygonum dregeanum* complex, Polygonaceae, southern Africa, taxonomy

ABSTRACT

The *Oxygonum dregeanum* Meisn. complex was studied. The following taxa are given a new status: subsp. *swazicum* (Burt Davy) Germishuizen, stat. nov. and subsp. *canescens* (Sond.) Germishuizen, stat. nov. Four new varieties of subsp. *canescens* are described: var. *linearifolium* Germishuizen, var. nov.; var. *dissectum* Germishuizen, var. nov.; var. *pilosum* Germishuizen, var. nov. and var. *lobophyllum* Germishuizen, var. nov. Two new subspecies are described: subsp. *streyi* Germishuizen, subsp. nov. and subsp. *lanceolatum* Germishuizen, subsp. nov.

UITTREKSEL

Die kompleks *Oxygonum dregeanum* Meisn. is bestudeer. Nuwe status is aan die volgende taksons toegeken: subsp. *swazicum* (Burt Davy) Germishuizen, stat. nov. en subsp. *canescens* (Sond.) Germishuizen, stat. nov. Vier nuwe variëteite van subsp. *canescens* word beskryf: var. *linearifolium* Germishuizen, var. nov.; var. *dissectum* Germishuizen, var. nov.; var. *pilosum* Germishuizen, var. nov. en var. *lobophyllum* Germishuizen, var. nov. Twee nuwe subspecies word beskryf: subsp. *streyi* Germishuizen, subsp. nov. en subsp. *lanceolatum* Germishuizen, subsp. nov.

As part of a revision of the genus *Oxygonum* Burch. in southern Africa, to be published in the *Flora of southern Africa*, the *Oxygonum dregeanum* complex was studied. Two subspecies and four varieties are new and are here described. A list of the changes in rank of the different taxa of *Oxygonum dregeanum* are given.

Oxygonum dregeanum Meisn. in Linnaea 14: 487 (1840). Type: neighbourhood of Omsamculo (Umzimkulu) (location and collector uncertain).

(a) subsp. *dregeanum*.

O. dregeanum Meisn.: 487 (1840); C.H. Wt.: 461 (1912); Tikovsky & Merxm.: 4 (1969); *O. dregeanum* Meisn. var. *dregeanum* — R.A. Grah.: 166 (1957); Ross: 156 (1972). Type as above.

O. dregei Meisn.: 38 (1856). Type: Port Natal, Krauss 283 [K, lecto!., designated by Graham: 166 (1957)].

O. natalense Schltr.: 92 (1907). Type: Natal, Alexandria, Rudatis 74 (Type not seen).

Found in grassland in sandy soil in Natal and Transkei. Figure 1.

Vouchers: Huntley 717 (NH, PRE); Johnson 414 (NBG, STE-U); Strey 8861 (PRE); Wood 628 (GRA, PRE, SAM).

(b) subsp. *streyi* Germishuizen, subsp. nov., a subspecies typica habitu multiramoso, caudice longo cylindrico rubro, ocrea subulato-lobata, inflorescentia brevi differt.

TYPE.—Natal, 3030 (Port Shepstone): Sea Park, R.G. Strey 11369 (PRE, holo; NH). Figure 2.

Robust, spreading, decumbent perennial herb, much branched from a long, thick, red vertical rootstock; root-

stock over 200 mm long and 25 mm in diameter. *Stems* angular, longitudinally ridged, reddish brown, densely hairy with white velutinous appressed hairs, rarely glabrous; with short internodes. *Ocrea* membranous, lobed, reddish brown, densely hairy with white velutinous appressed hairs, 4–5 mm long; lobes 3,0–4,5 mm long, ending in a narrow red tip. *Leaves* simple, sessile, glabrous except for white velutinous appressed hairs along the midrib and base of the leaves; blade elliptic to narrowly obovate, (8)13–31(32) × (1,5)3–12 mm, acuminate, ending in a stiff tip, margins crisped. *Inflorescence* a short axillary thyrses with fascicles of 1–4 flowers in the axils of the cup-shaped bracts; axis 40–100 mm long. *Perianth* 5-lobed, white, glabrous except for the dense pilose hairs at the base; the lobes free almost to the base, 5–8 × 2,5 mm, the outer 2 segments keeled at the apex; pedicels up to 4 mm long, glabrous. *Stamens* 8, inserted on the inner perianth; anthers 1 mm long, reddish brown; filaments 4–5 mm long, with a basal ring of reddish cilia.

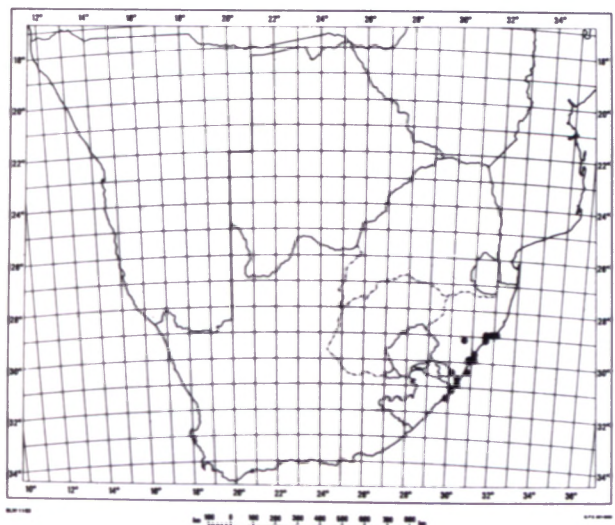


FIGURE 1.—Distribution of *Oxygonum dregeanum* subsp. *dregeanum*.

* Botanical Research Institute, Department of Agriculture and Water Supply, Private Bag X101, Pretoria 0001.

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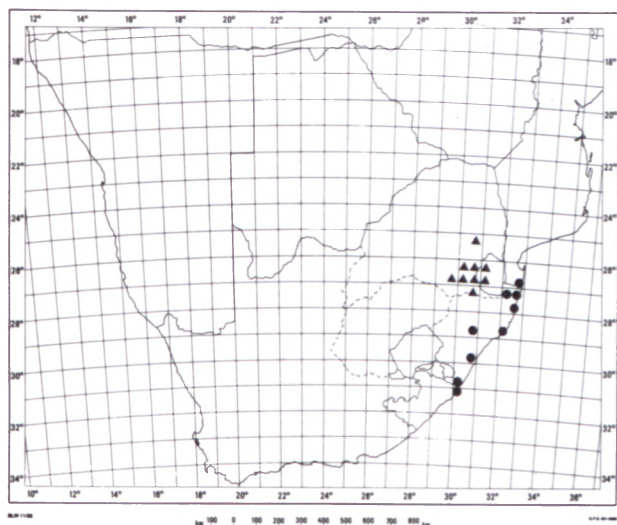


FIGURE 3.—Distribution of *Oxygonum dregeanum* subsp. *streyi*, ●; subsp. *swazicum*, ▲.

Occurs in eastern and south-eastern Transvaal and Swaziland (Figure 3). This taxon is distinguished from the typical subspecies in having deeply linear-lobed leaves and an unevenly lobed ocrea.

Vouchers: *Bolus* 12260 (BOL, PRE); *Khuge* 287 (PRE); *Rogers* 11484 (K, NH); *Stewart s.n.* TM 8880 (GRA, PRE).

(d) subsp. *canescens* (Sond.) *Germishuizen*, stat. nov.

O. canescens Sond.: 100 (1850); Meisn.: 38 (1856); C.H. Wt.: 462 (1912); Burt Davy: 167 (1926); Compton: 192 (1976). *O. dregeanum* Meisn. var. *canescens* (Sond.) R. Grah.: 167 (1957). Type: Transvaal, Aapjesrivier, *Zeyher* 1451a (W, holo.).

O. zeyheri Sond.: 100 (1850); Meisn.: 38 (1856); C.H. Wt.: 460 (1912); Burt Davy: 167 (1926); Compton: 192 (1976). Type: Transvaal, Magaliesburg, *Zeyher* 1451b (W, holo.).

O. calcaratum Meisn.: 38 (1856); Schinz: 870 (1901); C.H. Wt.: 462 (1912); Burt Davy: 167 (1926). Type: British Bechuanaland [northern Cape Province], 'near the source of Kuruman river', *Burchell* 2459 (K, holo.).

Annual herb, up to 0,5 m tall, much branched from a thick vertical perennial woody rootstock. *Stems* angular, sulcate, erect, occasionally decumbent, not much swollen at the nodes, finely to densely white strigose puberulous, long pilose or rarely glabrous, sometimes dotted with black glands. *Ocreae* lobed, up to 5 mm long, finely to densely strigose puberulous; lobes triangular, ending in slender red seta, nearly as long as the tube. *Leaves* (10–) 15–65(–70) × (1–)2–20(–26) mm, fleshy, linear, lanceolate or rhomboid, entire or with 1–2 short teeth at the base or deeply pinnately or bipinnately lobed; the lobes linear, further lobed, acute, sometimes with a red mucro, narrowing and tapering to a short petiole, white strigose puberulous. *Inflorescence* a long lax thyrse with fascicles of up to 3 flowers in the axils of the brown, ovate cuspidate membranous bracts without seta. *Perianth* 5-lobed, white, yellow or pinkish; lobes oblong, up to 5 mm long, densely white pilose outside below; pedicels up to 4 mm long, reddish brown, eglandular, pubescent. *Stamens* 8, included; filaments white, up to 5 mm long, with a ring of red-brown cilia one eighth from the base; anthers blue, up to 1 mm long. *Styles* heterostylous, 3, up to 5 mm long, joined for half their length; ovary pubescent with 3 basal horns. *Fruit* an obovoid nut, up to 10 × 5 mm, 9-ridged, transversely wrinkled, sometimes

with a small spreading prickle a third of the way from the base, long and sharp or short and obtuse, obscurely puberulous.

Five varieties are recognized that can be distinguished by the lobing of the leaves.

var. *canescens*

The leaves are deeply divided into 3–9 lobes. Only the lower lobes are shallowly divided again. Occurs in open grassland, savanna and thornveld on red sandy soils in Botswana, Transvaal, northern Orange Free State and northern Cape Province. Figure 4.

Vouchers: *Bayliss* 4515 (NBG, PRE); *Louw* 94 (GRA, PRE); *Morris & Engelbrecht* 1070 (PRE); *Pegler* 991 (BOL, PRE, SAM).

var. *linearifolium* *Germishuizen*, var. nov., a varietate typica foliis linearibus integris differt.

TYPE.—Transvaal, Pretoria District, beside freeway to eastern Transvaal at turnoff to Onbekend, *Mauve & Reid* 5326 (PRE, holo.). Figure 5.

A much branched herb with linear leaves, rarely with 1–2 short teeth at the base of lower leaves. Stems and leaves often dotted with black glands. Occurs in grassland, sour bushveld and in disturbed area along roadsides in the central, southern and south-eastern Transvaal and northern Natal. Figure 6.

TRANSVAAL.—2527 (Rustenburg): Jack Scott Private Nature Reserve (–DC), *Wells* 2405 (PRE). 2528 (Pretoria): Great North Road at turnoff to Rust De Winter (–AD), *Mauve, Reid & Smook* 5315 (PRE); Kwandebele, Gembokfontein Farm (–BD), *Van Hoepen* 1680 (PRE); Pretoria (–CA), *Rogers s.n.* (PRE); Rooikop (–CA), *Smuts & Gillett* 2124 (PRE); Kwaggaspoort (–CA), *Verdoorn s.n.* (PRE); Rietvallei 221 (–CA), *Acocks* 11280 (PRE); Koedoespoort (–CB), *Werdermann & Oberdieck* 1244 (PRE); Van der Merwe Station (–CB), *Janse* 55 (PRE, SAM); Donkerhoek, 35 km from Pretoria (–CD); *Repton* 672 (PRE); 1,8 km S of Rayton on road to Cullinan (–DA), *Davidse* 5988 (PRE); Premier Mine (–DA), *Menzies s.n.* (PRE); 37 km E of Pretoria (–DC), *Dyer & Collett* 4680 (PRE); Bronkhorstspuit, Kaalfontein 613 JR Farm (–DC), *Krynauw* 985 (PRE); beside freeway to eastern Transvaal at turnoff to Onbekend (–DC), *Mauve & Reid* 5326 (PRE). 2529 (Witbank): Groblersdal (–AB), *Venter* 2971 (PRE); NW side of Loskopdam (–AC), *Reid* 686 (PRE); 'The Hell', near Loskop-

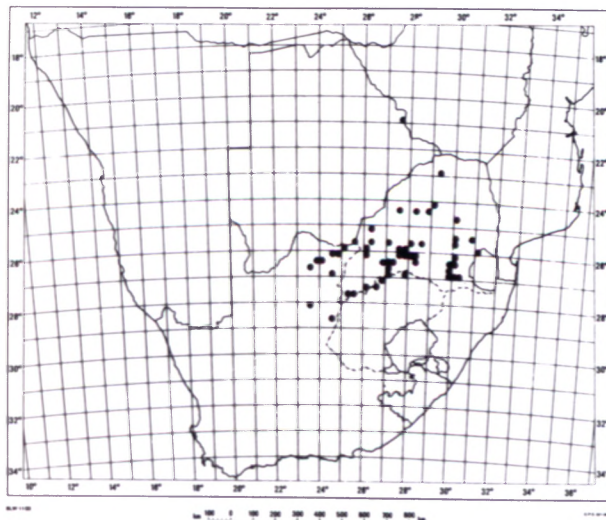


FIGURE 4.—Distribution of *Oxygonum dregeanum* subsp. *canescens* var. *canescens*.

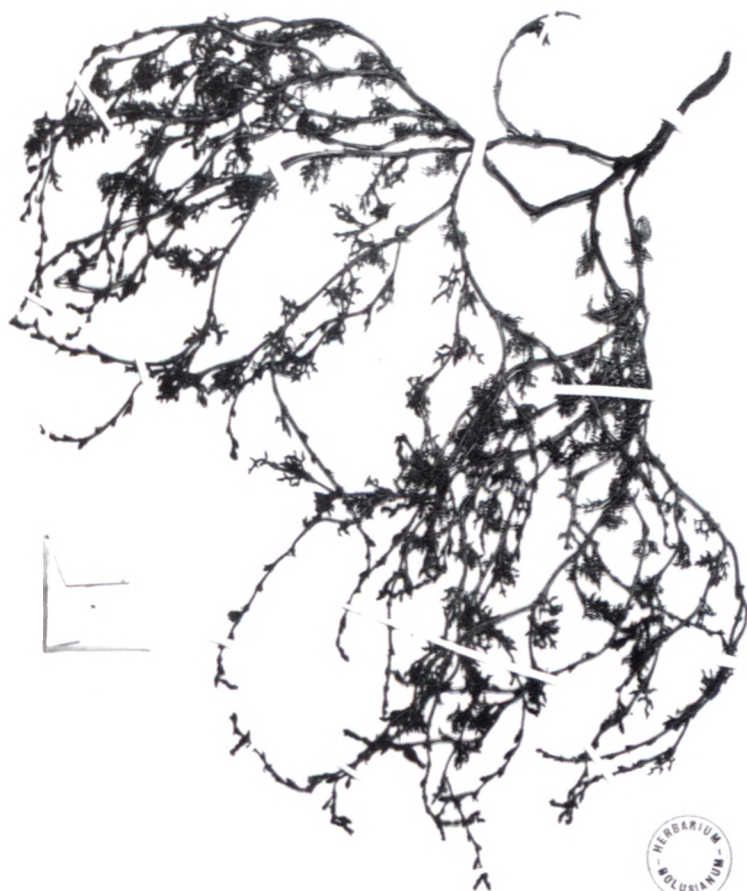
Occurs only in the north-western Transvaal, especially in the Waterberg area in savanna on sandy soils. Figure 8.

TRANSVAAL.—2428 (Nylstroom): Alma, 56 km NW of Warmbaths (–AC), *Bayliss 2007* (NBG); Van Rensburg Farm, 43 km along Nylstroom-Vaalwater road (–AC), *Leeuwenberg 10900* (PRE); Waterberg, Vaalwater, Farm Nooitgedacht (–AC), *Westfall 2279* (PRE); Waterberg, Zandrivierspoot near Alma on Farm Witpoort (–AC), *Van Wyk 2679* (PRE, PRU); Twenty-four Rivers (–AD), *Rogers 23637* (PRE); Geelhoutkop (–AD), *Breyer s.n.* (PRE).

var. **lobophyllum** *Germishuizen*, var. nov., a varietate typica lobis foliis latioribus et lobis ocreae triangularibus differt.

TYPE.—Transvaal, 18 km ENE of Pretoriusskop, *Acocks 16643* (PRE, holo.). Figure 10.

The leaves are shallowly and deeply lobed but not divided up to the midrib, rarely entire; lobes usually wider than 2 mm. Occurs in the northern and eastern Transvaal and Swaziland in woodland, bushveld and grassland in sandy loam or granitic soils. Figure 8.



A circular stamp with the text "HERBARIUM-BOLUSIANUM" around the perimeter.

H. BOLUS, AUSTRALAFRICANAE
FLORA TRANSVALENSIS

No 10883.

Oxygonum Fegleri, Sond.
In planitie ramifica prop. pagum
Lutobog alt. 14000

Plot $\frac{1}{\lambda} \ln C$ versus $\ln C$. Answer: $\ln C$ is linear.

HERBARIUM BOLUBIANUM.

Herb. No. 10553

Oxygonum Zeyheri Sand

Oxygonum dregeanum Meisn. subsp.
canescens (Sond.) Germishuizen
var. dissectum Germishuizen

Det *John L. Lutz* 1988

FIGURE 7.—Holotype of *Oxygonum dregeanum* Meisn. subsp. *canescens* (Sond.) Germishuizen var. *dissectum* Germishuizen.

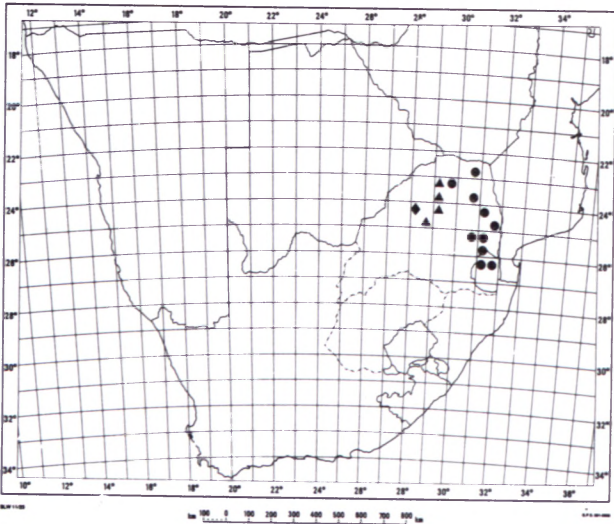


FIGURE 8.—Distribution of *Oxygonum dregeanum* subsp. *canescens* var. *dissectum*, ▲; var. *pilosum*, ◆; var. *lobophyllum*, ●.

TRANSVAAL.—2230 (Messina): Venda, Ha-Lambani (–DD), *Mugwedi* 1665 (PRE). 2329 (Pietersburg): 13 km from Bandolierskop on Pietersburg road (–BD), *Story* 1833 (PRE). 2330 (Tzaneen): Hans Merensky Nature Reserve (–DA), *Oates* 88, 128 (PRE). 2431 (Acornhoek): Farm Kempiana 90 KU, Timbavati Private Nature Reserve (–AD), *Zambatis* 1470 (PRE); Pilgrims Rest District, Manyeleti Game Reserve (–DA), *Bredenkamp* 1262, 1382 (PRE). 2530 (Lydenburg): Nelspruit (–BD), *Breyer* s.n. (PRE); Nelspruit Research Station (–BD), *Liebenberg* 2752 (PRE). 2531 (Komatipoort): Kruger National Park, 18 km ENE of Pretoriuskop (–AB), *Acocks* 16643 (PRE); near Pretoriuskop (–AB), *Codd & De Winter* 4933 (PRE); 10 km N of Pretoriuskop on road to Skukuza (–AB), *Codd & De Winter* 4993, 4994 (PRE); Nohpe (–AB), *Van der Schijff* 1541 (PRE); Kaapmuiden (–CB), *Rogers* s.n. (PRE).

SWAZILAND.—2631 (Mbabane): Malinda Hill (–AC), *Compton* 28433, 29775 (NBG, PRE); Stegi District, Sicusha (–BC), *Compton* 32472 (NBG, PRE).

(e) subsp. *lanceolatum* *Germishuizen*, subsp. nov. a subspecie typica foliis angustioribus et tepalis vinoso-rubris differt.

TYPE.—Transvaal, Lekgalameetse Nature Reserve, The Downs, Makwens, *M. Stalmans* 192 (PRE, holo.). Figure 11.

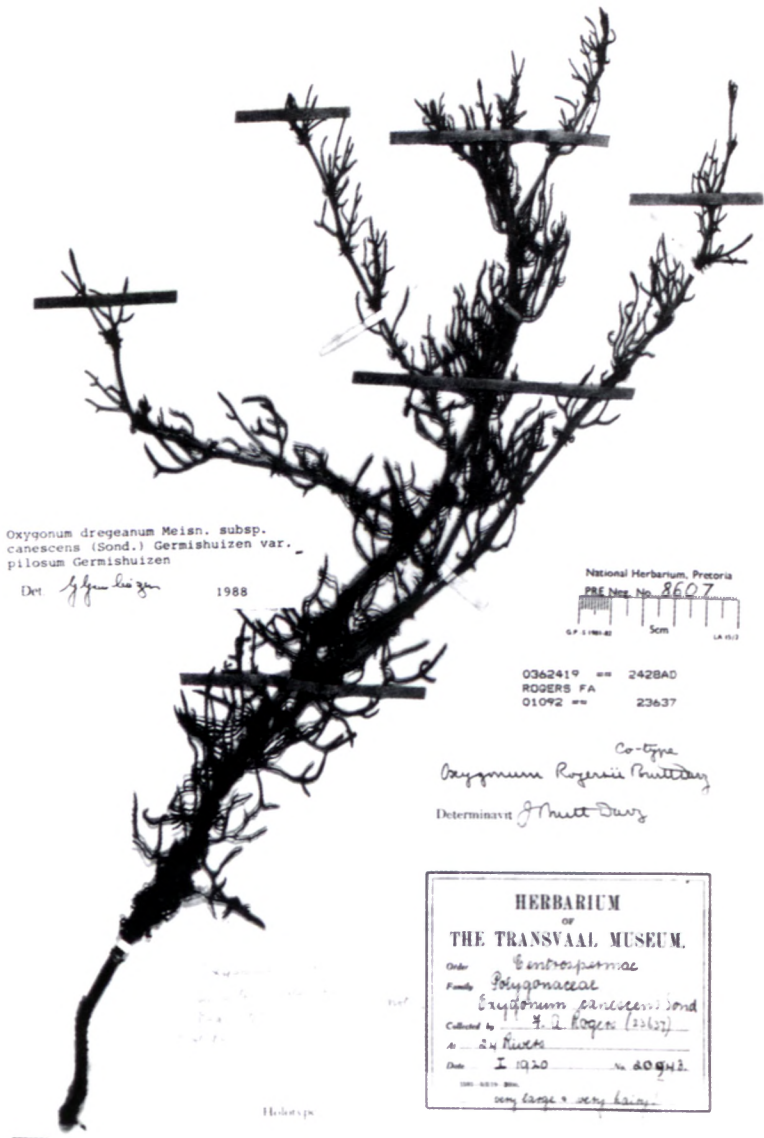


FIGURE 9.—Holotype of *Oxygonum dregeanum* Meisn. subsp. *canescens* (Sond.) *Germishuizen* var. *pilosum* *Germishuizen*.

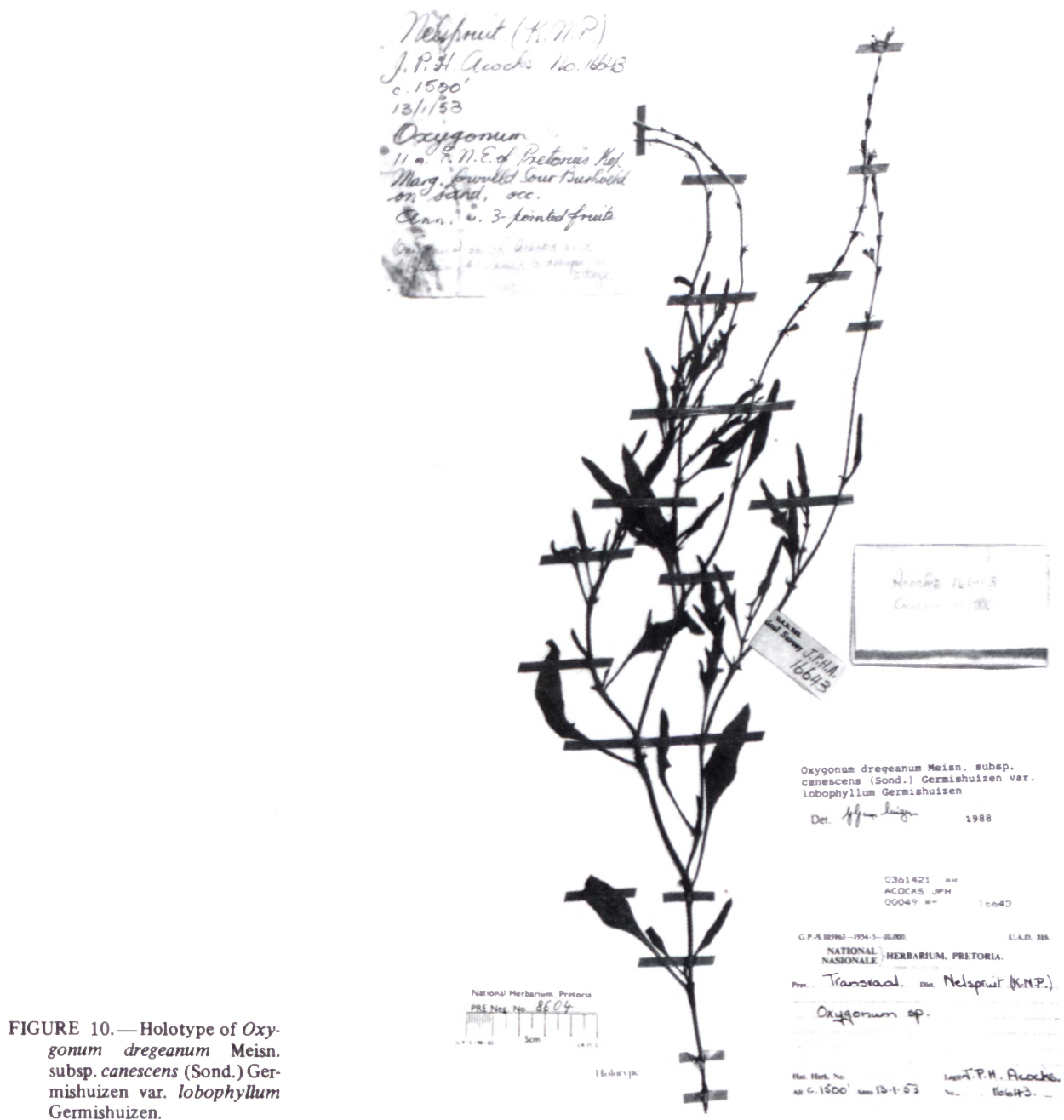


FIGURE 10.—Holotype of *Oxygonum dregeanum* Meisn. subsp. *canescens* (Sond.) Germishuizen var. *lobophyllum* Germishuizen.

Robust herb, arising from a thick vertical perennial woody rootstock, with many erect annual stems up to 0,3 m long. *Stems* much branched, angular, sulcate, finely and densely strigose puberulous, rarely glabrous, sometimes reddish tinged. *Ocrea* up to 8 mm long, lobed, membranous, brown, sometimes with a reddish tinge, white strigose puberulous, rarely glabrous; lobes up to 4 mm long, ending in a narrow red tip. *Leaves* (15–) 20–33(–40) × (1–)1,5–3,5(–8) mm, lanceolate to narrowly ovate, rarely lobed towards base, glabrous except for a few white appressed hairs along the midrib at base and along margins, rarely white strigose puberulous, acute, all ending in a stiff point, tapering to narrow petiole, mostly with dark red margins especially near apex. *Inflorescence* an axillary or terminal thyrse with up to 3 flowers in brown, cuspidate, cup-shaped bracts; axis 50–200 mm long. *Perianth* 5-lobed, white, deep pink or wine-red tinged along centre on outside of outer 3 lobes, densely pilose at base becoming glabrous towards the apex; lobes free almost to base, up to 7 mm long, outer 3 lobes keeled at apex; pedicels strigose, up to 4

mm long. *Stamens* 8, inserted on inner perianth lobes; filaments of different lengths, up to 5 mm long; anthers up to 1,5 mm long, reddish brown, with a ring of reddish brown cilia at base. *Styles* 3, heterostylous, 2,5–6,0 mm long, joined for less than half their length. *Fruit* an ovoid nut, up to 12 mm long, slightly 3-angled, usually without 3 blunt teeth at base, 9-ridged, transversely wrinkled, glabrous.

Found in open grassland and on montane rocky grassland, or rarely in woodland in Transvaal, Swaziland and Natal. Figure 12.

TRANSVAAL.—2430 (Pilgrims Rest): Lekgalameetse Nature Reserve, Makwens (–AA), *Stalmans* 192 (PRE); Haffenden Heights (–AA), *Stalmans* 174 (PRE); road to Makwens (–AA), *Stalmans* 634 (PRE); The Downs (–AA), *Junod* 4253 (PRE), *Stalmans* 1452 (PRE); on top of Orrie Baragwanath Pass (–AA), *Reid* 1159 (PRE); Ohrigstad Dam Nature Reserve (–DC), *Jacobsen* 1769 (PRE); Mount Sheba Nature Reserve, N slope of Mount Sheba (–DD), *De Winter* 9361 (PRE); Graskop (–DD), *Galpin* 14569 (PRE); Graskop, Stanley Bush Kop (–DD), *P. & G. Raal* 1035 (PRE); Pilgrims Rest (–DD), *Rogers* 14314 (PRE). 2530 (Lydenburg): Boschhoek, western Steen-

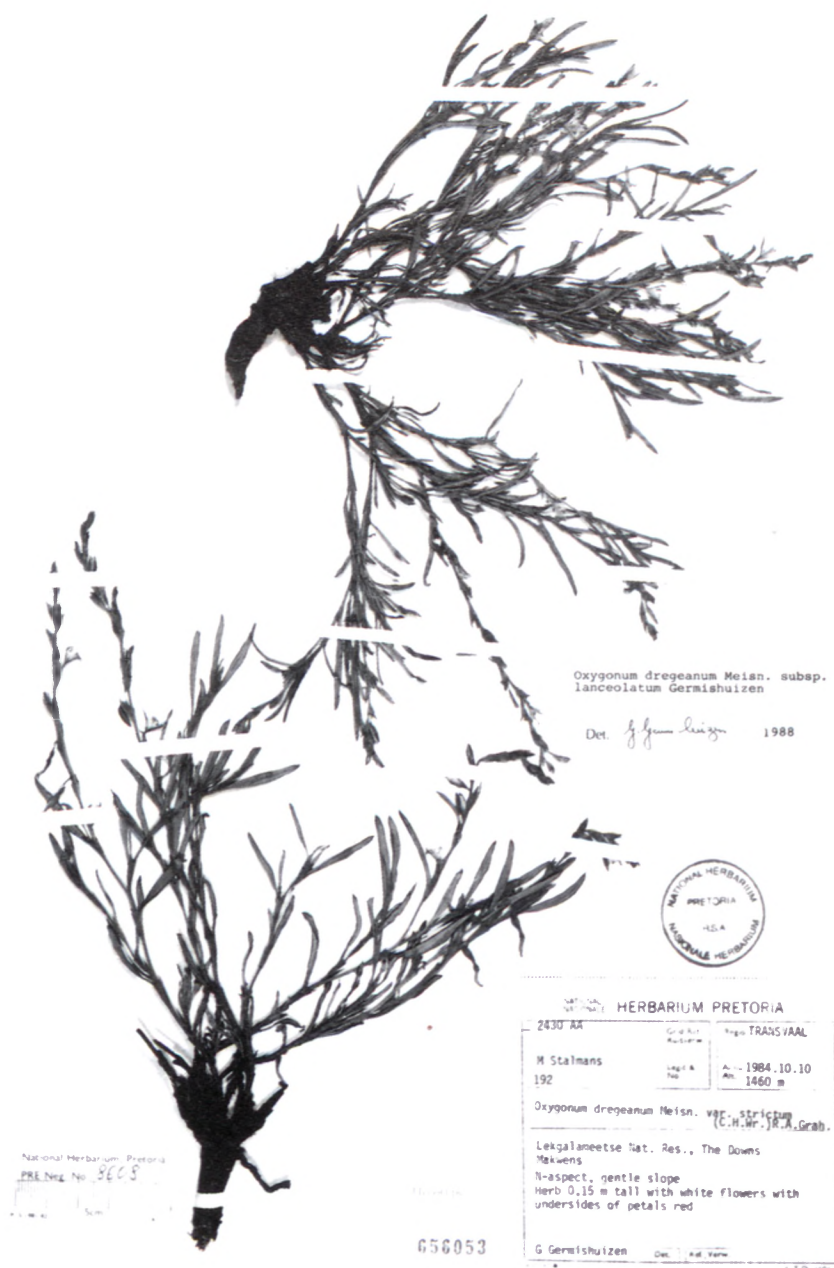


FIGURE 11.—Holotype of *Oxygonum dregeanum* Meisn. subsp. *lanceolatum* Germishuizen.

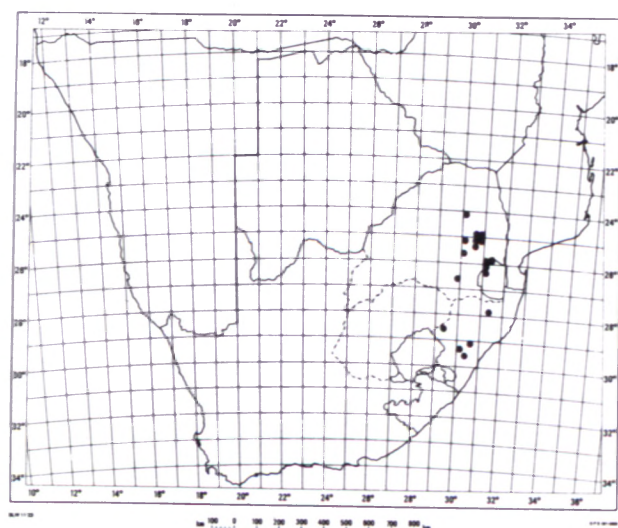


FIGURE 12.—Distribution of *Oxygonum dregeanum* subsp. *lanceolatum*.

kampsberg (—AA), *Young* 4407 (PRE); Hartebeestvlakte (—BA), *Mohle* 151 (PRE); Mauchsberg, Sabie (—BB), *Smuts & Gillett* 2306 (PRE, STE-U); Wonderkloof Nature Reserve (—BC), *Elan-Puttick* 128 (PRE); Belfast (—CA), *Jenkins* s.n. (PRE). 2531 (Komatipoort): *Barberton* (—CC), *Pott* 5469 (PRE); *Thorn-croft* s.n. (PRE); Saddleback Mountain (—CC), *Galpin* 615 (NH, PRE, SAM); Osterbeek Farm, 5 km S of Barberton (—CC), *De Sousa* 626 (PRE); Swaziland border, Daylight Farm, Bearded Man Mountain (—CD), *Buitendag* 756 (NBG, PRE). 2629 (Bethal): *Ermelo* (—DB), *Riley* 12 (PRE).

SWAZILAND.—2531 (Komatipoort): *Havelock Mine*, *Piggs Peak* (—CC), *Müller* 2988 (PRE). 2631 (Mbabane): *Malolotja Nature Reserve*, *Nkhamba* (—AA), *Heath* 470 (PRE); *Black Mbuluzi Valley* (—AA), *Dlamini* s.n. (NBG, PRE); *Ukutula* (—AC), *Compton* 25256 (NBG, PRE); *Compton* 24501 (NBG).

NATAL.—2731 (Louwsburg): 15 km from Ngome Forest Station on road to Vryheid (—CD), *Germishuizen* 2133 (PRE); 12 km from Ngome Forest Station on road to Vryheid (—CD), *Buthelesi* 115 (NH, PRE). 2829 (Harrismith): *Klip River*, *Stryd-hoek*, *Tintwa Mountains* (—CB), *Doidge* s.n. (PRE). 2930 (Pietermaritzburg): *Tweedie* (—AC), *Curator Pretoria* 3462 (PRE); *Greytown* (—BA), *Wylie* s.n. (PRE); *Pietermaritzburg*, *Table Mountain* (—CB), *Killick* 732 (NBG).

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REFERENCES

- BURTT DAVY, J. 1926. *A manual of the flowering plants and ferns of the Transvaal with Swaziland, South Africa* 1: 167. Longmans, Green, London.
- COMPTON, R.H. 1976. Polygonaceae. *Flora of Swaziland. Journal of South African Botany*, Supplement Vol. 11: 192.
- GRAHAM, R.A. 1957. A revision of *Oxygonum*. *Kew Bulletin* 1: 166–167.
- MEISNER, C.F. 1840. Polygonaceae. In D.F.L. Schlechtendal, *Linnaea* 14: 487.
- MEISNER, C.F. 1856. Polygonaceae. In A.P. De Candolle, *Prodromus systematis naturalis regni vegetabilis* 14: 38. Paris.
- ROSS, J.H. 1972. Flora of Natal. *Memoirs of the Botanical Survey of South Africa* No. 39: 156. Government Printer, Pretoria.
- SCHINZ, H. 1901. Polygonaceae. *Bulletin de l'Herbier Boissier* sér. 2,1: 870.
- SCHLECHTER, R. 1907. Beiträge zur Kenntnis der Flora von Natal. In H.G.A. Engler, *Botanische Jahrbücher* 40: 92. Leipzig.
- SONDER, O.W. 1850. In D.F.L. Schlechtendal, *Linnaea* 23: 100. Halle, Berlin.
- TIKOVSKY, H. & MERXMÜLLER, H. 1969. Polygonaceae. In H. Merxmüller, *Prodromus einer Flora von Südwest-afrika* 23: 4. Cramer, Lehre.
- WRIGHT, C.H. 1912. Polygonaceae. In W.T. Thiselton-Dyer, *Flora capensis* 5,1: 461–462. Reeve, London.