

## FSA contributions 12: Plantaginaceae

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Annual or perennial herbs. *Leaves* simple, usually all in a basal rosette or sometimes (in perennials) cauline, spirally arranged, venation parallel; stipules 0. *Inflorescence* a dense to lax spike; peduncle usually longer than inflorescence. *Flowers* bisexual, regular, small, bracteate. *Calyx* 4-lobed, membranous, imbricate. *Corolla* 4-lobed. *Stamens* 4, inserted on corolla tube. *Ovary* 2–4-locular, superior; style 1, filiform, long, often exserted; ovules 1–many in each locule. *Fruit* a circumscissile capsule. *Seeds* mostly 2–4 per capsule ( $\pm$  15–25 in *P. major*), mostly  $\pm$  boat-shaped with ventral hilum.

A family of three genera, only one of which is represented in southern Africa.

### 8116000 PLANTAGO

**Plantago** L., Species plantarum edn 1: 112 (1753); T.Cooke: 388 (1910); Pilg.: 1 (1937); Levyns: 729 (1950); Verdc.: 1 (1971); R.A.Dyer: 601 (1975). Type species: *P. major* L.

Description as for family.

A cosmopolitan genus of over 250 species, of which 12 and one variety occur in southern Africa. Five species are restricted to the *Flora* area, another five are introduced and two are weedy plants of such wide distribution as to make it impossible to determine whether they are indigenous or naturalised here. Two species of doubtful occurrence in the *Flora* area are appended to this treatment.

Note: in the descriptions and notes below, the word 'scape' is used to mean the whole inflorescence including both peduncle and spike.

- 1a Leaves petiolate, or at least narrowed towards base:
  - 2a Leaves broad (up to 4 times as long as wide):
    - 3a Seeds 15–25 per capsule; leaves with scattered hairs, usually drying greenish ..... 1. *P. major*
    - 3b Seeds 2–4 per capsule; leaves glabrous or with isolated hairs, usually drying brown to almost black ..... 3. *P. longissima*
  - 2b Leaves narrow (more than 4 times as long as wide):
    - 4a Spike less than half as long as peduncle ..... 10. *P. lanceolata*
    - 4b Spike more than half as long as peduncle:
      - 5a Leaves densely shaggy ..... 7. *P. virginica*
      - 5b Leaves with scattered hairs ..... 9. *P. myosuros*
- 1b Leaves amplexicaul, not narrowing towards base:
  - 6a Leaves distinctly cauline:
    - 7a Bracts long, conspicuous, projecting well beyond the flowers; leaves not succulent ..... 12. *P. aristata*
    - 7b Bracts short, inconspicuous, not projecting beyond the flowers; leaves semi-succulent ..... 6. *P. crassifolia*
  - 6b Leaves all in a basal rosette:
    - 8a Leaves lorate, margins with a few small teeth:
      - 9a Leaves glabrous ..... 4. *P. remota*
      - 9b Leaves villous ..... 8. *P. rhodosperma*

8b Leaves linear-pinnatifid or linear-filiform:

- 10a Leaves pinnatifid; spike over 20 mm long ..... 5. *P. coronopus*
- 10b Leaves linear-filiform, not pinnatifid; spike less than 20 mm long:
  - 11a Plants hirsute ..... 11. *P. cafra*
  - 11b Plants glabrous ..... 2. *P. bigelovii*

1. **P. major** L., Species plantarum edn 1, 112 (1753); Decne.: 694 (1852); T.Cooke: 388 (1910); Pilg.: 41 (1937); Levyns: 729 (1950); Verdc.: 2 (1971). Type: perhaps Sweden, *LINN 144.1* (LINN).

*P. dregeana* Decne.: 695 (1852); T.Cooke: 389 (1910). Type: Cape, near Nieuwjaarsfontein, *Drège s.n.* (P).

Perennial herbs, very variable. *Leaves* in a basal rosette, elliptical, ovate or obovate, 70–400 × 24–125 mm, glabrous, rarely pubescent; petiole flattened, 25–200 mm long. *Scapes* several per rosette, 150–300 mm long; spikes 40–135 mm long. *Bracts* usually glabrous, sometimes pubescent, apices acute. *Calyx* lobes elliptical,  $\pm$  2 × 1 mm, winged, acute. *Corolla* lobes deltoid,  $\pm$  1.2 × 0.7 mm, acute. *Capsule* ellipsoid,  $\pm$  3 × 2 mm (Figure 1D). *Seeds* rounded-tetrahedral, 15–25 per capsule, black to dark brown, 1.0–1.2 × 0.6–0.9 mm, hilum scar at apex, small. *Flowering time*: from spring to autumn.

A common weed of moist, sunny places; indigenous or naturalised throughout most of the world. Known from Northern Province to Western Cape and in Namibia (Figure 2).

Vouchers: Archibald 4947 (PRE); Galpin 2945 (PRE); Mogg 4838 (PRE); Muir 1911 (PRE); Thode A1185 (K. NH. PRE).

This plant is easily confused with *P. longissima* (no. 3), but may be distinguished from that species by its many-seeded capsules. Leaves of this species usually dry olive-green and have scattered hairs, whereas those of *P. longissima* usually dry various shades of brown to black, and are glabrous or have only isolated hairs.

Plants of *P. major* are occasionally seen on sale in the herb sections of nurseries in South Africa. The medicinal uses of this species are similar to those of *P. lanceolata*; Watt & Breyer-Brandwijk (1963) and Roberts (1983) may be consulted for further details.

2. **P. bigelovii** A.Gray in Whipple, Exploration and surveys for a railroad route from the Mississippi River to the Pacific Ocean 4: 117 (1857); Pilg.: 73 (1937); Levyns: 730 (1950). Type: California, Benicia, *Bigelow s.n.* (GH).

Annual herbs. *Leaves* in a basal rosette, linear to filiform, 30–40 × 0.3–0.6 mm, glabrous, amplexicaul. *Scapes* few per rosette, 30–150 mm long; spikes 1.5–5.0 mm long, few-flowered. *Bracts* pilose, obtuse. *Calyx* lobes elliptic,  $\pm$  1.5 × 1.3 mm, winged, subobtuse.

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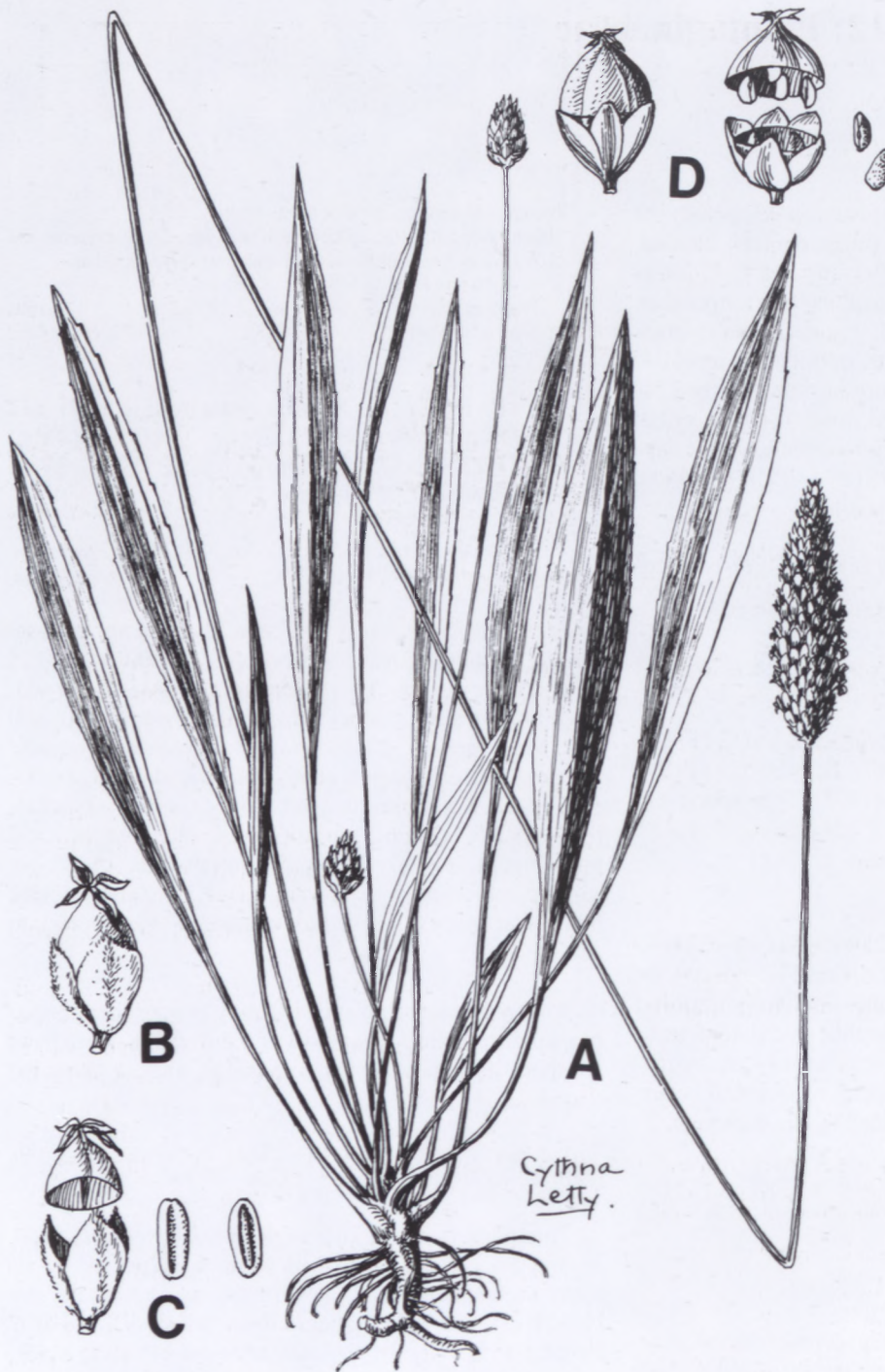


FIGURE 1.—A–C, *Plantago lanceolata* L.: A, habit,  $\times 0.5$ ; B, young fruit,  $\times 5$ ; C, dehiscent fruit and seeds,  $\times 5$ . D, *Plantago major* L., fruits and seeds,  $\times 5$ .

Corolla lobes deltoid to elliptic,  $\pm 0.6 \times 0.4$  mm, acute. Capsule ellipsoid,  $\pm 3$  mm long. Seeds not seen.

A western United States species, recorded once from the Cape Peninsula by Levyns (Figure 3).

Voucher: Levyns 5092 (BOL, K).

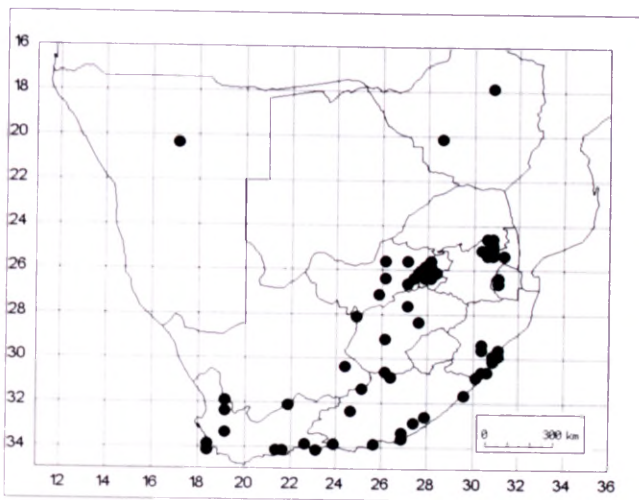
This is the smallest species of *Plantago* occurring in our area. While it would be difficult to confuse it with any other southern African species of *Plantago* except *P. cafra* (no. 11), it bears a striking superficial resemblance to a species of *Kyllinga* (Cyperaceae). The most striking difference between this species and *P. cafra* is that in this species all parts are glabrous, whereas in the latter the peduncle in particular (but also the leaves) is covered with brownish hairs.

3. *P. longissima* Decne. in DC., Prodrromus 13: 720 (1852); T.Cooke: 390 (1910); Pilg.: 81 (1937). Type: Eastern Cape, between Umtata and Umsamwubo, Drège 4711 (P).

*P. burchellii* Decne.: 720 (1852). *P. longissima* Decne. var. *burkei* Pilg.: 82 (1937). Type: KwaZulu-Natal, Mooi River, Burke s.n. (K).

*P. longissima* Decne. var. *densiuscula* Pilg.: 82 (1937). Type: Mpumalanga, near Lydenburg, Wilms 1247 (B).

Perennial herbs. Leaves cauline, often with woolly bases, elliptical, ovate or obovate,  $190\text{--}725 \times 45\text{--}150$  mm, glabrous; petiole flattened,  $50\text{--}400$  mm long. Scape one per rosette,  $0.40\text{--}1.12$  m long; spikes  $0.15\text{--}0.50$  m long. Bracts glabrous, apices acute. Calyx lobes elliptical,  $\pm 2.5 \times 1.0$  mm, winged, acute. Corolla lobes deltoid,  $\pm 2.0 \times 1.2$  mm, acute. Capsule ellipsoid,  $\pm 3.0 \times 1.5$

FIGURE 2.—Distribution of *Plantago major* in southern Africa.

mm. *Seeds* rounded-tetrahedral, 2–4 per capsule, black to dark brown, 1–2 × 0.6–0.8 mm, hilum scar at apex, small. *Flowering time*: from October to February.

Endemic in Eastern Cape, KwaZulu-Natal, Mpumalanga, Gauteng and Northern Province (Figure 4).

Vouchers: *Moss* 8718 (BM); *Phillips* 570 (PRE); *Rodin* 3854 (K, MO, PRE); *Rudatis* 1783 (PRE, STE).

This species is often confused with *P. major* (no. 1); see there for distinguishing characters.

4. ***P. remota* Lam.**, Tableau encyclopédique et méthodique I: 341 (1791); Decne.: 721 (1852); T.Cooke: 391 (1910); Pilg.: 96 (1937); Levyns: 730 (1950). Type: Cape of Good Hope, *Sonnerat s.n.* (P).

*P. capensis* Thunb.: 29 (1794); Thunb.: 148 (1823). Type: Cape of Good Hope, *Thunberg* 3503 (UPS, holo., PRE, fiche!).

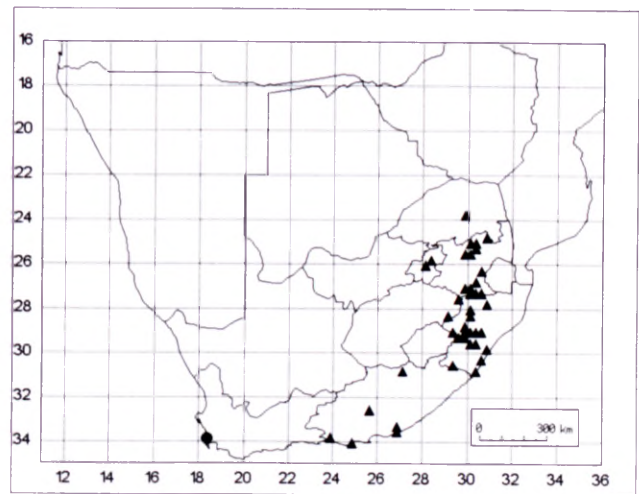
Perennial herbs. *Leaves* in a basal rosette, linear to lanceolate or oblanceolate, 50–210 × 2–9 mm, glabrous, amplexicaul. *Scapes* few per rosette, 200–400 mm long; spikes 30–125 mm long. *Bracts* glabrous, apices acute to acuminate. *Calyx* lobes narrowly deltoid, ± 3 × 1 mm, narrowly winged, acute. *Corolla* lobes deltoid, ± 1.4 × 0.8 mm, acute. *Capsule* ellipsoid, ± 2 × 1 mm. *Seeds* boat-shaped, 2–4 per capsule, black to dark brown, 2.2–3.0 × 1.0–1.9 mm, hilum scar in a ventral depression almost as long as seed. *Flowering time*: throughout the year.

Endemic to the Western and Eastern Cape (Figure 4).

Vouchers: *Britten* 6485 (PRE); *Dyer* 2400 (PRE); *Esterhuysen* 15454 (BOL, PRE); *Glass* 443 (NBG), *Wolley Dod* 2403 (BM, BOL, K, PRE).

This species is similar to *P. crassifolia* (no. 6) in that it has semi-succulent, linear leaves, but differs from that species in having all the leaves basal and glabrous except for a tuft of copper-coloured woolly hairs at the base, and in its generally more inland distribution.

5. ***P. coronopus* L.**, Species plantarum 115 (1753); Decne.: 732 (1852); Pilg.: 126 (1937); Levyns: 730 (1950); Chater & Cartier: 40 (1976). Lectotype: *Herb.*

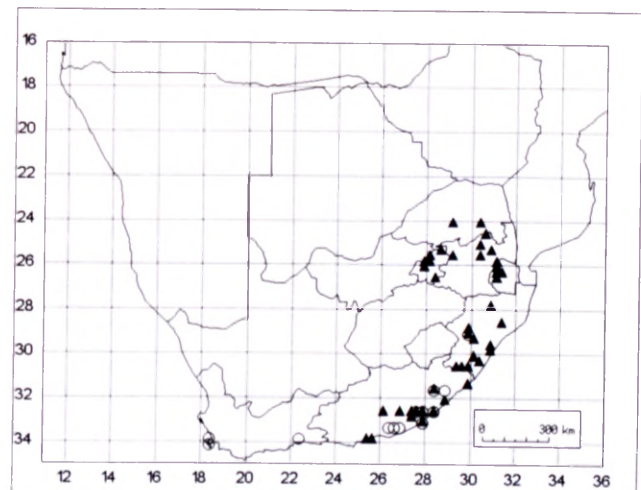
FIGURE 3.—Distribution of *Plantago bigelovii*, ●, and *P. virginica*, ▲, in southern Africa.

*Burser* 10: 89 (UPS) (fide C. Jarvis & L.L. Dreyer pers. comm.)

Annual herbs. *Leaves* in a basal rosette, appressed-horizontal, linear-pinnatifid, 40–200 × 2–5 mm, pubescent, amplexicaul. *Scapes* many per rosette, 70–320 mm long; peduncles horizontal below, erect above; spikes erect, 20–120 mm long. *Bracts* glabrescent, apices acute. *Calyx* lobes narrowly elliptic, ± 2 × 1 mm, acute. *Corolla* lobes deltoid, ± 1.0 × 0.7 mm, subacute. *Capsule* ellipsoid, ± 2.5 × 2.0 mm. *Seeds* rounded-tetrahedral, 2–4 per capsule, greenish brown, 1.0–1.3 × 0.6–0.7 mm, hilum scar at apex, small. *Flowering time*: September to December.

A cosmopolitan weed, introduced from Europe; in our area only known with certainty from the Western Cape, where it is very common, if not locally dominant in small areas, on paths leading to beaches, picnic areas and other disturbed areas from Elands Bay on the west coast to Pearly Beach near Bredasdorp, and possibly further afield. *Flanagan* 1377 (PRE) from near Komga (Eastern Cape) probably belongs here (Figure 5).

Vouchers: *Glen* 1518 (PRE); *Moss* 9082 (J); *Oliver* 3718 (PRE); *Salter* 8516 (BOL, K, NBG); *Walgate* 617 (BOL, NBG).

FIGURE 4.—Distribution of *Plantago longissima*, ▲; and *P. remota*, ○, in southern Africa.

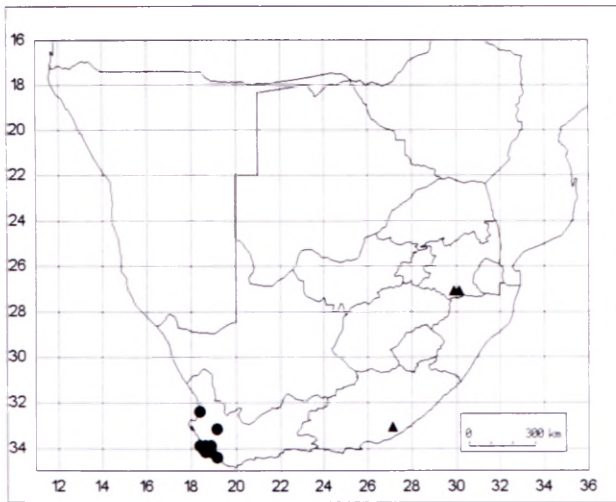


FIGURE 5.—Distribution of *Plantago coronopus*, ●, and *P. myosuroides*, ▲, in southern Africa.

This species is immediately distinguishable from all others in southern Africa by its linear-pinnatifid leaves.

6. *P. crassifolia* Forssk., Flora aegyptiaco-arabica 62 (1775); Pilg.: 160 (1937). Type: Egypt, Alexandria, Forsskål 261 (C).

*P. carnosa* Lam.: 342 (1791); Decne.: 729 (1852); T.Cooke: 393 (1910); Levyns: 730 (1950). Type not cited.

*P. litoraria* Fourc.: 96 (1934). Type: Western Cape, Eerste River, Fourcade 1961 (BOL!).

Perennial herbs or suffrutices. *Leaves* cauline, linear to narrowly lanceolate, 30–260 × 4–10 mm, pubescent, amplexicaul. *Scapes* few per rosette, 90–300 mm long; spikes 30–75 mm long. *Bracts* with scattered villi, apices subacute. *Calyx* lobes elliptical, ± 2.5 × 1.5 mm, narrowly winged, subacute. *Corolla* lobes deltoid, ± 1.5 × 1.0 mm, subacute. *Capsule* ellipsoid, ± 3.0 × 1.5 mm. *Seeds* boat-shaped, 2–4 per capsule, brown, 1.8–2.3 × 0.9–1.2 mm, hilum scar in a central depression about half as long as seed. Flowering throughout the year, mostly in summer.

Two varieties can be distinguished:

- 1a Leaves long and narrow, rarely less than 100 mm long . . . 6a. var. *crassifolia*  
 1b Leaves short and wide, rarely over 50 mm long . . . 6b. var. *hirsuta*

6a. var. **crassifolia**.

Description as for species.

Occurs in the Mediterranean Basin and in southern Africa, where it is known from the Western and Eastern Cape (Figure 6).

Vouchers: Acocks 17610 (PRE); Boucher 3004 (PRE); Bourke 698 (NBG, PRE); Taylor 3178 (PRE, STE); Wells 2678 (GRA, K, PRE).

This species is usually a beach-dweller, in contrast with *P. remota* (no. 4), which usually occurs in more inland situations. In addition to the distinctions mentioned under that species, the present one may be distinguished from it by having entire or very sparsely, coarse-

ly dentate leaf margins. In *P. remota* the leaf margins are sparsely minutely dentate.

6b. var. **hirsuta** (Thunb.) Bég. in *Bulletino della Società botanica italiana* 1901: 252 (1901); Pilg.: 162 (1937). Type: Cape of Good Hope, Thunberg 3518 (UPS, holo.; PRE, fiche!).

*P. hirsuta* Thunb.: 29 (1794).

*P. thunbergii* Poir.: 431 (1816). Type: Jacquin, Hort. Schoenbr. 3: t. 258 (PRE, icono!).

Plants smaller in all parts than the typical variety. Leaves more densely rosulate.

Occurs in the Western and Eastern Cape (Figure 6).

Vouchers: Bayliss 4182 (NBG); H. Hall s.n. in NBG97433 (NBG); Schlechter 10551 (BOL, GRA).

7. *P. virginica* L., Species plantarum edn 1, 113 (1753); Michx.: 94 (1803); Decne.: 722 (1852); Pilg.: 213 (1937); Rahn: 154 (1974). Type: probably North America, Kalm s.n. in LINN144.8 (LINN).

Perennial herbs. *Leaves* in a basal rosette, obovate or narrowly spatulate, 33–220 × 9–40 mm, densely villous; petiole flattened, 15–50 mm long. *Scapes* few per rosette, 170–360 mm long; spikes 90–200 mm long. *Bracts* glabrous, apices acute. *Calyx* lobes elliptical, ± 2 × 1 mm, subacute. *Corolla* lobes deltoid, ± 2.5 × 1.3 mm, acute. *Capsule* ellipsoid, ± 3.5 × 2.0 mm. *Seeds* narrowly tetrahedral, 2–4 per capsule, greenish brown, 1.4–1.9 × 0.7–1.0 mm, hilum scar at apex, small. Flowering time: throughout the year, mainly in summer.

Originally introduced from North America (see Rahn 1974 for the indigenous distribution of this species), *P. virginica* is now a widespread weed in southern Africa (Figure 3).

Vouchers: Acocks 11450 (NH, PRE); Balsinhas 2905 (K, MO, PRE); Codd 6455 (PRE); Jacobsz 2147 (NBG, PRE); Strey 3033 (K, PRE, SRGH).

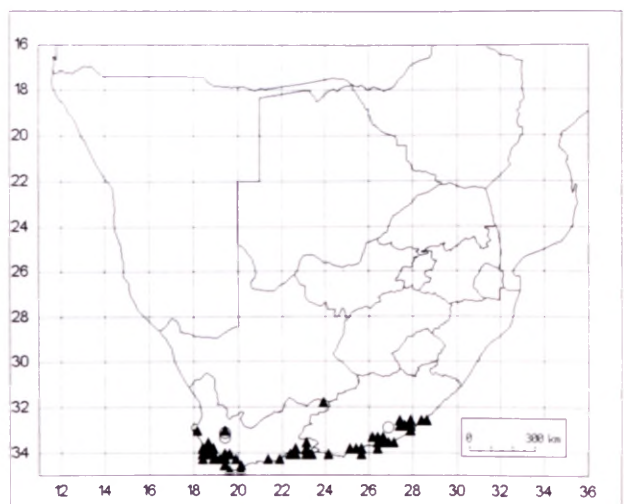


FIGURE 6.—Distribution of *Plantago crassifolia* var. *crassifolia*, ▲, and *P. crassifolia* var. *hirsuta*, ○, in southern Africa.

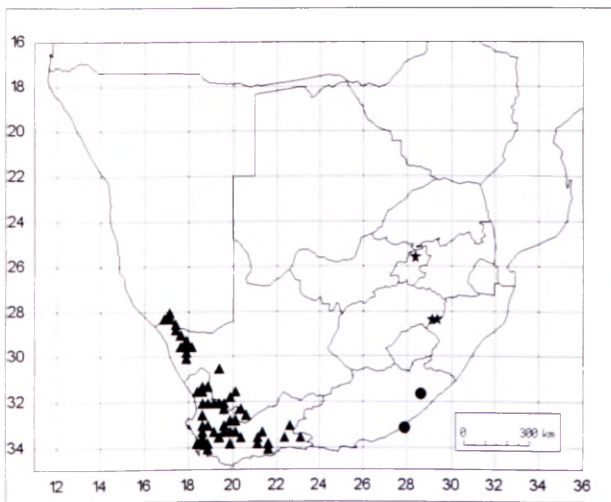


FIGURE 7.—Distribution of *Plantago rhodosperma*, ●; *P. cafra*, ▲; and *P. aristata*, ★, in southern Africa.

The densely villous leaves distinguish this species from all others in southern Africa. In shape, the leaves resemble a miniature form of *P. major* (no. 1).

8. *P. rhodosperma* Decne. in DC., Prodrumus 13: 722 (1852); Pilg.: 217 (1913); Pilg.: 12 (1928); Pilg.: 214 (1937); Rahn: 134 (1974). Type: Texas, *Anon. s.n. in herb. De Candolle* (G).

Annual herbs. *Leaves* in a basal rosette, linear, 115–120 × 5–8 mm, densely villous, amplexicaul. *Scapes* many per rosette, 50–300 mm long; spikes 10–180 mm long. *Bracts* villous, apices acute. *Calyx* lobes narrowly elliptic, ± 2 × 1 mm, subacute. *Corolla* lobes broadly deltoid, ± 2.0 × 1.7 mm, acute. *Capsule* ellipsoid, ± 3 × 2 mm. *Seeds* boat-shaped, 2–4 per capsule, greenish brown, 1.4–1.9 × 0.6–1.0 mm, hilum scar in a ventral depression almost half as long as seed. *Flowering time*: December.

This species was introduced from North America (see Rahn 1974 for indigenous distribution); in our area it is only known from the Eastern Cape (Figure 7).

Vouchers: *Ratray* 229 (GRA, K); *C.A. Smith* 3690 (PRE).

While the leaves and peduncles of *P. myosuroides* (below) have scattered hairs, those of the present species are densely villous. *P. rhodosperma* differs from *P. lanceolata* (no. 10) in that the spikes are as long as or longer than the peduncles in the former species but much shorter in the latter. It differs from *P. remota* (no. 4) in having densely villous leaves and dense spikes, rather than glabrous leaves and lax spikes. *P. rhodosperma* differs from *P. virginica* (above) in having narrower leaves (both absolutely and in proportion to their length), villous (not glabrous) bracts and broader corolla lobes.

9. *P. myosuroides* Lam., Tableau encyclopédique et méthodique 1: 342 (1791); Decne.: 723 (1852); Pilg.: 244 (1913); Pilg.: 16 (1928); Pilg.: 226 (1937); Rahn: 115 (1974). Type: Uruguay, *Commerson s.n.* (P).

Annual or perennial herbs. *Leaves* in a basal rosette, linear to narrowly lanceolate or oblanceolate, 90–120 ×

7.0–12.5 mm, glabrous, rarely pubescent; petiole flattened, 25–100 mm long. *Scapes* few per rosette, 60–180 mm long; spikes 20–66 mm long. *Bracts* densely pilose, apices acute. *Calyx* lobes narrowly elliptic, ± 2.5 × 1.0 mm, not winged, acute. *Corolla* lobes narrowly deltoid, ± 2.5 × 1.0 mm, acute. *Capsule* ellipsoid, ± 3.0 × 1.5 mm. *Seeds* narrowly tetrahedral, 2–4 per capsule, pale yellowish brown, 1.4–1.6 × 0.8–1.0 mm, hilum scar at apex, small. *Flowering time*: January.

A weed introduced from South America (see Rahn 1974 for indigenous distribution); known in our area from the Eastern Cape, and Mpumalanga (Figure 5).

Vouchers: *Codd* 9885 (PRE); *Galpin* 8230 (PRE); *Hilliard & Burt* 7557 (PRE); *Jacot Guillarmod* 8900 (GRA, PRE); *Sim* 19557 (PRE).

This species is superficially similar to *P. lanceolata* (below), from which it may be distinguished by its inflorescences, in which the spikes are about as long as the peduncles, whereas in *P. lanceolata* they are much shorter than the peduncles. The hilum scar on the seeds is raised in this species, but depressed in *P. lanceolata* and *P. rhodosperma* (no. 8).

10. *P. lanceolata* L., Species plantarum edn 1: 113 (1753); Decne.: 714 (1852); T.Cooke: 389 (1910); Pilg.: 313 (1937); Levyns: 730 (1950); Verdc.: 6 (1971); Troupin: 505 (1985). Type: specimen of *Plantago angustifolia major* in *Hort. Cliff. p. 36 no. 3* (BM, lecto.).

Perennial herbs, very variable. *Leaves* in a basal rosette, linear to narrowly lanceolate or oblanceolate, 65–370 × 6–35 mm, glabrous or pubescent; petiole 30–125 mm long. *Scapes* many per rosette, 250–750 mm long; spikes 15–70 mm long. *Bracts* glabrescent, apices subobtusate. *Calyx* lobes elliptic, ± 2.5 × 1.3 mm, winged, obtuse. *Corolla* lobes deltoid, ± 2.0 × 1.2 mm, acute. *Capsule* ellipsoid, ± 3.5 × 1.5 mm. *Seeds* boat-shaped, 2–4 per capsule, dark brown, 2.4–2.8 × 1.2–1.6 mm, hilum scar in a ventral depression almost as long as seed. *Flowering* throughout the year, but mainly in summer. Figure 1A–C.

A very common weed of cultivation and disturbed places; a typical habitat for this species is between paving stones on urban pavements (sidewalks). This species is indigenous or naturalised almost throughout the world and is widely distributed in southern Africa (Figure 8), even reaching Tristan da Cunha.

Vouchers: *Boucher* 1732 (PRE, STE); *Dahlstrand* 3570 (MO, PRE); *Marloth* 10044 (PRE); *Reid* 307 (PRE); *Van Jaarsveld* 3127 (PRE).

Differences between this species on the one hand and *P. myosuroides* (above) and *P. rhodosperma* (no. 8) on the other, are dealt with under those species. The medicinal uses of this species are similar to those of *P. major* (no. 1).

11. *P. cafra* Decne. in DC., Prodrumus 13: 719 (1852); T.Cooke: 389 (1910); Pilg.: 463 (1922); Pilg.: 352 (1937); Friedr.-Holzh.: 1 (1968). Type: Western Cape, Riebeeck Kasteel, *Drège s.n.* (P).

*P. capillaris* E.Mey. ex Decne.: 719 (1852); T.Cooke: 390 (1910). *P. cafra* Decne. forma *capillaris* (E.Mey.) Pilg.: 464 (1922); Pilg.: 352 (1937). Type: Western Cape, Olifants River, *Drège s.n.* (K!).

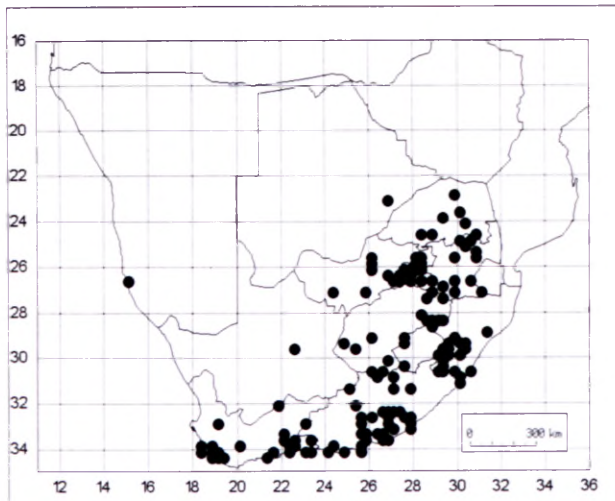


FIGURE 8.—Distribution of *Plantago lanceolata* in southern Africa.

Annual herbs. *Leaves* in a basal rosette, linear to filiform, acuminate, 32–144 × 0.2–2.0 mm, pubescent, amplexicaul. *Scapes* several per rosette, 12–130 mm long; spikes 4–17 mm long. *Bracts* with scattered villi, acuminate. *Calyx* lobes narrowly elliptic, ± 2.0 × 1.5 mm, winged, obtuse. *Corolla* lobes narrowly deltoid, ± 1.2 × 0.4 mm, acuminate. *Capsule* ellipsoid, ± 4.5 × 2.5 mm. *Seeds* boat-shaped, 2–4 per capsule, 2.3–4.1 × 0.8–1.25 mm, brown or greenish brown, hilum scar in a ventral depression almost as long as seed. *Flowering time*: August–September.

Endemic to the Western and Northern Cape (Figure 7). According to Pilger (1937) and Friedrich-Holzhammer (1968), also known from one collection from Warmbad District, Namibia.

Vouchers: *Acocks* 14836 (PRE); *Goldblatt* 2274 (NBG, PRE); *Rösch & Le Roux* 467 (PRE); *Schlechter* 4908 (BM, GRA, PRE, SAM, STE); *Strey* 3881 (PRE).

Differs from *P. bigelovii* (no. 2) in that the leaves and particularly the peduncles of the scapes are hirsute-villous rather than glabrous, and from all other southern African members of the genus by its small size and linear-filiform leaves.

12. *P. aristata* Michx., *Flora boreali-americana* 1: 95 (1803); Decne.: 714 (1852); Pilg.: 366 (1937). Type: USA, Illinois, *Michaux* s.n. (P).

Perennial herbs. *Leaves* cauline, linear, acuminate, 100–142 × 2–7 mm, thinly hirsute to glabrous, amplexicaul. *Scapes* many per stem, 200–300 mm long; spikes 100–150 mm long. *Bracts* glabrous or with few villi, very narrowly deltoid, conspicuous. *Calyx* lobes narrowly elliptic, ± 4 × 1 mm, not winged, obtuse. *Corolla* lobes ± 2.0 × 1.5 mm, obtuse. *Capsule* ellipsoid, ± 3.5 × 2 mm. *Seeds* boat-shaped, 2–4 per capsule, 1.9–2.6 × 1.1–1.3 mm, brown, hilum scar in a ventral depression almost as long as seed. *Flowering time*: January–February.

A weed, indigenous to the United States of America; rather rare in our region, known only from the Free State and KwaZulu-Natal border area, and from one specimen from Pretoria, Gauteng (Figure 7).

Vouchers: *Burt Davy* 7104 (K, PRE); *Haygarth* s.n. in NH15976 (NH); *Medley Wood* 8858 (NH, PRE); *Ward* 5968 (NU, PRE).

The bracts of this species are about 20 times as long as wide, whereas in all other southern African species they are about twice as long as wide.

#### DOUBTFUL SPECIES

*P. laxiflora* Decne. in DC., *Prodromus* 13: 699 (1852); Pilg.: 81 (1937). Type: Eastern Cape, 'between Gekan and Baxh', *Drège* s.n. (P).

Annual (?) herbs. *Leaves* apparently in a basal rosette, narrowly lanceolate, 50–150 × 20–45 mm, coarsely dentate, glabrescent; petioles flattened. *Scapes* few per rosette, 200–650 mm long; spikes 120–300 mm long. *Bracts* slightly villous, acute. *Calyx* lobes elliptic, ± 3 mm long, not winged, acute. *Corolla* lobes rotund or ovate, ± 1.4 mm long, acute. *Capsule* ellipsoid. *Seeds* boat-shaped, dark brown to black, to 3 mm long, hilum scar in a long ventral depression.

Pilger states that this species occurs in the Eastern Cape, but no specimen referable to this species was seen. The description above is based on that of Pilger.

Material matching this description should not be identifiable using the key above, which should fail at couplet 8, where neither lead describes this species, though it matches lead 6b.

*P. afra* L., *Species plantarum* edn 2: 168 (1762); Verdc.: 6 (1971). Type: Malta and North Africa, Morison Hist. 3: 262, sect. 8, t. 17/4 (syn.).

*P. psyllium* sensu L.: 167 (1762); Pilg.: 422 (1937) et auctt. mult., non L.: 115 (1753).

Annual erect herbs. *Leaves* opposite, subopposite or spirally arranged, narrowly lanceolate, 21–29 × 0.9–2.0 mm, glabrous, obtuse. *Scapes* several at a node, 20–50 mm long; spikes 6–11 mm long, few-flowered. *Bracts* glabrescent, acuminate. *Calyx* lobes elliptic, ± 3.0 × 1.5 mm, narrowly winged, subacute. *Corolla* lobes deltoid, ± 2.0 × 1.2 mm, acute. *Capsule* ellipsoid, ± 4 × 2 mm. *Seeds* boat-shaped, 2–4 per capsule, 2.7–3.2 × 1.0–1.4 mm, greenish brown, hilum scar in a ventral depression almost as long as seed.

Notes attached to a specimen from Kew indicate that this species was once cultivated experimentally in Pretoria. No material of it as a weed or naturalised in southern Africa was seen, though there are two cultivated specimens in the main herbarium at PRE. The above description was prepared from the Kew specimen.

A specimen, *L.L. Britten* 1613 (GRA), is similar to this species but has much denser leaves and shorter peduncles. These latter give the inflorescence the overall effect of a compound capitulum rather than a compound umbel.

It is distinguished from all other southern African species by its erect habit and usually opposite to subopposite leaves. It has been cultivated in order to extract an oil (psyllium oil) from the seeds. For opinions on the

nomenclature of this species see Pilger (1937) and Verdcourt (1971).

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