12. *Lebeckia uniflora* B-E.van Wyk and M.M.le Roux sp. nov. Closely related to *L. wrightii* but differs in the single-flowered inflorescences, the much larger flowers, the somewhat smaller, falcate pods and seeds which are black in colour. 

Type: South Africa, Caledon District, Highlands State Reserve, Paardeberg Mountains, *Mimetus stokoei* locality [3419AC], Boucher 1878 (NBG! holotype; PRE! isotype) (Fig. 5.32).

Decumbent, pubescent annual, up to 0.4 m in height. *Leaves* simple, acicular, unarticulated; leaf density up to 1 per 10 mm length of stem; stipules present, 3–5 mm long. *Inflorescences* terminal, 25–37 mm long; rachis furrowed; flowers single, (1 flower per inflorescence), intermediate in size (8–12 mm long), yellow, fading to purple; pedicel 3–6 mm long. *Bract* lanceolate, acute, 2.5–3.5 mm long. *Bracteoles* lanceolate, acute, 2.5–3.5 mm long. *Calyx* 7–10 mm long, tube 3–4 mm long, lobes 4–6 mm long; subequally lobed but the upper lateral sinuses much wider than the medial sinus and lower lateral sinuses; lobes deltoid, tips minutely pubescent inside. *Standard* ovate, ±11 x 9.5–10.0 mm; apex emarginate; claw 3–5 mm long. *Wings* oblong to obovate, invariably longer than the keel, 11.5–15.0 x 9.0–10.5 mm, with 9–11 rows of sculpturing; apex obtuse; claws 4.0–4.5 mm long. *Keel* rostrate, twisted, 9–10 x 3.5–4.0 mm, always with pockets; claws ±4 mm long. *Pistil* subsessile; ovary 5.0–5.5 x 0.8–1.2 mm, linear; ovules many (13–15); style 6–8 mm long, curved upwards. *Pods* narrowly oblong, straight and slightly falcate, not narrowly winged on the upper suture, up to 27–36 x 4.5–6.0 mm; stipe 1–3 mm long; dehiscent; flat; fruit wall.
thin, membranous. Seeds broadly oblong-reniform, ±2.2 x 2.0 mm, rugose, black; hilum black (Fig. 5.33).

Diagnostic characters

*L. uniflora* is closely related to *L. wrightii* but differs in the invariably single-flowered inflorescence, the larger flowers (8–11 mm long), the wings that are much longer than the keel and the black seeds. *L. wrightii* has 3 to 5, smaller flowers (5–8 mm long) per inflorescence, wings that are longer than the keel and seeds that are black, mottled black and white (Fig. 5.33).

Distribution and habit

*L. uniflora* has a localised distribution and is endemic to the Kogelberg and Palmiet River Mountains near Caledon (Fig. 5.34). It grows at altitudes between 500 and 1250 m in Fynbos vegetation. This species only grows directly after fire.
Fig. 5.32. Holotype of *Lebeckia uniflora* B-E. van Wyk and M. M. le Roux in NBG.
Fig. 5.33. Morphology of *Lebeckia uniflora*: (a) lateral view of flower; (b) abaxial view of bract and bracteoles; (c) abaxial view of calyx with the upper lobes to the left; (d) standard petal; (e) wing petal; (f) keel petal; (g) anthers; (h) long, basifixed anther, carinal (intermediate) anther and short, dorsifixed anther; (i) pistil; (j) lateral view of pod; (k) leaf. Vouchers: (a, c) from *Stokoe 964* (PRE); (b) from *Boucher 2175* (NBG); (d–f, h–i) from *Boucher 1878* (NBG); (g, k) from *Boucher 1878* (NBG); (j1) from *Snijman 80* (NBG); (j2) *Boucher 1878* (NBG). Scale bars: 1 mm. (b–f, h–j drawn by B-E. van Wyk.)
Specimens examined

− **3418** (Simonstown): Palmiet River Mountains, track to Kogelberg from Steenbras (–BB), *Stokoe 964* (BOL, PRE); Kogelberg State Forest, Elgin Basin side of Dwars River Mountains (–BD), *Boucher 2175* (NBG).

− **3419** (Caledon): Highlands State Reserve, Paardeberg Mountains, *Mimetes stokoei* locality (–AC), *Boucher 1878* (NBG, PRE); Highlands Forest Reserve, off track towards Lebanon along western border of Middelmans farm (–AC), *Snijman 80* (NBG, PRE).

Fig. 5.34. The known geographical distribution of *Lebeckia uniflora*.
13. *Lebeckia wrightii* (Harv.) Bolus in Hook. Icon. pl. 16, sub tab. 1552 (1887); Salter in Adamson and Salter, Flora of the Cape Peninsula: 471 (1950); Goldblatt and Manning, Cape Plants, Strelitzia 9: 493 (2000). Type: South Africa, Mountain sides near Simonstown [3318CB], *C. Wright s.n.* (TCD, photo in K!, holotype) (Fig. 5.34).

*Lotononis wrightii* Harv. in Harv. and Sond., Fl. Cap. 2: 594 (1862). Type as above.

Decumbent, pubescent annual, up to 0.3 m in height. Leaves simple, acicular, unarticulated; leaf density up to 1 per 10 mm length of stem; stipules present, 2.0–3.5 mm long. Inflorescences terminal, 80–130 mm long; rachis ± furrowed; flowers few (up to 5 flowers per inflorescence), sparse (up to 1 flower per 10 mm length of rachis), relatively small in size (5–8 mm long), yellow, fading to purple; pedicel 3–5 mm long. Bract narrowly lanceolate, acute, 2.0–3.5 mm long. Bracteoles narrowly lanceolate, acute, 2.0–3.5 mm long. Calyx 5.5–8.0 mm long, tube 2.5–3.5 mm long, lobes 2.5–4.5 mm long; subequally lobed but the upper lateral sinuses much wider than the medial sinus and lower lateral sinuses; lobes deltoid, tips minutely pubescent inside. Standard ovate, 6.5–9.0 x 5–7 mm; apex emarginate; claw 2–3 mm long. Wings oblong to obovate, invariably longer than the keel, 6.5–9.5 x 5–8 mm, with 6–7 rows of sculpturing; apex obtuse; claws 3.5–4.0 mm long. Keel rostrate, twisted, 5.5–6.5 x 2.0–2.5 mm, always with pockets; claws 2.5–3.0 mm long. Pistil subsessile; ovary 3.5–4.0 x ±1 mm,
linear; ovules many (15–18); style 5.0–5.5 mm long, curved upwards. *Pods* narrowly oblong, straight, not narrowly winged on the upper suture, up to 23–35 x 4.0–5.5 mm; stipe 1–2 mm long; dehiscent; flat; fruit wall thin, membranous. *Seeds* broadly oblong-reniform, ±2 x 1.6–1.9 mm, rugose, black, mottled white; hilum black (Fig. 5.35).

**Diagnostic characters**

*L. wrightii* is closely similar to *L. uniflora* but differs in the few-flowered inflorescences (up to five flowers per inflorescence), smaller flowers (5–8 mm long) and the shorter wings. *L. uniflora* has single-flowered inflorescences, larger flowers (8–12 mm long) and the wings much longer than the keel. *L. wrightii* is also similar to *L. pauciflora* but differs in the decumbent habit (annual fireweed) the emarginate apex of the standard petal, the short, sessile, pubescent fruit, and the small, mottled black and white seeds. *L. pauciflora* has a virgate, suffrutescent habit, the standard petal has an obtuse apex, the fruit is long, stipitate and glabrous and the seeds are large, pink-brown and mottled dark brown (Fig. 5.35).
Fig. 5.35. Morphology of *Lebeckia wrightii*: (a) lateral view of flower; (b) abaxial view of bract and bracteoles; (c) abaxial view of calyx with the upper lobes to the left; (d) standard petal; (e) wing petal; (f) keel petal; (g) anthers; (h) long, basifixed anther, carinal (intermediate) anther and short, dorsifixed anther; (i) pistil; (j) lateral view of pod; (k) leaf. Vouchers: (a) from Esterhuysen 22398 (BOL); (b–i) from Esterhuysen 31726 (BOL); (ji) from Taylor 7012 (NBG); (j2) from Levyns sub. Salter 7862 (BOL); (k) from Bolus 4671 (BOL). Scale bars: 1 mm. (b–f, h–j drawn by B-E. van Wyk.)

**Distribution and habit**

*L. wrightii* is distributed in the Cape Peninsula, Kogelberg and Palmiet River Mountains near Caledon (Fig. 5.36). It grows at altitudes between 60 and 750 m in Fynbos vegetation. This species is an annual fireweed that only grows after fire and then disappears until the area is burnt again.
Specimens examined

- **3318** (Cape Town): Kirstenbosch, mountain slopes (–CD), Compton s.n. sub BOL 32414 (BOL); Kirstenbosch, Nursery Gorge (–CD), Esterhuysen 7617 (BOL); Kirstenbosch, between Skeleton and Window Gorge (–CD), Leighton 729 (PRE); Table Mountain above Kirstenbosch (–CD), H. Bolus 4671 (BOL); Table Mountain, near Klassenbosch (–CD), H. Bolus 4671 (K); Table Mountain, top of Corridor Butress (–CD), Compton 20235 (BOL, NBG); Table Mountain, top of Skeleton Gorge (–CD), Compton s.n. sub BOL 32416 (BOL); Table Mountain, above Kirstenbosch (–CD), Esterhuysen 22398 (BOL, PRE); Table Mountain, slopes between Skeleton and Window Gorge (–CD), 1944, Esterhuysen 11223 (BOL, K); Table Mountain, above Window Gorge (–CD), Esterhuysen 11035 (BOL); Table Mountain, in Groene Kloof (–CD), Galpin 3924 (PRE); Table Mountain, lower plateau between Skeleton and Window Gorges (–CD), Goldblatt 6723 (PRE).

- **3418** (Simonstown): Kalk Bay Mountains, Cave Peak (–AB), Compton 18602 (NBG); Constantiaberg (–AB), Esterhuysen 32730 (BOL); Muizenberg Mountain (–AB), Levyns s.n. sub Salter 7862 (BOL); hills W of the Muizenberg (–AB), Pillans 3464 (PRE); Retreat (–AB), Rogers 4711 (BOL); Silvermine (–AB), Compton 14283 (NBG); between Swartkops Peak and Smitswinkel Peak (–AD), Esterhuysen 36403 (BOL); Cape Peninsular, between Buffelsfontein and Cape Point (–AD), L. Bolus s.n. sub BOL 32415 (BOL); Cape Peninsula, W of Smith's Farm (–AD), Salter 1868 (BM, BOL, K); Cape Point, circular drive near S entrance of the drive (–AD), Van Wyk 3354 (JRAU); Paulsberg, S. Ridge (–AD),
Taylor 7012 (BOL, K, NBG, PRE); W slope of Paulsberg (–AD), Salter 252/7 (BM); Betties Bay (–BD), Van der Merwe 1163 (NBG, PRE); mountains near Palmiet River Mouth (–BD), Esterhuysen 13670 (BOL); Kogelberg Forest Reserve (–BD), Viok et al. 11 (JRAU); Kogelberg Forest Reserve, Platberg, easterly ascent (–BD), Boucher 381 (K, NBG, PRE); Kogelberg State Forest, 60 m on left side of the road turning right along stream branching off from road to second dwelling (–BD), Kruger 114 (NBG).

– 3419 (Caledon): Houwhoek Mountain (–AA), Esterhuysen 31726 (BOL, K, 2 sheets); Lebanon State Forest, Jakkalsrivier Catchment (–AA), Kruger 1117 (NBG), Kruger 1613 (NBG); Zwarteberg (–AB), H. Bolus 32424 (BOL), Borkin s.n. sub BOL 6792 (BOL); Highlands State Forest, Paardeberg, Mimetes stokoei locality (–AC), Boucher 1879 (NBG); Hermanus, Fernkloof Nature Reserve (–AC), Drewe 448 (HER, K); Hermanus, Vogelgat (–AD), Stirton 11166 (K), Williams 3712 (K, NBG, PRE); Bredasdorp Mountains, 5 km WSW of Napier: Farm 139 (–BD), Cupido 114 (NBG).
Fig. 5.36. The known geographical distribution of *Lebeckia wrightii*.

14. *Lebeckia zeyheri* M.M.le Roux and B-E.van Wyk sp. nov. similar to *L. plukenetiana* but differs in the much smaller fruits of only 12 x 3 mm, the orbicular standard petal and the short wing petals (as long as the keel). In *L. plukenetiana*, the fruits are 18 to 38 mm long, the standard petal is ovate and the wings are distinctly longer than the keel. Type: South Africa, Klipfontein [3318 BC], Zeyher 378 (K sub. Herb. Hook.!, holotype; BM!, SAM!, S!, isotypes) (Fig. 5.37).

* L. plukenetiana* var. *brachycarpa* Harv. in Harv. and Sond., Fl. Cap. 2: 84 (1862), synon. nov. Type: South Africa, Klipfontein [3318 BC], Zeyher 378 (K
Decumbent, glabrous suffrutex, up to 0.3 m in height. Leaves simple, acicular, unarticulated, leaf density ±4 per 10 mm length of stem; stipules absent. Inflorescences terminal, up to 45 mm long; rachis furrowed; flowers few (up to 6 flowers per inflorescence), sparse (±2 per 10 mm length of rachis), very small in size (±4 mm long), yellow, fading to lighter yellow; pedicel 1.5–2.0 mm long. Bract unknown. Bracteoles triangular, acute, ±0.6 mm long. Calyx 1.5–2.5 mm long, tube 1.0–1.5 mm long, lobes 0.5–1.0 mm long; subequally lobed but the upper lateral sinuses much wider than the medial sinus and the lower lateral sinuses; lobes deltoid, tips minutely pubescent inside. Standard orbicular, ±3.8 x ±3.8 mm; apex obtuse to slightly emarginate; claw ±1.4 mm long. Wings oblong, as long as the keel, ±4.3 x ±1.9 mm, with ±8 rows of sculpturing; apex obtuse; claws ±1.6 mm long. Keel rostrate, not twisted, ±4.6 x ±2.2 mm, always with pockets; claws ±1.5 mm long. Pistil subsessile; ovary ±3.0 x ±0.5 mm, linear; ovules few (8); style ±3.5 mm long, curved upwards. Pods small, linear, straight, not narrowly winged on the upper suture, up to 12 mm x ±3 mm; stipe ±1 mm long; dehiscent; flat; fruit wall thin, membranous. Seeds unknown (Fig. 5.38).
Fig. 5.37. Holotype of *Lebeckia zeyheri* M.M.le Roux and B-E.van Wyk in K.
Chapter 5 – Taxonomy of Lebeckia section Lebeckia

Diagnostic characters

*L. zeyheri* is similar to *L. plukenetiana* but differs in the much smaller fruits of only 12 X 3 mm, the orbicular standard petal and the short wing petals (as long as the keel). In *L. plukenetiana*, the fruits are 18 to 38 mm long, the standard petal is ovate and the wings are distinctly longer than the keel. The flowers of the new species are very small, but the Darling form (OTU1) of *L. plukenetiana* also has very small flowers (but easily recognized by the longer wings). The fruits of *L. zeyheri* are invariably straight, while they are often falcate in *L. plukenetiana*. *L. zeyheri* also differs from *L. plukenetiana* in the usually much shorter inflorescences that are up to 45 mm long, but 40 to 200 mm long in *L. plukenetiana* (Fig. 5.38). [Note: The fruit structure of this species is clearly different from the other species in the section and it is therefore here described as a new species. It is known from only one collection by Zeyher.]
Distribution and habit

This new species is known from only one collection. All the specimens (duplicates) were collected at Klipfontein, Swartland by Zeyher (Fig. 5.37) in Renosterveld. Due to the cultivation of wheat, most of the natural veld at Klipfontein has been destroyed. A search of small patches of natural vegetation at Klipfontein was unsuccessful and collectors should keep a lookout for this poorly known and seemingly rare species.

Specimens examined

− 3318 (Cape Town): Klipfontein, Swartland (−DC), Zeyher 378 (BM, K, NBG, S, SAM).
Fig. 5.39. The known geographical distribution of *Lebeckia zeyheri*. 