

the 2-10 seeds. Seeds globular, 6-9mm long, 5-7mm wide and thick, brown.

Distribution: Co., Mo., N.K., P.C., S.K., W.B. Also N.S.W. and N.T. A strand-line species. Widespread on tropical coasts from East Africa to China, Australia and Polynesia.

Notes: Of no grazing significance. Roots and seeds have been used for medicinal purposes. Nodulates.

References: 3, 16, 17, 26, 106, 107, 108, 139, 141, 161, 287, 298, 306, 309, 332.

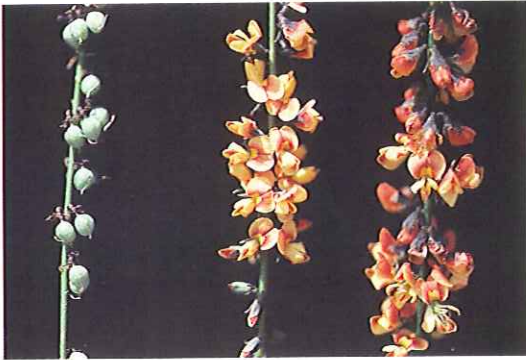
Sphaerolobium

Erect almost leafless shrub with small orange and red flowers. Stamens 10, the filaments free. Style with a narrow membrane below the stigma. Pods almost globular, containing 2 seeds. The genus is endemic to Australia.

Sphaerolobium vimineum

Erect rush-like plant to 0.7m tall. Stems sparingly branched, wiry, hairless, leafless or with a few leaves less than 5mm long.

Inflorescence a lateral or terminal raceme 20-200mm long. Flowers borne in clusters of 2-3 within the axils of 1-2mm scale-like bracts, each



Sphaerolobium vimineum, Girraween National Park, 28°49'S, 151°57'E.

flower on a c. 1mm pedicel which bears a pair of broad very deciduous 1.5mm bracteoles beneath the calyx. Calyx 2-4mm long, hairless, dark-coloured, the dorsal sepals joined for most of their length, the teeth quadrant-shaped, the sepals otherwise joined for less than ½ their length, the teeth narrowly pointed. Standard c. 4mm tall, 5mm wide, yellow-orange towards the margin grading to red, yellow-orange at the centre, largely red on the back. Wings c. 5mm long from base of calyx, yellow, red along the lower margin, the same length as the yellow, red-tipped keel.

Pod almost globular, c. 3mm diameter on a minute stalk above the calyx, containing 2 seeds.

Distribution: D.D., Mo., W.B. Also W.A., S.A. Vic., Tas., N.S.W. Not common; found in moist or swampy conditions in the south-east.

Notes: Of no grazing significance.

References: 17, 23, 26, 154, 287, 298.

Stylosanthes

Herbs or shrubs with pinnate leaves with three leaflets, lacking stipels. Flowers small, yellow, borne in dense terminal or axillary heads, each flower borne in the axil of a 2-3 toothed or entire primary bract (the lowermost flower in the axil of an ordinary leaf), each flower also with an entire or toothed membranous secondary bract and 1-2 membranous inner bracteoles, and in some species also a narrow feathery axis rudiment. Stamens 10, the filaments all joined, 5 longer anthers alternating with 5 shorter anthers. Pod short, flattened, with a beak, 1- or 2-jointed.

Key to species

1. Beak of pod 0.5mm long or less (perennial)
Beak more than 0.5mm long

S. guianensis
2

- | | |
|---|---------------------------------------|
| 2. Upper articulation of pod and beak hairless (annual)
Upper articulation of pod and beak more or less hairy | <i>S. humilis</i>
3 |
| 3. Beak shorter than or equal to upper pod articulation (perennial)
Beak longer than upper pod articulation | <i>S. scabra</i>
4 |
| 4. Axis rudiment present within the floral bract and/or 2 inner bracteoles (perennial)
Axis rudiment absent, 1 inner bracteole | <i>S. hamata</i>
<i>S. humilis</i> |

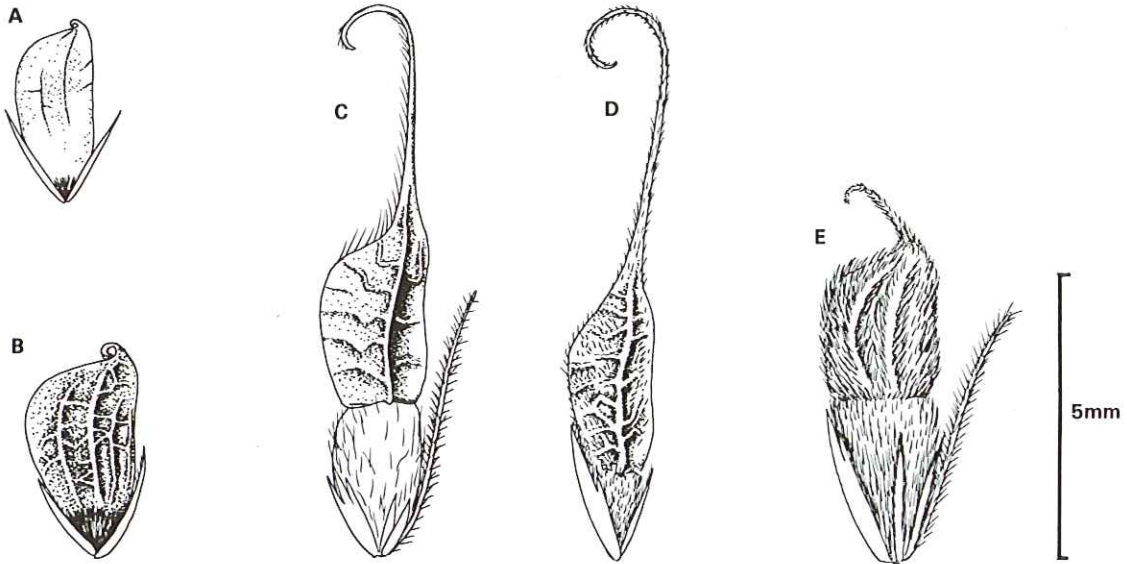


Figure 15. Pods of A—*Stylosanthes guianensis* var. *guianensis*; B—*S. guianensis* var. *intermedia*; C—*S. hamata*; D—*S. humilis*; E—*S. scabra*.

Stylosanthes guianensis (figures 15A, 15B)
Stylo

More or less erect perennial to c. 1.5m tall, often extensively branched and forming a dense shrub. Stems more or less covered with fine spreading hairs and often with bristles. Stipules 10-22mm long, joined to the petiole for c. $\frac{2}{3}$ their length, the tip extended into a fine point, covered with short fine hairs and long bristles, persistent. Petiole 15-20mm long, rachis 1-2mm long, hairy like the stem. Leaflets dull green, 5-50mm long, 2-10mm wide, broadest about the mid-point, the margins tapering to the angled base and angled mucronate tip, covered with short spreading hairs on both surfaces and sometimes with bristles along the mid-vein on the undersurface or sometimes almost hairless.

Inflorescence a dense terminal 2-40 flowered head, often as broad or broader than long, the flowers almost sessile, concealed within the overlapping bristle-covered bracts except when

open. Feathery axis rudiment lacking and only a single membranous inner bracteole present at base of flower. Calyx 6-10mm long, the lower 4-8mm constricted into a narrow tube, the upper c. 2.5mm expanded, with five c. 1mm hair-fringed teeth. Standard c. 5mm tall, 6.5mm wide, indented at the tip, yellow-orange, red-veined.



Stylosanthes guianensis, Gin Gin, 24°29'S, 151°36'E.

Wings yellow, c. 5mm long from distal end of calyx tube, the keel greenish.

Pod c. 3mm long, only the upper of the two articles setting seed, the beak minute (less than 0.5mm long), 2mm wide, hairless, pinkish brown when ripe, the single seed c. 2.5mm long, 1.5mm wide, almost rectangular with a corner extended into a short point, yellow.

Key to varieties

Pod prominently veined (figure 15B)	var. <i>intermedia</i> (cv. Oxley)
Pod indistinctly veined (figure 15A)	var. <i>guianensis</i> (other cvv.)

Distribution: Co., Mo., N.K., P.C., S.K., W.B. Also N.T. Native to Central and South America, now widely sown through the world's tropics.

Notes: A valuable and productive pasture legume tolerant of drought and of infertile soils low in phosphorus. Nodulates, mostly self-pollinating. Cultivars Schofield, Oxley and Cook were released in 1966, 1969 and 1971 respectively and Graham in 1980.

References: 3, 22, 23, 46, 69, 77, 84, 121, 134, 152, 174, 210, 218, 230, 232, 287, 306; as *S. gracilis*, 97.

Stylosanthes hamata (figure 15C)
Caribbean stylo

Short-lived perennial with spreading or erect stems to c. 1m tall. Young stems densely covered down one side with spreading white hairs. Stipules 11-14mm long, joined to the petiole for c. $\frac{2}{3}$ their length, hairless or sparsely to densely covered with fine hairs, the tip extended into a fine point, the veins prominent, very persistent. Petiole 10-15mm long, rachis 2-4mm long, both hairy like the stems. Leaflets 7-28mm long, 3-7mm wide, broadest about the mid-point, the margins curving to the angled base and angled mucronate tip, sparsely covered with fine adpressed hairs on the lower surface.

Inflorescence a dense terminal head, usually longer than broad, the flowers almost sessile, concealed within the overlapping bracts except when open. Feathery axis rudiment present (but falling off early), also two membranous inner bracteoles at the base of the flower. Calyx c. 4-6mm long, the lower part constricted into a narrow tube, the upper c. 2mm expanded, with five c. 1mm hair-fringed teeth. Standard c. 3.5mm tall, 6mm wide, indented at the tip,

yellow-orange, red-veined. Wings yellow, c. 4mm long from distal end of calyx tube, exceeding the greenish keel.

Pod up to 7mm long, excluding the 2-4mm (measured on the curve) curved beak, c. 2mm wide, densely covered with short hairs, prominently veined, containing 1 or 2 seeds, dark brown and disarticulating at maturity. Seeds c. 2mm long, 1.5mm wide, almost rectangular with a corner extended into a short point, yellow.

Distribution: Bk. A native of the Caribbean region, occasionally also naturalized in N.T. and W.A.

Notes: A valuable pasture species for subhumid to semi-arid northern regions and elsewhere in the semi-arid tropics. Tolerant of low phosphorus soils and of heavy grazing. The cultivar Verano was released in 1973.

References: 46, 79, 134, 210, 218, 230, 232.

Stylosanthes humilis (figure 15D)
Townsville stylo

Annual with prostrate to almost erect stems to 0.5m long. Stems softly hairy or hairless. Stipules 6-14mm long, joined to the petiole for 3-6mm, prominently veined, the tip extending to a fine point. Petiole 2-12mm long, covered with short hairs and often scattered bristles, rachis 2-4mm long. Leaflets 4-25mm long, 2-5mm wide, broadest about the mid-point, the margins more or less curving to the angled or rounded base and narrowly angled shortly mucronate tip, sparsely hairy along the margins and sometimes on both surfaces, prominently veined on the underside.

Inflorescence a short terminal head of 3-10 flowers, the flowers almost sessile, concealed



Stylosanthes humilis, Coochiemudlo Is., 27°33'S, 153°20'E, Cult.

within the overlapping bracts except when open. Axis rudiment lacking. Calyx 4-7mm long, the lower part constricted into a narrow tube, the upper 1-1.5mm expanded and shortly lobed, the five teeth fringed with hairs. Standard c. 2mm tall, 3mm wide, orange. Wings c. 3mm long from distal end of the calyx tube, yellow, longer than the greenish keel.

Pod 1.5-4mm long (excluding the 1.5-7mm hooked beak), 1.5-2.5mm wide, reticulately ridged, sparsely hairy, black when ripe, containing one or sometimes 2 seeds. Seeds 2-3mm long, c. 1.5mm wide, almost rectangular with a corner extended into a point, black, shiny.

Distribution: Bk., Co., Mo., N.K., P.C., Wa., W.B. Also N.T., W.A. Native of Central and northern South America.

Notes: Previously an important pasture legume in subhumid tropical areas, its usefulness is now much diminished due to the effects of anthracnose disease. Nodulates, self-pollinating. Cultivars Lawson, Gordon and Paterson were released in 1968 and 1969.

References: 3, 22, 30, 32, 46, 69, 121, 134, 172, 218, 227, 230, 232, 278, 285, 287, 306.

Stylosanthes scabra (figure 15E)
Shrubby stylo

Erect perennial extensively branched shrub to 1m or more tall. Stems densely covered with fine spreading hairs and sometimes bristles. Stipules 5-15mm long, covered with fine spreading hairs and sometimes bristles, joined to the petiole for c. $\frac{3}{4}$ their length, the tip extended to a fine point,

prominently veined, very persistent. Petioles 6-10mm long, rachis c. 2mm long, both hairy like the stems. Leaflets 5-16mm long, 3-7mm wide, broadest about the mid-point, the margins curving to the angled base and angled mucronate tip, softly hairy on both surfaces, the lower surface with prominent veins sometimes bearing bristles.

Inflorescence a dense terminal head usually longer than broad, the flowers almost sessile, concealed within the overlapping bracts except when open. Feathery axis rudiment and two membranous inner bracteoles present at base of flower. Calyx c. 7mm long, the lower part constricted into a narrow tube, the upper c. 2mm expanded, with five c. 1.5mm hair-fringed teeth. Standard c. 4mm tall, 5-6mm wide, indented at the tip, yellow-orange veined with red towards the base. Wings yellow, c. 4mm long from distal end of calyx tube, exceeding the greenish keel.

Pod up to c. 6mm long excluding the c. 1mm curved beak, c. 2.5mm wide, densely covered with short hairs, prominently veined, usually containing 2 seeds, dark brown and disarticulating at maturity. Seeds c. 2mm long, 1.5mm wide, almost rectangular with a corner extended into a short point, yellow.

Distribution: Co. Also N.T. Native to Brazil.

Notes: A valuable perennial pasture species for subhumid to semi-arid northern regions and elsewhere in the semi-arid tropics. Tolerant of low phosphorus soils. Nodulates. Cultivars Seca and Fitzroy were released in 1977 and 1980 respectively.

References: 69, 134, 210, 218, 230, 232.

Swainsona

Erect or prostrate herbs or herbaceous shrubs, the leaves pinnate, with a terminal leaflet and lacking stipels. Stipules persistent. Flowers small or large, often very showy, purple, rarely red or yellow, with minute bracteoles borne just below the calyx or lacking bracteoles. Stamens 10, 9 filaments joined in a dorsally split tube, 1 free. Style usually bearded on the upper side. Pods usually plump or inflated, rarely bilaterally compressed, often partly or completely divided longitudinally into two compartments, several-to many-seeded.

I am indebted to Mrs Joy Thompson, Royal Botanic Gardens, Sydney, for taxonomic help.

Identification of *Swainsona* species is not easy and undoubtedly some references to palatability and ecology of taxa are based on mis-identified material. However, I have preferred to include this information, despite its possible inaccuracy, as it is the best information available.