The Genus Psoralea Linn.

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The South African species of the genus *Psoralea* were last monographed by Harvey in Harvey and Sonder's "Flora Capensis" (Vol. II) and since then much fresh material has accumulated in the South African Herbaria. As the genus is a fairly typical representative of the family, especially in the South-Western portion of the Cape Province, it was suggested to the writer that the local material be brought up to date. The Curators of the Bolus Herbarium, the National Herbarium, and the herbaria of the Albany and South African Museums very kindly placed their respective collections at the disposal of the writer. Archdeacon F. A. Rogers also allowed use to be made of his private collection. The writer is also indebted to Dr. I. B. Pole Evans, C.M.G., for granting facilities to undertake the work, and to Dr. E. P. Phillips for assistance and criticism.

The genus *Psoralea* comprises a large group of shrubs and herbs belonging to the sub-order *Papilionaceae* of the family *Leguminosae*. The species, numbering about 124, are found throughout the tropical and sub-tropical parts of the world, and of these, 49 occur in South Africa. Most of the species occur in the south-western districts of the Cape Province, but extend through the south-eastern districts into the Transkei and Natal. The majority of the Transvaal species are found in the northern spurs of the Drakensbergen, a few in the western districts. With one or two exceptions, the genus is not represented in the Karoo proper, nor in the north-western districts of the Cape Province, and but few species have been recorded from Namaqualand and South West Africa.

The habit of the species varies considerably; some attain a height of 15 feet, while others are low shrubs or diffuse herbs, while at least one species forms a dense cushion-like growth. A characteristic feature of the genus is the presence of resinous glands on practically every part of the plant. With the exception of *P. biornulata*, all the species are uni-ovulate. The flowers are blue, purple, or rarely yellow, and the majority of the species have sweetly-scented flowers.

**PSORALEA** (Linn.).


*Calyx* gland-dotted, sub-equally lobed, or the lowest segment the largest; the upper segments often connate. *Standard* ovate or orbicular, clawed, with inflexed sides; wings oblong, sub-falcate; keel incurved, obtuse, shorter than the standard. *Stamens* diadelphous; the vexillary stamen free or more or less connate with the others; anthers uniform or the alternate fixed higher. *Ovary* sessile or shortly stalked, 1-ovuled, in 1 species 2-ovuled; style filiform or dilated at the base, incurved above; stigma terminal. *Pod* ovate, indehiscent, concealed in the calyx. *Seed* without an appendage; funicle very short.

Herbs, shrubs or undershrubs; leaves gland-dotted, digitately 3 to many-foliolate, pinnate or 1-foliolate; stipules embracing the branches, scarcely adnate to the petiole; inflorescence a head, spike or raceme, axillary or terminal, or flowers fascicled or rarely solitary; bracts 2–3; bracteoles 0.
KEY TO SPECIES.

1. Leaves reduced or apparently absent, or leaflets filiform or linear to linear obovate, not much broadened from the base upwards. ........................................ ........................................ 2
   Leaflets obovate, ob lanceolate or elliptic, broader at the apex than at the base. ........................................ 22

2. Leaves much reduced, never 5 mm. long. ........................................ 3
   Leaflets long-linear, sometimes reduced to a single leaflet, but usually over 1 cm. long. ........................................ 4

3. Calyx pilose within. ........................................ 1 aphylla.
   Calyx glabrous within; ovary 2-ovuled. ........................................ 2 biourvalata.

4. Stipules connate, forming a tubular sheath enclosing the petiole. ........................................ 5
   Stipules free or slightly connate, not forming a tubular sheath. ........................................ 6

5. Stipules with two short tooth-like points, leaflets sometimes solitary. ........................................ 3 restisoides.
   Stipules with two long acuminate points, often exceeding 1 cm. in length. ........................................ 4 fasciculatia.

6. Leaflets 3, or leaves reduced to 1 leaflet. ........................................ 7
   Leaflets more than 3. ........................................ 8

7. Leaves unifoliate. ........................................ 5 Guenzii.
   Leaves trifoliate, rarely unifoliate. ........................................ 9

   Vexillum not glandular. ........................................ 10

10. Leaflets uncinate, with a continuous row of glands round margin. ........................................ 7 uncinata.
   Glands scattered; if in any way appearing as a marginal band, then leaves not uncinate. ........................................ 11

11. Stems erect. ........................................ 12
   Stems diffuse or decumbent. ........................................ 13

12. Leaflets lanceolate to linear-lanceolate. ........................................ 14
   Leaflets linear to linear-oblong. ........................................ 15

13. Leaves not exceeding 5 mm. in length. ........................................ 16
   Leaves exceeding 1 cm. in length. ........................................ 20

14. Upper leaflets unifoliate; stems laxly leafy. ........................................ 8 oligophylla.
   Leaves all trifoliate; stems leafy. ........................................ 9 cerucosa.

15. Glands immersed in leaves. ........................................ 10 polyphylla.
   Glands not immersed. ........................................ 16

   Leaflets nigro-punctate. ........................................ 17

17. Calyx glabrous within. ........................................ 12 candidans.
   Calyx pilose within. ........................................ 18

18. Vexillum geniculate with two slight appendages at apex of the claw. ........................................ 13 azillaris.
   Vexillum not geniculate; no appendages. ........................................ 19

   Leaves densely hirsute when young, never quite glabrous. ........................................ 15 Bolusii.

20. Leaves on petioles up to 2 cm. in length. ........................................ 17 glaucina.
   Leaves on petioles up to 1 cm. in length. ........................................ 18 tetuissaena.

21. Pedicels up to 2-5 cm. long, with connate bracts seldom exceeding 1 mm. in length. ........................................ 20 pinnata.
   Pedicels up to 4 cm. long, with connate bracts up to 4 mm. long. ........................................ 21 affinis.

22. Stems diffuse or procumbent. ........................................ 23
   Stems erect or ascending. ........................................ 24

23. Vexillum glandular. ........................................ 22 repens.
   Vexillum not glandular. ........................................ 25

25. Leaflets mucronulate. ........................................ 26
   Leaflets without a mucro. ........................................ 27

26. Leaflets glabrous. ........................................ 28
   Leaflets pubescent. ........................................ 29

28. Inflorescence terminal, spicate; calyx veined. ........................................ 23 bracteata.
   Inflorescence axillary, racemose, calyx-tube and lobes marked with purple striae. ........................................ 24 Bowiana.

29. Leaves nigro-punctate, pubescent. ........................................ 25 decumbens.
   Leaves pellucid-dotted, canescent. ........................................ 26 argenta.

27. Peduncles with 2 sessile flowers. ........................................ 27 biflora.
   Peduncles with 3 or more shortly pedicelled flowers. ........................................ 28 obtusifolia.

24. Leaves unifoliate. ........................................ 30
   Leaves trifoliate. ........................................ 31

30. Leaves glabrous. ........................................ 29 rotundifolia.
   Leaves hispid. ........................................ 30 Thomii.
1. P. aphylla Linn.

A tall erect virgate shrub up to 30 metres with drooping branches. Stems glabrescent, glandular, canescent when young. Leaves unifoliate, 5-17 mm. long, linear, acute; present only on very young stems, their place on older stems being taken by ovate acute bracts up to 5 mm. long. Stipules adnate to the base of the petiole, up to 3 mm. long, filiform, acute. Flowers axillary, 1-3 subtended by a bract. Pedicels bracteolate about the middle, with scattered black hairs on upper portion. Bracts up to 5 mm. long, connate, bi-lobed, acute, glandular, pilose. Calyx-tube 2-5-6 mm. long, 6-10 mm. in diameter, 10 nerves, glandular, glabrous to nigro-hirsute; lobes linear-lanceolate to lanceolate-ovate, acute, glandular, ciliate, glabrous or laxly nigro-hirsute; shortly pilose on the inner surface; upper and lateral lobes 2-6 mm. long, 1-2 mm. broad; slightly sub-falcate; lowest lobe 4-12 mm. long, 1-5-8 mm. broad. Vexillum 7-14 mm. long, 6-15 mm. broad, obvate or sub-orbicular, geniculate, shading from white to deep blue; claw 1-4 mm. long, with two small appendages at the apex; alae pure white, 7-12 mm. long, 2-8 mm. broad, with a linear claw 2-5 mm. long; carina with a deep blue blotch at the apex, 5-9 mm. long, 3-6 mm. broad, with a linear claw 2-7 mm. long. Ovary glabrous; style 6-9 mm. long, glabrous.

Flowers: June-January.

Cape.—Clanwilliam district: Klavoer, Wolley Dod 298; Piquetberg district: Piquetberg, Edwards 248; Worcester district: Mitchell’s Pass, Bolus 2607; Tulbagh district: Waterfall, Ecklon and Zeyher; Rogers 17395; Cape district: Table Mountain, MacOwan 924; Bolus; Ecklon and Zeyher 1530; Galpin 3695, Ecklon and Zeyher, Forbes
2. \textit{P. biovulata} Bolus.

A small slender shrub. \textit{Stems} 3-6 mm. long, slender, thinly canescent when young, becoming glabrescent. \textit{Leaves} up to 6 mm. long, resembling scales, adpressed, exstipulate, rigid, few, linear-acuminate or subulate, glabrescent, ciliate, with incurved margins. \textit{Flowers} terminal, 1-3 together on short pedicels or subsessile. \textit{Pedicels} bracteate. \textit{Calyx-tube} up to 1.5 mm. long, 3 mm. in diameter, pilose with short silky white hairs, 10-nerved; lobes unequal, lanceolate, acuminate, ciliate, minutely glandular, glabrous on the inner surface; 2 lobes 1-1.5 mm. long, about 5 mm. broad; 3 lobes 2-3 mm. long, 0.5-1 mm. broad. \textit{Vexillum} 4 mm. long, 5-6 mm. broad, broadly obovate, with a short claw 1 mm. long; alae 4-5 mm. long, 2 mm. broad, with a linear claw 1.5 mm. long; carina 3-3.5 mm. long, 2 mm. broad, with a linear claw 1.5 mm. long. \textit{Ovary} pilose, 2 ovuled; style 3 mm. long, pilose.

Flowered: October.

\textit{Cape}.—Bredasdorp district: Mount Elim, Bolus 6902.

3. \textit{P. restioides} E. and Z.

A slender trailing suffruticose. \textit{Stems} up to 6 m. long, glabrous, glandular, striate. \textit{Leaves} unifoliolate, rarely trifoliolate, petiolate, stipulate; petioles up to 1.5 cm. long; leaflets 0.5-3 cm. long, scarcely 1 mm. broad, subsessile, filiform, mucronulate, glabrous, glandular. \textit{Stipules} adnate to the base of the petiole; up to 1.1 cm. long, stem-clasping, glandular. \textit{Flowers} solitary, axillary, pedicellate. \textit{Pedicels} up to 1 cm. long, bracteolate about the middle. \textit{Bracts} membraneous, tri-lobed, glandular, ciliate; 1 lobe short; 2 lobes up to 6 mm. long, acute, filiform, sub-falcate. \textit{Calyx-tube} 2-4 mm. long, 4-7 mm. in diameter, glabrous, glandular; lobes unequal, lanceolate, ciliate, glandular, glabrous, shortly nigro-hirsute on the inner surface; upper and lateral lobes 1-4 mm. long, 0.4-1.5 mm. broad; lowest lobe 4-6 mm. long, 1-2 mm. broad, subulate. \textit{Vexillum} 5-7 mm. long, 5-8 mm. broad, obovate, with a linear claw 1.5-3 mm. long; alae 5-6.5 mm. long, 1.5-2.5 mm. broad, with a linear claw 2-3 mm. long; carina 3-4 mm. long, 1-2 mm. broad, with a linear claw 2.5-4.5 mm. long. \textit{Ovary} glabrous; style 3-4 mm. long, glabrous.

Flowered: August-December. \textit{Flowers}: Violet-blue.

\textit{Cape}.—Clanwilliam district: Vogelgat, Schlechter 9529; Cape district: Muizenberg, Bolus 4271, Wolley Dod 2566; Table Mountain, Bolus 4504, Wolley Dod 795; Caledon district: Klein River, Ecklon and Zeyher, Hermanus, Burtt-Davy, Bolus 9841; Bredasdorp district: Elim, Bolus 6901, Bodkin; Riversdale district: Riversdale, Rogers 4394, Muir 794, Langeberg, Schlechter 2153; Mossel Bay district: Mossel Bay, Bolus 6902.

4. \textit{P. fascicularis} D.C.

\textit{Plants} suffruticose. \textit{Stems} up to 6 metres, slender, diffuse or ascending, glabrous. \textit{Leaves} trifoliolate, sometimes unifoliolate; leaflets 1-3 cm. long, linear-lanceolate, apex very acute; petioles up to 2.5 cm. long. \textit{Stipules} adnate to the petiole, stem-clasping, up to 3 cm. long; points of stipules 1-3 cm. long, subulate, acute. \textit{Flowers} axillary, solitary, or several together. \textit{Pedicels} up to 6 mm. long, axillary, solitary or several together. \textit{Calyx-tube} 2 mm. long, 5 mm. in diameter, glandular, glabrous; lobes linear-lanceolate, acute, glabrous, ciliate, nigro-hirsute on the inner surface; upper and lateral lobes 2-3 mm. long, up to 1 mm. broad; lowest lobe 5 mm. long, 1 mm. broad. \textit{Vexillum} 5-6 mm. long, 4-5 mm. broad, obovate with a linear claw 2 mm. long; carina 3-3.5 mm. long, 1.5 mm. broad, with a claw 2 mm. long; alae 5 mm. long, 1.5-2 mm. broad, with a claw 2 mm. long. \textit{Ovary} glabrous; style 3-4 mm. long, glabrous.

Flowered: November-January.

\textit{Cape}.—Stellenbosch district: Hottentots Holland near Somerset West, Ecklon and Zeyher; Cape district: Newlands, Forbes 89, Orange Kloof Farm, Wolley Dod 3166.
5. P. Gueinzii Harv.

Plants suffruticose. Stems 3–6 metres, diffuse, villose, becoming glabrescent. Leaves unifoliolate, 1–2.5 cm. long, up to 4 mm. broad, lanceolate, very acute, sub-sessile. Stipules ovate, acute, striate, persistent. Flowers axillary, pedicellate. Pedicels short, about 3 mm. long, bi-bracteolate. Bracts about 3 mm. long, ovate, acute, ciliate. Calyx-tube 2 mm. long 6 mm. in diameter, sparsely glandular and villous; lobes lanceolate, acute, ciliate, glands small, pilose on the inner surface; upper and lateral lobes 3–3.5 mm. long, about 1 mm. broad, lowest lobe 5 mm. long. Vexillum obovate, 1 cm. long, 8 mm. broad, with a narrow channelled claw 2 mm. long; alae 7 mm. long, 2 mm. broad, with a linear claw 2 mm. long; carina 5 mm. long, 3 mm. broad, with a linear claw 3 mm. long. Ovary glabrous; style 6 mm. long, glabrous.

Cape.—Stellenbosch district: Hottentots Holland, Ecklon and Zeyher.


Plants shrubby. Stems slender, up to 12 metres long, sparsely leafy, striate, glandular, glabrescent. Leaves uni or-trifoliolate; upper leaves usually unifoliolate; petioles variable, up to 2.5 cm. long; leaflets 1–8 cm. long, up to 4 mm. broad, linear to linear-lanceolate, acute, nigro-punctate, glabrescent. Stipules adnate to the base of the petiole, up to 7 mm. long, subulate, acute. Inflorescence spicate or compressed into an aggregated terminal head subtended by one or more unifoliolate leaflets with simple acute glandular pilose adnate stipules up to 1 cm. long, or stipules simple or connate. Flowers pedicellate. Pedicels about 2 mm. long, bracteate. Calyx-tube 1.5–2 mm. long, 3–5 mm. in diameter, glandular, glabrous to villos-hirsute; lobes lanceolate, acute, ciliate, glandular, glabrous to villos-hirsute without, pilose to nigro-hirsute within; upper and lateral lobes 1–3 mm. long, 0.5–1 mm. broad; lowest lobe 2.5–5 mm. long, 0.5–1 mm. broad. Vexillum 5–7.5 mm. long, 4–6 mm. broad, obovate, glandular, with a claw 0.5–2 mm. long; alae 4.5–7 mm. long, 1.5–2 mm. broad, with a linear claw 1–2 mm. long, carina 4–6 mm. long, 1.5–2 cm. broad, with a linear claw 1–3 mm. long. Ovary glabrous; style 3–7 mm. long, glabrous.

Flowers: November–April.

Cape.—Caledon district: Twenty-four Rivers, Zeyher; Tulbagh district: Waterfall, Zeyher; Cape district: Kenilworth, Bolus 3285; Knysna district: Knysna, Zeyher, Plettenberg Bay, Leipoldt; Uitenhage district: Witte Klip, Bolus, Zwarte Kops River, Zeyher 2386; Albany district: Grahamstown, Glass, Southey; Komgha district: Cape Morgan, Flanagan 2370.

Localities Unknown.—Zeyher 4945, Tyson 3049, MacOwan 2068.

7. P. uncinata E. and Z.

Plants small, 3–6 metres high; branching chiefly from the root. Stems erect, canescent, becoming glabrous, striate; glands becoming conspicuous when the stems are glabrous. Leaves trifoliolate, at equidistant nodes 3 cm. apart, shortly petiolate, stipulate; petioles up to 5 mm. long; leaflets up to 3.2 cm. long and 4 mm. broad, linear-oblong, a few lower ones cuneate-oblong, acuminate, uncinate, with scattered hairs and glands, the glands forming a continuous band round the margins. Stipules adnate to the base of the petiole, striate, canescent, glabrescent, with two lanceolate acute points up to 7 mm. Inflorescence terminal and axillary, in dense sub-globose heads. Peduncles very short, up to 6 mm. long. Flowers sessile or sub-sessile. Calyx-tube 3–4 mm. long, 6–8 mm. in diameter, canescent, distinctly 10-nerved, sparsely glandular; lobes linear-lanceolate, acute, glandular, canescent, ciliate, with the inner surface glabrous or shortly and thinly pilose; upper and lateral lobes 4–6 mm. long, 1–2.5 mm. broad; lowest lobe 6 mm. long, 2–3 mm. broad. Vexillum 6–8 mm. long, 4–6 broad, obovate with a linear claw 1–3 mm. long; alae 5–7 mm. long, 1–2 mm. broad, with a claw 3–4 mm. long; carina 3–4 mm. long, 1.5–2 mm. broad, with a claw 3–4 mm. long. Ovary pilose; style glabrous.

Flowers: November–January.
8. P. oligophylla E. and Z.

A tall slender virgate shrub. Stems glabrous, glandular, striate, sparsely leafy. Leaves uni- or trifoliolate, petiolate, stipulate; petioles up to 1 cm. long; leaflets up to 4-5 cm. and 4 mm. broad, linear to linear-lanceolate, acute, glabrous, glandular. Stipules minute, subulate. Flowers axillary 1-3 together. Pedicels up to 3 cm. long, bibracteolate near the apex. Bracts 2-4 mm. long, with acute glandular lobes. Calyx-tube 2-4 mm. long, 6-9 mm. in diameter, glandular, glabrous, 10-nerved; lobes 1-5 mm. long, 1-2 mm. broad, slightly unequal, lanceolate-ovate, acute, slightly sub-falcate, glabrous, glandular, ciliate, shortly pilose on the inner surface. Vexillum 6-11 mm. long, 7-12 mm. broad, sub-orbicular, geniculate; claw 1-4 mm. long, with two slight appendages at the apex; alae 0.6-1 cm. long, 2.5-5 mm. broad, with a linear claw 2-5 cm. long; carina 4.7-5.5 mm. long, 2.5-5.5 mm. broad, with a linear claw 3-6 mm. long. Ovary glabrous; style 3-8 mm. long, glabrous. Pod, when fully developed, about 6 mm. long and 3 mm. broad; seed about 4.5 mm. long, 2 mm. broad, brown.

A tall shrub 5-6 feet high, growing usually in moist places.

Flowers: Blue.

CAPE.—Van Rhynsdorp district: Giftberg, Phillips 3236, 7488; Ceres district: Onderbokkeveld, Ecklon and Zeyher, Koude Bokkeveld, Schlechter, Matroosberg, Phillips 1944; Worcester district: Hex River Valley, Tyson 1908, Rehmann 1533, 1534; Riversdale district: Riversdale, Muir 81; George district: Outeniqua Mountains, Hops 52, George, Schlechter 2227; Humansdorp district: near Humansdorp, Schonland 3086, Witte Els Bosch, Fourcade 827; Port Elizabeth district: Hankey, Sim 173, Forest Dept. Herb. 3957; Bathurst district: Bathurst, Rogers 3516; Albany district: Grahamstown, Featherstone's Kloof, Bolus 1935, Atherstone, Rogers 3316, Howison's Poort, Galpin 141, Glass, Barber, Galpin 336, Zeyher 2383, Ecklon and Zeyher, MacOwan 448, Asylum, Daly and Sole 137, Hofman's Bosch, Britten 1327, near Sanatorium, Zuurberg, Schonland 3185, Cold Spring, Rogers 5635, 27312, 27514; Queenstown district: Queenstown, Galpin 8107, Cathcart Shiloh, Baur 862; Kingwilliamstown district: Kingwilliamstown, Sim 2301; Komgha district: Komgha, Flanagan 556, 3410; Tembuland, Xalanga, Bolus 8858.


Localities Unknown.—Rogers 17584, Schlechter 10186, Britten 140.

9. P. verucosa Willd.

Plant shrubby. Stems erect, glandular striate, tomentulose. Leaves trifoliolate, petiolate, stipulate; petioles up to 1.5 cm. long; leaflets up to 4 cm. long and 4 mm. broad, linear-lanceolate, acute, glabrous, nigro-punctate. Stipules up to 3 mm. long, subulate, acute. Flowers axillary, 1-3 together. Pedicels up to 2-2 cm. long, bibracteolate. Bracts about 1 mm. long. Calyx-tube 3 mm. long, 5-9 mm. in diameter, 10-nerved, glandular, glabrous; lobes ovate, acuminate, glabrous, glandular, ciliate, shortly pilose on the inner surface. Vexillum 0.5-1 cm. long, 0.5-1.2 cm. broad, sub-orbicular, geniculate; claw 0.5-2 mm. long, with two slight appendages at the apex; alae 5-9 mm. long, 2.5-5 mm. broad, with a linear claw 3-5 mm. long; carina 3-5 mm. long, 2-4 mm. broad, with a linear claw 1-6 mm. long. Ovary glabrous; style 2-8 mm. long, glabrous.

10. *P. polyphylla* E. and Z.

*Plant* shrubby, pubescent, glabrous when older. *Stems* erect, leafy, branched. *Leaves* trifoliolate, sub-sessile, stipulate; leaflets 1-1-1.5 cm. long, 2-4 mm. broad, linear to linear-oblong, mucronate, glands immersed; lateral leaflets unequal sided. *Stipules* small, ovate, acuminate, not persistent. *Flowers* axillary, 2-3 together. *Pedicels* very short. *Calyx-tube* nigro-villous and veined; upper and lateral lobes subulate, the lowest ovate-lanceolate, longer than the rest.

*Flowered*: July.

*Cape*—Uitenhage district: Krakakamma, *Ecklon* and *Zeyher* 1536. Description taken partly from “Flora Capensis,” as there were no complete flowers on the material seen.

11. *P. Mundtiana* E. and Z.

*Plant* shrubby, up to 0.6 m. high. *Stems* erect, pubescent, leafy. *Leaves* trifoliolate, petiolate, stipulate; petioles about 5 mm. long, glabrescent; leaflets 1-5-2.5 cm. long, 4-6 mm. broad, broadly linear to linear-oblong, tapering at the base, recurved mucronate, pellucid dotted. *Stipules* about 5 mm. long and 1-5 mm. broad, ovate, acute, pubescent, scarious, striate. *Flowers* axillary, 2-3 together. *Pedicles* short. *Calyx-tube* 3 mm. long, 8 mm. in diameter, glandular, villous; lobes lanceolate, acute, villous, glandular, ciliate, pilose on the inner surface; upper and lateral lobes 5-7 mm. long, 1-1.5 mm. broad; lowest lobe 8 mm. long, 2 mm. broad. *Vexillum* 6 mm. long, 5 mm. broad, obovate, with a narrow channelled claw 1.5 mm. long; alae 6 mm. long, 1.5 mm. broad, with a linear claw 2 mm. long; carina 3 mm. long, 2 mm. broad, with a linear claw 2 mm. long. *Ovary* and style missing in the specimen examined.

*Flowered*: December.

*Cape*—Swellendam district: Swellendam, *Ecklon* and *Zeyher* 1537.

12. *P. candicans* E. and Z.

*Plant* shrubby, virgate, densely or thinly canescent, glabrescent. *Stems* erect, laxly leafy. *Leaves* trifoliolate, shortly petiolate, stipulate; petioles about 2 mm. long; leaflets 1.5 cm. long, 0.65 cm. broad, linear to linear-oblong, obtuse, recurved mucronate, nigropunctate; a few of the lower leaflets cuneate. *Stipules* small, up to 3 mm. long, adnate to the base of the petiole, subulate, acute, glandular. *Inflorescence* axillary, 1-3 flowers on common peduncle. *Peduncles* up to 1.7 cm. long; pedicels about 4 mm. long. *Calyx-tube* 1.5-3 mm. long, 4-6 mm. in diameter, canescent, distinctly 10-nerved, with small often inconspicuous glands; lobes linear-lanceolate, acute, pilose, glandular, glabrous on the inner surface; upper and lateral lobes 2-4 mm. long, about 1 mm. broad, slightly sub-falcate; lowest lobe 4-6 mm. long, about 1 mm. broad. *Vexillum* 3-5 mm. long, 3-5 mm. broad, obovate, with a linear claw 1-2 mm. broad; alae 3-5 mm. long, 1-2 mm. broad, with a claw 1.5-2 mm. long; carina 2-3 mm. long, 1-2 mm. broad, with a claw 2 mm. long. *Ovary* pilose; style 2-3 mm. long, glabrous.

*Flowered*: September-May.


*Without Locality*: *Zeyher* 2373.
13. **P. axillaris** L.

*Plant* shrubby. *Stems* erect, glabrous, glandular, striate. *Leaves* trifoliolate, stipulate, petiolate; leaflets 1-2.8 cm. long, 3-8 mm. broad, linear to linear-oblong, tapering at the base, obtuse, mucronulate, nigro-punctate, glabrous. *Stipules* about 3 mm. long, subulate. *Flowers* axillary, usually solitary. *Pedicels* up to 2 cm. long, bracteolate near the apex. *Calyx-tube* 2-4 mm. long, 0.6-1 cm. in diameter, thickly nigro-punctate, glabrous; lobes 1-3 mm. long, 1-2 mm. broad, slightly unequal, ovate, obtuse, nigro-punctate, glabrous shortly ciliate, pilose on the inner surface. *Vexillum* 0.8-1 cm. long, 0.8-1.1 cm. broad, sub-ornicular, geniculate; claw channelled, 1.5-2 mm. long, with two slight appendages above; alae 0.7-1 cm. long, 3-5 mm. broad, with a claw 3-5 mm. long; carina 5-6 mm. long, 4-5 mm. broad, with a linear claw 5-6 mm. long. *Ovary* glabrous; style 6-9 mm. long, glabrous.


14. **P. triantha** E. Mey.

A slender shrub up to 4 ft. *Stems* erect, tomentulose. *Leaves* trifoliolate, petiolate, stipulate; petioles about 6 mm. long; leaflets 0.5-2.5 cm. long, up to 6 mm. broad, linear, spathulate, recurved mucronate, thick, glabrous, nigro-punctate. *Stipules* about 2.5 mm. long, acuminate. *Flowers* axillary, crowded. *Pedicels* 0.5-1 cm. long. *Calyx-tube* 2 mm. long, 4-6 mm. in diameter, pubescent, granular; lobes lanceolate, pubescent, pilose on the inner surface; upper and lateral lobes 1-2 mm. long, 0.5-1 mm. broad. *Vexillum* 4-8 mm. long, 4-6.5 mm. broad, obovate, with a linear claw 1.5-2 cm. long; alae 4-6 mm. long, 1.5-2.5 mm. broad, with a linear claw 2-3 mm. long; carina 2.5-3 mm. long, 1.5-2 mm. broad, with a linear claw 2.5-3 mm. long. *Ovary* glabrous or thinly pilose; style 3-4 mm. long, filiform.

*Flowers*: November-February.


15. **P. Bolusii** Forbes n. sp.

*Plant* shrubby, small. *Stems* erect, leafy, glandular, striate; young stems densely albotomentose becoming glabrescent. *Leaves* trifoliolate, petiolate, stipulate; petioles about 7 mm. long; leaflets 1-2.5 cm. long, about 4 mm. broad, linear to linear-oblong, nigro-punctate, densely albo-hirsute becoming almost glabrous, recurved mucronate. *Stipules* adnate to the base of the petiole, up to 5 mm. long, subulate, acute. *Flowers* axillary, in groups of 3, sub-sessile. *Calyx-tube* 3 mm. long, 5 mm. in diameter, glandular, hirsute; lobes unequal, hirsute, long-ciliate, glandular, pilose on the inner surface; two upper lobes 2 mm. long, about 0.25 mm. broad, linear, acute; lateral lobes 3.5-4 mm. long, about 0.5 mm. broad, linear, acute; lowest lobe 6 mm. long, 1.5 mm. broad, lanceolate, acute. *Vexillum* 5.5-6 mm. long, 5.5 mm. broad, obovate, with a channelled claw 3 mm. long; alae 5.5 mm. long, 2.5 mm. broad, with a linear claw 2.5 mm. long; carina 3 mm. long, 1.5 mm. broad, with a linear claw 3 mm. long; *Ovary* thinly pilose; style 3 mm. long, filiform.

*Flowered*: October.

*Cape.*—Piquetberg district: Piquetberg, *Bolus*.

16. **P. oreophila** Schltr.

A very small slender herb, branching from the root. *Stems* decumbent, up to 3 metres long, filiform, subterete, with scattered leaves. *Leaves* trifoliolate, petiolate, stipulate; petioles slender; leaflets linear, acute, narrowing at the base. *Stipules* 4-5 mm. long, equalling or about half the length of the petiole, connate, linear-lanceolate, acute, glabrous.
Flowers axillary, solitary. Pedicels nearly equalling the leaves, bracteolate near the middle. Bracts up to 5 mm. long. Calyx-tube 2 mm. long, 4-5-5 mm. in diameter, glabrous, glandular; lobes linear-lanceolate, acute, glabrous, glandular, very shortly ciliate, glabrous on the inner surface; upper and lateral lobes 3-5 mm. long, 1-1.25 mm. broad; lowest lobe 5-5-6 mm. long, 1-5 mm. broad. Vexillum 5-5-6 mm. long, 6-8 mm. broad, sub-ornicular with a channelled claw 1.5-2 cm. long; alae 4-5-5 mm. long, 2 mm. broad, with a linear claw 2-2.5 mm. long; carina 3 mm. long, 2 mm. broad, with a linear claw 2-2.5 mm. long. Ovary glabrous; style 3-5 mm. long, glabrous.


Cape.--Caledon district: Sir Lowry's Pass, Schlechter 7233.

17. *P. glaucina* Harv.

Plant suffructicose, diffuse. Stems slender, glabrous. Leaves trifoliolate, petiolate, stipulate; petioles 0.7-2 cm. long; leaflets 0.9-2 cm. long, up to 2 mm. broad, linear-lanceolate, acute, tapering at the base, glabrous, glandular. Flowers axillary, 1-3 together. Pedicels 1-1.5 mm. long, bracteolate near the middle. Bracts 2-2.5 mm. long, tri-lobed, ciliate, acute. Calyx-tube 2 mm. long, 5 mm. in diameter, glandular, glabrous, 10-nerved; lobes lanceolate, acute, glandular, glabrous, with almost reticulate veining, shortly ciliate, very shortly pilose on the inner surface; upper and lateral lobes 1.5-2 mm. long, up to 1 mm. broad; lowest lobe 3 mm. long, 1 mm. broad. Vexillum 4 mm. long, 4 mm. broad, obovate, with a channelled claw 1 mm. long; alae 3 mm. long, 1.5 mm. broad, with a linear claw 2 mm. long; carina 2 mm. long, 1 mm. broad, with a linear claw 3 mm. long. Ovary glabrous; style 3 mm. long, glabrous.

Cape.—Doornhoogte, Ecklon and Zeyher.

18. *P. tenuissima* E. Mey.

Plant slender, trailing. Stems up to 6 metres long, glabrous. Leaves trifoliolate, petiolate, stipulate; petioles up to 9 mm. long; leaflets up to 2-5 cm. long, 1.5 mm. broad, narrow, linear, acute, nigro-punctate, glabrous, sub-sessile. Stipules up to 2 mm. long, subulate, acute, glandular. Flowers axillary, solitary. Pedicels up to 3 cm. long, bracteolate, near the apex. Calyx-tube 2 mm. long, 5-6 mm. in diameter, glabrous, glandular; lobes acute, lanceolate, glabrous, ciliate, glandular, pilose on the inner surface; upper and lateral 2-3 mm. long, 1-1.3 mm. broad; lowest lobe 3-4 mm. long, up to 1-5 mm. broad. Vexillum 6-8 mm. long, 6-8 mm. broad, obovate, geniculate, with a channelled claw 1-2 mm. long; alae 6-8 mm. long, 2-3 mm. broad, with a linear claw 1.5-2 mm. long; carina 5 mm. long, 2 mm. broad, with a linear claw 2-3 mm. long. Ovary glabrous; style 9 mm. long, glabrous.

Cape.—Tulbagh district: Tulbagh, Schlechter 7476; Swellendam district: Weggboom's River, Schlechter 10701.


Plant shrubby, at least 18 metres high. Stems striate, glandular, sparsely pilose. Leaves imparipinnate, petiolate, stipulate; petioles 5-8 mm. long; leaflets 5-7 pairs, 0.7-2.2 cm. long, about 1.5 mm. broad, linear-lanceolate, acute, glandular; young leaves laxly clothed with fairly long white hairs. Stipules about 4 mm. long and 2 mm. broad, lanceolate-ovate, acute, ciliate. Flowers axillary, 1-3 or more together. Pedicels up to 1.5 cm. long. Calyx-tube 3-5 mm. long, 7-5 mm. in diameter, sparsely pilose with long white hairs, glandular; lobes, lanceolate, acute, slightly sub-falcate, ciliate, shortly pilose on the inner surface; upper and lateral 4 mm. long, 2 mm. broad; lowest lobe 1 cm. long, 2-5 mm. broad. Vexillum 1 cm. long, 1.1 cm. broad, sub-ornicular, geniculate, with a channelled claw 3 mm. long; alae 1 cm. long, 5 mm. broad, with a linear claw 5 mm. long; carina 6 mm. long, 4 mm. broad, with a linear claw 5.5 mm. long. Ovary glabrous; style 6 mm. long, glabrous.

Flowers: Pure white, very fragrant.

Flowered at Kirstenbosch, October—November, 1923, 1924. Original locality unknown.
20. **P. pinnata** Linn.

- **Plant**: A tall much branched woody shrub up to 30 metres high. **Stems** striate, virgate, glandular, glabrous or pubescent. **Leaves** impar-pinnate, petiolate, stipulate; leaflets up to 5 cm. long and 3 mm. broad, linear to linear-lanceolate, acute, glandular, sometimes recurved at the apex. **Stipules** free, about 5 mm. long, lanceolate to ovate-lanceolate, acute, pubescent. **Flowers** axillary, 1–3 or several together. **Pedicels** sub-sessile or up to 2·5 cm. long, bracteolate near the apex. **Bracts** 1–3 mm. long, connate, pilose, with acute ciliate lobes. **Calyx-tube** 2–6 mm. long, 0·4–1·3 cm. in diameter, villous or glabrous, glandular; lobes lanceolate, ovate, acute, glabrous or villous, glandular, ciliate, pilose on the inner surface; upper and lateral lobes 2–7 mm. long, 0·5–3 mm. broad; lowest lobe 0·4–1 cm. long, 2–4 mm. broad. **Vexillum** 0·4–1·4 cm. long, 0·4–1·5 cm. broad, sub-ovibaric or broadly obovate, geniculate; claw channelled 1–4 mm. long, with or without the two small appendages at the apex of the claw; alae 0·4–1·2 cm. long, 1·5–6 mm. broad, with a linear claw 1·5 mm. long; carina 2·5–8 mm. long, 1·5–7 mm. broad, with a linear claw 2–7 mm. long. **Ovary** glabrous; style 0·3–1 cm. long. **Seed** 4 mm. long, 2 mm. broad, reddishbrown.

- **Flowers**: Pale to deep blue. This species has a wider distribution than any other native species and is in bloom almost the whole year.

- **Cape**.—Clanwilliam district: Clanwilliam, Rogers 16798, Olifants River, Leipoldt; Tulbagh district: Scott and Elliot, Winterhoek, Phillips 1729; Cape district: Devils Peak, Ecklon and Zeyher 1519, Table Mountain, Forbes 139, Newlands, Forbes 91, Wynberg Mountain, Wolley Død 22; Stellenbosch district: Stellenbosch, Ecklon and Zeyher 1515; Paarl district: French Hoek, Schlechter 9263, 10268, Phillips 1089; Caledon district: Caledon Zeyher, Bolus; Swellendam district: Swellendam, Ecklon and Zeyher 1518; Riversdale district: Riversdale, Muir 79, Aasvogelberg, Muir 1850, Ladismith, Seven Weeks Poort, Phillips 1432; Mossel Bay district: Mossel Bay, Rogers 4165, Potts; George district: Mitchell (Bolus Herb. 16060), Rogers 4281, near Langekloof, Zeyher 1517, Robertson Pass, Outeniqua Mountains, Hops 53, Garcia’s Pass, Phillips; Knysna district: Knysna, Main Forest, Schonland 3600, Plettenberg Bay, Smart (Rogers 15457); Kingwilliamstown district: Zitzikamma Mountains, Britton 1079; Humansdorp district: Humansdorp, Schonland 3018, Witte Els Bosch, Fourcade 892, 923, 924, Muir 1250, Assegai Bosch, Rogers 2834, Slang River, Phillips 3441; Uitenhage district: Uitenhage, Ecklon and Zeyher 305, Schonland 3730, Britton 3027, Van Staaden, Paterson 734; Albany district: Grahamstown, Zeyher 903, 2380, Rogers, Schonland, Signal Hill, Dale and Cherry 883, Coldspring, Gower; Queenstown district: Katberg, Schonland 4298; Fort Beaufort district: Hogsback, Rattray 83, Stuyart 11, Hoffman’s Bosch, Britton 1185, near Kat River, Ecklon and Zeyher 1514; Cathcart district: Cathcart, Cotterell 164, Galpin 7360; Komgha district: near Kei Mouth, Flanagan 178; Kentani district: Kentani, Pegler 255; Umtata district: Umtata, Schlechter 6337; Beaufort West district: Murraysburg, Bolus 220.

- **Transvaal**.—Lydenburg district: Pilgrims Rest, Rogers 23110, Lydenburg, Wilmer; Zoutpansberg district: Zoutpansberg, Rietfontein, Leendertz 898; Woodbush, Jenkins 7194; Barberton district: Barberton, Galpin 401, Elandshoek, Rogers 448.

- **Swaziland**.—Stewart 3687.

- **Natal**.—Drakensberg, Polela, Evans 714; Karkloof, Dimmock-Brown 333; Maritzburg, Moss 3344; Richmond, Wood 84, 9882; Estcourt, Wood 10261, Wylie (Wood 10006); Field’s Hill, Wood 12830; Evans 146; Illovo, Wood 6411.

- **Zululand**.—Inyiza, Edwards 315; Ngoya, Wood 9314; Nkandha, Wylie (Wood 8817).

21. **P. affinis** E. and Z.

- A tall virgate shrub up to 18 metres. **Stems** woody, striate, glandular, slightly pilose when young. **Leaves** imparipinnate with 2–4 pairs of leaflets, stipulate, petiolate; petioles 0·7–2·3 cm. long; leaflets up to 5 cm. long, 6 mm. broad, linear-lanceolate to ovate-lanceolate, obtuse, glandular, mucronulate. **Stipules** small, deltoid. **Flowers** axillary, 1–3 or
more together. Pedicels up to 4.5 cm. long, bracteolate near the apex. Bracts bi-lobed, up to 5 mm. long, pilose, glandular, veined. Calyx-tube 4 mm. long, 1 cm. in diameter, thickly nigro-punctate, sparsely to densely nigro-hirsute, veined; lobes lanceolate-ovate to ovate, acute, hirsute, nigro-punctate, hirsute on the inner surface; upper and lateral lobes 3.5–4 mm. long, 2 mm. broad; lowest lobe 5 mm. long, 3–4 mm. broad. Vexillum 0.9–1.2 cm. long, 1.2–1.7 cm. broad, obovate, geniculate, with a linear claw 3–4 mm. long; alae 0.8–1.1 cm. long, 5 mm. broad, with a linear claw 5–6 mm. long; carina 6–7.5 mm. long, 4–4.5 mm. broad, with a linear claw 6–8 mm. long. Style 0.8–1 cm. long.

Flowers: Deep blue or purple.

Cape.—Riversdale district: Riversdale, near Albertinia, Muir 1851; George district: George, Rogers 4291; Port Elizabeth district: Port Elizabeth, Van Staadenberg, Zeyher 2378; Albany district: Grahamstown, Rogers 27423; Stutterheim district: Stutterheim, Ecklon and Zeyher, Rooi Vaal, Flanagan 178.

Transvaal.—Barberton district: Barberton, Pole Evans, Rogers 14015; Middelburg district: Waterval Boven, Rogers 2743; Lydenburg district: Lydenburg, Rogers 14564, 23110.

Swaziland.—Mbabane, Rogers 11457.

Basutoland.—MacaMac, Drakensberg, MacLea 3017.

Localities Unknown.—Burchell 6038, Rogers 17382.

22. P. repens L.

Plant suffruticose. Stems procumbent or prostrate, sparsely pilose, glandular. Leaves trifoliolate, petiolate, stipulate; petioles up to 3 cm. long, glandular, sparsely pilose; young petioles more thickly pilose; leaflets thick, 0.5–1.5 cm. long, 2–6 mm. broad, obovate to obovate-oblong, cuneate, retuse or obtuse, nigro-punctate, sparsely pilose. Stipules up to 2 mm. long, ovate, acute. Flowers axillary, 1 or more together. Pedicels equaling the leaves, glandular, pilose, bracteolate near the middle. Bracts about 2.5 mm. long, bi-lobed. ovate, acuminate, pilose, glandular. Calyx-tube 2–4 mm. long, 5–7 mm. in diameter, glabrous or laxly hairy, thickly nigro-punctate; lobes ovate, obtuse, glabrous or villous, ciliate, nigro-punctate, shortly pilose on the inner surface; upper and lateral lobes 1.5–3 mm. long 1–2.5 mm. broad, lowest lobe 1.3–4 mm. long, 1–2.5 mm. broad. Vexillum 6–8 mm. long, 6.5–9 mm. broad, obovate, glandular, with a narrow claw 1.2 mm. long; carina 5–6 mm. long, 2–3 mm. broad, with a linear claw 3–4 mm. long; alae 6.7–5 mm. long, 1.5–3 mm. broad, with a linear claw 2–3 mm. long. Ovary glabrous, sometimes glandular; style 5–7 mm. long, filiform.

Flowers: October–April.


23. P. bracteata Linn.

A low suffruticose. Stems diffuse or erect, virgate, leafy, pubescent when young, becoming glabrous. Leaves trifoliolate, shortly petiolate, stipulate; petioles up to 3 mm. long; leaflets up to 2.6 cm. long and 1.5 cm. broad, broadly obovate or cordate, glabrescent, pellucid-dotted, recurved mucronate. Stipules adnate to the base of the petiole, up to 8 mm. long, lanceolate, ovate, acute, striate. Inflorescence terminal, spicate, having the appearance of a capitulum, sessile. Flowers subtended by bracts variable in size and shape. Calyx-tube 2.5–5 mm. long, 4.5–8 mm. in diameter, laxly hirsute or villous, pellucid-dotted,
distinctly 10-nerved; lobes pellucid-dotted, long ciliate, laxly hisrate or villous, glabrous or sparsely pilose on the inner surface; upper and lateral lobes 1·5–8 mm. long, 0·5–1·5 mm. broad, lanceolate, acute, slightly sub-falcate; lowest lobe 0·4–1 cm. long, 1·5–5 mm. broad, broadly ovate, cuspidate, reticulately veined. *Vexillum* 0·4–1·1 cm. long, 4–7 mm. broad, obovate-oblong or sub-orbicular, slightly geniculate with a channelled claw 1·5–3·5 mm. long; alae 0·4–1 cm. long, 1–3 mm. broad, with a linear claw 2·5–4 mm. long; carina 2·5–4·5 mm. long, 1–2 mm. broad, with a linear claw 3–5 mm. long. *Ovary* glabrous or slightly pilose; style 3–5 mm. long, glabrous. *Pod* turgid 5·5 mm. 3 mm. broad, glabrous; seed small, purplish-brown.


**24. P. Bowieana** Harv.

*Plant* suffruticosae. *Stems* slender, 6 or more metres long, diffuse, branching, puberulous, *Leaves* trifoliolate, shortly petiolate, stipulate; petioles 2 mm. long, leaflets 2–2·5 cm. long, 6–7·5 mm. broad, cuneate-obovate, recurved-mucronate, pellucid-dotted, ciliate, laxly hispid when young, becoming glabrous. *Peduncles* axillary, longer than the leaves, racemose. *Pedicels* 2–3 together, equaling the calyx. *Bracts* lanceolate. *Calyx-tube* pale, sub-glamous; lobes narrow-lanceolate; lowest lobe longest; calyx segments each marked with three purple striae.

**Cape.**—Cape, *Bowie.*

Description taken from "*Flora Capensis.*" No specimen seen.

**25. P. decumbens** Ait.

*Plants* suffruticosae or decumbent. *Stems* slender, striate, decumbent, young parts densely clothed with cano- or rufo-pubescence, becoming glabrous. *Leaves* trifoliolate, stipulate, petiolate; petioles up to 5 mm. long; leaflets 0·8–1·6 cm. long, 4–6 mm. broad, cuneate or cordate, recurved-mucronate, pellucid-dotted, ciliate, laxly hispid when young, becoming glabrous. *Peduncles* axillary, longer than the leaves, racemose. *Pedicels* 1–3 together, often crowded at the ends of the branches. *Pedicels* up to 2 mm. long. *Calyx-tube* 2–3 mm. long, 3·5–5·5 mm. in diameter, villous or sparsely hisrate; lobes lanceolate, acute, long ciliate, villous or sparsely hisrate, shortly pilose on the inner surface; upper and lateral lobes 1–4 mm. long, 0·5–1 mm. broad; lowest lobe 3·5–5·5 mm. long, 1–2 mm. broad; glands present on tube and lobes, especially on the lowest lobe. *Vexillum* 4·5–7 mm. long, 4–6 mm. broad, obovate, with a channelled claw 1·5–3 mm. long; alae 4·5–7 mm. long, 1·5–2·5 mm. broad, with a linear claw 2·3 mm. long; carina 2·5–4·5 mm. long, 1–1·5 mm. broad, with a linear claw 2·5–3·5 mm. long. *Ovary* glabrous; style 3–4 mm. long, glabrous.
Cape.—Piquetberg district: Piquetberg, Bolus; Malmesbury district: Moorreesburg, Bolus 9957; Tulbagh district: Tulbagh, Rogers 17436, Zeyher; Ceres district: Mitchell’s Pass, Schlechter 9971; Cape district: Table Mountain, Bolus 2770, 2771, 4272, Ecklon and Zeyher 1538, MacOwan 73, Moss 2610, Rosebank, Pillans 3474, Rondebosch, Hutton, Forbes 179, Rondebosch and Newlands, Wolley Dod 1901, Kirstenbosch, Verdoorn, Forbes 87; Stellenbosch district: Somerset Strand, Rogers 17674; Paarl district: French Hoek, Phillips 1090; Caledon district: Sir Lowry’s Pass, Galpin 369, Houw Hoek, Schlechter 5440; Riversdale district: Riversdale, Muir 5085; Swellendam district: Swellendam, Kennedy; Robertson district: Barrydale, Galpin 3963; Humansdorp district: Humansdorp, Bolus 2294; Uitenhage district: Zwartkop River, Ecklon and Zeyher 1033, Zeyher 445; Port Elizabeth district: Redhouse, Paterson 206, Humewood, Paterson 2613, West 246; Albany district: Grahamstown, MacOwan 818, 1083, Rogers 1567, Signal Hill, Dale and Cherry 1025, Balcock, Kaffraria, Mount Coke, Sim 1507, Bethelsdorp, Zeyher.


Plant a slender shrub. Stems diffuse or sub-erect, leafy, clothed with adpressed whitish pubescence. Leaves trifoliolate, petiolate, stipulate; petioles 2–4 mm. long; leaflets 6–8 mm. long, 4–5 mm. broad, obovate, recurved-mucronate, minutely pellucid-dotted, thinly canescent on both surfaces. Flowers in threes, axillary or in an interrupted terminal pedunculate raceme. Bracts minute. Calyx-tube silky canescent; lobes lanceolate, two uppermost semi-connate.

Description from “Flora Capensis.” No specimen seen.

27. P. biflora Harv.

Plant low-growing, forming a thick carpet, much branched, pubescent when young, becoming glabrous. Leaves trifoliolate, petiolate, stipulate; petioles up to 4 mm. long; leaflets thickish 2–3 mm. long, 2–2.5 mm. broad, obovate, nigro-punctate, pubescent when young, glabrous or with a few scattered hairs when older, with distinct veining on the lower surface. Stipules minute, ovate, withering. Flowers axillary; two sessile flowers on peduncle. Peduncle bracteolate at apex. Bracts very small. Calyx-tube 3 mm. long, 4–5 mm. in diameter, hispid, glandular, distinctly 10-nerved; lobes oblong, obtuse, hispid, ciliate, glandular, pilose on the inner surface; upper and lateral lobes 1.5–2 mm. long, 0.5 mm. broad; lowest lobe broadest, 2 mm. long, 1 mm. broad. Vexillum 3.5–5 mm. long, 4 mm. broad, obovate, geniculate, claw 1 mm. long, with a slight appendage at the apex; alae 3–5 mm. long, 2 mm. broad, with a linear claw 2.5 mm. long; carina 2 mm. long, 1.5 mm. broad, with a linear claw 2.5 mm. long. Ovary pilose; style 1.5 mm. long, glabrous or very sparsely pilose.

Flowers: Blue with a white vexillum.

South West Africa.—Keetmanshoop to Windhoek, Pearson, in Percy Sladen Memorial Expedition.

28. P. obtusifolia D.C.

A small diffuse plant. Stems up to 9 metres, slender, spreading, villosicanescent, becoming glabrous when older; very pale. Leaves trifoliolate, petiolate stipulate; petioles usually fairly long, 0.5–7 cm. long; leaflets 0.3–2.1 cm. long, 0.2–1.5 cm. broad, obovate or elliptic obtuse, thinly canescent, glandular, plicate, with margins slightly dentate. Stipules up to 3 mm. long, ovate, acute, ciliate, canescent. Inflorescence axillary, spicate. Peduncles with 3–8 flowers. Flowers sub-sessile. Calyx-tube 1.5–4 mm. long, 3–5 mm. in diameter, densely albo-villosus; lobes lanceolate-ovate, ciliate, villose, pilose on the inner surface; upper and lateral lobes 1–2 mm. long, 0.5–1 mm. broad; lowest lobe 2–4.5 mm. long, 1–1.5 mm. broad. Vexillum 3–5 mm. long, 3–4 mm. broad, obovate, with a channelled claw 1–1.5 mm. long; alae 3–4.5 mm. long, 1–2 mm. broad, with a linear claw 1.5–4 mm. long; carina 2–3 mm. long, 1–1.5 mm. broad, with a linear claw 2–2.5 mm. broad. Ovary villous; style 1–3 mm. long, glabrous or sparsely pilose.
Cape.—Cape district: Newlands, Wilman; Swellendam district: Gauritz River, Zeyher 450; Calvinia district: Near Twee River, Burtt-Davy 17562; Graaff-Reinet district: Graaff-Reinet, Bolus 127; Beaufort West district: Murraysburg, Bolus 35: Kimberley district: Barkly West, W.G.B. 637, Bolus 6814, near Vaal River, Bolus 6803; Vryburg district: Vryburg, Sharpe; Kuruman district: Kuruman, Burtt-Davy, Langberg, Lanham 4032.

South West Africa.—Great Namaqualand, Ramansdrift, Schlechter 11459; Holoog, Pearson 9808; Kiubis, Pearson 8012, 8026; Tsubgaus, Pearson 9204; Great Fish River, Pearson 9210, 9805, 9274; Tsoudat, Pearson 9189; Kalahari, Ireland 16134: Krai Kluf Ravine, Pearson 8280; Walvis Bay, Marloth 1481.

Namaqualand Minor.—Near Henkies, Phillips 1587.

Transvaal.—Pretoria district: Pienaar's River, Schlechter 4211; Bloemhof district: Christiana, Burtt-Davy; Zeerust district: Zeerust, Potts 4257, Burtt-Davy.

Orange Free State.—Boshof District: Burtt-Davy; Bloemfontein district: Bloemfontein, Burtt-Davy; Heilbron district, Heilbron, Flanagan 1459.

Locality Unknown.—Dinter 125.

29. P. rotundifolia Linn.
A suffruticose about 3 metres high. Stems ascending, leafy, densely hispid, becoming glabrous when older. Leaves unifoliolate, petiolate, stipulate, 0-9-2-7 cm. broad, 0-9-4 cm. long, ovate to ovate-elliptic, obtuse or acute, mucronulate, sparsely glandular, with reticulate veining, glabrous; petioles up to 5 mm. long. Stipules adnate to the base of the petiole, equalling or exceeding the petiole, lanceolate, subulate veined, glabrous, glandular. Inflorescence spicate, many-flowered. Peduncles terminal and axillary, 4-6 mm. long, hairy. Flowers on short pedicels, subtended by a small bract. Calyx-tube 3 mm. long, 7 mm. in diameter, densely hirsute with long white hairs, glands translucent; lobes lanceolate-ovate, long hirsute, ciliate, thinly pilose on the inner surface; upper and lateral lobes 6-7 mm. long, up to 2 mm. broad; lowest lobe 1-1 cm. long, 3 mm. broad. Vexillum about 1 cm. long and 5 mm. broad, obovate, with a channelled claw 2 mm. long; alae 8 mm. long, 2-5 mm. broad, with a linear claw 3-5 mm. long; carina 5-5 mm. long, 2-5 mm. broad, with a linear claw 4 mm. long. Ovary hispid; style 4 mm. long. Pod membranous, about 6 mm. long and 5 mm. broad, hispid.

Flowers: July—April.

Cape.—Caledon district: Houw Hoek, Bolus 80, near Klein River; Clanwilliam district: Vogelgat, Schlechter 9503, 10417.

30. P. Thomii Harv.
A small suffruticose. Stems slender, ascending, hairy. Leaves unifoliolate, petiolate, stipulate, 1-4 cm. long, 0-5-2-15 cm. broad, elliptic-lanceolate to elliptic-ovate or oblong, mucronulate, with reticulate veining, no glands present, densely hairy when young and never becoming quite glabrous; petioles up to 5 mm. long. Stipules about 7 mm. long and 2 mm. broad, ovate, acute, nervat, hispid. Inflorescence spicate. Peduncles terminal and axillary, bracteate, hairy, exceeding the leaves. Flowers sessile or sub-sessile. Calyx-tube 3-3-5 mm. long, 7 mm. in diameter, veined, thickly hirsute; lobes linear-lanceolate to ovate-lanceolate, acute, hirsute, glabrous on the inner surface; upper and lateral lobes 5-9 mm. long, 1-5-2 mm. broad; lowest lobe 0-8-1 cm. long, 2-5-3 mm. broad. Vexillum 1-15-1-4 cm. long, 8-9 mm. broad, obovate with a linear claw 1-5 mm. long; alae 0-9-1 cm. long, 3 mm. broad, with a linear claw 4 mm. long; carina 5-6 mm. long, 2-5-3 mm. broad, with a linear claw 4-5 mm. long. Ovary pilose; style 4-5 mm. long, pilose.

Flowers: July—October.

Cape.—Caledon district: Hermanus, Bolus 6378, Pieter's Fontein, Bodkin (Bolus 6378).
31. *P. aculeata* L.

An erect virgate shrub up to 12 metres. *Stems* woody, branched, leafy, glabrous, glandular, spiny with persistent stipules. *Leaves* trifoliolate, petiolate, stipulate; petioles 1-5-4 mm. long, glandular, glabrous; leaflets thickish, 1-5-8 mm. long, up to 2 mm. broad, cuneate, nigro-punctate on both surfaces, with a sharply curved mucro. *Stipules* adnate to the base of the petiole, 2-3 mm. long, persistent, subulate. *Flowers* axillary, solitary or 1-3 together. *Pedicels* up to 1-3 cm. long, bracteolate near the apex, often crowded on the upper parts of the stem. *Bracts* about 5 mm. long, connate, ovate, acuminate, nigro-punctate. *Calyx-tube* 3-5-5 mm. long, 0-8-1-1 cm. in diameter, glabrous, thickly glandular, nerved; lobes ovate, acuminate, glabrous, glandular, pilose on the inner surface, upper and lateral lobes 2-5-6 mm. long, 1-5-3-5 mm. broad; lowest lobe 0·3-1 cm. long, 2-5-5 mm. broad. *Vexillum* 0·8-1·3 cm. long, 0·8-1·5 cm. broad, obovate, geniculate, with a channelled claw 1-3 mm. long; alae 0·7-1 cm. long, 3-5-6 mm. broad, with a linear claw 2-5-5 mm. long; carina 4-8 mm. long, 3-5 mm. broad, with a linear claw 3-5 mm. long. *Ovary* 1-2 mm. long, glabrous; style 4-5-8 mm. long, glabrous.

*Flowers*: August–November.

**Cape.**—Cape district: Table Mountain, Ecklon and Zeyher 1545, MacOwan, Galpin 3966, Bolus 4660, Rogers 17744, Orange Kloof, Wolley Dod 20; Stellenbosch, Hottentots Holland Mountains, near Gordon’s Bay, Bolus 9865, 9933; Clanwilliam district: near Vogelgat, Schlechter 9516.

32. *P. Keetii* Schonl.

A shrub. *Stems* erect, glabrous, glandular. *Leaves* trifoliolate, petiolate, stipulate; petioles up to 1 cm. long; leaflets 0-5-2-5 mm. long, 0·4-1·1 cm. broad, obovate, thickly nigro-punctate, glabrous, mucronulate; terminal leaflet on short petiole; lateral leaflets sub-sessile. *Stipules* not exceeding 5 mm. long, ovate, lanceolate, acute. *Flowers* axillary, solitary. *Pedicels* up 3-5 cm. long, bracteolate at the apex. *Bracts* tri-lobed, 2-3 mm. long, ovate, acuminate, glandular, glabrous. *Calyx-tube* 3 mm. long, 8 mm. in diameter, glabrous, thickly glandular; lobes lanceolate, acute, glandular, glabrous, ciliate, pilose on the inner surface; upper and lateral lobes 2-4 mm. long, 1-5 mm. broad; lowest lobe slightly longer. *Vexillum* 8 mm. long, 1 cm. broad, obovate; claw channelled, 3 mm. long, with two slight appendages at the apex; alae 8 mm. long, 4 mm. broad, with a linear claw 4 mm. long; carina 6 mm. long, 4 mm. broad, with a linear claw 6 mm. long. *Ovary* glabrous; style 7 mm. long, glabrous.


**Cape.**—Knysna district: Hoogeberg, Keet 1055 (Type).

33. *P. polysticta* Benth.

A shrub, up to 10-5 metres. *Stems* woody, erect, striate, hairy, becoming almost glabrous when older, glandular. *Leaves* trifoliolate, sub-sessile or very shortly petioled, stipulate; petioles about 3 mm. long; leaflets 0·9-3·6 cm. long, 0·3-1·5 cm. broad, oblong, cuneate, nigro-punctate, recurved-mucronate, glabrescent. *Stipules* small, deltoid. *Flowers* axillary in clusters. *Peduncles* 2-4 mm. long with 3 or more short pedicels to each peduncle. *Calyx-tube* 2-3-5 mm. long, 5-7 mm. in diameter, veined, tomentulose, glandular; lobes lanceolate, acute, tomentulose, glandular, pilose on the inner surface; upper and lateral lobes 1-3-5 mm. long, about 1 mm. broad; lowest lobe 4-5 mm. long, 1-1-5 mm. broad. *Vexillum* 6-8 mm. long, 5-6 mm. broad, obovate, with a short claw 0-5-2 mm. long; alae 5-7 mm. long, 1-5-2 mm. broad, with a linear claw 2-5-3 mm. long; carina 3-4 mm. long, 1·5-2 mm. broad, with a linear claw 3-4 mm. long. *Ovary* glabrous; style 3-5 mm. long.

*Flowers*: August–April.
The following note is attached to Mrs. Dieterlen's specimen No. 372 in the S.A. Museum:

"Sesuto—Mohlonecha.—He who makes respectable. A chief who wishes to have prestige in the sight of his subjects must bathe the whole of his body with a decoction of this plant. The burnt root is smoked as a cure for cold in the head."

CAPE.—Uitenhage district: Uitenhage, Drege; Oudtshoorn district: Oudtshoorn, Taylor 323; Albany district: Zuurberg, Paterson 44, Griqualand East, Mount Currie, Tyson 1319, Dornkop, Zeyher, Tyson 519.

TRANSVAAL.—Pietersburg district: Pietersburg, Moss and Rogers 1330; Messina district: Louis Trichardt, Rogers 21148; Heidelberg district: Heidelberg, Burtt-Davy 15435.

SWAZILAND.—Hlatikulu, Stewart 181.

ORANGE FREE STATE.—Cooper 1114.

BASUTOLAND.—Leribe, Dieterlen 372.

NATAL.—Ladysmith, Wood 8010; Estcourt, Wood 9953; Weenen Country: Blaukrans, Wood 3517; Boston, Wood 9900.

No Locality.—Gerrard and McKen 440.

34. **P. carnea** E. Mey.

A shrub 12-15 metres high. **Stems** leafy, reddish pubescent, at length becoming glabrous. **Leaves** trifoliolate, stipulate, sub-sessile; leaflets up to 1.5 cm. long and 7 mm. broad, oblong to cuneate-oblong, obtuse, pellucid-dotted, recurved mucronate, glabrous. **Stipules** about 2 mm. long, deltoid. **Flowers** axillary, 2-3 together. **Pedicels** very short. **Calyx-tube** 2-3.5 mm., 5-6 mm. in diameter, veined, pellucid-dotted, recurved mucronate, glabrous. **Vexillum** 6-7 mm. long, 5-6 mm. broad, ovate, with a channelled claw 1-2 mm. long; alae 5-5.7 mm. long, 2-2.5 mm. broad, with a linear claw 2.5-3 mm. long; carina 3-4 mm. long, 1.5-2 mm. broad, with a linear claw 3-4 mm. long. **Ovary** glabrous or very slightly pilose; style 2-4 mm. long, glabrous.

**Flowers**: August-March.

CAPE.—Riversdale district: Riversdale, Muir 484, Langebergen, Schlechter 5691; Oudtshoorn district: Oudtshoorn, Britten 80; Knysna district: Knysna, Keet 278, 2716, Fourcade 1519, Plettenberg Bay, Rogers 15513, Clarkson, Galpin 3961, Schlechter 6012; Humansdorp district: Humansdorp, Fourcade 2330, Assegai Bosch, Fourcade 857, Schonland 3618, Rogers 2833; Albany district: Howison's Poort, MacOwan.

35. **P. obliqua** E. Mey.

An erect shrub up to 15 metres. **Stems** branched, villous when young, at length glabrescent, leafy. **Leaves** trifoliolate, petiolate, stipulate; petioles up to 6 mm. long; leaflets up to 3.1 cm. long and 1 cm. broad, elliptic-oblong, obtuse, mucronulate, densely glandular, glabrescent, shiny; lateral leaflets unequal sided. **Stipules** membraneous, about 6 mm. long and 2.5 mm. broad, ovate. **Flowers** axillary, in threes. **Pedicels** shorter than the leaves; sometimes three pedicels on short peduncle. **Calyx-tube** 2 mm. long, 7-8 mm. in diameter, veined, glandular, villous; lobes villous, glandular, ciliate, glabrous on the inner surface; upper and lateral lobes 4-5 mm. long, 1-1.5 mm. broad, lanceolate, acute; lowest lobe up to 8 mm. long, and 3 mm. broad, ovate, very acute, almost cuspidate. **Vexillum** 9 mm. long, 7-8 mm. broad, ovate, with a channelled claw 1 mm. long; alae up to 1 cm. long, 3-4 mm. broad, with a linear claw 2-3 mm. long; carina 3-4 mm. long, 2 mm. broad, with a linear claw 2-3 mm. long. **Ovary** glabrous; style 2-5 mm. long, glabrous.

**Flowers**: July–November.

CAPE.—Stellenbosch district: Stellenbosch, Duthie; Caledon district: near Palmiet River, Zeyher 1525, Hottentots Holland Mountains, Zeyher; Paarl district: French Hoek, Phillips 1088.
36. **P. macradenia** Harv.

A shrub. **Stems** branched, erect, leafy, striate, glandular, silky canescent when young, becoming glabrous when older. **Leaves** trifoliolate, stipulate, sub-sessile: leaflets 1-9 cm. long, 8-5 mm. broad, obovate, cuneate, recurved mucronate, canescent when young, becoming glabrous, nigro-punctate on the upper surface with large and prominent glands on the lower surface. **Stipules** up to 2-5 mm. long, subulate, acute, canescent. **Flowers** axillary, 1-3 together. **Pedicels** short; sometimes three sub-sessile flowers on a short peduncle. **Calyx-tube** 3 mm. long, 7 mm. in diameter, veined, canescent, very sparsely glandular; lobes lanceolate-ovate, acute, sparsely glandular and canescent. **Vexillum** 5 mm. broad, 6-5 mm. long, obovate, with a channelled claw 1-5 mm. long; alae 6-5 cm. long, 2 mm. broad, with a linear claw 3 mm. long; carina 4 mm. long, 2 mm. broad, with a linear claw 3 mm. long. **Ovary** glabrous: style 3-5 mm. long, glabrous.

**Flowers:** July-August.

**Cape.—**Riversdale district: Langebergen, *Muir* 1113.

37. **P. tomentosa** Thunb.

A shrub up to 24 metres. **Stems** erect, leafy, densely cano-pubescent, at length becoming glabrous. **Leaves** trifoliolate, petiolate, stipulate; petioles up to 2-5 cm. long; leaflets 0-6-4-5 cm. long, 0-5-1-8 cm. broad, elliptic or elliptic-lanceolate, mucronulate, with the upper surface glabrous or sparsely pilose and the lower surface densely canescent. **Stipules** up to 1-3 cm. long and 3 mm. broad, lanceolate, acute or subulate, cano-pubescent or glabrescent. **Inflorescence** axillary, or terminal. **Peduncles** up to 14 cm. long. **Flowers** in dense globose heads, sub-sessile; each flower subtended by a bract. **Bracts** up to 1 cm. long, ovate or lanceolate, villous, striate with dark lines. **Calyx-tube** 3-7 mm. long, 0-7-1-3 cm. in diameter, with reticulate veining, villoso-hirsute; lobes lanceolate, acute, reticulate or villous, pilose on the inner surface, ciliate; upper and lateral lobes 3-7 mm. long, 1-2-5 mm. broad; lowest lobe 0-75-1 cm. long, 2-3 mm. broad. **Vexillum** 7-8 mm. long, 2-8 mm. broad, obovate, geniculate, distinctly veined, with a channelled claw 2-5 mm. long; alae 4-5-8 mm. long, 2-3-5 mm. broad, with a linear claw 3-5-6 mm. long; carina 3-5 mm. long, 2-5 mm. broad, with a linear claw 5-6-5 mm. long. **Ovary** glabrous; style 5-7 mm. long. Glands present but very minute. The whole plant has a silvery appearance owing to the silky cano-pubescence.

**Flowers:** August-January.


**Localities Uncertain:** Kleinmonde, White 946A, Inalgaten River, Young 5516.

38. **P. zeyheri** Harv.

A suffruticose, about 3 metres high. **Stems** slender, ascending, pubescent. **Leaves** trifoliolate, petiolate, stipulate; petioles up to 1-5 cm. long, striate, pubescent; leaflets 0-7-4-2 cm. long, 0-4-1-5 cm. broad, broadly obovate, mucronulate, villous, becoming glabrescent; a few of the upper leaflets linear to ovate-linear. **Stipules** adnate to the base of the petiole, up to 1-3 cm. long, subulate or lanceolate, acute, hispid, ciliate. **Inflorescence** terminal, and axillary, spicate. **Peduncles** 5-5-16 cm. long, hirsute. **Flowers** sub-sessile, each subtended by a bract. **Bracts** ovate or linear, acute. **Calyx-tube** 3-4 mm. long, 5-6 mm. in diameter, with dark and reticulate veins, densely albo-hirsute, lobes albo-hirsute, glabrous on the inner surface; upper and lateral lobes 3-8 mm. long, 0-5-1 mm. broad, linear-lanceolate; lowest lobe 5-9 mm. long, 1-5-2-5 mm. broad,
reticulately veined, ovate-lanceolate. *Vexillum* 0·6–1·2 cm. long, 5–7 mm. broad, obovate, with a channelled claw 0·5–3 mm. long; alae 6–9 mm. long, 1·5–3 mm. broad, with a linear claw 1·4–5 mm. long; carina 3·5 mm. long, 1–2 mm. broad, with a linear claw 4–5 mm. long. *Ovary* glabrous; style 6 mm. long, glabrous.


39. **P. Patersoniae** Schonl.

A shrub. *Stems* erect, striate, glandular-scabrid, tomentose, at length glabrescent. *Leaves* trifoliolate, stipulate, petiolate; petioles 3–5·5 cm. long; leaflets 1·5–5·5 cm. long, up to 4 cm. broad, obovate, acute, cuneate at the base, dentate-crenulate, mucronulate, nigro-punctate, glabrescent; lateral leaflets sub-sessile; terminal leaflets on petioles 0·7–2 cm. long. *Stipules* up to 1 cm. long, lanceolate, ovate, acute, tomentulose, glandular. *Inflorescence* axillary, spicate. *Peduncles* up to 6 mm. long. *Flowers* 2–3, subtended by a bract, shortly pedicelled. *Bracts* up to 1 cm. long, ovate, lanceolate, acute, tomentulose, glandular. *Calyx-tube* 2 mm. long, 5 mm. in diameter, tomentose, glandular; lobes lanceolate, ciliate, tomentose, glandular, glabrous on the inner surface; upper and lateral lobes 2–3 mm. long, 0·7 mm. broad; lowest lobe 5 mm. long, 1·5 mm. broad. *Vexillum* 5 mm. long, 4 mm. broad, obovate, with a channelled claw 1·5 mm. long; alae 5 mm. long, 1·5 mm. broad, with a linear claw 3 mm. long; carina 3 mm. long, 2 mm. broad, with a linear claw 3 mm. long. *Ovary* glabrous; style 3·5 mm. long, glabrous.

*Flowers*: December.

**Cape.**—Port Elizabeth district: Redhouse, *Paterson* 393 (Type).

40. **P. caffra** E. and Z.

An erect shrub up to 6 metres. *Stems* leafy, striate, with prominent glands, tomentulose, at length glabrescent. *Leaves* trifoliolate, petiolate, stipulate; petioles up to 1·8 cm. long; leaflets 1·4–5·5 cm. long, 0·7–3 cm. broad, broadly elliptic or obovate, rounded at the apex, mucronulate, thickly nigro-punctate, tomentulose, at length glabrescent; terminal leaflet on a petiole up to 1·1 cm. long. *Stipules* 2·5 mm. long, deltoid, acuminate, pilose. *Inflorescence* terminal or axillary, laxly or densely spicate. *Peduncles* up to 5 cm. long. *Flowers* in whorls of three subtended by a bract. *Bracts* up to 3 mm. long, ovate, acuminate, pilose. *Pedicels* about 1 mm. long. *Calyx-tube* 2–3 mm. long, 4·5–6 mm. in diameter, nerves, crenate, tomentose, nigro-punctate; lobes lanceolate, acute, tomentose, nigro-punctate, pilose on the inner surface; upper and lateral lobes 1·2–5·5 mm. long, 0·5–1 cm. broad; lowest lobe 2–4 mm. long, 1–1·5 mm. broad, acuminate. *Vexillum* 5·7 mm. long, 5–7 mm. broad, obovate, with a channelled claw 0·7–2·5 mm. long; alae 5–6·5 mm. long, 1·5–2·5 mm. broad, with a linear claw 2·5–4 mm. long; carina 3·3–5 mm. long, 1·5–2 mm. broad, with a linear claw 3·4–5 mm. long. *Ovary* pilose; style 3·4 mm. long, pilose. *Pod* membranous, 5·5–7 mm. long, 3·4 mm. broad, hirsute, enclosed in calyx; seed small, hard and brown.

Whole plant has large conspicuous wart-like glands.


**Transvaal.**—Lydenburg district: Elandspruitberg, *Schlechter* 3889, *Pegler* 1740 is probably from Kentani.
41. **P. venusta** E. and Z.

A. suffruticose. *Stems* flexuous, appressedly pubescent. *Leaves* trifoliolate, stipulate, sub-sessile; leaflets 2-5 cm. long, 6-7 mm. broad, cuneate-oblong, obtuse, mucronulate, pellucid-dotted, appressedly puberulent. *Stipules* subulate. *Inflorescence* terminal and axillary, spicate, cylindric. *Peduncle* and spike up to 4 cm. long. *Bracts* subtending flowers half as long as the calyx. *Calyx-tube* 6 cm. long, silky canescent, lobes lanceolate, acuminated, glandular; lowest lobe longest, nearly equalling the petals.

**Cape.**—Malmesbury district: Saldanha Bay, **Ecklon and Zeyher** 1553.

Description taken from “Flora Capensis.” No specimen seen.

42. **P. hirta** Linn.

A branched shrub. *Stems* erect, rigid, canescent with appressed short hairs, sparsely leafy. *Leaves* trifoliolate, petiolate, stipulate; petioles not exceeding 5 mm. long; leaflets 0.5-1.5 cm. long, 4-9 mm. broad, cuneate, obovate, recurved-mucronate, canescent, glandular. *Stipules* adnate to the base of the petiole, small, subulate. *Inflorescence* axillary or in interrupted spikes. *Flowers* in whorls of three, sessile, bracteate. *Calyx-tube* 3-4 mm. long, 6-7 mm. in diameter, glandular, villous; lobes slightly unequal, 1-5 mm. long, 0.75-2 mm. broad, linear-lanceolate to lanceolate-ovate, acute, villous, pilose on the inner surface. *Vexillum* 5-7 cm. long, 4-5 mm. broad, obovate, with a claw 1-3 mm. long; alae 4-6.5 mm. long, 1-2.5 mm. broad, with a linear claw 3 mm. long; carina 3-4 mm. long, 1-2 mm. broad, with a linear claw 3-4 mm. long. *Ovary* glabrous or hirsute; style 3-4 mm. long, glabrous or hirsute.

**Flowers:** October–November.

**Cape.**—Tulbagh district: Winterhoek, **Zeyher**; Cape district: Blaauwberg, **Zeyher**, near Milnerton, **Forbes** 229; without locality, **Bolus** 2993; Stellenbosch district: Stellenbosch, **Ecklon and Zeyher**, Somerset Strand, **Rogers** 17675; Paarl district: Paarlberg **Drege**; Caledon district: Sir Lowry’s Pass, **Bolus** 9195.

43. **P. stachydis** L.f.

A branched shrub. *Stems* erect, rigid, villous, with spreading rusty hairs, becoming glabrous when older. *Leaves* trifoliolate, petiolate, stipulate; petioles up to 3 mm. long; leaflets 0.5-2.5 cm. long, 0.4-1.5 mm. broad, obovate, acute or obtuse, hirsute, recurved mucronate, glandular. *Stipules* adnate to the base of the petiole, subulate. *Inflorescence* axillary and terminal, in laxly flowered spikes. *Peduncles* up to 5 cm. long. *Flowers* in whorls of three. *Bracts* small. *Calyx-tube* 3-4 mm. long, 6 mm. in diameter, villous, glandular; lobes ovate-acuminated or sub-lanceolate, villous, glandular, glabrous or sparsely pilose on the inner surface; upper and lateral lobes 2-4 mm. long, 0.5-1.5 mm. broad; lowest lobe 3.5-5 mm. long, 1.5-2 mm. broad. *Vexillum* 7 mm. long, 5-7 mm. broad, obovate, with a linear claw 1-3 mm. long; alae 5.5-6.5 mm. long, 2-3 mm. broad, with a linear claw 3-4 mm. long; carina 3-4 mm. long, 1.5-2 mm. broad, with a linear claw 3-4 mm. long. *Ovary* thinly pilose or glabrous; style 4-5 mm. long, glabrous.

**Flowered:** October.

**Cape.**—Piquetberg district: Piquetberg, **Bolus** 3458, 7529; Cape district: Table Mountain, **Zeyher**.

44. **P. spicata** L.

A shrub. *Stems* erect, virgate, pubescent, glabrescent, glandular, leafy. *Leaves* trifoliolate, petiolate, stipulate; petioles up to 4 mm. long; leaflets up to 3 cm. long, 9 mm. broad, obovate or obovate-oblong, obtuse, recurved mucronate, thickly nigro-punctate, slightly hirsute, especially along the mid-rib and veins. *Stipules* adnate to the base of the petiole, up to 5 mm long, subulate, acute, glandular. *Inflorescence* terminal, sessile, a
densely flowered spike. *Bracts* small. *Calyx-tube* 3-4 mm. long, 5-8 mm. in diameter, veined, pubescent, glands few; lobes lanceolate-ovate, acute, long ciliate, more thickly glandular than the tube, shortly pilose on the inner surface; upper and lateral lobes 1·5-3·5 mm. long, 1-2 mm. broad; lowest lobe 3-5 mm. long, 1-2 mm. broad. *Vexillum* 4-6 mm. long, 4·5-5 mm. broad, obovate, slightly geniculate, with a channelled claw 2 mm. long; alae 3·5-6 mm. long, 1·5-2 mm. broad, with a linear claw 2·5-3 mm. long; carina 2-3 mm. long, 1·1-5 mm. broad, with a linear claw 3·4 mm. long. *Ovary* glabrous; style 3-4 mm. long, glabrous.


**Cape.**—Cape district: Capetown, Bolus 1429, near "Protea," Bolus (Herb. 7101), Wynberg, Bolus (Herb. 7101b), Table Mountain, Zeyher (?) (Ex. Herb. Gub.); Paarl district: French Hoek, Phillips 1091; Swellendam district: Swellendam, Zeyher 2374; Riversdale district: Riversdale, Muir 83; George district: George, Paterson; Knysna district: Forest Hill, Duthie 740, Plettenberg Bay, Ecklon and Zeyher 1546; Albany district: Zuurberg, Schlechter 5702, Hofman's Bosch, Britten 1028; East London district: East London, Rattray 186; Komgha district: Komgha, Flanagan 403.

45. *P. racemosa* Thb.

A suffruticose. *Stems* flexuous, slender, pubescent, becoming more or less glabrous; glandular, leafy. *Leaves* trifoliolate, shortly petiolate, stipulate; petioles up to 2·5 mm. long; leaflets up to 1·8 cm. long, 8 mm. broad, cuneate-oblong, flat, obtuse, mucronulate, coriaceous, hispidulous, glabrescent, nigro-punctate, especially near the margins. *Stipules* up to 4 mm. long, subulate, veined. *Inflorescence* terminal, interrupted or axillary. *Flowers* sessile, 2-3 together. *Calyx-tube* 3 mm. long, 5 mm. broad, veined, glands few, translucent, hispid along veins, otherwise glabrous; lobes linear-lanceolate, acute, ciliate, hispid, glands translucent, shortly hispid on the inner surface; upper and lateral lobes 3·5-4 mm. long, up to 1 mm. broad; lowest lobe 5·5 mm. long, 1·5 mm. broad. *Vexillum* 8 mm. long, 6·5 mm. broad, obovate, with a claw 1·5 mm. long; alae 9 mm. long, 3 mm. broad, with a linear claw 2·5 mm. long; carina 3 mm. long, 2 mm. broad, with a linear claw 3·5 mm. long. *Ovary* glabrous; style 3 mm. long, glabrous.

Flowers: October.

**Cape.**—Riversdale district: Garcia's Pass, Bolus 11264; George district: Langekloof, Ecklon and Zeyher.

46. *P. hamata* Harv.

A shrub. *Stems* erect, striate, virgate, with a few scattered glands, canescent, becoming glabrous. *Leaves* trifoliolate, sub-sessile, stipulate; leaflets up to 2 cm. long and 1 cm. broad, obovate, obtuse, recurved-mucronate, thickly glandular, canescent when young, becoming glabrous. *Stipules* up to 2·5 mm. long, subulate, acute. *Inflorescence* terminal, spicate, sessile. *Calyx-tube* 3 mm. long, 7 mm. in diameter, glandular, canescent; lobes ovate, acuminate, glandular, canescent, shortly pilose on the inner surface; upper and lateral lobes 1·5-3 mm. long, up to 1·5 mm. broad; lowest lobe 4 mm. long, 2 mm. broad. *Vexillum* 5 mm. long, 4·5 mm. broad, obovate, with a channelled claw 2·5 mm. long; alae 4·5 mm. long, 2 mm. broad, with a linear claw 3·5 mm. long; carina 3 mm. long, 2 mm. broad, with a linear claw 4 mm. long. *Ovary* pilose; style 4 mm. long. *Pod* membranous, pubescent, with persistent calyx; seed small, hard and brown.

Flowered: January.

**Cape.**—Worcester district: Hex River, near De Doorns, Bolus.

**Namaqualand Minor.**—Without precise locality, Scully 1137.
47. *P. Wilmsii* Harms.

A tall shrub. *Stems* thinly pubescent, leaves 2–3 cm. equidistant. *Leaves* trifoliolate, petiolate, stipulate; petioles up to 4 mm. long; leaflets up to 4.5 cm. long and 1.3 cm. broad, oblongate to oblongate-ovate, obtuse, recurved mucronate, nigro-punctate, thinly pubescent, becoming glabrous, sessile or sub-sessile. *Stipules* lanceolate, acuminate, glandular, thinly pubescent. *Inflorescence* terminal and axillary, spicate. *Peduncles* up to 2.8 mm. long. *Flowers* in threes subtended by a common bract. *Calyx-tube* 2.5 mm. long, 5.5 mm. in diameter, veined, glandular, hirsute; lobes ovate, glandular, hirsute, ciliate, hirsute on the inner surface; upper and lateral lobes 1.5–2 mm. long, up to 1 mm. broad; lowest lobe 2.5–3 mm. long, 1.1–5 mm. broad. *Vexillum* 6–6.5 mm. long, 5.5–6 mm. broad, ovate or obovate, with a linear claw 1.5–2.5 mm. long; alae 6 mm. long, 2.2–5 mm. broad, with a linear claw 2.5–3 mm. long; carina 3–4 mm. long, 1.5–2 mm. broad, with a linear claw 3.3–5 mm. long. *Ovary* pubescent; style 3.5–4 mm. long, pilose.


**Transvaal.**—Zoutpansberg district: The Downs, Rogers 20209; Lydenburg district: Elandspruitberg, Schlechter 3889; Ermelo district: Mavierstad, Pott 5086.

**Swaziland.**—Without precise locality, Bolus 11794.

48. *P. striata* Thb.

A virgate shrub. *Stems* erect, striate, leafy, canescent. *Leaves* trifoliolate, petiolate, stipulate; petioles not exceeding 5 mm.; leaflets 0.7–3.5 mm. long, 0.4–1.7 cm. broad, obovate to obovate-oblong, recurved mucronate, nigro-punctate, thinly canescent, becoming almost glabrous when older. *Stipules* lanceolate, acute, nigro-punctate, canescent. *Inflorescence* terminal and axillary, spicate. *Spikes* sometimes lax and interrupted. *Peduncles* up to 2.5 cm. long. *Calyx-tube* 2.5–4 mm. long, 6–7 mm. in diameter, glandular, canescent; lobes ovate to lanceolate-ovate, acute, glandular, canescent, glabrous or pilose on the inner surface; upper and lateral lobes 1–3 mm. long, 0.75–1.5 mm. broad; lowest lobe 1.5–5 mm. long. *Vexillum* 6–7 mm. long, 4–5 mm. broad, obovate, with a claw 1–3 mm. long; alae 4–5 mm. long, 1.5–2 mm. broad, with a linear claw 3–4 mm. long; carina 3–4 mm. long, 1.5–2 mm. broad, with a linear claw 3–4 mm. long. *Style* 3–4 mm. long, pilose or glandular. *Pod* membraneous, 1.4 cm. long, 4 mm. broad, pubescent, with the persistent calyx; seed up to 1 cm. long, hard and brown.

**Cape.**—Clanwilliam district: Olifant's River, Zeyher 1556; Swellendam district: Gauritz River, Zeyher 1551; Oudtshoorn district: Oudtshoorn, Britten 134.

*Var. gracilis.* Plant more slender and laxly leafy. *Flowers* fewer and smaller, 1–3 subtended by a common bract. *Flowers* on long terminal rhachi.

**Namaqualand.**—Between Brakdam and Rietkloof, Pillans 5667.

49. *P. Royffei* n. sp.

*Stems* striate, younger parts clothed with yellowish pubescence. *Leaves* trifoliolate, petiolate, stipulate; petioles up to 6 mm long; leaflets up to 2.3 cm. long and 1.3 cm. broad, elliptic-lanceolate to elliptic-ovate, mucronulate, densely nigro-punctate, pubescent on lower surface. *Stipules* up to 5 mm. long, subulate, acute, glandular, pubescent. *Inflorescence* terminal, spicate. *Peduncles* up to 1 cm. long. *Flowers* sessile or very shortly pedicelled, 2–3 together subtended by a bract. *Calyx-tube* 2.5 mm. long, 6 mm. in diameter, glandular, pubescent, glandular; lobes acute, pubescent, ciliate, glandular, pilose on the inner surface; upper and lateral lobes 2.5–3 cm. long; lowest lobe 4 mm. long, 1.5 mm. broad. *Vexillum* 7 mm. long, 6 mm. broad, obovate with a short claw 2 mm. long; alae 6.5 mm. long, 2 mm. broad, with a linear claw 3 mm. long; carina 3.5 mm. long, 2 mm. broad, with a linear claw 3.5 mm. long. *Ovary* pilose; style 3 mm. long, pilose.

*Flowered*: October. *Flowers*: Yellow.

**Cape.**—Tembuland, Cala, Royffe 161.
A Drying Cabinet for the Preparation of Plant Specimens for the Herbarium.

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INTRODUCTION.

The Drying Cabinet, which is described in this paper, is the outcome of our attempt to meet the extreme difficulty of drying plants under the normally highly humid conditions of the Durban climate. By the ordinary plant-press method, the drying is a lengthy process and even by exercising the greatest care the specimens are of poor quality, frequently rendered valueless by the development of moulds.

The general principle of our drier evolved from a conversation several years ago with Mr. G. H. Cunningham, of New Zealand. He is understood to have a machine of similar type in operation, but no description appears to have been published. In view of the interest which many visitors have shown in our drier, it appears advisable to make a description available. We acknowledge our obligation to Mr. Cunningham for the basic idea, though we, in collaboration with the Public Works Department, are responsible for the details of this design.

DESCRIPTION OF THE DRYING CABINET.

The principle of our method of drying is as follows:—The plants to be dried are laid between sheets of drying paper in the customary manner and subjected to a suitable degree of pressure. Hot air is then drawn through the pile, the air passing through the interstices between the sheets.

The cabinet, constructed of stout, well-seasoned teak, consists of a Pressing or Drying Chamber and a cupboard divided by a shelf into two compartments, an upper oven and a lower heating chamber. These features are illustrated in the accompanying photographs and diagrams.*

The Pressing or Drying chamber is 10" × 1' 8" × 1' high and can accommodate approximately 100 plant specimens of a size suitable for the average mounting sheet. This chamber is fitted with a lid consisting of a flat base with an attached letterpress screw and screw block. The latter is maintained in a fixed position by means of a slotted arm which fits over two hold-fasts screwed to the sides of the chamber. By this means the lid can be lowered or raised at will. In addition the lid has certain features to procure as nearly as possible an air-tight joint with the sides of the chamber. Pieces of solid rubber beading of the desired length are held in movable steel holders attached by means of slotted iron clips to the upper edges of the lid. When the lid is in the desired position, the rubber bead can be made to press firmly against the walls of the chamber by means of 4 pivoted cleats. Triangular pieces of rubber are provided for the corners, the ends of the steel holders and the beadings being cut in such a way as to allow for the fitting of the corner pieces.

* Acknowledgment is made to Mr. L. H. Godfrey, District Draughtsman, Public Works Department, Natal, for the diagram drawings.
The Heating Chamber of the dimensions 10" × 1' 8" × 8" is asbestos lined and equipped with 3 Revo electric fire-baths, each consuming 500 watts. By means of a 3-way control switch either one, two, or three of the units can be brought into operation. An iron shelf divides the heating chamber from the oven. Access is provided to the cupboard by means of a felt-lined door equipped with a fastening catch bevelled to create pressure on closing. Air is drawn through the system by a Sturtevant ½ H.P., 2,750 R.P.M. exhausting fan, attached to the side of the drying chamber, communication with which is provided through a narrow vent at its base. Air enters the system through a small opening in the base of the heating chamber—passes over the electric fire-baths, through an opening in the cupboard shelf and enters the drying chamber through five holes in the roof of the oven, at the end opposite to that carrying the fan. Hot air therefore enters the drying chamber at this end and is drawn by the fans horizontally through the pile of drying papers and plants, which lie compressed between the base of this chamber and the screw-down lid. Temperature is observed by means of a thermometer which passes through the wall of the cabinet into the oven at the point where the air enters the drying chamber.

PROCEDURE.

The plant specimens are arranged in the usual way between sheet of some absorbent material such as blotting paper; three sheets between each has been found generally suitable. The sheets are cut 10" wide so as to fit exactly into the drying chamber. A fairly high degree of pressure can be maintained on the specimens without seriously retarding the passage of air through the system. The fan is then set in motion and the heating switch turned to high. In this position the temperature measured by the thermometer already mentioned rises to about 150° C. after an hour. The switch should then be turned to medium which maintains the system at a temperature between 130° C. and 150° C. It is not desirable to keep the three heating units in action for long periods as this will tend to cause over-heating, the specimens becoming brittle and crumbling when handled. A drying temperature of about 130° C. to 140° C. seems to be the most satisfactory. The switch may be turned to low after four or five hours.

The average plant specimen of a woody nature and not of an unduly high degree of succulency requires about an 8-hour treatment. Delicate herbs can be dried in under four hours, while excessively succulent plants of the Aloe type require up to 16 hours. For seaweeds a low temperature is recommended and we have found it advisable to keep the switch at low, as high temperatures tend to remove the colouring matter.

The oven was included to make provision for the drying of such botanical specimens as fleshy fungi. An excellent result was obtained with a species of Polyporus and complete drying was effected in eight hours at a temperature of 70° C. We have no doubt that many uses will be found for this additional drying chamber.

DISCUSSION.

Our method not only provides for the very rapid drying and preparation of herbarium specimens, but yields results of an excellent quality.

The finished specimens do not possess the brittleness which so frequently is associated with certain plants prepared by the usual slow method of drying. Moreover, colours are retained very much better and there is less vegetative distortion. We have little doubt it will overcome many of the difficulties encountered with some natural families of which the preparation of dried specimens gives normally much trouble.

We commend this piece of apparatus to those in charge of Herbaria situated in the Tropics and other regions of high humidity.