Notes on the genus *Rubus* in southern Africa

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**ABSTRACT**

The species *Rubus ludwigii* Eckl. & Zeyh. is re-examined and a key is provided to the subspecies recognized. A new subspecies *spatiosus* C. H. Stirton is described. *R. rigidus* Sm. var. *longepedicellatus* C. E. Gust. is raised to specific rank, viz *R. longepedicellatus* (C. E. Gust.) C. H. Stirton.

**INTRODUCTION**

This short paper is the third in a series of papers on the genus *Rubus* in southern Africa (Stirton 1981a, 1981b).

1 *Rubus ludwigii* Eckl. & Zeyh.

*Rubus ludwigii*, Ludwig's bramble, is perhaps the most distinctive of the indigenous species of *Rubus* in southern Africa. It is a widespread species, extending from Beaufort West in the south-west of its range to as far north as Lydenburg in the Transvaal.

Throughout its range it is quite variable. A closer study of this variation suggests that it should be divided into two subspecies.

*Rubus ludwigii* Eckl. & Zeyh., Enum. 2: 263 (1836); Harv. in Harv. & Sond., Fl. Cap. 2: 287 (1862); Focke in Bibl. Bot. 72, 2: 178, f. 178 (1911); Gustafsson in Arkiv. för Bot. 26A, 7: 13 (1933); non Sudre (1913). Type: Inter saxa strata (altit. IV) laterum montium 'Sturmberge' prope 'Witte — et Zwartekyriver' (Tembukiland). (PRE!; S!).

*Rubus rhodacantha* E.Mey. in Drège, Zwei Pfl. Donkum. 1:217 (1843), nom. nud.

Primocanes 1.0—1.5 m long, erect and arching or sprawling, covered in a white bloom; axis terete, eglandular; sparsely or densely covered in 1—4 mm long prickles, often with fine acicles at the base. *Floricanes* reddish, glabrous, with or without a bloom; sparsely covered in 3—5 mm long, patent and partly deflexed prickles or densely armed with robust curved prickles. *Leaves* 5—9 partite on floricanes; 3—7 partite on primocanes; lacerate, laciniate or incised; upper surface glabrous or sparsely pubescent on the blade, pubescent along the sunken veins; lower surface fine to coarsely woolly, pale greenish white to silver-white. *Stipules* inserted 1—5 mm above the base of the petiole, persistent, linear to lanceolate-falcate; 4—15 mm long, 0.5—2.0 mm wide, acute, entire, glabrous inside, pubescent, tip glandular. *Petioles* of primocane leaves 12—40 mm long, of floricanes leaves 12—40 mm long. *Synflorescence* a few to many flowered frondose-bracteose thyrs; rhachis with or without prickles, glabrous to pubescent; pedicels with or without prickles. *Flowers* 10—13 mm wide, 4—7 mm deep. *Hypanthium* saucer-shaped, 4—5 mm across, finely pubescent outside, glabrous inside except near the base of the torus. *Sepals* 5—6 equal, spreading and upcurving at the tips, becoming erect after anthesis; teeth triangular, 5—10 mm long, 2—3 mm wide, pubescent. *Petalis* pale pink to crimson, 5,5—7.0 mm long, 4.0—5.6 mm wide, held vertically. *Stamens* 100—120, glabrous, upcurving; filaments 2.5—5.0 mm long, held in two rows. *Pistils* 40—45, 2.5—3.5 mm long, variously pubescent below. *Collective fruit* ovoid, 6—10 mm across, densely white pubescent.

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KEY TO SUBSPECIES

Synflorescence type I, (Fig. 1) 5–13 flowered; venation of lower surface of leaflets scarcely pubescent, brown on dried specimens, easily discernible against the greenish-white or cream finely woolly blade; tertiary venation obscure; terminal leaflets of floricane leaves lacerate; primocanes liberally armed with robust recurved prickles ........................................................................................................................... subsp. ludwigii

Synflorescence type II, (Fig. 2) 20–40 flowered; venation of lower surface of leaflets thickly pubescent, scarcely discernible against the silver to greenish white coarsely woolly blade; tertiary venation raised, prominent; terminal leaflets of floricane leaves incised, rarely laciniate; primocanes sparingly armed with slender, straight or partially deflexed prickles............................................................................. subsp. spatiosus

subsp. ludwigii

Primocanes up to 1 m long, sprawling or creeping, slender, densely covered in stiff patent or recurving 3–4 mm long prickles, extending along the entire cane, covered in a white bloom. Floricanes (Fig. 3) reddish, glabrous, with or without a bloom, armed with robust hooked prickles. Leaves 7-partite on primocanes, 5(–7)-partite on floricanes; range of variation shown in Fig. 4A discolerous below, upper surface of leaflets deep green, sparingly pubescent on the blade, more dense along the sunken veins; lower surface finely appressed woolly, greenish-white to cream, venation scarcely pubescent, brown on dried specimens and contrasting with the blade, tertiary venation obscure. Stipules inserted, 1–3 mm above the base of the petiole, persistent, linear-lanceolate, 4–7 mm long 0,5–2,0 mm wide, much narrower and shorter on the floricanes. Petioles of primocanes 12–25(32) mm long, of floricane leaves 12–20(25) mm long. Synflorescence a 5–13-flowered frondose-bracteose thyrse, not yet found on primocanes; rhachis glabrous with a bloom or sparsely pubescent, prominently armed with robust hooked prickles; pedicels densely pubescent and armed with narrow prickles. Flowers up to 11 mm wide, 4–6 mm deep. Hypanthium saucer-shaped, 4 mm across, pubescent at the base of the torus. Sepals 5–6, teeth 7–9 mm long, 2–3 mm wide. Petals pale pink to crimson, 5,5–6,0 mm long, 4,0–5,0 mm wide, narrowly elliptic to broadly ovate, margin ciliate and erose. Stamens ± 100–120, filaments 2,5–3,0 mm long, held in two rows. Pistils 40–45, 2,5–3,0 mm long.
A. SUBSP. LUDWIGII

Subspecies Ludwigii

Fig. 4.—Range of variation of leaflets in Rubus ludwigii subsp. ludwigii (A) and in Rubus ludwigii subsp. spatiosus (B), from: 1, terminal leaflet of floricane leaf; 2, lowest lateral leaflet of floricane leaf; 3, terminal leaflet of primocane leaf and; 4, lowest lateral leaflet of primocane leaf.

long, pubescent; stigma bilobed. Collective fruit 6–8 mm across, southern populations smaller; sepals erect during fruit development. Fruits densely pubescent, greyish pink when young; lightly packed.

Subspecies ludwigii is found most commonly in rocky outcrops on grassy hillsides. From the few ecological notes that are available it seems to favour sandstone outcrops. In Lesotho this species sometimes forms tangles on the outskirts of woodlands and is said not to pose a problem (Jacot Guillarmod, 1971). This subspecies is distributed to the west and south of subspecies spatiosus (Fig. 5). It flowers from October to December, but has a peak in November.

Transvaal.—2629 (Bethal): Nooitgedacht (-DB), Henrici 1132 (PRE). O.F.S.—(Senegal). Doornkop (-BC), Goossens 911 (PRE); Westbury (-DD), Galpin 13939 (K; PRE). 2826 (Bethlehem): Bethlehem area (-AB), Phillips 3175 (K; PRE); Mt Morkel (-CA), Repton 5013 (PRE); Dunelm Farm, Fouriesburg (-CA), Potts 3101 (PRE); Clarence (-CB), Van Hoepen s.n. (PRE).

Transkei.—3127 (Lady Frere): Cala (-DA), Pegler 1644 (PRE). Cape.—3027 (Lady Grey): Joubert Pass (-CA), Werger 1810 (PRE); Waterval Farm in Saalboomspruit Catchment area (-CD), Muller 754 (PRE); Barkly East (-DC), Gersten 166 (PRE). 3124 (Hanover): Carolus Poort (-BB), Burchell 2737 (K); Compaasberg (-DC), Drege s.n. (P). 3126 (Queenstown): Molteno (-AD), Kamze s.n. (K); between Garipina and Zuur epoort (-AD), Ecklon and Zeyher s.n. (PRE); Broughton (-AD), Flanagan 2754 (PRE); near Queenstown (-DD), Galpin 2189 (PRE). 3226 (Fort Beaufort): Great Winterberg (-AD), Ford s.n. (PRE). 3327 (Stutterheim): Windvogelberg (-AC), Drège 3565 (P); Hogsback (-CA), Rattray s.n. (PRE). Natal.—3029 (Kokstad): farm Vaalfontein (-AD), Comins 1906 (PRE). Lesotho.—2828 (Bethlehem): Leribe (-CC), Dieterlen 19 (PRE; SAM, STR). 2927 (Maseru): near Guilbeault Hall (-AD), Schnitz 96 (PRE); Roma (-BC), Ruch 1792 (PRE), Schnitz 4530 (PRE). 2929 (Nelson's Kop): farm Vaalfontein (-AD), Marais 1071 (K, PRE).

Atherstone s.n. (K); Cooper 1110, 2292 (K, 'Basutoland'); Atherstone s.n. (K); Prior s.n. (K).
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Fig. 5.—Known distribution of *Rubus ludwigii* subsp. ludwigii.

Focke’s Fig. 73 in *Bibl. Bot.* 72,2: 178 (1911) is a photograph of this subspecies. He places *R. ludwigii* in subgenus *Ideobatus*, section *Ideanthi*, series *Pinnatifidi*. With it he includes *R. tibetanus* Franch, an Asian species. The diagnosis that he gives for series *Pinnatifidi*, ‘*Rami fertiles foliosi, apice flores fere 5-12 capitato-racemoso ferentes. Flores mediocres. Foliola pinnatifida, subtus albotomentosa*’, would have to be amended to include subsp. *spatiosus*. In any case, I do not believe that *R. ludwigii* and the Tibetan species are at all related.

Phillips (*Ann. S.A. Mus.* 16: 88-89, 1917) records that the Lesotho call this subspecies ‘Monokotosai oa basali’, the mulberry or raspberry of the women.

subsp. *spatiosus* C. H. Stirton, subsp. nov., primocannis parce armatis aculeis angustis rectis vel partim deflexis; floricanae foliarum foliolis terminalibus incisis; venulis tertiariis prominentibus venis dense pubescentibus contra laminam argenteam vel alboviridem grosse lanatam vix visilibus distinctus.

TYPE.— Natal, 3029 (Kokstad): 10 km from Kokstad to Franklin (-AD), Stirton 8144 (PRE, holo.).

Primocanes (Fig. 6) up to 1,5 m tall, erect, arching, green, covered in a white bloom; axis terete, eglandular, base densely covered in fine acicles and stiff, patent 1–2 mm long, brown-tipped prickles, becoming fewer towards the apex. *Floricanes* (Fig. 7) reddish, glabrous, with or without a bloom, sparsely covered in 3–5 mm long, patent or partly deflexed prickles. *Leaves* 7–9 partite on floricanes, 3–5–7 on primocanes, range of variation shown in Fig. 4B, distinctly concolorous, upper surface of leaflets shiny, dark green, glabrous.

Fig. 6.—Upper section of the primocane of *Rubus ludwigii* subsp. *spatiosus* (Trauseld 565).

Fig. 7.—Upper section of a florican of *Rubus ludwigii* subsp. *spatiosus* (*x* 1) showing: 1, surface view of a flower with inrolled petals (*x* 2), and 2, cross-section of a flower (*x* 2).
except for a few scattered hairs along the sunken veins; lower surface coarsely woolly, silvery-white to greenish white. *Stipules* inserted 4–5 mm above the base of the petiole, persistent, lanceolate-falcate, 10–15 mm long, 1.5–2.0 mm wide, edges of the outer face, tip glandular. *Petioles* of primocane leaves 30–40 mm long, of florican leaves 30–40 mm long. *Synflorescence* a frondose-bracteose thyse, 30–40-flowered, fewer flowered on primocanes, axillary on florican, terminal on primocanes, leaves reducing apically to bracts; finely pubescent, rachis scattered with small prickles; pedicels only rarely armed. *Flowers* 10–13 mm wide, 6–7 mm deep. *Hypanthium* saucer-shaped, 5 mm across, finely pubescent outside, glabrous inside except near the base of the torus. *Sepals* 5–6, equal, spreading and upcurving at the tips, becoming erect after anthesis; tips green with sessile glands; teeth triangular, 5–6(10) mm long, 3 mm wide; pubescent inside and outside. *Petals* bright pink (Bisalski colour K11-4–3.5), 6–7 mm long, 5.0–5.6 mm wide, with claw 1.25–3.0 mm wide and sharply reflexed, erect covering androecium and gynoecium, forming a false corolla tube, margin crose, *Hermannia*-like, persistent, withering at fruit set. *Stamens* ± 120, glabrous; curving inwards, arched from the base; filaments 4–5 mm long, flushed pink just below the yellow anthers, held in two rows. *Pistils* 40–45; ovary 1 mm long, pubescent, style 3.0–3.5 mm long, sparsely hairy in basal half, grooved; stigma truncate, somewhat flared. *Collective fruit* ovoid, up to 10 mm across; sepals enclosing fruit. *Fruits* pubescent; endocarp rugose, lateral faces glabrous.

Subspecies *spatiosus* has been found in the *Themeda triandra* Grassveld, in and around bush clumps in open grassveld, near or among dolerite outcrops, on the edges of forest and alongside streams. It flowers between late October and January with a peak in December. This subspecies ranges from East Griqualand to the southern Transvaal (Fig. 8).

**Transvaal.**—Lydenburg (−AB), Wilms 457 (K.) 2529 (Witbank): 35 km from Stoffberg to Lydenburg via Roosseneeklo (−BB), Stirton 9769 (PRE). 2530 (Lydenburg): 15 km S of Lydenburg (−AB), Codd 8291 (PRE: K); 4 km from Dullstroom to Belfast (−AC), Stirton 6727 (PRE); 1 km from Dullstroom to Lydenburg (−AC), Stirton 6729 (PRE). 2629 (Bethal): Spitzkop (−BD), Pott 4943 (PRE); Ermelo (−DB), Leendertz 7970 (PRE). 2630 (Carolina): Leepoort (−AA), Burr 4717 (PRE). 2730 (Vryheid): Wakkerstroom (−AC), Pole-Evans 19652 (PRE), Galpin 9871 (PRE), Watt and Brandwyk 1629 (PRE); Oshoek (−AD), Devenish 184 (PRE); 20 km north of Belfast (−DA), Prosser 2036 (PRE, K); Belfast (−DA), Burr Dandy 1242 (PRE), Leendertz 2733 (PRE).

**O.F.S.**—2828 (Bethlehem): Witzieshoek (−DB), Junod 17421 (PRE).

**Natal.**—2730 (Vryheid): 10 km SNE of Groenvlei (−AD), Thode 1156 (PRE). 2829 (Harrismith): Nolens Volens (−AC), Van der Zeyde 146 (PRE); Cathedral Peak Forest Station (−CC), Killick 1331 (PRE, K). 2830 (Dundee): Buffalo River (−BC), Rogers 5065 (PRE). 2929 (Underberg): Cathkin Peak

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**Fig. 8.**—Known distribution of *Rubus ludwigii* subsp. *spatiosus*.

**Fig. 9.**—Habit and habitat of *Rubus ludwigii* subsp. *spatiosus* (Stirton 6727).
This species occurs along the margins of natural forests and plantations and in open grassland. It hybridizes with *R.* sp. cf. *cuneifolius* Pursh, forming extensive swarms in a few areas of the eastern Transvaal. It is predominantly a bramble of high rainfall upland areas.

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**REFERENCES**

