

## ***Solanum sarrachoides* SENDTN. – A NEW ALIEN *Solanum* IN AUSTRALIA**

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### **Abstract**

*Solanum sarrachoides* Sendtn. is newly recorded as an alien for Australia. A description, and notes on its distribution, ecology and distinction from related species are provided.

### **Introduction**

*Solanum sarrachoides* Sendtn. and *S. physalifolium* Rusby var. *nitidibaccatum* (Bitter)Edmonds are a closely related pair of short-lived, weedy herbs belonging to the taxonomically complex section *Solanum* (black nightshades). Both species are indigenous in southern south America, but are also widespread as weeds in temperate regions of the northern hemisphere (nominate var. *physalifolium* is relatively rare, and is restricted to northern Argentina and Bolivia and does not occur as an adventive or naturalised plant elsewhere (Edmonds 1986)).

The two taxa, in common with most members of section *Solanum*, have tortuous nomenclatural histories, and have variously been regarded as conspecific (Dandy 1958, Stanley & Ross 1986, Symon 1981), as distinct taxa (Henderson 1974, Morton 1976) or simply confused (Hawkes & Edmonds 1972, Schilling & Heiser 1979). Edmonds (1986) in a very detailed study, showed that the two taxa are indeed distinct at the species level and unravelled the complex nomenclature of the entities involved.

To date, only *S. physalifolium* var. *nitidibaccatum* has been recorded from Australia, as a sporadic weed in all states (including the Australian Capital Territory) except the Northern Territory (Symon 1981). The name *S. nitibaccatum* Bitter (= *S. physalifolium* Rusby var. *nitidibaccatum* (Bitter)Edmonds) has generally been applied to Australian material of this taxon (e.g. Beadle *et al.* 1981, Curtis 1967, Everist 1974, Henderson 1974, Stanley & Ross 1986, Willis 1972), but *S. sarrachoides* Sendtn. has also been used, but less frequently (Haegi & Symon 1986, Purdie *et al.* 1981, Symon 1981). More recently, following publication of Edmonds' work, the correct name *S. physalifolium* Rusby var. *nitidibaccatum* (Bitter)Edmonds has been applied (e.g. Conn 1992).

Recently material of *S. sarrachoides* was received at CANB; the purpose of this note is to draw attention to the presence of this new alien and to prevent any further occurrences being overlooked due to confusion with the superficially similar *S. physalifolium* var. *nitidibaccatum*.

*Solanum sarrachoides* Sendtn. in Martius, *Flora Brasiliensis*, 10 (1846) 18 pro parte (emend. Bitter, *Feddes Rep.* 11 (1912) 208.

*Lectotype*: Brazil, *Sellow s.n.* (P), *n.v.* (*vide* Edmonds, *Bot. J. Linn. Soc.* 92 (1986) 16–23.

*Synonyms*: for complete synonymy see Edmonds (1986).

More or less bushy, annual or rarely short-lived perennial herb to 60 cm (described as to c. 1 m in Australian material), covered with simple, viscid, glandular hairs to 2 mm long

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and sessile gland. *Leaves* (32-) 39–76 (-112) × (27-) 31–51 (-80) mm, ovate; base truncate to rounded, attenuate to the petiole, apex acute, margins regularly sinuate-dentate with 3–9 antrorse lobes; solitary and alternate or geminate (slightly unequal); petioles 16–32 (-38) mm. *Inflorescence* a simple umbellate cyme, 3–4 (-5) flowered. *Peduncle* usually leaf opposed, rarely internodal, 3–13 mm long in flower, 4–16 (-28) mm long in fruit, infructescence rhachis 0–2 mm. *Pedicels* 7–11 mm. *Calyx* 3–6 mm long in flower; lobes oblong-triangular slightly acuminate at apex, (2-) 3–5 mm × 1 (-2) mm in flower; in fruit lobes narrowly triangular, 5.5–8 × 3.5–4 mm. *Corolla* broadly stellate to pentagonal, white with yellow/translucent basal star, 5–7.5 mm diameter, lobes broadly triangular, 3–4.5 (-7 in Australian material) mm × 5–7 mm. *Filaments* 1–1.5 mm. *Anthers* yellowish, (1.5-) 2 mm long. *Style* 3–3.5 mm long, occasionally exerted beyond anthers, stigma capitate. *Berry* globular, pale green, shiny becoming dull, opaque (no information on fruits in the fresh state for Australian material), falling with pedicels still attached, 6–9 mm diameter, usually completely enveloped by enlarged calyces; calyces become papery and strongly reflexed at full maturity, exposing the berry. *Seeds* 1.3–1.5 × 1–1.3 mm, pale yellowish, flattened, (23-) 59 × 69 (-93) per fruit. *Sclerotic granules* 4–6, c. 1–1.3 mm broad.

The above description is based on that in Edmonds (1986), with due reference to the Australian material. For illustrations and photographs of both *S. sarrachoides* and *S. physalifolium* (both varieties) see Edmonds (1986). Illustrations of *S. physalifolium* var. *nitidibaccatum* are also included in Conn (1992), Haegi & Symon (1981), Henderson (1974) and Symon (1981). Soborino Vesperinas & del Monte Díaz de Guerfieu (1994) review the identification and occurrence of *S. sarrachoides* and *S. physalifolium* var. *nitidibaccatum* in Spain, and provide additional characters for separating the two species.

Indigenous to central and southern South America; distributed as a weed in North America (casual) and western Europe (Edmonds 1986). Known in Australia only from Montague Island (15°13' Lat. 36°15' Long.), c. 9 km ESE of Narooma, N.S.W.

#### *Specimen examined*

NEW SOUTH WALES: *Heyligers 89025*, 4.iv.1989, *Heyligers 92011*, 29.iii.1992, Montague Island (CANB (2 sheets), NSW).

#### *Notes*

*Heyligers 89025* was collected growing in beach sand c. 2 m above the high tide line at the base of a steep rocky gully which bisects the island, with little other vegetation apart from some chenopods, and *Heyligers 92011* from the same site, on rock ledges immediately above the beach (for information on the vegetation of Montague Island see Heyligers & Adams (1989)). No information is available as to the relative abundance of *S. sarrachoides* at this locality, although it appears that only a few plants are present. The current (1995) status of this population is unknown, as the site was not visited on subsequent trips to the island (the most recent in November 1994; Heyligers pers. comm.).

How this species arrived at Montague Island is unknown; Edmonds (1986) states both *S. sarrachoides* and *S. physalifolium* var. *nitidibaccatum* as adventives in the northern hemisphere are often associated with "South American trade", as both taxa may occur as contaminants of grain and other commodities. Neither species is regarded as a serious weed, and certainly *S. physalifolium* var. *nitidibaccatum* has not been at all successful in Australia, when compared with related taxa such as *S. nigrum* L. or *S. chenopodioides* Lam.

Examination of collections held at AD, BRI, CBG (now incorporated in CANB), HO, MEL, NSW & PERTH revealed no additional collections of naturalised *S. sarrachoides* from Australia.

As mentioned above, *S. sarrachoides* is most likely to be confused with *S. physalifolium* var. *nitidibaccatum*, but can be distinguished by the following key, which may be inserted into the key in Purdie *et al.* (1981):

p. 77 rewrite lead 24 as follows:

24 Plants erect or sprawling, mature berry green

25 Indumentum of glandular hairs; fruiting calyx lobes 2–8 mm long, 2–4 mm wide; berry 5–9 mm diameter

25a Inflorescence a 4–10 flowered racemose cyme; axis in fruit 2–12 mm long; calyx in flower 2–3 mm long, flowering calyx lobes 1–2 mm long, 0.5–1 mm wide; fruiting calyx lobes broadly triangular, 2.5–4 mm long; seeds 15–24 per berry, 1.8–2.4 mm long, 1.3–1.9 mm wide

.....*S. physalifolium* var. *nitidibaccatum* (as "*S. sarrachoides*" in Purdie *et al.* 1981)

25a: Inflorescence a 3–4 flowered umbellate cyme; axis in fruit 0–2 mm long; calyx in flower 3–6 mm long, flowering calyx lobes 3–5 mm long, 1–2 mm wide; fruiting calyx lobes narrowly triangular, 5.5–8 mm long; seeds 59–69 per berry, 1.3–1.5 mm long, 1–1.3 mm wide.....*S. sarrachoides*

25: Indumentum predominantly of non-glandular hairs; fruiting calyx lobes 1–2.5 mm long, 1–2 mm wide; berry 8–10 mm diameter.....*S. opacum*

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