

Senna alexandrina Mill.

Standardized Common Name: Senna

Other Common Names: Alexandrian Senna, Indian Senna, Khartoum Senna, Nubia Senna, Tinnevelly Senna, True Senna

Family: Fabaceae (Leguminosae)

Parts in Commerce: Leaflets or fruit

Identification:

Leaflets

- Lanceolate, 1.5–5 cm long and 0.4–1.2 cm broad
- Pale olive green, sometimes yellowish above or bluish
- Apex acute, sometimes mucronulate
- Base asymmetrical, with one side tapering and one side slightly rounded
- Margins entire
- Slightly leathery; brittle when dried
- Midrib prominent, raised; secondary veins 3–5(–6) pairs, raised, curving toward apex; tertiary veins netted, sometimes also raised
- Almost glabrous, with only small, appressed hairs, found mostly around main veins
- Taste sweetish and slightly bitter, mucilaginous

Fruit

- Oblong, slightly curved or kidney-shaped and of same width along whole length; 3–5(–7) cm long, 1.5–2.5 cm broad, and very flat
- Apex and base rounded; base narrowing suddenly to tiny triangular extension at petiole
- Brownish green to pale or dark brown or almost black, with fine irregular veins; veins and sutures paler, yellowish
- Fruit wall papery
- Seeds 5–6 mm long, 3–4 mm broad, flattened, ovate to heart-shaped, pear-shaped or wedge-shaped
- Seed apex broad, with shallow notch; seed base narrowed, with areole forming a vertical ridge
- Seeds pale brown to greenish or yellowish ivory in color
- Seed surface with tiny raised striations or bumps
- Taste somewhat bitter, mucilaginous

Adulterants: Tinnevelly senna has often been reported to be adulterated with *S. italica* Mill., also known as *S. obovata* (Collad.) Link, which, despite its inclusion within *C. senna* by Linnaeus, is not one of the commonly used medicinal species. The leaves of *S. auriculata* (L.) Roxb. have also been reported. In the past, admixture of the leaves of argel (*Solenostemma argel* (Del.) Hayne, Asclepiadaceae) was a common practice. Other species appear in the literature as occasional adulterants, including *Coriaria myrtifolia* L., *Colutea arborescens* L. and *Tephrosia apollinea* Del. Characteristics that could occur in misidentified leaflets or leaves include:

- Smaller than expected, or longer and narrower, or broadly ovate or obovate in shape
- Bases symmetrical
- Apices broad or notched
- Leaf 3-veined, or secondary veins indistinct or not pointing toward apex
- Most leaves folding along midrib
- Long, erect or dense hairs present on either leaf surface
- Silvery in color

Fruits are almost never confused, though the size and shape of the pod and the size, shape, and ornamentation of the seeds should be observed. The pods of *S. italica* are sharply curved almost into a C-shape, whereas the pods of *S. alexandrina* are only gently curved.

Taxonomy: *Senna* includes about 350 species, widely distributed in the tropics. The species now included in *Senna* have previously been included in the closely related genus *Cassia*, which now contains only about 30 species after the exclusion of *Senna*. *Senna* remains a variable genus, including trees, shrubs and herbs.

Senna alexandrina is native to northern Africa and the Middle East. Its synonymy is complicated. Traditional classifications recognized two or three separate species: *S. angustifolia* (Vahl) Batka was the source of Tinnevelly senna and Bombay or East Indian senna, whereas *S. acutifolia* (Del.) Batka and sometimes *S. alexandrina* were said to be the source of Alexandrian senna. Recent systematic treatments support the view that all of these plants belong to one species. Among its most important synonyms are *Cassia acutifolia* Del., *C. alexandrina* (Mill.) Thell., *C. angustifolia* Vahl, *C. medicinalis* Bisch. *C. senna* L., *S. acutifolia*, and *S. angustifolia*.

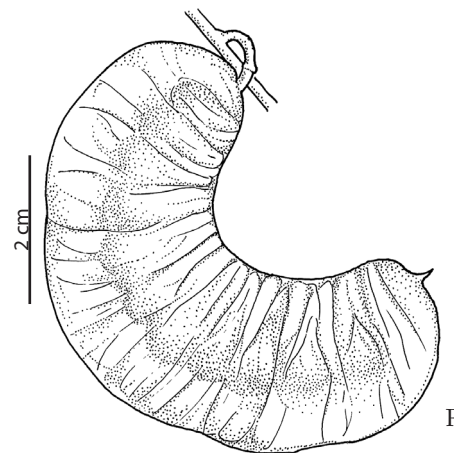
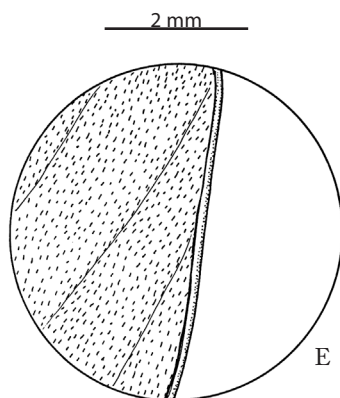
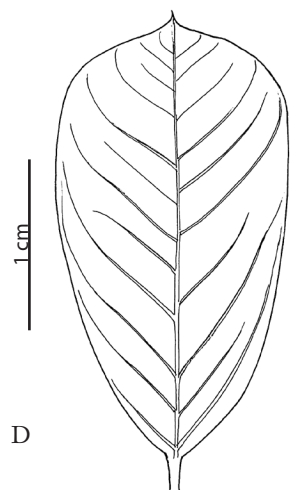
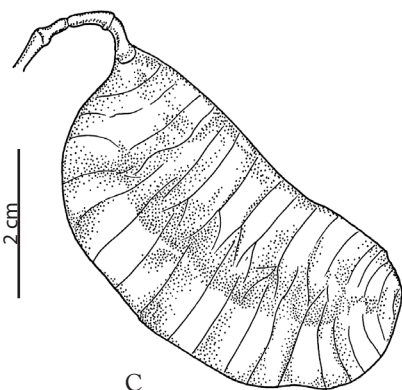
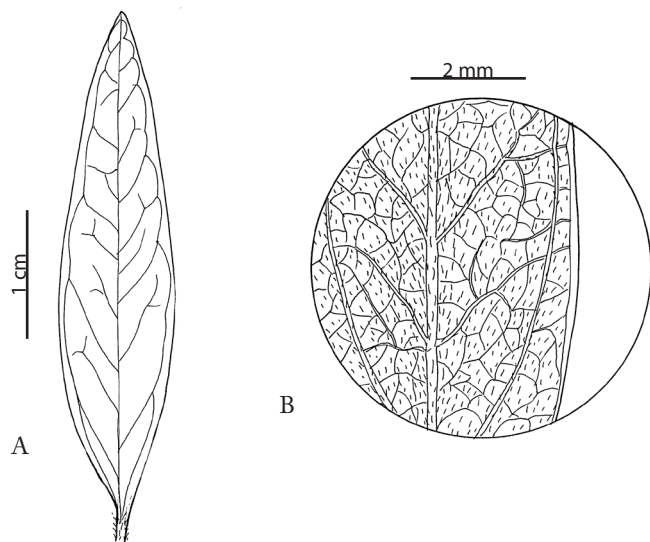


Figure 66: a–c, *Senna alexandrina* leaflet, close-up of lower surface of leaf, and fruit; d–f, *S. italica* leaflet, close-up of lower surface of leaf, and fruit.

Description: Perennial herb or shrub. Stems erect to ascending, to 1.5 m high. Leaves alternate, stipulate, pinnately compound, 5–20 cm long; stipules small, deciduous; leaflets (3–)4–8(–10) pairs per leaf, lanceolate-elliptic, 1.5–5(–6) cm long, 0.4–1.0(–1.2) cm broad, pale olive to yellowish above or bluish; base cuneate and slightly oblique; apex acute to mucronulate; venation pinnate. Inflorescence racemose, to 3 cm long in flower elongating to 10–20 cm in fruit, bracteate; bracts 5–7 mm long, obovate, deciduous; flowers almost sessile. Hypanthium 2.5–4 mm long, resembling extension of pedicel; sepals 5, obovate, reflexed; corolla bilaterally symmetrical, yellow to orange; petals 5, (8–)13–15 mm long, conspicuously veined; fertile stamens 7, with 2 twice the length of the other 5; staminodes 3; carpel single, longer than stamens, pubescent. Fruit a legume, 3–5(–7) cm long, 1.5–2(–2.5) cm broad, oblong and slightly curved, flattened, on short reflexed pedicel; apex and base rounded; fruit wall papery, greenish brown to dark brown with paler striations and sutures; seeds (5–)6–10, separated by membranes, 5–6 mm long, somewhat pear-shaped, heart-shaped, or wedge-shaped, strongly flattened, light brown to greenish or yellowish ivory.

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