

ARGEMONE OCHROLEUCA SWEET (PAPAVERACEAE) – A NEW INVASIVE SPECIES IN ANDHRA PRADESH STATE

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Critical examination of flora of Hyderabad city revealed the existence of not only *Argemone mexicana* L., but also another neotropical invasive species of *Argemone* L. It was collected from the wastelands of Begumpet and Balanagar area in Hyderabad district, Andhra Pradesh and was been identified as *Argemone ochroleuca* Sweet. This species has never been recorded from Andhra Pradesh. Therefore, a brief note on its extended distribution, phenology and habitat with supplemented photographs of the specimen is provided here. A comparative study with *Argemone mexicana* L. is also given in Table 1.

Argemone ochroleuca Sweet Brit. Fl. Gard. 3: t. 242. 1829; Ownbey in Mem. Torr. Bot. Club 21(1):1-149. 1958; Maheswari, Fl. Delhi:55. 1963; Nair in Rec. Bot. Surv. India 21(1): 7-8. 1978; Debnath and Nayar, Fl. India 2:5. 1993. (Papaveraceae).

Erect annual herb, up to 50cm tall. Young stems whitish-purple or violaceous. Leaves oblanceolate, semiamplexicaul, sessile at base, sinuate to pinnatifid, basal leaves deeply lobed; lobes oblong, glaucous. Flower buds oblong, 8-15 x 4-9mm; flower is whitish or pale lemon yellow, 2.5-3.5mm across, sessile, subtended by 2-3 foliaceous, 2-5cm long, ca 5mm broad bracts. Sepals 3, 8-12 x 5-7mm. Petals 6, obcuneate-obovate, 28-30 x 16-19mm. Stamens many, 8-10mm long; filaments pale yellow; anthers oblong, recurved, dark yellow. Ovary 8-10 x ca 5mm; stigmas five-lobed, deeply dissected, dark red. Capsules ovoid or lanceolate-ovoid, 1-4cm long excluding style, 4-17mm thick, with 12-26 erecto-patent spines per valve, the largest spine up to 10mm long; seeds 1.5-2mm in diam., finely reticulate, black (Image 1^w).

Specimens examined: Flowers and fruits, 18.v.2005, along the railway track, Begumpet, Hyderabad district, Andhra Pradesh; flowers, 25.v.2006, wastelands, Balanagar, Hyderabad district, Andhra Pradesh (Kakatiya University Herbarium - KUH, Warangal).

Phenology: Flowering and fruiting between February and June.

Habitat: A weed found along railway tracks, open fields and wastelands. It is associated with *Argemone mexicana* L. and *Alternanthera tenella* (another invasive exotic species).

Remarks: This species is native of Mexico. In India, it is found in Punjab, Delhi (Maheswari, 1963) and Uttar Pradesh. This species was recorded for the first time from southern India (Ganesh Babu *et al.*, 2006). Why it has not been recorded from Andhra Pradesh so far can be ascribed to two reasons. First, it is quite difficult to distinguish *A. ochroleuca* Sweet from *A. mexicana* L. in pressed condition (Ownbey, 1958). Second, the species is

Table 1. Distinguishing characters of *A. mexicana* L. and *A. ochroleuca* Sweet

Characteristics	<i>A. mexicana</i> L.	<i>A. ochroleuca</i> Sweet
Plant body	Green, slightly glaucous.	Whitish-green, densely glaucous with reddish tinge.
Stem prickles	A few per unit area (0-6), nearly straight at the base of stem, 3-4mm long.	more per unit area (0-8), downward at the base of stem, 5-6mm long.
Leaves	spreading, bent downward, 18-28cm long, 5-10cm broad, lobes 1.2-5.6cm broad	not spreading, not bent, 16-22cm long, 4-8cm broad, lobes 1-5.3 cm broad.
Flower buds	subspherical, prickles many, green.	Oblong, prickles few, tinged red.
Flowers	bright yellow	light lemon yellow
Sepal horns	6-10mm long, 4-5mm, broad at base	6-8 mm long, 2-3mm broad at base.
Petals	6	6, rarely 9.
Stigmatic lobes	broad, closely crowded together and appressed to the style	narrow, spreading widely and revealing the non-receptive surfaces between them
Capsule	oblong, prickles on capsule not spreading, 3.9 x 1.5-5.2 x 1.9cm; seeds deep brown	Lanceolate-ovoid, 1-4cm long excluding style; seeds black
Chromosome number	2n = 28	2n = 28, 56

known from mostly northern most states of India (Debnath & Nayar, 1993). Venkatesh (1962) recorded *A. ochroleuca* Sweet for the first time from India and quoted that "if allowed for sufficient time, it may become as widespread as *A. mexicana* L. (Image 2^w) in the country". The white flowered *A. ochroleuca* Sweet was earlier regarded as only a mutant of the yellow flowering *A. mexicana* L. (Malhotra, 1960). The most distinguishing features of the two species are the shape of flower buds, stigmatic lobes and the colour of petals (Kshetrapal *et al.*, 1984). Our detailed comparative studies have shown that there are some other vegetative features in which the two species differ. Table 1 summarizes the important differences between the two species.

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^w See Images in the web supplement at www.zoosprint.org

