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To Cite:
Sethi J, Rout S, Supriya Devi R, Marndi S, Jena N, Kumar S. *Argemone ochroleuca* (Papaveraceae): A new addition to the Flora of Odisha state, India. *Species* 2025; 26: e23s3121
doi: https://doi.org/10.54905/disssi.v26i77.e23s3121

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Peer-Review History
Received: 03 April 2025
Reviewed & Revised: 07/April/2025 to 09/May/2025
Accepted: 12 May 2025
Published: 18 May 2025

Peer-Review Model
External peer-review was done through double-blind method.

Species
pISSN 2319–5746; eISSN 2319–5754

DISCOVERY SCIENTIFIC SOCIETY

Argemone ochroleuca (Papaveraceae): A new addition to the Flora of Odisha state, India

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ABSTRACT

A new distributional record of *Argemone ochroleuca* Sweet is reported as new record to the flora of Odisha state, India from the open fields of Rourkela Forest Division, Odisha. The paper provides a comprehensive description and photographs of the species to facilitate accurate identification and contribute to the documentation of its extended geographical range.

Keywords: Weed, new distribution, open fields, wasteland

1. INTRODUCTION

The genus *Argemone* L. presently has 33 accepted species from different parts of the world. It is native to a wide geographic range, spanning the southwestern United States, Mexico, Central America, and South America, including countries such as Argentina, Bolivia, Chile, Ecuador, and Peru. However, it has been introduced to tropical, subtropical, and temperate regions of Africa, Asia, Australia, the Americas, and the Pacific and Indian Oceans, spanning over 100 countries (POWO, 2025). Some species of *Argemone* including *Argemone mexicana* are considered invasive weeds that has caused serious threats to the native biodiversity of the country (Das *et al.*, 2025). The species was earlier regarded as a mutant of *Argemone mexicana.* However, it is distinguished from *Argemone mexicana* by its peculiar pale petal colour, difference in shape of flower buds and stigmatic lobes (Kshetrapal *et al., 2024*; Reddy and Pattanaik, 2007). New distributional records of *Argemone ochroleuca* have been reported earlier from Punjab, Delhi, Andhra Pradesh, Gujarat, Uttar Pradesh, Hyderabad and Jharkhand (Maheswari 1963; Reddy and Pattanaik, 2007; Patel, 2013; Bagga *et al.*, 2017). Sharma and his coworkers mentioned three species of *Argemone* namely *Argemone mexicana*, *Argemone ochroleuca* and *Argemone subfusiformis* from India (Sharma *et al.*, 1993). The present documentation of new distributional records could be helpful in making conservation efforts and strategies for the native species and to check the population of invasive species.

2. METHODOLOGY

A floristic survey was undertaken to explore the floral diversity of Rourkela Forest Division, Odisha, during March 2025. During the survey, the team encountered the species of *Argemone* near the road of an open field or wasteland. The species was carefully collected, examined, and preserved following standard protocols (Jain and Rao, 1977). Herbarium specimens have been prepared and deposited at the Herbarium unit of Ambika Prasad Research Foundation, Odisha, India. After subsequent examination through published literature, photographs and e-Herbarium species, it was identified as *Argemone ochroleuca* Sweet.

3. TAXONOMIC TREATMENT

Argemone ochroleuca Sweet Brit. Fl. Gard. 3: t. 242 (1828)

Erect annual or perennial herb, up to 60 cm tall; young stems whitish purple or violaceous; leaves oblanccolate, semi-amplexicaul, sessile at base, basal leaves deeply lobed, sinuate to pinnatifid; lobes oblong and glaucous. Flower bud oblong, 8 - 15 x 4 - 10 mm; flowers pale lemon yellow, sessile, 2.5 - 3.4 cm across, subtended by 2 - 3 foliaccous 2 - 5 cm long, ca 5 mm broad bracts. Sepals 3, 8 -12 x 5 - 7 mm. Petals 6, obcuneate to obovate, 29- 30 x 16 - 20 mm. Stamens many, 8-10 mm long; filaments pale yellow; anthers oblong, recurved, dark yellow; stigmas 5-lobed, deeply dissected, dark red. Capsules ovoid or lanceolate-ovoid, 1 - 4 cm long excluding style, 4 -17 mm thick, 12 - 26 erecto-patent spines per valve, the largest spine up to 10 mm long; seeds finely reticulate and black (Figures 1-2).

Species examined

India, Odisha, Kuarmunda Range, Rourkela Forest Division at the road sides near the open field and wastelands, N 22º11'70.2", E 84º48'66.1" and elevation of 204 m MSL, 01st April 2025 R.S Devi 164 (Herbarium of Ambika Prasad Research Foundation).

Flowering & Fruiting: February – June

Habitat

It occurs in various habitats, including roadsides, railway lines, sandy streambeds, river flats, waste areas, disturbed sites, gardens, pastures, crops, and fallows.

Distribution

The species has been previously reported from multiple states, including Punjab, Delhi, Andhra Pradesh, Gujarat, Uttar Pradesh, Hyderabad, and Jharkhand. This study documents its first record from Rourkela, Odisha, marking a new geographic extension for the species.

Note

Argemone ochroleuca is recognized as an invasive species, with records from seven states and one union territory, including the current distributional record. Its presence poses a potential threat to the region's biodiversity, emphasizing the need for conservation efforts to protect native species and their habitats.

Figure 1: Herbarium of collected plant specimen

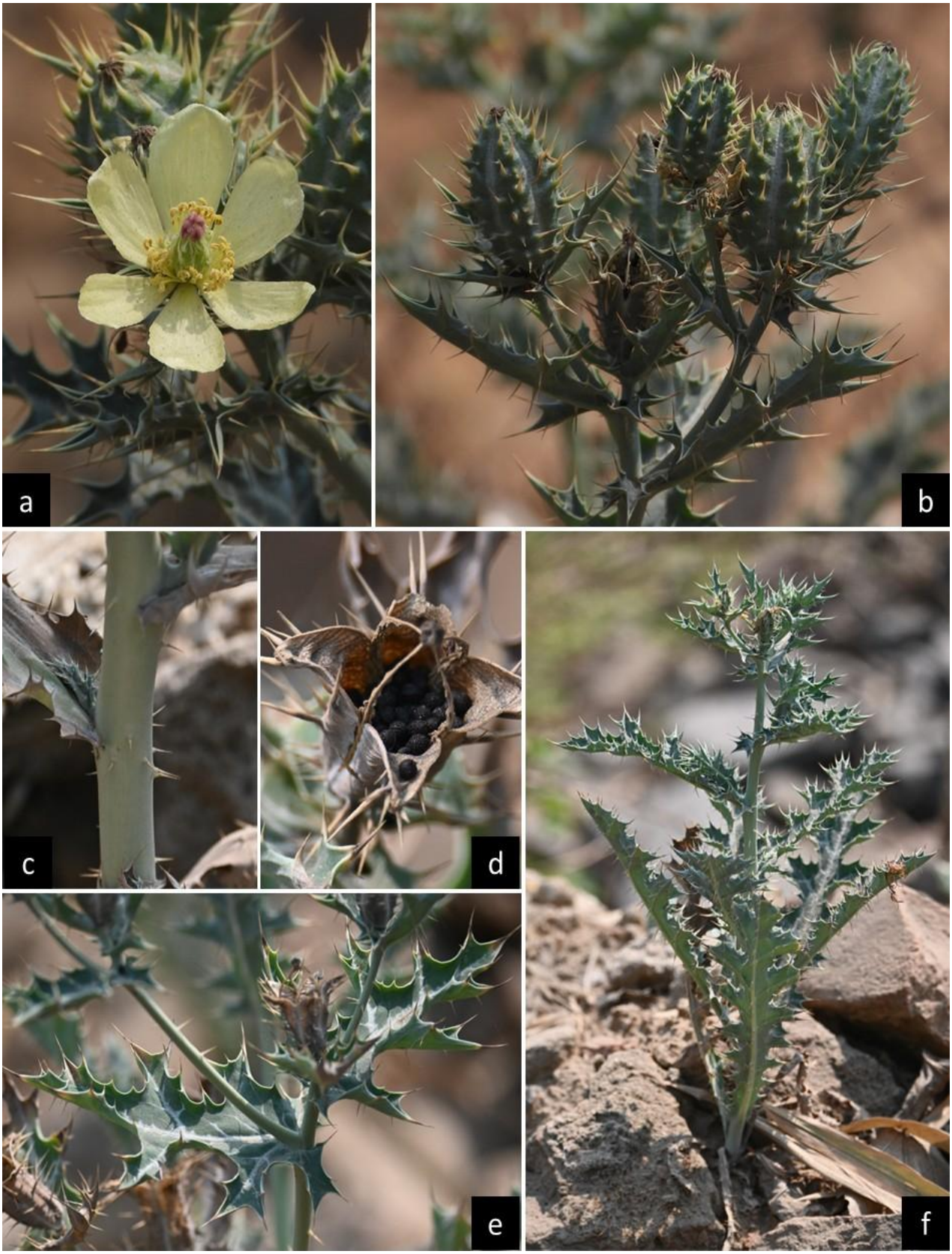

Figure 2: *Argemone ochroleuca,* a) Flower b) Capsule c) Stem d) Seeds e) Leaves f) Whole plant in its habitat

Acknowledgements
Authors are thankful to the forest officials of Rourkela Forest Division, Odisha.

Informed consent
Not applicable.

Ethical approval & declaration
In this article, as per the plant regulations followed in the Biodiversity and Conservation Lab., Ambika Prasad Research Foundation, Odisha, India; the authors observed a new distributional record of *Argemone ochroleuca* Sweet is reported as new record to the flora of Odisha state, India from the open fields of Rourkela Forest Division, Odisha. The ethical guidelines for plants & plant materials are followed in the study for species observation, identification & experimentation.

Conflicts of interests
The authors declare that there is no conflict of interests.

Funding
The study has not received any funding.

Data and materials availability
All data associated with this study are present in the paper.

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