



## Notes on the occurrence of *Spigelia antheimia* L. (Loganiaceae) in Odisha, India

P. B. Sahoo<sup>1</sup>, K. L. Barik<sup>1</sup>, R. K. Mishra<sup>2</sup> and A. K. Biswal<sup>3\*</sup>

<sup>1</sup> P. G. Department of Botany, Maharaja Sriram Chandra Bhanja Deo University, Sriram Chandra Vihar, Takatpur, Baripada, Odisha - 757003

<sup>2</sup> Department of Wildlife & Biodiversity Conservation, Maharaja Sriram Chandra Bhanja Deo University, Sriram Chandra Vihar, Takatpur, Baripada, Odisha - 757003

<sup>3</sup> Department of Botany, Fakir Mohan University, Vyasa Vihar, Nuapadhi, Balasore, Odisha – 756020

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### ABSTRACT

The present communication reports the occurrence of *Spigelia antheimia* L. (Loganiaceae), a native plant of South America, as a new distributional record for the state of Odisha. With this, the range of distribution of this species is extended further to the east of India. The nomenclature, botanical description, notes on phenology, ecology and distribution have been provided in this paper along with field photographs to facilitate easy identification.

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### 1. Introduction

Due to peculiar geographical location, topography, varied climatic and edaphic conditions, the flora of Odisha is interesting in terms of species content, vegetation diversity and phyto-geographical considerations. The flora of the state is an admixture of north and south Indian elements; and it is often postulated that the higher hill tops are considered as the meeting grounds for the Himalayan and the South Indian plant species (Gamble, 1892; Meher-Homji, 2001). The flora and vegetation of Odisha have been studied by several workers in the past (Gamble & Fischer, 1915-36; Haines, 1921-25; Mooney, 1950; Saxena & Brahmam, 1994-96) and subsequently, a good number of wild and naturalized species have been added to the state flora.

In connection with a recent study of diversity and distribution of plant resources of Balasore district, Odisha, an interesting plant was collected from Mitrapur, Balasore. After critical examination of morphological characters and consultation of available literature, the specimen could be identified as *Spigelia antheimia* L. (Loganiaceae). Updated

nomenclature, botanical description, photographs of plant and plant parts, notes on ecology, phenology, distribution etc. of the taxon have been provided below.

The genus *Spigelia* L. (Loganiaceae) is native to Central and South East America to tropical and sub-tropical America and is represented by 96 species in the world (POWO, 2022). Though *Spigelia antheimia* L. is native to tropical and sub-tropical America, the species has been reported to occur as an alien in different states of India. In India, it was first reported from Jabalpur, Madhya Pradesh (Oomachan & Srivastava, 1987). Subsequently, the occurrence of *S. antheimia* has been recorded from Tamil Nadu (Umamaheswari *et al.*, 1995), Maharashtra (Pardeshi & Srinivasu, 2006; Kamble & Chaturvedi, 2010), Rajasthan (Meena & Yadav, 2010), Karnataka (Hegde *et al.*, 2013), Gujarat (Desai & Raole, 2013; Meena *et al.*, 2014), Kerala (Sasidharan & Dantus, 2014) and Telangana (Swamy & Jalander, 2021). However, the species is not reported from any state of Eastern India. The present report on occurrence of *Spigelia antheimia* L. in Odisha extends the range of

\* Corresponding author; Email: akbiswal57@gmail.com

distribution of the species to eastern part of the country and the taxon is expected to have invaded in adjoining states too. The extended distribution of this American alien may be due to seed dispersal through different means and subsequent establishment and naturalization in suitable habitats. The species turned out to be a new generic addition to the flora of the Odisha.

***Spigelia anthelmia*** L. Sp. Pl. 149. 1753; Oomachan & Srivastava, J. Bomb. Nat. Hist. Soc. 84 (3): 730-732.1987; Umamaheshwari *et al.*, Nelumbo. 37 (1-4): 133-137. 1995; Meena & Yadav, J. Indian Bot. Soc. 89 (3 & 4): 258-261.2010; Hegde *et al.*, J. Bot. 2 (2): 9. 2013. (Fig. 1.)

Herbs, upto 50cm.; roots wiry, spreading; stems unbranched or few branches towards the base; erect, hollow, glabrous, green, terete; leaves simple, sessile, pseudo-whorl of two opposite pairs, anisophyllous, upper pair larger than lower, ovate-lanceolate, 3-11×1-5 cm, basal leaves smaller than apical leaves; blade sparsely pubescent to glabrous adaxially and puberulous along the veins abaxially, margin ciliate with simple trichomes, acute-acuminate apex, base equal to unequal, decurrent, mid vein broad basally, narrowed towards apex, secondary nerves prominent anastomising at margin, parallel from origin; stipules interpetiolar, membranaceous, broad and triangular, 2-3mm long; inflorescence monochasial scorpioid cyme, trichotomous, terminal, secund with 10-30 flowers; flowers linear-lanceolate, bisexual, 1.2-1.5 cm long, pedicel 1mm long; calyx 5 lobed, linear-lanceolate, 2-3.5 mm long, ciliate at margin; corolla lobes 5, lilac to white, tubulate-funnel shaped, tube 6-10 mm long, 2-2.2 mm broad at throat, lobes ovate-deltoid, acute, with two purple lines on middle surface; stamens epipetalous, adhering to lower part of the tube, filaments 2-3 mm long; stigma pubescent, style elongated with slightly swollen at middle portion, 5-6.2 mm long, ovary superior, 0.5 mm long, sub-globose, capsule green muricate, bi-lobed with persistent portion of style upto 2mm long, 5-5.5 mm long and 5-5-6 mm wide, receptacle boat shaped 3.3-4×0.5 mm, seeds many per locule, curved, brown, 1.7×1 mm.

*Flowering and Fruiting*: September-January.

*Specimen examined*:

Odisha: Nuapadhi, Balasore, A. K. Biswal and P. B. Sahoo, 1574, Dt. 07.09.2022, Herbarium, North Orissa University, Baripada.

*World distribution*:

Native to South America; introduced and naturalized in Tropical West Africa, South East Asia and India.

*Distribution in India*:

Madhya Pradesh, Maharashtra, Gujarat, Rajasthan, Karnataka, Kerala, Tamilnadu, Telangana and Odisha.

*Ecology*:

The taxon is sporadically found in wastelands, along roads and scrub jungles under shade. A total of 112 individuals of *Spigelia anthelmia* were found in the population in association with species like *Achyranthes aspera* L., *Alloteropsis cimicina* (L.) Stapf, *Alysicarpus vaginalis* (L.) DC., *Chamaecrista mimosoides* (L.) Greene, *Digitaria longiflora* (Retz.) Pers., *Evolvulus nummularius* (L.) L., *Grona triflora* (L.) H. Ohashi & K. Ohashi and *Physalis angulata* L.

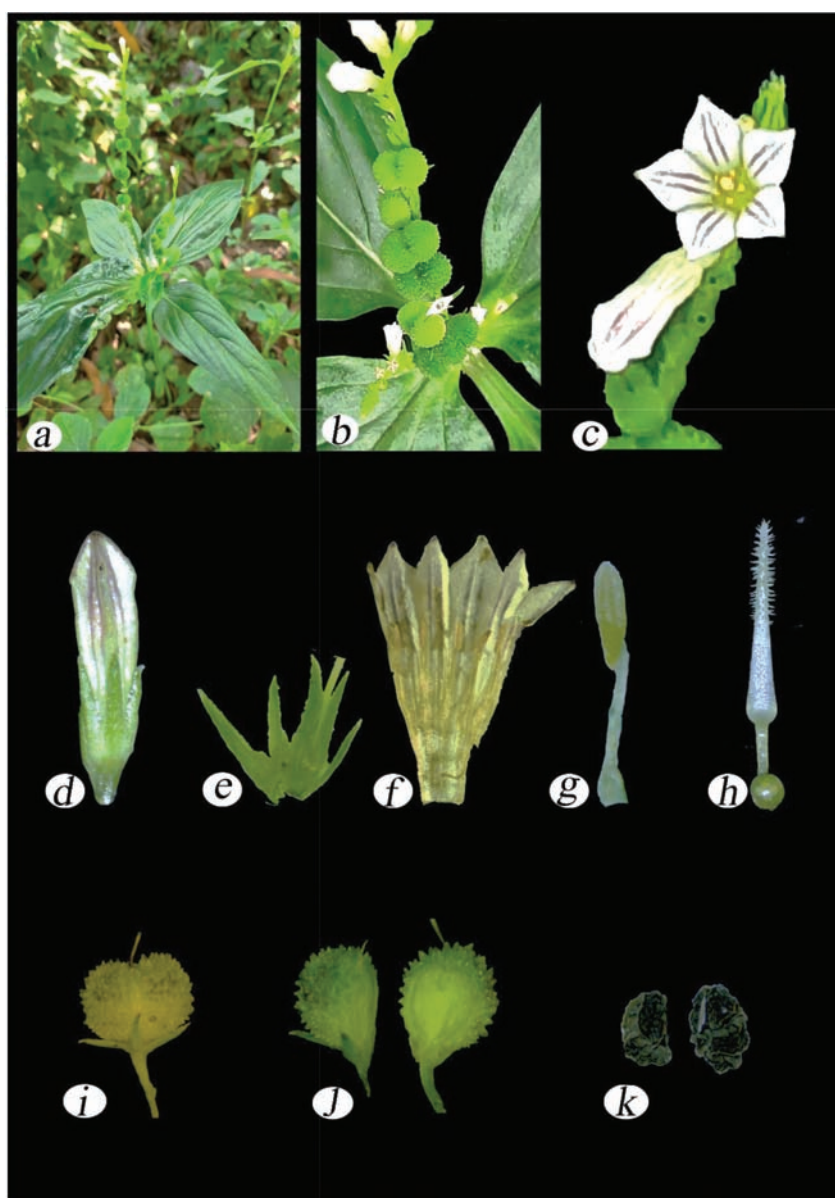
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**Fig. 1** *Spigelia anthelmia* L.: A. habit, B. inflorescence, C. flower, D. flower bud. E. calyx, F. opened corolla, G. stamen, H. carpel, I. bi-lobed capsule, J. longitudinal section of capsule, K. seed