

A new species of *Striga* (Orobanchaceae) from Odisha state, India

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Abstract: A new species, *Striga khordhae* is described and illustrated from Khordha district of Odisha state, India.

Keywords: Ghangapatna, Godibari, Khordha district, Scrophulariaceae, *Striga angustifolia*

Introduction

The genus *Striga* Lour. (Orobanchaceae) consists of about 53 species, distributed in tropical and subtropical Old World to Australia (POWO, 2024). Earlier, the genus was included in the family Scrophulariaceae, but based on molecular and morphological data was transferred to Orobanchaceae (Olmstead et al., 2001). In India, the genus is represented by 10 species, viz. *Striga angustifolia* (D. Don) C.J.Saldanha, *S. densiflora* (Benth.) Benth., *S. gesnerioides* (Willd.) Vatke, *S. indica* K.M.P.Kumar, P.Jayanthi, A.Rajendran & M.Sabu, *S. kamalii* Omalsree, K.M.P.Kumar, M.Sabu & Sunojk., *S. lutea* Lour., *S. masuria* (Buch.-Ham. ex Benth.) Benth., *S. musselmanii* Omalsree & V.K.Sreenivas, *S. sulphurea* Dalzell and *S. todgarhica* C.S.Purohit (Omalsree et al., 2015 & 2018; Singh, 2020; POWO, 2024). While working on the floristic diversity of Odisha state (Devi et al., 2023 & 2024), unidentifiable species of *Striga* were collected and photographed from the scrub forest areas of Khordha district. After a thorough analysis of relevant literature and herbarium specimens of all the *Striga* species of India and adjacent countries, proved it to be a new species hitherto unknown to science, which is described here as a novelty. The specimens were processed using standard herbarium methods and voucher type specimens were deposited in CAL and the herbarium of Ambika Prasad Research Foundation. Morphological observations and measurements were made on both freshly collected and dried specimens. The micromorphological characters were studied with a stereomicroscope.

Taxonomic treatment

Striga khordhae Sanjeet Kumar & Devi, *sp. nov.* (Figures 1–3)

Holotype: India, Odisha, Khordha district, Godibari, 20°32' 25.71" N, 85°74' 39.92" E, c 48 m, 3 August 2020, S. Kumar & R.S. Devi 30 (Herbarium of Ambika Prasad Research Foundation); isotype CAL!

Similar to *Striga angustifolia* (D.Don) C. J. Saldanha, but differs from it in having smaller calyx, calyx lobes unequal to subequal, length one third as long as tube, each lobe of lower lip of corolla lobe is divided up to the half-length, longer capsule and seed surface irregularly pitted.

Annual herb, erect, 15–25 cm high. Stem solitary, unbranched, 4-angled, scabrous to strigose. Leaves 8–18 × 2–3 mm, simple, scale like, linear to narrow lanceolate, acuminate at apex, sessile to sub-sessile, midrib prominent, margins entire, without visible nerves, strigose on both surfaces, appressed to the stem, sometimes reddish color lined at the leaf margin, young plant possess more leaves than mature plant, young plant with opposite to alternate leaves arrangement, leaves in mature plant confine to the base, opposite or sub-opposite. Flower sessile or sub-sessile, alternate or sub-opposite, spirally arranged; bract leaf like, initially small while flowering and gets longer than calyx after fruiting, single, linear to narrow lanceolate, acuminate at apex; bracteoles 2, 2–3 mm long, shorter than calyx. Calyx 5, 6–8 mm long, 12–15 ribbed and deepens when mature; lobes linear, unequal to subequal, length one third as long as tube, apex acute and lined with reddish brown tinge. Corolla white, 2-lipped; tube 9–12 mm long, pale green, hooked, pubescent, hairy within and outside, curved at the throat; upper lip bilobed, 3–4 × 5–6 mm, emarginate and broad obovate, sometimes irregular apex, abruptly curved; lower lip 3-lobed, 5–6 × 4–5 mm, each lobe divided up to the half-length. Stamens 4, didynamous, epipetalous, attached to distal end of tube; anthers yellow. Ovary superior, with numerous ovules. Capsule 2-valved, 7–10 mm long, loculicidal, enveloped in calyx. Seeds minute, numerous, black, irregularly pitted.



Figure 1: *Striga khordhae*: Close up of flower showing bract, bracteoles, calyx and corolla. Bract initially shorter than calyx, but gradually gets longer than calyx with fruiting

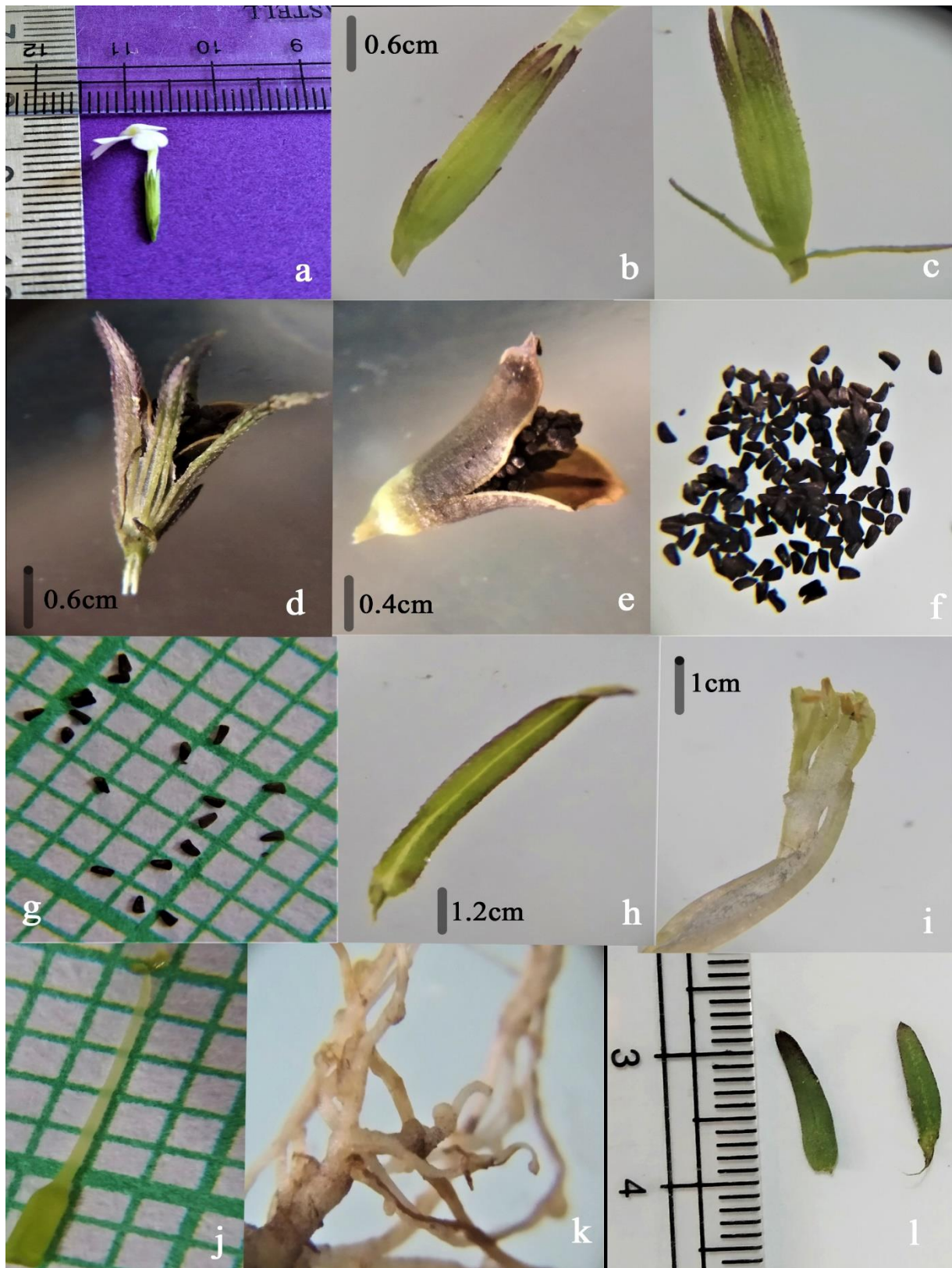


Figure 2: *Striga khordhae*: a. Flower; b. Calyx during flowering; c. Bracteoles with calyx; d. Ribs of mature calyx at fruiting; e. Capsule; f & g. Seeds; h. Calyx during fruiting; i. Anther with corolla tube; j. Style; k. Roots; l. Leaves



Figure 3: *Striga khordhae*: a–c. Close-up of flower from different angle; d. Habit; e. Hemiparasite with grass species; f. Corolla tube; g. Plant during flowering; h. Plant during fruiting; i. Anther with corolla tube; j. Mature capsule

Flowering and fruiting: July to August.

Distribution and habitat: *Striga khordhae* is so far recorded from the scrub forest area of Godibari and Ghangapatna, Khordha district, Odisha, India. This species was found growing in association with *Carissa carandas* L., *Cassytha filiformis* L., *Centranthera tranquebarica* (Biehler) Merr., *Chromolaena odorata* (L.) R.M.King & H.Rob., *Cipadessa baccifera* (Roxb. ex Roth.) Miq., *Curculigo orchiioides* Gaertn., *Cyanthillium cinereum* (L.) H.Rob., *Diospyros melanoxylon* Roxb., *Fimbristylis dichotoma* (L.) Vahl., *Grona triflora* (L.) H.Ohashi & K.Ohashi, *Microstachys chamaelea* (L.) Müll.Arg., *Oropetium thomaeum* (L.f.) Trin., *Phyllanthus virgatus* G.Forst. and *Spermacoce articularis* L.f.

Conservation status: The species is currently known to be distributed only in the Godibari and Ghangapatna, Khordha district, Odisha, India with a small group of about 55 individuals. Hence, the species is presently assessed as Data Deficient (DD). Although the said areas are prone to anthropogenic activities.

Etymology: The specific epithet refers to the Khordha district, Odisha state, India from where the species was collected.

Additional specimens examined (paratypes): India, Odisha, Ghangapatna, 20°19' 21.17" N, 85°44' 38.37" E, c 173 m, 3 August 2020, S. Kumar & R.S. Devi 31 & 32 (Herbarium of Ambika Prasad Research Foundation).

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