



***Ludwigia peruviana* (L.) H. Hara (Onagraceae): a new distributional record for Maharashtra State, India**

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Abstract: The present paper deals with an addition of new taxa of flowering plant to the flora of Maharashtra State. *Ludwigia peruviana* (L.) H. Hara (Onagraceae) is a robust bushy wetland plant that has been collected first time from Tapi river bed from the Khandesh region of Maharashtra. Detailed taxonomic description, photographs and relevant information's are provided here for easy identification.

Keywords: *Ludwigia peruviana* (L.) H. Hara; New records; Maharashtra

Introduction

The vegetation of Khandesh region is quite varied and interesting and divided into three districts Jalgaon, Dhule and Nandurbar. It lies at the Northwestern corner of the Deccan plateau, in the valley of the Tapti river, and is bound to the north by the Satpuda ranges, to the east by the Berar (Vidarbha) region, to the south by the hills of Ajanta, belonging to the Marathwada region of Maharashtra, and to the west by the Northern most ranges of the Western Ghats, and beyond that the coastal plain of Gujarat. Khandesh region lies between 20° 8' and 22° 7' North latitude and 73° 42' and 76° 28' East longitude. The forest of the Khandesh region is of dry deciduous type. Khandesh region though botanically rich in biodiversity have not been explored extensively except a few sporadic reports on floristic of Yadav (2003), Patil (2003), Valvi (2006), Kshirsagar (2008), Khan (2015) and Khan (2019).

Ludwigia L. (Onagraceae) is one important cosmopolitan wetland genus comprising of around 82 species and are mostly concentrated in the tropical regions of America (Mabberley 2005).

According to APG III system Onagraceae is placed in the order Myrtales of clade Malvids under the core class Eurosids II of Rosides of Core eudicots (Chase & Reveal, 2009). *Ludwigia* L. and *Jussiaea* L. have been treated as distinct genera in several Indian Floras (Clarke 1879; Cooke 1901; Fischer 1957). Baillon (1877) has merged three genera namely, *Ludwigia* L., *Jussiaea* L. and *Isnardia* L. those were published simultaneously and selected the name *Ludwigia* L. for the combined genus. There are seven species and one infraspecific taxon of *Ludwigia* L. reported so far from the Indian territory. Barua (2010) nicely presented seven species in Indian flora providing identification key, diagrams and their distribution in the country.

During the botanical explorations of various water bodies of Khandesh region, few specimens of an interesting species of *Ludwigia peruviana* (L.) H. Hara were first time collected by the authors from the bushy emerged area of Tapi river bed and few specimens from the ditches within the Satpuda range of the Khandesh region of the Maharashtra during the months of December-February, 2019 and 2020, respectively.

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The species was identified with the help of pertinent literature (Barua 2010 and Chowdhury *et al.* 2013) and the taxa were confirmed by Dr. Milind Sardesai, Department of Botany, Savitribai Phule Pune University, Pune. We have gone through all pertinent literature (Almeida 1998, Singh *et al.* 2001, Patil 2003, Kshirsagar 2008 and Khan 2019.) and by consulting the BSI Herbarium Pune. To find out the occurrence, distribution and habitat of this species. We found that, this species were not reported in any flora of the Maharashtra. This clearly reveals that, these species are rare to flora of Maharashtra State, even India as a whole. This species was new distributional record for the state of Maharashtra. The voucher specimens have been deposited in the herbarium of Department of Botany, H. J. Thim College of Arts and Science Mehrun, Jalgaon, Maharashtra.

Ludwigia L. is a cosmopolitan genus, represented by c. 82 species (Mabberley, 2005), mostly concentrated in Tropical American region. There are seven species and one infraspecific taxon in India. The taxonomic description, photograph, distribution are provided below for its easy recognition.

Taxonomic treatment

Ludwigia peruviana (L.) H. Hara in J. Jap. Bot. 28: 293. 1953; Raven in Reinwardtia 6: 345. 1963; Paul in Bull. Bot. Surv. India 40: 19. 1998. *Jussiaea peruviana* L., Sp. Pl. 1: 388. 1753. *J. speciosa* Ridley in J. Bot. (Lond.) 59: 259. 1921; Fischer in Gamble, Fl. Madras 3: 1298. 1957 (repr. ed.). Plate-I.

Shrubs, 1.5-3 m high, villous throughout; stem cylindric, hollow. Leaves lanceolate or ovate-lanceolate, 5-10 x 1.5-3 cm, cuneate at base, entire at margin, acute or subacuminate at apex, coriaceous; lateral nerves 10-20 on either side of midrib; petioles 7-10 mm long. Flowers on upper leaf axils, c. 5 cm across, showy; pedicels

quadrangular, c. 1.3 cm long, villous; bracteoles 2, subulate, as long as or slightly longer than the ovary. Sepals 4 (or 5), lanceolate to ovate-lanceolate, or deltoid-acuminate, 1.5-2.3 x 0.5-1 cm, irregularly serrulate at margin, fleshy, villous outside, glabrous inside, 9-nerved. Petals suborbicular, 1.5-2.5 x 1.5 - 2.5 cm, shortly clawed, slightly emarginate, yellow with brownish nerves. Stamens 8 or 10, subequal, yellow; filaments 1.5-3 mm long; anthers 1.5-3 mm long, apparently basifixed by reduction, somewhat extrorse. Disc much elevated; nectary depressed, U or C-shaped, densely white hairy, surrounding the base of each petaliferous stamen. Ovary quadrangular, 8-10 mm long, pubescent, 4-loculed; ovules 3 per locule; style c. 1 mm long, thick; stigma elongated-hemispherical to ellipsoid, longer than style, c. 3 mm across. Capsules sharply quadrangular, 1.3-3 x 0.5-1 cm, thin-walled, with 4 prominent deep brown ribs, villous, irregularly loculicidal; seeds pluriseriate, free, ellipsoid, c. 0.79 x 0.38-0.40 mm, with a prominent nipple and transversely striped integument, brown; raphe c. 0.70 x 0.16 mm.



Figure: *Ludwigia peruviana* (L.) H. Hara

Flowering and Fruiting: December-February

GPS Reading: N 21° 8' 27.14" E 75° 32' 28.90" (Elevation 173.7 m)

Distribution: India (South India, South Andaman and Assam), Indonesia (Sumatra and

Java), Malaysia, Sri Lanka, Singapore. Native of New World.

Specimens examined: Jalgaon Dist. Tapi river bed TAK 7931; Devjiri TAK 8017. Nandurbar District. Amlibari forest, TAK 8419.

Status: Rare.

Ecology: It grow along the Tapi river bed and grow on ditches within the Satpuda range of the Khandesh region.

Note: It can be identified by Stem and leaves pubescent to villous, leaves acute or sub-acuminate at apex; petals yellow, Capsules 4-angled; raphe much smaller than seed.

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