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A new species of *Luisia* Gaud. (Orchidaceae) from northwestern Bihar, India

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ABSTRACT In this paper, a new species of genus *Luisia* Gaud. (Orchidaceae) is described and illustrated. *L. indica* n. sp. is morphologically similar to *L. trichorhiza* (Hook.) Bl., but it is distinguished from *L. trichorhiza* by its smaller flowers and smooth surfaced greenish lip with purple spots together with five veined sepals and petals.

KEY WORDS *Luisia*; endangered; orchid; Bihar; India.

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INTRODUCTION

Luisia Gaud. is a small genus in the family Orchidaceae with ca 40 epiphytic species distributed in Indian subcontinent, Southeast Asia, Micronesia, Melanesia and Australia. India is the centre of diversity of this genus. In India, 18 species of *Luisia* have been reported and they are mainly found in Northeastern states, Peninsular India, Andaman and Nicobar Islands (Haines, 1924; Gamble, 1935; Bose & Bhattacharjee, 1980; Abraham & Vatsala, 1981; Kataki et al. 1984; Deva & Naithani, 1986; Srivastava, 1996; Chowdhery, 1998; Rath & Priyadarshini, 2005; Kumar et al., 2007; Gogoi et al., 2012; Karthigeyan et al., 2014). Taxonomically, *Luisia* is a difficult genus with relatively low morphological variations among the species (Seidenfaden, 1971; Misra, 2010).

During plant collection tour in March 2015 to Valmiki Tiger Reserve at West Champaran district of Bihar state, an attractive species of *Luisia* was found growing on a tree trunk on the top of the Bodrewa Hill in Manguraha Range of the Tiger Reserve. The species was found growing in clump with long green stem with terete leaves. The specimens were collected, acclimatized and grown in the Botanic Garden, CSIR-NBRI and have started bearing flowers in early April 2015.

ACRONYMS. LWG = Herbarium, National Botanical Research Institute, Lucknow, India.

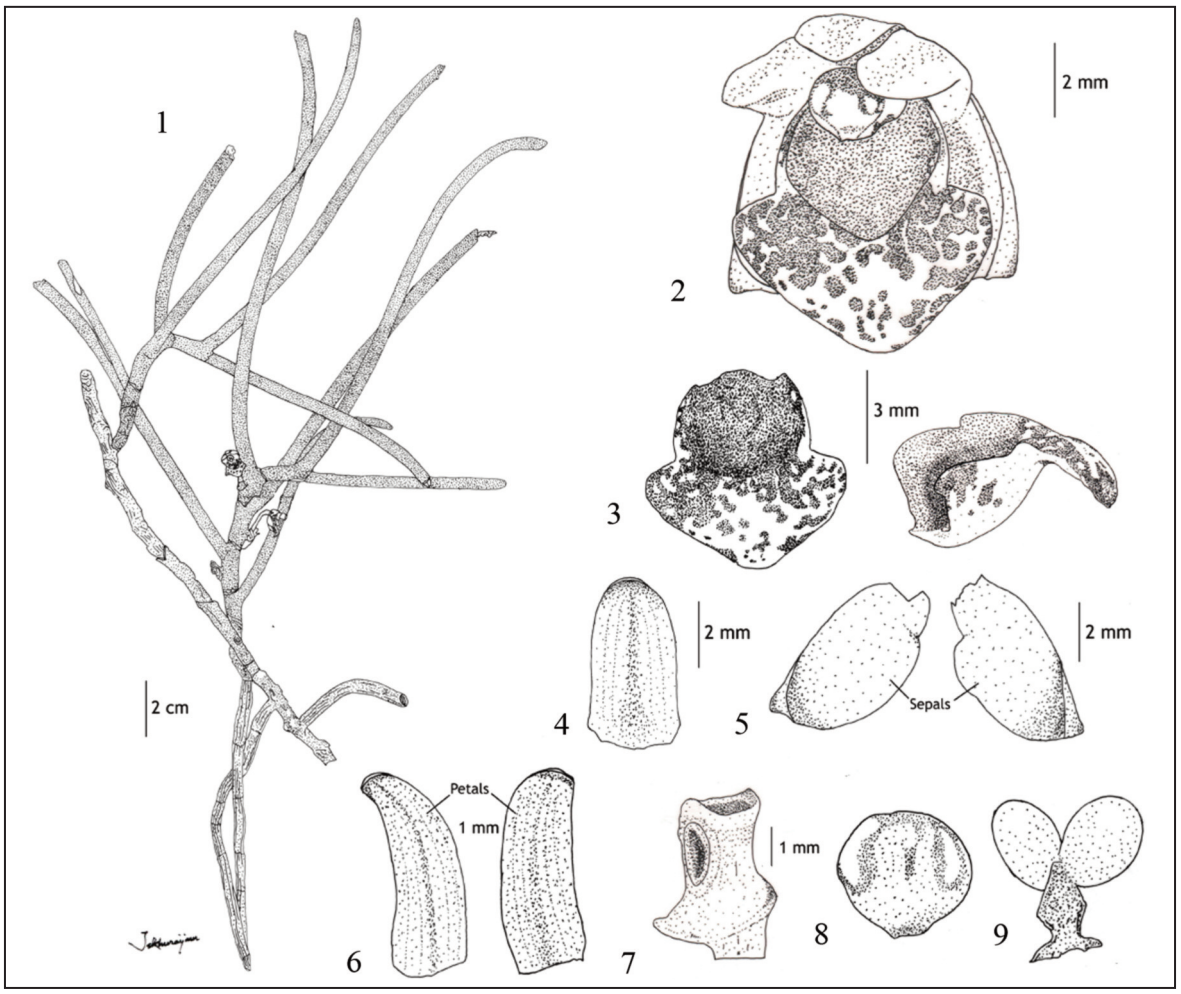
Luisia indica n. sp.
(Figures 1–12)

DIAGNOSIS. Herba caule erecto sive ascendendo; relinquit tenuibus, denique inflorescen axillares, 2-5 erecti, floribus, labium, triangularibus trilo, lamina labii pallore purpura coloratum; sepalis pallide quinque pauílo oblongo- petalis obovatis porrect carnosus, pallide viridia, five pauílo columna crassa, purpureus; duo flavo; pollinia.

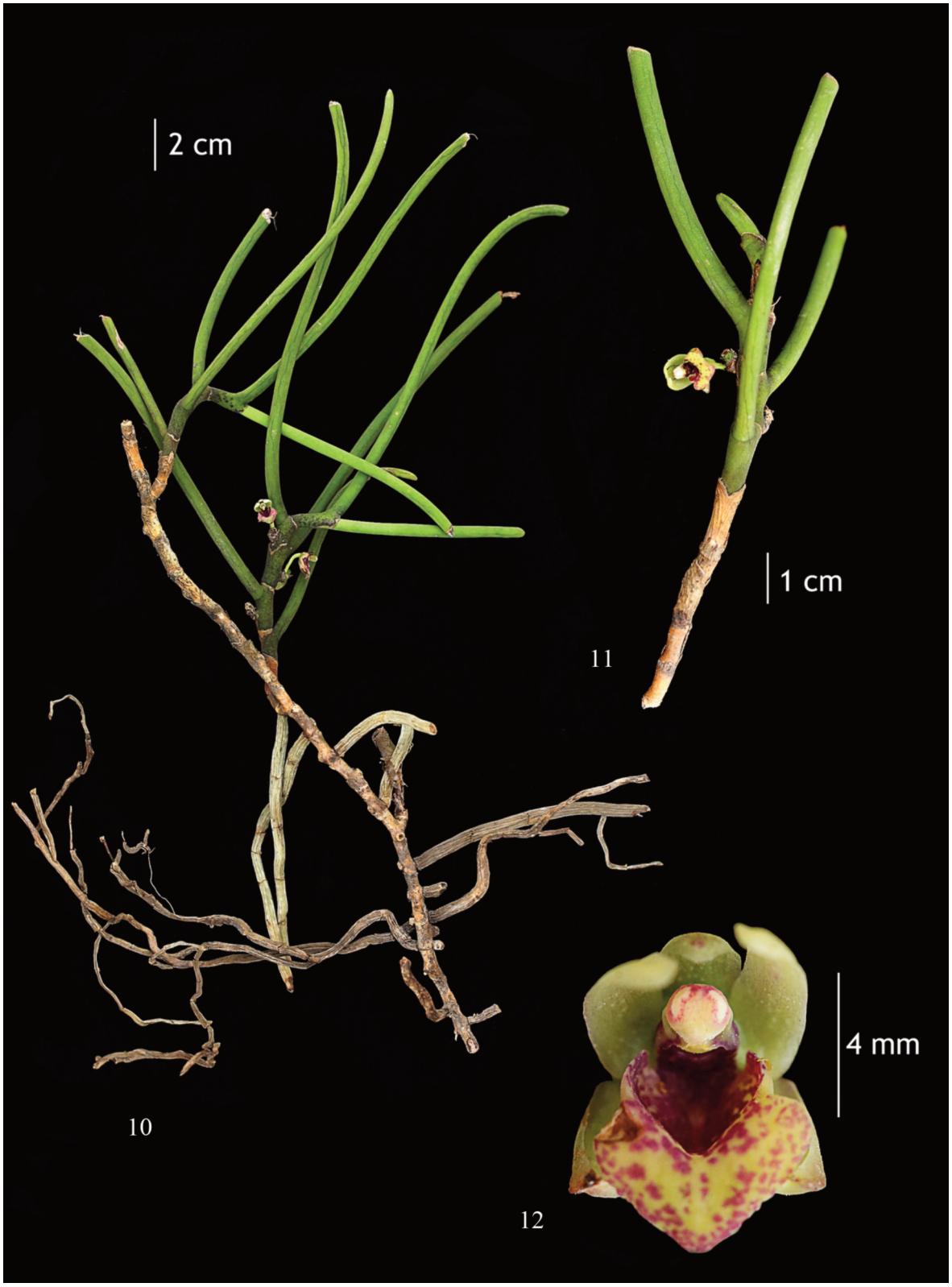
EXAMINED MATERIAL. Type. India. Bihar: West Champaran, Valmiki Tiger Reserve, 13 March 2015. J.S. Khuraijam 101206 (holotype LWG), here designated. Paratypes 101208, 101209 (LWG), same data of holotype.

DESCRIPTION OF HOLOTYPUS. Epiphytic herb, stem erect or ascending, 12 cm long, ca 0.5 cm diameter, covered with leaf bases. Roots 3 mm thick, vermiform. Leaves terete, slender, apex narrowed 17 cm long. Inflorescence short, axillary, 0.9 cm long, peduncle minute, 2 flowered, opening 1–3 flowers at a time. Flowers ca 8×7 mm, purplish green, lamina of lip greenish with purple coloured dots, green beneath, hypochile dark purple. Pedicel with ovary 9 mm long, pale green. Sepals and petals spreading. Sepals unequal, dorsal sepal 5 mm long, elliptic, acute, slightly hooded, pale green, five veined, central vein larger pale purple/pink. Lateral sepals 6 mm long, concave, boat shaped, dorsally keeled beyond the middle, pale green, five veined. Petals 7 mm long, oblong-obovate, pale green, five veined, central vein larger dim pink. Lip triangular, trilobed, fixed at the base of the column, porrect, fleshy, surface smooth, 5×7 mm, margin recurved. Column 4 mm long, stout, purple, anther cap greenish white with purple colour dots, pollinia two, yellow.

VARIABILITY. The paratypes do not show substantial morphological differences compared to the holotype. Lenght 10–15 cm, diameter 0.3–0.7 cm; Roots 2–3 mm thick, vermiform. Leaves terete, slender, apex narrowed 10–20 cm long. Inflorescence 0.5–1 cm long, 2–5 flowered, opening 1–3 flowers at a time. Flowers ca 8–9×7–8 mm; dorsal sepal 5–6 mm long; lateral sepals 6–7 mm long; petals 7–8 mm long; lip 5–6×6–7 mm; column 3–5 mm long.



Figures 1–9. *Luisia indica* n. sp. Fig. 1: habit. Fig. 2: flower. Fig. 3: Lip. Fig. 4: dorsal sepal. Fig. 5: lateral sepals. Fig. 6: petals. Fig. 7: column. Fig. 8: anther cap. Fig. 9: pollinia.



Figures 10–12. *Luisia indica* n. sp. Figs. 10, 11: habit. Fig. 12: flower.
Photos by A.C. Little.

ETYMOLOGY. The specific epithet is in reference to the species occurrence in India.

HABITAT, ECOLOGY AND DISTRIBUTION. Grow on tree trunks at tops of low lying hills in evergreen forest. The species is now known only from Valmiki Tiger Reserve in West Champaran district of Bihar, India.

FLOWERING. Late March–April

CONSERVATION STATUS. Since the species is known only from a small area in Valmiki Tiger Reserve along the Indo-Nepal border, the species may be designated as Endangered (IUCN SPS, 2010).

REMARKS. *Luisia indica* n. sp. resemble *L. trichorhiza* (Hook.) Bl. in having trilobed triangular lip but differ in having rather smooth surfaced greenish lip with purple spots and five veined sepals and petals. On the basis of these morphological variations, *L. indica* is different from *L. trichorhiza*. Moreover, *L. trichorhiza* have deep purple lip with ridged surface or deeply grooved and three veined sepals and petals (Hooker, 1823; Blume, 1849; Bose & Bhattacharjee, 1980; Yonzone & Rai, 2012). *Luisia indica* n. sp. is the first report of the genus *Luisia* from Bihar.

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