Distributional records for three little-known and rare flowering plants from West Bengal, India

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Abstract

Three angiospermic taxa, *Ixora anthroantha* Bremek. (Rubiaceae), *Psychotria erratica* var. *pedunculata* Hook.f. (Rubiaceae) and *Peliosanthes violacea* var. *minor* Baker (Asparagaceae) have been collected from the North Sevoke Medicinal Plants Conservation Area located at the feet of Darjeeling Hills, West Bengal, India during 2017. These are now reported here as first record of occurrence for the state of West Bengal.

Key words: *Ixora anthroantha*, *Psychotria erratica* var. *Pedunculata*, *Peliosanthes violacea* var. *Minor*; New record, Flora, West Bengal

INTRODUCTION

The North Sevoke Medicinal Plants Conservation Area (NSMPCA), one among the seven Medicinal Plants Conservation Areas in the state of West Bengal, is situated in Darjeeling district. The central location of the conservatory is 26°52' N Longitude and 88°27' E Latitude and covers an area of 100 ha. The MPCA supports 'North India Moist Deciduous Forests' (Champion & Seth 1968). While exploring the flowering plant wealth of MPCA three flowering plant species viz., *Ixora anthroantha* (Rubiaceae), *Psychotria erratica* var. *pedunculata* (Rubiaceae) and *Peliosanthes violacea* var. *minor* (Asparagaceae) have been collected. The identity of all three species was confirmed on careful examination of fresh plant materials along with perusal of relevant literature (Hooker 1880; Jessop 1976; Deb & Gangopadhyay 1989; Husain & Paul 1989; Roy 2018). Among the three taxa, *Psychotria erratica* var. *pedunculata* and *Peliosanthes violacea* var. *minor* are reported here as additions to the angiospermous flora of West Bengal State and for *Ixora anthroantha* the fruits are described here for the first time. For each taxon description, flowering and fruiting period, habitat with plant association, differences with close allies, distribution, notes on occurrence and population, photographs of plants are provided herewith.

ENUMERATION

1. *Ixora anthroantha* Bremek., Indian Forester 85(7): 372. 1959; T. Husain & S.R. Paul, J. Econ. Taxon. Bot., Addit. Ser. 6: 109, f. 16. 1989. [RUBIACEAE]. [PLATE - I, Figure 1 a - c].

Shrub, to 3.5 m high; branches terete, angled; stems hollow, glabrous and shiny. Leaves opposite, broadly elliptic-lanceolate to oblong-oblongeolate, 13 – 38 × 4.5 – 13.5(– 20.5), entire, acute-

acuminate, cuneate or obliquely cuneate at base, glabrous above, with black sessile glands on lower surface; lateral veins *c.* 22 pairs; petioles *c.* 5.2 cm long, triangular, thick, broadened at base, glabrous. Inflorescence in terminal pedunculate umbels, 5.5 – 6.5 cm long; peduncles angled or terete, to 3 cm long, densely pubescent, brownish; primary pedicels angled, to 1 cm long, appressed-pubescent; secondary pedicels terete or angled, 5–7 mm long; bracts linear-lanceolate, 5 – 9 mm long, acuminate at apex, sparsely pubescent, brownish; bracteoles linear, 3 – 4 mm, sparsely appressed-pubescent. Calyx 5-lobed; tube *c.* 2 mm long, minutely hairy or glabrous; lobes linear-triangular, *c.* 1 mm long, acuminate at apex. **Fruits ovoid-globoid, 1 or 2-lobed, 9 – 18 × 6 – 10 mm, persistent with calyx-rim at apex, brownish black when dry, hard; seeds 1 or 2, subglobose-ellipsoid, *c.* 7 × 3 mm long, yellowish.**

Fruiting: October – December.

Ecology: It is found occasionally in the Moist Deciduous Forest and is known from a single locality with only two mature individuals and the area of occupancy is estimated to be 10 km². This species is associated with *Hedyotis scandens* Roxb., *Hiptage benghalensis* (L.) Kurz, *Jasminum flexile* Vahl, *Lepidagathis incurva* Buch.-Ham. ex D. Don, *Pavetta indica* L., *Pericampylus incanus* (Colebr.) Miers ex Hook.f. & Thomson, *Phlogacanthus thyrsoformis* (Roxb. ex Hadrw.) Mabb., *Piper attenuatum* Buch.-Ham. ex Miq., *Pueraria sikkimensis* Prain, *Smilax griffithii* A.DC., *Strobilanthes* sp. and *Tabernaemontana divaricata* (L.) R. Br. ex Roem. & Schult.

Distribution: India (Assam, West Bengal) and Bangladesh.

Specimens examined: INDIA: West Bengal, Darjeeling district, Sukna, May 1940, *M.V. Laurie s.n.* (DD); North Sevoke MPCA, 177 m, 24.10.2017, *K. Ravikumar & N. Dhatchanamoorthy* 121981 (FRLH).

Note: Bremekamp (1959) described *I. anthroantha* without fruits, and stated fruits not yet seen. However, during the present study, the plants were found in fruiting state, and hence the morphological features of fruits and seeds are provided.

This species closely resembles *I. acuminata* Roxb., but can easily be distinguished from the latter by having anthers with filaments (vs. sessile anthers) and absence of wax layer on ovary (vs. ovary covered with wax layer).

2. *Psychotria erratica* Hook.f. var. *pedunculata* Hook.f., Fl. Brit. India 3: 169. 1880; Deb & M. Gangop., J. Econ. Taxon. Bot., Addit. Ser. 7: 103, f. 40. 1989. [RUBIACEAE] [PLATE - I, Figure 2 a – c]

Shrub, 1 – 1.5 m high; young branches sparsely appressed-puberulous, glabrous on maturity. Leaves opposite, elliptic-lanceolate, 9 – 13.2 × 3.3 – 5.8 cm, entire, acute-acuminate, narrowly cuneate at base, glabrous above, sparsely appressed-puberulous and sessile glandular beneath, brownish; lateral veins *c.* 12 pairs, brownish beneath; petioles 1–2 cm long, striate, appressed-puberulous, brownish when dry. Stipules ovate, *c.* 2 mm long, acute-acuminate at apex, 2 or 3-lobed, minutely appressed puberulous or pubescent beneath or glabrous. Inflorescence axillary or rarely terminal; dichotomously pedunculate cymes; primary peduncles slender, striate, to 4.7 cm long; secondary peduncles to 9 mm long, glandular-pubescent; pedicels 3-angled, to 5 mm long, glandular-pubescent. Bracts 2 or 3-lobed, ovate-triangular, 5 – 10 mm long, lateral lobes acute at apex, middle lobes acuminate at apex, pubescent; bracteoles lanceolate, 2 – 5 mm long, acuminate at apex, appressed-puberulous or glabrous. Fruits ovoid-globose, 5 – 7-ridged, glabrous, thick, 5 – 7 × *c.* 3.5 mm long.

Fruiting: October – December.

PLATE – I. 1. *Ixora anthroantha* a. Habit, b. Infructescence, c. Herbarium sheet; 2. *Psychotria erratica* var. *pedunculata* a. & b. Infructescences, c. Herbarium sheet; 3. *Peliosanthes violacea* var. *minor* a. Habit, b. Flowers & Fruits, c. Herbarium sheet

Habitat: It is found occasionally in the Moist Deciduous Forest; growing with *Aristolochia indica* L., *Ageratum conyzoides* (L.) L., *Coffea bengalensis* Roxb. ex Schult., *Cyanthillium cinereum* (L.) H. Rob, *Elephantopus scaber* L., *Oplismenus compositus* (L.) P.Beauv., *Persicaria hydropiper* (L.) Delarbre, *Piper attenuatum* Buch.-Ham. ex Miq. and *Smilax zeylanica* L.

Distribution: WORLD: Bhutan, Nepal and India (Sikkim, West Bengal)

Specimens examined: INDIA: West Bengal, Siliguri, Darjeeling district, Moist Deciduous Forest of North Sevoke MPCA, 177 m, 22.11.2017, K. Ravikumar & N. Dhatchanamoorthy 121952 (FRLH).

Additional specimens examined: Type: West Bengal, Sukna, May 1940, M. V. Laurie s. n. (DD!). Assam, Ledo, April, 1935, D.E. Bernard 21 (BM!).

Note: Hooker (1880) described the species *P. erratica* based on materials collected from India (Sikkim Himalayas, Assam), Nepal and Bhutan, under which he had also

recognized two varieties namely var. *latifolia* and var. *pedunculata*. He distinguished the latter on the basis of its axillary cyme with 1 – 2 inches (2.5 – 5 cm) long peduncle. This variety was described exclusively on the basis of plant materials collected by Nathaniel Wallich from Nepal. However, Deb & Gangopadhyay (1989.) in their taxonomic revision on the genus *Psychotria* listed four more collections housed at CAL under specimens examined, two from Sikkim (*G. King s.n.*, *Persons s.n.*) and the two other from Bhutan (*G. King s.n.*, *W.R. Jacob 257*) and distinguished var. *pedunculata* from the typical variety on the basis of nature of inflorescence and indumentum on leaf surface and stipule.

In India, this variety is hitherto known to occur only in Sikkim, and therefore, the present collection from NSMPCA exhibits its extended distribution in West Bengal. Thorough explorations in adjacent regions are necessary to quantify its population and extend of occurrence.

3. *Peliosanthes violacea* Wall. ex Baker var. *minor* Baker, J. Linn. Soc., Bot. 17: 504. 1880. *P. bakeri* Hook.f., Fl. Brit. India 6: 267. 1892. [ASPARAGACEAE]. [PLATE` - I, Figure 3 a - c]

Rhizomatous herb, with strong fibrous roots, 10 – 15 cm long, ash coloured. Leaves narrowly elliptic or lanceolate, 14.5 – 18.5 × 3.3 – 5 cm, entire, acuminate, narrowly cuneate at base, glabrous; longitudinal parallel veins 10 – 19; secondary veinlets less prominent; petioles subterete or flat, 15 – 24 cm long, rigid, glabrous. Racemes shorter than petiole, 11 – 16 cm long; scapes 3 – 4.5 cm long. Flowers 61 – 75; pedicels *c.* 5 mm long; bracts lanceolate, membranous, 4 – 6 × 1 – 2 mm, equal or shorter than flower. Perianth 3 – 5 mm long, purple or pale white; tube 2 – 3 mm long, mostly adnate to ovary; lobes ovate-obconical, *c.* 1.5 × 1.5 mm. Corona ovoid-rounded, *c.* 2 mm long, purple. Fruits ovoid-globoid, 7 – 14 × 5 – 9 mm, glabrous; seeds ovoid, 0.6 – 13 mm long.

Flowering & Fruiting: September – January.

Habitat: Found occasionally in moist shaded localities near streams in deciduous forests; growing with *Chromolaena odorata* (L.) R.M. King & H. Rob., *Curculigo orchoides* Gaertn., *Cyclea peltata* (Lam.) Hook.f. & Thomson, *Cyathula prostrata* (L.) Blume, *Desmodium heterocarpon* (L.) DC., *Lepidagathis incurva* Buch.-Ham. ex D. Don, *Piper betleoides* DC., *P. lonchites* Roem. & Schult. and *Spermacoce pusilla* Wall.

Distribution: Endemic. India: Assam (Cachar hills), Meghalaya (Khasi and Garo hills) and West Bengal.

Specimen examined: India: West Bengal, Darjeeling district, North Sevoke MPCA, 177 m, 24.10.2017, K. Ravikumar & N. Dhatchanamoorthy 120381 (FRLH).

Note: According to Roy (2018), it is an endemic species confined to Assam (Cachar) and Meghalaya (Khasi hills). However, the present record of its occurrence from NSMPCA shows its extended distribution in West Bengal. Intensive survey in the entire northeastern region would reveal its exact range of distribution in India. This variety differs from other varieties in leaf size and number of longitudinal veins, slightly upward facing flowers and floral bract shorter than flowers.

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