

## ***Aeschynanthus* W. Jack (Gesneriaceae) in Mokokchung and Zunheboto districts of Nagaland, India**

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### **Abstract**

The present paper reports the distributional extension of five species of genus *Aeschynanthus*, viz., *A. bracteatus* Wall. ex DC., *A. micranthus* C. B. Clarke, *A. parasiticus* (Roxb.) D.B. Deb, *A. parviflorus* (D. Don) Sprengel and *A. sikkimensis* (C.B. Clarke) Stapf in the Mokokchung and Zunheboto districts of the State of Nagaland, India.

**Keywords:** Distributional range, *Aeschynanthus*, Mokokchung and Zunheboto district, Nagaland.

### **INTRODUCTION**

The genus *Aeschynanthus* W. Jack (Gesneriaceae) with its about 80 species is distributed in the tropical, sub-tropical and temperate regions of India and Malaysia, extending from Kumaon and Srilanks to Hong Kong and Philippines. It is represented by 20 species in India (Haridasan & Rao 1986). These species have been reported from temperate Himalaya ranging from Nepal to Bhutan, North- East Indian states of Assam, Meghalaya, Sikkim and Arunachal Pradesh. But, so far, there is no mention regarding the occurrence of various species of *Aeschynanthus* from the state of Nagaland. Therefore, the present paper reports extension of distributional range of five species of *Aeschynanthus* Viz., *A. bracteatus* Wallich ex DC., *A. micranthus* C. B. Clarke, *A. parasiticus* (Roxb.) D.B. Deb, *A. parviflorus* (D. Don) Sprengel and *A. sikkimensis* (C.B. Clarke) Stapf from Zunheboto and Mokokchung districts of Nagaland state.

Nagaland lies between 25° 6' to 27° 4' N latitudes and 93° 2' to 95° 15' E longitudes covering an area of 16, 575 sq km. It has common boundaries with Myanmar in the East, Arunachal Pradesh in the North, Manipur in the South and Assam in the West. The district Mokokchung lies between 26° 19' 207" N latitudes and 94° 33' .054" E longitudes and the average altitude of the district is 1371.60 m. The district Zunheboto lies between 24° 52' 30" N latitudes and 94° 35' 58" E longitudes and the average altitude of the district is 1874.22 m.

### **MATERIALS AND METHODS**

The plants were collected from the natural vegetations in various localities of Mokokchung and Zunheboto districts of Nagaland and processed following Jain & Rao (1977). The voucher specimens are deposited in the Herbarium of the Department of Botany, Nagaland University.

### **ENUMERATION**

*Aeschynanthus* W. Jack, Trans. Linn. Soc. London, Bot. 14: 42. 1823 (1825). [**Gesneriaceae**]

The genus *Aeschynanthus* W. Jack belongs to the sub-tribe Trichosporeae of Gesneriaceae. Plants are mostly epiphytic undershrubs or in rock crevices. Plants are with slender or creeping stems, often rooting at the nodes and internodes.

The genus is characterized by succulent and leathery simple leaves, alternate, opposite or whorled, pairs equal or unequal, usually entire; nerves ± obscure; flowers in cymes or racemes or

solitary, hermaphrodite and zygomorphic; calyx 5-lobed or divided to base; corolla with a distinct curved tube and limb, often 2-lipped; stamens 2 – 4, inserted on corolla tube, didynamous, all perfect; anthers exserted, connivent in pairs; ovules numerous; fruit a linear capsule, valves straight or twisted, rarely berry.

### Key to the species

1. Calyx tube almost missing and lobes extending almost to the base .... 2
- 1a. Calyx with a distinct tube ..... 3
2. Bracts conspicuous; flowers in distinctly peduncled cyme; corolla
  - 3.5 – 4 cm long ..... *A. bracteatus*
- 2a. Bracts inconspicuous; flowers in sessile clusters of 1 – 5; corolla
  - 2.5 – 2.8 cm long ..... *A. micranthus*
3. Corolla 3.5 – 4 cm long, coarsely glandular hairy lower part inside, with a dark purple median blotch on each lobe ..... *A. parasiticus*
- 3a. Corolla 2 – 3 cm long, coarse hairs inside lower part absent, with a crimson median blotch on each lobe ..... 4
4. Calyx lobes 2.5 – 4.5 mm long, purplish green, covered with minute sessile glands outside ..... *A. sikkimensis*
- 4a. Calyx lobes 6 – 8 mm long, orange yellow, glabrous outside .. *A. parviflorus*

***Aeschynanthus bracteatus*** Wallich ex DC., Prodrumus 9: 261. 1845; Balak. Fl. Jowai 2: 345 - 346. 1983; Grierson & Long, Fl. Bhutan 2(3): 1301. 2001; Clarke in Hook.f., Fl. Brit. India 4: 342. 1885 (ut *bracteata*); Kanjilal *et al.*, Fl. Assam 3: 391. 1939; Haridason & Rao, For. Fl. Meghalaya 2: 651. 1987.

Glabrous epiphyte; leaves opposite, 7.0 – 11.0 x 2.5 – 4.0 cm, elliptic or oblong-elliptic, entire, acuminate, tips rounded, base rounded or cuneate; petioles 1.0 – 1.3 cm; flowers mostly terminal, often opposite; peduncles 1.0 – 4.5 cm long; bracts paired, ovate, 2.5 x 1.0 cm, crimson, caducous; pedicels 1.0 – 1.2 cm; calyx divided nearly to base, lobes lanceolate, 1.5- 2 x 0.2- 0.5 cm, crimson; corolla glabrous outside, 3.5 – 4 cm long, mouth scarcely oblique, upper lip erect, shallowly bilobed, lower lip with three reflexed lobes, marked with purplish stripes, crimson or scarlet outside, probably yellowish inside; stamens far exserted, filaments glandular-puberulous; capsules 8 – 13 cm.

**Habitat:** On tree trunks. **Flowering & Fruiting:** August – October.

**Exiccatus:** Naltoge, Zunheboto, *SK Chaturvedi & Moaakum 0179*, September 08, 2005.

**Distribution:** Zunheboto district; temperate Himalayas, Assam, Meghalaya.

***Aeschynanthus micranthus*** C.B. Clarke in Hook.f., Fl. Brit. India 4: 340. 1885 (ut: *micrantha*); Grierson & Long, Fl. Bhutan 2(3): 1300. 2001; Kanjilal *et al.*, Fl. Assam 3: 390. 1939.

laxly branched epiphytic, often rooting at nodes, glabrous; leaves opposite, succulent, 2.5 - 7 x 1 - 2 cm, elliptic, shortly acuminate, base cuneate, glabrous; petiole 0.2 - 0.6 cm; flowers 1 - 5 on short terminal and axillary spurs; pedicels 0.7 cm; bracts linear-lanceolate; calyx green, deeply lobed; corolla pubescent, 2.5 – 2.8 cm long, crimson, narrow, mouth rounded, all 5 lobes projecting forward, lobe-margins purplish; stamens far exserted, filaments glandular, pubescent; capsules 8 – 15 cm.

**Habitat:** On tree trunks. **Flowering & fruiting:** September - October.

**Exiccatus:** Khensa, Mokokchung, *SK Chaturvedi & Moaakum 0827*, September 08, 2007.

**Distribution:** Mokokchung district

*Aeschynanthus parasiticus* (Roxburgh) D.B. Deb, Fl. Tripura State 2: 301. 1983; Balak., Fl. Jowai 2: 344- 345. 1983; Grierson & Long, Fl. Bhutan 2(3): 1302. 2001; *Incarvillea parasitica* Roxburgh, Pl. Corom. 3: 88, t. 291. 1819; *A. grandiflorus* Sprengel, Clarke in Hook.f., Fl. Brit. India 4: 338. 1885; Kanjilal *et al.*, Fl. Assam 3: 389. 1939; Haridason & Rao, For. Fl. Meghalaya 2: 651. 1987.

Epiphytic; branches lax, slender, pendent, rooting at the nodes, glabrous except corolla; leaves opposite, 6 - 14 x 2 - 3.2 cm, succulent, lanceolate, entire, acuminate, base cuneate; petiole 0.6 - 1.3 cm; flowers about 3.5 - 4 cm long, clustered at branch tips; pedicels 1.0 - 1.5 cm; calyx  $\pm$  0.7 cm, greenish white, foliaceous, veined, glabrous; corolla glandular pubescent outside, inside with very coarse gland- tipped hairs, orange scarlet with dark purplish longitudinal stripes outside and triangular purple blotch on the inner face of each lobes; stamens exserted, filaments glandular puberulous; capsules 6 - 12 cm.

**Habitat:** On tree trunks. **Flowering & Fruiting:** End of April to October.

**Exiccatus:** Mokokchung, *SK Chaturvedi & Moaakum 0622*, May 24, 2007.

**Distribution:** Mokokchung and Zunheboto districts, Nagaland; Himalayas (Nepal - Bhutan), Assam, Meghalaya.

*Aeschynanthus parviflorus* (D. Don) C. Sprengel, Syst. Veg. 4(2): 238. 1827; Grierson & Long, Fl. Bhutan 2(3): 1303. 2001; *Trichosporum parviflorum* D. Don in *Edinb. Philos. J.* 7: 85. 1822; *A. ramosissima* Wallich, Pl. Asia. Rar. 1: 55, t.71. 1829; Clarke in Hook.f., Fl. Brit. India 4: 339. 1885.

Laxly branched epiphytic, spreading, glabrous except corolla; leaves opposite, 4 - 9 x 1.5 - 3.3 cm, succulent, broadly lanceolate, entire, base cuneate; petioles 0.5 - 0.9 cm; flowers several, clustered at branch tips, later overtopped by new growth; bracts linear-lanceolate, 0.2 - 0.4 long; pedicels 0.6 - 1 cm; calyx light orange-yellow, 0.6 - 0.8 cm long, glabrous; corolla glandular- pubescent outside, 2.5- 2.8 cm long, tube curved, inflated in upper half, all 5 lobes projecting forward, throat yellowish or light orange, remaining part bright orange or orange-scarlet, paler at base, crimson median patches on each lobes; stamens far exserted; capsules 8 - 16 cm.

**Habitat:** On tree trunks. **Flowering & Fruiting:** May – June.

**Exiccatus:** Lumami, Zunheboto, *SK Chaturvedi & Moaakum 0718*, August 14, 2007.

**Distribution:** Mokokchung and Zunheboto districts; Himalayas (Kumaun - Sikkim), Tibet.

*Aeschynanthus sikkimensis* (C.B. Clarke) Stapf, Bot. Mag. t. 8, 938. 1922; Fl. Assam 3: 392. 1939; Balak., Fl. Jowai 2: 345. 1983; Haridason & Rao, For. Fl. Meghalaya 2: 651. 1957; Grierson & Long, Fl. Bhutan 2(3): 1303. 2001; *A. maculata* Lindl., Clarke in Hook.f., Fl. Brit. India 4: 339. 1884.

Photoplate:

110 *Aeschynanthus* in Mokokchung and Zunheboto districts of Nagaland

Epiphytic; glabrous except corolla; leaves opposite, succulent, 5.5 - 10.5 x 2 - 3.2 cm, oblong-lanceolate, entire, acuminate, base cuneate; petiole 0.5 - 1.5 cm long; flowers  $\pm$  3 cm long; pedicel  $\pm$  0.8 cm, clustered, axillary and terminal; calyx 0.4 - 0.6 cm, purplish green, lobes as long as tube; corolla 2.5- 3 cm, curved, crimson-scarlet with dark purple longitudinal strips outside along the mid lobe; anthers pale purple, far exserted; filaments purple and hairy; styles shortly exserted; capsules 20 – 25 cm.

**Habitat:** On tree trunks. **Flowering & Fruiting:** August – September.

**Exiccatus:** Ungua, Mokokchung, *SK Chaturvedi & Moaakum 0828*, September 18, 2007.

**Distribution:** Mokokchung district, Nagaland; Himalayas (Nepal - Bhutan), Khasi Hills.

## DISCUSSION

After through review of literature it is confirmed that the above described five species of the genus *Aeschynanthus* W. Jack, viz., *A. bracteatus* Wallich ex DC., *A. micranthus* C. B. Clarke, *A. parasiticus* (Roxb.) Wallich, *A. parviflorus* (Roxb.) Wallich and *A. sikkimensis* (C.B. Clarke) Stapf have not been reported from the Zunheboto and Mokokchung district of Nagaland state. Therefore, the occurrence of these four species of genus *Aeschynanthus* in Mokokchung and Zunheboto districts have been reported as the extension of the distribution range in the Nagaland state of North- East India.

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## LITERATURE CITED

- Haridason, K. & Rao, R.R. 1987. *Forest Flora of Meghalaya*. Vol- II, Pp. 649- 652. Bishen Singh Mahendra Pal Singh, Dehradun.
- Jain, S.K. & Rao, R.R. 1977. *A Handbook of Field and Herbarium Methods*. Today & Tomorrow's Printers and Publishers, New Delhi.