

NOTES ON SOME RARE PLANTS FROM NONGPOH, K. AND J. HILLS, MEGHALAYA

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ABSTRACT

Descriptions of 11 rare species—*Salomonium aphylla* Griff., *Cotylanthera tenuis* Bl., *Oberonia parvula* K. et P., *Dendrobium terminale* Par. et Reichb. f., *Eria fragrans* Reichb. f., *E. biflora* Griff., *Bulbophyllum listeri* K. et P., *B. triste* Reichb. f., *Polystachya flavescens* Bl., *Taeniophyllum crepidiforme* (K. et P.) K. et P. and *Peristylus parishii* Reichb. f. gathered for the first time from Khasi and Jaintia Hills of Meghalaya, have been described along with geographical distribution.

INTRODUCTION

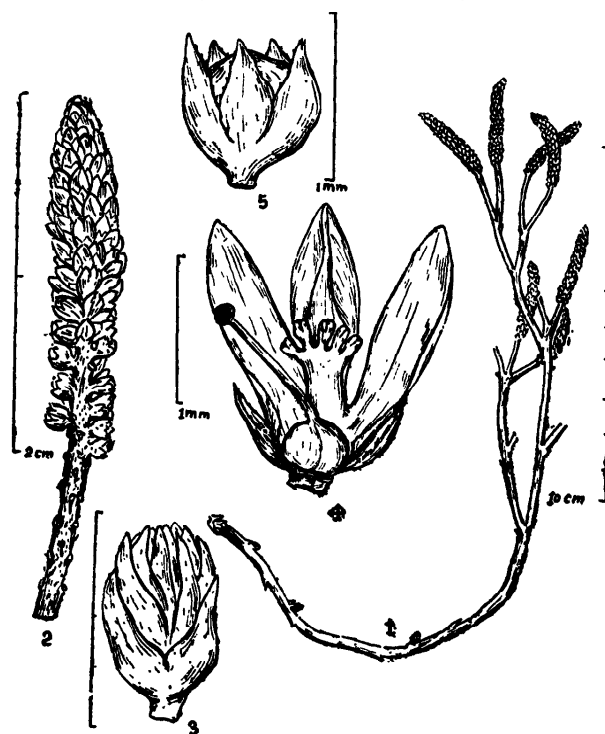
The northern face of the Khasi Hills has remained botanically obscure in contrast to the southern face which has received publicity due to the earlier location of the capital at Cherrapunji and the chronicles of J. D. Hooker, who with T. Thomson botanised for nearly six months in these areas, about a century ago. Hence, a detailed study of an area midway between Gauhati and Shillong was taken up to evaluate its botanical riches. The forests spread over an area of about 187 sq. km located between 25° 45' - 26° 0' N Latitude and 91° 45' - 92° 0' E Longitude at altitudes between 500-800 m, in the vicinity of Nongpoh, have been surveyed, during different seasons at intervals, from 1965 to 1969. The following selected rarities are now commented upon for their biological and geographical interest. It has to be noted that some of these like *Salomonium aphylla* Griff., *Cotylanthera tenuis* Bl. and *Taeniophyllum crepidiforme* (K. & P.) K. & P. need the searching eyes of a professional plant explorer, as they are quite inconspicuous, in consequence of their tiny size combined with unusual habitat. Further, the first two have a relatively short span of life of hardly a month. Attention to these aspects may reveal the existence of these up to now rarities, in more places, extending their range of distribution. Further, in the light of these discoveries, continued combing in these forests around Nongpoh will surely bring out new finds of significance in phytogeography.

POLYGALACEAE

Salomonium aphylla Griff. in Proc. Linn. Soc. 1: 221. 1844 et in Trans. Linn. Soc. 14: 112. 1845; Bennet, in Hk. f. Fl. Brit. India 1: 207. 1872.

This is the first record of this species from India. Previous reports are from Malacca, Tenasserim and Borneo.

Slender herbs; *stem* 10-25 cm tall, branching; *leaves* scale like; lower ones with axillary bulbils of imbricate scales; *inflorescence* a spike with congested flowers, 1.5-3 cm long, puberulous; *flowers* 2 mm; *sepals* 5, subequal, 0.75 × 0.5 mm, ovate, obtuse, erose at margins; *petals* 3, two narrowly lanceolate, 1.1 × 0.5 mm, the third keeled and clawed at base; *stamens* 5, monadelphous; *ovary* laterally compressed; *style* slightly arcuate; *stigma* globose; *cap-*



Figs. 1-5: *Salomonium aphylla* Griff. 1. Habit. 2. Portion of spike. 3. Vegetative bud. 4. Flower with the calyx and corolla split opened. 5. Fruit.

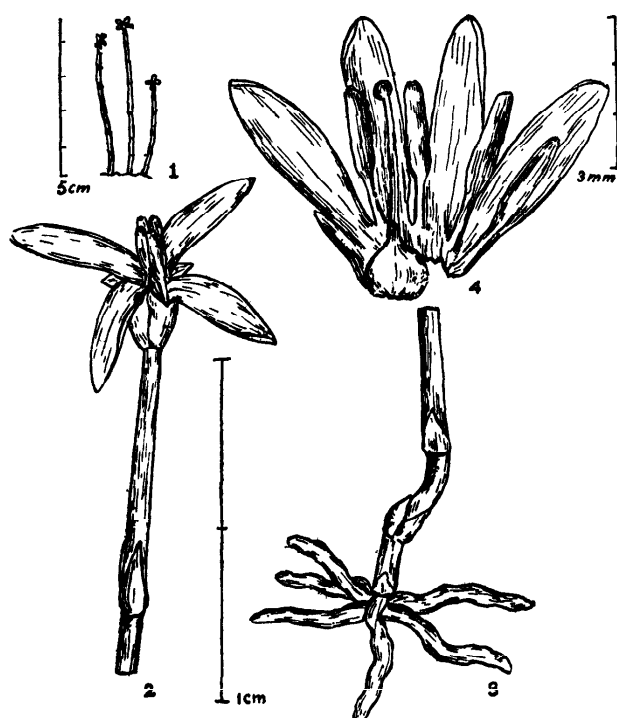
sules 0.75 cm long and a little broader, 2-ovuled, laterally compressed with a slightly accrescent sepals; *seeds* black (Figs. 1-5).

Rare, in shady places; Fls. & frts. Sept. *Joseph* 43684, Nongpoh-Noonmati, 18.9.65.

GENTIANACEAE

Cotylanthera tenuis Bl. Bijdr. 708. 1825. *C. paucisquama* C. B. Cl. in Hk. f. Fl. Brit. India 4: 94. 1883.

Blume (1825) originally described it from Java. Subsequently C. B. Clarke (1883) described on King's collection from Sikkim Himalayas. The present report of this interesting, rare species represent an eastward extension of its distribution from Sikkim.



Figs. 1-4: *Cotylanthera tenuis* Bl. 1. Habit. 2. Flower. 3. Root system. 4. Flower with the corolla split opened.

Small leafless herbs; stem white, 3-5 cm high, with slightly swollen nodes, glabrous; roots thick, sparse. Leaves scale like, 6-8 pairs, ovate lanceolate, obtuse, 2 mm long, erose at margins. Flowers solitary, 6 mm across; calyx deeply 4-lobed; lobes broadly ovate or triangular, 1.5 mm long, connate only at base, persistent and slightly accrescent; corolla 4-lobed; lobes 3.5-4 mm × 1 mm, ligulate, obtuse or slightly retuse, white, spreading, very slightly connate at base. Stamens 4, quite conspicuous with large, bright, yellow anthers. Anthers 2.25-3 mm long, oblong, poricidal; pores 1 or 2, terminal; stigma hemispheric. Ovary globose, 2-celled; ovules minute, numerous (Figs. 1-4).

Rare, in shady forest floor; Fls. Sept. *Joseph* 43664, Balaiba Tilla, 20.9.65.

ORCHIDACEAE

Oberonia parvula K. et P. in Journ. As. Soc. Beng. 64(2): 330. 1897 et in Ann. Roy. Bot. Gard. Cal. 8: 11. Pl. 6B, 1898.

After its first description from its type locality: Taesta valley, at Guru Bathaw (Sikkim), 500 m (1,500 ft.), this discovery now extends its distribution to the Khasi Hills.

My collections differ from the original description in having an arcuate inflorescence, instead of erect, very short bracteate scape instead of being half as long as the raceme and ebracteate; apex of the petal erose instead of entire.

Caespitose, acaulescent epiphytes; leaves 3-5, 0.5-3.0 cm long, narrowly lanceolate; inflorescence 8.0 cm long, arcuate, cylindric; scape short with a few sterile, scattered bracts near the top, but bare below; flowers dense, distinctly pedicellate, erect, 2.5 mm long, yellowish-brown; lateral sepal larger than the dorsal sepal, spreading, cupular; petals narrower, gland dotted, truncate at apex, erose; lip 1 × 1 mm, lateral lobes narrow, with sub-entire margins; lobules of the midlobe slightly bent forward, gland-dotted.

Epiphytic on slender branchlets of trees; rare. Fls. March, *Joseph* 45631, Umling, 16.3.66.

Dendrobium terminale Par. et Reichb. f. in Trans. Linn. Soc. 30: 149. 1874; Hk. f. Fl. Brit. India 5: 726. 1890; K. et P. in Ann. Roy. Bot. Gard. Cal. 8: 42. Pl. 55. 1898.

Records of its distribution in Sikkim at one end and Tenasserim at the other end is bridged by the present record of its occurrence in the intervening area.

Erect, caespitose, epiphytic, 10-15 cm high. Flowers yellowish white.

Fls. & frts. Jan.-Oct. *Joseph* 45635, Umling, 12.11.66; G. K. *Deka* 22793, 11.1.50, 23578, 25.9.51 & 23579, 6.11.52, from around Nongpoh.

Bulbophyllum listeri K. et P. in Journ. As. Soc. Beng. 64 (2): 334. 1897 et in Ann. Roy. Bot. Gard. Cal. 8: 66. Pl. 90. 1898.

The original description of this is based on a collection from 'Rumpti Lake, British-Bhutan 330 m (1,000 ft.)'; the author comments "It is one of the most curious of the whole genus; the flower of a dull lake colour". The present collection is undoubtedly referable to *B. listeri* K. et P. although it

exhibits some variations such as the flower as a whole being purplish with darker purple lip instead of a "dull lake colour"; tip of lateral sepal beak-like, bright yellow and diverging instead of obliquely truncate; the lateral petals distinctly bifid at tip with a sharp mucro in the shallow sinus as against being erose at apex; the lip lacks a central line along its entire length and hence a detailed description is given below.

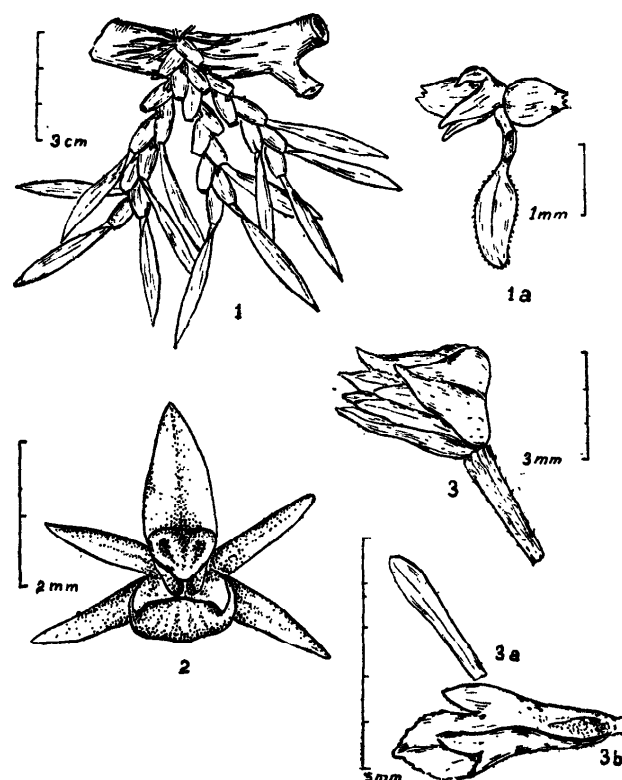
Epiphytic, dense, pseudobulbous, 5-10 cm long, profusely branching. *Pseudobulbs* 10 × 5 mm, ovoid to oblong, bead-like, closely appressed alternately. *Leaves* 3.0 × 0.5 cm, sessile, oblong to elliptic, acute at tip, dull green or pinkish-green. *Spikes* condensed, few-flowered, 3.0 mm long, from the base of both old and new pseudobulbs. *Flowers* 4 × 2 mm, blossoming one at a time. *Bracts* broadly ovate, membranous, gland-dotted. Dorsal sepal 2.5 × 1.0 mm, ovate to oblong, thick, 3-nerved; lateral sepals, 3.0 mm long, as broad as or a little broader than the dorsal sepal strongly adhering on the ventral margins except at the beak-like tips, concave, 3-nerved, tips yellow, finely ciliolate at margins; lateral petals very small, 0.75 × 0.5 mm, ovate, 1-nerved, thin, bidentate at tip, with a sharp mucro in the shallow sinus; lip 1.5 × 0.5 mm, stipitate, ligulate, 3-nerved, dark purple, more finely ciliolate at margins than in the sepals; column very short, prolonged into a foot, with 2 large, lanceolate, porrect, lateral-lobes, one on each side, and a much smaller one at the apex concealing the pollinia; capsules erect, sessile, 4.0 × 2.0 mm, ovoid to oblong, prominently 3-ridges (Figs. 1-1a).

Epiphytic on ultimate branchlets of large trees, often in association with other orchids like *Bulbophyllum hirtum* Lindl. *Oberonia parvula* K. & P.; Fls. & frts. March. *Joseph* 45162, Umling 16.3.66.

Bulbophyllum triste Reichb. f. in Walp. Ann. 6. 253. 1861; Hk. f. Fl. Brit. India 5: 768. 1890; K. & P. in Ann. Roy. Bot. Gard. Cal. 8: 73. Pl. 98. 1898.

The present discovery of the species and the recent report of its occurrence from Kumaon Himalayas (Bull. Bot. Surv. India 8: 93. 1966) establish the range of distribution from Burma to Western Himalayas through Sikkim. Our plants under cultivation in the National Orchidarium, Shillong from 1964, invariably bear three leaves per pseudobulb instead of two and also show variations in the foot being twice as long as the column and in the absence of a divided protuberance on the lip.

Pseudobulbs close, 2.5 cm broad, broadly ovoid,



Figs. 1-3b: 1. *Bulbophyllum listeri* K. et P.-Habit. 1a. Column with lateral sepals and lip. 2. *Taeniophyllum crepidiforme* K. et P.-Flower (Front view) 3. *Polystachya flavescens* (Bl.) J. J. Sm. -Flower (Lateral view); 3a. Lateral petal. 3b. Lip.

with a small leafy-scale when young. *Leaves* absent during flowering, 6.5-10.5 × 1.5-3.0 cm; scapes 1 or 2, erect, from the base of pseudobulb, 8 cm long, slender, with a few sheathing bracts; spikes 4 cm long, pendulous; *flowers* 7.0 mm long, dense, dull purple, fragrant; dorsal sepals about 4 × 2 mm broadly ovate, concave, obtuse at tip, finely papillose externally, 3-nerved; lateral sepals cohering along the lower margins 2.5-5 mm, thick, 3-nerved, projecting forward, finely papillose externally; petals 2.5 × 1.5 mm, hyaline, triangular, 1-nerved, much smaller than the dorsal sepal; lip 2 mm long, thick; column green.

Fls. April; fresh pseudobulbs with sprouting leaves in July. *Joseph* 45170, Nongpoh, 15.4.66.

Eria fragrans Reichb. f. in Bot. Zeit. 22. 415, 1864; Hk. f. Fl. Brit. India 5: 794. 1890; K. et P. in Ann. Roy. Bot. Gard. Cal. 8: 122. Pl. 168. 1898.

The previous reports being from Burma and Sikkim, the present collection establishes the link in its distribution.

Epiphytes; leaves 2 or 3, 35×4 cm; leaf sheaths 3.13×2.5 cm, conduplicate; *racemes* 2 or 3, lateral, drooping, pubescent; *flowers* lax, white, drooping, fragrant; bracts deciduous; *lip* shorter than the petals; side-lobes with pink or purple streaks; mid-lobe reflexed, with 3-parallel medium, wavy ridges and 2 short ones, one on either side at the junction of the lateral lobes.

In large clumps on accumulated humus-debris. Fls. & frts. Aug.-Nov. *Joseph* 37489, Balaiba Tilla, 31.7.64.

Eria biflora Griff. Notul. 3: 302. 1851; Hk. f. Fl. Brit. India 5: 800. 1890; K. et P. in Ann. Roy. Bot. Gard. Cal. 8: 117. Pl. 160. 1898.

The previous report of this species being from Burma and Sikkim, this record indicates the continuity of its distribution.

Caespitose, erect, epiphytes; *stems* clavate 8-12 cm long, 0.6 cm broad towards apex, quite narrow towards base; flower creamy white, two.

Fls. Oct. G. K. *Deka* s.n. (Acc. no. BSI-EC 35742). Umsaw, 27.10.54.

Polystachya flavescens (Bl.) J. J. Sm. Fl. Buit. 6: 284. f. 218. 1905; Holttum, Fl. Malaya 1: 546. 1. 161. 1957; Seid. et Smit. Orch. Thai. 2(2): 326. f. 248. 1960; Santapau et Kapadia, Orch. Bombay 186. Pl. 44. 1966. *P. wightii* Reichb. f. in Walp. Ann. 6: 640. 1863; Hk. f. Fl. Brit. India 6: 21. 1890. *P. purpurea* Wt. Ic. Pl. t. 1679-1851; Hk. f. loc. cit. *Onychium flavescens* Bl. Bijdr. 325. 1825.

This tropical genus mainly represented in Africa by several species of brightly coloured flowers, was hitherto known by this unimpressive species in South India only. This record of its presence in Khasi Hills extends its Indian distribution further North-East. The specimens studied exhibit minor variations which have been incorporated in the description below.

Tufted, erect, small, epiphytes; roots numerous, thick, flat, crowded. *Leaves* 2 or 3, distichous, 6.14×2.5 cm, oblong subacute at tip, sheathing, jointed at base; lower leaf sheath-like with reduced lamina; sheaths keeled; *inflorescence* terminal, erect, sparsely hairy, 15 cm long, simple or with short side branches; scapes compressed, narrowly winged, *bracts* long, narrow, sheathing; *flowers* small, greenish-yellow, 7×10 mm long, sparsely hairy externally, nonresupinate, half opened; dorsal sepal oblong to ovate, 3.5×2.0 mm, thick; lateral sepals broadly triangular, 5×3 mm, acute at tip, erect, attached to the foot forming a mentum; petals

very narrow spathulate, 3×5 mm, much narrower than the sepals; *lip* 5.0 mm long, clawed, 3-lobed, superior, with median, purple streaks, callus median, pinkish, oblong, mealy-pubescent inside except towards the periphery of the midlobe and sidelobes; sidelobes erect, oblong, midlobe large, orbicular, crenulate at margins, reflexed at tip or not, subretuse at tip or obtuse; column short; foot long, incurved, purple, pollinia 4, in pairs, pyriform, discoid, sessile, cohering at base; capsules ellipsoid to oblong, 1.2 cm long, with marescent perianth, ridged, shortly stalked; bracts persistent (Figs. 3, 3a & 3b).

Fls. & frts. June-Aug. G. K. *Deka* s.n. (Acc. No. BSI-EC 35403, 35405, 35427), Nongpoh-Barapani, 9.8.50; *Saikia* s.n. (Acc. No. BSI-EC 35404), Nongpoh 17.7.54; *Joseph* 45164, Nongpoh, 16.3.66.

Taeniophyllum crepidiforme (K. et P.) K. et P. in Ann. Roy. Bot. Gard. Cal. 8: 245. Pl. 325. 1898. *Sarcocylus crepiformis* K. et P. in Journ. As. Soc. Beng. 64 (2): 340. 1897.

This is the first record of the species from outside its type locality, viz. Sikkim-Himalayas.

Small, stemless, leafless, epiphytes; flowers creamy white; lip cup-like (Fig. 2).

Rare; found on the ultimate branches of small tree; Fls. July, *Joseph* 45619, Nongpoh, 23.7.66.

Peristylus parishii Reichb. f. in Trans. Linn. Soc. 30: 139. 1874. *Habenaria parishii* Hk. f. Fl. Brit. India 6: 161. 1890; K. et P. in Ann. Roy. Bot. Gard. Cal. 8: 323. Pl. 426. 1898.

The previous report of this species being from S. Andamans, Upper Burma and Sikkim, the present collection establishes the continuity of its distribution, through the Khasi hills.

Terrestrial, erect, tuberous herbs, 20-30 cm high; *flowers* greenish white in terminal spike; *lip* 5×3 mm, narrowed towards the base, trilobed beyond the middle; spur 2.5 mm long, projecting downwards, grooved on the abaxial side.

In general habit it resembles *P. goodyeroides* and is often mistaken for it.

Fls. June. *Sharma* 21698 A, Nongpoh, 28.6.41.

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