

Pecteilis rawatii (Orchidaceae), a New Species from India

P. KUMAR¹ AND J.F. VELDKAMP²

¹ Department of Habitat Ecology, Wildlife Institute of India, Post Box # 18,
Dehradun - 248001, Uttarakhand, India.

Email: pankajsahani@rediffmail.com

² National Herbarium of The Netherlands, Leiden University, Post Box 9514,
2300 RA, Leiden, The Netherlands.

Abstract

Pecteilis rawatii, sp. nov. (Orchidaceae) is described and compared to its nearest ally, *P. triflora*.

Introduction

The genus *Pecteilis* Rafin. (Orchidaceae) is represented by 5 to 12 species distributed from India to South China and Malesia. In India there are 4 species (Misra, 2007; Govaerts *et al.*, 2008). It is similar to *Habenaria* Willd. and *Peristylus* Blume on the basis of the separate stigmatic lobes, but not freely extending from the column as in *Habenaria*, nor adnate to the hypochile as in *Peristylus*. The rostellum is characteristic in forming a broad band above the stigmatic lobes.

While studying the orchids of Chotanagpur (Kumar *et al.*, 2007), a species that turned out to be *Pecteilis triflora* (D. Don) T. Tang & F.T. Wang was collected (*P. Kumar 051062, WII*). *Pecteilis triflora* was originally described based on a Wallich's collection from Nepal (Original material: *Wallich 7035, A, K!* IDC microfiche 7394; *CAL, L!). but is known to be distributed also in India (Chotanagpur plateau and Uttarakhand) and Bangladesh (Govaerts *et al.*, 2009).

During our research we came across a publication by Hooker f. (1895), who, based on an illustration by Mr. G.C. Dass, described what he thought was an aberrant form of *Habenaria triflora* D. Don (the basionym of *P. triflora*). He noted that it was a plant of unknown origin, "presumably flowered in the Calcutta Botanic Garden" (Fig. 1) and remarked that it represented a many-flowered, gigantic state of *H. triflora*, mentioning some other differences as well. He did not describe it as new as he thought that the best course would be to refer it doubtfully to *H. triflora*.

This publication was largely overlooked until Pradhan (1976, 1979) described *Platanthera triflora* (D. Don.) Pradhan var. *multiflora* Pradhan based on the report. Unfortunately this trinomial was invalidly published as

the diagnosis was in English, and not in Latin as is required after 1 January 1935. We now agree that it is a taxon different from *Pecteilis triflora*, and after having seen living material of *P. triflora*, it became clear that this is not a mere variety, but a quite distinct species (Table 1).

Pecteilis rawatii P. Kumar & Veldk., sp. nov.

Syn. *Platanthera triflora* (D. Don.) Pradhan var. *multiflora* Pradhan, Indian Orchids: Guide Identif. & Cult. 1:57 (1976), *inval., anglice; ibid.* 2:680 (1976), *sine descr.*

Pecteilis triflorae (D. Don) T. Tang & F.T. Wang *similis, foliis bracteatisque fasciculatis, floribus plus quam 3, labii lobis lateralibus apice rotundato, margine integra, lobo medio lobis lateralibus longiore, columna latiore differt. Pecteilis triflora folia breactaeaque distantiter dispersae, flores haud plus quam 3, labii lobi laterales apice acuto, margine crenulata, lobo medio lobis lateralibus multo breviore, columna quadrata gaudet.* – **Typus:** Hooker f., *Ann. Roy. Bot. Gard. (Calcutta)* 5: t. 99. 1895. **Figs. 1 & 3.**

Plant terrestrial, herbaceous, erect with stout **stem**. **Leaves** many, green, glabrous, single veined, densely placed in the lower half on the plant, base sheathing, blade ovate, acute, margins entire. Leaves smaller and narrower upwards, gradually decreasing in size, becoming bract-like. Inflorescence terminal, short and dense, erect. Floral bracts green, glabrous, many, single veined, base slightly sheathing the ovary, ovate, acute, margins entire, longer than ovary. **Flowers** 9, pure white, densely placed. Sepals subequal in size, midvein longitudinally ridged on the outer side, with two veins on either side. Dorsal sepal ovate, apex obtuse, slightly notched. Lateral sepals broadly ovate, apex obtuse. **Petals** linear, 1-veined, slightly constricted in the lower half. Labellum trilobed, partition of lobes extending till the centre of the lower half of labellum; lateral lobes broadly ovate, gradually constricting towards the base, with a transverse basal callus, entire, apex rounded; midlobe linear, distinctly longer than the lateral lobes, 1-veined, apex acute; spur with a wide opening in the hypochile, gradually tapering and then again broadening towards the apex, much longer than ovary. **Column** concave; rostellum forming a broad transverse band above the broad, slightly concave stigmatic lobes. **Anther** locules obpyriform, diverging towards the apex of the column. **Pollinia** oblong, apex acute, caudicle thin, viscidium present (Fig. 1).

Distribution. India, possibly once cultivated in Calcutta, original provenance unknown.

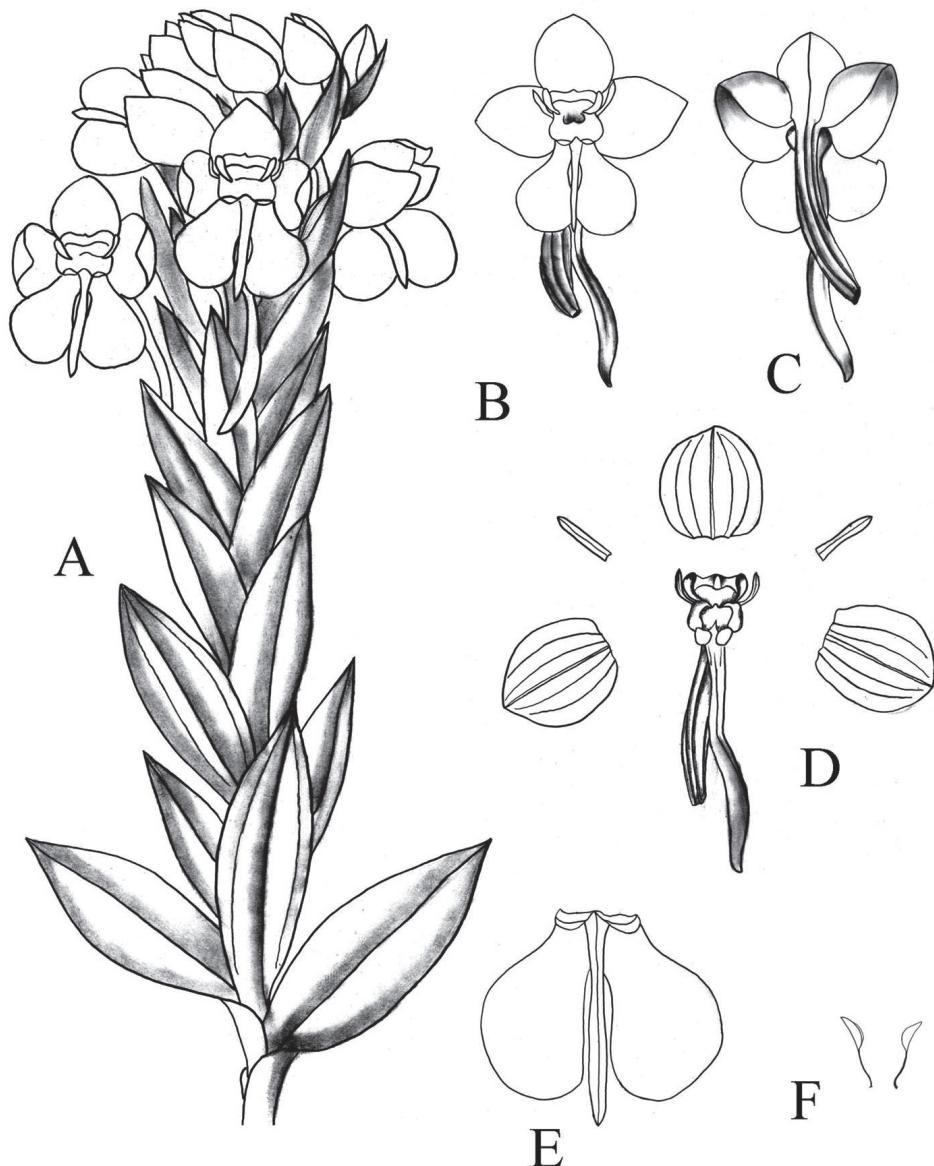


Figure 1. *Pecteilis rawatii* P. Kumar & Veldk. A. Plant; B. Flower (front view); C. Flower (dorsal view); D. Dissected flower and column; E. Labellum; F. Pollinia; (illustration redrawn from Hooker f., 1895 by P. Kumar).

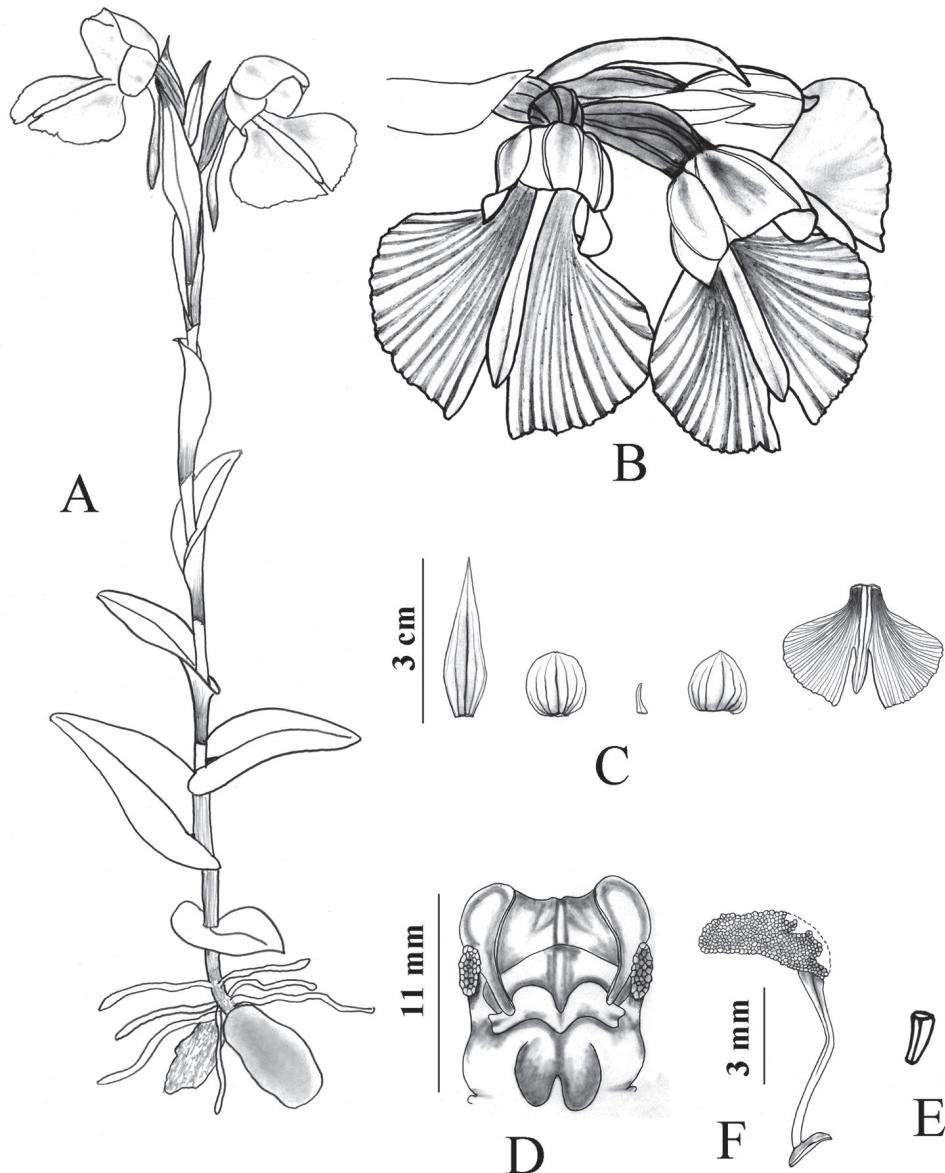


Figure 2. *Pecteilis triflora* (D. Don) T. Tang & F.T. Wang. A. Plant; B. Flower; C. Dissected flower (floral bract, dorsal sepal, lateral petal, lateral sepal and labellum); D. Column; E. Pollinia; F. Single pollen (based on *P. Kumar* 051062, WII). (Drawn by P. Kumar).

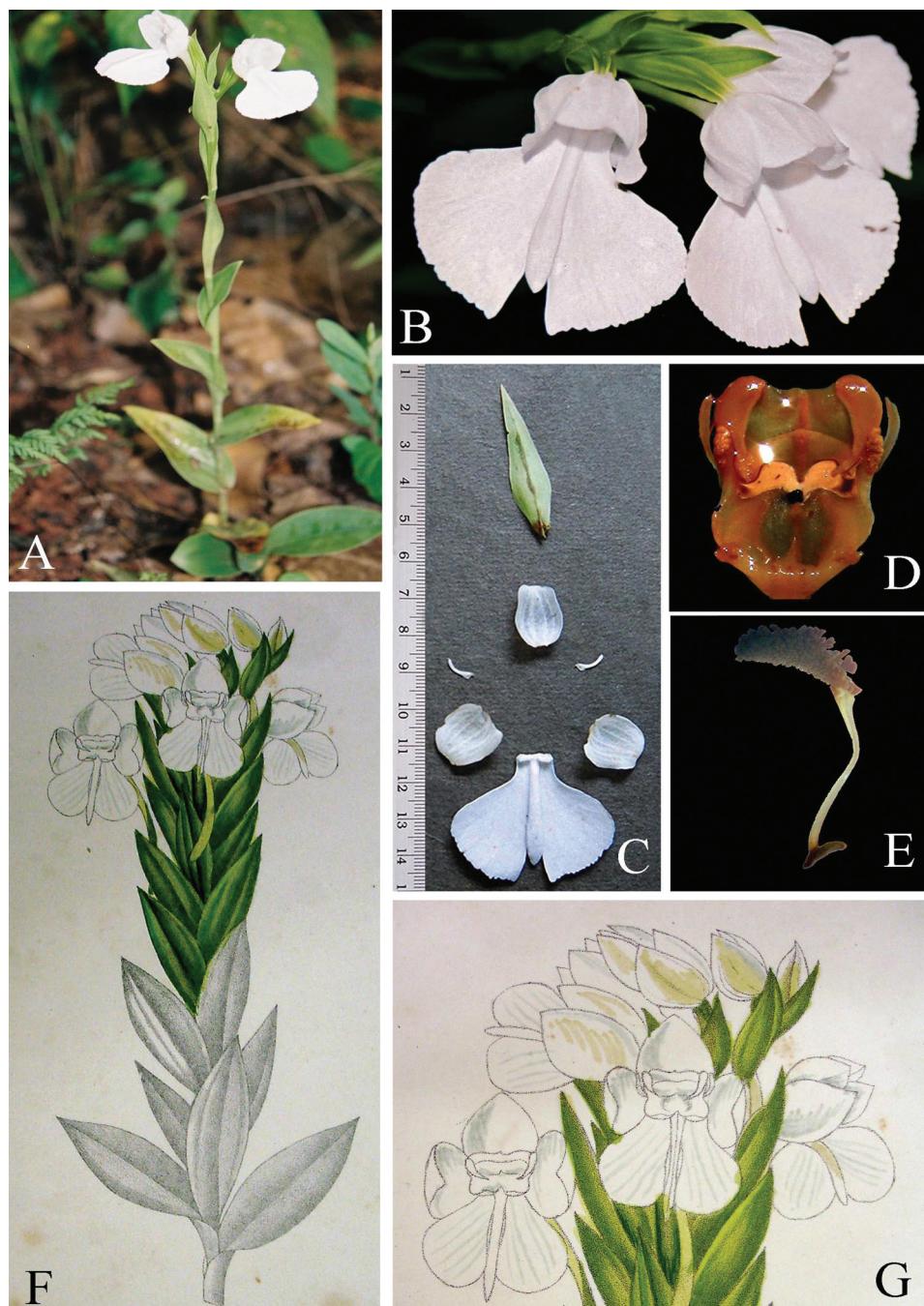


Figure 3. *Pecteilis triflora* (D. Don) T. Tang & F.T. Wang (A-E). A. Habit; B. Close up of flower; C. Dissected flower; D. Column; E. Pollinia. *Pecteilis rawatii* P. Kumar & Veldk. (F-G). F. Habit; G. Close-up of flower [A-E: based on P. Kumar 051062, WII, photos by P. Kumar; F & G, courtesy of Singapore Botanic Gardens].

Etymology. Named after Prof. Dr. Gopal Singh Rawat, Wildlife Institute of India (WII), who is one of the leading phytotaxonomists and ecologists of India and a source of inspiration for his students including the first author and colleagues.

Table 1. Differences between *P. rawatii* (Fig. 1) and *P. triflora* (Fig. 2).

Character states	<i>Pecteilis rawatii</i>	<i>Pecteilis triflora</i>
Leaves	Densely placed, 5 or 6, apex acute but not sharply pointed.	Scattered on the stem, many, apex sharply pointed_acute.
Inflorescence	ca 9 flowered	1-3 flowered
Flower	Sepals and petals widely spread, each with two lateral veins on each side of the midrib. Base of lateral sepals oblique.	Sepals and petals forming a hood, each with three lateral veins on each side of the midrib. Base of lateral sepals truncate.
Labellum	Midlobe much longer than the side lobes. Margins of lateral lobes entire and apex rounded. Base of midlobe broadly cuneate.	Midlobe (much) shorter than the lateral lobes. Margins of lateral lobes crenulate and apex acute. Base of midlobe elongated and shortly attenuate.
Column	Column broader towards the upper side.	Column more or less square

Acknowledgements

The authors wish to thank the Mr. P.R. Sinha, Director (WII); Dr. G.S. Rawat (WII); Dr. C. Sathish Kumar, Coordinator, All India coordinated research project on the Taxonomy of Orchids; Dr. J.R. Bhatt, Director, GOI-MOEF; Dr. D. Scherberich (LYJB); Mr. P. Boyce, Kuching, Sarawak, Malaysia; Dr. P. Cribb, Dr. J.J. Wood and Renata Borosova (K) for translations from the Latin, provision of digital images of type materials and valuable suggestions. The authors are also thankful to Dr. Jana Leong-Škorničková, Singapore Botanic Gardens (SING), for her valuable suggestions and also for providing the images of colour plates from Hooker (1895).

References

- Don, D. 1825. *Prodromus florae nepalensis*: 25. J. Gale, London.
- Govaerts, R., M.A. Campacci, D.H. Baptista, P. Cribb, A. George, K. Kreutz and J. Wood. 2009. *World Checklist of Orchidaceae*. The Board of Trustees of the Royal Botanic Gardens, Kew. Published on the Internet; <http://www.kew.org/wcsp/> accessed on 10 June 2009; 14:10 IST.
- Hooker, J.D. 1890. Orchidaceae, p. 142. In: *The Flora of British India* 6. L. Reeve & Co, Brook nr Ashford.
- Hooker, J.D. 1895. A century of Indian orchids. *Annals of the Royal Botanic Gardens (Calcutta)* 5: 66, t. 99.
- Kumar, P., Jalal, J.S. and Rawat, G.S. 2007. Orchidaceae, Chotanagpur, State of Jharkhand, India, checklist 3, 4: 297-304.
- Misra, S. 2007. *Orchids of India, a glimpse*. Bishen Singh Mahendra Pal Singh. Dehradun
- Pradhan, U.C. 1976. Indian orchids. *Guide to identification and culture* 1: 57. U.C. Pradhan, Kalimpong.
- Pradhan, U.C. 1979. Indian orchids. *Guide to identification and culture* 2: 680. U.C. Pradhan, Kalimpong.

