Taiwania, **52**(4): 307-314, 2007

Orchidaceous Additions to the Flora of China and Vietnam (II)

Paul Ormerod[1]

(Manuscript received 3 July, 2007; accepted 8 September, 2007)

ABSTRACT: Continuing literature and herbarium studies of Chinese and Vietnamese orchids have revealed a variety of new and noteworthy floristic information. One species is newly recorded for the flora of China, one for Yunnan Province, China and one is newly recorded for the flora of Vietnam. One new synonym is proposed in the genus *Oberonia*. Five new species are proposed, viz. *Epigeneium forrestii, Liparis brunnea, L. rockii, L. superposita* and *L. yuana.*

KEY WORDS: Orchidaceae, Additions, new species, China, Vietnam.

INTRODUCTION

The present paper is mainly the result of herbarium and literature studies conducted at the Harvard University Herbaria (A, AMES, GH) and Kew. All of the new records and species derive from materials collected in the first half of the 20th century. These relatively older specimens show that the examination of neglected herbarium material is just as important as ongoing fieldwork in assessing the biodiversity of a nation's flora.

Epigeneium Gagn.

This is a genus of about 40 species distributed in tropical Southeast Asia (NE India to Taiwan) and in the western part of Malesia (Malaysia, W Indonesia, Philippines). The genus is very similar to *Dendrobium* Sw. and may once again be merged with it. There are 10 species (4 endemic) in China and 5 species (2 endemic) in Vietnam. I add below a fifth endemic taxon to the flora of China.

Epigeneium forrestii Ormerod, *sp. nov.* Fig. 1

Type: China – Yunnan, N'Maikha-Salwin Divide, 1830 m, September 1919, *G. Forrest 18830* (holotype: E!; isotype: K!).

Affinis E. treutleri (Hook. f.) Ormerod *sed carina labello ad apicibus biangulatis (non oblique truncatis) differt.*

Creeping and spreading epiphytic or lithophytic herb. Rhizome terete, occasionally branching, covered in tightly tubular sheaths 2-2.5 cm long, rooting from under pseudobulbs, 0.25 cm thick. Pseudobulbs subcylindric-fusiform, bifoliate, 6-9.5 cm apart, 3-5.8 cm long, 0.7-0.8 cm thick. Leaves oblong-ligulate, minutely and obtusely bilobed, subcoriaceous, 5-9.5 cm long, 1.7-2.35 cm wide. Inflorescence one-flowered; peduncle short, hidden by 2.5 cm long sheathing bracts. Pedicellate ovary terete, 2.8 cm long. Flowers deep purplish-crimson. Dorsal sepal broadly ovate-lanceolate, subacute, 21.5 mm long, 8 mm wide. Lateral sepals broadly ovate-lanceolate, acute, 20.5-25 mm long, 9-10 mm wide, forming with the columnfoot a mentum 9 mm long. Petals linear-ligulate, acute, 20-21 mm long, 2.5-3 mm wide. Labellum trilobed, 20-22 mm long, medially with subsimilar laminate carinae which terminate on the base of the epichile, outer two keels divided in lower three-quarters before fusing in apical quarter, apices biangulate; hypochile obdeltate-obcordate, 8 mm long medially, 10.5 mm wide across sidelobes, free part of sidelobes obliquely elliptic, obtuse, 3 mm long medially; epichile suborbicular, 12 mm long, 12.5-13 mm wide. Column semicylindric, 9-10 mm long; columnfoot 6-7 mm long.

Distribution: China (Yunnan). Habitat: on rocks and trees by streams.

Notes: This species is externally identical to *E. treutleri* (Hook. f.) Ormerod [Syn.: *E. yunnanensis* Tsi], a taxon now known to occur in Sikkim, Bhutan, Myanmar and China. The two taxa can be separated by the shape of the keels on the labellum. In *E. treutleri* the lateral keels are most prominent and are obliquely truncate apically whilst the median keel is very low. In *E. forrestii* all three keels are similar in size and shape in the upper half of the callus and each one terminates in a biangulate manner.

Liparis L. C. Rich.

This genus (in the broad sense) probably has about 400-450 pantropical, subtropical and temperate

1. P. O. Box 8210, Cairns 4870, Queensland, Australia. Email: wsandave@bigpond.net.au

NATIONAL CENTRAL LIBRARY ROC

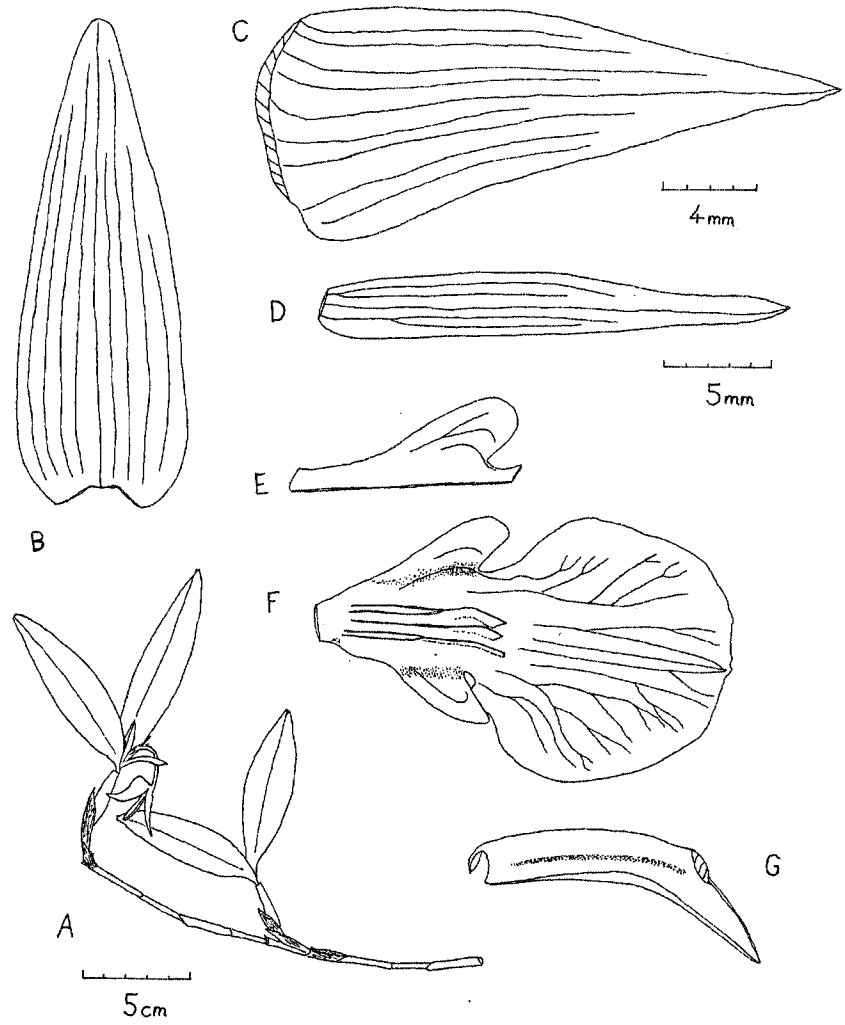


Fig. 1. *Epigeneium forrestii*. A: Plant. B: Dorsal sepal. C: Lateral sepal. D: Petal. E: Lateral lobe spread. F: Labellum. G: Column. A, BDEF and CG to respective scales. CG drawn from isotype, rest from holotype.

species. Recent molecular investigations by Cameron (2005) suggest that some terrestrial and all conduplicate-leaved epiphytic species should be segregated from a narrowly defined *Liparis*. This approach was partly accepted by Cribb (in Pridgeon et al., 2005) who accepted two genera of mostly Asiatic epiphytic species, namely *Alatiliparis* Szlach. and *Stichorkis* Thouars. I have however preferred to adopt a conservative approach and therefore treat *Liparis* in the broad sense since barely any authoritative information has been published on the vegetative structures that will ultimately be used for generic division.

Taking into account proposals in the present paper, there are about 50 (14 endemic) Chinese species and 47 (14 endemic) Vietnamese species.

Liparis anatina Szlachetko, Fragm. Fl. Geobot. 38, 2: 454, f. 3, 1993.

Type: Laos – near Nape, *Delacour s. n.* (holotype: P).

Distribution: Laos; Vietnam.

Specimen examined: Vietnam – Tonkin, Tam Dao Massif, 1000 m, December 1930, *A. Petelot 5428* (AMES).

Notes: The above new record for Vietnam is kept among specimens that are regarded as possible isosyntypes of *L. balansae* Gagn. at AMES. *Liparis anatina* is indeed similar to *L. balansae* in having an anther cap shaped like a duck's bill but it differs in having an obovate, broadly apiculate labellum with discoid calli. In typical *L. balansae* the labellum is suborbicular with a tabular, retuse to emarginate callus.

Szlachetko (1993) also considered the semiconnate lateral sepals in the type of *L. anatina* to be diagnostic of the species but this feature would be unique in the entire *L. bootanensis* Griff. complex and it does not occur in the Vietnamese specimen. Possibly the lateral sepals were just stuck together during pressing and not truly connate.

NATIONAL CENTRAL LIBRARY ROC

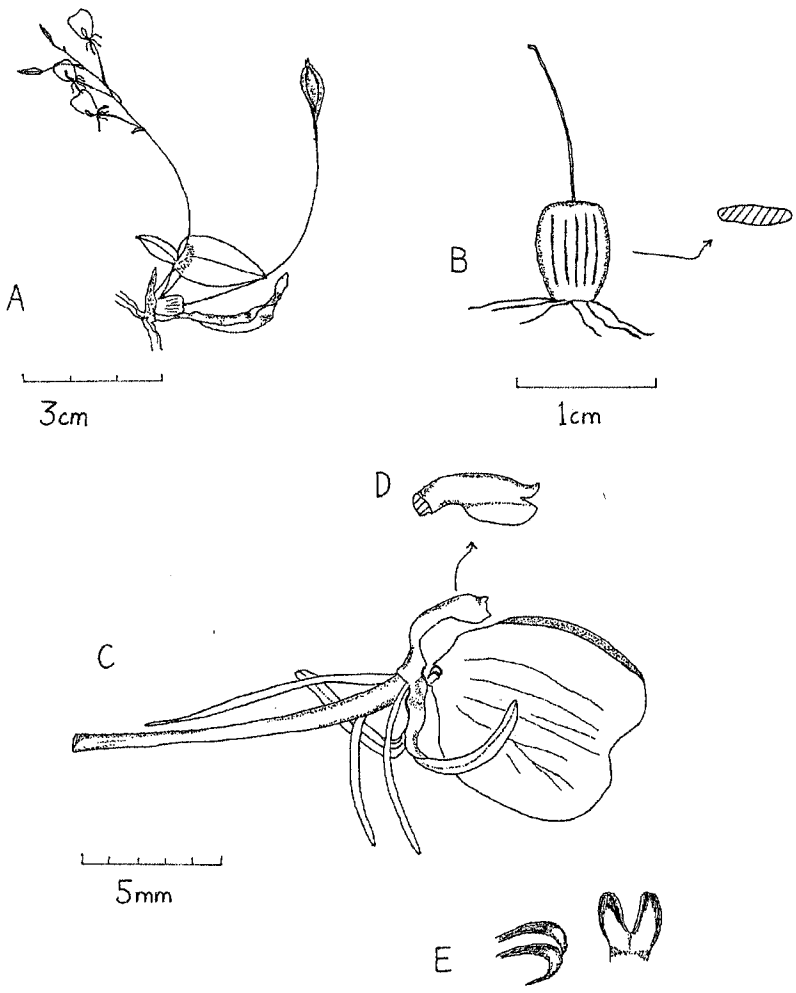


Fig. 2. *Liparis brunnea*. A: Plant. B: Pseudobulb with old inflorescence. C: Flower. D: Column apex. E: Labellum callus from side and above. A, B and C to respective scales. D and E not to scale. Drawn from holotype.

Liparis brunnea Ormerod, *sp. nov.* Fig. 2

Type: China – Guangdong: Sam Kok Shan, Ch'an Woh T'ung Village, Ts'ung-hwa (Tsung-fa) District, 16-29 March 1935, *W.T. Tsang 24983* (holotype: AMES!).

Affinis L. pygmaea King & Pantl. *sed sepalis dorsalis linearibus (non oblongis), labello subquadratis (non oblongo-obovatis) et emarginatis (non apiculatis) differt.*

Pseudobulbs broadly elliptic-subquadrate, somewhat truncate, laterally compressed, 1-2-leaved, enclosed by the bases of the leaves and 3 sheaths, 5-7 mm long, 3-5 mm wide. Leaves ovate-elliptic to suborbicular, subacute, 10-17.5 mm long, 7-11 mm wide. Inflorescence arising with the developing pseudobulbs and leaves, erect, 15-65 mm long; peduncle narrowly winged, 15-39 mm long; rachis laxly 1-5-flowered, 0-26 mm long; floral bracts ovate-lanceolate, acute, to 0.8 mm long. Pedicellate ovary terete, 7.5-11 mm long. Flowers brown. Dorsal sepal linear, subacute, reflexed, 8.3 mm long, 0.7-0.8 mm wide. Lateral sepals linear, obtuse, possibly parallel, 1-veined, 7 mm long, 1 mm wide. Petals linear, subacute, reflexed, 7 mm long, 0.5 mm wide. Labellum subquadrate, emarginate, at the base with a fleshy bilobed callus, 8.5 mm long, 7 mm wide. Column slender, arcuate, narrowly winged apically, 4 mm long.

Distribution: China (Guangdong). Habitat: in swampy thickets.

Notes: This species is related to *L. pygmaea* King & Pantling from Sikkim (NE India) but it differs in its flowers having a linear (not oblong) dorsal sepal and a subquadrate, emarginate, entire (not oblong-obovate, apiculate, obscurely dentate) labellum. Another similar species is *L. nana* Rolfe from Vietnam but it differs in having oblong (not linear) sepals and an apiculate, dentate (not emarginate, entire) labellum with a low hippocrepiform (not thickly V-shaped) callus.

NATIONAL CENTRAL LIBRARY ROC

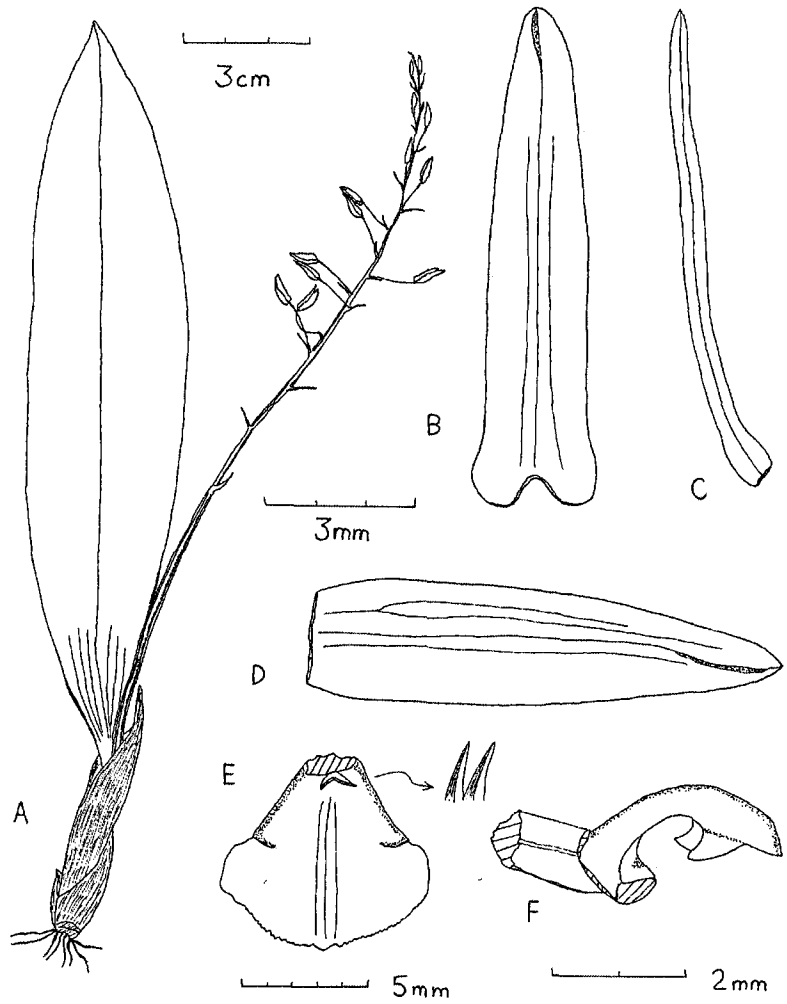


Fig. 3. *Liparis rockii*. A: Plant. B: Dorsal sepal. C: Petal. D: Lateral sepal. E: Labellum. F: Column. A, BCD, E and F to respective scales. Drawn from holotype.

Liparis oppositifolia Szlach., Fragm. Fl. Geobot. 38, 2: 458, f. 6, 1993.

Type: Cambodia – Mekong, Stung Treng, 1866 to 1868, *C. Thorel 2201* (holotype: P).

Distribution: Cambodia; Laos; Vietnam?; China.

Specimen examined: China – Yunnan, Che-li Hsien, Dah-meng-lung, 1100 m, August 1936, *C.W. Wang 77825* (AMES).

Notes: This species has flowers that seem indistinguishable from *L. deflexa* Hook.f. but it differs from the latter in having spreading, broadly elliptic-suborbicular, sessile leaves. In *L. deflexa* the leaves are suberect, broadly ovate-lanceolate and more attenuate basally. According to the collector of the new Chinese record, the plant is locally common under dense woods and it has green flowers. Also the floral bracts reach 11 mm long as opposed to the 5.3 mm long recorded by Szlachetko (1993).

Liparis pumila Averyanov, Updated Checkl. Orch. Vietnam: 85, f. 7, 2003.

Type: Vietnam – Hoa Binh Prov., Da Bac District, SW of Doan Ket Village, 900-1000 m, 29 March 2001, *N.T. Hiep, L. Averyanov, N.T. Vinh & D.T Doan HAL 317* (holotype: HN; isotype: LE).

Distribution: Vietnam; China (Hainan, Yunnan).

Specimen examined: China – Yunnan, Salwin Valley, Dara, 25 June 1938, *T. T. Yu 22035* (AMES).

Notes: This small flowered (sepals 2.5 mm long) species is somewhat similar to *L. cespitosa* (Lam.) Lindl. in general aspect but it has a trilobed (not entire) labellum with two (not one) widely separated suprabasal calli. It is here newly recorded for Yunnan Province, China.

Liparis rockii Ormerod, *sp. nov.* Fig. 3

Type: China – Yunnan, between Mau Lo and Lungling, October to November 1922, *J.F. Rock 7157* (holotype: AMES!).

Affinis L. bootanensis Griff. *sed lobulis callus labello cornutis (non semidisciformis ad complanato-digitatis) differt.*

NATIONAL CENTRAL LIBRARY 國家圖書館 ROC

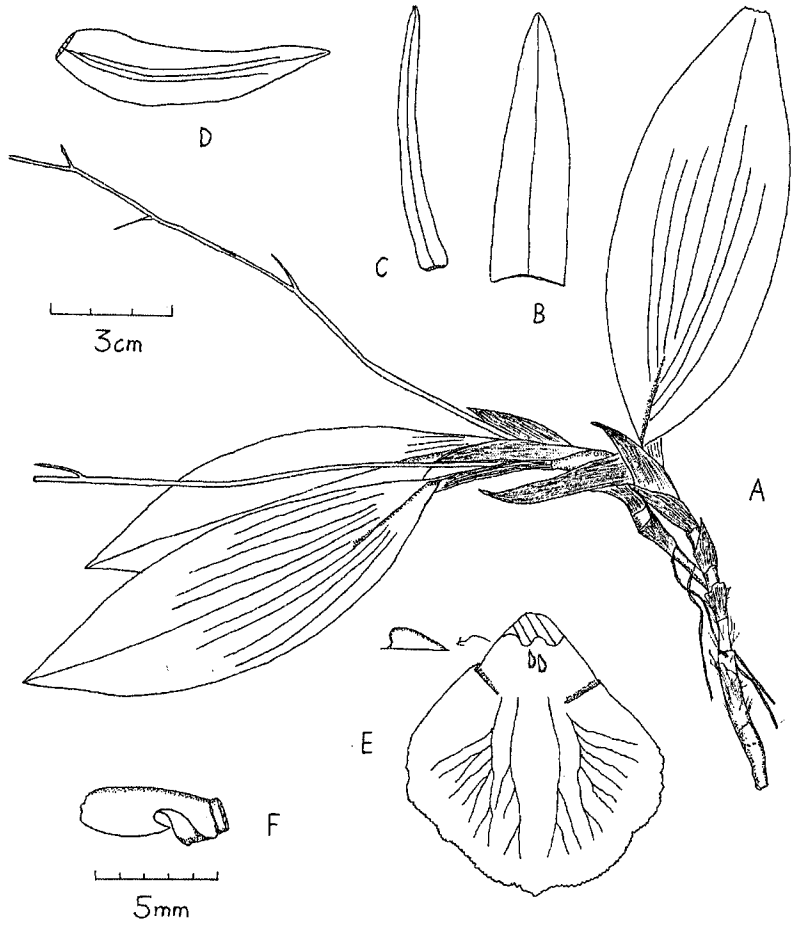


Fig. 4. *Liparis superposita*. A: Plant. B: Dorsal sepal. C: Petal. D: Lateral sepal. E: Labellum. F: Column. A and B-F to respective scales. Drawn from holotype.

Lithophytic herb. Roots slender, terete, several, 0.3-1 mm thick. Pseudobulbs approximate, unifoliate, ovoid-subcylindric, 2.5-4 cm long, basally 1 cm thick, apically 0.4 cm thick; covered by several subacuminate sheaths, the largest three 2.5-7 cm long. Leaves oblong-ligulate to ligulate-oblanceolate, acute, thin, with several prominulous parallel veins below, petiolate, 17.7-24.6 cm long, 3.4-4.4 cm wide; petiole 1.8-3.2 cm long. Inflorescence terminal, narrowly winged, 18-20.8 cm long; peduncle 8-8.8 cm long; rachis laxly ca. 20-flowered, 10-12 cm long; floral bracts lanceolate, acute, to 8 mm long, 1.8 mm wide. Pedicellate ovary subcylindric, to 13 mm long. Flowers orange. Dorsal sepal oblong-lanceolate, obtuse, 9 mm long, 2.4 mm wide. Lateral sepals oblong-lanceolate, subacute, 8.7 mm long, 2.3 mm wide. Petals linear-lanceolate, acute, 9 mm long, 1 mm wide. Labellum broadly obovate spread, in the natural state with a semitubular basal third expanded into a transversely elliptic lamina, basal margins entire but becoming irregular-suberose toward the apex, basally with a single callus divided into two narrowly conical lobes, ca. 7.5-8 mm long, ca. 7.5-8 mm wide. Column semiterete, arcuate, subapically with triangular, subfalcate, subacute wings, 3 mm long.

Distribution: China (Yunnan).

Notes: This species is related to *L. bootanensis* Griff. from which it may be recognized externally by its relatively broader leaves (3.4-4.4 vs. 1.1-3.3 cm) and labellum which has a callus with narrowly conical lobes (not with half disc-shaped to flattened finger-shaped lobes of the callus). The labellum also differs in being broadly obovate (rather than oblong-obcuneate) and broadly rounded (not more or less truncate).

King and Pantling (1898) reported *L. bootanensis* to have two tooth-like (i.e. dentiform) calli but this is clearly incorrect since their own illustration shows the callus to have a tabular base with each side having an oblong, obtuse extension.

Liparis superposita Ormerod, *sp. nov.* Fig. 4

Type: China – Yunnan, Mar-li-po: Hwang-jin-in, 1400-1800 m, 6 November 1947, *K.M. Feng 12963* (holotype: AMES!).

NATIONAL CENTRAL LIBRARY ROC

Affinis L. bautingensis Tang & Wang *sed pseudobulbis longioribus (2-2.3 vs. 1.2 cm), foliis latioribus (3-4.05 vs. 1.6-1.8 cm) et columna floribus recto (non curvatis) differt.*

Rhizome stout, woody, rooting at nodes, terete, 0.4 cm thick. Roots slender, terete, 0.5-1 mm thick. Pseudobulbs 3-5 cm apart, arising from the base of the previous pseudobulb or arising from the apex of the pseudobulb next to the inflorescence, unifoliate, 2-2.3 cm long, 0.5-0.6 cm thick; covered by 1-3 subacuminate sheaths, 1.3-5 cm long. Leaves narrowly elliptic, acute to subacuminate, with several prominulous parallel veins below, petiolate, 8.3-11.5 cm long, 3-4.05 cm wide; petiole 1.7-2.7 cm long. Inflorescence terminal, narrowly winged, 14.1-17.2 cm long; peduncle 4.1-11.5 cm long; rachis laxly 4-6-flowered, 10 cm long; floral bracts lanceolate, acute, 5-10.5 mm long, 1-1.8 mm wide. Pedicellate ovary narrowly winged, ca. 21 mm long. Flowers green. Dorsal sepal oblong-ligulate, subacute, 10 mm long, 3 mm wide. Lateral sepals obliquely oblong-ligulate, subacute, subfalcate, 10.5 mm long, 2.5 mm wide. Petals linear, acute, 11.5 mm long, 1 mm wide. Labellum suborbicular-rhombic, margins of upper half minutely irregular-erose, callus consisting of a pair of separated, parallel calli which are obliquely elliptic in lateral view, 10-11 mm long, 10 mm wide. Column straight, upper half with two broad-based wings which each have a short triangular, subfalcate lobe basally, 4.8-5 mm long.

Distribution: China (Yunnan). Habitat: in mixed forests.

Notes: This species appears to be the plant that is illustrated as *L. bautingensis* Tang & Wang in Chen (1999). It however differs from *L. bautingensis* (as described by Tang & Wang, 1974) in having longer (2-2.3 vs. 1.2 cm) pseudobulbs, much broader (3-4.05 vs. 1.6-1.8 cm) leaves, longer (10 vs. 5 cm) rachis and a longer (4.8-5 vs. 4 mm), straight (not arcuate) column.

Another similar species is *L. balansae* Gagn. but it differs in having approximate (not distant) pseudobulbs, narrower (1-2.8 vs. 3-4.05 cm) leaves and a thick, tabular, retuse to emarginate, single labellum callus. In *L. superposita* the labellum callus is composed of two separate parallel lobes.

Liparis yuana Ormerod, *sp. nov.* Fig. 5

Type: China – Yunnan, Shunning, Hila, Wumlung, 2650 m, 10 July 1938, *T.T. Yu 16668* (holotype: AMES!).

Affinis L. stenoglossa Par. & Rchb.f. *sed bracteis floribus brevioribus (ad 5.5 vs. ad 7.5 mm), labello latioribus (3-3.5 vs. 2.2 mm) et ecallosus (vs. callosus) differt.*

Epiphytic (but probably terrestrial normally) herb. Roots slender. Pseudobulbs subglobose, approximate, 2(-3?)-leaved, ca. 1 cm long, 0.8 cm thick. Leaves ovate-lanceolate, obtuse to acute, thin, 6.5-7.3 cm long, 2.2-3.15 cm wide; petiole and sheath 3-5 cm long. Inflorescence winged, 16.5-18.2 cm long; peduncle 6-7 cm long; rachis at first laxly flowered, later becoming sublaxly flowered, many-flowered, 10.5-11.2 cm long; floral bracts lanceolate, acute, 1-5.5 mm long. Pedicellate ovary 6-8 mm long. Flowers light purple. Dorsal sepal ligulate-lanceolate, subacute, 3-veined, 6 mm long, 1.9 mm wide. Lateral sepals obliquely oblong-lanceolate, subacute, parallel, 3-veined, 5.5 mm long, 1.8 mm wide. Petals linear, conduplicate above base, 1-veined, 5.5 mm long, 0.5 mm wide. Labellum obcunate, apex shortly bylobulate - emarginate, above the base with a dark patch that represents a much reduced callus, 5 mm long, 2 mm wide basally, 3-3.5 mm wide near the apex. Column shortly arcuate, with subquadrate wings near the apex, 2.8 mm long.

Distribution: China (Yunnan).

Notes: This species appears to be most similar to *L. stenoglossa* Par. & Rchb.f. from Myanmar but it has floral bracts that are usually 2-3 mm (up to 5.5 mm) long and the labellum is broader (3-3.5 vs. 2.2 mm) and it seems to lack a callus. In *L. stenoglossa* the floral bracts are up to 7.5 mm long (averaging 3.5-5.5 mm) and the labellum has a prominent bicornute basal callus.

Oberonia Lindl.

A genus of 300 species distributed from Africa to Tahiti. Most of the species are found in tropical Southeast Asia. There are 27 species (7 endemic) in China and 28 (6 endemic) in Vietnam.

Oberonia langbianensis Gagn., Bull. Soc. Bot. Fr. 79: 168, 1932.

Type: Vietnam – Langbian, Dran, 14 October 1924, *Evrard 1402* (holotype: P!).

Oberonia dalatensis Gagn., Bull. Soc. Bot. Fr. 79: 168, 1932. syn. nov.

Type: Vietnam – ravine behind the Gendarmerie, 19 August 1924, *Evrard 1160* (holotype: P!).

Distribution: Thailand; Vietnam.

Notes: Comparison of the holotypes of *O. langbianensis* and *O. dalatensis* shows the two entities to be conspecific. The former is based on an

NATIONAL CENTRAL LIBRARY

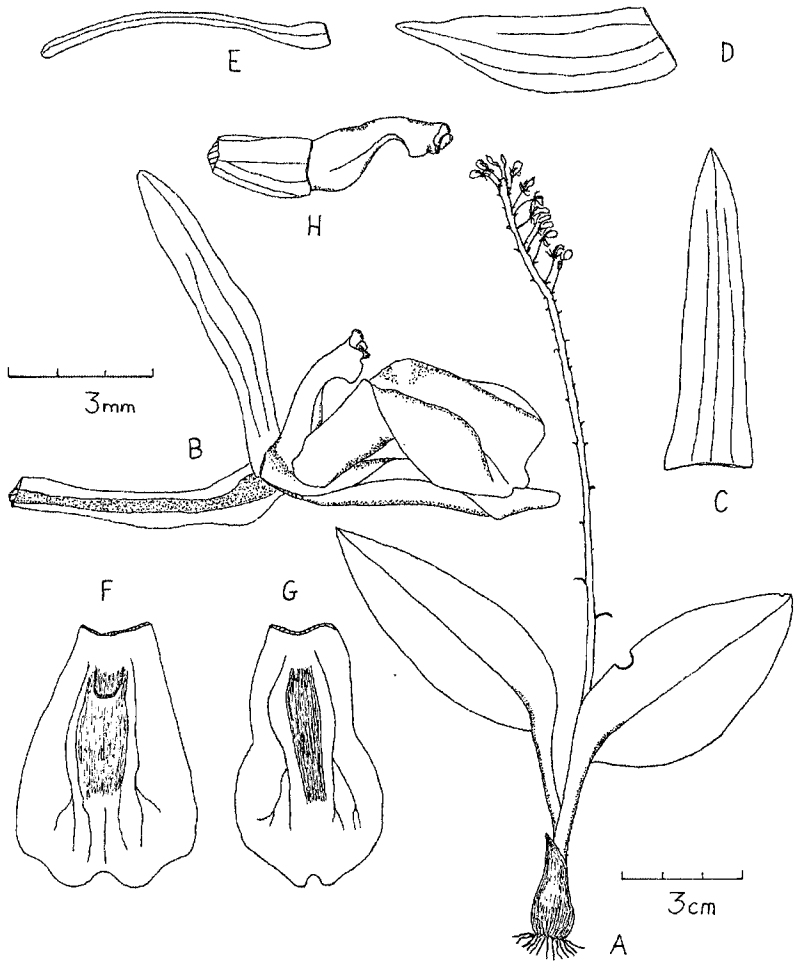


Fig. 5. *Liparis yuana*. A: Plant. B: Flower minus lateral sepal and petals. C: Dorsal sepal. D: Lateral sepal. E: Petal. F & G: Labellum, two variations. H: Column. A and B-H to respective scales. Drawn from holotype.

adult plant with mature flowers whilst the type of *O. dalatensis* is a small plant with an inflorescence of large buds.

ACKNOWLEDGEMENTS

I wish to thank herbarium and library staff at the Harvard University Herbaria (A, AMES, GH) and Kew (K) for their help and hospitality. The Royal Botanic Garden, Edinburgh (E) and the Museum National D'Histoire Naturelle, Paris (P) kindly loaned material.

LITERATURE CITED

Cameron, K. M. 2005. Leave it to the leaves. A molecular phylogenetic study of Malaxideae (Epidendroideae, Orchidaceae). American J. Bot. **92**: 1025-1032.

Chen, S.-C. 1999. *Liparis*. In: Chen, S.-C. (ed.), Flora Reipublicae Popularis Sinicae **18**: 53-104. Science Press, Beijing, PROC.

Cribb, P. J. 2005. Malaxideae. In: Pridgeon, A. M., P. J. Cribb, M. W. Chase and F. N. Rasmussen (eds.), Genera Orchidacearum **4**: 453-486. Epidendroideae (Part one). Oxford University Press, Oxford, UK.

King, G. and R. Pantling. 1898. The orchids of the Sikkim Himalaya. Ann. Roy. Bot. Gard. Calc. **8**: 1-342 + 448 Plates.

Szlachetko, D. L. 1993. Seven new species of the genus *Liparis* (Orchidaceae) from Asia. Fragm. Flor. Geobot. **38**: 451-460.

Tang, T. and F.-T. Wang. 1974. Plantae novae Orchidacearum Hainanensium. Acta Phytotax. Sin. **12**: 35-49.

NATIONAL CENTRAL LIBRARY ROC

中國及越南蘭科植物誌增補 (二)

Paul Ormerod[1]

(收稿日期：2007 年 7 月 3 日；接受日期：2007 年 9 月 8 日)

摘　　要

持續進行中國及越南蘭科植物文獻及標本研究發現了一些新的及值得注意的訊息。本文報導三個中國植物誌的新紀錄種及一個越南植物誌的新紀錄種。莪白蘭屬有一新的同義名，另外有五個新種分別為 *Epigeneium forrestii*，*Liparis brunnea*，*L. rockii*，*L. superposita* 和 *L. yuana*。

關鍵詞：蘭科植物、新增補、新種、中國、越南。

1. P. O. Box 8210, Cairns 4870, Queensland, Australia. Email: wsandave@bigpond.net.au

NATIONAL CENTRAL LIBRARY 國家圖書館 ROC