

Orchidaceous Additions to the Floras of China and Myanmar

Paul Ormerod

P.O. Box 8210, Cairns 4870, Queensland, Australia. Email: wsandave1@bigpond.com

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ABSTRACT: Herbarium and literature studies of orchids from China and Myanmar reveals three new species, seven new records, sixteen new combinations and two reductions. The new taxa are *Conchidium dickasonii, Dendrobium cobra* and *Epipactis dickasonii.* New combinations are proposed in the genera *Conchidium* (9), *Pecteilis* (1) and *Pinalia* (6). *Habenaria rodgeri* and *Zeuxine chenkangensis* are respectively found to be synonyms of *H. rhodocheila* and *Z. flava*.

KEY WORDS: China, Myanmar, new species, records.

INTRODUCTION

The present paper is a continuation of efforts to update the floras of China and Myanmar (e.g. Ormerod, 2010; Ormerod and Kumar, 2009). The orchid flora of China has recently benefited from a comprehensive English language account (Wu et al., 2009), conversely the orchid flora of Myanmar lacks a modern treatment. Thus all the new records are from Myanmar whilst only one new combination, one new taxon and one reduction affect the Chinese flora.

TAXONOMIC TREATMENTS

Bulbophyllum Thouars.

A pantropical genus of about 1900 species. In China there are almost 100 species whilst in Myanmar there are so far about 76 species, including the two new records added below.

Bulbophyllum nigrescens Rolfe, Bull. Misc. Inf. Kew:158, 1910.

Type: THAILAND, Chiangmai, Doi Suthep, A.F.G. Kerr 84 (Holotype: K).

Distribution: Myanmar; SW China?; Thailand; Vietnam.

Specimen examined: MYANMAR, Myitkyina District, 4.8 km below Black Rock, 1525 m, 7 May 1948, *Kermode 17332* (AMES).

This and the next species belong to section *Hirtula* Ridl., a group monographed by Vermeulen (2002). A photograph labelled *B. secundum* Hook.f. by Lwin (2004) is I think most likely representative of *B. nigrescens*.

Bulbophyllum scaphiforme J.J. Verm., Gard. Bull. Singap. 54:84, f.31, 2002. Type: Thailand, Doi San Yao, G. Seidenfaden & T. Smitinand GT 7464 (Holotype: C).

Distribution: Myanmar; SW China; Thailand; Vietnam.

Specimen examined: MYANMAR, Kengtung State, Mong Pawk, 1220 m, 23 April 1940, *Dickason 9693* (AMES).

This taxon is related to *B. nigrescens* and like it has almost black coloured flowers but it is easily recognised by the remarkable saccate apex of the lip.

Conchidium Griff.

A genus of about fifteen species that was previously included in a broadly construed Eria Lindl. It has two centres of speciation, one in southern India and Sri Lanka, and one in Myanmar where seven (four endemic) taxa can be found. The plants are generally small epiphytic herbs with clusters of circular, pseudoterminal depressed pseudobulbs and inflorescences of one to few glabrous flowers. Four species have been recorded from China but I believe C. japonicum (Maxim.) S.C. Chen & J.J. Wood is better placed in *Pinalia* (see transfer) whilst the placement of C. rhomboidale (Tang & Wang) S.C. Chen & J.J. Wood in the genus requires further investigation.

Apart from the description of *C. dickasonii*, I have transferred to *Conchidium* various taxa from throughout its range.

Conchidium dickasonii Ormerod, sp. nov. Fig. 1.

Type: MYANMAR, Haka, 1980 m, 2 April 1938, F.G. Dickason 7359 (Holotype: AMES).

Affinis C. lacei (Summerh.) Ormerod sed mento floribus longioribus (7.8-8 vs. 5 mm), labello longioribus (17 vs. 10-13 mm), apicibus hypochilo callosis (vs. ecallosis) et discus epichilo villosibus differt.





Fig. 1. *Conchidium dickasonii* - A. plant; B. flower; C. dorsal sepal; D. petal; E. hypochile (keels and cross-section arrowed); F. epichile; G. column. A, B-F and G to respective scales. Drawn from holotype.



Epiphytic herb. Roots slender, terete, pubescent. Pseudobulbs caespitose, circular-hexangular, depressed-truncate, 2-8 mm tall, 5-11 mm wide. Leaves probably two, not seen. Inflorescence pseudoterminal, glabrous, one (rarely two) flowered; peduncle slender, 17-30 mm long; peduncular sheath tubular, inflated, obliquely truncate with a small apiculus, 1.5 mm long; floral bract widely ovate-deltate, acute, carinate, 2.5-5 mm long, 3.5-5 mm wide. Pedicellate ovary terete with a ribbed, obconic ovary, glabrous, 11.5-12 mm long. Flowers pink, lip red, inside with a yellow streak. Dorsal sepal oblong-lanceolate, obtuse, 5-veined, midvein carinate, 10 mm long, 3.9 mm wide. Lateral sepals obliquely ovate-lanceolate, subacute, 10.8-11 mm long, 11 mm wide basally, 4 mm wide medially, forming with the columnfoot a conical, obtuse, 7.8-8 mm long mentum closed at the front for 2.5-3 mm. Petals elliptic, obtuse, 3-veined, lateral veins branched, 10 mm long, 4.5 mm wide. Labellum trilobed, ca. 17 mm long, 7 mm wide; keels 3, glabrous basally but then papillose-pubescent, finally minutely crenulate before merging into a single fleshy V-shaped callus at the apex of the hypochile; hypochile unguiculate-obovate, medially 11 mm long, 7 mm wide, sidelobes oblong-elliptic, obtuse, ca. 3.5 mm long, 3.1-3.2 mm wide; epichile subquadrate, emarginate, disc villose, 6 mm long medially, 6.5 mm wide. Column erect, 1 mm long; stigmatic opening oblong, large, ca. 1 mm long; anther cap truncate with ocular depressions on its face, ca. 1 mm long; columnfoot at right angle to ovary, 7.8-8 mm long.

Distribution: Myanmar.

Vernacular name: Zulai.

Etymology: Named after F.G. Dickason, collector of the type.

This attractive little plant resembles *C. lacei* but differs in its flowers having a longer mentum, longer labellum that has a callus at the apex of the hypochile and a large villose patch on the epichile.

The following combinations are required in *Conchidium*:

Conchidium braccatum (Lindl.) Ormerod, comb. nov.

Basionym: Dendrobium braccatum Lindl., Gen. Sp. Orch. Pl.:75, 1830.

Distribution: India; Sri Lanka.

Conchidium conicum (Summerh.) Ormerod, comb. nov.

Basionym: *Eria conica* Summerh., Bull. Misc. Inf. Kew:308, 1929.

Distribution: Myanmar.

There is an isotype of this taxon (Parkinson 5288) at AMES. The same number was cited under *Eria obesa* Lindl. by Seidenfaden (1982) but the two taxa are widely different in habit though the flowers are superficially similar.

Conchidium exile (Hook.f.) Ormerod, comb. nov.

Basionym: Eria exilis Hook.f., Fl. Brit. Ind. 5:788, 1890.

Distribution: India.

Kumar and Manilal (1994) add *Porpax chandrasekharanii* Bhargavan & Mohanan to the synonymy of this species.

Conchidium lacei (Summerh.) Ormerod, comb. nov.

Basionym: Eria lacei Summerh., Bull. Misc. Inf. Kew:308, 1929.

Distribution: NE India; Myanmar; Thailand.

Conchidium nanum (A. Rich.) Ormerod, comb. nov.

Basionym: Eria nana A. Rich., Ann. Sci. Nat., Bot. s.2, 15:19, 1841.

Distribution: India.

Kumar and Manilal (1994) add *Eria muscicola* (Lindl.) Lindl. var. *ponmudiana* Mohanan & Henry to the synonymy of this species.

Conchidium reticosum (R. Wight) Ormerod, comb. nov.

Basionym: Eria reticosa R. Wight, Ic. Pl. Ind. Or.:t.1637, 1851.

Distribution: India.

Conchidium spirodelum (Averyanov) Ormerod, comb. nov.

Basionym: *Eria spirodela* Averyanov, Bot. Zhurn. (Moscou & Leningr.) 73, 1:101, 1988.

Distribution: Vietnam.

Conchidium summerhayesianum (Hawkes & Heller) Ormerod, comb. nov.

Basionym: *Eria summerhayesiana* Hawkes & Heller, Lloydia 20, 2:132, 1957.

Distribution: Myanmar.



Conchidium wildianum (Rolfe ex Downie) Ormerod, comb. nov.

Basionym: Eria wildiana Rolfe ex Downie, Bull. Misc. Inf. Kew:377, 1925.

Distribution: Thailand.

Dendrobium Sw.

The upcoming treatment of this genus for the Genera Orchidacearum project will treat it as a broader concept, including such genera as *Epigeneium* Gagnep. and *Flickingeria* Hawkes. Such an entity has about 100 species in China and Taiwan and 120 species in Myanmar.

The species described below belongs to section *Sarcopodium* Benth., a group already with eleven (four endemic) taxa in China and Taiwan, and four (none endemic) in Myanmar.

Dendrobium cobra Ormerod, sp. nov. Fig. 2.

Type: CHINA, Yunnan, Fugong Xian, Yaping Xiang, between the Nujiang and Shibali logging station, ca. 16 km W of the Nujiang, Nujiang to Yaping Pass road, E side of Gaoligong Shan, 2180 m, 7 May 2004, *Gaoligong Shan Biodiversity Survey (H. Li et al.) 20364* (Holotype: GH!).

Species nova subsimilis D. tsangianum (Ormerod) Schuit. & P.B. Adams sed pseudobulbi bifoliatis, teretibus (non unifoliatis, subcylindrico-fusiformis) et callus labello tricarinatis (non bicallosis) differt.

Epiphytic herb. Rhizome long-creeping, terete, to 42 cm long, 0.15 cm thick, with 3-5 tubular, 1.2 cm long sheaths that do not overlap. Roots terete, glabrous, 1-3 under each pseudobulb. Pseudobulbs terete, base obliquely adnate to rhizome, rest erect, bifoliate, 25-40 mm long, 2-3 mm thick; young pseudobulbs clothed by a thin, ovate-deltate sheath to 33 mm long. Leaves lanceolate to oblong-lanceolate, minutely inequally obtusely bilobed, erect, thinly coriaceous, 55-90 mm long, 11-22 mm wide, base with a short petiole to 6 mm Inflorescence uniflorous, pseudoterminal; long. peduncle very short, hidden between three thin 15-20 mm long sheaths. Pedicellate ovary narrowly terete-clavate, glabrous, 22 mm long. Flowers greenish-yellow. Dorsal ovate-lanceolate, sepal subacute, 22 mm long, 10 mm wide. Lateral sepals obliquely ovate, acute, recurved midway, 22 mm long, 12.5 mm wide, forming wide the columnfoot a mentum 10 mm long. Petals obliquely elliptic-lanceolate, subacute, 24 mm long, 8.5 mm wide. Labellum trilobed,

thickly tricarinate on hypochile, keels shallowly sulcate, midkeel most prominent apically, 20-21 mm long, 18 mm wide; hypochile broadly obovate, base curved, 9-10 mm long, 18 mm wide, sidelobes shortly elliptic-obovate, obtuse, 5.9 mm wide; epichile broadly obovate, emarginate, 10-11 mm long, 15 mm wide. Column with broad wings continuous along the columnfoot, 8 mm long, 8 mm wide across wings; columnfoot forming an acute angle with the ovary, cymbiform, 8 mm long.

Distribution: China (Yunnan).

Etymology: Named for the resemblance of the column and its wings to the flared hood of cobra snakes. The word cobra comes from the Portuguese *cobra de capello* (snake with a hood), but ultimately the word itself derives from the Latin *colubra*, also meaning snake.

This species superficially resembles its Chinese congener *D. tsangianum* (Ormerod) Schuit. & P.B. Adams but differs in having erect, terete, bifoliate (not subcylindric-fusiform, prostrate, unifoliate) pseudobulbs and flowers with a tricarinate (not bicallose) callus. The labellum is somewhat rigid or plastic-like and cannot be flattened without risk of breaking it.

Epipactis Zinn.

A genus in which numerous species have been proposed but it is thought only about 20 are valid. (Chen et al., 2009). China and Taiwan have ten species (two endemic) whilst three or four species (none endemic) are believed to occur in Myanmar. The species described below is related to Thai and Vietnamese taxa and is the first endemic entity recorded from Myanmar.

Epipactis dickasonii Ormerod, *sp. nov.* Fig. 3.

Type: Myanmar, Maymyo, 10 April 1933, F.G. Dickason 6122 (Holotype: AMES!).

Affinis E. flava Seidenf. *sed carinis hypochilo fusiformis, bilabiatis (non recto-bicarinatis) et callus posterioris deltatis, verrucosis (vs. ecallosis) differt.*

Erect, presumably terrestrial herb. Roots and rhizome not seen. Stem terete, laxly 7-9-leaved, 22-26 cm long, 0.100-0.225 cm thick; internodes 1.9-3.6 cm long. Leaves ligulate-lanceolate to lanceolate (lowest leaf ovate-lanceolate, 3.5 cm long, 1.5 cm wide), acute, 5.6-12 cm long, 0.60-1.55 cm wide; sheathing base tubular, 0.15-2.4 cm long. Inflorescence pubescent, 12.5-15.7 cm long; peduncle evaginate, 5.5-6.1 cm long; rachis laxly 5-6-flowered, 7-9.6 cm long; floral





Fig. 2. *Dendrobium cobra* - A. plant; B. dorsal sepal; C. lateral sepal; D. petal; E. labellum; F. flower minus segments. A and B-F to respective scales. Drawn from holotype.



bracts ovate-lanceolate, acute, 1.1-2.8 cm long, 0.45-0.80 cm wide. Pedicellate ovary clavate, pubescent, 1.4-1.5 cm long. Flowers externally pubescent, resupinate, colour unknown. Dorsal sepal oblong-cymbiform, acute, midvein carinate externally, ca. 13.5 mm long, 4.5 mm wide. Lateral sepals obliquely ovate-lanceolate, acute, midvein carinate externally, 14.5 mm long, 5.5 mm wide. Petals ovate basally, upper half oblong-lanceolate, subacute, midvein thickened and finely pubescent externally, ca. 13 mm long, 5 mm wide. Labellum trilobed, ca. 11.5 mm long, 7.8 mm wide; hypochile widely obdeltate with obtuse, forward pointing sidelobes, basally with a delate, verrucose callus, medially with a fusiform, bicarinate callus, ca. 5.5 mm long, 7.8 mm wide; epichile movably attached to hypochile, trilobulate, upper half oblong, obtuse, ca. 6 mm long, 4 mm wide. Column semiterete, slightly curved, 4.8 mm long (minus anther cap); anther cap rectangular, back strongly ridged medially, 2.8-2.9 mm long.

Distribution: Myanmar.

Etymology: Named after F. G. Dickason, collector of the type.

This species is most closely related to the Thai *E*. *flava* Seidenf. but differs from it in having two calli on the hypochile. One callus is triangular and verrucose and is probably a pollen mimic, the other is a fusiform pair of acute keels. In *E. flava* there is only one pair of parallel, obtuse keels.

Another similar species is the Vietnamese *E. atromarginata* Seidenf. but it differs in having a pair globular verrucose calli on the hypochile and the epichile is simple (not trilobulate).

Habenaria Willd.

A worldwide genus commonly said to have 600 species. About 54 species have been accepted for the floras of China and Taiwan whilst Myanmar has about 36 species. A number of entities described from Myanmar remain to be clarified.

Habenaria rhodocheila Hance, Ann. Sci. Nat., Bot. s.5, 5:243, 1866.

Type: CHINA, Canton, North River, 15 July 1864, Sampson in Herbarium Hance 11332 (Holotype: BM!).

Habenaria rodgeri W.W. Sm. & Banerji, Rec. Bot. Surv. India 6:34, 1914 syn. nov.

Type: Myanmar, Ruby Mines Division, Mogok, 305 m, September 1910, *Rodger 201* (Holotype: CAL; Isotype: K!).

Distribution: Malaysia; Thailand; Myanmar; Laos; Cambodia; Vietnam; SE China; Philippines.

Specimens examined: MYANMAR, Mindat area, 900 m, 21

September 1956, *Kingdon Ward 22700* (BM); Chin Hills, Falam, 1830 m, 1923, *Daun 98* (K); Maymyo, 1065 m, no date, *Samuel 13582* (K).

Study of an isotype of *H. rodgeri* shows it to be a synonym of this variable but attractive plant.

Neottia Guett.

A genus of about 70 species, it was formerly restricted to holomycotrophic ("saprophytic") taxa but now includes the autotrophic plants previously referred to *Listera* R.Br. In China and Taiwan 35 species (23 endemic) but only six species (two endemic) in Myanmar, including the new record listed below.

Neottia dentata (King & Pantl.) Szlach., Fragm. Fl. Geobot., Suppl. 3:117, 1995.

Listera dentata King & Pantl., Ann. Roy. Bot. Gard. Calc. 8:257, t.342, 1898.

Type: INDIA, Sikkim, Jongri, 3960 m, *R. Pantling* 452 (Holotype: CAL; Isotypes: BM, K, W).

Distribution: NE India; Myanmar.

Specimen examined: MYANMAR, N Triangle, Tama Bum, 2895 m, 26 June 1953, *Kingdon Ward 21058* (AMES, BM).

This species is easily recognised by the deeply dentate margins of the lip.

Pecteilis Raf.

A genus of 5-10 large-flowered plants allied to *Habenaria*. There are three species in China and now four in Myanmar.

Pecteilis ophiocephala (W.W. Sm.) Ormerod, comb. nov.

Basionym: *Habenaria ophiocephala* W.W. Sm., Not. Roy. Bot. Gard. Edinb. 13-14:208, 1921. Synonym: *Platanthera ophiocephala* (W.W. Sm.) Tang & Wang, Bull. Fan. Mem. Inst. 10:29, 1940.

Type: MYANMAR, Laktang, 2135 m, July 1919, *Kingdon Ward 3336* (Holotype: E!; Isotype: E!).

Distribution: Myanmar.

I place this species in *Pecteilis* due to its 1-2-flowered inflorescence, large flowers, long spur, broad column with widely separated anthers, large stigmatic area and widely triangular rostellum.

Pinalia Lindl.

A genus formerly included in an inclusive *Eria* Lindl. and said (Chen et al., 2009) to have about 160 species with 17 (six endemic) in China and Taiwan, and





Fig. 3. *Epipactis dickasonii* - A. Plant; B. flower; C. dorsal sepal; D. petal; E. lateral sepal; F. flower minus tepals; G. labellum. A and B-G to respective scales. Drawn from holotype.



24 (four endemic) in Myanmar. Apart from one new record for Myanmar, six new combinations are required in the genus.

Pinalia affinis (Griff.) Ormerod, comb. nov.

Basionym: Eria affinis Griff., Notul. Pl. Asiat. 3:297, 1851.

Distribution: Myanmar.

Pinalia brownei (Braid) Ormerod, comb. nov.

Basionym: Eria brownei Braid, Bull. Misc. Inf. Kew:203, 1924.

Distribution: Myanmar.

Pinalia japonica (Maxim.) Ormerod, comb. nov.

Basionym: *Eria japonica* Maxim., Bull. Acad. Imp. Sci. St. Petersb. 31:103, 1887.

Distribution: China; Taiwan; Japan.

This taxon was previously well known as *Eria* reptans (Franch. & Sav.) Makino [based on the homonym *Dendrobium reptans* Franch. & Sav. 1879 (non Sw. 1800)]. *Eria japonica* is the next available and legitimate name for this species, thus requiring its transfer to *Pinalia*.

Pinalia lineoligera (Rchb.f.) Ormerod, comb. nov.

Basionym: Eria lineoligera Rchb.f., Gard, Chron. 24:262, 1885.

Type: Thailand, sine loc., *cult. Christy s.n.* (Holotype: W-R 37667; Isotype: K).

Distribution: Myanmar; Thailand.

Specimen examined: MYANMAR, Mogok, May 1934, *Dickason 5778* (AMES).

Seidenfaden (1982) has provided a figure of this characteristic species that was formerly thought to be endemic to Thailand. The old pseudobulbs in the Myanmar plant are more thickly fusiform-terete rather than clavate as in the Thai specimens.

Pinalia shanensis (King & Pantl.) Ormerod, comb. nov.

Basionym: Eria shanensis King & Pantl., J. As. Soc. Beng. 66, 3:589, 1897.

Distribution: Myanmar.

Pinalia trilophota (Lindl. ex B.D. Jackson) Ormerod, *comb. nov.*

Basionym: *Eria trilophota* Lindl. ex B.D. Jackson, Index Kew 1, 2:864, 1893.

Distribution: Myanmar; Thailand.

The name *Eria trilophota* is commonly attributed to Lindley (1858) but he did not accept it, only noting that it was a variety of his *E. obesa*. It was not until Jackson accepted *Eria trilophota* and accordingly listed it in Index Kewensis that it became a valid name.

Platanthera L.C. Rich.

A genus of about 200 species with 42 taxa (19 endemic) in China and Taiwan and five taxa (none endemic) in Myanmar. Another two species are here added to the latter flora.

Platanthera bakeriana (King & Pantl.) Krzl., Orch. Gen. Sp. 1:632, 1898.

Basionym: Habenaria bakeriana King & Pantl., J. As. Soc. Beng. 65, 2:132, 1896.

Type: INDIA, Sikkim, Lachen Valley, 2745 m, *R. Pantling 401B* (Holotype: CAL; Isotype: K).

Distribution: Bhutan; NE India; SW China; Myanmar.

Specimens examined: MYANMAR, Adung Valley, July 1931, *Kingdon Ward 9806* (AMES); Adung Valley, August 1931, *Kingdon Ward 9931* (AMES).

Pearce and Cribb (2002) have cited the type collection as "*Pantling 401B*" because Pantling collected five different sets at various times of his number 401.

Platanthera exelliana Soo, Ann. Hist. Nat. Mus. Hung. 26:359, 1929.

Basionym: Habenaria oligantha Hook.f., Fl. Brit. Ind. 6:154, 1890.

Synonym: *Platanthera elachyantha* Tang & Wang, Acta Phytotax. Sin. 1, 1:58, 1951 *nom. superfl.* non *Platanthera oligantha* Turcz. 1848.

Type: INDIA, Sikkim, interior valleys, 3050-3660 m, *J.D. Hooker 311* (Holotype: K-L; Isotype: K).

Distribution: Nepal; Bhutan; NE India; SW China; Myanmar.

Specimen examined: MYANMAR, Adung Valley, August 1931, *Kingdon Ward 9918* (AMES).

Zeuxine Lindl.

A genus of about 90 species distributed from tropical Africa to Samoa. One species, *Z. strateumatica* (L.) Schltr., has become adventive in several countries including Brazil, Saudi Arabia and the United States of America (Florida).

Reappraisal of a recently described Chinese taxon leads to its proposed reduction to synonymy below.



Zeuxine flava (Wall. ex Lindl.) Trimen, J. Ceyl. Br. Roy. As. Soc. 9:90, 1885.

Basionym: *Monochilus flavus* Wall. ex Lindl., Gen. Sp. Orch. Pl.:487, 1840. Synonyms: *Haplochilus flavus* (Wall. ex Lindl.) D. Dietr.,

Syn. Pl. 5:172, 1852.

Type: NEPAL, sine loc., 1821, *N. Wallich (Catal. no.)* 7380A (Holotype: K-L!; Isotypes: K!, K-W).

Zeuxine aurantiaca Schltr., Rep. Sp. Nov. Regni Veg. 19:377, 1924.

Type: China, Yunnan, Shweli-Salwin Divide, 2440 m, August 1913, *G. Forrest 11914* (Holotype: E!).

Zeuxine chenkangensis Ormerod, Taiwania 55, 1:26, f.3, 2010 syn. nov.

Type: China, Yunnan, Chen-Kang Hsien, 1640 m, March 1936, C.W. Wang 72192 (Holotype: AMES!).

Distribution: Nepal; Bhutan; NE India; SW China; Myanmar; Thailand.

Specimens examined: CHINA, Yunnan, Fugong Xian, Maji Xiang, Lao wuodong Qiao, W side of Nujiang, S of border with Gongshan Xian, 1390 m, 26 April 2004, *Gaoligong Shan Biodiversity Survey (H. Li et al.) 19535* (GH). MYANMAR, Chin States, Kanpetlet, 2285 m, April 1939, *Dickason 8448* (AMES, K); Chisben, 915-1220 m, 2 April 1939, *Kingdon Ward 475* (AMES); Kalaw, May 1932, *Dickason 1011* (AMES).

I have restudied the type of my Z. chenkangensis and believe the original flower examined was aberrant in details of the labellum calli. Zeuxine flava is variable in the shape of the epichile lobules, and the column wings can seem more rounded (instead of triangular) in some herbarium material. Further Chinese collections of Z. flava are cited in Ormerod (2010).

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LITERATURE CITED

- Chen, S.-C., Y.-B. Luo, P. J. Cribb and S. W. Gale. 2009. *Epipactis.* In: Wu, Z.-G., P. Raven and D.-Y. Hong (eds.), Flora of China **25**: 179-183. Science Press, Beijing & Missouri BG Press, St. Louis, USA.
- Chen, S.-C., Y.-B. Luo and J. J. Wood. 2009. Pinalia. In: Wu, Z.-G., P. Raven, and D.-Y. Hong (eds.), Flora of China 25: 352-357. Science Press, Beijing & Missouri BG Press, St. Louis, USA.
- Kumar, C. S. and K. S. Manilal. 1994. A Catalogue of Indian Orchids. Bishen Singh Mahendra Pal Singh, Dehra Dun, India. 162 pp.

- Lindley, J. 1858. Contributions to the Orchidology of India II. J. Proc. Linn. Soc., Bot. 3: 1-63.Lwin, S. 2004. Myanmar Native Orchids 2. University of Yangon, Myanmar. 41 pp.
- **Ormerod, P.** 2010. Orchidaceous Additions to the Flora of Yunnan. Taiwania **55**: 24-27.
- Ormerod, P. and C. Sathish Kumar. 2009. Orchidaceous Additions to the Flora of Myanmar 2. Rheedea 18: 75-80.
- Pearce, N. R. and P. J. Cribb. 2002. The Orchids of Bhutan. Flora of Bhutan 3: 1-643. Royal Botanic Garden Edinburgh & Royal Government of Bhutan.
- Seidenfaden, G. 1982. Orchid Genera in Thailand X. *Trichotosia* Bl. and *Eria* Lindl. Opera Botanica 62: 1-157.
- Vermeulen, J. J. 2002. A Taxonomic Revision of Bulbophyllum (Orchidaceae) 2. Sections Altisceptrum and Hirtula. Gard. Bull. Singap. 54: 1-151.
- Chen, X., Z. Liu, G. Zhu, K.-Y. Lang, Z. Ji, Y-B Luo, X. Jin, P. J. Cribb, J. J. Wood, S. W. Gale, P. Ormerod, J. J. Vermeulen, H. P. Wood, D. Clayton and A. Bell. 2009. Orchidaceae. In: Wu, Z. G., P. Raven and D. Y. Hong (eds.), Flora of China 25: 1-570. Science Press, Beijing & Missouri BG Press, St. Louis, USA.



中國與緬甸蘭科植物誌新見

Paul Ormerod

P.O. Box 8210, Cairns 4870, Queensland, Australia. Email: wsandave1@bigpond.com

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摘要:標本與文獻研究發現中國和緬甸原生蘭中三個新種、七項新紀錄、十六種新組合的 學名及兩項刪減。新種分別為Conchidium dickasonii、Dendrobium cobra和Epipactis dickasonii。新組合建議在Conchidium (9)、Pecteilis (1)與Pinalia (6)等屬中使用。Habenaria rodgeri和 Zeuxine chenkangensis分別為H. rhodocheila與Z. flava的同種異名。

關鍵詞:中國、緬甸、新物種、記錄。