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Oberonia segawae (Orchidaceae): A New Orchid Species in Taiwan

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ABSTRACT: *Oberonia segawae*, a new orchid species found from central to south Taiwan, is described and illustrated. This species, which belongs to subgenus *Oberonia*, is characterized by its narrowly ensiform leaves up to 13 cm long and 5 mm wide, its whitish flowers, and its lip with indistinct lateral lobes and irregularly laciniate margins.

KEY WORDS: Orchidaceae, *Oberonia segawae*, new species, Taiwan, taxonomy.

INTRODUCTION

The orchid genus *Oberonia* Lindl. consists of about 300 species, distributed from South Africa, through Asia to Australia and the Pacific Islands. The plants of this genus are easily recognized by their distichous, laterally compressed leaves, and terminal racemes covered with numerous minute flowers. In Taiwan, five *Oberonia* species were listed in the latest overall revision (Su, 2000), and two small rhizomatic species were later transferred from *Hippeophyllum* (Ormerod, 2002). We recently discovered an *Oberonia* species with a lip shape quite distinct from the seven known species in Taiwan. After consulting the literature regarding *Oberonia* in neighboring regions, we conclude that the taxon constitutes a new species, which we describe and illustrate here.

Key to the species of *Oberonia* in Taiwan

1. Leaves jointed at base ……..…… (subg. *Oberonia*)
  2. Leaves more than 1 cm wide; lip distinctly 3-lobed from base ……...…….. *O. gigantea*
  2. Leaves less than 0.8 cm wide; lip not distinctly 3-lobed from base.
    3. Stem 3-6 cm long; lip margin entire …… *O. caulescens*
    3. Stem less than 3 cm long; lip margin irregularly laciniate ….. …… *O. segawae*
1. Leaves not jointed at base …… (subg. *Menophyllum*)
  4. Plants arising separately from distinct rhizome.
    5. Rhizomes loosely scaled; rachis not dilated; lip not 3-lobed from base……..……...…… *O. pumilum*
    5. Rhizomes densely scaled; rachis distinctly dilated; lip 3-lobed from base ……...…… *O. seidenfadenii*
  4. Plants tufted, rhizome indistinct.
    6. Inflorescence shorter or as long as leaves; lateral lobes of lip extending upward, slightly surrounding column; petals distinctly erose ……...…..… *O. rosea segawae*
    6. Inflorescence much longer than leaves; lateral lobes of lip extending apically, not surrounding column; petals entire or indistinctly erose.
      7. Apical leaves 3-5 cm long, often much longer than central leaves; central lobe of lip rectangular …..… *O. arisanensis*
      7. Apical leaves 1-3 cm long, slightly longer than central leaves; central lobe of lip orbicular or squarish ……... ……...……...… *O. japonica*

TAXONOMIC TREATMENTS

Oberonia segawae T.-C. Hsu & S.-W. Chung, *sp. nov.* — TYPE: TAIWAN. Pingtung County, Chaozhoujun, Aug 1937, *K. Segawa s. n.* (holotype, TAIF 117872), here designated.

齒唇菱白蘭 Figs. 1-3

Species *O. gigantea* Fukuyama affinis, sed planta et floris minore, floris albidus, labellum lobi laterals indistinctus, marginis dentatum.

Perennial epiphyte. Plant often tufted and pendulous. Stems short, concealed by leaf sheaths, less than 3 cm long. Leaf 5-8, distichous, laterally compressed, narrowly ensiform, fleshy, variable in size, the largest ones 6-13 cm long, 0.3-0.5 mm wide, base jointed, apex sub-falcate. Inflorescence 5-10 cm long; peduncle short, 1.5-3 cm long, terete, with many small bracts; flowers numerous, arranged in whorls, forming a cylinder ca. 6 mm in diam. Bracts ovate-lanceolate, 2-2.5 mm long, 1-1.3 mm wide. Pedicel and ovary 1-2 mm long, finely ridged. Flowers minute, whitish or sometimes tinged with orange, ca. 1.5 mm in diam. Sepals spreading, subequal, entire, ovate- triangular, 0.7-0.8 mm long, 0.4-0.5 mm wide. Petals spreading, subentire, elliptic-oblong, 0.7-0.8 mm long, ca. 0.2 mm wide. Lip spreading, more or less perpendicular to ovary, slightly concave, ovate, nearly unlobed, base truncate, apex retuse, margin irregularly laciniate; the laciniate lobulets progressively deeper towards the apex. Column short, globular, ca. 0.3 mm

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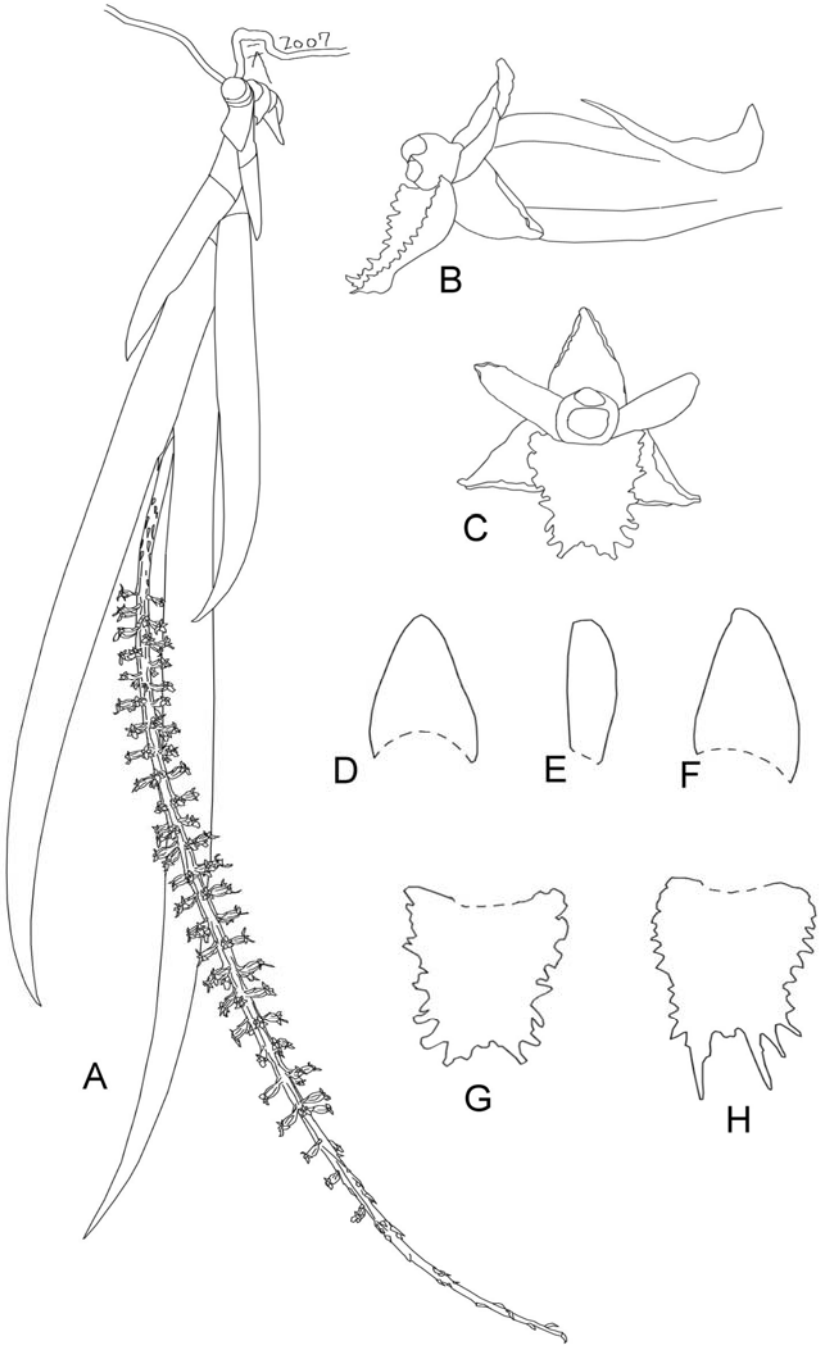


Fig. 1. *Oberonia segawae* T. C. Hsu & S. W. Chung. A: Habit. B: Flower with ovary and bract, lateral view. C: Flower, front view. D: Dorsal sepal. E: Petal. F: Lateral sepal. G-H: Lips in varied shapes, cut from flowers in the same inflorescence.

long. Pollinia 4, in 2 pairs. Capsules ellipsoid, ca. 2 mm long.

Additional specimens examined: TAIWAN. Nantou County: Xingaojun, 25 Jun 1934, *K. Segawa s. n.* (TAIF); Ruan-an, ca. 1400 m, 27 Aug 2006, *T. -C. Hsu 567* (TAIF); Hsitou, 31 Jan 1986, *H. -J. Su 6953* (HAST). Chiayi County: Chiehtung Trail, ca. 1000 m, 15 Dec 2004, *P. -F. Lu 8854* (TAIF). Kaohsiung County: Zhonzhiguan, 3 May 1936, *K. Segawa s. n.* (TAIF); Sanhexi, 21 Jan 1934, *K. Segawa s. n.* (TAIF).

Distribution: Endemic to Taiwan. Presently known at elevations of 1000 to 2000 m a.s.l. in the central and southern mountainous regions. Plants are usually found in moist forests along streams, growing as an epiphyte on branches of broadleaf trees or on vines.

Phenology: Flowers observed in August; fruits matured in September to October.

Etymology: The specific epithet is derived from the collector of the type specimen, Kokichi Segawa, a prominent plant collector and ethnologist.

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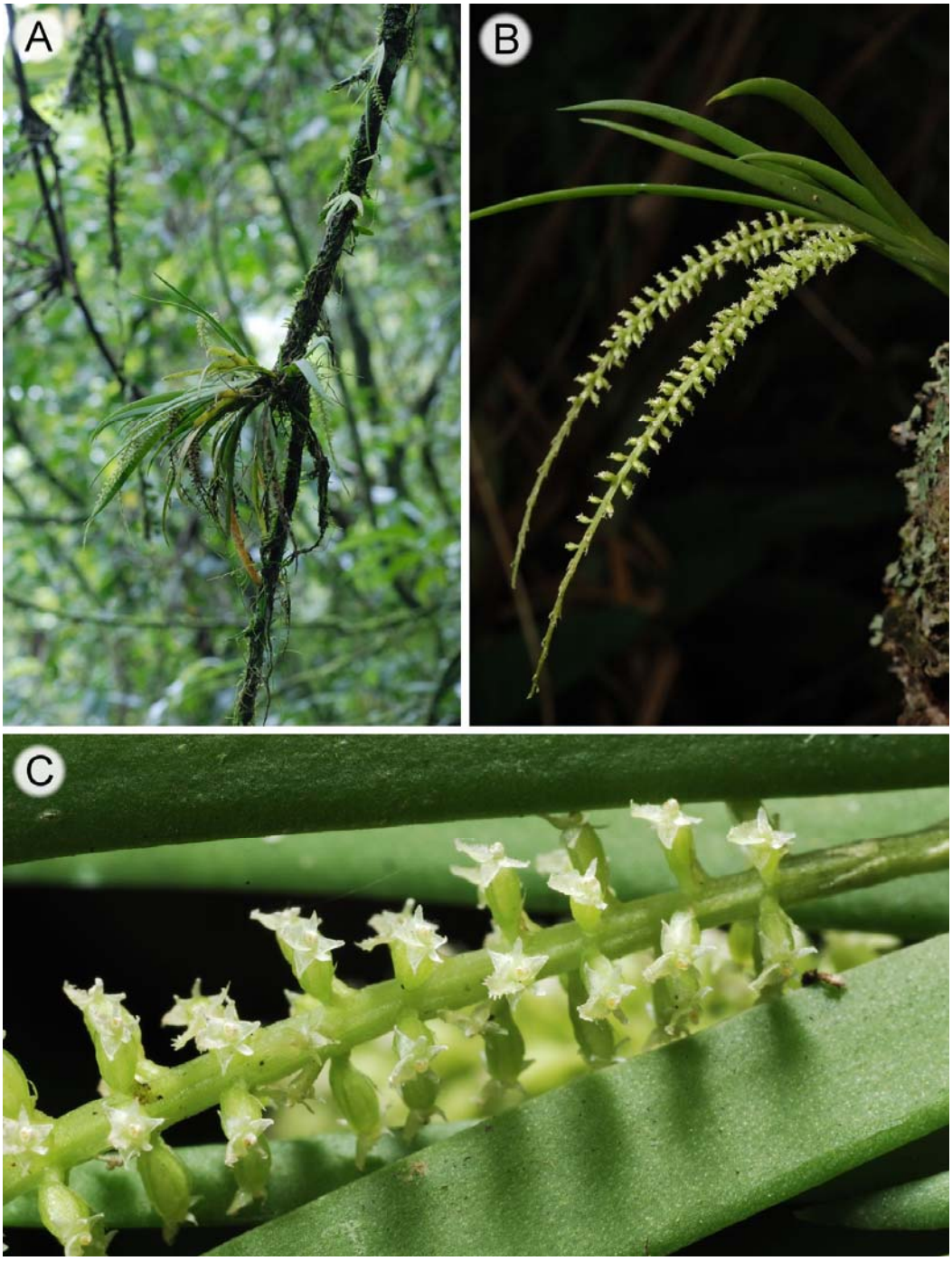


Fig. 2. *Oberonia segawae* T. C. Hsu & S. W. Chung. A: Habitat and habits. B: Habit. C. Part of inflorescence with flowers.

Notes: This new species is assigned to subgenus *Oberonia* base on its jointed leaves (Seidendaden and Wood, 1992; Chen et al., 1999). In Taiwan, it can be easily distinguished from the two known species in this subgenus, *O. caulescens* Lindl. and *O. gigantean* Fukuyama (Lin, 1987; Chen et al., 1999; Su, 2000), by its narrowly ensiform leaves to 13 cm long and 0.5 cm wide, and obscurely lobed lip which has an irregularly laciniate margin. Although specimens referable to this taxon have been collected several times since 1934, they were either determined as an unknown species or misidentified as *O. caulescens*.

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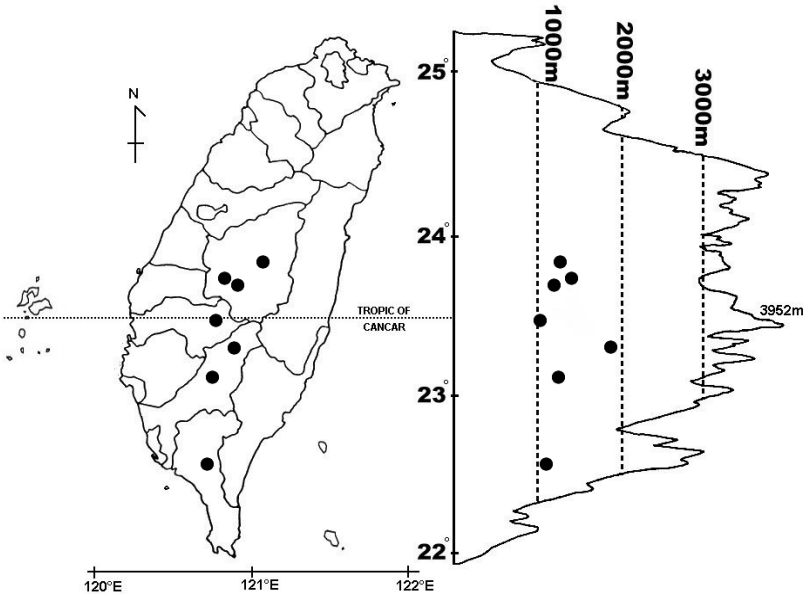


Fig. 3. Distribution of *Oberonia segawae* (solid circles) in Taiwan.

There are certain Asian taxa, such as *O. mucronata* (D. Don) Ormerod & Seidenf., *O. denticulata* Wight (=*O. iridifolia* Lindl.), *O. gammiei* King & Pantl. and *O. dissitiflora* Ridl., which are characterized by jointed leaves, an obscurely lobed lip and an erose lip margin. However, after checking descriptions and illustrations regarding these species (Valmayor, 1984a, 1984b; Ansari and Balakrishnan, 1990; Seidendaden and Wood, 1992; Chen et al., 1999; Comber, 2001; Pearce and Cribb, 2002; Misra, 2004), none were found to adequately fit the material collected from Taiwan. We therefore regard it as a new species. Further systematic research on related species is needed, since the tiny flowers are problematic for comparative morphological studies.

The high fruit set ratio and rapidly expanding ovaries suggest the possibility of self-pollination in this species.

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臺灣新種蘭科植物：齒唇菱白蘭

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摘　　要

本文描述產於臺灣中南部的蘭科新種：齒唇菱白蘭 *Oberonia segawae* T. C. Hsu & S. W. Chung。本種隸屬於 *Oberonia* 亞屬，且具有下列特徵：葉狹長劍形，長可達 12 公分，寬達 5 公釐；花近白色，唇瓣側裂片不顯著且邊緣呈現撕裂狀。

關鍵詞：蘭科、菱白蘭屬、齒唇菱白蘭、新種、臺灣、分類學。

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