

Research note

Odontochilus poilanei (Gagnep.) Ormerod (Orchidaceae), A Newly Recorded Species in Taiwan

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[Summary]

Odontochilus (Orchidaceae), comprises about 40 species, from northern India and the Himalayas through Southeast Asia, as far north as Japan, and east to the southwestern Pacific islands. Four species of *Odontochilus* were recorded in the 2nd edition of the *Flora of Taiwan*. The occurrence of the fifth species, *O. nanlingensis*, was reported from northern Taiwan in 2009. The present paper reports an additional new distributional record, *O. poilanei* (Gagnep.) Ormerod, from central Taiwan. This species was previously known to occur in Vietnam, Myanmar, Thailand, Japan, and southern China. In this paper, a taxonomic description, line drawings, a distribution map, color photographs, conservation status, and a key to the 6 *Odontochilus* spp. in Taiwan are provided.

Key words: Orchidaceae, *Odontochilus*, *Odontochilus poilanei*, newly recorded species, Taiwan.

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研究簡報

臺灣新紀錄蘭科植物-齒爪齒唇蘭

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摘 要

蘭科齒唇蘭屬植物全世界約有40種，分布從北印度和喜馬拉雅山經東南亞，北至日本，東至西南太平洋島嶼。據臺灣植物誌第二版記載及最近發表的南嶺齒唇蘭，臺灣共有五種該屬植物分布。本文描述最近發現於臺灣中部地區的新紀錄蘭科植物-齒爪齒唇蘭(*Odontochilus poilanei* (Gagnep.) Ormerod)，該種原分布於越南、緬甸、泰國、日本及中國南部。除分類描述外，本文提供該種之地理分布、線繪圖、照片、保育等級及臺灣6種齒唇蘭之檢索表，以與本屬其他種類區別。

關鍵詞：蘭科、齒唇蘭屬、齒爪齒唇蘭、新紀錄、臺灣。

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INTRODUCTION

Species of *Odontochilus* are distributed from northern India and the Himalayas through Southeast Asia, as far north as Japan, and east to the southwestern Pacific islands, with about 40 species in the world (Chen et al. 2009). Four species of *Odontochilus* were recorded in the 2nd edition of the *Flora of Taiwan* (Su 2002). The occurrence of a fifth species, *O. nanlingensis*, was reported by Hsu and Chung (2009a) from northern Taiwan. The present paper documents an additional new distributional record, *O. poilanei* (Gagnep.) Ormerod for this island. It was discovered in a low-elevation mountainous area of central Taiwan. This species is holomycotrophic and is sharply distinct from other known species of *Odontochilus* known to occur on this island (Su 2000, Hsu and Chung 2009a, b, 2012).

A key to all 6 species of *Odontochilus* in Taiwan, the taxonomy and a morphological description, conservation status, line drawings, color photos, and a distribution map of *O. poilanei* are presented below.

Key to the species *Odontochilus* in Taiwan

1. Plants holomycotrophic, achlorophyllous, and lacking leaves, reddish-brown
..... *O. poilanei*
1. Plants autotrophic, leafy, not reddish-brown.
 2. Sepals uniformly green or yellowish-green, sometimes tinged red toward apex; hypochile of lip bisaccate, divided by a central longitudinal septum.
 3. Leaves purple, serrulate at margins
..... *O. elwesii*
 3. Leaves green, entire at margins
 4. Adaxial surface of leaves uniformly dark-green; lip white; lateral sepals 8~9 mm..... *O. brevistylyis*
 4. Adaxial surface of leaves dark-green with whitish stripes along midvein and 2 lateral veins; lip yellow; lateral sepals 5~7 mm..... *O. lanceolatus*
 2. Sepals white, pale-green, or purplish, with either dark-brownish-green patches or purplish-red longitudinal stripes; hypochile of lip globose-saccate, aseptate.

5. Plants 7.5~8.5 cm tall; leaf petiole-like base and tubular sheath 0.3~0.5 cm; lip 12~13 mm.....
*O. nanlingensis*
5. Plants 10~20 cm tall; leaf petiole-like base and tubular sheath of 1.5~3.5 cm; lip 20~24 mm.....
*O. inabai*

Taxonomy and morphological description

Odontochilus poilanei (Gagnep.) Ormerod, 2002, Lindleyana, 17, 4: 225.- *Evrardia poilanei* Gagnep. 1932, Bull. Mus. Nat. Hist. (Paris) 2, ser. 4, 5: 596. Type: Described from southern Vietnam ("Annam, Dalat"). Type ("Evrard, 1807").....齒爪齒唇蘭(Figs. 1, 2)
 Terrestrial achlorophyllous herb, 10~25

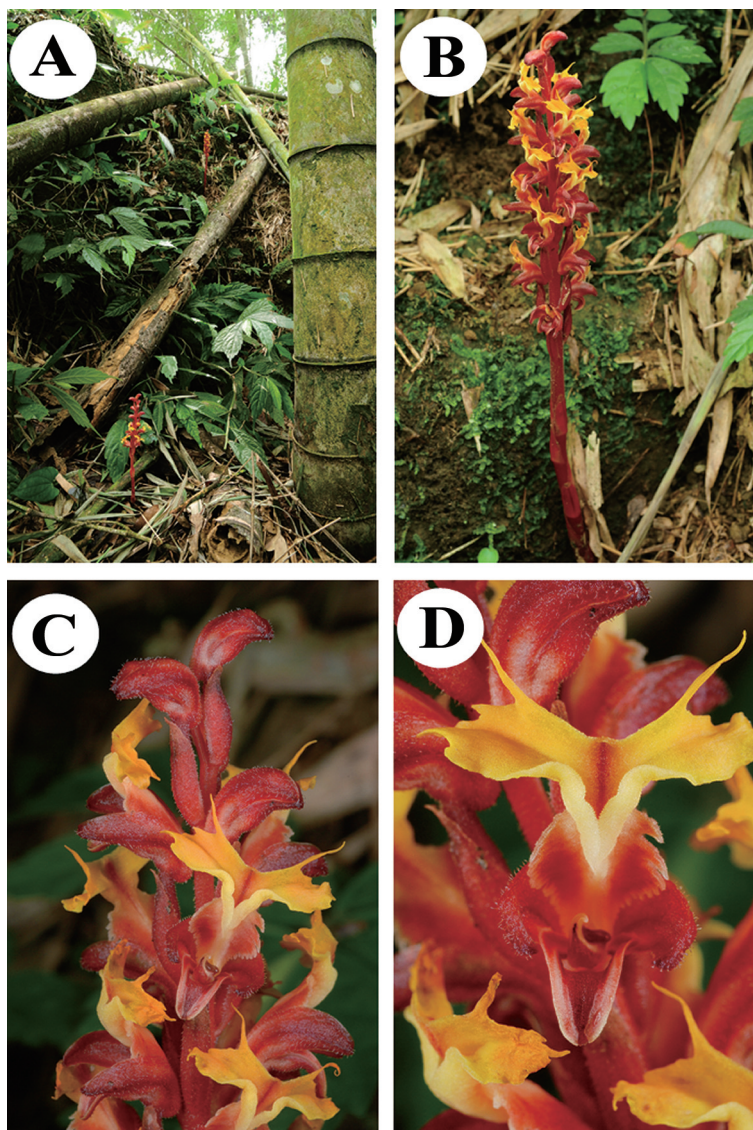


Fig. 1. *Odontochilus poilanei* (Gagnep.) Ormerod. (A) Habitat; (B) habit; (C) a portion of the inflorescence; (D) flower.

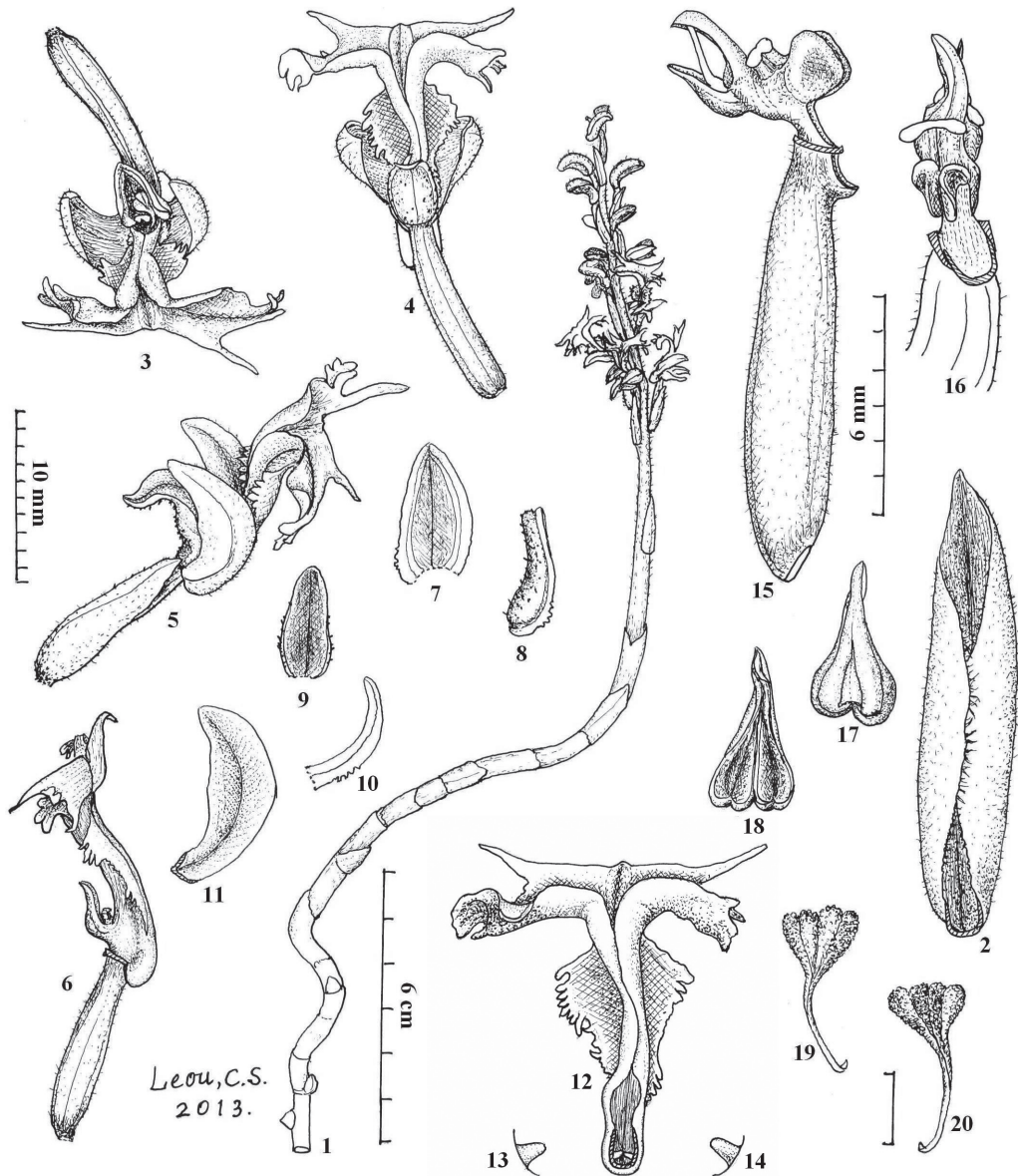


Fig. 2. *Odontochilus poilanei* (Gagnep.) Ormerod. 1. Habit; 2. floral bract; 3-5. flower, various views; 6. column and lip, side view; 7. hood, inside; 8. hood, lateral side; 9. dorsal sepal, inside; 10. petal, inside; 11. lateral sepal, inside; 12. lip, abaxial side; 13 and 14. calli; 15. column and ovary, lateral side; 16. column and upper part of ovary, ventral side; 17. anther, dorsal side; 18. anther, ventral side; 19 and 20. pollinia.

cm tall. Leaves absent. Rhizome erect, 4-6 mm in diameter, creamy to white, bearing few buds. Stem erect or ascending, 3.5-4.5 mm in diameter, reddish-brown and shortly pu-

bescent above, becoming light reddish-brown and glabrous below. Bracts ovate, 1-1.8 cm long, reddish-brown, lower ones sheathed. Inflorescence a raceme, 7.5 cm long, few- to

13-flowered, rhachis shortly pubescent. Floral bracts oblong, acute at both ends, subequal in length to ovary, with short pubescence abaxially. Ovary cylindrical, 10~12 mm long with short hairs. Flowers not resupinate, orangish-red or reddish-brown except for yellow lip epichile. Sepals reddish-brown, hairy outside; dorsal one lanceolate-ovate, concave, 6.5 mm long, 3 mm wide; lateral ones obliquely elliptic, concave, 10 mm long, 4 mm wide. Petals obliquely linear-lanceolate, glabrous, 7 mm long, 1.2 mm wide, irregularly toothed at outer margins near base, inner halves appressed to dorsal sepal and forming a hood. Lip tripartite, 13~14 mm long, 13~14 mm wide, covered with fine papillose hairs on both surfaces; hypochile light-yellow, saccate, 4 mm long, 2 mm wide, bearing 2 flat papillae near base and a low keel along midrib, mesochile reddish-brown, narrow, canaliculated, 5~6 mm long, bearing flanges along lateral side, flanges 6~7 mm long, 2~2.5 mm wide, irregularly toothed or laciniate at

margins; epichile yellow, subrectangular, 4~5 mm long, 13~14 mm wide, bilobed, lobes cleft halfway to midrib and forming 2 lobules, distal lobules smaller but prominent, spreading, linear-lanceolate, pointing to distal end, proximal lobules larger, more or less quadrate-orbicular, bearing 1 or 2 teeth at distal margins, entirely folded, or irregularly wavy, or rarely lacinate at lateral margins. Column bent to 1 side, stalked, 5 mm tall, bearing 2 ventral appendages below stigma, appendages tabular, arched, quadrate at lateral side; rostellum erect, triangular-oblong, 3 mm tall; stigma 2, ventral, located near base of rostellum, connated with their upper (distal) halves to form a dumbbell-shaped receptive area; anther triangular-ovate, 2.5 mm long, 1.2 mm wide, cap orangish-red, theca orangish-yellow; pollinia 2, light-yellow, 1 mm long, with a slender stalk 1.3 mm long.

Specimen examined: Taiwan. Nantou County, Lugu Township, 19 Aug. 2013, C. K.

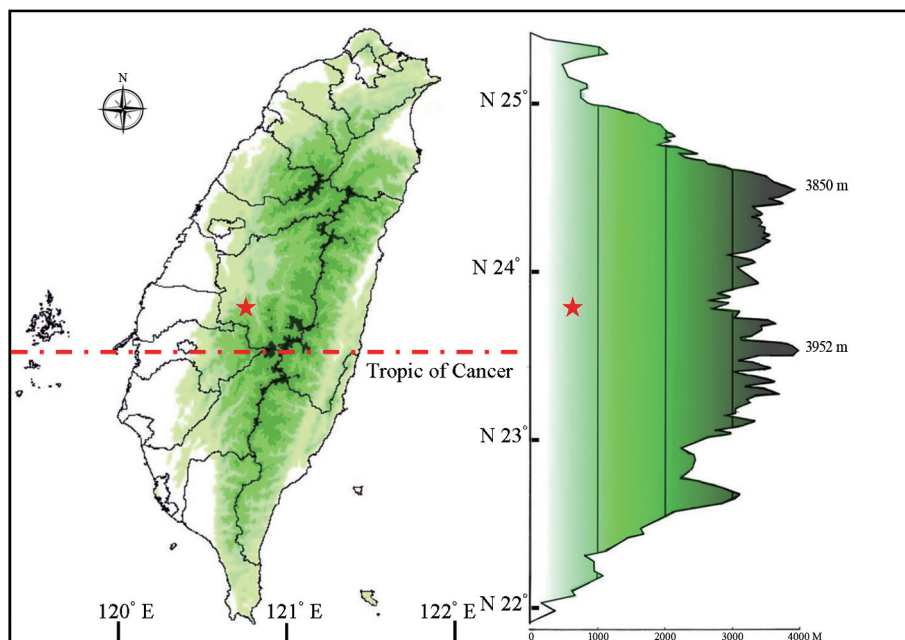


Fig. 3. Distribution of *Odontochilus poilanei* (Gagnep.) Ormerod in Taiwan.

Yang & H. T. Yeh 1890 (Herbarium, National Taiwan Normal Univ., TNU).

Distribution and habitat: *Odontochilus poilanei* is so far known to occur in mid-elevation mountainous areas of southeastern Tibet, southeastern Yunnan (China), Japan, Myanmar, Thailand, and southern Vietnam (Wu et al. 2009). In Taiwan it was found on the Alishan Mountain Range, along borders of secondary forests and bamboo forests at about 700 m in elevation, and is apparently very rare (Fig. 3). Its flowering period is from late July to August.

Conservation status. Only 1 locality with fewer than 10 adult individuals is currently known to exist in an area of 10 km². According to the IUCN red list criteria (IUCN 2001), this species is categorized as ‘critically endangered’ (CR D1+ B2). It is listed as an extinct species in Japan (J-IBIS, Japan Integrated Biodiversity Information System).

Note: The morphology of *O. poilanei* is similar to that of *O. guangdongensis*, but *O. poilanei* can be distinguished from *O. guangdongensis* by its dorsal sepal which is 7 mm long and 4 mm wide (vs. 3.8–4 mm long and 1.8–2 mm wide), and a T-shaped (vs. Y-shaped) lip with V-shaped lacunae (vs. no lacunae) at apex.

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