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## A New Record of a Hornet (Hymenoptera: Vespidae) from Taiwan 【Scientific note】

### 台灣產胡蜂屬（膜翅目：胡蜂科）之一新紀錄種【科學短訊】

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#### Abstract

A queen of the hornet *Vespa simillima* Smith was collected from Tsaoshan Village (950 m in elevation) in Chiayi County, Taiwan. This is a first record of this species from Taiwan and may represent an accidental introduction from other regions. The species is common in the northeastern part of the Palearctic region, constructs large colonies, and has been a serious nuisance pest in Japan. A continuing investigation of the spread and/or decline of this wasp is needed in Taiwan.

#### 摘要

本科學短訊記述台灣新記錄一種黃色胡蜂 *Vespa simillima* Smith，所得標本係母后一匹，採自嘉義縣番路鄉草山村，海拔 950 公尺。本種廣泛分布於舊北區的東北部，可構築大型蜂巢，在日本是重要的有害動物，未來值得繼續觀察族群的增減與分布情形。

**Key words:** social wasp, hornet, new record, nuisance pest, Taiwan

**關鍵詞:** 社會性胡蜂、虎頭蜂、新紀錄種、有害動物、台灣

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## A New Record of a Hornet (Hymenoptera: Vespidae) from Taiwan

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### ABSTRACT

A queen of the hornet *Vespa simillima* Smith was collected from Tsaoshan Village (950 m in elevation) in Chiayi County, Taiwan. This is a first record of this species from Taiwan and may represent an accidental introduction from other regions. The species is common in the northeastern part of the Palearctic region, constructs large colonies, and has been a serious nuisance pest in Japan. A continuing investigation of the spread and/or decline of this wasp is needed in Taiwan.

**Key words:** social wasp, hornet, new record, nuisance pest, Taiwan

### Introduction

Hornets are stout social wasps belonging to the subfamily Vespinae of the family Vespidae. Many scientists have studied the vespine fauna of Taiwan (e.g., Sonan, 1927; 1929; Starr, 1992; Yamane and Wang, 1996; Carpenter and Kojima, 1997), and recorded seven species of *Vespa* and three species of *Vespula*. Records of *Provespa anomala* (de Saussure) (Sonan, 1929; Uchida, 1935) and *Vespa crabro* Linnaeus (Carpenter and Kojima, 1997) may have been based on misidentifications or wrong materials

(Starr, 1992).

The yellow hornet, *V. simillima* Smith, is distributed in the eastern part of the Palearctic Region; the southern limit on the Asian continent recorded in Liaoning Province of China (Carpenter and Kojima, 1997), and the southernmost records came from the island of Yaku-shima in Japan (30°15'-30'N) (Yamane *et al.*, 1999). Recently we examined a queen of this species collected in Taiwan. This represents a first record of this wasp from Taiwan which is located in the Oriental region.

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Fig. 1. *Vespa simillima* specimen from Taiwan.

## Results and Discussion

The wasp (queen) was collected in Tsaoshan Village, Chiayi County, at 950 m in elevation on June 6, 2003, by I. H. Sung. It will be deposited in the Entomological Collection of the Faculty of Science, Kagoshima University, Kagoshima, Japan.

The specimen well agrees with the Japanese form of *V. simillima* in structure, and has the following measurements and color pattern. Head width 6.7 mm, pronotal width 7.5 mm, forewing length 22.5 mm, and hindwing length 14.5 mm. Head yellowish orange; ocellar region between eyes widely black; black area on each side connected to black marking just above clypeus. Mesosoma and metasoma dark blackish brown with the following orange portions: pronotum above extensively, a triangular marking on mesepisternum above, a minute spot on mesepimeron, a pair of large spots on scutellum, a pair of transverse markings anteriorly on

metanotum, minute spots on metapleuron, a pair of relatively large markings on propodeum, a basal band interrupted medially on gastral tergite 1, a narrow apical band on tergite 1, relatively wide bands on tergites 2-6, gastral tergites 2-6 extensively, the lower parts of all femora, all tibiae and tarsi wholly (Fig. 1).

In Japan, two subspecies occur, namely *V. simillima simillima* Smith in Hokkaido, and *V. simillima xanthoptera* Cameron in Honshu to the Northern Ryukyus (Yamane *et al.*, 1999). The southernmost records came from Yaku-shima, more than 1000 km from Taiwan. In the color pattern mentioned above, the present specimen from Taiwan roughly agrees with that from central lowland Honshu, not with that from southern Japan including Yaku-shima. Although the vespidae fauna of Taiwan has been monitored for a long time by entomologists including Sonan (1927; 1929), Kuo and Yeh (1987), Starr (1992), Yamane (1977, 1992), and Yamane and Wang (1996), *V. simillima*

has never been found on this island. Therefore, it is most probable that this species was accidentally introduced from Japan or other part of northeastern Asia.

In Japan, *V. simillima* is one of the important nuisance pests particularly in urban areas (Makino *et al.*, 1981; Matsuura, 1995; Ono, 1997). It constructs huge nests in various sites, both in open and closed situations, and even in houses. Workers are aggressive toward humans, particularly during summer and autumn when colonies reach their peak size. In body size *V. simillima* is similar to some Taiwanese species such as *V. velutina* Lepelletier, *V. affinis* (Linnaeus), *V. analis* Fabricius and *V. basalis* Smith, and in aggressiveness comparable to *V. velutina*. At present, it is not certain that this species has established itself in Taiwan. A continuing investigation is necessary to determine whether *V. simillima* is spreading or declining on the island.

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# 台灣產胡蜂屬（膜翅目：胡蜂科）之一新紀錄種

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## 摘 要

本科學短訊記述台灣新記錄一種黃色胡蜂 *Vespa simillima* Smith，所得標本係母后一匹，採自嘉義縣番路鄉草山村，海拔 950 公尺。本種廣泛分布於舊北區的東北部，可構築大型蜂巢，在日本是重要的有害動物，未來值得繼續觀察族群的增減與分布情形。

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