


Research article

# New records of Psocoptera (Insecta) from Vietnam

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**Abstract:** This study presents novel findings on the Psocoptera (Insecta) fauna of Vietnam, contributing to the understanding of biodiversity in the region. Psocoptera specimens were collected from Tam Dao National Park during October 2023, adding 19 new species to the existing list. These discoveries include species previously unknown to Vietnam and some new to the Indochina Peninsula and continental Asia. Material examination and species identification were conducted following established methodologies, with specimens deposited at the National Museum of Natural History, Sofia, Bulgaria. The findings underscore the importance of continued research efforts in documenting and understanding the psocid fauna of Vietnam, particularly in tropical forest ecosystems.

**Keywords:** biodiversity, Indochina, national park, new records, tropical forest

## Introduction

The first study on the Psocoptera of Vietnam was published by Enderlein (1903), followed by Navas (1924). Subsequently, a few more papers were published, and by 2016, the species list comprised 26 species (Lienhard, 2016, Liang et al., 2013.). Liang (2017) and Ning et al. (2020) added two more species. However, considering the tropical and diverse nature of the region, this list remains relatively small and reflects the poorly known psocid fauna in the region.

In this paper, we contribute by adding 19 more species to the list of Vietnam. Some of these species are identified only to the generic level, but they are clearly distinct (and some of them may potentially

represent new species to science). Additionally, several of the identified species are new records and for the Indochina Peninsula, and Continental Asia.

## Material and methods

Psocoptera specimens were collected from the Tam Dao National Park in Vietnam during October 2023 by M. Langurov, N. Simov and R. Bekchiev by beating the vegetation and insecticide knock-down method. The specimens were preserved in 96% ethanol. The collected material has been deposited at the National Museum of Natural History, Sofia, Bulgaria (NMNH). The identification of species in this

paper is based on original descriptions, and measurements were conducted following the methodology outlined by Lienhard (1998). Species distribution is according Lienhard (2016).

## Results and discussion

A comprehensive survey resulted in the registration of a total of 20 species, among which only one had been previously documented in Vietnam. The following is the compiled species list, with asterisks denoting new records for Vietnam.

### Caeciliusidae

#### *Caecilius persimilaris* (Thornton & Wong, 1966)\*

Material examined: 22.10.2023, Ngu Chi Son Mts, above Ta Giang Phinh, Lao Cai Province, 22.42903 N103.74982E, 1 ♀; 24.10.2023, Fansipan/Phan Xi Pang Mts, Hoang Lien National Park, near Fansipan Summit, Lao Cai Province, 22.36198N 103.77795E, 1815 m a.s.l., 1 ♂. Known from India, China, Nepal. In China found in Baishanzu Mountain (Eastern China) (Li, 1995). New record for Vietnam.

#### *Isophanes cf. platystigma* Li, 1997\*

Material examined: 17.10.2023, Tam Dao National Park, Tam Dao, ab Khu du lich sinh thai, Vinh Phuc Province, 21.47291N 105.63941E, 974 m a.s.l., 1 ♀. No any species from the genus *Isophanes* were reported from Vietnam till now (Lienhard, 2016).

#### *Valenzuela gracilis* Okamoto 1910\*

Material examined: 22.10.2023, Ngu Chi Son Mts, above Ta Giang Phinh, Lao Cai Province, 22.42903 N103.74982E, 1 ♀, collected by insecticide knock-down method. The species was known only from Japan (Okamoto, 1910; Lienhard, 2016). New record for Indochina Peninsula and continental Asia.

#### *Valenzuela* sp.\*

Material examined: 17.10.2023, Tam Dao National Park, Tam Dao, ab Khu du lich sinh thai, Vinh Phuc Province, 21.47291N 105.63941E, 974 m a.s.l., 1 ♀.

This specimen is obviously different from the previously mentioned *V. gracilis*.

### Epipsocidae

#### *Epipsocus* sp. 1\*

Material examined: 16–20.10.2023, Tam Dao National Park, Tam Dao, ab Chua Vang Tam Dao, Vinh Phuc Province, 21.46058N 105.64864E, 1067 m a.s.l., 2 ♀♀, flight interception trap.

#### *Epipsocus* sp. 2\*

Material examined: 22.10.2023, Ngu Chi Son Mts, above Ta Giang Phinh, Lao Cai Province, 22.42903 N103.74982E, 1 ♂, 1 ♀, collected by insecticide knock-down method. Species from the family Epipsocidae were not reported from Vietnam till now (Lienhard, 2016).

### Stenopsocidae

#### *Stenopsocus* sp. 1\*

Material examined: 22.10.2023, Ngu Chi Son Mts, above Ta Giang Phinh, Lao Cai Province, 22.42903N 103.74982E, 1 ♂, 1 ♀; 23.10.2023, Ngu Chi Son Mts, W Ta Giang Phinh, Lao Cai Province, 22.44250N 103.75070E, 1510 m a.s.l., 1 ♂, collected by insecticide knock-down method.

#### *Stenopsocus* sp. 2\*

Material examined: 17.10.2023, Tam Dao National Park, Tam Dao, ab Khu du lich sinh thai, Vinh Phuc Province, 21.47291N 105.63941E, 974 m a.s.l., 1 ♂, 1 ♀. The species is known from Taiwan and China (Banks, 1937; Liang, 2017). New record for Vietnam.

#### *Stenopsocus* sp. 3\*

Material examined: 16.10.2023, Tam Dao National Park, Tam Dao, ab Chua Vang Tam Dao, Vinh Phuc Province, 21.46058N 105.64864E, 1067 m a.s.l., 1 ♂.

#### *Stenopsocus* sp. 4\*

Material examined: 17.10.2023, Tam Dao National Park, Tam Dao, ab Khu du lich sinh thai, Vinh Phuc

Province, 21.47291N 105.63941E, 974 m a.s.l., 1 ♂. For Vietnam, only the species *S. tonkinensis* was reported (Enderlein, 1903; Banks, 1938). All these mentioned obviously distinct species are new country records of known species or new to science. Future studies are needed.

*Taeniostigma* sp.\*

Material examined: 17.10.2023, Tam Dao National Park, Tam Dao, ab Khu du lịch sinh thái, Vinh Phuc Province, 21.47291N 105.63941E, 974 m a.s.l., 1 ♀. Two species from this genus were recorded in Vietnam: *T. ingens* Enderlein, 1903 and *T. tibiale* Navas, 1924 (Lienhard, 2016) but this species is different.

Amphipsocidae

*Amphipsocus* cf. *declivimaculatus* Li, 1997\*

Material examined: 16.10.2023, Tam Dao National Park, Tam Dao, ab Chua Vang Tam Dao, Vinh Phuc Province, 21.46058N 105.64864E, 1067 m a.s.l., 1 ♂. The species *declivimaculatus* is known only from China (Lienhard, 2016). New record for Vietnam.

*Amphipsocus* sp.\*

Material examined: 17.10.2023, Tam Dao National Park, Tam Dao, ab Khu du lịch sinh thái, Vinh Phuc Province, 21.47291N 105.63941E, 974 m a.s.l., 1 ♂, 1 ♀.

Peripsocidae

*Peripsocus pauliani* Badonnel, 1949\*

Material examined: 16–20.10.2023, Tam Dao National Park, Tam Dao, ab Chua Vang Tam Dao, Vinh Phuc Province, 21.46058N 105.64864E, 1067 m a.s.l., 1 ♂, flight interception trap. Pantropical species with very wide distribution known from North and South America, Africa, Asia and many oceanic islands (Lienhard, 2016). First record for Vietnam.

*Peripsocus* sp.\*

16.10.2023, Tam Dao National Park, Tam Dao, ab Chua Vang Tam Dao, Vinh Phuc Province, 21.46058N 105.64864E, 1067 m a.s.l., 1 ♂, 1 ♀.

Pseudocaeciliidae

*Heterocaecilius fuscipalpus* Lee & Thornton, 1967\*

Material examined: 16.10.2023, Tam Dao National Park, Tam Dao, ab Chua Vang Tam Dao, Vinh Phuc Province, 21.46058N 105.64864E, 1067 m a.s.l., 5 ♀♀; 22.10.2023, Ngu Chi Son Mts, above Ta Giang Phinh, Lao Cai Province, 22.42903N 103.74982E, 2 ♂♂, 2 ♀♀. Known from Malaysia (Lee & Thornton, 1967) and India (Ray, 1984). New record for Vietnam.

*Pseudocaecilius* sp.\*

Material examined: 16–20.10.2023, Tam Dao National Park, Tam Dao, ab Chua Vang Tam Dao, Vinh Phuc Province, 21.46058N 105.64864E, 1067 m a.s.l., 1 ♀, flight interception trap. There were no any species from the family Pseudocaeciliidae reported from Vietnam till now (Lienhard, 2016).

Psocidae

*Psococerastis bengalensis* (Kolbe, 1883)\*

Material examined: 17.10.2023, Tam Dao National Park, Tam Dao, ab Khu du lịch sinh thái, Vinh Phuc Province, 21.47291N 105.63941E, 974 m a.s.l., 1 ♂, 1 ♀. The species is known from India, Malaysia and Nepal (Lienhard, 2016). First record for Vietnam.

*Psococerastis taprobanes* (Hagen, 1858)

Material examined: 22.10.2023, Ngu Chi Son Mts, above Ta Giang Phinh, Lao Cai Province, 22.42903N 103.74982E, 1 ♀. The species is known from Sri Lanka, Bhutan, China, India, Indonesia, Malaysia, Tibet, and Vietnam. Reported for Vietnam by Enderlein (1912).

*Psococerastis tokyoensis* (Enderlein, 1906)\*

Material examined: 17.10.2023, Tam Dao National Park, Tam Dao, ab Khu du lịch sinh thái, Vinh Phuc Province, 21.47291N 105.63941E, 974 m a.s.l., 1 ♀. The species is known from Japan, China and Taiwan (Lienhard 2016). First record for Vietnam.

The significant discovery of 19 new species, some potentially representing new taxa, emphasises the im-

portance of continued exploration and research in Vietnam's psocopteran fauna. The addition of these species, particularly those previously undocumented in the region, enriches our understanding of the biodiversity and distribution patterns of Psocoptera in Vietnam. Furthermore, the presence of species previously known only from distant regions such as Japan and China underscores the need for further investigation into the factors influencing the dispersal and colonisation of these insects across Southeast Asia. Continued exploration and taxonomic studies are essential and for elucidating the evolutionary relationships and ecological roles of psocopteran insects in Southeast Asia.

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