




# Formosan Entomologist

Journal Homepage: [entsocjournal.yabee.com.tw](http://entsocjournal.yabee.com.tw)

## A New *Ischnopsyllus* Westwood (Siphonaptera: Ischnopsyllidae) from Taiwan **【Research report】**

### 臺灣產蝠蚤屬之一新種(蚤目：蝠蚤科) **【研究報告】**

Chao-Lin Chung\* and Meng-How Hsu  
鍾兆麟\*、徐孟豪

\*通訊作者E-mail:  [Siphonaptera, Ischnopsyllidae, bat flea, new species, Taiwan](mailto:Siphonaptera, Ischnopsyllidae, bat flea, new species, Taiwan).

Received: 1998/10/26 Accepted: 1999/03/22 Available online: 1999/06/01

### Abstract

A male bat flea collected from the host, *Myotis latirostris* Kishida, 1932 in the alpine area of central Taiwan is identified as a new species, *Ischnopsyllus* ( *Hexactenopsylla* ) *anmashanensis*, sp. nov. Morphological descriptions of the new 6-combed species are provided including illustrations.

### 摘要

本報告描述蚤目蝠蚤科蝠蚤屬之一新種，命名為鞍馬蝠蚤(*Ischnopsyllus anmashanensis* Chung and Hsu, sp. nov.) 正模為一雄性，係採自從鞍馬山招待所屋簷下飛出的寬吻鼠耳蝠(*Myotis latirostris* Kishida, 1932)。

**Key words:** Siphonaptera, Ischnopsyllidae, bat flea, new species, Taiwan.

**關鍵詞:** 蚤目、蝠蚤科、蝠蚤屬、新種、臺灣

Full Text:  [PDF\( 3.38 MB\)](#)

下載其它卷期全文 Browse all articles in archive: <http://entsocjournal.yabee.com.tw>

# A New *Ischnopsyllus* Westwood (Siphonaptera: Ischnopsyllidae) from Taiwan

Chao-Lin Chung\* and Meng-How Hsu Division of Medical Entomology National Institute of Preventive Medicine, Nankang, Taipei, Taiwan, R.O.C.

## ABSTRACT

A male bat flea collected from the host, *Myotis latirostris* Kishida, 1932 in the alpine area of central Taiwan is identified as a new species, *Ischnopsyllus* (*Hexactenopsylla*) *anmashanensis*, sp. nov. Morphological descriptions of the new 6-combed species are provided including illustrations.

**Key words:** Siphonaptera, Ischnopsyllidae, bat flea, new species, Taiwan.

## Introduction

The 1st report of a bat flea of the genus *Ischnopsyllus* Westwood, 1833 of Taiwan was made by Sugimoto (1933), where a new species, *Ischnopsyllus tateishii*, was described which is now recognized as a synonym of *I. (Hexactenopsylla) indicus* Jordan, 1931. Later, Chow and Huang (1950) reported another species, *I. (H.) comans* Jordan and Rothschild, 1921. Since then, no further taxonomic studies on the *Ischnopsyllid* fleas of Taiwan have been made. In August 1993, 5 small-sized bats, *Myotis latirostris* Kishida, 1932, were captured during a field investigation in the alpine area of central Taiwan. A male flea was obtained from one bat. Comparison with the morphological characters of the known species of 6-combed fleas (i. e., *I. hexactenus* (Kolenati), 1856 and *I. kolenatii* Wagner, 1930) from both the Palaearctic and Mediterranean Regions revealed that the specimen is a new spe-

cies. The holotype is deposited in the Division of Medical Entomology, National Institute of Preventive Medicine (NIPM), Taipei, Taiwan, Republic of China.

## Materials and Methods

A long-armed sweeping net was used to capture bats while they were leaving from under the eaves of a guest house at dusk. Fortunately 5 individuals were captured. Upon anesthesia, these bats were examined for ectoparasites.

The flea specimen was preserved in 70% ethanol and washed with tap water, then soaked in 10% KOH solution overnight. After removing it from the KOH solution, the specimen was washed with tap water twice, dehydrated with 70, 80, and 95% alcohol respectively for 60, 60, and 30 min, then cleared in a 1:1 mixture of phenol and xylene for 30 min, and finally mounted in Canada balsam on a microslide with cover.

\*Correspondence/reprint request address

The morphological terminology adopted in this paper follows that of Hopkins and Rothschild (1956).

## Description

*Ischnopsyllus anmashanensis* Chung and Hsu, sp. nov. (Figs. 1-5)

**Male:** Body length about 2 mm. **Head** (Fig. 1) much longer than high. Maxilla somewhat concave at apex. Both spines of genal comb blunt. Frons with dorsal marginal area rugulose with contrasting pale band submarginated and a sharply defined anterior margin, 12 bristles in a row gradually lengthening from anterior to posterior, lower portion with 11 bristles, 1 of which is much longer and stouter. Preoral tuber long and narrow, free end bent almost at a right angle; genal process tapered to blunt end; eye vestigial, tentorium with arch visible in front of eye, ocular bristle small and short. Occiput with 5 small anterolateral bristles, posterior marginal bristles in a row with 3 ventral marginal bristles. Labial palp 4-segme-

nted, 1st segment  $\frac{1}{4}$  length of fore coxa. **Thorax** (Fig. 2). Pronotum bearing pronotal comb with 14 spines and 2 rows of bristles in front; the dorsoapical corner of mesonotum with a very long and stout bristle, lacking marginal bristles posteriorly; metanotal comb with 11 spines, metepisternum and metasternum each with an elongated bristle, the squamulum at the antero-dorsal angle of metasternum obvious; metepimeron with 4 bristles and 2 spiniform bristles at posterior margin. **Abdomen** (Fig. 3). Combs of terga I-IV with 8, 9, 11, and 9 spines, respectively. Modified segments as shown in Figs. 4, 5; sternum VIII about 4.5 times as long as broad and somewhat dorsally truncated at apex, apical margin with 4 bristles in a row which extend almost to dorsal angle and of which ventral 2 much stouter, the remaining 2 bristles sloping downwards to subapically. Sternum VIII narrowest at middle with 2 long and 1 short posterior submarginal bristles at posterior margin. Clasper broad with apical margin almost straight, dorsal and ventral process form-

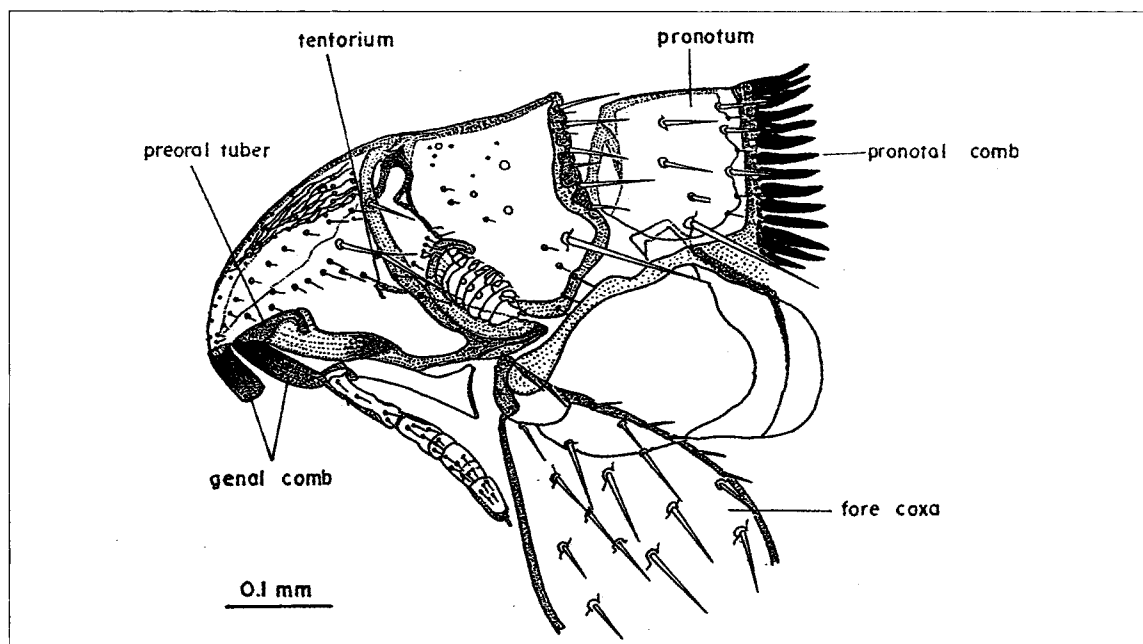


Fig. 1. *Ischnopsyllus anmashanensis*, head and prothorax of male.

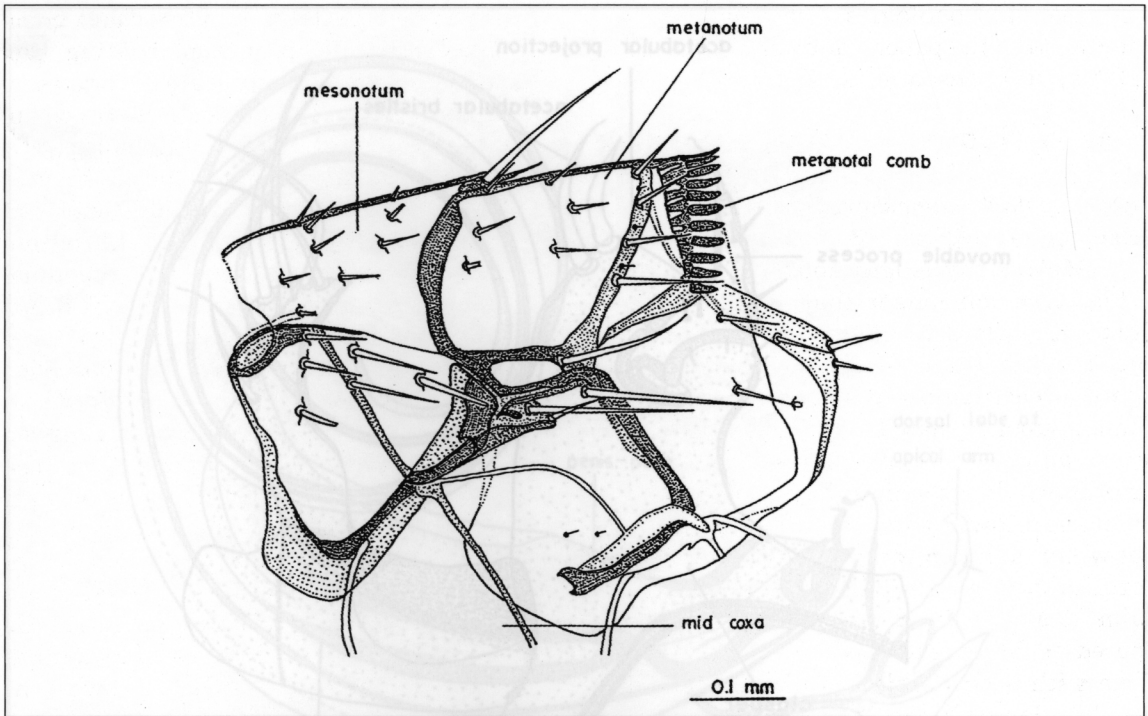


Fig. 2. *Ischnopsyllus anmashanensis*, mesothorax and metathorax of male.

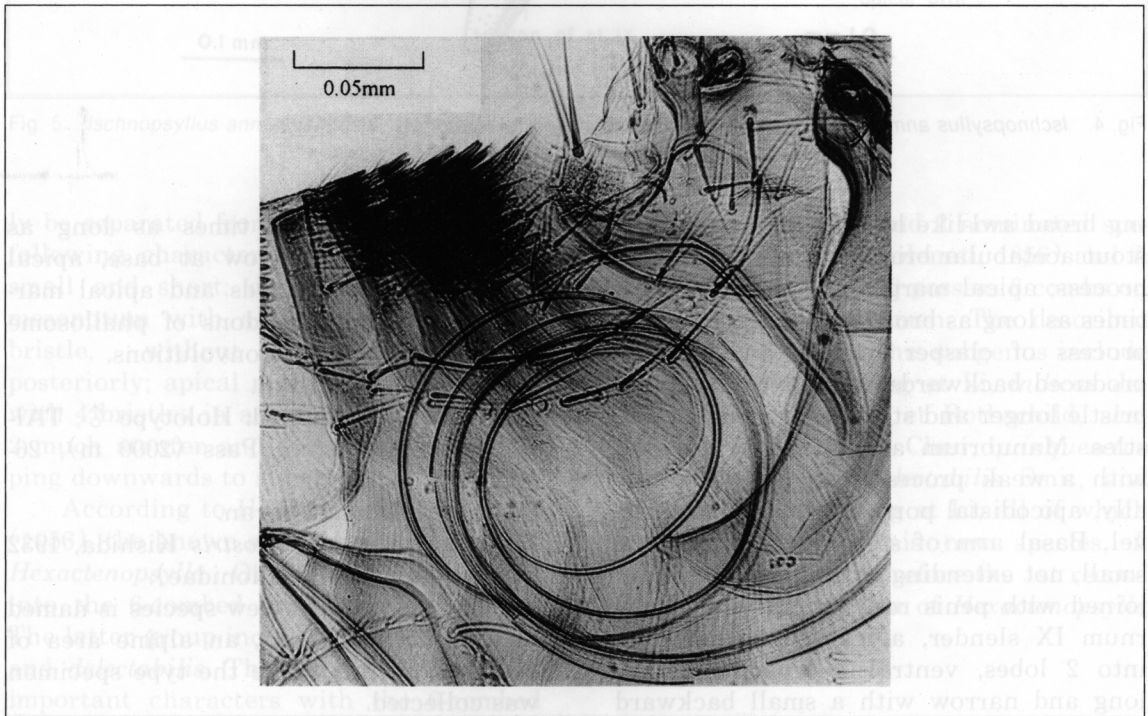


Fig. 3. *Ischnopsyllus anmashanensis*, terga I-IX of male. Note the 4 combs on terga I-IV.

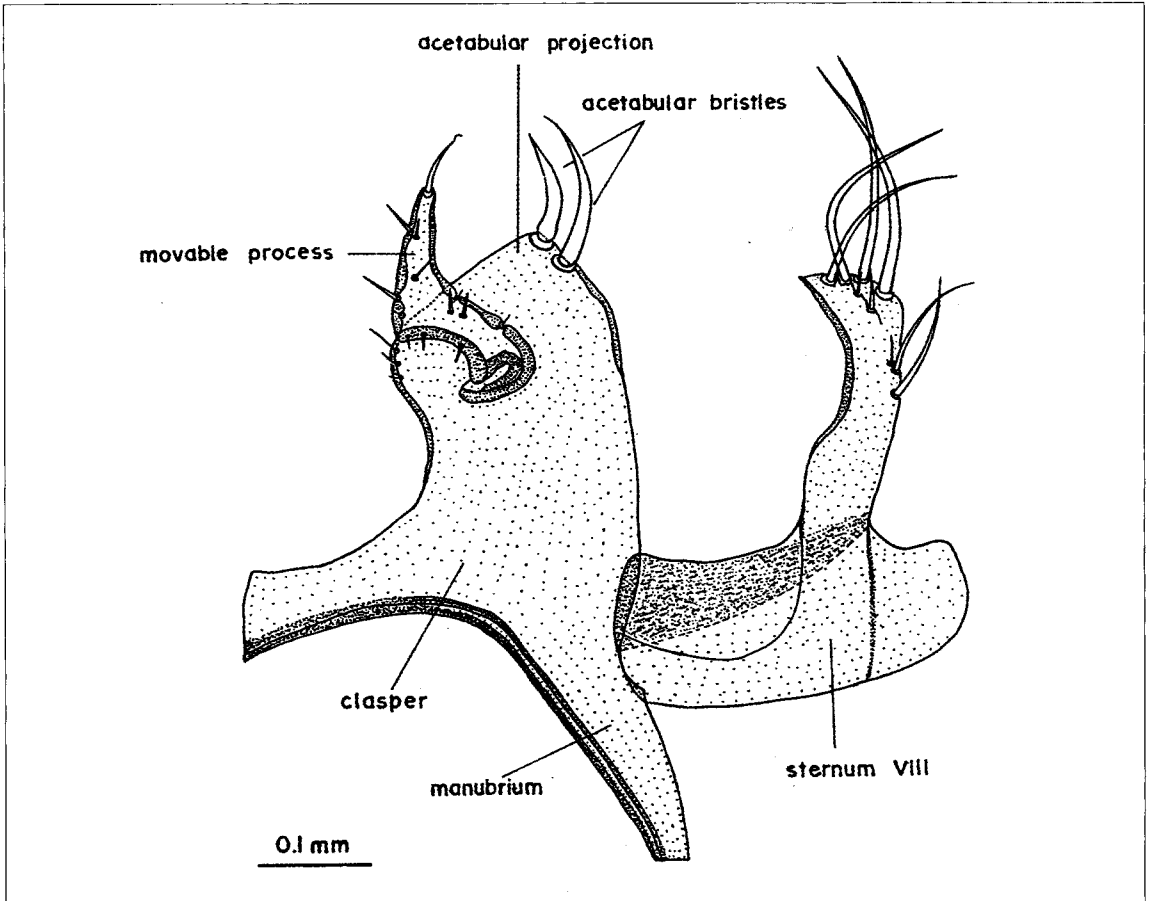


Fig. 4. *Ischnopsyllus anmashanensis*, sternum VIII and clasper of male.

ing broad awl-like lobes, each lobe with 2 stout acetabular bristles nearly as long as process; apical margin of process about 4 times as long as broad in middle. Movable process of clasper narrow and slightly produced backwards, apex with an apical bristle longer and stronger than other bristles. Manubrium approximately parallel with a weak process near middle ventrally, apicodistal portion of manubrium level. Basal arm of sternum IX short and small, not extending to manubrium, elbow joined with penis rod. Apical arm of sternum IX slender, apical portion divided into 2 lobes, ventral 1 broad, dorsal 1 long and narrow with a small backward process, 3 bristles on posterior margin.

Penis-plate about 3 times as long as broad, not very narrow at base, apical portion turned upwards and apical margin very oblique; tendons of phallosome forming more than 2 convolutions.

**Female:** Unknown.

**Material examined:** Holotype ♂, TAI-CHUNG: Anmashan Pass (2000 m), 26-VIII-1993. M. H. Hsu.

**Distribution:** Taiwan.

**Host:** *Myotis latirostris* Kishida, 1932 (Chiroptera, Vespertilionidae).

**Etymology:** The new species is named after Anmashan Pass, an alpine area of central Taiwan, where the type specimen was collected.

**Remarks:** This new species can readi-

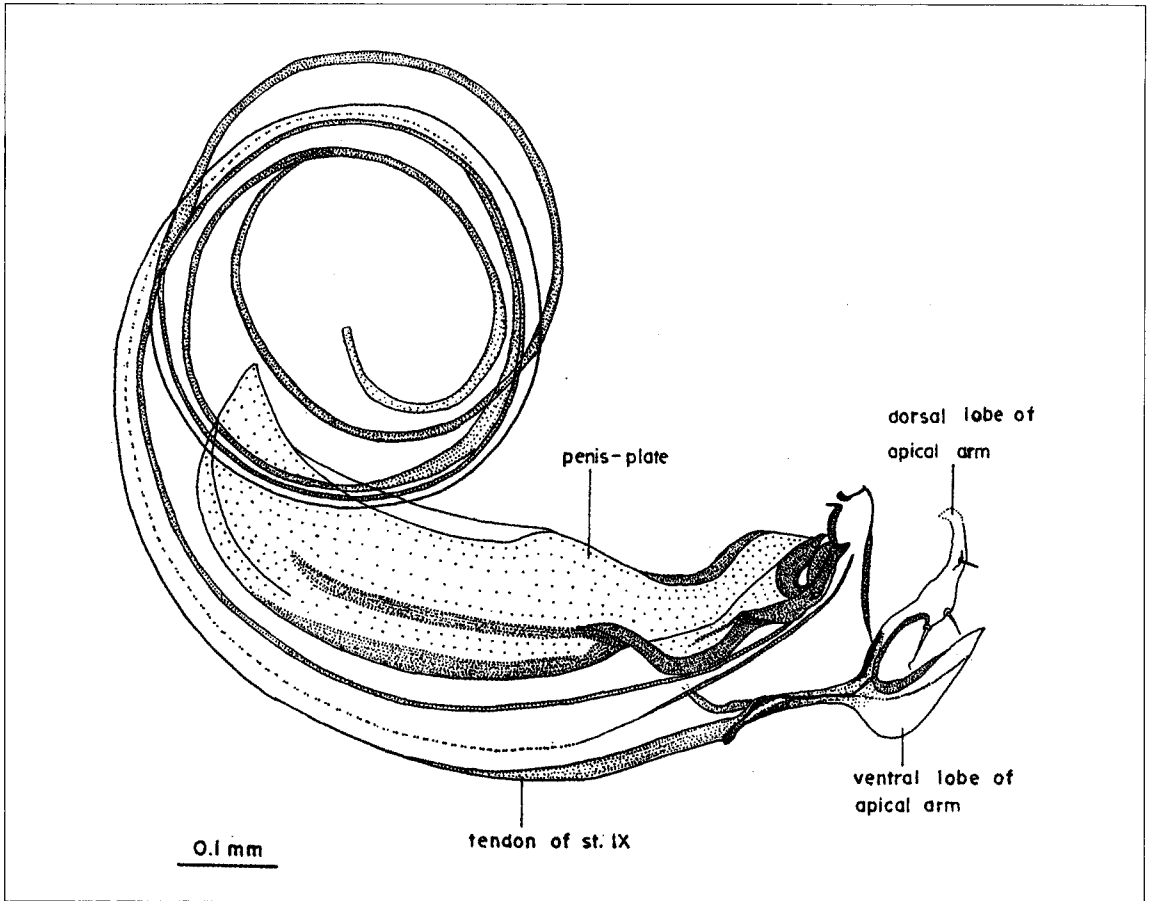


Fig. 5. *Ischnopsyllus anmashanensis*, sternum IX and penis-plate of male.

ly be separated from *I. hexactenus* by the following characters: ocular bristle very small and short; dorso-apical corner of mesonotum with a very long and stout bristle, without marginal bristles posteriorly; apical margin of sternum VIII with 4 bristles in a row, of which ventral 2 much stouter and the remaining 2 sloping downwards to subapically.

According to Hopkins and Rothschild (1956), the known species of the subgenus *Hexactenopsylla* Oudemans are divided into the 6-combed and 8-combed groups. The latter group includes *comans*, *indicus*, and *delectabilis*. They share a number of important characters with the 6-combed species as pointed out by Li *et al.* 1986.

The present species and 2 nominated species, *I. hexactenus* (Kolenati, 1856) and *I. kolenatii* Wagner, 1930 possess 6 combs on the thorax and abdomen. The described species in China for this subgenus include *magnabulga* Xie, Yang et Li, *indicus* Jordan, *comans* Jordan et Rothschild, *shaxiensis* Liu, Xing et Chen, *quinqusetus* Xie, Yang et Li, *delectabilis* Smit, and *quadrasetus* Xie, Yang et Li, all of which possess 8 combs. This new species, *I. anmashanensis*, is therefore the 1st record of a 6-combed bat flea of *Hexactenopsylla* from Taiwan.

## Acknowledgements

The authors wish to express their sincere thanks to Dr. J. C. Lien, Consultant at the National Institute of Preventive Medicine for identifications; Dr. T. H. Lin (NIPM) for preparation of the manuscript; and Professor W. J. Wu, of the Department of Entomology (NTU) for helpful suggestions and comments on the manuscript. Special thanks are due to Dr. G. R. Wang, Director of the Institute of Preventive Medicine, for encouragement and support.

## References

- Chow, C. Y., and T. C. Huang.** 1950. The identification of known species of Taiwan (Formosan) fleas (Insecta, Siphonaptera). *Quart. J. Taiwan Mus.* 3(3): 113-123.
- Hopkins, G. H. E., and M. Rothschild.** 1956. An Illustrated Catalogue of the Rothschild Collection of Fleas (Siphonaptera) in the British Museum (Nature History). Vol. 11. London, 441 pp. +32 pls.
- Li, K. C., D. C. Wang, and P. C. Xie.** 1986. Ischnopsyllidae, 621-661. *in:* Liu et al. eds. *Fauna Sinica, Insecta, Siphonaptera*. Science Press, Beijing, China. 1334 pp. (in Chinese).
- Sugimoto, M.** 1933. Note on fleas in Formosa. *Trans. Nat. Hist. Soc. Formosa* 23: 116-40 (in Japanese with English summary).

Received Oct. 26, 1998

Accepted Mar. 22, 1999

## 臺灣產蝠蚤屬之一新種(蚤目：蝠蚤科)

鍾兆麟\* 徐孟豪 行政院衛生署預防醫學研究所病媒昆蟲組 台北市南港區昆陽街 161 號

### 摘要

本報告描述蚤目蝠蚤科蝠蚤屬之一新種，命名為鞍馬蝠蚤(*Ischuopsyllus anshanensis* Chung and Hsu, sp. nov.) 正模為一雄性，係採自從鞍馬山招待所屋簷下飛出的寬吻鼠耳蝠(*Myotis latirostris* Kishida, 1932)。

**關鍵詞：**蚤目、蝠蚤科、蝙蝠蚤、新種、臺灣。