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Source: Florida Entomologist, 97(1) : 98-99

Published By: Florida Entomological Society

URL: <https://doi.org/10.1653/024.097.0113>

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A NEW SPECIES OF BITING MIDGE OF THE GENUS *CULICOIDES* (DIPTERA: CERATOPOGONIDAE) FROM CHINA

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ABSTRACT

A new species of bloodsucking *Culicoides* Latreille of the subgenus *Avaritia* is described and illustrated based on female specimens from China. The new species is compared with its congener, *C. trimaculatus* McDonald and Lu, 1972.

Key Words: *Culicoides* (*Avaritia*), bloodsucking midges, new species, China

RESUMEN

Se describe e ilustra una nueva especie de jejenes, *Culicoides* Latreille del subgénero *Avaritia*, basada sobre especímenes de hembras de la China. Se compara la nueva especie con sus congéneres similares.

Palabras Clave: *Culicoides* (*Avaritia*), jejenes, jenjenes, ceratopogónidos, nueva especie, China

Culicoides (Diptera: Ceratopogonidae), the main bloodsucking Ceratopogonidae, is the largest genus, which contain 1,210 species worldwide (Borkent & Wirth 1997). During entomological surveys in the Kuankuoshui National Nature Reserve of Guizhou Province, female specimens of *Culicoides* belonging to an undescribed species of the subgenus *Avaritia* were collected. The purpose of this paper is to describe and illustrate this new species from China and to compare it to related species.

MATERIALS AND METHODS

The specimens described herein as a new species were collected by light trap in Zunyi, China. The methods and morphological terminology used in this study follow Spinelli et al. (2005) and Yu (2006). The specimens were mounted in phenol-balsam in the manner described by Wirth & Marston (1968). Diagnostic characters were illustrated using a Leica MZ 12.5 stereomicroscope. The type specimens and examined specimens are deposited in the Insect Collection at the Institute of Entomology, Zunyi Medical University, Zunyi, Guizhou Province, China (IEZU).

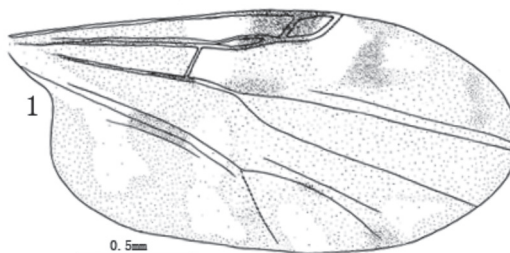
The measurements of the spermathecae and the wings are in millimeters. Meristic information is given as the range followed by the mean and number of specimens examined.

CULICOIDES (*AVARITIA*) *SUIYANGENSIS* SP. NOV. (FIGS. 1-6)

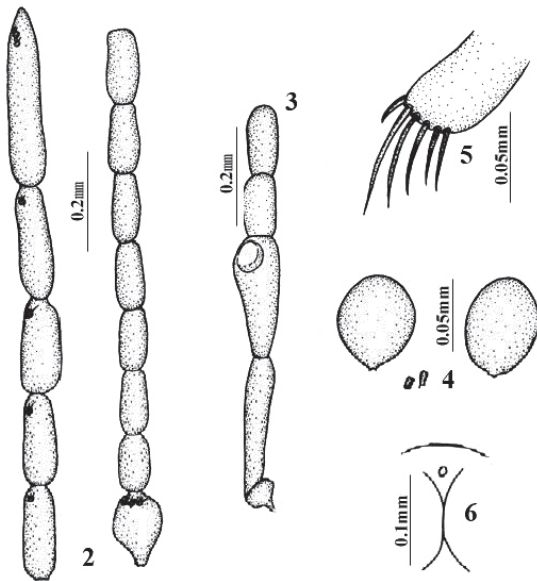
HOLOTYPE: Female, Xiangshuwan, Kuankuoshui National Nature Reserve, Guizhou Province, China, 1-IV-2012, leg. Fei He. **Paratypes:** 6 females, same data as holotype; 2 females, Baishagou, Kuankuoshui National Nature Reserve, Guizhou Province, China, 2-IV-2012, leg. Fei He. The type specimens are deposited in the Department of Cell Biology and Genetics, College of Basic Medicine, Zunyi Medical University, Zunyi, China.

Description

Large-sized midge species, wing length 1.69 mm. Antenna with sensory pattern 3, 11-15. Palpus with



Figs. 1: Wing of *Culicoides* (*Avaritia*) *suiyangensis* sp. nov., female.



Figs. 2-6: *Culicoides (Avaritia) suiyangensis* sp. nov., female; 2: flagellomeres 1-13; 3: palpus; 4: spermathecae; 5: hind tibial comb; 6: dorsal portion of head capsule, in anterior view.

3rd segment moderately swollen, a large, round, shallow, sensory pit on distal segment. Wing mostly dark with distinct light and dark patches at the leading edge of the wings. Two of the dark patches are most distinct, others are blurred. Spermathecae 2, plus a rudimentary 3rd, and a sclerotized ring, subspherical to ovoid with short slender necks.

Specimens Examined

Female

Wing length 1.69 mm ($n = 9$), width 0.8 mm ($n = 9$).

Head. Eyes contiguous, bare. Antenna with lengths of flagellar segments in proportions of 12:8:8:8:8:9:10:12:12:13:14:23; AR 1.10 (1.03~1.21; $n = 9$); sensory pattern 3, 11-15. Palpus with lengths of segments in proportions of 8:26:28:14:15, 3rd segment moderately swollen, a large, round, shallow, sensory pit on distal segment; PR 2.38 (2.33~2.67; $n = 9$). Mandible with 17-19 teeth, maxilla with 13-15 teeth.

Thorax. Brown. Legs brown, femur and tibiae with narrow basal pale rings. Foreleg with lengths of F-T in proportions of 40:44:25:11:7:4:5, TR 2.29; midleg with lengths of F-T in proportions of 52:56:29:13:7:5:5, TR 2.23; Hindleg with lengths of F-T in proportions of 55:58:28:15:8:5:5, TR 1.93; hind tibial comb with 5 spines, the 1st spine is the longest.

Wing. Mostly dark. With mostly distinct pattern of 2 dark spots at the leading edge of the

wings, other spots are blurred. A trace of a pale spot extends over the r-m cross vein and extends to the edge of cell M2. A pale spot in the distal $\frac{1}{3}$ of cell R2. Distal pale spot in cell R5 transverse more and less emarginated on distal side. A blurred pale spot extends to the middle of cell M2 and costal cell M1, over vein M2. Three blurred pale spots elongate in the cell M2 distal side, cell M4, the costal cell Cu1 extending to base of wing. Macrotrichia sparsely spread on distal $\frac{1}{2}$ of wing, CR 0.61.

Abdomen. Light brown. Spermathecae 2 plus rudimentary 3rd and sclerotized ring; subspherical to ovoid with short slender necks; measuring 0.069 by 0.050 mm and 0.065 by 0.055 mm.

Male

Unknown.

Distribution

China (Guizhou Province).

Remarks

This new species is similar to *C. trimaculatus* McDonald & Lu 1972, but it differs clearly in wing length of 1.69 mm, distal pale spot in cell R5 transverse emarginated on distal side, a blurred pale spot on the middle of cell M2 and costal cell M1.

Etymology

The species is named after the type locality.

ACKNOWLEDGMENTS

We thank Prof. G. P. Liu (Center for Disease Control and Prevention, Shenyang, China) for reviewing the manuscript. This research was supported by the National Natural Science Foundation of China (No. 81360257), the Science and Technology Foundation of Guizhou Province (No. LKZ [2011] 39) and the Governor's Foundation of Guizhou Province (No. [2011]56).

REFERENCES CITED

- ART, B., AND WIRTH, W. W. 1997. World species of biting midges (Diptera: Ceratopogonidae). 1-257.
- MCDONALD, J. L., AND LU, L. C. 1972. Female *Culicoides* of Taiwan with description of new species (Diptera, Ceratopogonidae). J. Med. Entomol. 9: 396-417.
- SPINELLI, G. R., RONDEROS, M. M., DÍAZ, F., AND MARINO, P. I. 2005. The blood-bloodsucking biting midges of Argentina (Diptera: Ceratopogonidae). Mem. Inst. Oswaldo Cruz 100: 137-150.
- WIRTH, W. W., AND MARSTON, N. 1968. A method for mounting small insects on microscope slides in Canada Balsam. Ann. Entomol. Soc. America. 61: 783-784.
- YU, Y. X. 2006. Ceratopogonidae of China (Insecta, Diptera). Military Medical Science Press, Beijing. 1,684 pp.