

Case 2702

***Culex stigmatosoma* Dyar, 1907 and *C. thriambus* Dyar, 1921 (Insecta, Diptera): proposed conservation of the specific names by the suppression of *C. peus* Speiser, 1904**

Bruce F. Eldridge

Department of Entomology, University of California, Davis, CA 95616, U.S.A.

Ralph E. Harbach

Walter Reed Biosystematics Unit, Museum Support Center, Smithsonian Institution, Washington, D.C. 20560, U.S.A.

Abstract. The purpose of this application is to stabilize the name of the important American 'banded foul-water mosquito' as *Culex stigmatosoma* Dyar, 1907, and also that of the species known as *C. thriambus* Dyar, 1921. A strict application of the Code would lead to confusion in the names of both species.

1. Speiser (1904, p. 148) published the name *Culex peus* as a replacement for *Culex affinis* Adams, 1903 (p. 25) [preoccupied by *Culex affinis* Stephens, 1825 (p. 452)]. He selected 'peus' as the Greek equivalent of the Latin 'affinis'. Adams had described this species from Oak Creek Canyon, Arizona.

2. Dyar (1907, p. 121) described *Culex stigmatosoma* from specimens collected in Pasadena, California. Its range extends from the western United States to northern South America (Knight & Stone, 1977, p. 216). In California, it is commonly known as the 'banded foul-water mosquito' (Bohart & Washino, 1978, p. 125); it is a common pest, and probably plays a role in arbovirus disease ecology. Stone (1958, p. 236) compared the types of *C. stigmatosoma* and *C. peus* and concluded that they were conspecific. He accordingly synonymized *C. stigmatosoma* under *C. peus*, and the latter name gradually entered general use (see below).

3. Dyar (1921, p. 33) published the name *Culex thriambus*, based on specimens collected in Kerrville, Texas. The range of this species is southwestern U.S. to northern Central America (Knight & Stone, 1977, p. 225).

4. Strickman (1988a, p. 484) re-examined the holotype of *C. affinis* Adams (i.e. *C. peus*) in much greater detail than had Stone (1958, p. 236) and concluded that it was not conspecific with *C. stigmatosoma*, but rather with *C. thriambus*. As a consequence, he synonymized *C. thriambus* under *C. peus*, and resurrected *C. stigmatosoma* for the 'banded foul-water mosquito'.

5. This action has had one very serious negative consequence. It transferred the name *C. peus* from the 'banded foul-water mosquito', where it has been used in public health, ecological, and taxonomic literature for 30 years (1958–1988), to the southwestern species previously known as *C. thriambus* for 67 years (1921–1988). The

strict application of the Code in this way would cause enormous confusion in non-taxonomic literature and in literature indexes. For example, just in the Nowell Index to proceedings and papers of the California Mosquito and Vector Control Association (Nowell, 1982, p. 102) the name *Culex peus* (for the banded species) is cited at least 125 times. It would be nearly impossible for one doing literature searches to know which species bearing the name *C. peus* was being referred to, other than by implication from the date of publication. Furthermore, the use and construction of keys to western U.S. mosquito species in the public health literature would become complex and confusing.

6. This problem can be alleviated by suppressing the name *Culex peus*. Thus the name of the 'banded foul-water mosquito' would become *C. stigmatosoma*, as it was for 51 years (1907–1958), and *C. thriambus* would remain as the name for the southwestern species. This action will have the advantage of stabilizing the name *C. thriambus* for a well established species concept.

7. We considered a course which would have had the effect of preserving the 1958–1988 usage of the names *peus* and *thriambus*. This would have involved designating the holotype of *C. stigmatosoma* as a neotype of *C. peus*, using the Commission's plenary powers to set aside the holotype of the latter. We discarded this course for the following reasons:

(1) *Culex stigmatosoma* is a well described and aptly named Dyar species. *Culex peus* is a replacement name which is not in any way descriptive of the species, and is only 3 years senior to *stigmatosoma*.

(2) Much more importantly, and as stated in para. 5, because of the published realignment of names by Strickman (1988a, 1988b) the name *C. peus* henceforth would be subject to confusion. There would be no such confusion from conservation of the names *C. stigmatosoma* and *C. thriambus*. Name changes are nearly always unpopular with applied biologists, and the 1958 change in the name of the 'banded foul-water mosquito' to *C. peus* was only slowly accepted. However, with the appearance of the Strickman (1988a) paper, the name *C. stigmatosoma* has been quickly re-adopted in the economic literature. The *Proceedings of the California Mosquito and Vector Control Association* (Glenn Yoshimura, Editor, personal communication), the *Journal of Medical Entomology* (W. K. Reisen, Editor, personal communication), and the *Journal of the American Mosquito Control Association* (Ronald A. Ward, Editor, personal communication) all now use *Culex stigmatosoma* as a matter of editorial policy. We conclude that to attempt to go back to the 1958–1988 use of *Culex peus* at this point would create needless confusion.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary powers to suppress the specific name *peus* Speiser, 1904, as published in the binomen *Culex peus*, for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *stigmatosoma* Dyar, 1907, as published in the binomen *Culex stigmatosoma*;
 - (b) *thriambus* Dyar, 1921, as published in the binomen *Culex thriambus*;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *peus* Speiser, 1904, as published in the binomen *Culex peus* and as suppressed in (1) above.

References

- Adams, C. F. 1903. Dipterological contributions. *University of Kansas Science Bulletin*, 2: 21–47.
- Bohart, R. M. & Washino, R. K. 1978. *Mosquitoes of California*, viii+153 pp. University of California, Berkeley.
- Dyar, H. G. 1907. Report on the mosquitoes of the coast region of California, with descriptions of new species. *Proceedings of the United States National Museum*, 32(1516): 121–129.
- Dyar, H. G. 1921. Ring-legged *Culex* in Texas (Diptera, Culicidae). *Insector Inscitiae Menstruus*, 9: 32–34.
- Knight, K. L. & Stone, A. 1977. *A catalog of the mosquitoes of the world (Diptera: Culicidae)*, xi+611 pp. Thomas Say Foundation, Entomological Society of America, College Park, Maryland.
- Nowell, W. R. 1982. *The Nowell index of the proceedings and papers of the first fifty annual conferences of the California Mosquito and Vector Control Association, Inc. 1930–1982*. 120 pp. California Mosquito and Vector Control Association, Inc., Sacramento, California.
- Speiser, P. 1904. Zur nomenclatur blutsaugender Dipteren Amerikas. *Insektenborsa*, 21: 148.
- Stephens, J. F. 1825. Some observations on the British Tipulidae, together with descriptions of the species of *Culex* and *Anopheles* found in Britain. *Zoological Journal of London*, 1: 448–457.
- Stone, A. 1958. Types of mosquitoes described by C. F. Adams in 1903 (Diptera, Culicidae). *Journal of the Kansas Entomological Society*, 31: 235–237.
- Strickman, D. 1988a. Redescription of the holotype of *Culex (Culex) peus* Speiser and taxonomy of *Culex (Culex) stigmatosoma* Dyar and *thriambus* Dyar (Diptera: Culicidae). *Proceedings of the Entomological Society of Washington*, 90: 484–494.
- Strickman, D. 1988b. *Culex stigmatosoma* and *Culex peus*: identification of adult females in the United States. *Journal of the American Mosquito Control Association*, 4: 555–556.