

Notes on Tokunaga's Japanese Species of *Psychoda*

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Recently I have been able to examine types of some species of Japanese Psychodidae described by Tokunaga (1958). From these I am able to correct certain errors which now exist in Tokunaga's revision of Japanese psychodids. The chief errors made by Tokunaga have been the misassociation of sexes. The proper association of sexes is often a difficult matter in *Psychoda*, but in doubtful cases is more certain when species are known from a wider range than a single country or area.

Sexes of *Psychoda bifurcata* Tokunaga and *P. hamatifera* Tokunaga have been incorrectly associated. Females of *P. bifurcata* are conspecific with *P. harrisi* Satchell, but males belong to a distinct species. Females of *P. hamatifera* I regard as the same as *longiseta* Tokunaga & Komyo, while the males are the same as *P. harrisi* Satchell.

One specimen identified by Tokunaga as *P. albipennis* Zetterstedt was seen and this is *P. savaiiensis* Edwards. Other females of *P. albipennis* listed by Tokunaga (1958:371) have not been seen, but I suspect that they too are *savaiiensis* and that *albipennis* should be deleted from the Japanese fauna. Males of *P. savaiiensis* were properly identified.

The new synonymies are as follow:

***Psychoda harrisi* Satchell**

Psychoda harrisi Satchell, 1950, TRANS. ROY. ENT. SOC. LONDON, 101:171 (New Zealand).

Psychoda bifurcata Tokunaga, 1958, PHIL. JOUR. SCI. 86:378. (In part, ♀ only. Allotype ♀, Okinawa; ♂ a valid species.)

Psychoda hamatifera Tokunaga, 1958, PHIL. JOUR. SCI. 86:385. (In part, ♂ only. Holotype ♂, Okinawa.) New synonymy.

Distribution: Ryukyu Is., Borneo, Australia, New Zealand, Caroline Is., Hawaii.

***Psychoda longiseta* Tokunaga & Komyo**

Psychoda longiseta Tokunaga & Komyo, 1954, PHIL. JOUR. SCI. 83:313 (Japan).

Psychoda hamatifera Tokunaga, 1958, PHIL. JOUR. SCI. 86:385. (In part, ♀ only. Allotype ♀, Okinawa.)

Distribution: Japan, Ryukyu Is., Bonin Is.

Psychoda bifurcata Tokunaga

Psychoda bifurcata Tokunaga, 1958, PHIL. JOUR. SCI. 86:378. (Holotype ♂, Okinawa.)

Distribution: Ryukyu Is.

The female described for this species is *P. harrisi*, but the holotype male is a valid species. The species thus stands, but with the female still unknown.

Psychoda savaiiensis Edwards

Psychoda albipennis, Tokunaga (*nec* Zetterstedt) 1958, PHIL. JOUR. SCI. 86:371.

REFERENCE CITED

TOKUNAGA, M. 1957. Japanese Psychodidae, IV. Descriptions and revision of *Psychoda* species. PHIL. JOUR. SCI. 86(4):359-403.

BOOK REVIEW

Insects of Hawaii, Zimmerman. Vol. 10, Diptera: Nematocera-Brachycera by D. Elmo Hardy. 368 pp. Univ. Hawaii Press. \$7.00.

To the monumental series treating the insects of Hawaii, which first began publication over twelve years ago by E. C. Zimmerman, another volume has been added. In a departure from the previous scheme, a specialist of the group concerned has participated in the series. Dr. Hardy has completed the first of four volumes covering the Diptera of the Hawaiian Islands.

The volume is chiefly taken up with the alpha taxonomy of the Hawaiian Nematocera and Brachycera to facilitate identification of the species. Keys to families and categories to the subspecies level are given. By personal experience, the reviewer can recommend the keys as well constructed and useful. Detailed descriptions and excellent illustrations greatly enhance the usefulness of the paper. Every species is illustrated and there are over 400 separate figures. Wherever possible, the species have been designated as endemic or introduced and, if the latter, the direction from which they may have come is given. This surely is one of the most thorough faunal works on Diptera that has ever been done.

The families Tipulidae, Psychodidae, Culicidae, Chironomidae, Ceratopogonidae, Scatopsidae, Mycetophilidae, Sciaridae, Cecidomyiidae, Stratiomyidae, Bombyliidae, Scenopinidae, and Empididae are included in this volume. In these families there are 152 Hawaiian species and subspecies in 96 genera and subgenera, but undoubtedly more will yet be found, especially in the rugged montane forests. Of the lower Diptera, the Hawaiian families with largest number of species are the Chironomidae and Cecidomyiidae. Only a few Brachycera species are in the Islands and, as typical with oceanic islands, representatives of the large families Asilidae, Tabanidae, Rhagionidae and Therevidae are absent. About two-thirds of the species are apparently endemic.

The introductory section includes a historical review of studies of Hawaiian Diptera, discussion of morphology, nomenclature, taxonomy and technics, and an eight-page review of the economic importance of Hawaiian Diptera, both from a medical and agricultural viewpoint.

This volume will certainly be a lasting contribution to Hawaiian Diptera and will be an indispensable tool to zoologists concerned with Pacific flies either for purposes of identification or broader studies. With a high standard established, we can look forward to the remaining three volumes on the Hawaiian Diptera by Dr. Hardy.

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