

PREPARATION OF SLIDE MOUNTS OF SCIARIDAE (DIPTERA)

Abstract. Techniques for mounting Sciaridae on microscope slides are described, including a procedure for remounting Sciaridae from deteriorated Hoyer's medium.

Identification and taxonomic study of Sciaridae require well-prepared microscope slide-mounted specimens. The following techniques have been used for several years and appear to provide good, long term slide mounts. These techniques were modified from Belkin (1962, *Mosquitoes of the South Pacific*, Vol. 1, Univ. Calif. Press, Berkeley, p. 74-75).

A. MOUNTING DRIED SPECIMENS

1. Place specimen into 75% alcohol in one of the following ways and soak for 48 h.
 - a. If specimen is glued to paper point, cut point to free specimen from pin and drop into alcohol solution.
 - b. If specimen is on minuten pin, carefully remove minuten with specimen and place in alcohol.
2. Continue with step B1.

B. MOUNTING FROM 75% ETHANOL

Since the wings are separated from the remainder of the specimen during the following procedure, all containers must be properly identified to ensure that the final slide contains the properly associated wings and body.

1. Dissect wings.
 - a. Place wings in 95% alcohol (5 min).
 - b. Transfer wings to clove oil (5 min).
 - c. Mount in Euparal on upper right-hand corner of labelled slide.
2. Place remainder of specimen in stender dish half-filled with 10% KOH (prewarmed for 30 min) for 30 min to 1 h.
3. Transfer specimen to dish half-filled with water (prewarmed for at least 30 min) for 1 h.
4. Transfer specimen to 75% alcohol (stender dish) for 1 h (room temp.).
5. Transfer specimen to 95% alcohol (stender dish) for at least 30 min, but not more than 1 h (room temp.).
6. Place specimen in clove oil until it sinks, usually 30 min to 1 h.
7. Place specimen on slide in very small drop of clove oil; dissect and separate head and, if male, genitalia; add a drop of Euparal. Move genitalia, ventral surface up, to left side of drop of Euparal. Move head, anterior surface up, to right side of drop. Allow Euparal to set, then add fresh Euparal on cover slip and invert onto specimen.
8. Place in oven (50 °C).
9. Check slide every few days and add Euparal as needed.

C. REMOUNTING FROM DETERIORATED HOYER'S MEDIUM

1. Soak Hoyer's preparation in 10% KOH at room temperature for 3 h or until Hoyer's has dissolved.
2. After Hoyer's is completely dissolved, remove cover slip to free specimen and detach wings in KOH solution.
3. Transfer specimen and wings to prewarmed (30 min), distilled water to soak for 1 h (use small spatula and transfer very quickly or specimen will stick).

4. If necessary, stain specimen and wings in acid fuchsin for 30 min.
5. Proceed with step B4.

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PUBLICATION ANNOUNCEMENT

TAXONOMY, PHYLOGENY AND BIOGEOGRAPHY OF THE GENUS *COSMOPSALTRIA*, WITH REMARKS ON THE HISTORIC BIOGEOGRAPHY OF THE SUBTRIBE COSMOPSALTRIARIA (HOMOPTERA: CICADIDAE)

By J. P. Duffels

A new concept is proposed for the cicada genus *Cosmopsaltria*, sister-group of the genera *Diceropyga* and *Aceropyga* revised earlier by the author. Nine new species are described, 5 are placed in new generic combinations, and 3 are considered new synonyms. The generic rearrangements proposed are corroborated by distributional patterns. The infrageneric classification in 7 species-groups is based upon cladistic analysis. The species of *Cosmopsaltria*, which now number 21 valid species, are virtually restricted to New Guinea and nearby islands. Because these large, attractive cicadas appear to be adapted to lowland and montane rain forests, the phytogeography of New Guinean rain forests is treated in detail. As a weakly dispersive group, cicadas might be expected to reflect biogeographic patterns of the past more strongly than do more dispersive groups. Hence, the biogeography of *Cosmopsaltria* is treated in detail, with distribution maps given for each species. The biogeographic history of the subtribe Cosmopsaltriaria is also discussed, taking into account the present and past vegetation of New Guinea and the geological history of New Guinea, the Moluccas, and adjacent areas. Origin of *Cosmopsaltria* and its sister-group is hypothesized to be Oriental, and 2 major pathways of distribution of ancestors of the Papuan cicadas—the Inner and Outer Melanesian arcs—are discussed.

This treatise embodies the best traditions of systematic zoology in using knowledge in several related disciplines to arrive at conclusions regarding the classification and biogeographic history of a taxon. All those interested in paleogeography or phytogeography of the Papuan subregion, in reconstructions of historic biogeographies of taxa in space and time, in phylogenetic (cladistic) classification, or in the taxonomy of the Homoptera in general, and Cicadidae in particular, will find J.P. Duffels' latest tome a valuable reference for many years to come.

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