

Biological Bases for Placement of Aedes sierrensis (Ludlow)in the Subgenus Finlaya Theobald

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It is herewith proposed to ascribe this species to the subgenus Finlaya. The species from western United States was returned to binomial status by Belkin and McDonald (1956a, 1956b) and removed from synonymy with Aedes varipalpus (Coquillett), a species more easterly in range. Ludlow (1906) thought this species was a Finlaya. Edwards (1932) likewise considered the varipalpus complex as belonging to Finlaya. Knight and Marks (1952) removed Aedes varipalpus from Finlaya on the basis of female genitalic characters. Belkin and McDonald (1957) placed Aedes sierrensis in the subgenus Ochlerotatus.

Bases for assignment to Finlaya:

1. Morphological: Rohlf (1963) by statistically analyzing a large number of larval and imaginal features of Aedes sierrensis, established a morphological basis for placement in Finlaya. In addition, chorionic sculpturing of the eggs of this species when examined by the scanning electron microscope shows patterns characteristic for the subgenus. This confirms observations made by Craig (1956) who used phase microscopy.

2. Behavioral: Aedes sierrensis exhibits behavioral characteristics typical of Finlaya. Eggs are deposited in cavities in stumps of redwoods left after lumbering operations (Strickland 1969). The cavities were without contact with soil. Those members of Ochlerotatus that oviposit in cavities in trees do so in cavities having soil at the base. The observations of Freeborn (1926) and Peyton (1956) confirm that eggs are deposited on wood rather than soil. Lastly, Aedes sierrensis is stenogamous as is the rule with species of Finlaya and is only rarely known for Ochlerotatus.

3. Cytochemical: A cytochemical basis for assignment to the subgenus Finlaya is that of Trebatoski and Haynes (1969) who proposed indices based on paired affinities of isoenzymes.

4. Parasitic: Parasitic affinities based on attack by the gregarine Lankesteria sp. indicate that Aedes sierrensis is not an Ochlerotatus because these parasites are known only from Finlaya or Stegomyia (Vavra 1969).

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