LEPTOPHLEBIIDAE OF THE SOUTHWESTERN UNITED STATES AND NORTHWESTERN MEXICO (INSECTA: EPHEMEROPTERA)

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ABSTRACT—Collections of mayflies of the Leptophlebiidae, genera Charoterpes Eaton, Paraleptophlebia Lestage, Thrulodes Ulmer, and Traverella Edmunds from the southwestern United States and northwestern Mexico are reviewed. Charoterpes (Charoterpes) oaxacaensis Brusca & Allen is synonymized with C. (C.) inornata Eaton. The nymph described as Thrulodes species “D” Allen & Brusca is the nymph of T. arizonicus McDunnough. New distributional records extend the known ranges of C. inornata, C. (Neochoroterpes) mexicanus Allen, Paraleptophlebia memorialis (Eaton), T. arizonicus, T. brunneus Koss, T. saltinus Kilgore & Allen, T. speciosus Traver, Traverella albertaina (McDunnough), and T. castanea Kilgore & Allen.

A study of collections of mayflies belonging to the family Leptophlebiidae from Arizona, New Mexico, and Texas in the United States and from Chihuahua, Sonora, and Sinaloa in Mexico has revealed new distribution records for species in the genera Charoterpes Eaton, Paraleptophlebia Lestage, Thrulodes Ulmer, and Traverella Edmunds. Collections by the authors were labeled by the initials C.M.M. and/or R.K.A., and their specimens have been deposited in the California Academy of Sciences, San Francisco. Specimens collected by B. C. Kondratieff and R.W. Baumann were deposited in the collection of Brigham Young University, Provo, Utah.

Genus Charoterpes Eaton

The subgenera Charoterpes and Neochoroterpes Allen occur in the geographic area considered by this manuscript.

Charoterpes (Charoterpes) inornata Eaton

Charoterpes inornata Eaton 1892; 6, Kilgore & Allen 1973: 321 (nymph).

Charoterpes oaxacaensis Brusca & Allen 1973: 137. NEW SYNONMY.

Brusca and Allen (1973) noted that the nymphs of C. nervosa Eaton and C. inornata were unknown and that the nymph described as C. oaxacaensis may eventually be found to be the nymph of the former species, as many Central American species occur in tropical Mexico. The nymph of C. inornata was described by Kilgore and Allen (1973) from specimens collected in Arizona and New Mexico, and a comparison of these nymphs with the type specimen of C. oaxacaensis reveals that they belong to a single species and therefore C. inornata.

DISTRIBUTION: This species is now known from southern Mexico (17° N lat.) to southern Colorado (37° N lat.).


Charoterpes (Neochoroterpes) mexicanus Allen

Charoterpes (Neochoroterpes) mexicanus Allen 1974: 163.

DISTRIBUTION: This species has been reported from central Texas (32° N lat.) to Chihuahua and Veracruz, Mexico (19° N lat.).

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Genus Paraleptophlebia Lestage
This genus reaches its most southern distributional limits in the southwestern United States and only P. altaea Kilgore & Allen and P. memorialis (Eaton) occur in this geographic region.

Paraleptophlebia memorialis (Eaton)

Distribution: This species is widely distributed in western North America from southern Alberta (53° N lat.) to Arizona and New Mexico (32° N lat.).


Genus Thraulodes Ulmer
Allen and Brusca (1978) divided the genus into the brunneus (brunneus, speciosus) and the gonzalesi (arizonicus, salinus) groups based on nymphal characters.

Thraulodes brunneus Koss

Distribution: This species is known to occur from central Arizona and New Mexico (34° N lat.) to near Cabo San Lucas, Baja California, and Sinaloa, Mexico (23° N lat.).


Thraulodes speciosus Traver
Thraulodes speciosus Traver 1934; 201; Mayo 1969: 103 (nymph).

Distribution: This species has a narrow latitudinal distribution range as it is known only from central Arizona (35° N lat.) to Chihuahua and southern Sonora, Mexico (27° N lat.).


Thraulodes arizonicus McDunnough

Allen and Brusca (1978) described a species of nymph collected from several localities from Honduras to Nuevo Leon and Sinaloa, Mexico, as Thraulodes sp. "D." The nymphal species was given an informal epithet as several Mexican and Central American Thraulodes were unknown in the nymphal stage. Traver and Edmunds (1967) described the male imago of T. arizonicus as having a distinctive black apical band on tibiae I. The tibiae of the nymphs described as Thraulodes sp. "D." and the tibiae of other nymphs recently collected in Arizona and in Chihuahua, Sonora, and Sinaloa, Mexico, have a black band and all are herein assigned as the nymph of T. arizonicus. This placement appears to be almost certain as no other Thraulodes species from the southwestern United States or northern Mexico is without a known nymph. A mature nymph of T. arizonicus is described.
and figured by Allen and Brusca (1978: 422).

DISTRIBUTION: This species is now known from Arizona (35° N lat.) to Honduras (14° N lat.). The very broad latitudinal distribution of this species, from the southwestern United States to tropical Mexico and Central America, is essentially the same as the distributions of *Leptophyphes ferruginus* Allen, *L. packeri* Allen, and *Choroterpes inornata*.


*Thraulodes salinus* Kilgore & Allen


DISTRIBUTION: This species is now known from Arizona (34° N lat.) to southern Sinaloa (23° N lat.).


*Traverella* Edmunds

Allen (1973) revised the nymphal stages of the North and Central American species, including a key to the species.

*Traverella albertana* (McDunnough)

*Thraulodes albertana* McDunnough 1931: 82.

Traverella albertana Edmunds 1948: 142.

DISTRIBUTION: This species has the widest latitudinal distribution of any North American species with a range of more than 26°. Specimens have been collected from Saskatchewan, Canada (54° N lat.), to Chihuahua, Mexico (25° N lat.).


*Traverella castanea* Kilgore & Allen


DISTRIBUTION: This species is now known to occur from Arizona (35° N lat.) to Chihuahua and southern Sinaloa (23° N lat.).


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LITERATURE CITED


