

A New Species of Bromeliad-Breeding *Culex* (*Micraedes*)  
From Mexico (Diptera, Culicidae)<sup>1</sup>

by

O.G.W. Berlin<sup>2</sup>

The new species was collected by John N. Belkin during a trip to Mexico in August 1972 for the project "Mosquitoes of Middle America" (Belkin, Schick, et. al. 1965). Study revealed that it was a member of the Schicki Group, others being the nominate form and *sandrae*. This new species, *jalisco*, is described and illustrated in the present paper. The method of presentation, terminology and abbreviations used in the description follow Belkin (1962).

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*Culex* (*Micraedes*) *jalisco* Berlin, sp. n.

Figs. 1,2

TYPES: *Holotype* male (MEX 723-18) with slides of associated pupal and larval skins and genitalia, near El Tuito, 16 km from Boca de Tomatlan (on highway from Puerto Vallarta to Manzanillo), Jalisco, Mexico, 500 m, larva from terrestrial bromeliad, 29 Aug 1972, J.N. Belkin [USNM]. *Allotype* female (MEX 723-12) with slide of associated pupal and larval skins, same data as holotype [USNM]. *Paratypes*: 9 lpM (MEX 723-11,14,19,41,42,46,47,49,76), 13 lpF (723-10,13,15,16,17,40,43-45,48,60,75,77), 12 pM (723-70,81,84,87,89,95,100-102,111-113), 3 pF (723-80,96,114), 36 M, 14 F, 87 P, 565 L (723), same data as holotype [BM, ISET, LACM, UCLA, USNM].

FEMALE. Wing: 3.3 mm. Proboscis: 2.3 mm. Forefemur: 1.9 mm. Abdomen: 2.4 mm. As described for the subgenus (Berlin, 1970:24-25) and with the following diagnostic features. *Head*: Decumbent scales on dorsum white. Erect scales dark brown. Antenna subequal to proboscis length. Palpus short, about 0.2 of proboscis. Proboscis longer than forefemur. *Thorax*: Mesonotal scales predominantly auburn, linear; scales on anterior promontory and humeral area white; scales on antearlar area above paratergite predominantly white, posteriorly auburn. Pleural integument mostly pale yellow; *ppn*, *psp*, lower *stp*, upper and lower *mep* areas brown. Scales on

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<sup>2</sup>Department of Biology, University of California, Los Angeles, California, 90024.

upper margin of *ppn* white; scattered, moderately broad whitish scales on posterior margin of *stp* along bristles. Lower *mep* with a single bristle. Wing and legs dark scaled. *Abdomen*: Tergites dark, with basolateral light patches. Sternites I-VI mainly creamy, with a few apical dark scales on distal segments; sternite VII mainly creamy.

MALE. Wing: 2.8 mm. Proboscis: 1.9 mm. Forefemur: 1.6 mm. Similar to female in coloration. Antenna shorter than proboscis. Palpus long, about 0.9 of proboscis length. Proboscis longer than forefemur.

MALE GENITALIA (fig. 1). As figured; diagnostic characters as in the key. *Segment IX*: Ninth tergite lobe moundlike, with 9 or 10 short setae. *Sidepiece*: Roughly conical, length about 1.8-1.9 of greatest width; tergal surface laterad of subapical lobe with a dense patch of 20-25 bristles; a few scattered short setae caudad of subapical lobe on mesal surface; no scales evident. Subapical lobe situated at 0.7, directed caudomesad; proximal division prominent, split apically into 2 unequal parts, longer bearing a broad saber with recurved apex, shorter with a specialized seta; distal division with at least 15 or 16 short and moderately long relatively simple setae, most of them with recurved apices, and with a prominent leaf and a flat seta on base of tergal surface. *Clasper*: About 0.6 of sidepiece length; distal 0.3 expanded, bent inward, with a row of fine ridges on external margin and with 2 subapical setae. *Phallosome*: Basal hook of lateral plate broadly sclerotized; distal part of apical process broadly rounded in tergal aspect; sternal spine projecting anteriorly. *Proctiger*: Paraproct with 6 or 7 apical teeth; cercal setae 3 in number.

PUPA (fig. 1). Abdomen: 2.8-3.0 mm. Trumpet: 0.5 mm; index about 10.0. Paddle: 0.7-0.8 mm. As figured, diagnostic characters as in the key. *Cephalothorax*: Lightly to moderately pigmented, areas laterad of trumpet slightly darker. Hairs 1-3-C usually double; 5-C with 5 (3-5) branches, moderately long, extending to base of trumpet; 6,9-C single; 7-C double and 8-C usually triple; 10-C with 7 branches (3-11); 11-C single. Trumpet moderately long; tracheoid distinct and strongly pigmented. *Abdomen*: Integument moderately pigmented, progressively lighter caudad, imbricate. Hair 6-I,II single, long, at least 2.0 of 7-I,II; hair 6-III,IV usually double, 6-V,VI single; 2-II-VI short, subequal in length to 9-II-VI; hair 5-IV-VI usually 3 or 4 branched, long, at least 1.5 of succeeding segment; 9-VII,VIII strongly developed, usually double. *Paddle*: Elongate, longer than wide, at least 2.5 of segment VIII. Male genital lobe extending to 0.4 and female to 0.2 of paddle.

FOURTH INSTAR LARVA (fig. 2). Head: 0.85 mm. Siphon: 1.4 mm. Anal saddle: 0.3 mm. As figured; diagnostic characters as in the key. *Head*: width about 1.1 of length. Hair 4-C usually 4 branched (3-7); hair 5-C with at least 5 branches (5-7); hair 7-C with 8-11 branches; 9-C usually 12 branched (9-14); hair 14-C with at least 5 branches (5-8); hair 15-C double, moderately long, barely extending beyond base of mental plate. *Antenna*: Length about 0.5 of head, with distinct spicules in basal 0.6; all hairs single except 1-A (3-9). *Thorax*: Hair O-P with 11-17 branches; 4,7-P double; 5,6-P single; 14-P usually double; 1-M usually with 13 branches (8-15). *Abdomen*: Hair 2-II-VII multiple, weakly stellate, with at least 6 (6-15) branches; 6-I-VI always double; 7-I double; 7-II strong, 3-5 branched; 9-I-VII at least 3 branched. *Segment VIII*: Comb scales in a patch of 3 irregular rows, about 31-55 in number; individual scales fringed to apex. *Siphon*: Index about 10.0. Integument strongly pigmented, darker apically; imbrication distinct in basal 0.3; subventral hairs (1,1a-S) 4 pairs and subdorsal (2a-S) 2 pairs; proximal subdorsal hair double, strongly developed, subequal in length to proximal subventral hair; distal subdorsal

hair small, subequal in length to distal subventral. Pecten extending to basal 0.3; teeth 23-25 in number; individual tooth with a weak subbasal ventral tooth. *Anal Segment*: Integument of saddle imbricate and finely spiculate; caudolateral border with moderately long spines. Hair 1-X short, forked; 2-X usually triple, rarely double. Ventral brush with 5 pairs on a grid. Gills moderately long, pointed apically; ventral subequal in length to dorsal and 1.5-2.0 of saddle length.

SYSTEMATICS. As now interpreted, the Schicki Group of *Culex (Micraedes)* contains 3 species (*schicki*, *sandrae* and *jalisco*). All three have limited allopatric distribution in the Sierra Madre del Sur in southern Mexico.

All species of Schicki Group are very similar morphologically in the females but are readily separated in the males and the immature stages. These diagnostic features are indicated in the provisional keys to the group given below.

BIONOMICS. The immature stages of *jalisco* have been collected in terrestrial and epiphytic bromeliads and doubtfully from a treehole (MEX 722). The immatures were associated with species of *Culex (Microculex)*, *Wyeomyia* and *Corethrella*. All known adults have been reared and nothing is known about their behavior.

DISTRIBUTION. *C. jalisco* has been collected in the state of Jalisco in southern Mexico at elevations of about 500-600 meters. Material examined: 1230 specimens, 58 males, 26 females, 128 pupae, 1018 larvae; 60 individual rearings (19 pupal, 41 larval).

MEXICO. *Jalisco*: El Tuito (near), 16-19 km from Boca de Tomatlan on highway from Puerto Vallarta to Manzanillo (MEX 719,721,722,723 (type series), 724).

### KEYS TO SPECIES OF SCHICKI GROUP

#### MALE GENITALIA

(*sandrae* unknown)

- Dorsal surface of sidepiece laterad of subapical lobe with 3 or 4 bristles in a patch; proximal division of subapical lobe with a broad saber, a smaller saber and 2 specialized setae on tergal surface in addition to a group of several simple setae at base . . . . . *schicki*  
 Dorsal surface of sidepiece laterad of subapical lobe with a dense patch of 20-25 bristles; proximal division of subapical lobe with only 1 broad saber and 1 specialized seta in addition to a group of several simple setae at base . . . . . *jalisco*

#### PUPAE

1. Hair 5-C at least 4 branched; 7-C, 6-IV usually double . . . . . *jalisco*  
 Hair 5-C usually 3 branched; 7-C, 6-IV usually single . . . . . 2

- 2(1). Hair 6-IV,V long, exceeding apex of succeeding segment; 6-I distinctly longer than 7-I . . . . . *schicki*  
 Hair 6-IV,V shorter, barely extending to middle of succeeding segment; 6-I subequal in length to 7-I. . . . . *sandrae*

#### LARVAE

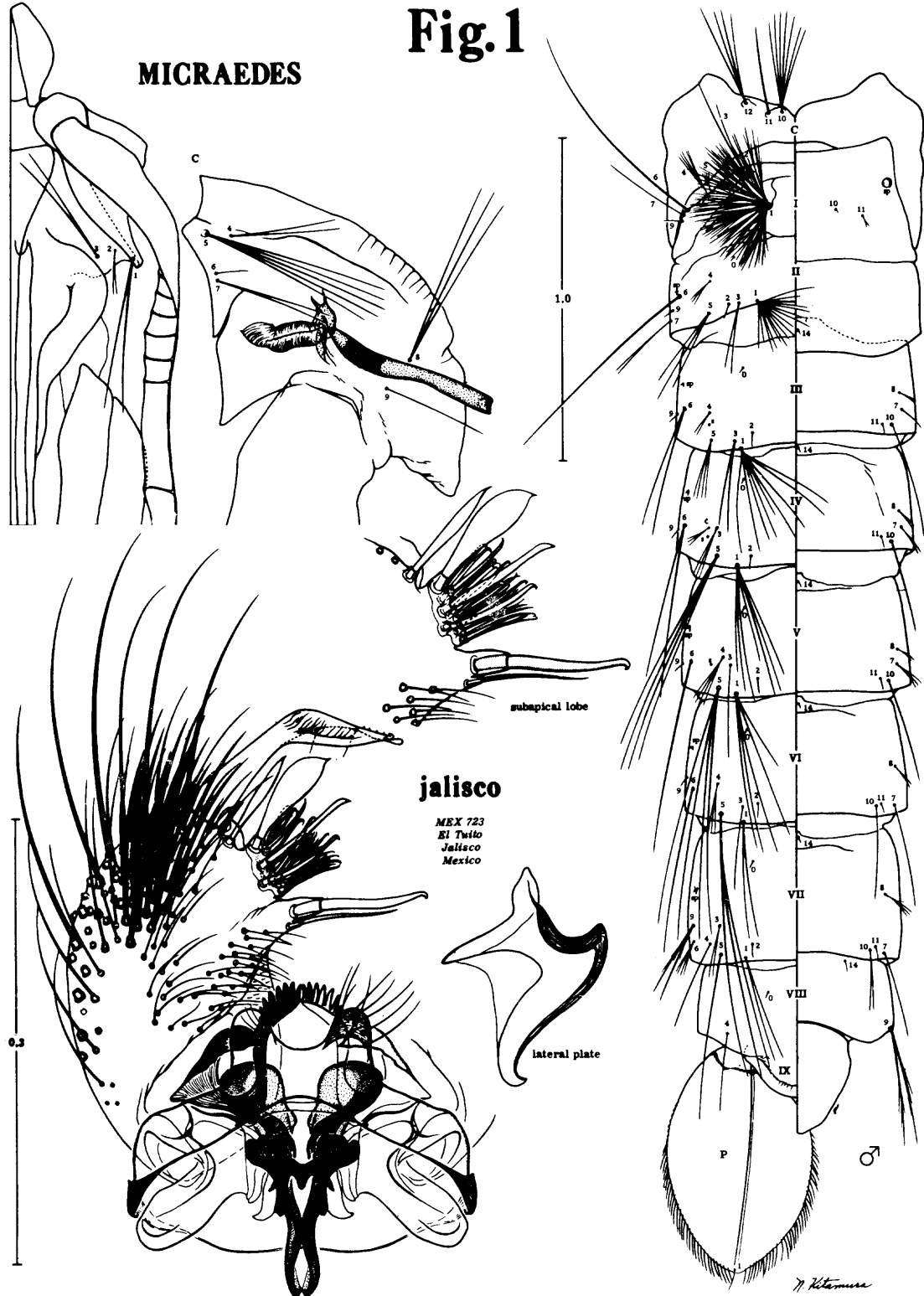
1. Hair 8-C double, 7-P single; 2-X at least 4 branched . . . . . *sandrae*  
 Hair 8-C triple, 7-P double; 2-X usually double or triple . . . . . 2
- 2(1). Proximal subdorsal siphonal hair moderately long, strongly developed and subequal in length to proximal subventral hair (1-S); hair 2-X usually triple . . . . . *jalisco*  
 Proximal subdorsal siphonal hair short, weakly developed and about 0.25 of hair 1-S; hair 2-X usually double . . . . . *schicki*

#### FIGURES

1. *Culex (Micraedes) jalisco*: male genitalia and pupa.  
 2. *Culex (Micraedes) jalisco*: larva.

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**Fig. 2**

