THE IMMATURE STAGES OF *CHIRONOMUS AETHIOPS* (TOWNES) WITH KEYS TO THE SPECIES OF THE KNOWN IMMATURE STAGES OF THE SUBGENUS *DICROTENDIPES* (CHIRONOMIDAE: DIPTERA)

DONALD W. WEBB
Illinois Natural History Survey

ABSTRACT.—The immature stages of *Chironomus* (*Dicrotendipes*) *aethiops* (Townes) are described and an extension of its North American range is noted. A key to the immature stages of known North American species is included.

Chironomus (*Dicrotendipes*) *aethiops* (=*Tendipes* (*Limnochironomus*) *aethiops*) was described by Townes (1945) from specimens collected in New Mexico. It has subsequently been recorded by Beck and Beck (1959) from the coastal lowlands and central highlands of Florida. The material presented in this paper was collected by D. Erman, during a limnological study of the littoral zone of Bear Lake, Rich County, Utah. Mr. Erman was able to provide adult specimens as well as numerous live larvae living in *Scirpus acutus* Muhlenberg from which twelve larvae were reared through to the adult.

Chironomus (*Dicrotendipes*) *aethiops* (Townes)

Pupa:

Length 5.6 ± 0.19 mm (N=8). Cephalic tubercle (Fig. 1) 1.5 times as wide as long, subapical setae 0.5 times as long as tubercle. Respiratory apparatus filamentous, arising from 2 main stems. Tergite 1 (Fig. 2) with 2 small anterio-lateral patches of spinnules and without posterior band of spines. Tergites 2-6 with broad mesal patch of spinnules, becoming coarser towards posterior of segment; tergite 2 with single transverse row of anteriorly directed hooks across posterior margin; tergite 4 and 5 with small caudolateral patch of spines. Tergite 7 with narrow transverse band of spinnules across anterior fourth of segment. Tergite 8 with bifid caudolateral spur (Fig. 3). Tergites 5-8 with 4 lateral filamentous setae, respectively. Tergite 9 with 48 ± 2 (N=15) natatory setae.

Larva:

Length 7.8 ± 0.34 mm (N=4). Color blood red with mottled green pigmentation covering thoracic segments. Head pale yellow, 1.3-1.4 times as long as wide; eyespots black. Antenna (Fig. 4) pale yellow, 5 segments (36:10:6:6:2), basal segment 3 times as long as wide, sensorium 0.31 of way from base; antennal blade attached to base of second segment, extending beyond tip of apical segment; single broad lauterborne organ present at base of third segment, extending to middle of third segment. Mandible (Fig. 5) pale yellow, 1.6 times as long as wide, apical tooth and 3 lateral teeth black; dorsomesal tooth paler, not extending beyond apical tooth; accessory tooth (Fig. 6) knife shaped, extends to apex of third lateral tooth; preapical setae present; caudolateral brush arising from 3 distinct stems. Epipharyngeal plate with 5 teeth (Fig. 7). Labial plate (Fig. 8) blackish brown; 1.5 times as wide as long; medial tooth simple; first laterals equal in height or slightly longer than medial tooth; second laterals small, basal 5/6th fused to first laterals; remaining 4 laterals descending in

height. Paralabial plates (Fig. 8) pale yellow, striated, widely separate medially, 1.7 times wider than long, anterior margin crenulate. Premandibles (Fig. 9) bifid, inner blade broader than outer. Anterior prolegs separated medially. Anal papillae short, 1.9 times as wide as long, each with 8 coarse apical setae and 2 fine basal setae. Two pairs of short, obtuse anal gills.

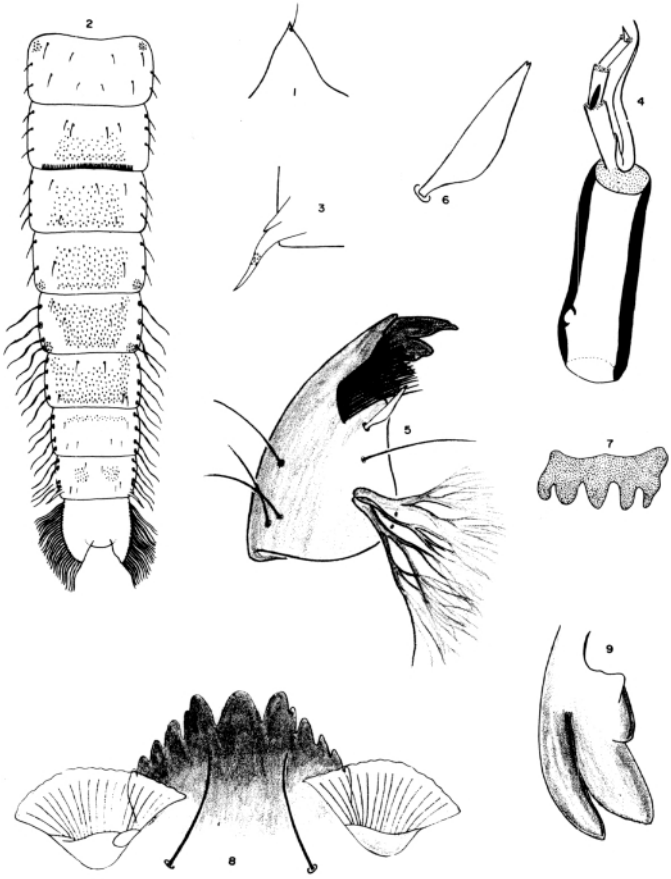

FIGURE 1. *C. (D.) aethiops*, cephalic tubercle of pupa.

FIGURE 2.—dorsal view of abdominal tergites of pupa.

FIGURE 3.—dorsal view of left caudolateral spur on abdominal segment 8 of pupa.

FIGURE 4.—larval antenna.

FIGURE 5.—ventral view of larval mandible.

FIGURE 6.—accessory tooth of larval mandible.

FIGURE 7.—larval epipharyngeal plate.

FIGURE 8.—ventral view of labial plate of larva.

FIGURE 9.—ventral view of premandible of larva.

Key to the Known Larvae of *Chironomus* (*Dicrotendipes*)

1. First antennal segment about 2.2 times length of second segment..... .....*nervosus* Staeger
   First antennal segment greater than 2.8 times length of second segment...2
2. First lateral teeth of labial plate barely notched.....*neomodestus* Malloch
   First lateral teeth of labial plate deeply notched.....3
3. Inner and outer blades of premandibles equal in width..... .....*fumidus* Johannsen
   Inner blade of premandible at least twice as wide as outer blade.....4
4. Anterior margin of paralabial plate smooth.....*californicus* Johannsen
   Anterior margin of paralabial plate crenulate.....*aethiops* (Townes) *modestus* Say

Key to the Known Pupae of *Chironomus* (*Dicrotendipes*)

1. Caudolateral spur on eighth abdominal tergite bifid.....2
   Caudolateral spur on eighth abdominal tergite simple.....3
2. First abdominal tergite without posterior band of spines..... .....*aethiops* (Townes)
   First abdominal tergite with posterior band of spines.....*nervosus* Staeger
3. Apical abdominal tergite with less than 50 anal filaments..... .....*neomodestus* Malloch
   Apical abdominal tergite with 50 or more anal filaments.....4
4. First abdominal tergite with anteriolateral patch of spines..... .....*modestus* Say
   First abdominal tergite without anteriorlateral patch of spines..... .....*californicus* Johannsen

Acknowledgments

The author wishes to express his gratitude to D. Erman for his cooperation in collecting live material for purposes of rearing and to H. K. Townes, Jr. for the loan of paratypes to verify the identification.

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Manuscript received October 11, 1971.