

NOTE ON VARIATION IN LARVAE OF *Chaoborus*
LICHT. (DIPTERA: CULICIDAE)

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Fourth instar larvae of *Chaoborus borealis* Cook, *C. americanus* (Joh.) and *C. nyblaei* (Zett.) collected at Churchill, Manitoba, in 1952 and 1953 by H. G. James (James and Smith, 1958) were identified by means of Cook's (1956) key. It was found that the shape of the prelabral appendages and the number of setae in the mandibular and anal fans of some specimens differed slightly from Cook's descriptions. Attempts were therefore made to define the differences using 150 fourth instar larvae of *C. borealis*, 78 of *C. americanus*, and 130 of *C. nyblaei*.

In *C. borealis* the ratio of length to maximum width of the prelabral appendages averaged 7.53 and ranged from 5.40 to 8.90; in *C. americanus* it averaged 2.73 and ranged from 2.40 to 3.90; and in *C. nyblaei* it averaged 2.85 and ranged from 2.00 to 4.90.

Four percent of the *C. borealis* larvae had 11 setae on one mandibular fan and 12 on the other, 31 percent had 12 on both fans, and 65 percent had 11 on both. Exuviae with 12 setae on both fans were of males and those with 11 setae on both fans were of females. One percent of *C. americanus* had 27 setae on both fans, three percent had 24, seven percent had 25 on one and 26 on the other, 44 percent had 26 on both, and 45 percent had 25 on both. Variation of this character in *C. nyblaei* was considerably greater than in the other two species. Two percent had 10 setae on one fan and 11 on the other,

nine percent had 15 on one and 16 on the other, nine percent had 13 on both, 13 percent had 12 on one and 13 on the other, 15 percent had 14 on both and 52 percent had 13 on one and 14 on the other.

C. borealis had either 21 or 22 setae in the anal fan; 59 percent had 21 and 41 percent had 22. There was greater variation in *C. americanus*; one percent had 22, one percent 23, 15 percent 24, 75 percent 25, and eight percent 26. In this species, as in *C. nyblaei*, the larger larvae had the larger numbers of setae in the anal fan. In *C. nyblaei* there was one percent with 25 setae, two percent with 26, two percent with 27, three percent with 28, one percent with 29, three percent with 31, 45 percent with 32, four percent with 33, 33 percent with 34, three percent with 35, one percent with 36, and two percent with 37.

The present observations on the larvae of the three species, with Cook's observations in brackets, are summarized in the accompanying table.

SUMMARY

This paper describes variations in last-instar larvae of *Chaoborus borealis* Cook, *C. americanus* (Joh.) and *C. nyblaei* (Zett.) from Churchill, Manitoba.

References

- COOK, E. F. 1956. The Nearctic Chaoborinae. Univ. Minnesota Agr. Exp. Sta. Tech. Bull. 218.
JAMES, H. G., and SMITH, B. C. 1958. Observations on three species of *Chaoborus* Licht. (Diptera: Culicidae) at Churchill, Manitoba. Mosquito News 18:242-248.

Species	Prelabral appendage ratio	Number of setae in mandibular fan	Number of setae in anal fan
<i>C. borealis</i>	5.40-8.90 (7.00-7.33)	11-12, (11-12)	21-22, (21-22)
<i>C. americanus</i>	2.40-3.90 (less than 2.5)	24-27, (22-29)	22-26, (23-26)
<i>C. nyblaei</i>	2.00-4.90 (4.5, 3 in Canadian specimens)	10-16, (13-20)	25-37, (24-33)