

OBSERVATIONS OF EARLY SPRING ACTIVITY OF *CULISETA*  
*INORNATA* (WILLISTON) (DIPTERA, CULICIDAE)  
IN SOUTH CENTRAL NEBRASKA<sup>1</sup>

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The activity of *Culiseta inornata* (Will.) was observed during February, March, and April, 1950 at a borrow pit located about 3 miles south of Kearney, Nebraska. The observations confirm the overwintering of this species in the adult stage.

As early as February 8, water appeared in small holes in the surface of the ice. In midafternoon the air temperature was 40° F. and that of the water was 34°. Some Collembola and copepods were active; no other aquatic life was noted. On February 20, water was present between the surface ice and the bottom ice. The surface ice was softening and becoming porous. Collembola and copepods still were the only active life found. On March 6, the second of two consecutive days when the air temperature reached 71°, the water temperature was 58°. No stages of mosquitoes were found although small numbers of other aquatic insects were active.

No further observations were made until March 31, at which time no larvae, but many egg rafts were found. The majority of the eggs were fully pigmented. Samples of the incompletely pigmented eggs that were held at room temperature became completely pigmented within 12 hours. Dissection of some of the fully pigmented eggs revealed, at 50X magnification, no embryonic development. Several of the darker egg masses that were kept at room temperature produced larvae on April 3.

On April 4, following a heavy snow, the water temperature was 38° under a 5-inch blanket of snow. No larvae were

found at this time although a thorough search was made. First instar larvae were found on April 11. Some larvae appeared to be at least halfway through the first instar. Adult mosquitoes were conspicuous, flying about the borrow pit as the vegetation was disturbed. A good sample of the population was obtained by sweeping; all were *C. inornata*. Larvae were reared until positive identification could be made. These were also all *C. inornata*.

During the time that the borrow pit was under observation, several other ponds were checked to determine developments in the vicinity of the borrow pit. All other ponds were several days later developing aquatic life than was the borrow pit. This probably was due to the pit being so located that it received the full benefit of the warmth from the sun but was protected from the northwest winds.

Eggs were found shortly after the first dates that the minimum temperature remained above 32° and after there was sufficient ice-free water for oviposition. Diligent search failed to reveal any stages prior to the finding of eggs. The presence of eggs that were not fully pigmented indicated recent oviposition. The occurrence of adults at about the time of finding the eggs, confirms the probability of recent oviposition. The author feels that it would have been impossible for larvae or pupae to have existed in the borrow pit prior to the finding of eggs, and to have escaped observation. The checking of other ponds eliminated the possibility of there being more advanced breeding in them.

These observations indicate that the *C. inornata* under consideration could have overwintered only as adult mosquitoes.

<sup>1</sup> From the Communicable Disease Center, Public Health Service, Federal Security Agency, Atlanta, Georgia.