



Figure 11. Survival of field collected *Culex nigripalpus* at outdoor temperatures.

out undue reduction of tissue nitrogen (Thayer & Terizan 1971, Van Handel 1965). After 2 weeks of ad lib. feeding on the sucrose solution, the energy reserves (glycogen, and triglyceride, or caloric reserves) of these females reached a maximum level (Nayar & Sauerman 1973a, 1975a), and provided continuous energy for their normal physiological functions, such as flight, respiration, mating, and general metabolism. Triglyceride, in addition to free sugar, served as the substrate for general maintenance and respiration (Nayar & Van Handel 1971), and its availability in large quantities prolonged survival. Therefore, energy reserves declined as the females approached 50% survival time.

When wild blood-seeking females collected from the field from October 1976 to August 1977 were maintained on distilled water under outdoor conditions, their 50% survival times varied inversely with temperature. A high 10-day mean temperature after the collection produced a 50% survival time of 53 to 112 hours; however, when the temperature was lower, the 50% survival times were 129 to 256 hours (Fig. 11). These survival times were similar to those observed in unfed females at the same temperatures.

It is impossible to calculate the 50% survival time of mosquitoes in the field, so other methods must be used (Service 1976). During one study, marked *Cx. nigripalpus* adults were recovered with CDC light traps, assuming that these light traps caught active females without bias and that the mortality rate was constant from day to day. The daily survival rate was calculated from the number of marked females recovered each day (Dow 1971), and was found to be 0.81 or 81% daily for 176 radioactive females recaptured.

In 1976 at Tiger Hammock, a series of four experiments was conducted releasing ^{32}P -marked *Cx. nigripalpus* into the field. Resting adults were recaptured with portable aspirators and blood-seeking females were recaptured with