

made them susceptible to chemotropic stimuli from a food viewpoint.

At a temperature of 70° F, about one-half were active and at 75° F. all were active. When the temperature was suddenly lowered as from 75° to 36° F. all became dormant at once and exhibited no tropic reactions. By at once I mean within ten or twelve minutes. Without doubt thermotropism plays an important if not the most important part in deciding just what reactions are to occur. A gradual lowering of the temperature such as would naturally result in the beetles acting phototropically and thigmotropically while a sudden drop resulted in what might be called immediate partial hibernation. Of course with a soft bodied insect this would have resulted in death. When the temperature of the air was 42° F., that of their natural hibernation place was 54° F. which indicates an effort to secure optimum conditions.

After emerging from winter quarters, the females of *Culex pipiens* are at first positively chemotrophic. After having fed they become positively hydrotropic and deposit their eggs on the surface of water. While in hibernation during which time they may be fairly active, depending on the temperature of their hibernation quarters, they are strongly negatively hydrotropic. Food and water placed within easy reach of hibernating specimens were always avoided, even when the temperature of their surroundings was 75° or 80° F.

*Aedes sollicitans* and *Aedes cantator* are also positively hydrotropic but not to the extent of most other mosquitoes. With these species eggs are deposited in damp depressions and not on the surface of the water. Sterile females of both of these species are strongly negatively hydrotropic and fly long distances away from salt marshes where they breed. However this migratory habit, or at least the direction they take, is undoubtedly influenced by anemotropism inasmuch as they allow themselves to be carried by strong breezes and will fly inward against light breezes. Sterile females of *Aedes taeniorhynchus*, which has a similar life history to *sollicitans* are to a certain extent negatively hydrotropic.