

## SIX GENERATIONS OF *CULEX PIPIENS* WITHOUT A BLOOD MEAL

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About 2500 larvae and pupae of *Culex pipiens* were collected from a water filled hole in the storeroom floor of a tavern located at La Grange and Joliet Roads, Lyons Township, Illinois, on March 16, 1945. Several thousand adults were present in the room in an active condition, flying about readily when disturbed. The larvae and pupae collected were allowed to develop and emerge as adults into several lamp chimneys.

One of the chimneys containing 50 adults was placed over a bowl of water on March 29th. These adult mosquitoes were not permitted to get a blood meal from any source at any time. Five small egg rafts and about 100 larvae in the first instar were observed in the bowl on April 2nd, four days later.

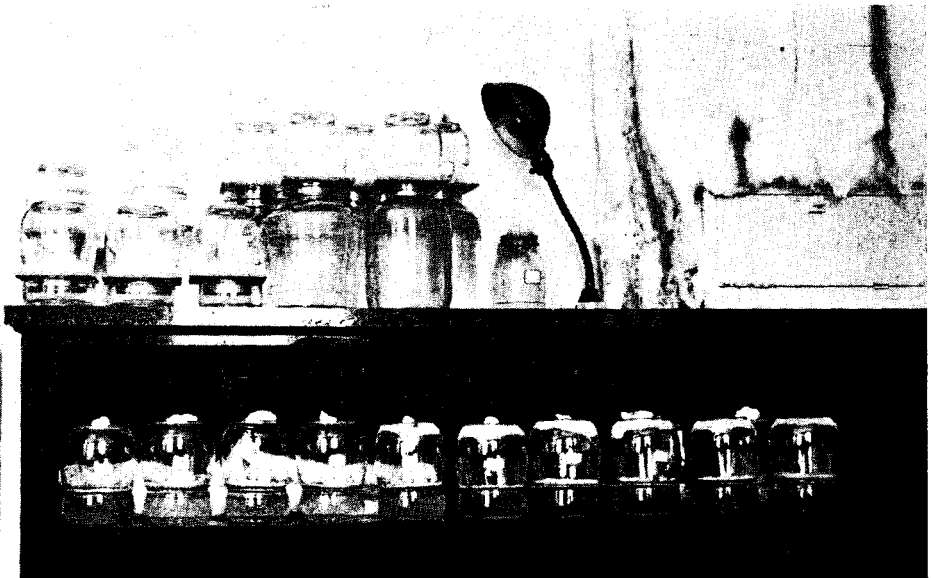
This colony was kept alive for a period of 4½ months, March 29th to August

20th, passing through six generations during this time. The number of larvae, pupae and adults varied from about 1200 in the second and third generations to about 50 in the sixth and last generation.

Adults in the colony were fed by placing cotton pads saturated with a 5 per cent solution of Karo syrup on the top of the chimneys. The larvae were fed with powdered Purina Dog Chow, and occasionally a small amount of Pablum.

Oviposition occurred in from four to nine days after hatching of adults with an average time of six days. A total of 106 egg rafts were laid during the existence of the colony, none of which were normal size.

The eggs in 54 of these rafts were counted and totalled 2473, an average of 46 eggs per raft. The largest raft contained 75 eggs, and the smallest contained



Method of rearing *Culex pipiens* in bowls covered with lamp chimneys.

16 eggs. This is in contrast to normal rafts found in the field under normal breeding conditions which vary from 100 to 400 eggs.

The average number of eggs per raft in each generation ranged from 40 to 50 eggs during the first four generations, and then dropped to an estimated 20 in the fifth and no rafts in the sixth generation.

The first rafts laid were very loosely constructed, many of the eggs lying in a haphazard, irregular manner, and a few floating singly on the water surface. This condition continued from the first raft laid on April 18th, until the first week in May, when they were more normal in appearance, although a few along the edges were still laid in irregular positions. After May 10th only one out of 43 rafts was abnormal in structure.

The time required for the eggs to hatch varied from 2 to 13 days, averaging five days. The time in the larval and pupal stages averaged 15 days, ranging from 7 to 24 days. In most cases over half of this time was spent in the first and second instars.

The larvae were usually very slow in development during the first and second

instars, often appearing colorless and weak, even when an excess of food was present. Their growth was usually stimulated suddenly in the third instar, without any changes being made in the type or rate of feeding.

Tap water and distilled water were both used with this colony without making any perceptible difference in the rate of development of the larvae. Although the degree of pollution of the water varied, it likewise did not affect the larvae.

During the first five generations the adults appeared much as in nature, occasionally flying about the chimneys. Placing of laboratory animals within close proximity to these adults did not agitate them, as was the case with *Aedes aegypti* when they were close to a prospective blood meal.

Those in the sixth generation rarely lived more than one or two days. For some unexplained reason they were found drowning in the water and when the bowl of water was removed, were found dead on the bottom of the chimney the following day. They did not have any inclination to lay eggs or to bite and could almost be thought to have committed suicide.