

EGG

FOCAL DISTRIBUTION

Cx. nigripalpus breeds in more or less permanent collections of water where its eggs are laid. A more detailed account of its focal distribution is given under 'Larva and Pupa.'

SEASONAL OCCURRENCE AND ASSOCIATED SPECIES

Cx. nigripalpus eggs occur along with eggs of other *Culex* species. During a 1971-1972 study at Seashore Key (north Florida) egg rafts of *Culex* species were collected and individually reared to 4th instar for species identification. This resulted in the following proportions: 24.2% *Cx. nigripalpus*, 67.4% *Cx. quinquefasciatus*, 7.3% *Cx. restuans*, and 1.0% *Cx. salinarius* (Lowe et al. 1974). *Cx. quinquefasciatus* was present throughout the entire collection period, but was more abundant during the warmer months of May to August. *Cx. restuans* was found only during the winter and spring months except for a single collection in July, and *Cx. salinarius* was collected only in August 1971. *Cx. nigripalpus* was collected mainly from September to December and only sporadically from April through August (Lowe et al. 1974).

In experiments conducted at Tiger Hammock, egg rafts were collected from August to November 1978, and May to June 1979, and were individually hatched and identified during the first instar larva stage (cf. Identification of first instar larvae). All of the egg rafts collected from August to November 1978 were *Cx. nigripalpus*, but in May 1979, when fewer egg rafts were laid, 56.2% were *Cx. nigripalpus*, 37.2% were *Cx. quinquefasciatus*, and 2.3% and 4.3% were *Cx. salinarius* and *Cx. restuans*, respectively (Table 3). By the end of May to early June, the population of *Cx. nigripalpus* had greatly increased and the total number of eggs collected was almost equivalent to those collected in summer (Table 3). At this time, 89% of the collected egg rafts were *Cx. nigripalpus*, 10.7% were *Cx. quinquefasciatus*, 0.2% were *Cx. salinarius*, and no egg rafts of *Cx. restuans* were present.

EMBRYOGENESIS AND EGG HATCHING

The eggs of *Cx. nigripalpus* do not undergo either quiescence or diapause, but hatch immediately upon the completion of embryogenesis. Eggs laid in the laboratory hatch after 18 to 20 hours at 35°C, 20 to 21 hours at 32°C, 27 to 28 hours at 27°C, 40 to 41 hours at 22°C, 55 to 56 hours at 20°C, and 122 to 126 hours at 15°C (Nayar 1968a). They do not hatch at 10°C. This indicates that the duration of embryogenesis is temperature dependent since the Q_{10} value is 2.0 for a 10°C range of temperature from 22 to 32°C, and is much higher than 2.0 for any 10°C range lower than 22°C. Therefore, in south and central Florida, eggs