tures (Nayar 1968a). By varying the temperature, embryogenesis was prolonged and hatching delayed, and the use of moist filter paper further forestalled hatching for 1 to 2 hours after the embryonic development was completed. When the rafts were then placed into water, a simultaneous hatching occurred. Thus hatching could be obtained that was both simultaneous and at a predetermined time and newly hatched larvae could be reared to the adult stage and used for both laboratory and field experiments (Nayar et al. 1979, 1980).

Larval Rearing

In the field, most mosquito larvae feed on microscopic fauna, such as bacteria, yeast, algae, and protozoa that are associated with decaying plant materials, e.g., hay and leaf litter. In the laboratory, larvae of different Florida mosquito species can be reared on either a ration of dry brewer's yeast supplemented with liver powder, or a mixture (1:1) of dry brewer's yeast and lactalbumin (Nayar 1967, 1968a, Nayar & Sauerman 1970a, Nayar et al. 1979, 1980).

Larval Marking With Radionuclide $H_3{}^{32}PO_4$

Radionuclides have been used to mark mosquitoes during the larval stage to study the dispersal and energetics of adult mosquitoes (Service 1976). Dow (1971) marked *Cx. nigripalpus* by feeding the larvae during the entire 4th instar with $H_3{}^{32}PO_4$ in HCl at concentrations of either 0.5 of 0.3 μCi/mL of tagging medium. The newly emerged adults exhibited diverse radioactive counts, and the females had damaged ovaries. Nayar et al. (1979) improved this technique by allowing synchronously reared larvae, at 10 to 12 hours after reaching 4th instar, to feed for 16 hours on the radionuclide $H_3{}^{32}PO_4$ at concentrations of either 0.5, 0.25 or 0.125 μCi/mL of tagging medium. After the 16-hour period, the radioactive counts per larva averaged 28,062 counts per minute (cpm), 12,213 cpm, and 6,802 cpm for the three respective concentrations of ^{32}P. During later mark-release-recapture experiments, early 4th instar larvae were marked with $H_3{}^{32}PO_4$ for 18 to 24 hours at a concentration of 0.4 μCi/ml. The following radioactive counts were recorded: 15,795 ± 1268 cpm per larva, 12,045 ± 1132 cpm per pupa, 9,820 ± 543 cpm per male and 11,645 ± 725 cpm per female. The subsequent 50% survival time on distilled water was 52 to 64 hours for males and 56 to 68 hours for females and on 10% sucrose, this period was 32 to 46 days for males and 57 to 75 days for females. These survival times were identical to those of unmarked adults reared in a similar manner.

Sampling Method for Larvae and Pupae

In the field, larvae and pupae were collected with a standard dipper.

Sampling Methods for Adults

All sampling methods for adult mosquitoes are subject to bias. Bidlingmayer (1967) and Service (1976) have summarized different sampling methods used for mosquitoes.