

It is not possible to observe directly the flight patterns of mosquitoes in the field, but they can be indirectly studied through the use of non-attractant collecting techniques when both environmental conditions and the physiological state of the mosquito can be evaluated (Bidlingmayer 1971, 1974). Bidlingmayer used suction traps within and adjacent to wooded swamps, and vehicle aspirators within daytime resting habitats to collect mosquitoes. From his data he found that certain species including *Cx. nigripalpus* remained in the woodland throughout the day, and even though a few mosquitoes did move into the fields, they were usually found near shrubs. Only a small number ventured outside their natural habitat at night, except after an early evening rain, when the relative humidity was above 90% (Bidlingmayer 1974, Dow & Gerish 1970, Provost 1973). Therefore, even though *Cx. nigripalpus* has a great dispersal potential (both the energy reserves and flight capacity), it rarely moves far from the shaded woodlands and swamps unless the humidity is high.

Results from suction and truck trap collections showed that the light intensity of the moon, wind velocity, and temperature also affected the flight activity of *Cx. nigripalpus* (Bidlingmayer 1967, 1971, 1974). During the full moon phase, 1.7 times more *Cx. nigripalpus* adults were collected than during the new moon, indicating that flight activity was greater with the higher intensity of moonlight (Bidlingmayer 1967, Provost 1959).

Mosquito collections were reduced by about 60% with wind velocities of 10 to 20 mph (4.5 to 8.9 meters per second). Winds above this prevented any flight activity. Only a few more adults were collected when early morning temperatures were 22°C than were collected at temperatures of 19°C to 21°C. The collections were significantly smaller when morning temperatures dropped to between 18°C and 16°C, and even fewer were collected below 16°C.

Approximately seven times more blooded *Cx. nigripalpus* females were collected in suction traps at dawn than at dusk (Edman & Bidlingmayer 1969, Bidlingmayer 1975). Even though gravid females flew at both evening and morning twilight, more were usually collected in the morning than in the evening. The number of parous females that were flying gradually increased during the night, being lowest in the evening and greatest at dawn. On moonlit nights, more blooded and gravid females of *Cx. nigripalpus* were trapped in the fields than in the hammocks (Bidlingmayer 1971, 1974).

DISPERSAL

All species of mosquitoes disperse varying distances after emergence from their larval habitats. The extent to which a brood may disseminate is influenced by the weather conditions following emergence, the direction and speed of the air mass bearing them during flight, and the availability of nutritional sources, resting places, and oviposition sites.

The dispersal of *Cx. nigripalpus* marked with radiophosphorous and fluorescent dyes was studied in a uniform citrus-growing area west of Vero Beach (Dow 1971). Recoveries were made with CDC light traps arranged in a geometrical