



PREDATION BY TERRESTRIAL ISOPODS—(*Prepublished Abstract.*) Fifty of each sex of 2 species of terrestrial isopods, *Armadillidium vulgare* and *Porcellio laevis*, were each offered 16 live pupae, 4 each of *Drosophila hydei*, *D. immigrans*, *D. pseudoobscura*, and *D. melanogaster*, for 24 hr. Both sexes of both predator species fed on all prey species, each predator species taking numbers of prey species in the reverse order of prey size, namely *D. melanogaster* > *D. pseudoobscura* > *D. immigrans* > *D. hydei*. The results, however, do not indicate preference by predators. In terms of total weights consumed, *Porcellio* males and females ate 8.91 and 8.04, and *Armadillidium* males and females 11.69 and 11.86 mg/isopod/day, respectively. The difference between sexes is insignificant, but between predators it is highly significant ($P < 0.001$). Rates of consumption of *Drosophila* pupae and of *Hippelates* pupae decreased by about two-thirds or more over a week in the absence of other food.

Laboratory experiments using known numbers of ^{32}P -labelled *Drosophila* pupae fed to *Armadillidium* proved the feasibility of using this technique for field studies. Such work subsequently showed that *A. vulgare* ate *D. melanogaster* pupae in natural conditions in a citrus grove where alternative food was abundant. If predation by isopods in nature proves to be wide-spread, their significance in several ecosystems would deserve reconsideration. (*Ecology*, 1974, 55(2):428-433; E. B. Edney, Univ. Calif., Riverside, 92502, W. Allen, Univ. Calif., Los Angeles, 90024, and J. McFarlane, Univ. Calif., Riverside, 92502).



THE ECOLOGY OF A NATURAL POPULATION OF THE QUEENSLAND FRUIT FLY, *DACUS TRYONI*—(*Prepublished Abstract.*) Mark-recapture techniques were used to study the immigration and emigration of adults of the Queensland fruit fly in an isolated orchard at Wilton, N.S.W. During the 1968 season, several thousand mature flies migrated into the orchard during late February and early March; the females in this influx were responsible for laying the majority of eggs which contributed to the next generation. After the fruit disappeared these immigrants left the orchard, but immature flies continued to enter the orchard in smaller numbers until late in the season. In the early part of the season approximately 75% of adults that emerged in the orchard left during their first week. Later in the season, when lack of rain made conditions less favorable, nearly all the flies left the orchard in the first week after emergence.

During the 1969 season, when no fruit was present because of a spring drought, fewer mature flies migrated into the orchard in late February and March, even though traps located over a wide area around the orchard indicated that at least as many flies were present in the general area as in 1968. Studies on emigration rates at the orchard were carried out using flies bred from infested fruit collected in neighboring towns. As in the comparable part of the 1968 season, approximately 75% of the flies left the orchard in the first week after emergence. It is postulated that dispersive movements in *D. tryoni* can be divided into 3 main categories: a post-teneral dispersive stage, host seeking, and responses to adversity. (*Aust. J. Zool.*, 1973, 21(4):541-65; B. S. Fletcher, Univ. Sydney, N.S.W. 2006).