

## RESULTS

Total abundance of invertebrates was higher in the three experimental treatments than the leafless control (Fig. 1). The fresh leaf treatment had significantly higher abundance than the control (paired- $t = 2.78$ ,  $df = 6$ ,  $P = 0.02$ ), as did the combined green and dead leaf treatment (paired- $t = 2.55$ ,  $df = 6$ ,  $P = 0.02$ ). However, the difference between control and dead leaves was not significant (paired- $t = 1.36$ ,  $df = 6$ ,  $P = 0.11$ ).

Mosquito larvae comprised about 90% of the total abundance, which did not vary among treatments ( $F = 2.04$ ,  $df = 26$ ,  $P = 0.14$ ) except that the percentage of mosquitoes was marginally lower in the dead leaf treatment than the control (paired- $t = 1.83$ ,  $df = 5$ ,  $P = 0.06$ ).

Morphotype richness was also higher in the treatments with leaves than in the control (Fig. 2). There was no significant difference between control and green leaves (paired- $t = 1.16$ ,  $df = 6$ ,  $P = 0.15$ ), while the dead leaf treatment had marginally higher richness than the control (paired- $t = 1.44$ ,  $df = 6$ ,  $P = 0.10$ ). Richness in the combination treatment was significantly higher than the control (paired- $t = 2.50$ ,  $df = 6$ ,  $P = 0.02$ ).

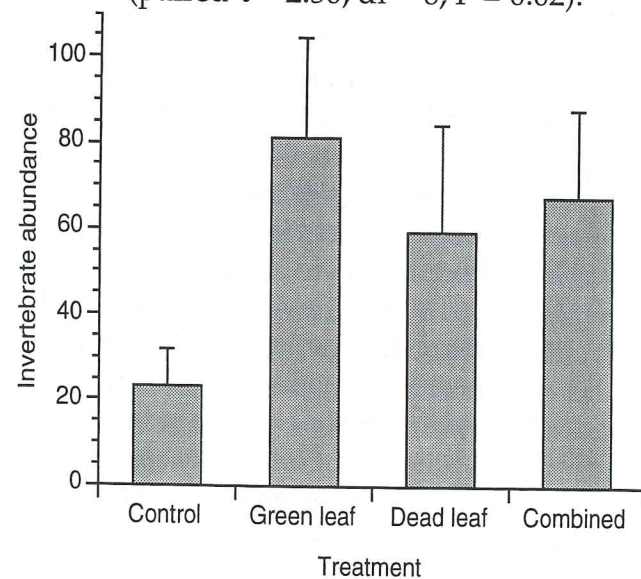


FIG. 1. Mean counts of invertebrates ( $\pm 1$  SE;  $n = 7$ ) in the four treatments (see text) after three days of colonization in artificial phytotelmata at La Selva Biological Station, Costa Rica.

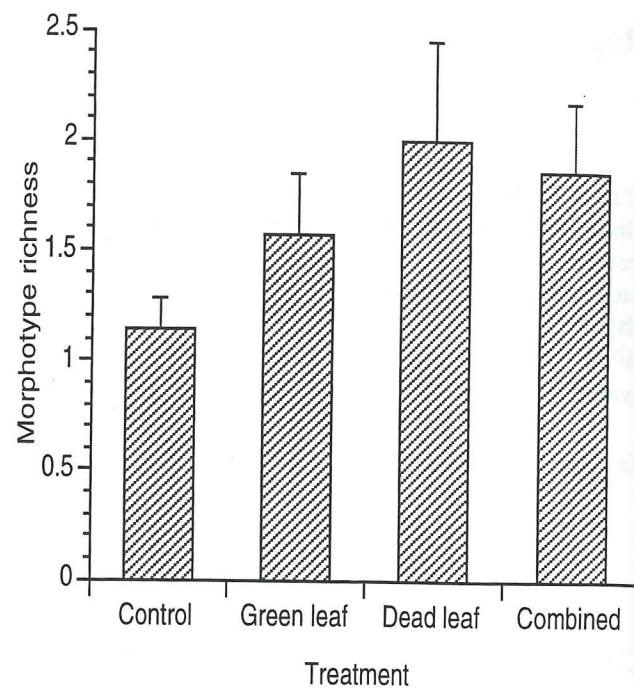


FIG. 2. Mean morphotype richness of the four artificial phytotelmata treatments ( $\pm 1$  SE;  $n = 7$ ) after three days of colonization at La Selva Biological Station, Costa Rica. See text for details of treatments.

## DISCUSSION

The proportion of mosquito larvae was higher in both treatments with green leaves than in the dead leaf treatment. Thus, for mosquitoes in particular, the artificial phytotelmata were most attractive to colonizers (or allowed better survival) when green leaf material was present. Various nutrients in the tissues of green leaves leach out upon submergence in water. This enrichment may in turn have enhanced algal or bacterial growth in those treatments, which the mosquitoes could feed upon, though this remains untested. These results suggest that the best phytotelmata for mosquitoes would be under the canopy of a forest where a higher proportion of falling leaves is green.

For other invertebrates that colonize phytotelmata, there is an indication that the resources provided by dead leaves are more important than those from green leaves. The dead leaf treatment's richness was marginally higher than the control, while

