

in the laboratory (not those with which the above-mentioned tests were conducted), where such exuviae, originally scattered about a foraging arena, may be gathered into dense craters about the entrances to Lubbock nests.

Summary and Conclusions

In a parallel series of experiments to those reported by Wilson (1958) and Wilson, Durlach, and Roth (1958) with *Pogonomyrmex badius*, the effects of oleic acid, caproic acid, methylbenzylamine, n-butyric acid, n-valeric acid, formic acid, and triethanolamine as behavioral releasers in the ant *Myrmecia vindex* were investigated both in the laboratory and the field. The comparison was deemed particularly interesting because of the archaic character of the Myrmecinae and their societies.

As with *Pogonomyrmex* and other higher Formicid genera, oleic acid was found to act as a releaser of both necrophoric and digging behavior, suggesting the early establishment of this set of reaction patterns in Formicid social evolution—a not unexpected situation in view of the highly adaptive character of this pattern in ridding the nests of dangerous animal decomposition products, perhaps in response to the bacterial production of oleic and related fatty acids. In *Pogonomyrmex*, n-butyric acid, n-valeric acid, and n-caproic acid stimulated weak to moderate alarm behavior, passing over into digging behavior. In *Myrmecia*, caproic acid stimulated mildly necrophoric behavior, associated with some digging and burying behavior. Exposure to filter papers of cocoons impregnated with n-butyric acid resulted in deposition of earth grains on the treated object. No reaction was observed to n-valeric acid.

Thus responses to these substances were of the same general quality as those reported for *P. badius*. There were, however, very marked differences in the responses of *M. vindex* to two presumed releasing substances: formic acid and triethanolamine. Formic acid neither stimulated necrophoric nor digging behavior nor prevented immediate transport into the nest of formic-acid-treated cocoons. This result was somewhat surprising to the authors in view of the highly positive and specific attack reactions stimulated by formic acid in *Myrmecia gulosa* mentioned earlier, which have been reported elsewhere (Haskins, Hewitt, and Haskins, 1973). The most marked contrast between behavior patterns of *P. badius* and *M. vindex*, however, occurred with those released by triethanolamine. With *M. vindex*, vapors of this compound consistently stimulated the most conspicuous necrophoric behavior of any substance tested, while also acting as a