

NOTE ON THE OCCURRENCE OF PREDATORY *ANYSTIS* MITES (ACARI: ANYSTIDAE) IN SW BRITISH COLUMBIA

B. D. FRAZER AND C. NELSON

Research Station, Agriculture Canada
6660 N.W. Marine Drive, Vancouver, B.C. V6T 1X2

Mites of the genus *Anystis* have been observed preying on the eggs of Lepidoptera on artichokes (Lange 1940), on leafhoppers and phytogamous mites on grapes (Sorensen *et al.* 1976) and on thrips on citrus (Mostafa *et al.* 1975). Sorensen *et al.* (1976) concluded that these cosmopolitan mites probably prey on anything they can capture and puncture. We observed them feeding on all the instars and morphs of the pea aphid on alfalfa and the abundance of these and other predators was inversely correlated to rates of increase of the pea aphids (Frazer *et al.* 1981).

Because these mites are apparently effective aphid predators, we wanted to know more about their distribution and prey preferences and if their abundance and distribution warranted the effort needed to study their effectiveness. Our populations were mostly of *Anystis*, probably *agilis* Banks. Unfortunately, this group of mites is in need of taxonomic revision so that specimens cannot be assigned with certainty (I. M. Smith, pers. comm.).

The 108 spp. of plants were sampled with a beating tray and the mites and other soft-bodied arthropods were preserved in 80% alcohol. The samples were taken within 75 km of Vancouver, between July 8 and 31, 1980. We sampled on the edges of commercial fields and away from agricultural disturbance. Anystid mites were 2 times more likely to be found on plants less than 50 cm in height than on taller plants. Of the 30 samples with mites, 21 included aphids; of the 133 mites found, 102 were in samples with aphids. Most of the mites that were not associated with aphids had no

other apparent prey nearby, but three of the samples included scale insects, thrips or phytogamous mites.

Most samples (92) came from non-crop plants in agricultural fields and bordering areas and these contained far fewer (χ^2 , $P \leq .01$) mites than did those (16) from undisturbed areas.

From the observations of Sorensen *et al.* (1976) it appears that *Anystis* mites have little prey specificity. Our survey shows that they are found in greatest numbers associated with aphids, but they will accept a wide variety of prey. Anystid mites were fewer by a factor of 1:4 on non-crop plants in agricultural fields even though the plants sampled and the aphids found were of the same species as those in non-agricultural areas. The scarcity of *Anystis* near agricultural fields may have resulted directly from pesticide drift or residues, or indirectly from depletion of their prey. Aphids and other prey may be more consistently available in uncultivated areas where plants of many species grow closer together. Aphids are not equally abundant on one species of plant throughout the year but tend to be numerous only during rapid plant growth. A mixture of plant species might provide a succession of prey for a long time and so permit larger Anystid populations.

ACKNOWLEDGEMENTS

We thank S. Dennis, S. MacFarlane, D. Ng, and K. Wellington for technical assistance. We thank Dr. I. M. Smith of the Biosystematics Research Institute for taxonomic information on the mites.

REFERENCES

- Frazer, B. D., N. Gilbert, V. Nealis and R. Raworth. 1981. Control of aphid density by a complex of predators, *Can. Ent.*: (in press).
- Lange, W. H. 1940. *Anystis agilis* Banks, a predaceous mite on eggs of the artichoke plume moth, *Pan. Pac. Entomol.* 16:30.
- Mostafa, A. R., P. DeBach and T. W. Fisher. 1975. Anystid mite: citrus thrips predator, *Calif. Agric.* 29:5.
- Sorensen, J. T., D. N. Kinn, R. L. Doult and J. R. Cate. 1976. Biology of the mite, *Anystis agilis* (Acari: Anystidae): a California vineyard predator *Ann. Ent. Soc. Amer.* 69:905-910.