Introduction

Little is known of the phylogeny and ecology of most groups of wild-land mites, especially those of tropical regions. The ecology and behavior of the lineages collectively known as hummingbird flower mites, however, have been studied in unusual depth over the past 25 yr (Colwell 1973, 1979b, 1983, 1985, 1986a, b, 1995; Colwell et al. 1974; Colwell and Naeem 1979, 1994; Wilson and Colwell 1981; Dobkin 1984, 1985, 1987, 1990; Heyneman 1985; Heyneman et al. 1991; Paciorek et al 1995; Colwell and Naskrecki, in press). All known species of hummingbird flower mites share an obligate affiliation with the flowers of hummingbird-pollinated plants, where they feed on nectar and pollen, and are transported between inflorescences in the nasal cavities of hummingbirds.

The term *hummingbird flower mite* was originally applied by Colwell (1973) to mites of the closely related genera *Rhinoseius* and *Tropicoseius* (Ascidae) (sensu Baker & Yunker 1964), based on a detailed study of 2 species (1 in each genus, as defined here) in the highlands of Costa Rica. That study confirmed Baker and Yunker's (1964) conjecture that mites of these genera probably were phoretic rather than parasitic on hummingbirds, feeding on plants visited by the birds.

Later, Fain et al. (1977a) described several new species of *Proctolaelaps* Berlese, 1926 (Ascidae) from hummingbird nares (as well as some additional *Rhinoseius* spp.). Based on detailed ecological studies (Colwell 1979b; 1986b), the term hummingbird flower mite was extended to these species and others, all in a possibly monophyletic lineage within *Proctolaelaps* that has converged on the same ecology and behavior as *Rhinoseius* and *Tropicoseius*. Additional species from hummingbird nares and flowers