

Figure S1.1. Mites are highly diverse in their biology and behavior. The plant-feeding tomato russet mite (Eriophyidae) is very tiny, but can develop huge populations on crops such as tomatoes. The Eriophyoidea are unusual mites because they have only two pairs of legs, even as adults. Many are highly host specific, causing galls, witches brooming, and erineia (patches of hairs) by their feeding. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)



Figure S1.2. A predatory phytoseiid, *Neoseiulus* (or *Amblyseius*) *californicus*, feeding on a spider mite. Phytoseiids are important natural enemies of several plant-feeding mite families, including the Tetranychidae. They may be used in classical biological control programs, in augmentative releases, or conserved in cropping systems by modifications of cultural practices. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)





Figure S1.3. An acaridid mite that is a pest of stored foods. Some stored products mites can feed directly on undamaged grains, but others feed on grains only after they are damaged, while others feed primarily on fungi associated with the foods. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)



Figure S1.4. *Varroa* females are parasitic on adult honey bees, *Apis mellifera*, and on the brood. These relatively large, heavily sclerotized mites suck hemolymph from adult bees and debilitate the bees. The mites can transmit viral diseases to the bees, as well. Strains of honey bees are being developed through selective breeding that have some resistance to *Varroa*. (Photo by the U.S. Department of Agriculture.)



Figure S1.5. This beetle grub has numerous mites (*Sancassania* sp., Acaridae) attached to it, especially on the thorax and legs. These mites will be transported by the adult beetle (by phoresy) to new habitats more suitable for development of the mites. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)





Figure S1.6. Plant-feeding false spider mites (*Tenuipalpidae*) can reach very high densities on their host plant, causing serious crop losses. All life stages and numerous exuviae from the molting mites are present. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)



Figure S1.7. Soil-inhabiting mites (Oribatida) are often heavily sclerotized. They are important in maintaining soil fertility. The mite at the top of the photo can protect its legs by bending its anterior down. Many oribatid mites are relatively long lived and need protection from predation. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)



Figure S1.8. This tiny mite (*Demodex*) lives in the pores of skin. At least two species live in the pores of human skin, where they typically cause no damage. However, other *Demodex* species inhabit the skin of other vertebrates, causing demodectic mange. (Photo by Jerry Butler, Department of Entomology and Nematology, University of Florida, Gainesville.)





Figure S1.9. Adult female of the black-legged tick *Ixodes scapularis* that is engorged with blood from feeding on a vertebrate host. This tick can transmit the causative agent of Lyme disease to humans. Ticks are vectors of human and animal disease-causing agents, as well as annoyances to livestock. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)



Figure S1.10. These water mites (*Hydrachna* sp., Hydrachnidae) are parasitic on an aquatic insect (Nepidae). Mites are highly diverse, and have adapted to the many habitats in which insects are found. In addition, they may be found in the ocean. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville. Identification by Heather Proctor.)

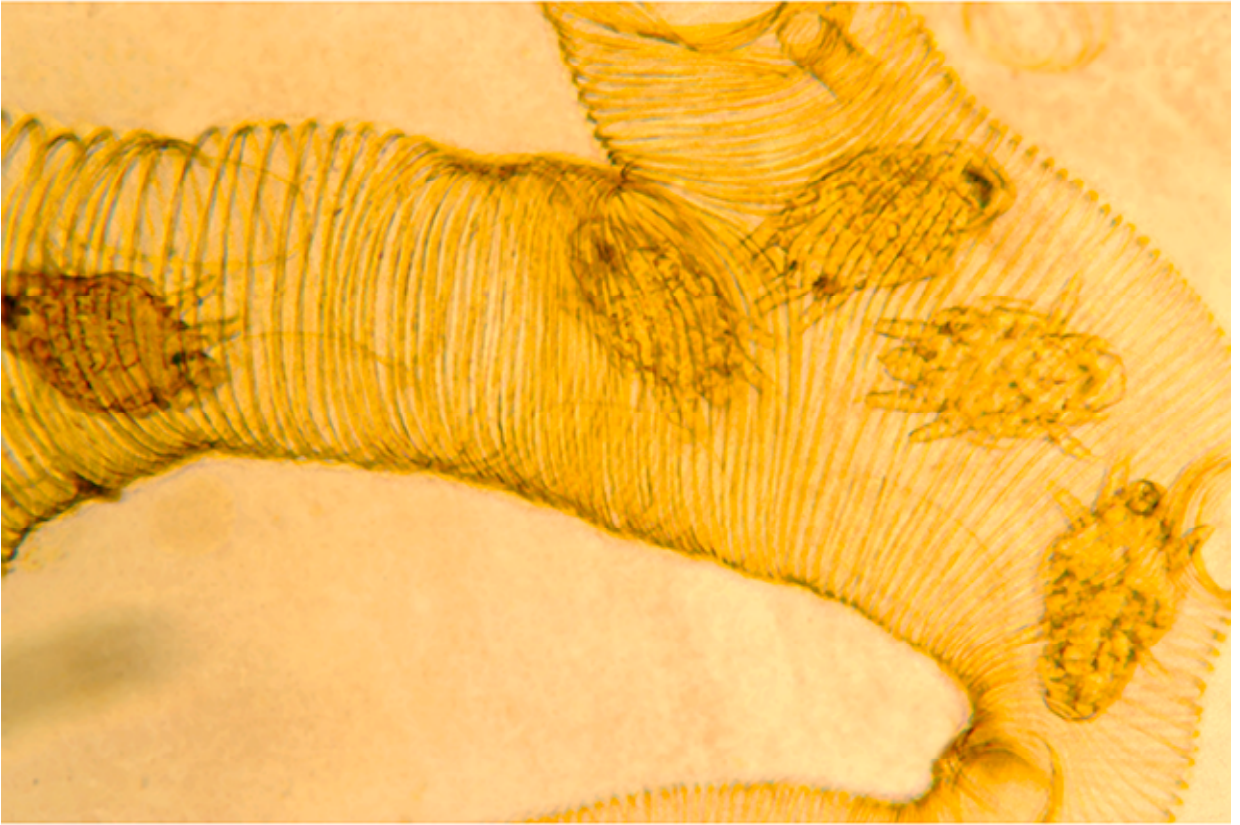


Figure S1.11. *Acarapis woodi* (Tarsonemidae) are parasites within the tracheae of the honey bee, *Apis mellifera*. This mite is a serious pest of the honey bee. (Photo by the United States Department of Agriculture, Agricultural Research Service.)





Figure S1.12. Mites (*Macrocheles* sp., Gamasida, Macrochelidae) phoretic on a dung beetle (*Phanaeus igneus*). These mites are likely predators of fly eggs and larvae in the dung and they will travel with the beetle to a new, suitable habitat, where they will leave their beetle host and begin a new population. (Photo by Lyle Buss, Department of Entomology and Nematology, University of Florida, Gainesville.)