



FIGURE 9.17. The phylogenetic relationship of several insect orders. Of the groups shown here, only two, the Thysanura and Siphonoptera, are wingless. Based on the fossil record and relationship to other arthropods, Thysanura are thought to have evolved from the last common wingless ancestor of all the insects shown here. Thus, Thysanura retain the wingless condition of the presumed ancestor. On the other hand, the Siphonoptera lineage is thought to have become wingless as it is nested within multiple orders of winged insects. Thus the common ancestor of fleas and flies was winged, but wings were lost in the lineage leading to fleas.