

ORDER HYMENOPTERA

THIS great order of insects, which contains the bees, wasps, ants, gall-flies, saw-flies, ichneumon-flies and related forms is unsurpassed in interest by any other group of animals. It is a very large order, and comprises nearly 30,000 described species; but the enormous number of undescribed species, particularly of the smaller parasitic forms inhabiting tropical regions and other out-of-the-way localities would probably swell this number to more than 300,000. To indicate the work still to be done in this order it is safe to say that a day's collecting in Central Park, New York, almost under the windows of the great American Museum of Natural History, or in Logan Square, Philadelphia, within 200 yards of the Academy of Natural Sciences, would result in the capture of a number of species new to science. But the size of the order is its least important and interesting feature. The very great variation in habits and life history, the wonderful social organization of the bees, ants and some wasps, the seeming marvellous intelligence of these creatures, the remarkable adaptations of structure to environment, the extraordinary interrelations and interdependencies of species seen with the members of the parasitic families, the strange vital phenomena of sex-abortion, of virgin birth or parthenogenesis, and the wonderful plant deformations brought about by the gall-makers, unite to render the Hymenoptera a field of study of never-ending interest.

As a group the Hymenoptera are distinguished from other insects by the following points: Their metamorphoses are complete, their mouth parts are mandibulate, and in most families formed for biting, although in the bees they are so modified as to form a sort of proboscis, and the females are furnished with an extensile sting or ovipositor. All have four wings, of which the hind pair is smaller. The wings are membranous, usually transparent, bear no scales, and are divided by veins or nervures, as they are inappropriately and misleadingly called, into a comparatively small number of cells.

On account of the great diversity of form and structure which exists within these limits, the Hymenoptera have long