

The head varies endlessly in size and shape, and the mouth-parts are correspondingly diversified. In some orders they consist of mandibles and maxillæ, which work transversely between the labrum and labium, and there are also attachments known as maxillary and labial palpi. Several of these parts are again subdivided, and in all there are nearly a score of parts, each with its distinguishing name, to be studied in connection with the mouth alone. Then there occur many modifications of these organs, in which certain parts are so altered that the entire form of the mouth is changed. Then the lepidoptera, diptera and hemiptera have the mouth-parts transformed into a rostrum or proboscis which serves to suck the nectar from flowers, or the vital juices from plants and animals. The head also bears the eyes, which consist generally of two large aggregations of facets, often to the number of several thousands, besides which the majority of insects have two or three simple eyes, or ocelli. The antennæ, also placed upon the head are movable sense organs which perform very important functions, and which vary in form. They are composed of small rings or segments the number of which varies in the different groups, and averages perhaps ten or twelve. In the simpler forms of antennæ these joints are merely short cylinders placed end to end, but in numerous families one or more of these joints may be enlarged or modified so much, that the antenna becomes very different in appearance, and many terms are employed to indicate the modifications, such as serrate, flabellate, pectinate, clavate, lamellate, etc.

The thorax is formed of a number of plates, more or less solidified and united, and bears the organs of locomotion, usually three pairs of legs and two pairs of wings. The legs consist of several segments, ending usually in a pair of small claws, and may be variously armed or ornamented with spines and hairs. The wings are formed of two thin transparent membranes stiffened by an interposed net work, more or less complicated, of nervures or veins, and upon this venation of the wings is based the classification of many groups. In beetles one pair of wings is modified and hardened to form protecting sheaths for the hinder pair, and a somewhat similar, but partial, thickening is observed in grasshoppers and bugs. Butterflies and moths have the wings greatly developed and covered with scales and pubescence, which are so