

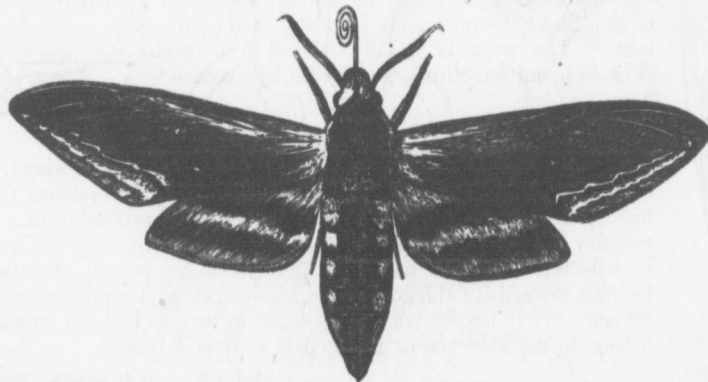
In *Suctorial Insects* there is a wonderful diversity of structure. Bugs, for instance, have the two pairs of side-pieces lengthened out into slender lancet-like organs for piercing, the whole being enclosed in the fleshy elongated lower lip, which acts as a sucker. (Fig. 51 *a*.) In Flies, also, the five



Fig. 51.

upper organs are turned into lancets sheathed in the fleshy sucker of the lower lip; this structure is especially seen in the fierce, blood-thirsty Horse-fly (*Tabanus*); in the common House-flies the lancets are wanting. In Butterflies and Moths the lower jaws are greatly elongated into a delicate instrument for sucking, which is coiled up and hidden from sight when the insect is at rest, but is thrust out and extended to the bottom of long-throated flowers when in action. (Fig. 52.) In all these cases the palpi, or mouth-feelers, also are variously modified. The

Fig. 52.



other organs of the mouth about which we need not now speak in particular are the antennæ, and the different kinds of eyes.

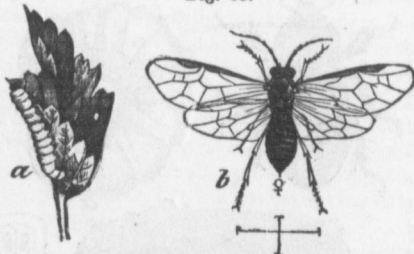
We have just now spoken of insects as being divided into two great sections according to

the structure of the mouth in the perfect insects, viz: *Suctorial* (*Haustellata*) and Biting (*Mandibulata*). These sections are further subdivided into seven Orders, depending upon the structure of the wings. We shall briefly recount the special characteristics of each Order, and then turn from what we fear are dry, even though necessary, details to the consideration of our proper subject—Beneficial Insects.

There is an immense difference of opinion among Naturalists with regard to the arrangement of these Orders, but as this is a question that does not concern us in these Reports we shall not enter into it, but merely content ourselves with following here the series adopted by Dr. Packard.

Order 1. HYMENOPTERA. (Greek: *Hymen* a membrane, and *Pteron*, a wing). Includes Bees, Wasps, Sawflies, Ants, Ichneumons, etc. Four membranous wings, with few veins or nervules;

Fig. 53.



the hind pair usually the smaller. Fig. 53 represents a Saw-fly and its larva; Fig. 54 a magnified Ichneumon.

Fig. 54.



Order 2. LEPIDOPTERA. (Greek: *Lepis* a scale, and *Pteron* a wing). Includes Butterflies (Fig. 55.) and Moths. (Fig. 56.) Membranous wings, generally four, entirely covered with scales, antennæ almost always composed of numerous minute joints. Butterflies may be distinguished from moths by their club-shaped antennæ; the latter have these organs of very various forms, but never clubbed or thickened at the extremity. The larvæ are usually called caterpillars (Fig. 57),