

Microscopical.

The Microscope is a delightful source of instruction, especially when in the hands of an expert. The *minute* of this world are through it clearly presented to our view. When the instrument is properly worked by an intelligent head of a family, the information and pleasure derived from it is unbounded. Having clever microscopists in Canada, it is our wish to encourage their investigations, and we therefore solicit communications regarding new discoveries. Mr. Murphy's microscopical investigations on the structure of the mosquito's proboscis should induce others to follow correct manipulation. We cannot publish what has been microscopically examined in a hurry; an object must be repeatedly and thoroughly tested, and its structure properly defined by frequent examinations in order to claim our attention. Furthermore, in describing minute forms, it will be necessary to apply proper names to their several parts. It is not correct to call the proboscis of a Dipterous fly (the mosquito) a sting, as the latter organ does not occur in the two-winged flies. Bees and wasps (four-winged flies) are stinging insects.

THE MOSQUITO'S PROBOSCIS.

It is an interesting question how a creature as small as the mosquito, and so very light that the slightest breeze will blow him away, can hold on to his prey with sufficient tenacity to force through a hard epidermis, and into solid flesh, his very delicate and perfect instruments. A careful examination of his organs, and repeated observation of the insect while feeding, by Mr. Edward Murphy of Montreal, (who has dissected and mounted a large number of these little creatures, and has paid particular attention to their habits) have brought to light the following particulars, which are copied from his extensive notes on the subject.

As in all the "blood-sucking" insects there is a wonderful modification of the mandibulate

mouth. A prolongation of the *labium* forms a proboscis, covered with minute scales; having a sort of muscular contraction a short distance from the point, which not only holds all the contained organs into a compact body for insertion, but also forms a sort of "cleaning" organ, through which they can be drawn. When the instruments are inserted into the flesh, this proboscis is pushed back, bending towards the top, at an angle more or less acute, and having something the appearance of a leg with a bent joint.

The mandibles have been modified into a pair of beautiful saws, whose sharp teeth, generally ten in number, small at the point of the instrument, and increasing in size towards the mouth, and set backwards, not only act as cutting tools, but from their barbed shape, give the creature the "purchase" necessary to hold him to his prey. A careful observation of the insect whilst feeding, shows him *pulling* the saw on one side as he *pushes* it on the other. The side he *pulls* is the side that cuts. Thus the action that increases the depth and size of the wound, also gives him the necessary "purchase" to enable him to push in the opposite saw.

Between these saws and the central tube the *maxillæ* are modified into a pair of irritators; possibly used also to prevent any solid matter of too large dimensions entering the tube.

The tube, a modification of the tongue, is horny in its structure, sharp pointed and solid at the end; so that it may be pressed firmly against the bottom of the wound, without risk of being stopped up: the blood flowing through a hole like the eye of a needle, which passes through the tube, at a distance from the point equal to about the diameter of the tube.

MONTREAL BRANCH ENTOMOLOGICAL SOCIETY OF ONTARIO.

The Eighty-second meeting of this Society was held on the 12th April last, at the residence of H. H. Lyman, Esquire. Three gentlemen were proposed for membership, and some interesting notes of the early appearance of insects