

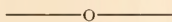
Tiger beetle (*e, e, e*, fig. 7) the sharp pointed middle piece (marked by the middle *e*) appears to represent the united glossæ and paraglossæ, if nothing more.

It is necessary to warn the student that great variation exists in different entomological writings, as to the names applied to the parts of the labium. The nomenclature which is here given is that of Comstock, with very slight modifications; it seems based on sound homologies with the parts of the maxillæ.

Within the cavity of the mouth may be two other organs, the *epipharynx* and the *hypopharynx*. The epipharynx is attached to the inner surface of the labrum, the hypopharynx to the inner surface of the labium; "both are rarely developed in the same insect. . . . The form and position of the hypopharynx" resemble "those of the tongue of higher animals. On this account it has been named the *lingua*, or tongue. But as both of these terms have been applied to the glossa* it is best to designate this part as the hypopharynx, and to avoid the use of the terms *lingua* and *tongue*, as liable to be ambiguous (Comstock)."

The foregoing description of the mouth parts is of that referred to above as the typical arrangement, and to be found in biting insects. In various modifications existing in sucking insects, some of the mouth parts may be represented only by bristles, or united to form a sheath.

P. P. C.



A NEW APPLE PEST.

BY F. W. GODING, M.D., PH. D.

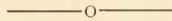
Empoasca birdii n. sp.—Seen from above long ovate, bright yellow, varying to green; abdomen deeper yellow and attenuated at the extremity. Head length of pronotum, obtusely rounded in front and convex; eyes purple-black; ocelli nearer the eyes than each other; three pale bands passing along the occiput, one at the centre and one at the edge on each side along border of the eyes. Pronotum one and a half times length of scutellum, its posterior border straight, front arched; three large, pale spots on front edge, the mesial one being continuous with the corresponding band on the occiput. Scutellum large, triangular, depressed, having a pale green, broad band on posterior part; apex and base yellow, a dark spot occupying the disc. Abdominal joints gradually decreasing in size; pure yellow. Elytra slightly smoky, with a darker band passing across the centre. Wings hyaline and iridescent, in the former the terminal vein is at the margin, while in the latter has a membranous margin; lower part

* When the two glossæ alone are united into one median piece, this piece is often called the glossa.

of tibiæ and all of tarsi indigo-blue; femora with a row of strong spines. One specimen with all colors much deepened, and some minor differences, may prove to be distinct. Length about 2 mm.; 3 mm. to end of hemilyta; breadth one-third the length.

Described from many specimens. Taken in Illinois from leaves of apple, hop, walnut, bean, and some weeds. I regret to add another to the long list of apple pests, but I am compelled to do so from observations repeated during two seasons. The specimens were taken from May until after heavy frosts. Their injuries to the apple leaves were plainly to be seen, the leaves being discolored wherever a puncture had been made. An account of its injuries appears in the Lacon. (Illinois) "Fruit Grower" vol. i, p. 132, July, 1890. — p. 116

I take pleasure in dedicating this beautiful little species to my highly esteemed friend, Miss Emma Bird, who has greatly aided me in entomological work for several years.



WHAT CAN IT BE?

BY MRS. JULIA P. BALLARD,
Easton, Pa.

On the 12th of September, 1889, a large "mulberry" colored caterpillar was given to me. Its food-plant was not known. It was very strong and very snappish. There were two pairs of spined horns, one pair on the third and one on the fourth ring, and a strong sharp-pointed spined horn at the end. His whole length was marked by diagonal lines of the same mulberry color, but of a darker shade. These radiated from the central line down his back just like the veinings of a leaf. He was fully three inches in length, quite as large as the caterpillar of the Royal Dryocampa (*C. regalis*). No food offered him proved satisfactory. He resented the slightest disturbance with a sudden, quick motion, jerking about as if in a fury of passion, but kept quite still if not disturbed. I at once recognized him as the same kind of caterpillar I once secured nearly ten years ago.

"I saw an immense caterpillar, as I was coming up the hill, fully three if not four inches long," said a friend coming in one hot June day.

"Why didn't you bring him along?" was the quick response.

"I had no box, and I dare not touch him."

Seeing me don my hat and take up a pencil and parasol, said: "You will not find him; he'll be sure to have gotten away,"