Larva (last stage) (b, c).—Head shining luteo-castaneous, the ocellar field, labrum and clypeus black. Body pallid fuliginous, the harder parts glistening; dorsal shield of first thoracic segment luteous, inconspicuous; surface covered with longer or shorter erect bristles, which are very fine and taper to an exquisitely fine point; they are blackish at base, but beyond testaceous; the longer ones are nearly as long as the breadth of the body and are situated in lateral and infrastigmatal series; the shorter ones are hardly as long as the segments and are distributed on the sides of the body; there is also a series intermediate in length and laterodorsal in position, situated in the middle of the larger anterior division of the segments, while the lateral series lies on the smaller posterior section; under surface and prolegs pallid; legs pallid, the claws luteous. Length, 15mm.

Chrysalis (d).—Nearly uniform, very pale honey yellow, more pallid beneath; the wings, excepting at base, with a very slight olivaceous tinge, all the thoracic and the first two abdominal segments, as well as the wings and legs finely edged at the incisures with dark castaneous, darkest near the head; all the abdominal segments are bordered posteriorly, at least on the dorsal surface, with pale testaceous; lips of spiracles fuscous; cremaster blackish or blackish fuscous. Length, 7.75mm; breadth, 2.25mm.

TWO PARASITES OF IMPORTANT SCALE-INSECTS.

By L. O. Howard.

There is a destructive scale-insect known as *Aspidiotus uvæ* Comst. which infests the lower part of grape vines, from the ground to the shoots of second year growth, and frequently clusters upon this portion of the vine under the rough outer bark in such numbers as to seriously affect its vitality. The species was originally described from Vevay, Ind., but has since been sent in to the Division on Entomology from Louisville, Ky., Kirkwood, Mo., and Lafayette, Ind., and has been found by Mr. Pergande and Mr. Lull, members of the office force, at Soldiers' Home, D. C., and near Beltsville, Md. A closely allied species occurs in Europe, but Prof. Comstock considers it distinct. Miss Murtfeldt, in studying this insect at Kirkwood, Mo., observed that it is preyed upon by mites of the genus Tyroglyphus and that it is also attacked by a true parasite. In November, 1888, and October, 1889, she sent in a few specimens of this parasite, which proves to belong to the chalcidid subfamily Aphelininæ, in which it forms a new genus. It is described below under the name *Prospalta murtfeldtii* n. g. et n. sp.

The well known and widespread scurfy bark-louse of the apple (*Aspidiotus furfurus* Fitch) is a common denizen of apple orchards throughout the eastern United States. It was first described by Dr. Fitch in the Report of the New York State Agricultural Society for 1856 and was subsequently redescribed by Walsh as *Coccus harrisii* in volume II of the Practical Entomologist. The species affects apple, crab, cherry, pear, quince, currant, and the mountain ash. It occurs from Massachusetts to Kansas and seems to be especially abundant in the State of New York. No parasite of the species has hitherto been discovered. In July, however, of the present year, a number of speci-

mens of a very handsome aphelinine were reared from scales found upon a crab-apple tree on the grounds of the Department of Agriculture.

This parasite proves, on careful examination, to be identical with a form described by Mr. Ashmead as *Centrodora clisiocampæ* (Proc. Ent. Soc. Wash., vol. III, p. 10). The opportunity which this rearing has afforded for a close study of fresh specimens shows that it does not belong to Förster's genus Centrodora and I have felt obliged to erect a new genus to contain it. It is described below as *Ablerus clisiocampæ* (Ashm.). The specific name is unfortunate in its signification, since, in my opinion, the true host is Chionaspis, and not the egg stage of Clisiocampa.

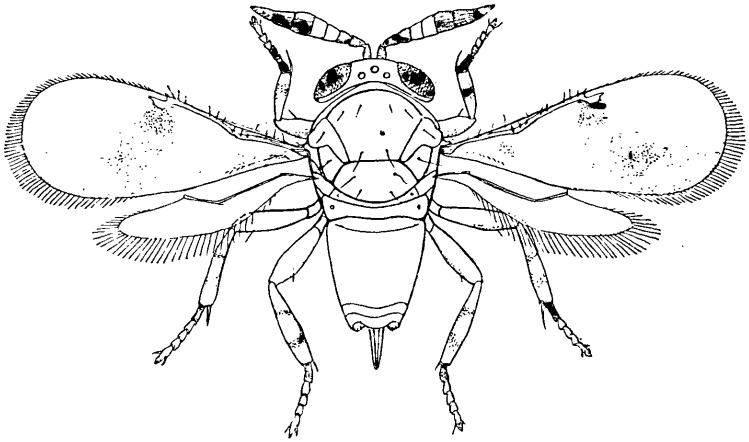

FIG. 2.—*Prospalta murtfeldtii* n. sp.: female, greatly enlarged (original).

Prospalta* gen. nov.

Female.—Anterior wings with no oblique, transverse, hairless line below stigma. Antennæ 8-jointed; club 3-jointed; all joints subequal in length; first joint of club widest. Head transverse; ocelli at corners of an oblique angled triangle. Thorax wider than head; mesoscutar parapsides club-shaped, broadening suddenly on distal side; scapulæ extending anteriorly to swelling of parapsides; metascutellum broad and short; legs rather stout; all tarsi short; first joint of hind tarsi only as long as second; first joint of middle and front tarsi longer than second. Ovipositor slightly extruded. Wings long and broad; submarginal vein reaching nearly to middle of wing; marginal much shorter than submarginal; stigmal very short, its anterior border nearly parallel with costa, its posterior border extending into disk of wing at an angle of 45° with costa; outer margin of fore wing with rather short cilia; under margin of hind-wings with somewhat longer cilia. First abdominal joint much the longest; abdomen on the whole equaling thorax in length; whole body tapering gradually from tegulæ to tip of abdomen.

Prospalta murtfeldtii n. sp.

Female.—Length, 0.69mm; expanse 1.7mm; greatest width of fore-wing, 0.3mm. Surface of body nearly smooth; scutellum slightly shagreened. General color light yellow; mesoscutum with brownish patch covering entire disk; mesoscutellum

* Πρόσταλτα, nom. prop.

with two large brown patches, one each side of middle line; scapulæ each with a brown patch; metanotum brownish; base of abdomen brown; tip of abdomen also brown; antennæ brown with the exception of joints 2 and 3 of the funicle, which are whitish; all coxæ and femora light honey yellow, except that hind femora are dusky at base; front tibiæ with a dusky ring near middle; first and second tarsal joints of fore legs dusky; middle and hind tibiæ each with two dusky bands; first tarsal joint of middle and hind legs dusky; wings hyaline with a fuscous basal patch and a triangular median fuscous patch with its apex at stigmal vein and its base reaching somewhat less than half of outer hind margin; entire disk of wing densely, finely, and uniformly ciliate.

Described from five balsam-mounted female specimens reared by Miss Mary E. Murtfeldt, at Kirkwood, Mo., from *Aspidiotus uvæ*. Received November 4, 1888.

To this genus may also be referred *Coccophagus aurantii* How. described in INSECT LIFE (vol. VI, p. 231).

Ablerus* gen. nov.

Female.—Fore-wings with no transverse, hairy streak below stigma. Antennæ apparently only 7-jointed, club appearing unjointed; antennæ simple, slightly clavate; scape slender; pedicel as long as, or slightly longer, than funicle joint 1; funicle joints 1, 2, and 4 subequal in length, 3 rather shorter: club as long as three last

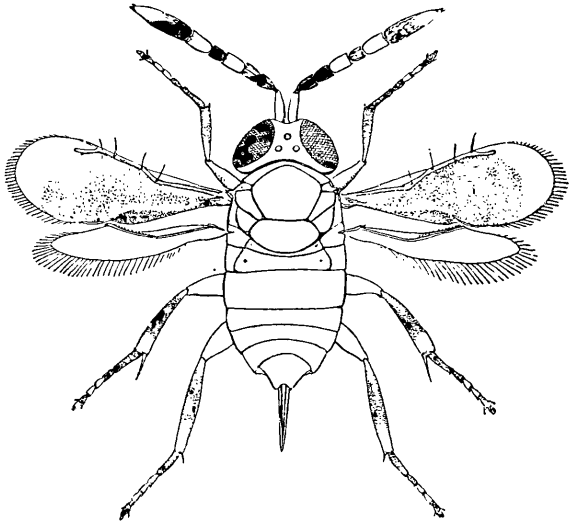

FIG. 3.—*Ablerus clisiocampæ* (Ashm.): female, greatly enlarged (original).

funicle joints together, furnished with two minute papillar projections at tip; mesoscutar parapsides clavate, but not broadening suddenly into a club; mesoscutellum transverse; abdomen semi-ovate; ovipositor extruded for more than half the length of abdomen. Wings short, narrow; marginal vein nearly as long as submarginal; stigmal long, slender, one-third length of marginal, squarely truncate at tip, extending at a very slight angle into disk of wing; marginal vein with three principal bristles, submarginal with one; cilia of border of wings as with Prospalta; hind border of fore-wings with a longitudinal hairless streak and a slight fold extending from base of wing nearly to middle; thickening of anal margin opposite tip of mar-

*"Αβληρος, nom. prop.

ginal vein of hind wings seems to extend forward into this fold; marginal vein of hind-wings with closely set row of minute bristles. First tarsal joint of all legs as long as two succeeding joints together. Middle tibial spur as long as corresponding first tarsal joint.

Ablerus clisiocampæ (Ashm.).

Female.—Length, exclusive of ovipositor, 0.7mm; ovipositor, 0.18mm; expanse, 1.5mm; greatest width of fore wing, 0.19mm. Hairs of anal spiracle nearly as long as ovipositor. General color black, somewhat metallic, notal sclerites of thorax having a greenish luster, while abdomen appears bluish; antennæ black, with funicle joints 2 and 4 silvery white, and apical three-fourths of club light brown, with a somewhat silvery tinge. Head in life, and shortly after the insect has issued, whitish, with occiput yellow-brown and occipital line black; brown patch including ocelli. Eyes bright red. In dry mounts the head shrivels considerably and becomes light brown in color. Legs dark brown; all tibiæ with a silvery white distal apex. Spurs of middle tibiæ black; tarsal joints 1, 2, and 5 dark brown or black; 3 and 4 whitish. Fore-wings with proximal three-fourths deeply and uniformly infuscated, except two light longitudinal streaks near base; apical one-fourth hyaline; discal cilia very minute, but closely placed; sparse, however, towards distal anal portion and towards base of wing.

Redescribed from ten freshly-issued females reared July 6 and 7, 1894, from female specimens of *Chionaspis furfurus*, District of Columbia.

THE BUFFALO TREE-HOPPER

(*Ceresa bubalus* Fab).

By C. L. Marlatt.

The adult of this little grass-green insect is one of the best known of the common species frequenting vegetation, and often attracts the curious on account of its triangular shape, quick, active flight, and considerable vaulting powers. It receives its peculiar popular name from a supposed similarity in shape to the male buffalo or bison. The thorax, or pronotum, is greatly enlarged anteriorly, projecting laterally in two strong horns, and is distinctly triangular, as shown in the illustration (Fig. 4*a*). It is this peculiar shape rather than any knowledge of its habits that has given it its popular interest. During the last eight or ten years, however, it has become important on other and strictly economic grounds. In the Mississippi Valley, especially from the Missouri northwards, well up into Canada, it has been the cause of very great damage in orchards, particularly to young trees and nursery stock, not, however, confining itself to fruit trees, but attacking also all sorts of shade trees. The injury is due solely to the cutting up of the limbs by the female with her saw-like ovipositor (Fig. 4. *f*, *g*) in the deposition of her eggs, in which particular the injury is not unlike that caused by the periodical cicada, and frequently is scarcely less in amount on account of the great numbers in which the Ceresa occurs. On entering a badly infested orchard in the latter part of August, or in September, the buffalo tree-hopper will indicate its presence by flying