

the latter place he met the entomologist, Prof. J. M. Aldrich, and was favorably impressed with his work. Boise City was stopped at briefly, and from there he passed through Wyoming and returned home. Dr. Howard's account of his trip was illustrated by many photographs taken *en route* of objects and places of interest.

At the conclusion, questions were asked and discussion participated in by Messrs. Doolittle, Gill, Kotinsky, Stiles, and Schwarz. Mr. Schwarz, speaking of the *Chilocorus* which preys upon the San José scale, said that *C. similis*, the form found in North China, was extremely like our *C. bivulnerus*, in fact, almost indistinguishable, and more especially like the race of *bivulnerus* occurring in California. He recalled how *C. bivulnerus*, originally found on oak in Florida, transferred itself to the orange when orange culture began to become general in the central part of the peninsula. The beetle increased enormously, and aided very materially in keeping the scale in check. It was also said that the reason it was not of more benefit in more northern localities was because of its being a slow breeder.

—The next paper was by Dr. Dyar, and was entitled :

ILLUSTRATIONS OF THE EARLY STAGES OF SOME
DIPTERA.

(PLATE I.)

By HARRISON G. DYAR.

While looking for mosquito larvæ at Bellport, N. Y., the larvæ or pupæ of several other water inhabiting flies were noticed, some of which were bred. Mr. Coquillett has kindly named them for me.

Tanypus dyari Coq. (Fig. 8.)

Only the pupæ were noticed. They occurred in the cold spring pool with *Culex territans*, and greatly resemble mosquito pupæ. On comparing the figures it will be noted that they differ in many proportions from *Culex*, but when taken in the water the general resemblance was deceptive. They were, however, much larger than the *Culex*. They have the same habits, resting at the surface with the slender funnel-shaped, prothoracic air tubes penetrating the surface film and quickly descend when disturbed. The anal paddles resemble those of *Culex*, but are more hairy.

Sepedon fuscipennis Loew. (Figs. 6 and 7.)

These disgusting black maggots were not infrequent in the collection of dead plants, scum and floating matter at the dam in the cold lake and in the adjoining water. They rest and move below the surface, parallel to it, suspended by the four radiate, narrow plates with which the body terminates. These rest with the upper surface dry, and expose the spiracles to the air. The larval segments are distinctly 3-annulate, the color is blackish with wavy black lines showing by transparency. The puparium floats in the water, resembling a seed. It is blackish above, whitish on the sides, with a lateral reddish stripe containing segmentary black dots; below whitish gray, speckled with black dots.*

Chironomus anonymus Will.

These larvæ were first noticed in the blacksmith's rain-water barrel. They are bright red in color, but usually remain in a tube formed of granular sediment united together. The material seems to be largely the excrement of mosquito larvæ. They wriggle with a slow squirming motion continuously, apparently to aerate the tracheal filaments. The pupa also remains in the case, but wriggles with a different motion as it has to aerate the bunches of fine filaments on the prothorax. Shortly before the emergence of the imago it rises to the surface.

Larva (Fig. 1). Head a little higher than wide, flattened, rounded, oblique; clypeus large, triangular, high; eyes in two small, angular patches; antennæ moderate, simple; labium distinct with two simple hairs; a few hairs on the surface of the head. Body slender, elongate, last two thoracic joints gently enlarged, subconsolidated. On ventral side of prothorax anteriorly a short bilobed process bearing a large tuft of slightly curved spines; between the 7th and 8th abdominal segments ventrally a group of long, thick, curving, subsegmented respiratory tubes; a tuft of four small processes on the last segment; a group of hairs at the dorsal tip; anal tip conical, with a ring of curved spines. Color bright coral red, translucent; alimentary canal whitish, more opaque.

Pupa (Fig. 2). Head nearly free; thorax small, the wing cases partly covering the long, coiled leg cases. A diffuse bunch of finely branching respiratory filaments on prothorax. Abdomen long, tapering, gently curved.

Chironomus modestus Say.

These larvæ occurred in cases similar to the preceding, but they lived in the masses of *Spirogyra* and under the *Lemna* leaves in the lake. They were much smaller and slenderer than the other species and pale whitish in color. The larva is without the

* This has just been figured by Needham & Betten, Bull. 47, N. Y. State Mus., pl. 14, ff. 1-5, 1901.

branchial filaments; it wriggles in a similar manner, however. Probably its small size renders it possible to aërate the tissues completely through the skin.

Larva (Fig 3). Head rounded, flattened, free but somewhat retracted; antennæ slender, distinct; eyes of two contiguous black spots. Body slender, filamentous, undulatory. A ventral pad on the prothorax bearing a tuft of recurved spines. Four anal finger-shaped processes and a dorsal, terminal, double tuft of hairs. Whitish, translucent, alimentary canal more opaque or blackish, according to food.

Pupa (Fig. 4). Shaped as in the preceding species, the cases forming a moderate prominence. Abdomen slender, tapering, ending in a ventral lamellate projection, the last segment bearing a large tuft of colorless hairs. Translucent, pale greenish, the thorax yellowish, eye dark; wing and leg cases very transparent. A tuft of few, rather coarse, filaments on the prothorax.

Ceratopogon varicolor Coq. (Fig. 5.)

The pupa only was observed. It was floating upright with the air tubes penetrating the surface. The abdomen was straightly extended so that the stiff, spiny thing did not suggest the appearance of a mosquito pupa at all.

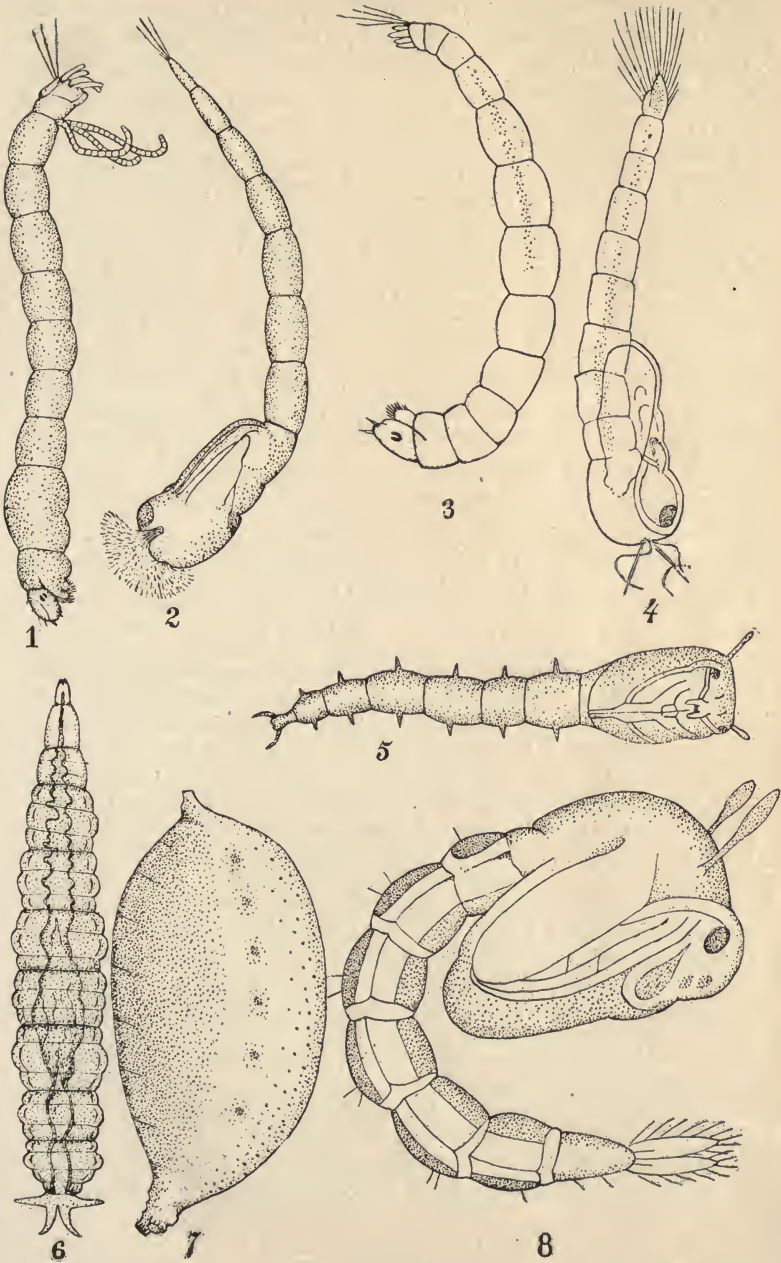


PLATE I.

FIG. 1. *Chironomus anonymus*, larva. 2. Pupa of the same. 3. *Chironomus modestus*, larva. 4. Pupa of the same. 5. *Ceratopogon varicolor*, pupa. 6. *Sepedon fuscipennis*, larva. 7. Pupa of the same. 8. *Tanyptus dyari*, pupa.