

THE LIFE-HISTORY OF URANOTÆNIA
SAPPHIRINA O. S.

BY HARRISON G. DYAR, PH.D.

(PLATE XI, FIGS. 1-4.)

This mosquito is not common nor troublesome. The species is the only one of its genus at present known from North America. The larvae occurred in a cold stream which was formed into a large pool by a dam and in a warm marshy pool. They occurred sparingly distributed and were not abundant. Both places were permanent bodies

of water and contained aquatic plants, *Lemna*, *Spirogyra*, etc. The water was somewhat stagnant. The locality was at Bellport, on the south shore of Long Island. The eggs form a boat-shaped mass floating on the surface of the water, much as in *Culex pungens*, but the mass is smaller, containing a less number of eggs and is less regularly elliptical, more angular. It floats less on the surface, the middle eggs being nearly half submerged. The sculpture and color of the individual eggs also are different. The newly hatched larva at once takes up the usual feeding position. This is essentially as in *Culex*, but the body is held more flatly, more parallel to the surface, yet below the surface film. Consequently, though feeding as *Culex*, the larvæ resemble *Anopheles* at a casual glance and were several times at first mistaken for them. The larvæ are fond of resting below the leaves of the *Lemna*, where they remain with the air tube penetrating the surface film and feed, often with a rotary motion of the body on the air tube as an axis. Occasionally they bend up to feed at the surface. They are not timid and often a considerable commotion of the water is necessary to send them to the bottom. The head may be partly rotated on the neck, but the habit is not so completely developed nor so frequent as in *Anopheles*, which regularly feeds with the head inverted. It has an elongate, dark brown head with a contrasting pale body, the hairs of the anterior abdominal segments markedly longer than those of the succeeding ones. Of the local species (at Bellport), it most suggests the species of *Anopheles*, as above noted. The long anterior hairs assist in the deceptive appearance. There seem to be four larval stages, the last three being essentially alike, except for the successively larger size. This is shown best by the head, as in Lepidopterous larvæ. The head gradually becomes paler, being black in the young larva and brown in the large ones. The pupa resembles that of *Culex*, but is very small and has unusually long air tubes. The species seems to breed continuously all summer, preferring warm stagnant pools of some size, containing *Spirogyra*. It did not occur in the marshes which were well filled with larvæ of *Culex sylvestris* and *C. sollicitans*.

The figures of the accompanying plate were drawn by Mrs. Perle N. Knopf from fresh specimens immediately after collection. I am indebted to Mr. D. W. Coquillett for verifying my determination of the species.

Egg. (Fig. 1.)—Erect, the micropylar end down, closely placed,

but not appressed, forming a triangular mass about 2 mm. in diameter. Egg elongate cylindrical, bluntly rounded at the large (micropylar) end, smooth without central elevation, tapering considerably to the small end; smooth, the terminal fourth roughly granular with large projecting granules. Dark brown, shading to black on the apical fourth.

Stage I. (Fig. 2.)—Head rounded elliptical, flattened, smooth, with four coarse, black setæ on the lower part of the face as in the mature larva; antennæ long, divergent, rather thick with the middle tufts very small. Black, paler above the mouth; eyes black; width about .2 mm. Thorax short, wide, flattened; abdomen slender, segments submoniliform, subequal; anal segment twice as long as wide, cylindrical, weakly chitinized, the four anal finger-shaped processes about half as long as the segment; terminal hairs in a tuft above ~~and~~; *ventral brush absent.* in a ~~long brush~~ below as usual. Air tube moderate, cylindrical, slightly tapering, blackish chitinized, about four times as long as thick. Hairs of the thorax long, equal; those of abdominal segments 1 and 2 similar; of segment 3 somewhat shorter and then successively shorter, those of segments 7 and 8 only about one-third as long as those of the first abdominal, but all similar hair tufts, differing only in length. Lateral combs of segment 8 distinct, but without as strong a plate as in the adult larva.

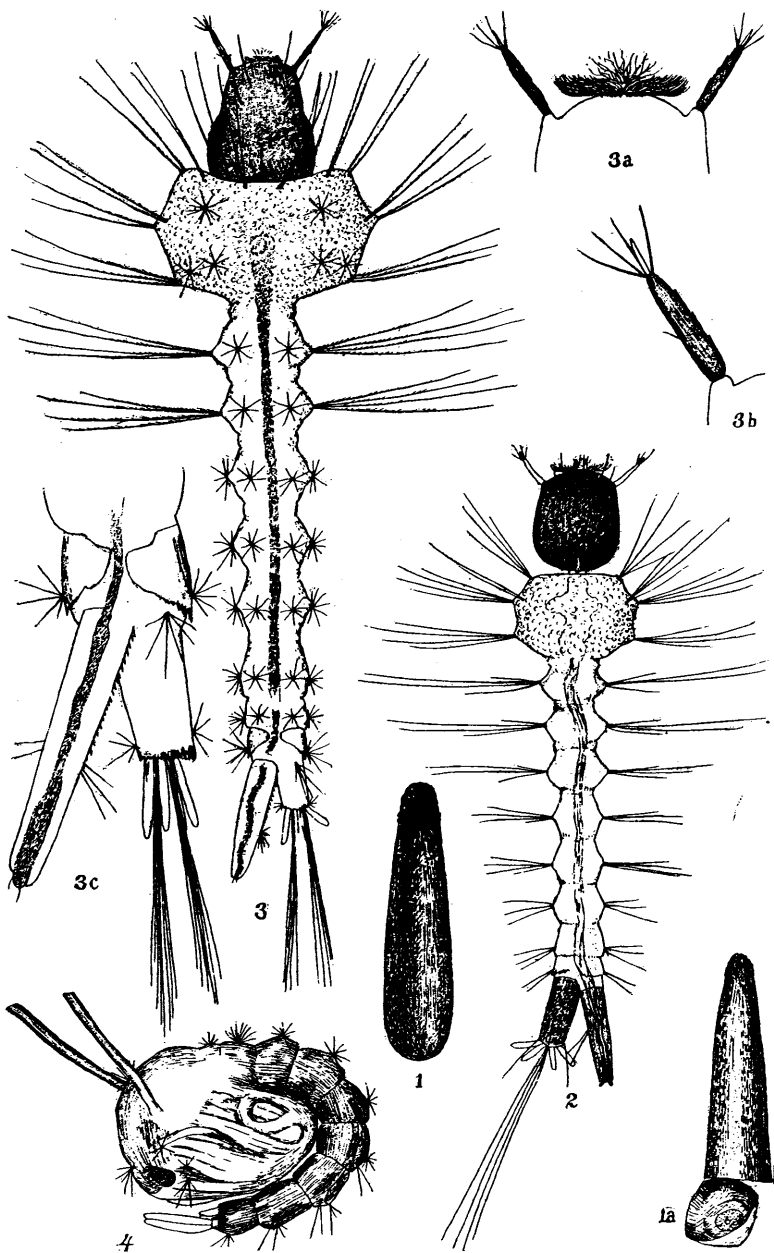
Stage II.—Head about .3 mm. wide; at first pale with a dark shade above, but soon turning black. Hairs of the thorax and first two abdominal segments long, black; the rest of the hairs short and stellate as in the mature larva.

Stage III.—Width of head about .4 mm. Other characters as in the last stage, but the head more blackish.

Stage IV. (Fig. 3.)—Head ovate, longer than wide, proportionately small, pointed before, the antennæ moderate, divergent. All brown black; width .6 mm. Thorax enlarged laterally, not annular, flattened to the size of the abdomen dorso-ventrally. Abdomen uniform, tapering a little posteriorly; last segment moderate with the usual four anal fingers. Eighth abdominal segment bearing the air tube, which is rather short, not longer than two segments, widened at the tip by four, distinct, flattened teeth, as long as the width of the tube. Lateral comb a large plate with a row of stout teeth on the posterior edge. All yellowish subopaque, the alimentary canal dark, edged by the silvery tracheal tubes. Hairs black, the thoracic ones

equal, long, those of the first two abdominal segments also long; but the rest very short and inconspicuous, stellate. Dorsal tufts and ventral brush of anal segment long.

Pupa. (Fig. 4.)—Essentially as in *Culex*. Thorax and cases forming a large elliptical mass, round which the slender, distinctly segmented abdomen curves, bearing a pair of anal paddles. Segments dorsally tufted with stellate hairs and some small tufts about the eyes and between the prothoracic air tubes. Tubes long, slender, uniform in width, not flared, but slightly bent in the middle, about twelve times as long as wide.



Life-History of *Uranotænia sapphirina*.