

## DIVERSE MOSQUITO LARVÆ THAT PRODUCE SIMILAR ADULTS.

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In going over somewhat carefully the material in Culicid larvæ that has been gathered by Dr. Howard to be figured, the writers have met in more than one instance with diverse larvæ that produced adults so similar that they have not been differentiated with the material now at hand. As examples we cite:

**Culex cantans** Meigen.

1. What we have considered as the normal form has the air tube about three-and-a-half times as long as wide, the pecten consisting of two rows of teeth with the distal two or three detached. The tracheal tubes are broad, band-shaped, slightly waved segmentarily, broadened within the air tube. The long abdominal hairs on segments 3 to 6 are single; the hairs on the head are in tufts of two or three centrally, five in the tuft next the antennæ.

2. The second form has the air tube about four times as long as wide, the pecten of evenly spaced teeth without any detached. The tracheal tubes are very narrow, uniform, strongly bent segmentarily, especially in abdominal segment 7, where they form acute angles, likewise narrow within the air tube. The long abdominal hairs on segments 3 to 6 are double; the hairs on the head have three to four hairs in the central tufts, about nine in the tuft next the antennæ.

Both forms have been taken at Springfield, Mass., by Dr. Geo. Dimmock and Mr. F. Knab, in temporary pools in fields and woods formed by the melting of the snow in the spring.

There must be two species here in spite of the apparent similarity of the adults.

**Culex restuans** Theobald.

1. The usual form has the air tube about three-and-a-half times as long as wide, slightly fusiform, strongly tapering to the tip, furnished with about six scattered hairs, coarse, single, only the one nearest the tip sometimes in the form of a small tuft. The anal processes may be much elongated.

2. The other form has the tube about four times as long as wide, slender, not fusiform, gradually tapering, the only hair a small tuft beyond the outer third. Otherwise, as in the usual form, the antennæ and the peculiarly shaped labial plate being the same.

Both forms have been taken at Cummington, Mass., by Mr. F. Knab, in a "pothole" in a rock, about six feet above the level of the Westfield river, in company with *C. atropalpus* Coq.

The usual form we have from many other places, such as St. Anthony Park, Minn. (F. L. Washburn); Center Harbor, N. H. (H. G. Dyar); Durham, N. H. (H. G. Dyar); Ithaca, N. Y. (O. A. Johannsen); Saranac Inn, N. Y. (O. A. Johannsen); Lahaway, N. J. (J. T. Brakeley); Baltimore, Md. (Dyar and Caudell); Washington, D. C. (H. G. Dyar); St. Asaph, Va. (F. C. Pratt), in temporary pools, roadside puddles, water barrels, etc. The second form has been mentioned by Dr. John B. Smith,\* as collected by him at Lahaway, N. J., and he considers it specifically distinct from *restuans*. The differential character which he mentions between the labial plates of the two forms is, however, not existant in our specimens.

These forms are, we think, not specifically distinct, as we have some specimens that indicate an intergradation of the characters.

### **Culex impiger** Kirby.

1. The usual form has the air tube about two-and-a-half times as long as wide, thick, tapered outwardly, the pecten followed by a single tuft. Anal segment with slight tufts before the barred area. The lateral comb of the 8th abdominal segment consists of a large patch of small spines over three rows deep. On the head the upper frontal tuft consists of six hairs, the lower of three, the one near the antennæ of seven.

2. The other form has the air tube of the same proportions, but the pecten has three or four large detached teeth which extend well beyond the tuft, almost to the apex of the tube. There are besides on the ventral aspect, two small tufts and two rows of long tufts on the dorsal side. The anal segment has ventral tufts almost to the base. The lateral comb of the 8th abdominal segment consists of a small patch of large, thorn-shaped spines in an irregular double row. The head hairs have three in the upper frontal tuft, one in the lower, seven in the tuft near the antennæ.

The first form we have abundantly from Kaslo, B. C.,† the second form from Kaslo also, and from Springfield, Mass., where it was collected by Dr. Geo. Dimmock, under the number 2173. At present the adults have not been separated; but in this case we hope that they may yet prove to be distinguishable, for our bred series of the second form is very small and not well preserved. Better material may show differences. The larvæ are certainly abundantly distinct.

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\* Ent News, XIII, p. 303, 1902.

† Dyar, Proc. Ent. Soc. Wash., VI, p. 37, 1904.