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THE IDENTIFICATION OF CULEX CYANEUS FABRICIUS.

BY

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THE IDENTIFICATION OF CULEX CYANEUS
FABRICIUS.

[Diptera, Culicidæ.]

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Theobald assumed that the *Culex cyaneus* of Fabricius is identical with Williston's *Haemagogus splendens*.* Although it is evident that Theobald had not gone beyond a cursory perusal of the original description, this identification was generally accepted. To the writer the original description seemed to conflict with this identification in that it indicates a mosquito with uniformly white sides of the abdomen. This type of coloration is characteristic of the Sabethini and so are the long legs indicated by Fabricius. Very few mosquitoes of the metallic blue color of *Culex cyaneus* are known, and in view of the recent large collections of Culicidæ it seems improbable that Fabricius had before him a species that has remained unknown to subsequent workers. In considering these points Dr. Dyar and the writer thought that most probably the mosquito in question was identical with *Sabethoides nitidus* Theobald (= *S. confusus* Theo.) and published this opinion;† however, until the type had been examined, this identification could not be more than tentative. The opportunity to definitely identify this mosquito came in 1908, when Mr. Busck visited Copenhagen, where the type is preserved in the Royal Zoological Museum.

Mr. Busck examined the type at our request and what he found showed that our determination was incorrect. The specimen has a much swollen proboscis, while in *Sabethoides nitidus*, and also in *Haemagogus*, the proboscis is slender. The abdomen is blue above, silvery below, not banded, and this indicated a sabethid; but Mr. Busck, who examined the specimen with a hand-lens, could find no setæ on the metanotum. Moreover, he found that on the front legs, the only ones remaining, the claws are toothed near the middle, a condition we had not found in any of the many sabethids we had studied. Yet we could not find that there was a blue culicine with swollen proboscis, and it seemed inconceivable that Fabricius had a mosquito which has since remained unknown. A review of all the blue mosquitoes with reference to the proboscis led inevitably to *Sabethes*, and as in the Fabrician type the middle legs, which in that genus bear the characteristic ciliation, were missing, it seemed probable that *cyaneus* belongs to

*Monograph Culicidæ, vol. 2, p. 238-241 (1901).

†Proc. Biol. Soc. Wash., v. 19, p. 168 (1906).

Sabethes. Two points, however, the toothed claws and the absence of metanotal setæ, threw a doubt upon such identification. It seemed reasonable to suppose that Mr. Busck, in his examination with a hand-lens, had failed to find the delicate setæ on the metanotum; but that still left the toothed claws to be accounted for. In this extremity we applied to Dr. Böving, of the Copenhagen Museum, and he kindly reexamined the type. The points ascertained by Dr. Böving are as follows: (1) Metanotum undoubtedly with setæ; (2) antennæ plumose, the joints long, as in *Sabethes*; (3) palpi very short, hardly one-fifth the length of the proboscis—intact, without trace of breakage; (4) claws of the fore legs undoubtedly toothed, each claw with a small but distinct tooth near the middle; (5) wing with the posterior cross-vein nearer the apex of the wing than the anterior cross-vein; (6) wing with the scales of the veins broad, obliquely truncate. To these characters must be added the following, determined by Mr. Busck in his examination of the type; (7) Abdomen blue above, silvery below—no trace of banding; (8) proboscis much swollen apically; (9) wing with the second marginal cell very much longer than the second posterior cell. All these characters fitted *Sabethes locuples* Rob.-Desv., as known to us, perfectly, with the one exception of the toothed claws. As the Fabrician type is undoubtedly a sabethine, and we had only female specimens of *Sabethes* before us, it seemed practically certain that the Fabrician specimen is the male of *Sabethes locuples*. It is true that in the descriptions of male *Sabethes* available to us the front claws are stated to be simple. These descriptions, however, are by Theobald, an author who had, in our experience, proved to be unreliable in such details. While everything pointed to an error in Mr. Theobald's statement, the question could not be considered settled until a male *Sabethes* had been examined by someone else.

The opportunity came with Dr. Howard's visit to Europe the past summer, and at our request he examined the material in the British Museum. Dr. Howard, with the use of the compound microscope, found that in the male of *Sabethes locuples* the claws of the front feet have a small tooth at about the middle. Thus the question is settled beyond a doubt: *Culex cyaneus* Fabricius is identical with *Sabethes locuples*, upon which Robineau-Desvoidy founded his genus, and with *Culex remipes* Wiedemann. It should therefore be known as *Sabethes cyaneus* Fab. Fabricius did not mention the most obvious character of the species, the ciliate middle legs, be-

cause, without a doubt, the specimen already had those legs missing when it came into his possession. Wiedemann had the type before him when he prepared his *Ausereuropäische zweiflügelige Insekten* and in such cases he gave supplementary notes, in addition or correction of the short Fabrician diagnosis; that he does not mention the ciliation of the middle legs is further proof that those legs were missing at that time.

It may appear strange that Wiedemann failed to recognize the identity of *Culex cyaneus* Fabricius and his *Culex remipes*, described in the same volume. The description of *Culex remipes* was, however, added in the third supplement (Fernere Nachträge) of the first volume of the above named work, and it was drawn up at a later period when he no longer had the Fabrician type before him.