

PSYCHE.

ON THE LIFE-HISTORIES AND IMMATURE STAGES OF THREE *EUMLOPINI*. CORRECTIVE NOTE.

BY STEPHEN ALFRED FORBES, NORMAL, ILLINOIS.

I regret to have to report a mistaken identification of the species of *Scelodonta* mentioned in my paper "On the life-histories and immature stages of three *eumolpini* (PSYCHE, Jan.-Feb. 1884, v, 4, p. 123-130, pl. 1).

When the imagos appeared in our breeding cages last June (see PSYCHE, v. 4, p. 129), I sent a pair of them to Dr. J. L. Leconte, with a request that he would take the trouble to determine them for me; and mentioned at the same time the economic relations of the species.

In his reply, dated June 24, 1883, from Alexandria Bay, N. Y., he says:

"I have examined carefully the specimens of *Graphops* [*Scelodonta*], which were safely received just after my arrival here. I find that they are without doubt *G. pubescens*; that species differs from allied ones *G. curtipennis* and *G. marcassita*, by the more elongate form and by the punctuation being rugose only at the sides."

With this decision I, of course, rest-

ed content, until this month, when the reception of specimens of *Scelodonta* collected from evening primrose (*Oenothera biennis*), in southern Illinois, in the vicinity of strawberry fields, led to a review of this determination. It was soon evident that these primrose specimens were of a different species from those breeding in strawberries, and had also a different life-history, since they were taken *in copula*, in April, at which time the strawberry species was abundant in the earth, in the larval condition, not to appear as adult until June.

As the primrose specimens agreed closely with all accessible descriptions of *S. pubescens*, I enclosed to Dr. G. H. Horn a specimen of this lot, together with one from the lot bred from strawberry root-worms last June, with a statement of Dr. Leconte's previous identification of the latter as *S. pubescens*.

In his reply, received this morning, Dr. Horn determines the primrose specimen as *S. pubescens*, and that from the

strawberry as *S. nebulosus*, saying further :

"The names I now give you are absolutely typical as far as Leconte's collection goes. Last summer his health was so poor and his eyesight so deceptive that I do not wonder that some of his comparisons were erroneous."

When we further notice that he was separated from his collection when he

wrote me, it need not surprise us that for once Jove nodded.

So far as the paper in *PSYCHE* is concerned, the errors will be eliminated if *pubescens* is changed to *nebulosus* wherever it occurs, as a reëxamination of all the collections referred to shows that they consist of *nebulosus* only.

Illinois state laboratory of natural history,
17 April 1884.

PROTECTIVE SECRETIONS OF SPECIES OF ELEODES.

BY SAMUEL WENDELL WILLISTON, NEW HAVEN, CONN.

In connection with Dr. G. Dimmock's interesting article¹ on the glands opening externally in certain insects, it may be of interest to give some results of several years' observations of certain *tenebrionidae* on the Kansas plains. The following species, belonging to the genus *Eleodes*, viz., *E. acuta*, *E. suturalis*, *E. tricotata*, *E. obsoleta*, *E. extricata*, *E. longicollis*, and *E. hispilabris*, are abundant in the regions east of the Rocky Mountains, some of them very abundant, and with one or two exceptions, they all, when disturbed, eject a pungent, vile-smelling liquid. Perhaps the most disagreeable of these, in this respect, is *E. longicollis*, a beetle about two and a half centimetres long, which will eject a stream of fluid from the anal glands, sometimes to the distance of ten centimetres or more. This liquid has a strong, persistent odor, and leaves a brown stain upon the skin. Whether acid or alkaline in its reaction I cannot

say, but its effect upon the skin is very much like the first solution of carbolic acid, though less strong. Several times I have had small quantities reach my eyes, with disagreeable effects. Both sexes are equally provided with the secretion, and, in individuals which have not been exhausted, it is directed backward with considerable force, as I once learned to my entire satisfaction. I had seized a fine, large pair of *E. longicollis* by the thorax and held them up, at what I deemed a safe distance, for them to eject their vile secretion before placing them in my collecting bottle. Unfortunately they were provided with an unusually large quantity, and, both ejecting it simultaneously, I received it on my face and hands. A very noteworthy habit, moreover, in the species of this genus at least, and a constant one is that, when approached, they stand almost vertically with the abdomen directed upwards ready the moment they are touched, to eject their mephitic secretion. Among the species given in the forego-

¹*Psyche*, Sept.-Oct. 1882 [1 March 1884], v. 3, p. 387-401.



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