that this guard is of prominent advantage for the plant. The enormous numbers of the spores of the rust-fungus will scarcely be diminished by these larvæ to any extent, that the guard may be considered to be a practical advantage for the plant.

The second point of interest in Mr. Trelease's paper is that the larvæ open the way for the fungus in the plants. I may state as an analogous fact, that here the pustulae and pocks on the leaves of Pomaceæ, made by Phytoptus, are not rarely filled by fungi, especially by the carbonized ones. The last plant I received by the late Alex. Braun, in 1877, from Blankenburg, Hartz., was a leaf of *Sorbus aucuparia*, with fungus immigrated in the galls of the mites.

A NOTE ON SOME HYDROPHILIDÆ.

BY GEORGE H. HORN, M. D.

Hydrophilus, as heretofore recognized in our fauna, contains two sets of species, the one series large, the other relatively small. They also differ in the form of the maxillary palpi and should properly be considered distinct genera defined as follows :—

HYDROPHILUS.—Terminal joint of maxillary palpi much shorter than the penultimate, the second joint long, arcuate. Claws toothed.

TROPISTERNUS.—Terminal joint as long or even longer than the penultimate, the second joint moderately long and straight. Claws not toothed.

The large species belong to the first series, and but two have appeared in our lists.

In the Biologia Cent. Am., vol. 1, pt. 2, p. 54, Dr. Sharp mentions two others as occurring in our faunal limits, *H. insularis* Cast. and *H. ater* Fab. The former has long been known to us, but has remained without name in our cabinets. The latter, which I have never seen, is quoted rather indefinitely by Dr. Sharp, "Philadelphia, Texas."

The species known in American collections are as follows :—

H. ovatus G. & H. *(ovalis* || Zieg.) Form more broadly oval, thorax more deflexed in front. Prosternal groove open in front. Abdomen opaque, densely finely pubescent, except a narrow space at the middle of the last three ventral segments.

The claws of the anterior tarsi ♂ are very nearly equal, the last joint about one and a half times the length of the four preceding joints and not broader than these, as is the case in the next two species. The tooth of the tarsal claws is much longer than in either of the foregoing species. This species is readily recognized It is less widely distributed than the others, but specimens are known to me from Pennsylvania, Missouri and Georgia.

H. triangularis Say. More elongate and narrower than either the preceding or next species. Prosternal groove closed in front. Ventral segments smooth and shining, except for a narrow space on each side, each segment with a conspicuous pale spot.

The male has the claws of the anterior tarsi very unequal, the anterior or outer being much larger and stronger, the last tarsal joint oblong, wider and a little longer than the preceding joints together, and much longer than wide.

This species occurs from the Middle States to Oregon, southward into Mexico.

H. insularis Cast. Larger than the preceding species and less slender. Prosternal groove closed. Abdomen smooth, the sides narrowly opaque, the yellow spots very indistinct or absent.

The male has the anterior claws very unequal, the last joint of the front tarsi as long as the preceding four, broadly triangularly dilated, slightly broader than long.

When once the form of these two species is fixed in the eye, there is no difficulty in distinguishing them independently of the male characters, which are very obvious.

This species is known to me from Texas and Arizona. It extends to Guatemala, and occurs also in the Antilles.

Tropisternus apicipalpis Chevr. This species should be added to our lists. It is much larger than our other species and more narrowed posteriorly. The terminal joint of the maxillary palpi is a little shorter than the preceding, thereby approaching Hydrophilus. The last ventral segment has a strong spiniform crest. It is more nearly related in our fauna to *glaber* and *mixtus*, and differs from both not only in its larger size and by being more narrowed posteriorly, but also by the middle and hind femora being very dissimilarly punctate.

Occurs in Arizona, the peninsula of California, and in Mexico.

Berosus Salvini Sharp, Biol. loc. cit. p. 79. This species also occurs in our fauna. It belongs to the same series as *punctatissimus* and resembles it, but is rather more elongate, the sculpture smoother and the apical spines of the elytra more prolonged.

Occurs in Texas and Mexico.

BOOK NOTICES.

Report of the Dominion Entomologist for 1884.—Department of Agriculture. Ottawa.

A long felt want has at last been supplied in the appointment of a Dominion Entomologist, and a well qualified expert selected for the work, Mr. James Fletcher, whose preliminary report is before us. His appointment was made so late in the season that he has been unable to do more than furnish a brief report, in which reference is made to the organization of the department under his charge and the measures taken to interest all those engaged in agriculture and horticulture in the work. Following this is a report on the quality of the Paris green found in the market, with results of the analysis of six samples; also reports on insects injuring grain crops, hay and clover, peas, root crops, fruits and forest trees; altogether a useful review of the chief injuries caused by insects to these several crops during 1884. We sincerely congratulate Mr. Fletcher on the good work thus far done, and earnestly hope that he may be able to carry to a successful issue the plans laid out for the present year.

Eighth Report of Observations on Injurious Insects and Common Farm Pests, with Methods of Prevention and Remedy, by Eleanor A. Ormerod, Dunster Lodge, near Isleworth, England; 8 vo., pp. 122, with 39 cuts. Published by Simpkin, Marshall & Co., Stationers, Hall Court, London, England.

We are much indebted to the talented authoress for a copy of this valuable report, which is in no respect behind its predecessors. In the preface reference is made to the relations of birds to insects, wherein the sparrow is condemned very strongly. Its habit of driving away other and more useful birds, together with its grain-feeding propensities, are fully recognized in England as well as in this country, and fairly entitle it to be regarded as an enemy rather than a friend. More extended reference is made to this subject in a chapter headed "Birds, Depredations of Spar-