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On the Distribution of Certain Hemiptera

Herbert Osborn

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Iowa. The more important facts gathered during the past summer bearing upon this subject were:

Egg laying began about the 25th of May and practically ceased by the last of June. Eggs began again to be deposited in considerable numbers about the 20th of July. Unhatched eggs were found constantly from July 22 to August 22. The number of eggs laid after July 20, on trees where counts were made, was over one-fifth as great as the number laid before that date. The beetles reared from early stung plums began appearing in the breeding cages as early as July 22. Beetles were seen pairing July 22. The eggs of the late punctures hatch as well as any and the larvæ develop in the plums.

ON THE DISTRIBUTION OF CERTAIN HEMIPTERA.

BY PROF. HERBERT OSBORN.

(Abstract.)

The *Hemiptera* present some instructing cases of special distribution, a few of which are considered. The relation of the distribution to distribution of food plants is discussed and cases cited where there is apparently entire independence of climate, latitude, altitude, etc. For several of the species localities are recorded which extend the range of the species as heretofore known. The species mentioned more particularly are: *Anasa armigera*, *Alydus pilosulus*, *Leptocoris trivittatus* (recorded for eastern Iowa), *Macrocoleus coagulatus*, *Emblethis arenarius*, *Calocoris rapibus*, *Pygolampis pectoralis*, *Melanocaryphus bicrucis*.

ON THE WAX GLANDS OF THE PEMPHIGINÆ.

BY PROF. HERBERT OSBORN.

(Abstract.)

After considering the accepted ideas concerning the wax glands of the *Coccidæ* and *Aphidæ*, the paper describes the