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NEW HISTORIES AND SPECIES IN PAPAPEMA AND HYDRÆCIA.

BY HENRY BIRD, RYE, N. Y.

(Continued from Vol. XLI, page 118.)

The environs of large cities are often prolific of *Papaipema* species, which, in comparison with rarer forms of other Noctuids, quite surprise one at first. While the flora of a section must indeed be indicative of the species to be expected, it is an undisturbed and unburned flora that at this day exerts a lasting influence on the perpetuation of these moths. So it happens the very urbanity which drives much insect life away helps, through lessening the indiscriminate burning of neglected areas, where a fire might be dangerous to buildings, to allow many species of this genus to breed in good numbers. Although a preferred indigenous food-plant has been established for most of their known larvæ, there is one introduced weed to which a great many will substitute upon necessity, this is the common Burdock, *Arctium*, and its prevalence in vacant city lots and waste places is sure to be detected by some of these boring larvæ. In fact, it is hard to find an extended growth of Burdock that is not bored by some *Papaipemid*, though *cataphracta* and *nebris* are the species to be generally expected. Investigations around Buffalo, N. Y., show an unusual number of species in *Arctium*, and several unfamiliar forms are bred. The primitive flora and fauna of this section must have been very rich; the extreme fringe of the prairie zone here met the general Atlantic State forms, with conditions of damp bottom lands and water margins in proximity to the sand-dune life of the lake shore. It certainly reflected many varied characteristics, as is evidenced by the flora of Niagara Glen to-day.

Opportunity was offered to observe *Papaipema harrisii* in well-established colonies, and the following notes are additional to published data:

The wide dispersion of *Heracleum lanatum*, the preferred food-plant of this species, would naturally suggest some environmental forms, but aside from this, much instability in colour of the imago is found in every colony, and the range of variation seems most marked with it. We may use the term colony, for though in no sense gregarious, the persistent