

NEW SPECIES AND HISTORIES IN PAPAPEMA SM.  
(LEPID.)

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(Continued from Vol. XLV, p. 126.)

More than ten years ago the writer encountered a *Papaipema* larva at Rye boring Loosestrife, *Lysimachia quadrifolia*, and in the interim a wide occurrence of its work has been noted. At that time the imago was successfully reared, and there was surprise that it appeared to be but a small form of the well-known *P. purpurifascia* G&R, which was known to have an indigenous food-plant in Columbine, *Aquilegia canadensis*. In 1902 (Can. Ent., vol. XXXIV, p. 118) attention was called to a difference between these larvæ, but the moths seemed so nearly identical except in size, it was believed the small diameter of the Loosestrife stems might account for the reduced size of the resultant moth.

As the years go by and more extended observations on the habits of the genus accrue, it is noticed how the Columbine feeders begin to emerge weeks in advance of the other, being one of the earliest of the local species in that respect. True, it continues to emerge for over a month and overlaps the Loosestrife feeder but there seems always two weeks difference with the earliest ones of the respective forms. The *Papaipema*, as with most mid-season moths, are quite prompt on the dates of their first appearance, and as these two larvæ often flourish within a few feet of each other, such discrepancy was a point to be considered. It is found the latter is much the commoner and more generally diffused, due doubtless to a more widespread foodplant. Finally, a familiarity with a large series of moths, resultant of personal field work from southern Canada to Delaware, makes clear the points of difference that are constant with the imago, and careful comparisons of the larvæ through their various stages, establishes the fact that we have clearly to do with two well-defined species. Of some weight in a general summing up, the Loosestrife feeder is found to be kept down by a parasite all its own, while *purpurifascia* falls to the general ones, mainly the *Hemiteles* and a *Ceromasia* fly, that are common checks throughout the genus.

Before considering more specifically this smaller, narrower winged species, which is clearly the more primitive of the two, it