

The Status of Exotic European Corn Borer Parasites in Indiana

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Two years ago the author (1) reported on the introduction of exotic species of European corn borer parasites in Indiana. The following parasitic species, *Lydella grisescens*, *Macrocentrus gifuensis*, *Horoglyphus punctatorius* and *Chelonus annulipes* which have been introduced in Indiana were discussed with particular reference to their habits. The results of the 1947 survey showing the establishment of *Lydella grisescens* were also tabulated.

Since then, in cooperation with the Bureau of Entomology and Plant Quarantine, annual fall surveys have been continued and were quite extensive, both in 1948 and 1949. In 1949 some counties in which

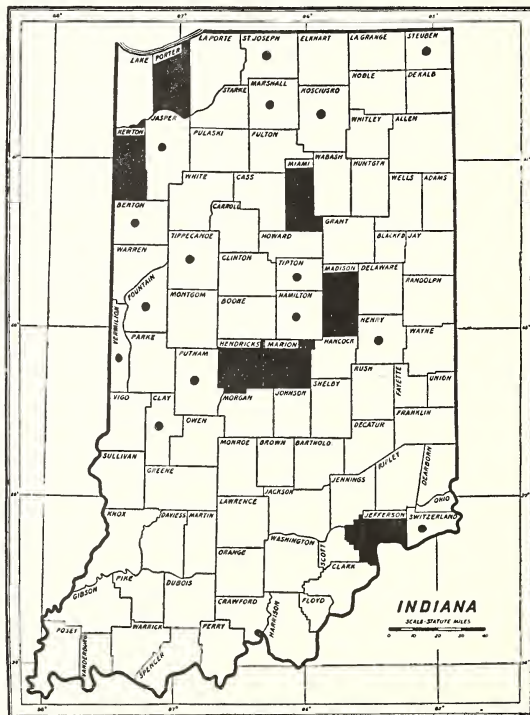


FIG. 1. Colonization and Dispersion of *Lydella stabulans grisescens* in Indiana. Black dots indicate counties where *L. grisescens* has been colonized. Blackened areas indicate counties where *L. grisescens* has never been released but to which it has dispersed.

parasites had never been released were surveyed to determine the spread of the parasites.

The extensive collections in Indiana in 1947, 1948 and 1949 provide a comprehensive picture of the status of exotic European corn borer parasites in the State (Fig. 1).

Lydella stabulans grisescens has not been released in Indiana since 1947. The recovery records for this species in each of the past six years are shown in Table I. It will be noted that where a release was made in Steuben County in 1929 and recoveries followed in 1929, 1930,

TABLE I. Parasitism by *Lydella stabulans grisescens* 1944-1949.

County	Percentage of Borers Parasitized					
	1944	1945	1946	1947	1948	1949
Benton	x	x	x	7.0*	x	18.6
Blackford	x	x*	x*	10.0	14.8	x
Clay	x	x	x	66.7*	27.8	x
Fountain	x	x	x	00.0*	x	x
Fayette	x	x	x	x	x	x
Hamilton	x	x	x	28.9*	15.8	20.7
Hendricks	x	x	x	0.0	1.1	19.2
Henry	x	x	x*	4.1*	4.7	8.8
Jasper	0.6*	6.0*	x	12.7	12.5	11.0
Jefferson	x	x	x	x	x	2.2
Kosciusko	x	x	x*	0.0	1.7	1.2
LaPorte	x	x	x	x	0.0	0.0
Madison	x	x	x	x	x	16.9
Marion	x	x	x	x	x	12.1
Marshall	x	x	x	0.0*	0.0	0.6
Miami	x	x	x	x	x	5.3
Newton	x	x	x	x	x	20.0
Porter	x	x	x	x	7.3	6.4
Putnam	x	x	x	0.0*	12.6	x
St. Joseph	0.0	x*	x*	6.8	11.6	1.2
Steuben	0.0***	x	x	x	3.6	1.3
Switzerland	x	x	x	0.0*	25.2	27.3
Tippecanoe	x	x	x*	x*	20.6	6.4
Tipton	4.5**	30.8*	35.5	30.0	26.7	14.6
Vermillion	x	x	x	15.5*	3.2	x

* Released here this year.

** Released here this year and in 1945.

*** Released here in 1929; recovered in 1929, 1930, 1933, and 1938; not recovered in 1931, 1932, and 1935.

x No collection made this year.

1933, and 1938 but not in 1931, 1932, 1935, and 1944, it was again recovered in 1948 and 1949.

After initial establishment was obtained in any other locality, *L. grisescens* was always recovered whenever a collection was made in a later year with the exception of Fountain County where it was not recovered in 1947 and 1948 and where collections were not made in 1949. This parasite is dispersing rapidly. Eight counties: Hendricks, Madison, Marion, Jefferson, Miami, Newton, LaPorte, and Porter where *L. grisescens* was never released were surveyed in 1949 and data show that this parasite has migrated to all of these counties with the exception of LaPorte from which no recoveries were obtained. This evidence of dispersion indicates that the parasite may now be rather widely spread in the State.

Horogenes punctorius was recovered from one of three collections taken in Steuben County in 1948 and from four of eight collections taken in 1949. It was released and recovered in York Township in this county in each of the three years, 1930, 1931, and 1932 but was not recovered from collections made in 1933, 1935, 1938 and 1944. The single collection which produced it in 1948 consisted of 92 borers of which 20 were parasitized. It was taken in Clear Lake Township, lying immediately north of York Township (Table II).

Attempts to colonize *Macrocentrus gifuensis* to date in Indiana appear to have been unsuccessful. Extensive releases have been made in 34 localities in the state, but only one borer, collected in Steuben County, has produced this species.

Eulophus viridulus was collected in three counties, Jasper, Kosciusko, and Vermillion in 1948 and Steuben in 1949.

From the data summarized in the tables it is evident that the colonization of *Lydella stabulans grisescens* has been successful. Its rapid dispersion is taking place and it is probably now quite general in many counties of Indiana. *Horogenes punctorius* and *Eulophus viridulus* have survived in a few localities but have not become abundant enough to be considered established. Colonization of *Macrocentrus gifuensis* is usually quite slow. However, although not evident in the surveys, enough of these may be surviving to eventually build up large populations as they have in southern New England.

Literature Cited

1. WILSON, M. CURTIS, 1949. The Introduction of Exotic Species of European Corn Borer Parasites in Indiana. Proc. Ind. Acad. of Sci. 1948, 58:157-159.