

SPREAD OF THE JAPANESE BEETLE INTO PORTAGE COUNTY, OHIO

RALPH W. DEXTER

Department of Biology, Kent State University, Kent, Ohio

The introduction, spread, and distribution of the Japanese beetle (*Popillia japonica* Newm.) in Ohio have been described by Polivka (1948, 1950). Locations of all known records are mapped and tabulated, but no record of this insect pest is given from Portage County in Northeastern Ohio. It is surprising that this county should escape infestation longer than all of the surrounding counties since it is situated near the middle of the greatest concentration of the beetle in the state. A beetle trap set on the campus of Kent State University in the summer of 1941 failed to obtain any specimens. During the past four years, however, a number of specimens collected within the city of Kent in Portage County have come to the attention of the writer. To date it is the only locality in the county where this species is known to occur.

On August 15, 1948, a single specimen of the Japanese beetle was collected from a rose bush on the west side of the city by Mr. Ladd Heldenbrand, a student in a class of field zoology. On July 14 of the following year another student, Ernest Port, collected after a careful search another single specimen from a lawn near the original discovery. That summer five beetle traps were operated in this neighborhood under the direction of Dr. J. B. Polivka. Twenty-two specimens were captured. In August two students found one beetle each while collecting with the field zoology class on the campus of Kent State University. On August 7 Miss Ann Horwarth found one of them behind Engleman Hall, and eleven days later Mr. John Brough collected the other one from a pasture at the eastern edge of the campus. That same month Mr. William Jeffers captured two beetles from about 10 specimens seen on two willow trees approximately one-half mile north of the campus. Signs of leaf-feeding were noticeable.

In the summer of 1950 the writer examined the vegetation in all of the areas listed above without finding any Japanese beetles. A beetle trap set near the middle of the city for one week did not attract any. Three professors of Kent State University, however, found specimens on rose bushes in their gardens. Prof. E. H. Pake found about eight beetles in June, one on August 4, and one on October 1, about two blocks northeast of the campus. In a nearby yard Dr. H. A. Cunningham collected two beetles side by side from a rose blossom on August 28. From September 6 to November 19 the writer operated a beetle trap in this yard, capturing two beetles by September 10. During the summer Dr. C. B. Sumner found approximately a dozen Japanese beetles on his rose bushes only a few blocks north of the original discovery in Kent. All three of these men had purchased rose bushes in the fall of 1949 from nurseries in Lake County where the beetle is common in certain areas, but the occurrence of Japanese beetles on these plants the following year may be a coincidence since none of them was packed for shipping with the original soil. The same situation was found to be true at other residences where the Japanese beetle had been found on rose bushes. The standard method of packing roots of rose bushes for shipment probably precludes the spread of grubs in that manner. However, in the immediate vicinity of several sites of beetle occurrences listed in this report, plants of one type or another had been recently introduced with their original soil. Possibly this has been one source of infestation.

During the summer of 1951 three beetle traps were set up in the City of Kent. No. 1 was placed near the site of the original find on South Pearl St. in the western section of the city. No. 2 was placed in the yard of Dr. H. A. Cunningham in the central section, while No. 3 was placed on East Erie St., also near the central section. Between July 2 and September 23, a single specimen was captured in the first trap and another one was found on a grape vine nearby. Trap No. 2

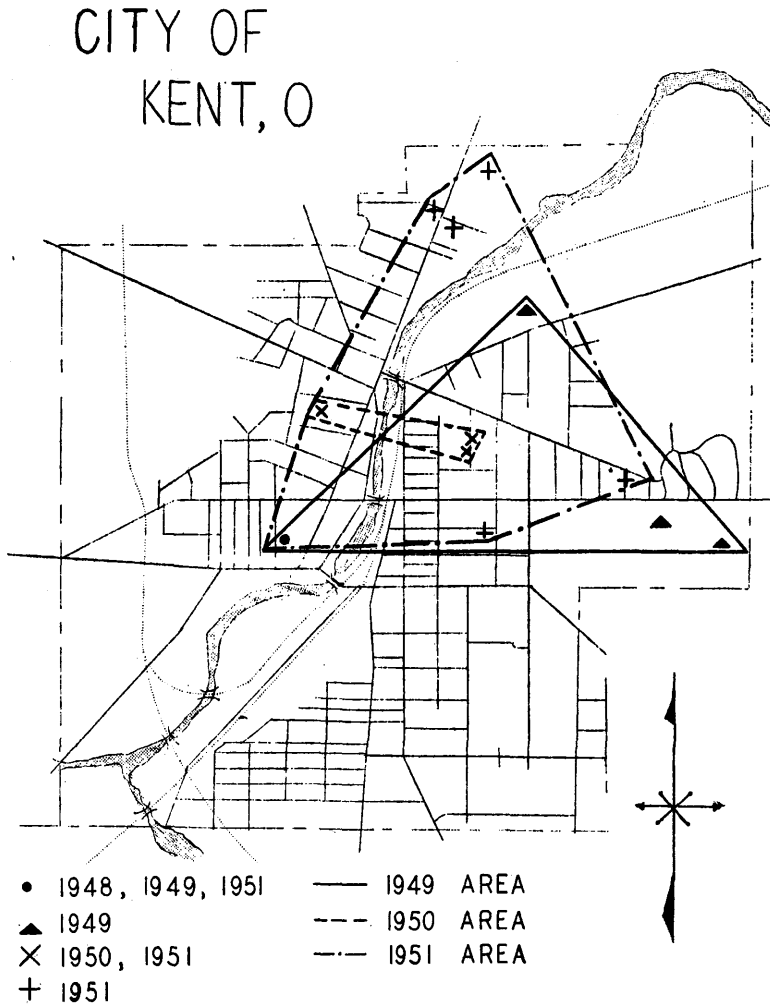


FIGURE 1. Collection sites of Japanese beetles in Kent, Ohio.

captured 13 specimens and 10 additional ones were hand picked from rose bushes at the same place. Two specimens were obtained in the third trap. Not far from trap 1 Dr. Sumner found occasional specimens on his rose bushes between July 4 and August 16. About 17 specimens in all were found and destroyed. Near trap 2 Prof. Pake collected 33 beetles from rose bushes in his yard and that of his neighbor between July 31 and August 31. His neighbor had set out rose bushes purchased near Akron. Since these were potted there is a possibility that

grubs may have been introduced in the soil. A single beetle was collected on a rose bloom in the eastern section of the city. In the north section a resident found the beetles abundantly on rose bushes. As many as 18 were counted on a single blossom in June. After the rose blooms were gone the beetles changed over to the grape vines where much damage was done to the leaves. On August 25 the writer collected 33 from a plum sapling in the same garden. Across the street Japanese beetles were reported to be numerous in several gardens and fruit trees, although only a single specimen could be found when examined by the writer on August 25. They were reported to prefer the white and yellow roses over the red varieties. The beetles were also reported in abundance on geranium plants in Standing Rock Cemetery, a block farther north, but could not be found when visited on August 25. Specimens were neither trapped nor observed anywhere after the first light frost.

Over a period of years a number of insects suspected of being the Japanese beetle have been brought by various persons to the writer and to the County Agricultural Agent, R. M. Thomas, in Ravenna. None of these specimens proved to be that species. This report includes all of the known records of this insect pest in Portage County. Infestation is still temporary and sporadic, but continued invasion and successful reproduction of those already introduced may eventually establish the insect as a permanent and common pest. Plans are being made to continue the annual survey to determine the rate and extent of spreading and to study the ecological factors concerned with its spread. Acknowledgment is made to those who reported collections of the beetles and to Dr. J. B. Polivka and Mr. R. M. Thomas for their assistance in this survey.

LITERATURE CITED

- Polivka, J. B.** 1948. Japanese beetle in Ohio. *Ohio Biol. Surv.*, 7: 383-385.
1950. Distribution and control of the Japanese beetle in Ohio. *Ohio Agric. Exper. Sta. Research Circ. no. 4.* 15 pp.
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