

BRIEF NOTE

The Unexpected 1995 Emergence of Periodical Cicadas (Homoptera: Cicadidae: *Magicicada* spp.) in Ohio¹

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ABSTRACT. Ohio witnessed an unexpected emergence of periodical cicadas in 1995. The largest emergence occurred in Athens County where hundreds of cicadas emerged on 24 May 1995. Gallia County witnessed the emergence of less than fifty periodical cicadas and smaller emergences of only a few individuals were reported in Adams, Clermont, Hamilton, Highland, Hocking, and Washington counties. Athens and Gallia counties have Brood V cicadas which are expected to emerge in 1999, suggesting that this year's cicada emergence was a four-year acceleration of Brood V. The other counties were sites of Brood XIV emergences in 1991 and these may be cicadas emerging four years late.

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INTRODUCTION

Periodical cicadas emerged in several Ohio counties in 1995. The heaviest emergence was in Athens County where hundreds of *Magicicada cassini* Fisher emerged over approximately 2,500 ha of the county centered at Athens. The emergence began on 24 May 1995 but was not large enough to satiate predators and periodical cicadas were not heard singing in choruses or seen in copula. Indeed, the cicadas were gone within a few days.

Ohio is known to have four broods of periodical cicadas. Brood V, next expected to emerge in 1999, occurs over much of the eastern half of the state. Brood VIII will emerge three years later and has been recorded from Carroll, Columbiana, Delaware, Mahoning, and Stark counties (Forsythe 1976). Brood X last emerged in western Ohio in 1987 (Kritsky 1988) and Brood XIV emerged in the south central portion of the state in 1991 (Kritsky 1992).

Periodical cicadas emerging in 1995 are designated as Brood I and Ohio does not have a continuous historical record of Brood I. Alexander and Moore (1962) reported that cicadas emerged in Hocking, Jackson, and Washington counties in 1961 which would be a Brood I year, but there are no other records of Brood I cicadas in Ohio. The purpose of this project was to determine the nature and extent of the 1995 emergence of periodical cicadas in Ohio.

MATERIALS AND METHODS

To verify the possible occurrence of Brood I cicadas in Ohio, county extension agents for Hocking, Jackson, and Washington counties were contacted and notices were placed in local papers alerting the public to the possible emergence. Counties along the Ohio River were checked for periodical cicadas and reports from independent observers were received.

RESULTS

Periodical cicadas emerged in eight Ohio counties (Fig. 1). Periodical cicadas were reported by county extension agents in Hocking and Washington counties. The reports indicated that the emergences consisted of fewer than ten individuals. Specimens collected from Washington County belonged to *Magicicada septendecim*.

Small emergences of *M. cassini* were found or independently reported from Adams, Clermont, Gallia, eastern Hamilton, Hocking, and Highland counties. The largest of these emergences was in Gallia County where *M. cassini* skins and approximately 30 emergence holes were found on 3 June 1995 but no cicadas were heard.

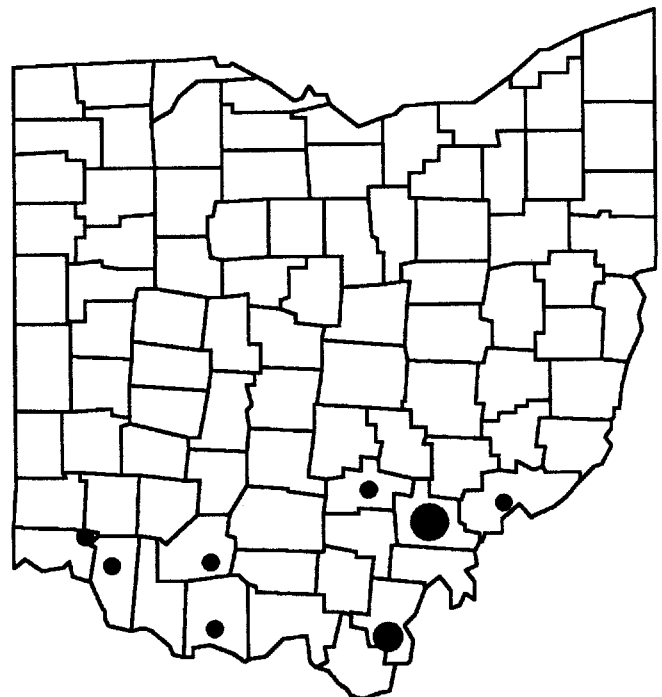


FIGURE 1. The 1995 emergence of the periodical cicadas. Large circles represent large emergences of hundreds of individuals, intermediate sized circles represent emergences of up to 50 individuals, and small circles denote fewer than ten cicadas.

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All of the other emergences consisted of fewer than ten individuals. Emergence localities are included as an appendix.

DISCUSSION

Brood I periodical cicadas emerged this year in large numbers in West Virginia and Virginia. The distribution of Brood I borders the eastern limit of Brood V which occurs in Virginia, through central West Virginia, extreme southwest Pennsylvania, and over eastern Ohio (Forsythe 1976). In Athens County, the emergence involved hundreds of individuals but these numbers were too small to escape predation to enable the cicadas to form chorusing centers, mate, and oviposit. The lack of any evidence of oviposition damage from the emergence further predicts that this emergence did not establish a new population which will emerge again in 17 years.

Periodical cicada broods are likely related to each other by four-year accelerations (Kritsky 1988, 1992). This would suggest that the larger emergences in Athens and Gallia counties in 1995 were four year accelerations of Brood V which is expected to emerge in those counties in 1999.

The other Ohio counties where periodical cicadas emerged in 1995 have Brood XIV cicadas in common, indicating that these cicadas may be stragglers from the 1991 emergence which occurred in large numbers in those counties (Kritsky 1992). Maier (1985) reported that periodical cicadas emerged in 1983 in Connecticut four

years after a large emergence. The Connecticut emergences consisted of fewer than four individuals at each locality similar to our observations of the Ohio counties with smaller emergences.

LITERATURE CITED

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APPENDIX

Counties and localities reporting periodical cicadas in 1995.

Adams: Edge of Appalachia Preserve; **Athens:** Athens; **Clermont:** western portion of county; **Gallia:** southern portion of county; **Hamilton:** Loveland; **Highland:** Fort Hill; **Hocking:** Washington; **Washington:** Marietta.
