

OBSERVATIONS ON PERIODICAL CICADAS (BROOD XIV) IN INDIANA IN 1991 (HOMOPTERA: CICADIDAE)

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ABSTRACT: Periodical cicadas (*Magicicada cassini*, *M. septendecim*, and *M. septendecula*) of the 17-year brood XIV emerged in 1991 in 14 Indiana counties. The emergence was heaviest in Brown, Crawford, Floyd, Harrison, Perry, and Ripley Counties. Light scattered emergences were found in Bartholomew, Dearborn, Dubois, Grant, Fountain, Franklin, Putnam, and Washington Counties. Emergence was reconfirmed in five of the six counties where the brood XIV cicadas appeared in 1974. One new county record was also found. A concerted effort to check counties with nineteenth century emergence records located pockets of periodical cicadas in eight counties. In some cases, periodical cicadas had not been recorded in those counties since the 1889 emergence.

DISCUSSION

Periodical cicadas of brood XIV emerged in parts of central and southern Indiana during May and June 1991. Fourteen counties witnessed the emergence with Brown, Crawford, Floyd, Harrison, Perry, and Ripley Counties having the heaviest infestation, while Bartholomew, Dearborn, Dubois, Grant, Fountain, Franklin, Putnam, and Washington Counties reported light and scattered emergences.

The last emergence of brood XIV in 1974 was reported to have centered in six counties: Brown, Morgan, Crawford, Harrison, Perry, and Washington Counties (Young, 1975). In 1991, all but Morgan County recorded the reemergence of the periodical cicadas.

The emergence began in the southern part of the State on May 8 with the greatest emergences occurring on May 13. Oviposition commenced on May 20 with the last of the cicadas heard until June 20.

As was done in 1987 with the emergence of brood X (Young and Kritsky, 1988), the county agents in each county with historical records of brood XIV cicadas were contacted to determine if they had received reports or made observations of periodical cicadas in 1991. The letters were sent at the height of the emergence before the annual cicadas appeared to lessen the possibility of confusion of the periodical cicadas with the annual cicadas. Five of these county agents reported small emergences. In some cases, these were the first records of brood XIV cicadas in those counties since 1889. This "reappearance" is likely due to the small scattered nature of these emergences, which caused the brood XIV cicadas to go unnoticed during past emergences. In Dearborn County, significant publicity from the Cincinnati media alerted the public, who responded to the emergence by contacting the first author directly. Investigation revealed extremely scattered emergences of only a few individuals in three locations. Emergence holes, skins, adults, and isolated singing males were found.

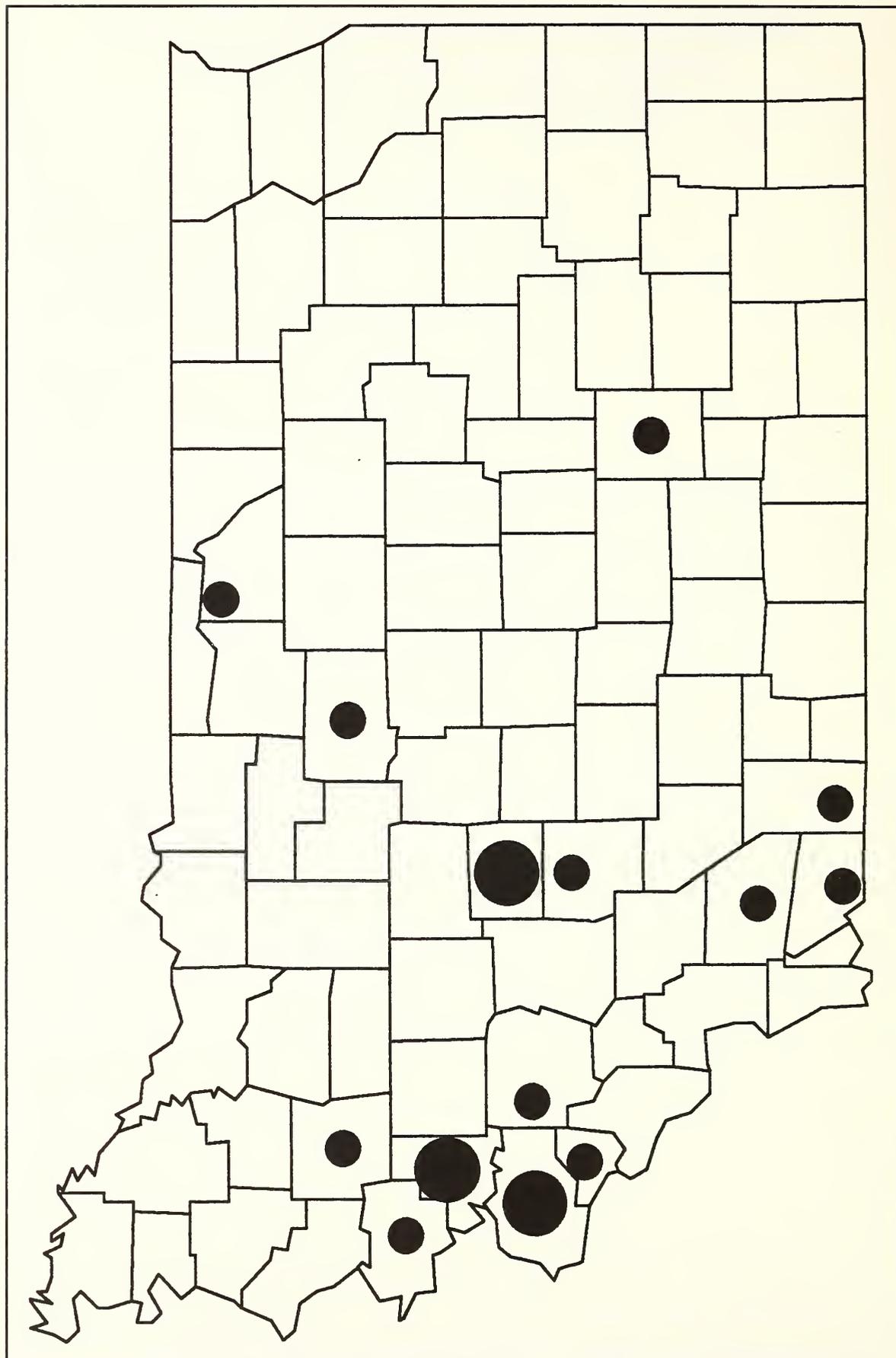


Figure 1. The 1991 emergence of the periodical cicada brood XIV in Indiana. The large circles represent heavy emergences, and the small circles represent light and scattered emergences.

Kritsky (1988) analyzed the historical record of the periodical cicadas and has shown that brood XIV cicadas have been declining in Indiana during the past two centuries. This year's emergence continues the decline of brood XIV. Indeed, brood XIV occupied much of the southern half of Indiana in the nineteenth century, being consistently reported in 23 counties. The nine counties where brood XIV has disappeared overlap with the region where brood X is the heaviest (Young and Kritsky, 1988). It is likely that this decline was the result of four year accelerations of brood XIV into brood X. This would account for the heavy populations of brood X in the south-central counties and the disappearance of brood XIV in the same region.

The next expected emergences of periodical cicadas in Indiana are brood XXIII in 2002 in southwestern Indiana (Young and Kritsky, 1990), brood X in 2004 in the extreme north and the southern half of the State (Young and Kritsky, 1988), brood XIII in 2005 in three northwestern counties (Kritsky and Young, 1991), and brood XIV again in 2008. A careful watch should be made in the year 2000 to determine if four-year accelerations of brood X, reported throughout this century (Kritsky, 1988), signal the appearance of a new brood in Indiana which would be designated brood VI.

LITERATURE CITED

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