

THE RANGE OF *ZOROTYPUS HUBBARDI* WITH AN ILLINOIS RECORD (INSECTA: ZORAPTERA)

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Specimens of the order Zoraptera are rare in collections, but one species, *Zorotypus hubbardi* Caudell, seems to be fairly abundant in at least parts of 17 southeastern states (Copeland, 1953, 1954; Riegel, 1950, 1956a, 1956b; Riegel and Koestner, 1957; St. Amand, 1954; Valentine and Wilson, 1949). Gurney's (1938) synopsis of the order listed *Z. hubbardi* from only seven states, with a doubtful record from Evanston, Illinois. Under the circumstances related by Dr. Gurney, it seems probable that the living specimens, found in a laboratory termite culture at Evanston, actually came from another locality.

The first *bona fide* Illinois specimens were taken from a sawdust pile at the Kelly Band Mill, Lawrenceville, on Sept. 15, 1956, by G. T. Riegel. Additional specimens were collected there on March 9, 1957, by Riegel and B. A. Landes, showing that this population had survived the winter successfully. When the latter collection was made the air temperature was slightly above freezing, yet the decaying sawdust was at 95° F. 18 inches below the surface where the specimens were found.

On May 12, 1956, numerous specimens, including one winged and one dealate female, were collected from sawdust near Montreal, Camden Co., Missouri, by Riegel, J. T. Fulton, Landes, J. T. McGinnis and R. W. Pippen. This extends the known range of *Z. hubbardi* approximately 115 miles northwest from a previous record (Riegel, 1956a).

On July 22, 1956, more than 100 additional specimens, including one winged female and many nymphs with long wing pads, were taken by E. J. Koestner and Riegel from a sawdust pile in Pike Co., Ohio, where the species had been collected earlier (Riegel, 1956b). These specimens (Dayton Museum of Natural History) are interesting in that they confirm Gurney's (1942) observation that winged forms occur throughout the summer.

The pattern of distribution that is emerging for *Z. hubbardi* seems to coincide with the deciduous forest region north almost to the 39th parallel. The known range now includes all eastern states south of this parallel, and west to and including eastern Texas, except Delaware, West Virginia, Kansas, and Oklahoma.

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