

SPIDERS IN OLD INSECT GALLS ON GOLDENROD.¹ Some common galls formed on stems of goldenrod (*Solidago* spp.) persist for a year or more after their insect makers leave them. These galls are subsequently used by many different arthropods as shelters or homes. Although at least three authors have mentioned that spiders may inhabit old galls, only Judd (1964) noted which species were found in them. He recorded six species from galls of the lepidopteron *Gnorimoschema gallaesolidaginis* (Riley) in Ontario. The present paper concerns spiders collected mostly in Ohio in 1953 from galls formed by *Epiblema scudderiana* (Clemens) as well as *Gnorimoschema gallaesolidaginis*. The galls of these lepidopterons are known as "scarred" and "elliptical" goldenrod galls, respectively. They were about equal in abundance at collection localities.

The galls contain a single chamber and usually have an opening to the outside fitted with a stopper-type plug manufactured by the insect. When used by an issuing moth, the plug is pushed out, leaving an opening about 2 mm in diameter, though it may be larger or smaller if certain predators or parasites of gall makers have been at work. An occasional gall will not have an opening because its maker has died prematurely. Of 335 old galls examined at various times from April to August (some without openings), 18 per cent actually contained spiders (a few more contained webs). In one sample of 40 galls, 22 contained spider eggs.

Eight species of spiders belonging to three families were identified from casual collections. Three of these are the same as reported by Judd, and five are new records for goldenrod galls. Of the eight species recorded, all except *Araneus patagiatus* are hunting spiders which do not use webs for catching prey. On the other hand, none of the species are restricted to galls, but are known to occur in a variety of situations (Kaston, 1948). More purposeful collecting is certain to uncover still other species. At least two species reproduce in the galls because two kinds of spider eggs were seen in them at various times. The eight species found, together with biological notes, are listed below:

SALTICIDAE

1. *Gertschia noxiosa* (Hentz). Seven females and one immature recovered between May 18 and June 26 from scarred galls in Ottawa County, Ohio. Also reported by Judd.
2. *Icius elegans* (Hentz). One female from elliptical gall, Tuscarawas County, Ohio, July 17.
3. *Metaphidippus canadensis* (Banks). One female from scarred gall, Ottawa County, Ohio, May 11.
4. *M. galathea* (Walckenaer). One female from scarred gall, Prince Georges County, Maryland, June 22. Also found by Judd.
5. *Paraphidippus marginatus* (Walckenaer). Two females, two males, and four immatures from scarred and elliptical galls, Wayne and Ottawa Counties, Ohio, May 7-11. Also reported by Judd.
6. *Salticus scenicus* (Linnaeus). Four females and 11 immatures from scarred and elliptical galls, Washington and Ottawa Counties, Ohio, May 3-July 28. In each of two galls, an adult female accompanied hatching eggs, suggesting that this was one of the species reproducing in the galls.

CLUBIONIDAE

7. *Clubiona abboti* Koch. Two females from scarred galls, Ottawa County, Ohio, May 7-13.

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EPEIRIDAE

8. *Araneus patagiatus* Clerck. One female from scarred gall, Ottawa County, Ohio, May 7.

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Kaston, B. J. 1948. Spiders of Connecticut. *Conn. Geol. Nat. Hist. Sur. Bull.* 70. 874 p.
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