

DISTRIBUTION OF ILLINOIS INSECTS

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The insect fauna of Illinois, estimated at approximately 20,000 species, brings out interesting generalities regarding the place of Illinois in the continental distribution of species, the types of abode of insects within the State, seasonal succession of species and their horizontal stratification.

Within the State itself insect distribution is influenced primarily by differences in vegetation. This is a result of the close dependence upon specific host plants of a large number of insect species. Many species occur principally in open prairie; these same ones often frequent weed patches around cultivated land. Another large set of species inhabits the forest, many of them actually feeding on various kinds of trees. Still a third large set prefers the forest edge region which occurs between the prairie and forest areas wherever these two are side by side, and which contains a wide variety of trees and shrubs, each harboring different insect species.

A wide variety of insects range over the entire State in whichever general

category they frequent. This includes many in which Illinois is in the heart of the species range, as in the case of the housefly and periodical cicada.

Other species are more restricted and occupy small areas which are of a more special type. A few areas of unusual interest are (1) White Pines Forest State Park and Starved Rock State Park, unique in Illinois in having insects restricted to white pine; (2) glacial lakes, swales and marshes in extreme northeastern Illinois, including many northern species which intrude into the Illinois fauna only in this area, fig. 1; (3) tamarack bogs in this same section with insect species restricted to this small area by either host preference or other limiting factors; (4) cypress swamps found in extreme southern Illinois, containing many insects intruding from the south, fig. 1, including species of crickets, plant bugs, and others which feed only upon cypress; and (5) the most diverse faunal feature of extreme southern Illinois, the Ozarkian Uplift. This has a wide variety of rock, hill, and meadow

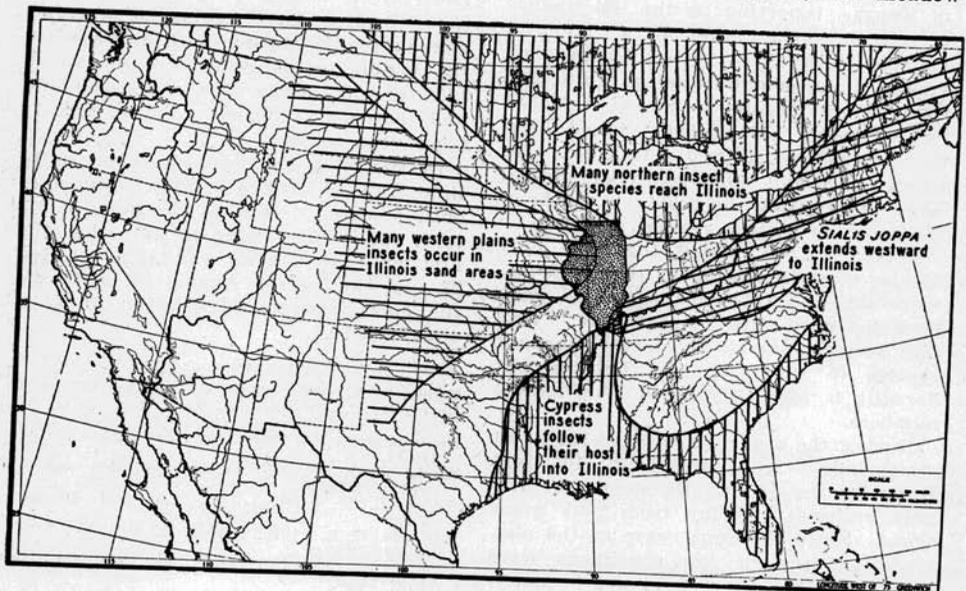


FIG. 1.

situations, in addition to unique streams in which are many species of insects found nowhere else in the State. Many of these species are eastern or typically Ozarkian in general distribution. An example is the alder fly, *Sialis joppa*, whose known range is shown in fig. 1. In various parts of Illinois occur extensive tracts of blow sand and dunes; most notable are those at Zion, along the shores of Lake Michigan, others near St. Anne, Savanna, Rock Island, Amboy and Havana. These areas sustain a typical sand flora and fauna and account for the presence in this State of many unique insect species. Most of these have a range centering in the western prairie, fig. 1.

The place of Illinois in the continental range of its insect species is varied. In the case of a large proportion of its species Illinois is in the central part of the range, which may be wide or limited. In many other cases the species intrude into the State from ranges which center to the east, south, west or north. Examples are given in fig. 1. So many intrusive species of many diverse groups have been taken in the State that it is

apparent that Illinois has an axial position in regard to many faunal regions of North America.

Seasonal distribution of the insects within the State is tremendously complicated. Since Illinois has severe winters and hot summers, there is a very marked seasonal succession of species throughout the year. Hordes of insects are active during spring, summer, and fall. Others including springtails, stoneflies, and a few other aquatic insects, are active also during the winter months. Due to the difference in climate between northern and southern Illinois, this seasonal succession is very different in the two ends of the State.

Equally complex is the distribution of Illinois insects among the various strata. Certain forms are adapted to spend their entire life cycle in the soil, others in the herbs, others in the shrubs and trees. Most insects, however, may be found in more than one stratum, frequently spending the larval stage in one, the pupal stage in another, and the adult stage in several.
