Insects of Indiana for 1946

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Some very unusual weather conditions occurred in 1946 which reflect the insect problems of the year. Table I shows clearly these weather conditions.

Table I. Comparative Monthly Weather Data for Indiana, 1946

Month		Temperature		Precipitation		Number of Days		
		State Mean °F	Departure from Normal °F	State Average Inches	Departure from Normal Inches	Clear	Partly Cloudy	Cloudy
1945	Normal	42.4		3.05				
November	1945	44.0	+1.6	3.38	+0.33	8	7	15
	Normal	32.1		2.72				
December	1945	25.6	—6.5	2.33	—0.39	8	6	17
1946	Normal	29.0		2.95				
January	1946	30.8	+1.8	1.57	—1.38	10	6	15
	Normal	30.7		2.45				
February	1946	34.6	+3.9	3.09	+0.64	10	6	12
	Normal	41.0		3.77				
March	1946	52.8	+11.8	3.11	—0.66	12	9	10
	Normal	51.9		3.58				
April	1946	54.2	+2.3	1.72	—1.86	12	10	8
	Normal	62.3		4.09				
May	1946	60.0	—2.3	6.06	+1.97	8	9	14
	Normal	71.6		3.91				
June	1946	71.3	—0.3	4.12	+0.21	14	10	6
	Normal	75.7		3.31				
July	1946	75.1	—0.6	2.62	—0.69	19	9	3
	Normal	73.6		3.34				
August	1946	69.6	—4.0	3.31	+0.03	13	13	5
	Normal	67.2		3.29				
September	1946	66.8	—0.4	1.35	—1.94	17	9	4
	Normal	55.0		2.75				
October	1946	59.2	+4.2	2.71	—0.04	16	8	7

Beginning in *November*, 1945, we find that temperature changes were frequent and fluctuations sometimes large. The first half of the month warm weather predominated while the weather was reversed the last half. *December* averaged quite cool due to two weeks of very cool weather about the middle of the month. *January* of 1946 had several periods of rather cold weather, but the average was somewhat above normal and precipitation was less than normal. Warm weather predominated in all parts of the state during *February* and precipitation was slightly above normal. *March* was the warmest March on record and precipitation was slightly below normal, especially in the southern half of the state. During *April* the temperature fluctuated but averaged above normal. Precipitation was less than half than normal and it was the driest April since 1934. *May* conditions delayed spring planting. Cool weather prevailed but the deficiency for the state was not large. There was heavy precipitation in the south but much less in the northern area. *June* shows normal temperature but with rather heavy rainfall in the extreme northern counties and less than needed in central and southern Indiana. Following a rather cool May, summer thus far was generally pleasant with slightly below normal temperatures in June and July. Reversing the order of the preceeding month, the northern part of Indiana was generally quite dry in *July* and the southern part moderately wet. *August* was a very cool month, the third coolest on record, but precipitation was normal for most areas of the state. During *September* the temperature was slighly below average and precipitation much below normal. The mean *October* temperature was sixth highest in sixty years while precipitation was about normal for the month although the first half of the month was very dry.

Field Crop Insects

Chinch Bug *(Blissus leucopterus* Say). In spite of the large population of chinch bugs in the fall of 1944 and their successful hibernation, the unusually unfavorable weather during the spring and early summer of 1945 reduced the chinch bug population to harmless numbers. Continued unfavorable conditions in the Spring of 1946 prevented the bugs from increasing to destructive numbers. Surveys to date indicate no likelihood of serious damage in 1947.

European Corn Borer (*Pyrausta nubilalis* Hbn.) has not been a serious problem for three or four years, due to the fact that weather has prevented most corn planting until after the recommended planting date. It should be noted, however, that each year there are enough overwintering borers to develop a serious infestation the following year if conditions are favorable for early corn planting and if farmers plant early.

Grasshoppers *(Melanoplus femur-rubrum* DeG. et spp.) were spottedly abundant, especially in areas of drought or semi-drought, due largely to the fact that dry conditions forced the grasshoppers to migrate from their breeding areas, lowland areas, to cultivated crops. They were

destructive to vegetable gardens, but more so in orchards, eating and girdling the tender twigs.

Hessian Fly *(Phytophaga destructor* Say) caused some damage to wheat the past Spring, with the stubble infestations moderate to heavy and general throughout the state.

White Grubs *(Phyllophaga spp.)* were abundant in many parts of the northwestern quarter of the state, attacking rye, wheat, soybeans, and golf greens.

The Annual White Grub *(Cyclocephala* sp.) was destructive to lawn grass in several localities in central Indiana.

Wireworms (Elateridae) were destructive to corn in northern Indiana during June.

Corn earworm *(Heliothis obsoleta* Fab.). This pest was unusually scarce during the past season.

The Potato Leafhopper *(Empoasca fabae* Harr.) was abundant on alfalfa throughout the northern two-thirds of Indiana, causing conspicuous yellowing of the foliage.

The Northern Corn Root Worm (*Diabrotica longicornis* Say) damaged corn in the bottom lands of southwestern Indiana. The beetles were responsible for injury to corn fertilization by cutting the green silks. There is evidence this insect is becoming increasingly important in the muck areas of northern Indiana where corn is grown on the same ground year after year.

Clover Bud Weevil *(Hypera nigrirostris* Fab.) was responsible for damage to clover, especially in southwestern Indiana, the last of April and early May.

Clover White Grub *(Colaspis brunnea* Fab.) were destructive to corn in many localities where corn followed spring-plowed legumes.

Corn Seed Maggot *(Hylemyia cilicruca* Rond.) was more abundant than for a number of years, especially in the northern half of the state, attacking planted seeds of corn, beans and melon. Cold, wet weather was probably largely responsible.

The Corn Seed Beetle *(Agonoderus pallipes* Fab.) was rather common attacking planted seeds, especially sweet corn, in the northern half of the state during June.

The Common Stalk Borer (*Papaipema nebris* Gn.) was quite common in most regions of the state attacking corn, potatoes, tomatoes, wheat and oats.

The Spittle Bug *(Philaenus lineatus* L.) was more common and destructive than in any of the past 26 years for which we have records. It became conspicuous in May and early June, and although not uncommon in all sections of the state it was most abundant in the northern third. It became conspicuously noticeable on all kinds of vegetation, including especially parsley and other vegetable crops, alfalfa, clover, flowers, including chrysanthemum and commercial cut flower gardens, strawberry and juniper trees. This insect is present every year and

common along streams and similar shaded places. Apparently the general outbreak this year was the result of cool, wet and cloudy weather.

Vegetable Insects

Mexican Bean Beetles *(Epilachna varivestis* Muls.) were scattered but became rather generally abundant and destructive beginning in June.

The Pickle Worm *(Diaphania nitidalis* Stoll) was destructive in all sections of the state but especially so to melons and cucumbers, or pickles, in the southern third of the state.

Potato Flea Beetle *(Epitrix cucumeris* Harr.) and the Potato Leafhopper *(Empoasca fabae* Harr.) were generally abundant on potato beginning in early June.

Onion Thrips *(Thrips tabaci* Lind.). Injury began to show up in late June and became increasingly abundant and destructive as the season progressed. Excellent control was obtained with DDT.

A Serpentive Leafminer *(Agromyza pusilla* Meig.) became very abundant on potatoes where DDT was used.

Fruit Insects

Strawberry Leaf Roller *(Ancylis comptana* Fröl.) was quite abundant in the northern half of the state.

The Apple Maggot (*Rhagoletis pomonella* Walsh). During the past few years there has been a definite migration southward and this year it was received from as far south as Danville in Hendrichs County, about the center of the state. Only a few years ago it occurred only in the northern tier of counties adjoining Michigan.

Bark beetles, commonly known as Shot Hole Borers *(Scolytus rugulosus* Ratz.) were unusually abundant in some localities on plum and peach.

Oriental Fruit Moth *(Laspeyresia molesta* Busck). In the dry areas of northern Indiana the worms left the twigs because of the hardening of the twigs and ate pits in the peaches which at the time were apparently too green to permit normal entrance in the fruits.

The Codling Moth *(Carpocapsa pomonella* L.) was normally abundant in northern Indiana but less abundant in southern Indiana. This may be attributed to the fact that in northern Indiana weather conditions were approximately normal. In southern Indiana about half of the overwintering larvae emerged normally but a cold spell following prevented egg-laying. After this late cold weather about a third of the overwintering larvae emerged as adults, and because of their late appearance there was practically no third brood which normally occurs. The rather general use of DDT in southern Indiana was another factor in reducing the importance of the codling moth in southern Indiana.

Shade Tree and Shrub Insects

Walking Sticks *(Diapheromera femorata* Say) defoliated a 10-acre oak grove near Knox, Indiana, the latter half of September. From there they migrated to nearby apples and roses, which were similarly defoliated. From reports received they did not attack Chinese or American Elms.

Bagworms *(Thyridopteryx ephemeraeformis* Harr.) was common throughout the southern half of the state. One report was received from Hammond in the extreme northwest corner of the state, the farthest north ever reported in Indiana.

Catalpa Worms *(Ceratomia catalpae* Boisd.) were scattered but groves of catalpa were defoliated in many parts of the state.

Cottony Maple Scale *(Pulvinaria vitis* L.) seems to be on the increase in northern Indiana.

European Elm Scale *(Gossyparia spuria* Mod.) is abundant throughout the state and its presence in nurseries is especially important because it prevents nursery inspection certification. Control has been difficult due to the fact that dormant oil sprays are effective only in high concentratives and early summer treatments have been ineffective because of the long period of hatching. During the past season, Paul Ulman and Howard O. Deay carried on a series of tests with DDT in a nursery near Indianapolis. Wettable DDT in strengths of ½, 1, 2, 3, 4 and 5 per cent were used, applications being made in July, about one month after the first young were hatched. Complete control was obtained with all strengths of DDT.

The Juniper Webworm *(Dichomeris marginellus* Fab.) is definitely on the increase and has been reported from many sections of the state, both north and south.

Pine tip moth *(Rhyacionia frustrana* Comst.) was sent in from several scattered localities.

Locust Leaf Miner *(Chalepus dorsalis* Thumb.) was unusually abundant and occurred in noticeable numbers as far north as Rushville, in central Indiana. Almost every year the hillsides of extreme southern Indiana are brown because of the browned locust leaves resulting from leaf miner infestation.

The Red Spider *(Tetranychus telarius* L.) was definitely more abundant on shrubs and trees, also on greenhouse crops, and in the case of apples it became a problem where DDT was used.

Aphids have been unusually abundant during the past late summer and fall. The three most conspicuous were willow aphids *(Clavigerus = Melanoxantherium smithae* Monl.), sycamore aphids *(Longistigma caryae* Harr.) and maple aphids *(Periphyllus lyropictus* Kess. and *Drepanaphis acerifoliae* Thos.). The willow aphids were especially obnoxious because of their fall migrating habits to nearby buildings and furnishings where they leave blood red stains when crushed. The maple aphids were especially annoying because of the abundant mist-like honeydew given off,

covering the leaves with a shiny sticky surface which interferes with transpiration, and by leaving glistening spots on the radiator and other parts of automobiles parked nearby.

Miscellaneous Insects

Stored Grain Insects were of normal occurrence.

Termites *(Reticulitermes flavipes* Koll.) were the subject of more inquiries than in any previous normal year for which we have records. The accompanying graph shows the interest in termites based on letter inquiries received from 1923 to 1946, during which period we have

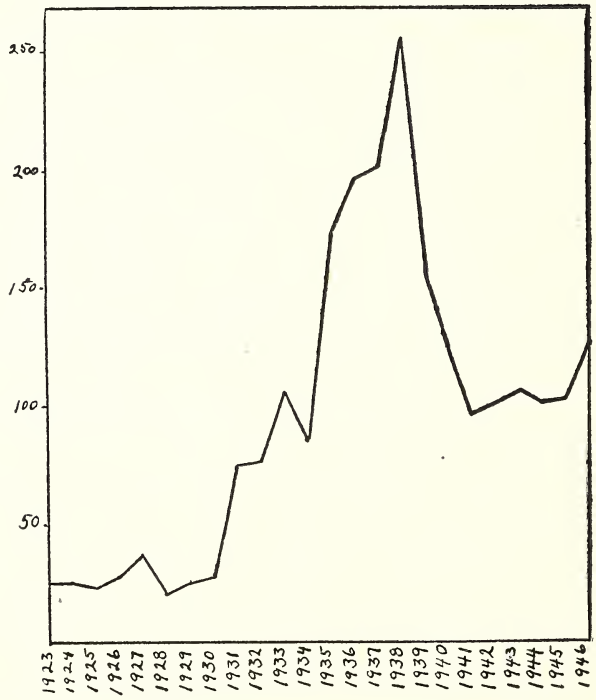

Fig. 1. Number of termite letter inquiries each year from 1923 to 1946.

maintained records of all insect inquiries. It will be noticed that but few inquiries were received from 1923 to 1930. Beginning in 1931 and until 1934 increasing inquiries were received which resulted in publicity and extension activities to aid home owners. This publicity apparently was responsible for a rapid increase in inquiries with the peak in 1938. From that date the inquiries decreased and for the past six years the inquiries have reached a normal level.

Powder Post Beetles *(Lyctus* spp.) have been increasingly important during the past few years in all sections of the state.

Ants of various species have been the subject of many inquiries. For the most part the inquiries referred to ants annoying in the lawn and garden although many referred to ants as household pests, and not a few referred to winged ants confused with termites.

Boxelder Bugs *(Leptocoris trivittatus* Say) were again abundant and annoying in homes where they sought winter quarters.

Cluster or Attic Flies *(Pollenia rudis* Fab.) were more abundant than usual this past fall.

Cockroaches of all kinds, but especially the German roach *(Blattella germanica* L.), were reported as household pests more than usual.

Fleas *(Ctenocephalus felis* Bouche and *Pulex irritans* L.) were again major pests the same as for the past few years. Excellent control has been obtained in buildings, lawns, and on animals by use of DDT.

Flies, especially the house fly (*Musca domestica* L.) were less abundant the past year than most years.

The Brown Dog Tick *(Rhipicephalus sanguineus* Latr.) has been the subject of many inquiries and there is little doubt but this dog and household pest is on the increase in Indiana.