In the nearby Delta section of Mississippi the damage caused by weevils was much below normal. Damage was also light in southeastern Texas, but a long period of rainy weather during June and July was favorable for rapid multiplication and unusually heavy damage was caused in the blackland area of eastern and central Texas. At Waco, Tex., the yield was more than doubled in many of the experimental plots where weevils were controlled. In the lightly infested area an abundance of food late in the season allowed weevils to continue increasing until frost and to enter hibernation in excellent conditions; hence, in most sections the number of weevils entering hibernation in the fall of 1940 was above average. (U. C. Loftin, Bureau of Entomology and Plant Quarantine, U. S. D. A.)

COTTON LEAF WORM

The cotton leafworm situation in 1940 was characterized by the extremely slow and erratic spread of the insect and the small amount of damage it caused. The first leaf worms of the season were found in Cameron County, Tex., near Brownsville, on May 27, 1940, or about the normal time. It was reported from Calhoun County, in southeastern Texas, on July 31; from Marana, Pima County, Ariz., on August 5; from Burleson and McLennan Counties, in central Texas, on August 6; and from Presidio County, in western Texas, on August 10. A separate invasion of moths occurred in Florida as half-grown worms were found near Trenton, Gilchrist County, in the north-central part of the State on June 18, the earliest date recorded in many years. It is also of interest that the first appearance of leaf worms in Florida has been reported from the vicinity of Trenton over a period of years. Spread from this area was also slow. Infestations were reported from Valdosta, Lowndes County, southern Georgia, on July 31 from George County, in the Gulf coast region of Mississippi, on August 1; from Tallulah, Madison Parish, northeastern Louisiana, on August 15; from Washington County, in the Mississippi Delta, on September 28; and from Florence County, S. C., late in October. The leaf worm did not become sufficiently abundant to cause noticeable damage in any section, and for the first time in many years practically no control measures were necessary in 1940. (U. C. Loftin, Bureau of Entomology and Plant Quarantine, U. S. D. A.)

PERIODICAL CICADA

Breed XIV of the periodical cicada occurred over much of the territory from which it has been previously recorded. The old records from Illinois and New Jersey were not confirmed. Neither were several others, particularly those around the edge of the area of great abundance. The records for 1940 are as follows, the counties being underscored:

Alabama: Etowah, Attalla (5 mi. north); Jackson, Woodville.

Indiana: (Southern half of State as far north as La Fayette); Brown, Jefferson Madison; Lawrence; Tippecanoe, La Fayette.

Kentucky: Adair (entire county), Columbia, Glens Fork; Allen (entire county), Holland, Scottsville; Anderson (entire county), Alton, Glensboro, Lawrenceburg, Barren, Cave City, Glasgow; Bull (entire county), Frakes, Jonsom, Middleboro, Pinonville; Boyd (entire county), Ashland, Catlettsburg; Boyle, Danville;
Bracken (entire county), Brookeville; Breckinridge, Cloverport, Brandenburg, McDaniels, Mystic; Bullitt, Shoppardsville; Butler, Morgantown; Caldwell, Princeton; Campbell, Newport; Carter (entire county); Carter, Hitchens, Christian, Hopkinsville, Clark; Water Mill, Winchester; Edmonson, Brownsville, Calhoun; Elliott (entire county), Sandy Hook; Estill (entire county), Irvine, Ravenna, Fayette; Franklin, Frankfort; Garrard (eastern and southern); Grant (southern half); Graves, Mayfield. (5 miles east); Grayson (entire county), Big Cliffy, Clarkson, Caneyville, Green (entire county), Elizabethtown, Greensburg, Goshen, New, Summersville, Greenup (entire county), Greenup; Harlan (entire county), Summit, Upton, Harlan (entire county), Cumberland: Hart, Cash, Linwood; Henderson, Ashland, Greenup, Hazard; Henry (western half), Campbellsville, Frankfort, New Castle; Jackson (entire county), Foytown; Jefferson (eastern and southern), Cedar Grove near Buechel, Louisville, Okolona; Johnson, Paintsville; Kenton, Erlanger, Independence; Knott (entire county), Barbourville; Letcher (entire county), Hodgenville, Lawrenceburg, Louisa; Leslie (entire county), Horseshoe Crater, Hyden, Stinnett; Letcher (entire county), Hazard, Pineville, Whitesburg; Logan, Lewisburg, Russellville; McCreary, Cumberland Falls; Pine Knot, Reel, McLean, Livermore; Madison (entire county), Richmond; Marion (entire county), Lebanon, Loretto; Martin (entire county), McLean; Inez, Sticken, Warfield; Mason (entire county), Narrows; Manteo, Cranmoor; Mercer, McFerrin, Metcalfe, Hopkins, Summer Shade; Monroe (entire county), Fountain Run; Morgan, Edon, Hise; Nelson, Bardstown, Boston; Nicholas (northwestern), Oldham, Ballardville; Owen (southern half); Owsley (entire county), Boonesville; Pendleton (southern half); Perry (entire county), Hazard; Pike (entire county), Campton, Meto, Virgile, Zebulon; Powell (entire county), Stanton; Pulaski (entire county), Spencer; Robertson (entire county), Mount Olive; Robertson (entire county), Broadway, Wilder; Rowan (entire county), Farners; Russell (entire county), Crooksboro, Jamestown, Shelby, Portonia, Shelbyville; Simpson, Franklin; Spencer, Taylorsville, Rivels; Taylor (entire county), Campbellsville; Todd, Allegre, Trenton, Trinette, Bedford, Milton; Warren, Bowling Green; Washington, Springfield; Wayne (entire county), Frazer, Hill Springs; Whitley (entire county), Walden, Williamsburg, Youngs Creek.

Maryland: (On boundary line between Allegany and Washington Counties); Allegany; (Sideling Hill, Tonoloway Hill), Cumberland, Baltimore, Baltimore City, Baltimore, Frederick, (Catoctin Mountains), Frederick, Lewistown (3 miles west); Montgomery, Ashton, Silver Spring (Avenal, 4 miles east, and Woodside, 1 mile north); Prince Georges, Beltsville, Borwn, College Park, Laurel, Washington.

Massachusetts: Barnstable (both sides of Cape Cod Canal at the end of Cape Cod Bourne, Bourneville, Catsuot, Centerville, Cotuit, East Fairhough, Fairhough, Hyannis, Mashpee, Osterville; Plymouth, Manomet, Plymouth.


North Carolina: On the Madison-Yancey County line. Alexander; Alleghany; Avery, Allemand; Buncombe, Asheville; Burke (northwestern, in vicinity of Ashford, McDowell County); Caldwell; Watauga; Wilkes.
Ohio: Adams; Brown, Ripley; Butler; Clermont; Clarke; Clinton; Delaware;
Franklin, Columbus (10 miles north); Gallia; Greene; Clinton; Hamilton;
Highland; Jackson, Oak Hill; Lawrence, Burlington, Chesapeake, Coal Grove,
Hanging Rock, Trenton, North Kenova, Proctorville, South Point, Sybene;
Nees; Montgomery; Pickaway; Pike, Piketon, Sargent, Wakefield; Ross,
Chillicothe; Sciota, Franklin Furnace, Haverhill, Lucasville, New Boston,
Portsmouth (15 miles northwest in Shawnee forest), Wheelersburg; Warren.

Pennsylvania: Adams, Arendtsville, Bendersville, Biglerville, Flora Dale,
Gettysburg, Idaville, Orrtanna, townships of Berwick, Butler, Huntington,
Lemington, Menallen, Tyrone; Bedford, Alum Bank, Bedford (also 10 miles northeast),
Breezewood, Buffalo Mills; Blair, Altoona, Bellwood, Canoe Creek,
Martinsburg, Tyrone, Williamsburg, townships of Alleghany, Antis, Catherine,
Frankstown, Juniata, Logan, Snyder, Tyrone, Woodbury; Berks, Bernville,
Mt. Penn, Reading, townships of Brocknock, Caernarvon, Robeson, Union;
Bucks, Pleasant Valley, Quakertown, Sellersville; Cambria (northeastern);
Corto (entire county), Bellefonte, Centre Hall, Fleming, Mill Hall, Milroy,
Philipsburg, Fort Matilda, Snow Shoe, State College, Unionville; Chester,
Compass, townships of East Brandywine, Highland, Uwchlan, Upper Uwchlan,
West Brandywine, West Cocalico, West Coventry, West Sadsbury; Clearfield, Bridgeport,
Clearfield, Curwensville, Frenchville, Hawk Run, Kanish, Lebanon,
Lambert, Mansfield, Woodward, townships of Bradford, Cooper, Covingston, Girard,
Goshen, Karthaus, Lawrence, Morris, Pike; Clinton, Beech Creek, Lock Haven,
Loganton, Renovo, townships of Allison, Bald Eagle, Beech Creek, Castanea,
Chambers, Colebrook, Crawford, Dunstable, Gallagherr, Grogan, Green, West
Koting, East Koting, Lower, Leidy, Logan, Noyes, Pines Creek, Porton
Woodward, Wayne; Columbia (entire county), Bloomsburg, Buckhorn, Mill Grove,
townships of Benton, Bloom, Beaver, Briar Creek, Catasauqua, Center, Cleveland,
Coyngham, Fishing Creek, Franklin, Greenwood, Hemlock, Jackson,
Locust, Madison, Maine, Mifflin, Montour, Mount Pleasant, Orange, Pine,
Roaring Creek, Scott, Sugarloaf; Cumberland, Carlisle, Mount Holly Springs,
Newburg, townships of Dickinson, Goodyear, Penn; Dauphin, Ingleside,
townships of Reed, Halifax, Middletown, Upper Paxton, Susquehanna; Franklin,
Blackgap, Caledonia, Pen Mar, townships of Antrim, Greene, Guilford, Quincy,
Washington; Fulton, Harmony, Naednoro, Warfordburg; Huntingdon (along
William Penn highway), Alexandria, Centre Union, Huntingdon, McAlvays Fort,
Petersburg, Todd, Union Church, Union Furnace, townships of Berree, Brady,
Carbon, Dublin, Franklin, Handsyron, Jackson, Juniata, Logan, Miller, Morris
Cressida, Porter, Shirley, Smithfield, Spruce Creek, Todd, Union, Walker,
Warriors Mark, West; Juniata, Cocalamus, Mifflintown, townships of Fayette,
Fernonagle, Greenwood, Monroe; Lancaster, Brickerville (along highway 322 to
Lebanon County line); Gap (at Chester–Lancaster County line); Lockawanna,
Jersey, townships of Scott; Lebanon, Millers, Newemtans, townships of
Cornwall, Heidelberg, Londonderry, Mill Creek, South Annville, West Cornwall;
Lohigh, Newtington, Zionsville; Luzerne, Hazleton, Kyttr, Leffin,
Laurel Run, Wilkes-Barre, townships of Bear Creek, Dennison, Fairmount,
Hanover, Plains, Lycoming (entire county), Marsh Hill, Williamsport, townships of Anthony,
Armstrong, Brady, Brown, Cabassa, Clinton, Cogan House,
Cumings, Eldred, Fairfield, Franklin, Grumble, Hopburn, Jackson, Jordan,
Lewis, Limestone, Loginsack, Lycoming, McHenry, McIntyre, McNett, Mifflin,
Mill Creek, Moreland, Nuncy, Nuncy Creek, Nippenose, Old Lycoming, Penn,
Pitt, Pines, Thompson, Creek, Porter, Shrewsbury, Susquehanna, Upper Fair-
field, Watson, Washington, Wolf, Woodward; Mifflin, Allensville, Belleville,
Lewistown, Milroy, Newton, Hamilton, Tengertown, townships of Armagh, Bratton,
Brown, Decatur, Deny, Granville, Kenno, Oliver, Union, Wayne; Monong (entire
county), Danville, Washingtonville, townships of Anthony, Cooper, Derry,
Limestone, Liberty, Valley, West Hanover, Mahoning, Mayberry; Northumberland
(entire county), Milton, Mount Carmel, Northumberland, Paxinos, Pottsville,
Shenandoah, Sunbury, townships of Coal, Delware, East Cameron, East Chillis-
squaque, Gearhart, Jackson, Jordan, Lewis, Little Mahanoy, Lower Augusta,
Lower Mahanoy, Mount Carmel, Point, Ralpho, Rockefeller, Rush, Shenandoah,
Tobort, Upper Augusta, Upper Mahanoy, Washington, West Cameron, West Chillis-
squaque, Zerbe; Perry (on Blue Mountain from Marysville at the Susquehanna
River to Sterrets Gap), Duncannon, Ellitsburg, Liverpool, Marysville,
New Bloomfield, Newport, Shermans Dale, townships of Buffalo, Carroll,
Center, Greenwood, Howe, Liverpool, Millio, Oliver, Penn, Rye Spring; Schuyl
kill, Shamokin, townships of Barry, Butler, Branch, Cass, Hegins, Hubley,
Union; Snyder, Beaumont, Freeburg, Middleburg, Post Trevorton, Rolling
Green Park, Selinsgrove, Shenandoah, Towaco, townships of Adams,
Beaver, Center, Chapman, Franklin, Jackson, Millis Creek, Monroe, Penn, Perry
Springs, Union, Washington, West Beaver, West Perry; Union, Allenwood, Buffalo
Valley, Hartleton, Lewisburg, Mifflinburg, Millmont, New Berlin, New Columbia
Winfield, townships of Buffalo, East Buffalo, Gregg, Hartley, Kelly, Lewis,
Limestone, Union, West Buffalo, White Deer; York, Dillsburg, Dover, Hanover,
Helen, Mount Wolf, Woodbine, York (10 mi. west), townships of Conewago,
East Manchester (Conewago Mills), Hellam, Paradise.

Tennessee: Anderson, Blount (Chilhowee Mountain); Campbell; Coffee; Cumber-
land; Davidson; De Kalb; Fentress; Franklin; Hamilton (along U. S. Highway
27; from Sols Creek to the Rhea County line); Knox (in area between Knox-
ville and Norris Dam); Marion, Martin Springs, Montgomery, Clarksville;
Putnam, Cocke; Greene, Robertson, Springfield, Sullivan, Bristol; Union,
Wayneville; Warren.

Virginia: Albemarle, Crozet; Augusta, Churchville, Staunton, Staunton Draf,  
Waynesboro; Clarke; Fairfax, El-Nido, Vienna; Frederick, Gore; Rockingham, 
Timberlane; Shenandoah.

West Virginia: Berkeley, Gerrardstown, Glengary; Boone; Cabell; Jackson; 
Kanawha, Charleston; Lincoln; Logan; McDowell; Mason; Mercer; Mingo; Putnam; 
Wayne; Wyoming.

EASTERN HEMLOCK BORER

Examination of the root systems of 30 hemlock trees in stands on the 
Menokinso Indian Reservation, washed out in 1939 and 1940, has conclusively 
shown that the eastern hemlock borer (Malonochila fulgurata Herr.) can 
successfully attack eastern hemlock only when the trees are definitely dying 
from other causes. Therefore this borer should be considered as a secondary 
insect. The succession of consecutive drought years in this region from 1930 
9137 was the primary cause of the heavy hemlock mortality in these stands.
There was a noticeable reduction in the abundance of the beetles in 1940 for the 
first time since the study was started in 1937. This is apparently be-