

TOBACCO, A NATURAL APHID TRAP¹

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The green peach aphid, *Myzus persicae* (Sulzer), appeared in unprecedented numbers in a few Florida tobacco fields in 1946. The following year this aphid became a major pest, and it was considered a serious threat to tobacco in all the tobacco growing sections of this country and in Canada and Cuba. It was believed that field infestations of the insect developed principally from aphids brought in with plants from infested seed beds. However, there also was a possibility that new colonies were started by winged aphids which entered the fields from outlying areas.

To obtain information on this matter, winged aphids resting on tobacco plants in the field were collected and studied in the spring of 1949. Many of them were the green peach aphid, but several other species were taken. Collections were made on five different dates, and a total of 245 specimens were taken. They included 28 different species, several of them represented by single individuals. Eight of the species were new to Florida and four of these were undescribed at the time of collection.

Because so many unusual aphids were taken in 1949, this method of collecting was used in several subsequent years. All of the collections were made in Alachua County, Fla. Except for one year, they were made in the experimental tobacco plantings of the Agricultural Experiment Station at Gainesville. In 1962 collections were made in several commercial tobacco fields in the Alachua and Newberry areas.

The success of this method of collecting aphids is due to a characteristic feature of the tobacco plant. Both surfaces of the leaves are thickly covered with sticky glandular hairs. Aphids alighting on the tobacco begin to move about, and soon the sticky material of the leaf hairs accumulates on their legs and they become securely trapped. As long as the trapped aphids remain alive, they can be removed from the plants rather easily with a camel's hair brush dipped in 70% alcohol. Dead aphids stuck to the leaves soon become dry and brittle, and they are of little value as specimens for identification.

The collection data for 11 years are summarized in Table 1. Because of variations in the number of collections made in different years and in the number and size of tobacco plants examined, the aphid catches are not directly comparable. The species recorded are representative of the aphids alighting on the tobacco at the collection periods as all aphids seen on the plants were collected.

The green peach aphid was taken in each of the 11 collection years. This species flew to the tobacco in very large numbers in 1957, 1961, and 1962, but infestations in tobacco were not severe in Florida during these years. This does not prove that migrating aphids are not a factor in initiating field infestations, but it does show that severe outbreaks do not necessarily follow a heavy influx of flying aphids.

Five other aphid species also were taken in all years that collections were made. Four of these, *Aphis gossypii* Glover, *Macrosiphum euphorbiae*

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TABLE 1.—APHID SPECIES TRAPPED ON FLUE-CURED TOBACCO IN FLORIDA FROM 1949 TO 1963.

Year in which collections made	1949	1950	1951	1952	1953	1954	1957	1958	1961	1962	1963
Number of collections during year	5	12	4	5	12	3	4	13	6	14	7
Number of species collected	28	42	12	33	31	16	18	21	29	29	14
<i>Acyrtosiphon pisum</i> (Harris)										3-4*	
<i>Acyrtosiphon solani</i> (Kalt.)										2-2	1-1
** <i>Anoecia oenotherae</i> Wilson										1-1	
** <i>Anoecia querci</i> (Fitch)	1-1	2-2			1-1				1-1		
<i>Anuraphis middletonii</i> (Thos.)	1-23	12-55	3-12	5-34	9-61	1-7	2-5	9-22	6-16	11-86	2-4
<i>Aphis astericola</i> Tissot				1-1							
<i>Aphis cephalanthi</i> Thos.		1-1					1-1				
<i>Aphis coreopsidis</i> (Thos.)	1-3	4-9	1-1	2-2	3-4			1-1	2-2	1-1	
<i>Aphis craccivora</i> Koch	1-1	3-5		2-3	3-5	2-23		7-13	4-39	11-151	5-22
<i>Aphis fabae</i> Scopoli									1-1		
<i>Aphis forbesi</i> Weed		1-1									
<i>Aphis gossypii</i> Glover	4-4	8-118	2-12	5-23	9-24	2-9	1-1	3-4	3-5	4-10	4-4
<i>Aphis illinoensis</i> Shimer						1-1		1-2			
<i>Aphis nasturtii</i> Klth.				1-3							
<i>Aphis nerii</i> Fonsc.		3-4						1-1	1-1		
<i>Aphis oestlundii</i> Gill.				3-5	3-3					3-5	1-2
<i>Aphis rubifolii</i> (Thos.)	1-1			1-1						2-2	
<i>Aphis sambucifoliae</i> Fitch				1-1					2-5	2-4	
<i>Aphis spiraeicola</i> Patch		10-32	2-2	3-5	2-2	1-4	3-4	3-3	2-6	2-5	1-1
<i>Aphis vermoniae</i> Thos.				1-1					1-1		

*Number of times the species was taken during year—number of specimens taken.

**Species has not been taken on a host plant in Florida.

Year in which collections made	1949	1950	1951	1952	1953	1954	1957	1958	1961	1962	1963
<i>Aphis</i> sp.										1-1	
<i>Aphis</i> sp.										1-1	
<i>Aphis</i> sp.											1-3
<i>Brevicoryne brassicae</i> (Linn.)	2-3				2-2				1-2	3-9	
<i>Calaphis nanas</i> Tissot		6-21		1-3	1-6						
<i>Capitophorus elaeagni</i> (del Guer.)		2-2		1-1	2-3		3-12	3-9	3-7	6-7	
<i>Carolinaia rhois</i> Tissot	1-1										
<i>Chaetosiphon minor</i> (Forbes)				1-1							
<i>Chaitophorus</i> ? sp.	1-1										
<i>Cinara carolina</i> Tissot		2-2						1-2			
<i>Cinara pirivora</i> (Wilson)						1-1					
<i>Cinara taedae</i> Tissot		1-1									
<i>Cinara watsoni</i> Tissot								1-1			
<i>Dactynotus ambrosiae</i> (Thos.)	1-1										
** <i>Dactynotus chrysopsidicola</i> Olive					1-1						
** <i>Dactynotus pseudambrosiae</i> Olive				1-1	1-1	1-4					
<i>Dactynotus sonchellus</i> (Monell)				1-1							
** <i>Dactynotus tuataiae</i> Olive											
<i>Dactynotus</i> sp.	1-1	1-1									
<i>Dactynotus</i> sp.				1-1							
<i>Eriosoma lanigera</i> (Haus.)				1-1							
<i>Eriosomatinae</i> (genus ?)											
<i>Essigella pini</i> Wilson		1-1		2-2	1-1			2-2			
<i>Eulachnus rileyi</i> Williams		2-2									
<i>Hyadaphis pseudobrassicae</i> (Davis)	3-16	9-64			1-29	2-2	1-1	2-3	4-43	11-37	2-2
<i>Hyalomyzus eriobotryae</i> (Tissot)		1-1									

**Species had not been taken on a host plant in Florida.

Year in which collections made	1949	1950	1951	1952	1953	1954	1957	1958	1961	1962	1963
<i>Hyalopteris atriplicis</i> (Linn.)	1-2	8-15		4-10	3-5	2-5	3-11	3-10	1-5	1-1	
<i>Hyperomyzus lactucae</i> (Linn.)		3-3							2-2	3-6	
<i>Hysteronura setariae</i> (Thos.)	1-1	4-4		2-3	1-1		1-1	2-2	2-3		
** <i>Iziphya flabella</i> (Sanborn)							1-1		1-1		
<i>Lachnochaetophorus obscura</i> (Tissot)	1-1	1-1					1-1		1-1		
<i>Lachnochaetophorus</i> sp.	1-1										
<i>Macrosiphum avenae</i> (Fabr.)					1-1					2-2	
<i>Macrosiphum euphorbiae</i> (Thos.)	5-64	9-18	4-20	5-197	8-38	2-3	3-25	11-52	4-52	8-37	2-3
** <i>Megouraparsus tephrosiae</i> (Smith)	1-1	1-1									
<i>Melanocallis caryaefoliae</i> (Davis)					1-1						
<i>Melanocallis kahawakokalani</i> (Kirk.)		2-2							1-1		
<i>Microparsus olivei</i> Smith & Tuatay	2-2										
<i>Monellia costalis</i> (Fitch)					1-1						
<i>Monellia nigropunctata</i> Gran.		2-3		1-1							
<i>Myzocallis alhambra</i> Davidson		3-5		1-1							
<i>Myzocallis discolor</i> (Monell)		2-2	1-1		1-1				2-2	1-3	1-1
<i>Myzocallis granovskyi</i> Bou. & Tis.											
<i>Myzocallis longiunguis</i> Bou. & Tis.	1-1										
<i>Myzocallis melanocera</i> Bou. & Tis.		1-1			1-2						
<i>Myzocallis multiseta</i> (Monell)		5-6	2-22	2-3	2-4						
<i>Myzocallis punctata</i> (Monell)		2-2									
<i>Myzocallis spinosa</i> Bou. & Tis.	1-1	5-6		1-1							
<i>Myzocallis walshii</i> (Monell)				1-1				1-1			
<i>Myzus persicae</i> (Sulzer)											
<i>Neosymydobius albasiphus</i> (Davis)	5-48	9-22	2-4	3-4	11-52	2-8	4-113	11-45	6-145	12-195	6-61
<i>Neosymydobius luteus</i> Tissot		1-1								2-2	

**Species has not been taken on a host plant in Florida.

Year in which collections made	1949	1950	1951	1952	1953	1954	1957	1958	1961	1962	1963
<i>Rhopalosiphum enigmae</i> H. & F.	1-1										
** <i>Rhopalosiphum fitchii</i> (Sand.)	1-1						1-1			3-17	
<i>Rhopalosiphum maidis</i> (Fitch)	4-9	5-14	2-4	4-10	2-7	1-2	1-1	2-4	3-3	3-3	2-49
<i>Rhopalosiphum nymphaeae</i> (Linn.)		1-1								1-2	
** <i>Rhopalosiphum padi</i> (Linn.)								2-4	1-1		
<i>Rhopalosiphum rufiabdominalis</i> (Sasaki)	3-9	6-8	2-3	3-12	3-3	1-1	2-3	3-3	2-3	7-15	
<i>Rhopalosiphum</i> sp.					1-1						
<i>Schizaphis graminum</i> (Rondani)	2-12	6-7	1-1	1-1	5-11	2-2	2-6	3-4	6-25	5-12	3-4
<i>Sipha flava</i> (Forbes)		4-4		1-2	3-3		2-3		5-8		
** <i>Tetraneura hirsuta</i> Baker							1-1		6-8	6-18	
† <i>Therioaphis riehmii</i> (Börner)		1-1								3-3	
† <i>Therioaphis trifolii</i> (Monell)	1-1	2-2			1-1	1-4			1-1		
<i>Toxoptera aurantii</i> (Fonsc.)			1-1		1-1						
<i>Unilachnus parvus</i> Wilson	1-1					1-2					

**Species has not been taken on a host plant in Florida.

†First Florida record—was taken on host plant later

(Thomas), *Rhopalosiphum maidis* (Fitch), and *Schizaphis graminum* (Rondani) are pests of various cultivated plants. *M. euphorbiae*, the potato aphid, infests tobacco at times, but no established colonies of it were found on tobacco in Florida during the period 1949-1963. The fifth species, *Anuraphis middletonii* (Thomas), is a root feeding aphid that lives on weeds and other wild plants.

Reference to the table shows that a majority of the species were taken only rarely and then in very small numbers. Thirty of the species were taken in only one year, and most of these collections consisted of single individuals. An additional 15 species were collected in only two years. Thus, well over half of the species were taken only once or twice during the entire collection period.

It is of interest that 12 of the species had not been reported from Florida and were not known to occur in the state when they were collected on tobacco. Two of these, *Therioaphis riehmii* (Börner) and *T. trifolii* (Monell) have since been taken in Florida on their natural host plants. Ten species, *Anoecia oenotherae* Wilson, *A. querci* (Fitch), *Dactynotus chrysopsidicola* Olive, *D. pseudambrosiae* Olive, *D. tuataiae* Olive, *Iziphya flabella* (Sanborn), *Megouraparsus tephrosiae* (Smith), *Rhopalosiphum fitchii* (Sanderson), *R. padi* (Linnaeus), and *Tetraneura hirsuta* Baker had not been taken on a natural host in Florida, and this is the first report of their occurrence in the state.

The 77 identified species of aphids trapped on tobacco and recorded here compare favorably with the number of species taken by other collectors elsewhere with wind traps, sticky boards, light traps, and yellow tray Moericke traps. The list of entrapped species gives an indication of the diversity of forms that can be taken in this way. This unusual manner of taking aphids may prove useful to other workers as a supplement to the more conventional collecting methods.

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NOTICE OF MEETING

The 49th annual meeting of the Florida Entomological Society will be held at the George Washington Hotel in Jacksonville on September 28-30, 1966. James E. Brogdon, Extension Entomologist, University of Florida, Gainesville, is Program Chairman. The Program Committee will mail out a formal call for papers at a later date.