

RESULTS OF THE PENNSYLVANIA MOSQUITO SURVEY FOR 1948¹

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The following notes have been taken entirely from insects caught in standard mosquito traps. These traps, equipped with 25 watt lamps² and electric fans, were generally operated every night from May 23 to September 15. The material secured from these traps was shipped daily to State College where it was completely broken down for the identification of all insects including mosquitoes. Four assistants helped to separate the material and very satisfactory results were obtained. The mosquitoes were sent weekly to the U. S. Public Health Service, New York, where they were identified by Mrs. Miriam B. Horn. Our office was supplied with lists of determinations and copies were sent to the operators of the individual light traps. This service proved accurate and prompt.

During 1948, light traps were operated in 20 localities, twelve of which were not surveyed previously, thus yielding new distributional notes. In addition records

from traps operated at Coatsville were supplied by the U. S. Public Health Service and those from Tinicum were obtained from the Delaware County Mosquito Commission. Some of the localities such as the crop areas of State College and Lancaster, were not selected for mosquito records alone and therefore the catches were comparatively small. In comparing the records summarized in table 1, one should remember that most of the traps were operated from May 25 to September 15, but some were operated for only short periods when mosquitoes were expected. A fair idea of the mosquito populations can be obtained by comparing the total catches with the number of nights the traps operated and the number of nights these traps actually caught mosquitoes.

On the whole, the species taken during 1948 closely resemble those of 1947; however, there are some new records. *Aedes intrudens* Dyar, *Psorophora ferox* (Humbolt) and *Psorophora ciliata* (Fab.) which have not previously been taken in light traps in Pennsylvania, were intercepted in 1948. *Aedes intrudens* has never been taken before in Pennsylvania. Three specimens came to a light trap operated

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² Except one trap, see Table III.

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Mosquitoes taken from Light Traps in Pennsylvania in 1948

No. nights operating	Dates of collections		City	Presque Isle	Greene	Hancock	Indiana	Ohio-Creek	Ticonderoga	Phillipsburg	State College	Camp Hill	Caledonia	Williamsport	Buckhannon	Fallsburg	Easton	Pottsville	Coatesville	Minersville	
	15	30																			44
Anopheles quadrimaculatus Say	7	0	1	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	3	38
Anopheles walkeri Wied.	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2	14
Anopheles punctipennis (Say)	1	4	61	73	13	6	0	127	5	52	21	9	9	14	271	3					
Anopheles walkeri Theob.	455	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Culex pipiens Linn.	17	113	45	24	36	35	11	2872	6	98	650	198	687	219	752	3361					
Culex quinquefasciatus Coq.	0	0	0	0	0	0	4	29	0	0	4	0	129	51	5748	0					
Culex tarsalis Theob.	2	2	24	3	3	13	33	989	10	9	4	44	106	18	74	0					
Eriophthalma adamsi	26	22	1	3	2	0	3	26	5	1	5	20	5	5	79	0					
Aedes vexans (Meig.)	532	338	145	224	36	60	13	317	8	38	38	34	79	99	218	580					
Aedes canadensis (Theob.)	0	1	2	0	0	0	8	0	2	2	0	1	0	0	1	0					
Aedes triseriatus (Say)	2	3	2	2	0	0	0	25	10	1	1	3	0	0	1	4					
Aedes dorsalis (Walk.)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0					
Aedes trivittatus (Coq.)	0	0	0	1	0	0	0	2	2	2	0	0	0	0	0	1					
Aedes sticticus (Meig.)	7	3	0	1	2	2	0	0	1	0	0	0	0	0	0	0					
Aedes cinereus Meig.	0	4	1	0	0	0	1	0	3	0	1	1	0	0	1	0					
Aedes cantator Coq.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Aedes sollicitans (Walk.)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Uranotaenia sappharina (O.S.)	52	2	2	5	3	1	4	68	9	15	12	8	6	1	89	10					
Mansonia perturbans Walk.	259	7	0	0	0	2	1456	5	0	0	2	2	0	0	1	0					
Orthopodomyia signifera (Coq.)	1	0	1	0	1	0	0	2	0	0	0	0	0	0	0	0					
Theobaldia immitis (Will.)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0					
Theobaldia morisani (Theob.)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0					
Theobaldia meianura Coq.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Psorophora ferox (Humbolt)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Psorophora ciliata (Fab.)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0					
Psorophora ferox (Humbolt)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0					
Total	1391	500	185	337	94	120	1563	3668	94	224	748	322	1047	441	7290	4175					

*Three traps, see Table III.

TABLE 2.—Light-trap Locations

Location	County	Type of area
Presque Isle	Erie	Lake, thin woods, ponds
Grove City	Mercer	Suburban, woods
Raccoon Creek	Beaver	Forest, small stream
Indian Creek	Fayette	Reservoir, woods
Ohiopyle	Fayette	Forest, large stream
Tionesta	Forest	Forest, reservoir
Philipsburg	Centre	Suburban, swamps
Bl. Moshannon	Centre	Forest, lake, swamp
State College	Centre	Crop
State College	Centre	Sewage
Camp Barree	Huntingdon	Forest, pond, stream
Martinsburg	Blair	Crop
Caledonia	Franklyn	Forest, stream
Williamsport	Lycoming	Suburban
Buck Hill Falls	Monroe	Forest, stream
Wilkes Barre	Luzerne	Suburban
Lancaster	Lancaster	Crop
Pottstown	Montgomery	Crop
Coatsville	Chester	Suburban
Kennett Square	Chester	Crop
Tinicum	Delaware	Swamp

in a forested area at Black Moshannon. Although *Psorophora ferox* was collected only once by Breland in 1937 in the vicinity of Carlisle this species is probably not as rare as sometimes believed for in 1948 it was taken at light traps at State College and Coatsville. While he found only a single larva of *Psorophora ciliata* near Carlisle, last summer this species was taken from traps operated at Ohiopyle and Indian Creek Reservoir, both in Fayette County.

The 1948 records do not reveal *Aedes stimulans* which was previously reported from Pennsylvania (Brown 1948). This is undoubtedly due to the fact that certain areas surveyed in 1947 were not studied in 1948.

Records from traps not operated for more than ten nights have not been included in table 1. These traps were run at irregular periods during the summer. They include: Black Moshannon operated for two nights and yielding the interesting record of *Aedes intrudens*; Wilkes Barre operated for ten nights with a total

of 103 mosquitoes consisting chiefly of *Culex pipiens* and *Aedes vexans*; Martinsburg operated for 10 nights with a total of six mosquitoes, nothing significant; and Kennett Square operated for eight nights with a total of 148 mosquitoes, chiefly *Culex pipiens*, *Culex salinarius*, *Culex restuans* and *Aedes vexans*.

Three traps were operated in State College, one at the sewage plant and two on the college farms. The catches from these traps, which are summarized in Table 3, show the effect of location on mosquito populations. At the sewage plant, which is scarcely a mile from the college farms, a trap was hung on a pine tree in a small ravine adjacent to a somewhat wooded area and adjoining a small stream and a pond. This was an ideal location for mosquito catches and proved to be excellent for trapping insects in general. The trap indicated as No. 1, operated on the college farms, was hung on a pear tree in an exposed location with extensive fields of corn and clover nearby and fruit orchards and a wooded area less than 1000 feet from the trap. The trap indicated as No. 2, also operated on the college farms, was hung on a black walnut tree in an exposed location adjacent to corn and clover fields and orchards but was more distant from the wooded area mentioned above. The mosquito catches from location No. 1 have been divided into two periods, May 25 to August 31 and from September 1 to September 15. This was done so that catches from the standard mosquito trap with electric fan and a 25 watt lamp could be compared with the Minnesota type trap with no electric fan and with a 100 watt lamp.

Naturally the mosquito catches were much greater from the trap placed at the sewage plant although this trap operated for fewer nights than the traps situated on the college farms. However, *Aedes triseriatus* was taken more frequently in the trap on the college farms. This species is known to breed in tree holes and the adults generally do not wander far from the woods which they inhabit.

TABLE 3.—Mosquito Catches from Three Traps * Operated in State College

	Location of traps			
	Sewage plant	College farms 1	College farms 1	College farms 2
No. nights operating	81	96	14	17
No. nights catching	71	51	7	15
Wattage of lamp	25	25	25	100 [†]
Period of operation	May 25 to Sept. 15	May 25 to Aug. 31	Sept. 1 to Sept. 15	Sept. 1 to Sept. 19
<i>Culex pipiens</i>	1492	23	11	46
<i>Culex salinarius</i>	29	0	0	0
<i>Culex restuans</i>	912	50	2	25
<i>Culex apicalis</i>	21	1	0	4
<i>Anopheles punctipennis</i>	113	2	6	6
<i>Aedes vexans</i>	257	38	12	10
<i>Aedes triseriatus</i>	2	20	0	1
<i>Uranotaenia sapphirina</i>	46	5	1	16
Totals	2872	139	32	108

* Only the more abundant species are considered.

† This is the Minnesota type trap without electric fan; the other records in this table were taken from standard mosquito traps with electric fan.

Although the period of comparison of the operation of the Minnesota type trap with the standard mosquito trap was short, the figures indicate a higher catch for the former.

SUMMARY

The operation of light traps throughout Pennsylvania for two consecutive years and additional mosquito studies make it possible to draw some general conclusions. *Culex pipiens* Linn., and *Aedes vexans* (Meig.) are the most common and widely distributed species in Pennsylvania occurring from early spring to late fall. *Uranotaenia sapphirina* (O.S.) occurs generally throughout the State but is seldom common and is not an important species. *Culex restuans* Theobald is another common and widely

distributed species. Certain species are common only where proper breeding conditions exist. *Anopheles crucians* Wied. is common only in the eastern part of the State. *Anopheles walkeri* Theobald is abundant only at Presque Isle. It is very evident that *Mansonia perturbans* Walk. predominates at Philipsburg although it occurs to some extent at Presque Isle. *Anopheles quadrimaculatus* Say has been taken in small numbers from seven widely separated parts of the State.

Literature Cited

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