MIRIDÆ FROM LIGHT TRAPS

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Few references are found in literature concerning the attraction of Miridæ to lights. Occasional notes on phototrophic species appear from time to time. Of 200 species recorded by Knight and McAtee[2] in the vicinity of Washington, D. C., eleven were taken at lights. Recent studies by the author indicate that some species are strongly attracted and that traps may be used successfully for determining populations. Plant bugs are small and generally come freely to lights. Although a large number of species have been taken in Pennsylvania, only eight occurred frequently enough to be discussed. Other species were taken in noticeable numbers namely, *Capsus ater* L., *Hyaliodes vitripennis* (Say), *Reuteroscopus ornatus* (Reut.) and *Phytocoris puella* Reut.

While some species were intercepted frequently, others were never taken. This may be due to the fact that the traps were often operated in areas of low populations or too distant from hosts of the bugs. The pear plant bug *Neolygus communis* Knight, for example, came to lights from May 30 to June 10 only when a trap was placed on or near an infested pear tree. Certain economic species such as the apple red bugs *Lygidea mendax* Reut., and *Heterocordylus malinus* Reut., the box elder bug *Leptocoris trivittatus* (Say) and the four lined plant bug *Pœcilocapsus lineatus* Fab., were never taken in light traps. The absence of *Pœcilocapsus lineatus* may result from the fact that the traps were placed at a height of 6 to 8 feet above the ground and beyond the range of the flight of this species.

[1] Authorized for publication on November 8, 1951, as paper No. 1705 in the journal series of the Pennsylvania Agricultural Experiment Station.

[2] Knight, H. H. and W. L. McAtee (1929). Bugs of the family Miridæ of the District of Columbia and vicinity. Proc. U. S. Nat. Mus. 75(13): 1–77.

The Miridæ mentioned in this paper were taken from eighteen light traps located in widely separated areas of Pennsylvania. The New Jersey mosquito trap with a 25 watt frosted bulb was used in all localities except Martinsburg where the Minnesota type trap was used. This trap differs in having no motor or fan but is equipped with four baffles which direct the insects into a cyanide jar at the bottom. It was equipped with a 150 watt bulb. The trap located at Lancaster was provided with a 100 watt lamp.

In general the traps were operated from May 15th to September 20th and from 7 P.M. to 7 A.M. However, some of the traps were operated for only a few nights during the season. These are indicated in the accompanying table. As a rule no mirids

MIRIDÆ TAKEN FROM LIGHT TRAPS, PENNSYLVANIA 1948

	Period of Collection	Presque Isle	Grove City	Racoon Creek	Indian Cr. Res.	Ohiopyle	Tionesta	Philipsburg
Nights Operating		16	33	72	97	72	49	40
Lygus oblineatus	5/29–9/20	2	7	25	31	13	40	11
Adelphocoris rapidus	6/ 4–9/20	0	17	14	26	30	30	2
Plagiognathus politus	6/20–9/19	0	15	30	29	12	406	3
Polymerus basalis	6/ 7–9/ 3	0	1	2	0	0	7	1
Trigonostylus ruficornis	6/ 3–9/20	37	35	10	293	231	143	124
Stenotus binotatus	6/ 4–9/ 9	4	6	0	14	4	2	0
Orthotylus flavosparsus	7/27–9/20	0	0	2	5	0	0	0
Ilnacora stalii	6/24–9 /4	0	0	6	2	1	0	0
Total		43	81	89	700	291	628	141

were taken when the temperature fell below 60° F. With similar light intensities, the New Jersey trap proved most satisfactory for capturing these insects.

A brief summary is given of the areas where the largest captures were made, since the locations of traps play an important

part in the nature of the insect catches. The trap at Indian Creek reservoir was located in a more or less open area surrounded only by distant woods. The one at Tionesta was placed on a dam in a very open area and far from surrounding woods. Three traps were located at State College; two in open cultivated country planted to young fruit trees and field crops, the other in a semi-wooded area. The Lancaster trap was situated in an open area where tobacco, corn and similar crops were grown. The Martinsburg trap was operated in an open area adjacent to extensive plantings of sweet corn. At Pottstown the trap was located more or less in the open. The traps at Racoon Creek, Ohiopyle, Camp Barree, Buck Hill Falls and Caledonia were located in wooded areas.

State* College	Camp Barree	Caledonia	Williamsport	Buck H. Falls	Lancaster	Pottstown	Tinicum	Martinsburg	Total
206	27	54	71	51	95	69	40	48	1,840
413	0	2	179	11	1,106	79	2	312	2,233
352	8	8	45	5	1,350	44	1	202	2,134
1,033	5	7	121	5	1,065	112	0	525	3,368
20	0	1	4	0	79	3	0	32	150
916	12	0	172	17	931	111	0	440	3,472
78	0	6	10	2	75	15	0	2	218
347	0	0	73	4	159	16	0	203	809
0	0	0	97	0	18	31	0	3	158
3,159	25	24	701	44	4,783	411	3	1,719	12,542

* Catches from 3 traps.

The accompanying chart does not show the seasonal variations in the catches which reflect differences in the habits of the species and the effects of climatic conditions. Species such as the tarnished plant bug *Lygus oblineatus* (Say) hibernate as adults

and naturally are on the wing earlier than some species. The rapid plant bug *Adelphocoris rapidus* (Say) and the pear plant bug *Neolygus communis* Knight hibernate as eggs and would not be expected to appear at light traps until winged forms appeared. Low temperatures, other conditions remaining constant, depress the captures considerably. Moderate wind velocities and precipitation seem to increase the catches.

Adelphocoris rapidus (Say) came to the traps almost continually from June 4th until September 16th. There were only a few nights during this period that no adults were taken. All of these nights showed low temperatures.

The tarnished plant bug *Lygus oblineatus* (Say) was active from May 24th to September 20th. From May 24th to June 15th the catches were low and sporadic with no catches exceeding 14 on a single night. From June 16th to August 20th the takes were almost continuous. This species has several generations a year which accounts for the rather continuous occurrence.

The little black mirid *Plagiognathus politus* Uhler, common in eastern and central United States, occurs on many species of Compositæ and has been reported as a pest on the tender leaves of apple and other fruits. It came to lights almost continuously from June 20th to July 15th with only two nights showing no catches. From July 15th to August 20th the catches were small and irregular. From August 20th to September 10th the catches were again almost continuous.

The captures of the meadow plant bug *Trigonostylus ruficornis* Geoff. were very sporadic from June 3rd to July 27th but from July 28th to August 5th they were almost continuous with only one night showing an absence. From August 6th to September 10th the catches were small and irregular again.

It is quite evident that the largest catches were made in light traps that were located in open areas.