their terminalia examined microscopically to determine the composition of the *Culex pipiens* complex in the area. The results are summarized in Table 1.

TABLE 1.—Subspecies composition of male *Culex pipiens* collected in Evansville, Indiana and vicinity in October, 1964, as determined by examination of male terminalia.

Collection site	No. of typical *Culex p. pipiens*	No. of apparent intergrades	No. of typical *Culex p. quinquefasciatus*
1	13	0	1
2	47	2	1
3	66	1	1
4	54	1	1
Totals	180	4	4

The presence of *C. pipiens quinquefasciatus* was not unexpected. Evansville lies between 36 and 39 degrees North latitude, the zone found by Barr [1] to contain both *C. p. pipiens* and *C. p. quinquefasciatus*. The subspecies was reported, as *Culex quinquefasciatus*, by Dyar [2] from Cincinnati, Ohio on the east, and by Ross [3] from an area in Illinois to the west.

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BLOOD VOLUMES INGESTED BY VARIOUS PEST MOSQUITOES

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Mosquitoes have been a periodical scourge to both men and cattle along the extensive gulf coast of Louisiana throughout the historical period of human habitation. Severe outbreaks, principally of *Aedes sollicitans* (Walker) and *Psorophora confinnis* (Lynch-Arribalzaga), as in 1962, resulted in the death of many cattle and severe weight losses in the survivors (Hoffman and McDuffie, 1963). The effect on cattle of the blood loss due to mosquito bites is not known but is possibly less important than the pain arising from the actual piercing of the skin by mosquito hordes.

TABLE 1.—Average weights of unfed and engorged female mosquitoes of several species.

Species	Unfed		Engorged		Ratio of wt. of unfed adult to wt. of blood meal
	Number of adults	Average wt. (mg.)	Number of adults	Average wt. (mg.)	
Psorophora ciliata	50	13.1	50	38.1	1.91
P. confinnis	60	3.1	60	9.1	1.94
P. cyanescens	100	4.2	86	13.4	2.19
P. ferox (Humboldt)	30	3.1	42	8.2	1.65
Aedes atlanticus-tormentor [a]	137	1.9	85	6.7	2.53
A. sollicitans	75	3.1	90	7.0	1.26
A. taeniorhynchus (Wiedemann)	50	1.9	41	5.1	1.68
A. infirmatus (Dyar & Knab)	50	3.0	50	7.9	1.63
A. vexans (Meigen)	50	3.0	49	7.7	1.57
Culex salinarius	100	2.0	85	4.1	1.05
Mansonia perturbans (Walker)	49	4.0	51	8.3	1.08
Anopheles quadrimaculatus	50	2.6	50	8.1	2.12

[a] Adult females of *A. atlanticus* Dyar and Knab and *A. tormentor* Dyar and Knab are inseparable.

[1] In cooperation with McNeese State College, Lake Charles, Louisiana.

Experiments were made to determine the amount of blood imbibed by females of 12 species of mosquitoes common in parts of Cameron and Calcasieu Parishes in Southwestern Louisiana. Unfed mosquitoes were collected from natural habitats with battery operated aspirators. Engorged specimens were obtained by feeding the mosquitoes on a chicken or human arm in the laboratory. Engorged and unengorged specimens of the various species, in lots of 10 to 50, usually 25, were immobilized by placing them in the freezing compartment of a refrigerator for a short time, then weighed on a microbalance. The average volume of blood ingested was computed from these total weights. The data obtained are presented in Table 1. Females of all species more than doubled their body weight in a single blood meal. *Psorophora cyanescens* (Coquillett), *Aedes atlanticus-tormentor,* and *Anopheles quadrimaculatus* Say ingested enough blood to more than triple their body weight.

These results are similar to the findings of Wray (1957) and Monroe and Hoffman (1959) that four species of *Aedes* were capable of ingesting enough blood at a single feeding to double their body weight.

Day and night landing rate and biting observations indicated that all of these species, especially *Aedes sollicitans* and *Culex salinarius* Coquillett, occur in large numbers in our marsh areas. The following biting rates for the various species during each minute of a 24-hr. period would result in the loss of a gallon of blood: *Psorophora ciliata* (Fabricius)—104; *Aedes sollicitans*—648; and *Culex salinarius*—1200.

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