



NEW JERSEY VECTOR SURVEILLANCE

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ABSTRACT: Culiseta melanura populations have been well above average in New Jersey and record collections have been routine at the collection sites that are being monitored for EEE virus this year. Two EEE isolations were made from Cs. melanura in late July and 14 have thus far been obtained from specimens collected in August. The first equine case was reported in early August. During August, 7 equine cases were confirmed from 3 counties in the southern half of the state. No human involvement has been associated with the epizootic.

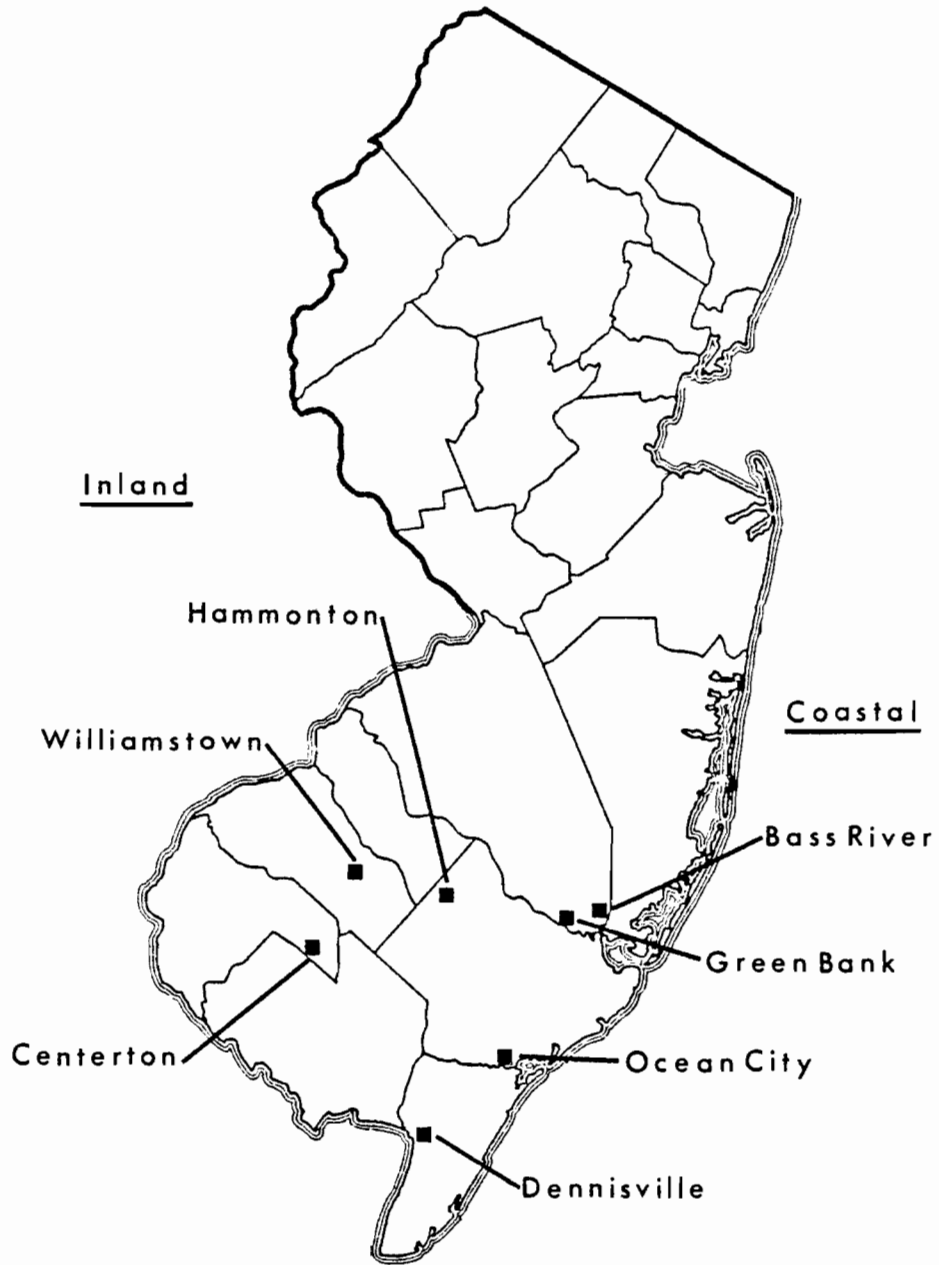
THE CURRENT STATUS OF EEE AND ITS MOSQUITO VECTORS

An exceptionally wet spring contributed to record high Culiseta melanura populations at the study sites that are being monitored for EEE virus in New Jersey. Figure 1 compares the 1987 population levels with the 8-yr mean at Bass River, a site on the east coast of the state in Burlington County. Record peaks were documented for each of the June, July and August generations. EEE virus was isolated from this population on August 4 and August 11. An equine case, with an onset date of August 19, was confirmed from Chatsworth, a town approximately 13 mi northwest of the study site.

Figure 2 compares population levels of Cs. melanura with the 10 year mean at Dennisville, a study site along Delaware Bay. Data indicate 3 distinct generations with peaks that exceed the mean. EEE virus was isolated from this population July 28, August 11 and August 18. A single pool of Culex salinarius was also positive for EEE on August 11. September populations of Cs. melanura (not depicted) have increased markedly at Dennisville and preliminary data indicate that EEE virus is still present in the area.

RESTING BOX SITES

1987



Virus activity has been intense at the Centerton study site in Salem County. The first 2 generations of Cs. melanura were exceptionally high at that inland site (Figure 3) and EEE virus was isolated from specimens collected August 12, 26 and 30. Two equine cases of EEE were confirmed from the Williamstown area, approximately 15 mi to the north, during the month of August. Specimens from the study site closest to the horse cases, however, did not give any indication of virus.

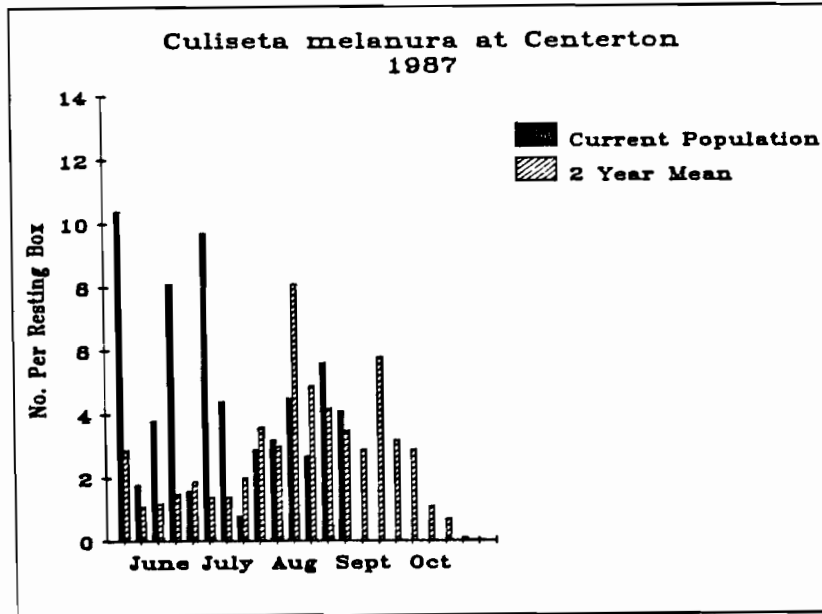


Fig. 3. Resting box populations of Cs. melanura at Centerton, Salem County compared to the 2 year mean for that site.

Through the month of August, 82,625 mosquito specimens were tested for EEE virus in 2,360 pools. Table 1 shows that 8 HJ isolations and 16 EEE isolations were obtained from Cs. melanura. A single EEE isolation was obtained from Cx. salinarius.

Table 1. Total mosquito specimens tested for EEE virus through the month of August, 1987.

MOSQUITO SPECIES	TOTAL TESTED	NO. POOLS	POSITIVE POOLS	
			HJ	EEE
<u>Cs. melanura</u>	17463	677	8	16
<u>Cq. perturbans</u>	3735	168	0	0
<u>Ae. sollicitans</u>	5286	151	0	0
<u>Ae. canadensis</u>	7030	166	0	0
<u>Ae. cantator</u>	1839	72	0	0
<u>Ae. taeniorhynchus</u>	28	8	0	0
<u>Ae. triseriatus</u>	11	7	0	0
<u>Ae. vexans</u>	60	11	0	0
<u>Cx. erraticus</u>	0	0	0	0
<u>Cx. pipiens</u>	22	16	0	0
<u>Cx. resturans</u>	795	159	0	0
<u>Cx. salinarius</u>	31236	398	0	1
<u>Cx. territans</u>	273	90	0	0
<u>An. bradleyi</u>	10927	170	0	0
<u>An. punctipennis</u>	220	73	0	0
<u>An. quadrimaculatus</u>	3692	186	0	0
<u>Ae. thibaulti</u>	3	3	0	0
<u>Ae. cinereus</u>	0	0	0	0
<u>Ae. grossbecki</u>	0	0	0	0
<u>Ps. columbiae</u>	1	1	0	0
<u>Ps. ferox</u>	2	2	0	0
<u>Cs. inornata</u>	1	1	0	0
<u>Ur. sapphirina</u>	1	1	0	0
Totals	82625	2360	8	17

Table 2 compares Minimum Field Infection Rates (MFIR) for Cs. melanura by site and month. Data show that EEE first appeared at low levels in July and became widespread in the State during August. The exceptionally high MFIR at the Ocean City site indicates that EEE may pose a problem along the coast later in the season. The Ocean City site is located immediately adjacent to marshland south of Atlantic City. The site was established following a human case in that area during the 1984 equine epizootic. The area is characterized by extremely low Cs. melanura populations, but high MFIR values when EEE is present. The 1987 population of Cs. melanura in that area appears to fit that general model. EEE virus levels are also high in the Centerton area of Salem County. Data from previous years suggest that equine cases will likely follow throughout the southwestern portion of the state later in the year.

Table 2. Minimum Field Infection Rates in Cs. melanura during June, July and August, 1987.

	JUNE 1987				MFIR
	TOTAL TESTED	NO. POOLS	POSITIVE POOLS HJ	EEE	
COASTAL SITES					
GREEN BANK	561	19	0	0	0.00
BASS RIVER	2225	55	0	0	0.00
OCEAN CITY	109	14	0	0	0.00
DENNISVILLE	1118	46	1	0	0.00
INLAND SITES					
HAMMONTON	645	25	0	0	0.00
WILLIAMSTOWN	86	14	0	0	0.00
CENTERTON	528	21	0	0	0.00
	JULY 1987				
COASTAL SITES					
GREEN BANK	872	27	1	0	0.00
BASS RIVER	1547	39	2	0	0.00
OCEAN CITY	36	11	0	0	0.00
DENNISVILLE	3915	121	2	1	0.26
INLAND SITES					
HAMMONTON	622	21	0	1	1.61
WILLIAMSTOWN	120	18	0	0	0.00
CENTERTON	460	25	0	0	0.00
	AUGUST 1987				
COASTAL SITES					
GREEN BANK	434	20	0	0	0.00
BASS RIVER	1347	34	0	3	2.23
OCEAN CITY	78	13	0	2	25.64
DENNISVILLE	1381	68	2	3	2.17
INLAND SITES					
HAMMONTON	703	31	0	2	2.84
WILLIAMSTOWN	174	19	0	0	0.00
CENTERTON	488	25	0	4	8.20

THE CURRENT STATUS OF EEE IN EQUINES

During the month of August, 7 equine cases of EEE were confirmed in New Jersey and 1 is still pending. Table 3 lists the location of the cases with other pertinent information involving each case. Additional equine cases are being tested from September, but data are not yet available for full documentation. No evidence of human involvement has accompanied the epizootic to date.

Table 3. Equine cases of EEE in New Jersey during August, 1987.

DATE OF ONSET	TOWN COUNTY	BREED SEX/AGE	STATUS	METHOD
Aug 8	Monroe Twp. Gloucester	Unknown	CONFIRMED	4-fold Change in Titer
Aug 19	Chatsworth Burlington	Grade Horse Male 2 yr	CONFIRMED	Brain Isolate
Aug 19	Williamstown Gloucester	Thoroughbred Female 2 yr	CONFIRMED	4-fold Change in Titer
Aug 19	Vincetown Burlington	Thoroughbred Female 1 yr	CONFIRMED	Brain Isolate
Aug 22	New Egypt Ocean	Arabian Male 1 yr	CONFIRMED	Brain Isolate
Aug 22	Tabernacle Burlington	Standardbred Female 13 yr	CONFIRMED	Brain Isolate
Aug 24	New Egypt Ocean	Arabian Female 1 yr	PRESUMPTIVE	Brain Isolate is Pending
Aug 26	Lakehurst Ocean	Unknown	CONFIRMED	Brain Isolate

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