

# Vector Surveillance Report\*

**Vol. 3**      **No. 4**

**Period.** August 29-September 12, 1978

## Introduction

Eastern encephalitis virus was recovered from Culiseta melanura within the last two weeks, thus, the virus has reached New Jersey and is now detectable within the mosquito vectors that are being monitored. Epizootic activity appears to be fairly widespread in the Northeast with some neighboring states reporting virus in mosquitoes and birds as well as horse cases. At the present time, EE appears to be restricted to the Cs. melanura - avian cycle in New Jersey. There is no evidence of equine involvement to date, but the situation is being closely followed. Mosquito populations are also being monitored to determine if emergency control will be required.

## The Results of Virus Studies

The New Jersey State Department of Health isolated EE virus from 6 separate pools of Cs. melanura collected at the Dennisville site on August 28. The isolations correspond directly with the enormous population peak recorded for that date. The results of subsequent collections will show whether viral activity declines (as a result of the declining Cs. melanura populations since that date) or increases as the mosquitoes in the area age.

Western encephalitis virus has been epizootic since early August. The number of WE positive pools collected this year is the highest ever recorded in the State.

## Current Status of Cs. melanura Populations

Cs. melanura populations are still quite high for this time of year, but the numbers have decreased considerably since the late August peak which produced the infected specimens. There is some question to the authenticity of the resting box collections at this time, since light traps in some areas of the state are still collecting Cs. melanura in high density. The populations that are being monitored by resting box have been repeatedly controlled by larvicide as well as ULV airspray. Whether or not the control efforts have produced the noticeable decline cannot be determined without monitoring additional test sites in the absence of insecticide.

## Current Status of Ae. sollicitans Populations

The vector potential of Ae. sollicitans populations are presently very different in the 4 test sites that are being monitored. At West Creek, vector potential is moderately high but fresh mosquitoes have been added to the population which are

\*Supported by the New Jersey State Mosquito Control Commission

reducing the overall parous rate of the biting population. At Port Norris, the mosquitoes have declined markedly in the past week, but the entire biting population is composed of old adults and the parous rate is 100%. Mosquitoes are minimal at both of the Cape May study sites. The larval control directed at the original brood was extremely successful and vector potential has remained low throughout the period.

Some breeding has been reported during September and a minor emergence will undoubtedly occur in isolated coastal areas later this month. Overall, however, vector potential is lower than normal for this time of year which further minimizes the chances of human involvement late in the season.

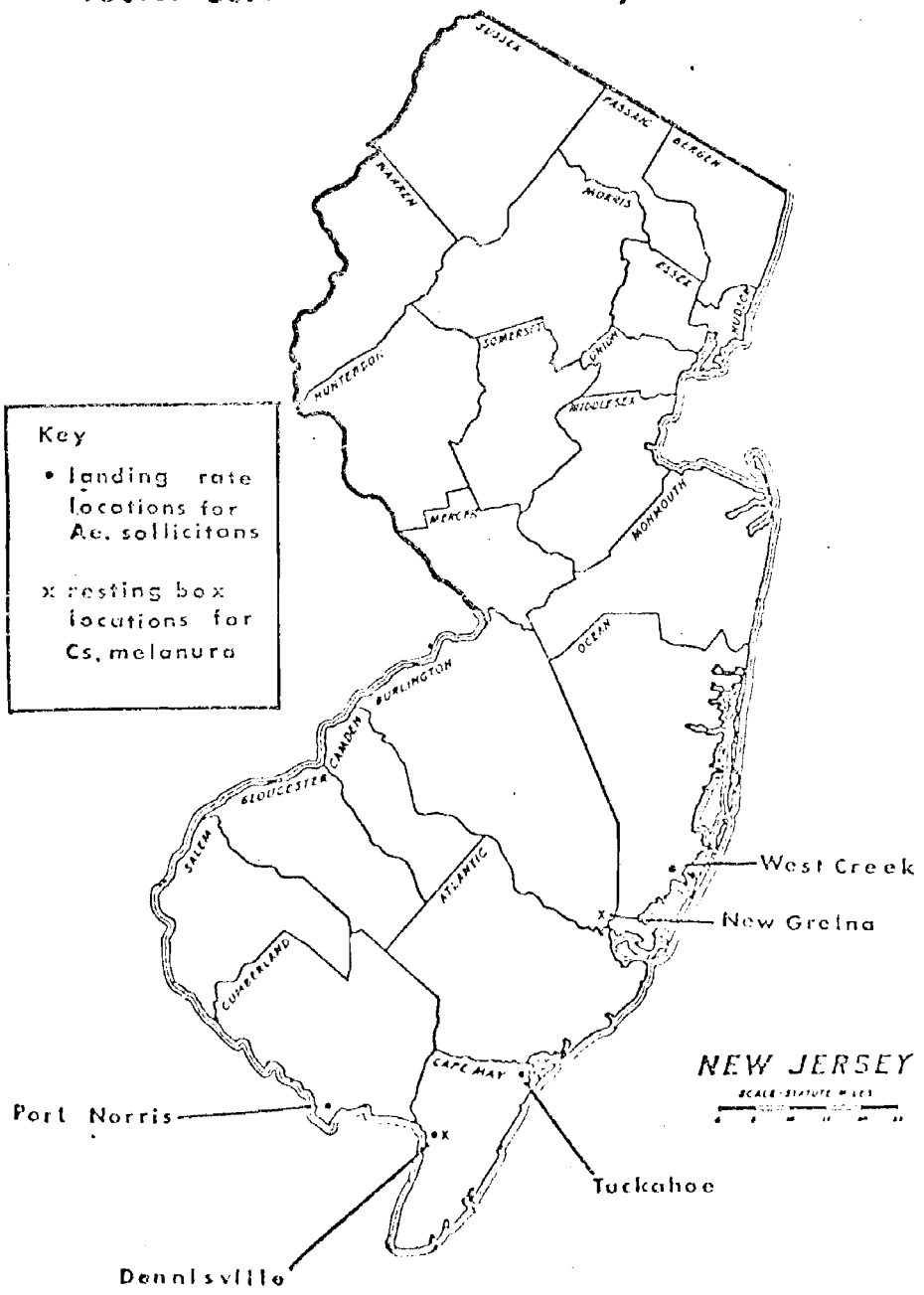
#### Summary

Eastern encephalitis virus was isolated from Cs. melanura very late in August. Since the isolation, Cs. melanura populations appear to be declining, thus, the fate of the virus remains uncertain. Ae. sollicitans populations are lower than average in many areas, particularly near the sites where virus is known to be active. The combination of low Ae. sollicitans, late season virus activity and absence of horse or pheasant involvement to date, suggests that virus may not progress beyond the epizootic cycle this year.

#### List of Personnel:

Project Leader:	Wayne J. Crans
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State Mosquito Control Coordinator:	Kenneth W. Bruder

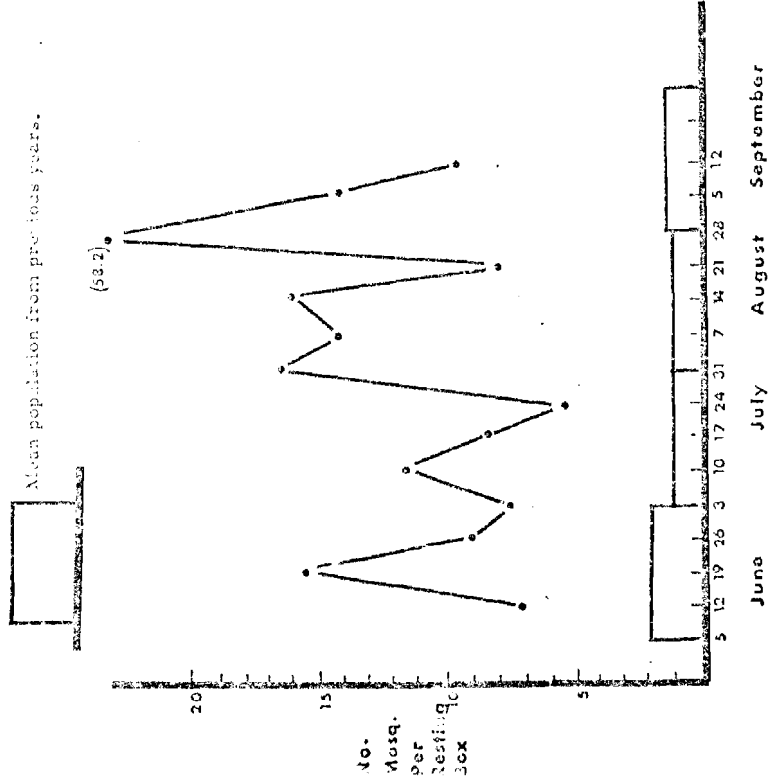
### Vector Surveillance Study Sites



# Culiseta melanura

SITE New Gretna  
COUNTY Burlington

CUMULATIVE POPULATION RECORD

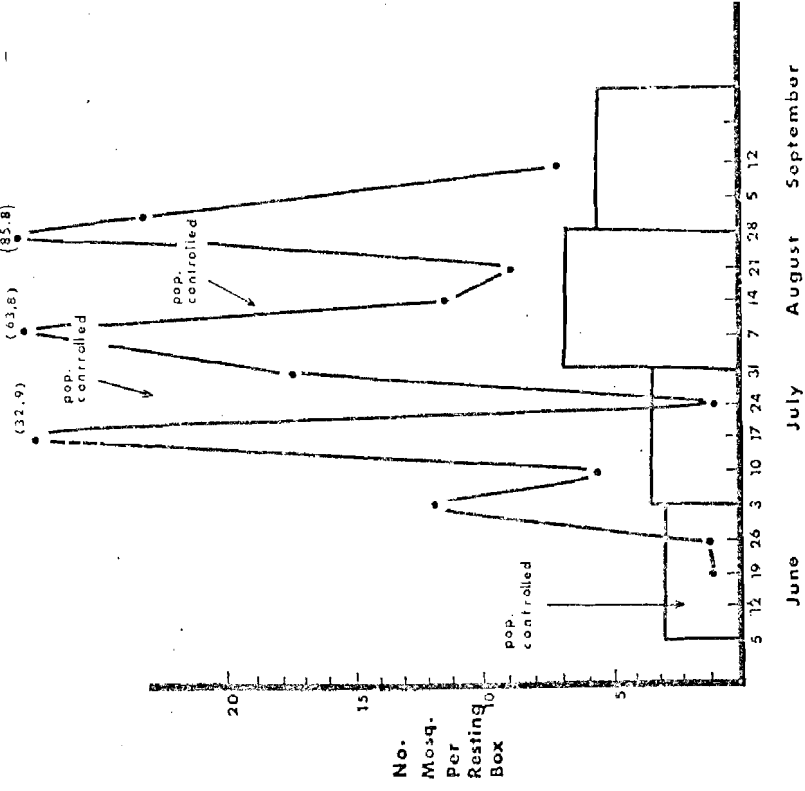


REMARKS: Populations have dropped considerably since the peak of August 28. Mosquitoes are still 10 times higher than collections of previous years. WE virus is still epizootic at this site.

# Culiseta melanura

SITE Dennisville  
COUNTY Cape May

CUMULATIVE POPULATION RECORD

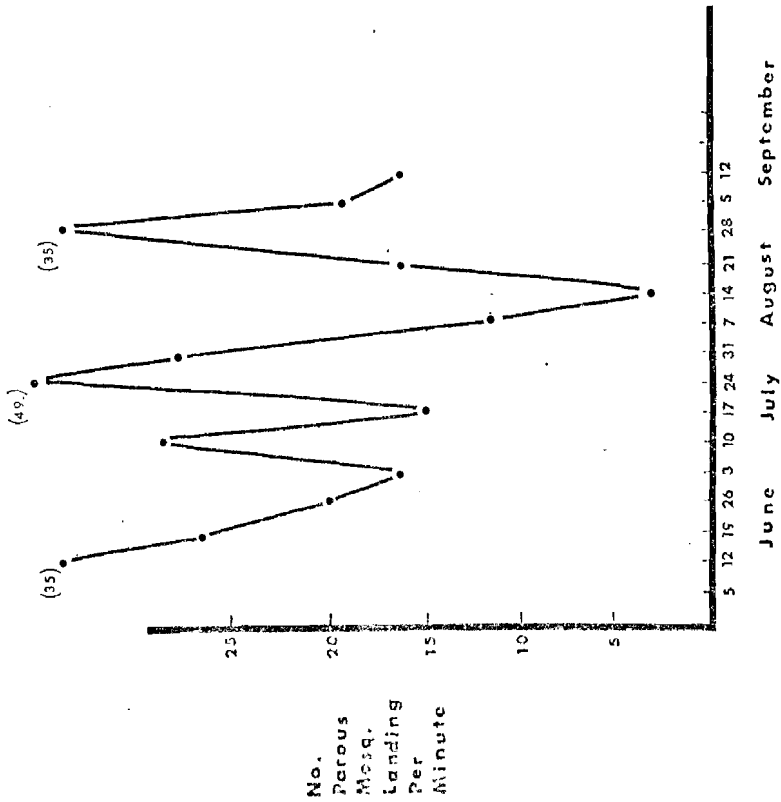


REMARKS: EE virus was isolated from collections made during the August 28 population peak at this site. The numbers have since declined markedly and are presently very close to the average found in prior years' monitoring.

# Aedes sollicitans

SITE West Creek  
COUNTY Ocean

CUMULATIVE VECTOR POTENTIAL RECORD

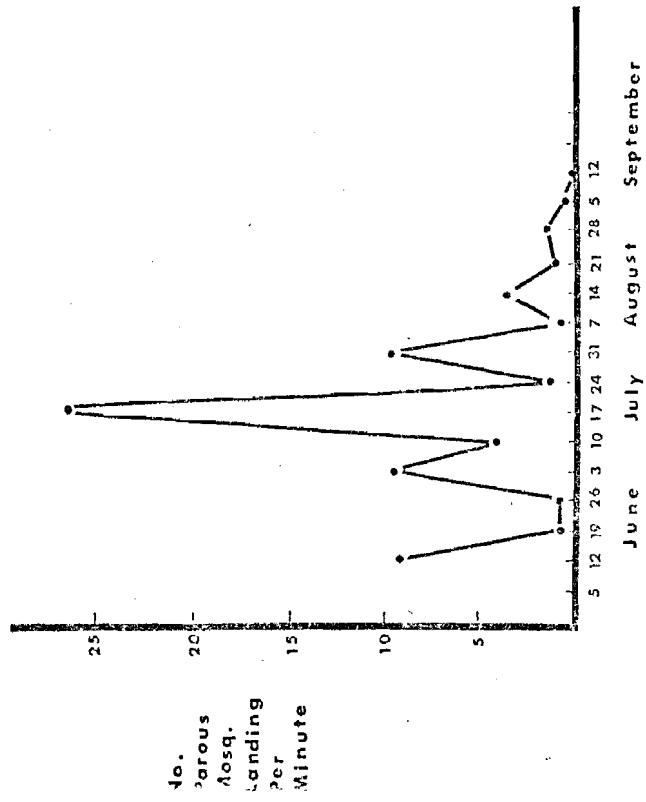


REMARKS: Vector potential has declined but fresh mosquitoes were added to this population within the past week. Landing rate of 40 per min. were recorded Sept. 12 with a parous rate of 40%.

# Aedes sollicitans

SITE Tuckahoe  
COUNTY Cape May

CUMULATIVE VECTOR POTENTIAL RECORD

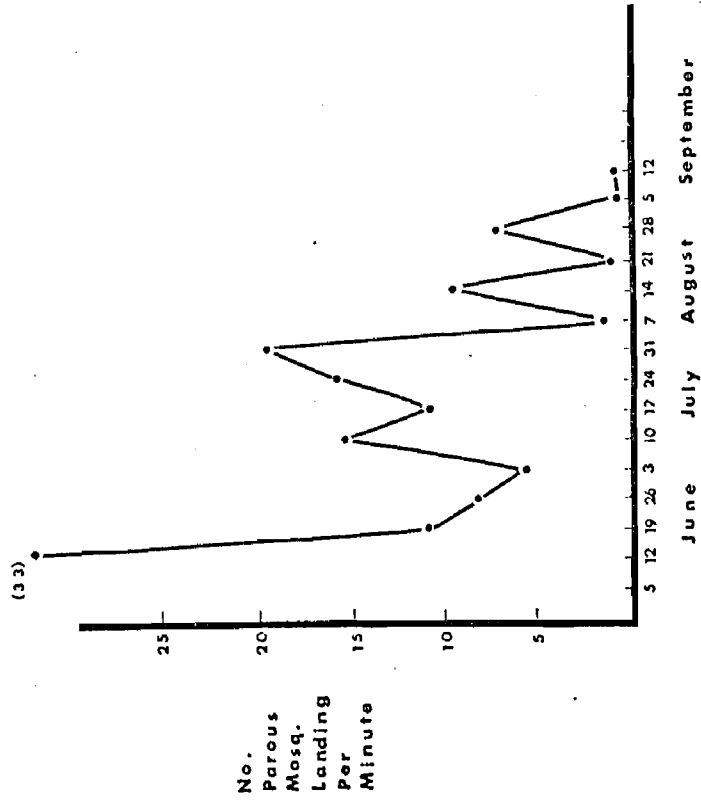


REMARKS: Mosquitoes are totally absent from this site at this time.

# Aedes sollicitans

SITE Dennisville  
COUNTY Cape May

CUMULATIVE VECTOR POTENTIAL RECORD

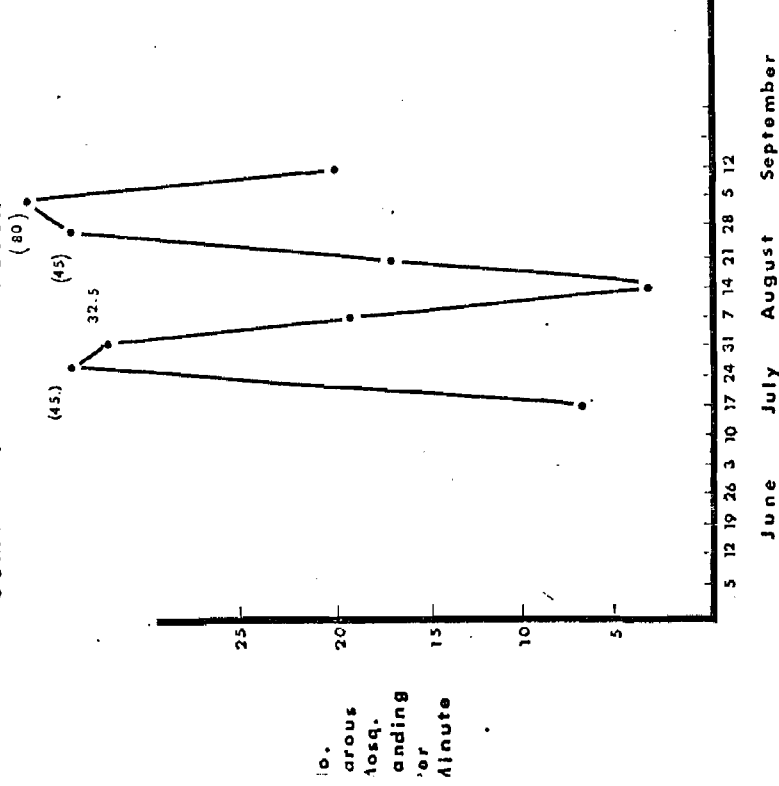


REMARKS: Vector potential is minimal at this important site where EE is known to be active. Landing rates of 2 per min. were recorded Sept. 12 with a parous rate of 85%.

# Aedes sollicitans

SITE Port Norris  
COUNTY Cumberland

CUMULATIVE VECTOR POTENTIAL RECORD



REMARKS: Both biting and vector potential have declined at this site in the past week, but the index is still high and the population is apparently very old. Landing rates of 20 per min. were recorded Sept. 12 with a parous rate of 100%.

Culexeta melanura tested for EE Virus during 1978

Key:  
 NG - New Britain Study Site  
 DV - Dennisville Study Site

Pool No.	Date Collected	Study Area	Specimens		
			No. Tested	Initial Screening	Confirmation
1	6/12/78	N.G.	100-U	Neg	
2	6/12/78	N.G.	120-U	Neg	
3	6/12/78	N.G.	100-E	Neg	
4	6/12/78	N.G.	44-E	Neg	
5	6/19/78	N.G.	100-U	Neg	
6	6/19/78	N.G.	100-U	Neg	
7	6/19/78	N.G.	100-U	Neg	
8	6/19/78	N.G.	112-U	Neg	
9	6/19/78	N.G.	100-E	Neg	
10	6/19/78	N.G.	100-E	Neg	
11	6/19/78	N.G.	123-E	Neg	
12	6/19/78	D.V.	15-U	Neg	
13	6/19/78	D.V.	3-E	Neg	
14	6/26/78	N.G.	100-U	Neg	
15	6/26/78	N.G.	100-U	Neg	
16	6/26/78	N.G.	72-U	Neg	
17	6/26/78	N.G.	100-E	Neg	
18	6/26/78	N.G.	35-E	Neg	
19	6/26/78	D.V.	12-U	Neg	
20	6/26/78	D.V.	11-E	Neg	
21	7/06/78	D.V.	100-E	Neg	
22	7/06/78	D.V.	95-E	Neg	
23	7/06/78	D.V.	97-U	Neg	
24	7/06/78	N.G.	100-E	Neg	
25	7/06/78	N.G.	52-E	Neg	
26	7/06/78	N.G.	100-U	Neg	
27	7/06/78	N.G.	119-U	Neg	
28	7/10/78	D.V.	100-E	Neg	
29	7/10/78	D.V.	72-E	Neg	
30	7/10/78	D.V.	49-U	Neg	
31	7/10/78	N.G.	100-U	Neg	
32	7/10/78	N.G.	42-E	Neg	
33	7/10/78	N.G.	100-U	Neg	
34	7/10/78	N.G.	100-U	Neg	
35	7/10/78	N.G.	56-U	Neg	
36	7/17/78	D.V.	100-U	Neg	
37	7/17/78	D.V.	100-U	Neg	
38	7/17/78	D.V.	100-U	Neg	
39	7/17/78	D.V.	81-U	Neg	
40	7/17/78	D.V.	100-E	Neg	
41	7/17/78	D.V.	100-E	Neg	
42	7/17/78	D.V.	55-E	Neg	
43	7/17/78	N.C.	100-U	Neg	
44	7/17/78	N.G.	45-U	Neg	
45	7/17/78	N.G.	115-E	Neg	
46	7/24/78	N.G.	90-U	Neg	
47	7/24/78	N.G.	93-E	Neg	
48	7/24/78	D.V.	7-U	Neg	
49	7/24/78	D.V.	27-E	Neg	
50	7/31/78	D.V.	100-U	Neg	
51	7/31/78	D.V.	119-U	Neg	
52	7/31/78	D.V.	100-E	Neg	
53	7/31/78	D.V.	89-E	Neg	
54	7/31/78	N.G.	125-U	Positive	WE
55	7/31/78	N.G.	119-U	Positive	WE
56	7/31/78	N.G.	100-E	Neg	
57	7/31/78	N.G.	50-E	Neg	
58	8/07/78	D.V.	100-U	Neg	
59	8/07/78	D.V.	100-U	Neg	
60	8/07/78	D.V.	100-U	Neg	
61	8/07/78	D.V.	100-U	Neg	
62	8/07/78	D.V.	100-U	Neg	
63	8/07/78	D.V.	103-U	Neg	
64	8/07/78	D.V.	100-E	Neg	
65	8/07/78	D.V.	100-E	Positive	WE
66	8/07/78	D.V.	100-E	Positive	WE
67	8/07/78	D.V.	100-E	Positive	WE
68	8/07/78	D.V.	100-E	Neg	
69	8/07/78	D.V.	100-E	Neg	
70	8/07/78	D.V.	45-E	Neg	
71	8/07/78	N.C.	100-U	Positive	WE
72	8/07/78	N.G.	59-U	Positive	WE
73	8/07/78	N.G.	100-E	Positive	WE
74	8/07/78	N.G.	91-E	Positive	WE
75	8/14/78	N.G.	100-U	Neg	
76	8/14/78	N.G.	115-U	Positive	WE
77	8/14/78	N.G.	100-E	Neg	
78	8/14/78	N.G.	48-E	Positive	WE
79	8/14/78	D.V.	100-U	Neg	
80	8/14/78	D.V.	47-U	Positive	WE
81	8/14/78	D.V.	114-E	Positive	WE
82	8/21/78	N.G.	100-U	Positive	
83	8/21/78	N.G.	100-U	Positive	
84	8/21/78	N.G.	87-U		
85	8/21/78	N.G.	58-E		
86	8/21/78	D.V.	100-U		
87	8/21/78	D.V.	55-U		
88	8/21/78	D.V.	76-F		
111	8/28/78	D.V.	100-U		
112	8/28/78	D.V.	100-U		
113	8/28/78	D.V.	100-U		
114	8/28/78	D.V.	100-U		
115	8/28/78	D.V.	100-U		
116	8/28/78	D.V.	100-U		
117	8/28/78	D.V.	100-U		

Pool No.	Date Collected	Study Area	No. Tested	Initial Screening	Confirmation
118	8/28/78	D.V.	100-U		
119	8/28/78	D.V.	100-U		
120	8/28/78	D.V.	100-U		
121	8/28/78	D.V.	100-U		
122	8/28/78	D.V.	100-U		
123	8/28/78	D.V.	100-U	Positive	EE
124	8/28/78	D.V.	100-U	Positive	EE
125	8/28/78	D.V.	100-U	Positive	EE
126	8/28/78	D.V.	100-U		
127	8/28/78	D.V.	31-U		
128	8/28/78	D.V.	100-E	Positive	EE
129	8/28/78	D.V.	100-F		
130	8/28/78	D.V.	100-E	Positive	EE
131	8/28/78	D.V.	100-F		
132	8/28/78	D.V.	82-F	Positive	EE
133	8/28/78	N.G.	100-U		
134	8/28/78	N.G.	100-U		
135	8/28/78	N.G.	100-U		
136	8/28/78	N.G.	100-U		
137	8/28/78	N.G.	100-U		
138	8/28/78	N.G.	100-U		
139	8/28/78	N.G.	100-U		
140	8/28/78	N.G.	100-U		
141	8/28/78	N.G.	100-U		
142	8/28/78	N.G.	100-U		
143	8/28/78	N.G.	122-U		
144	8/28/78	N.G.	34-U		
145	8/28/78	N.G.	100-E		
146	8/28/78	N.G.	100-E		
147	8/28/78	N.G.	78-E		
180	9/05/78	N.G.	100-U		
181	9/05/78	N.G.	100-U		
182	9/05/78	N.G.	100-U		
183	9/05/78	N.G.	100-U		
184	9/05/78	N.G.	38-U		
185	9/05/78	N.G.	100-E		
186	9/05/78	N.G.	29-E		
187	9/05/78	D.V.	100-U		
188	9/05/78	D.V.	100-U		
189	9/05/78	D.V.	100-U		
190	9/05/78	D.V.	114-U		
191	9/05/78	D.V.	110-E		
192	9/12/78	N.C.	192-U		
193	9/12/78	N.C.	148-E		
194	9/12/78	D.V.	121-U		
195	9/12/78	D.V.	103-E		

Virus Data From the New Jersey State Department of Health

Aedes sollicitans tested for EE Virus during 1978

Key:  
 WG - West Creek  
 PN - Port Norris  
 LP - Ladds Point  
 T - Tuckahoe  
 E - Eldora  
 DV - Dennisville  
 E - Engorged (blooded) specimen  
 U - Unengorged specimens

Pool No.	Date Collected	Study Area	No. Tested	Initial Screening	Confirmation
89	8/18/78	W.C.	100-U		
90	8/18/78	W.C.	100-U		
91	8/18/78	W.C.	100-U		
92	8/18/78	W.C.	100-U		
93	8/18/78	W.C.	100-U		
94	8/18/78	W.C.	100-U		
95	8/18/78	W.C.	100-U		
96	8/18/78	W.C.	100-U		
97	8/18/78	W.C.	104-U		
98	8/18/78	T	100-U		
99	8/18/78	T	77-U		
100	8/21/78	P.N.	100-U		
101	8/21/78	P.N.	100-U		
102	8/21/78	P.N.	69-U		
103	8/22/78	W.C.	100-U		
104	8/22/78	W.C.	100-U		
105	8/22/78	W.C.	125-U		
106	8/22/78	L.P.	80-U		
107	8/22/78	T	66-U		
108	8/22/78	D.V.	53-U		
109	8/22/78	E	55-U		
110	8/22/78	L.P.	24-U		
148	8/29/78	W.C.	100-U		
149	8/29/78	W.C.	100-U		
150	8/29/78	W.C.	109-U		
151	8/29/78	L.P.	100-U		
152	8/29/78	L.P.	61-U		
153	8/29/78	T	55-U		
154	8/29/78	D.V.	60-U		
155	8/29/78	E	31-U		
156	8/29/78	T	49-U		
157	8/29/78	P.N.	100-U		
158	8/29/78	P.N.	82-U		
159	8/29/78	P.N.	2-U		
160	8/29/78	W.C.	100-U		
161	8/29/78	W.C.	100-U		
162	8/29/78	W.C.	89-U		
163	8/29/78	W.C.	14-E		
164	8/29/78	D.V.	64-U		
165	8/29/78	W.C.	115-U		
166	8/29/78	W.C.	5-F		
167	8/29/78	T	37-U		
168	8/29/78	T	1-E		
169	8/29/78	D.V.	66-U		
170	8/29/78	D.V.	1-E		
171	8/29/78	P.N.	100-U		
172	8/29/78	P.N.	50-U		
173	9/04/78	W.C.	125-U		
174	9/04/78	L.P.	50-U		
175	9/04/78	L.P.	21-U		
176	9/04/78	D.V.	16-U		
177	9/04/78	E	16-U		
178	9/04/78	P.N.	100-U		
179	9/04/78	P.N.	46-U		
180	9/05/78	N.C.	100-U		