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 Cq. melanura very late in August. Since the isolation, Cq. 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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Mosquito Program Acting Director: Harry D. Brown
State Airspray Program Director: Donald J. Sutherland
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David Risley, Atlantic County
Patrick Slavin, Cumberland County
William Fisher, Salem County

State Mosquito Control Coordinator: Kenneth W. Bruder
Vector Surveillance  
Study Sites

Key
- Landing rate locations for Aedes sollicitans
- Testing box locations for Culex melanura

NEW JERSEY

West Creek
New Greina
Port Norris
Dennisville
Tuckahoe
**Culiseta melanura**

**SITE** New Orleans  
**COUNTY** Burlington

**CUMULATIVE POPULATION RECORD**

Mean population from previous years.

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 epidemic at this site.

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**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**

<table>
<thead>
<tr>
<th>No. Parasous Mosq. Landing Per Minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 1972</td>
</tr>
<tr>
<td>July 1972</td>
</tr>
<tr>
<td>August 1972</td>
</tr>
<tr>
<td>September 1972</td>
</tr>
</tbody>
</table>

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

**Aedes sollicitans**

**SITE** Tuckahoe  
**COUNTY** Cape May

**CUMULATIVE VECTOR POTENTIAL RECORD**

<table>
<thead>
<tr>
<th>No. Parasous Mosq. Landing Per Minute</th>
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<tr>
<td>September 1972</td>
</tr>
</tbody>
</table>

**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 EEE is known to be active. Landing rates of 2 per min. were recorded Sept. 12 with a parous rate of 85%.

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**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%.
### Virus Data from the New Jersey State Department of Health

**Virus Data for the New Jersey State Department of Health**

**Virus Data Collected from 5-24-78 to 8-31-78**

<table>
<thead>
<tr>
<th>Pool No.</th>
<th>Date</th>
<th>Study</th>
<th>Neg</th>
<th>Initial</th>
<th>Study Area</th>
<th>Negative</th>
<th>Positive</th>
</tr>
</thead>
</table>

### Key

**NC - New Jersey Study Site**

**IV - Influenza Study Site**

**N.G.** - Negative

**D.V.** - Double Virus

**N.C.** - North Carolina

**U.** - Unknown

**EV - Enlarged (hooded) specimens**

**DS** - Double Specimen

**E.** - Enlarged

**S.** - Stained

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**Virus Data from the New Jersey State Department of Health**

**Areas collected tested for EE Virus during 1978**

<table>
<thead>
<tr>
<th>Pool No.</th>
<th>Date</th>
<th>Study</th>
<th>Neg</th>
<th>Initial</th>
<th>Study Area</th>
<th>Negative</th>
<th>Positive</th>
</tr>
</thead>
</table>

### Key

**PG - West Creek**

**PS - Post Norris**

**EV - Enlarged**

**U.** - Unknown

**DS** - Double Specimen

**E.** - Enlarged

**S.** - Stained