

# New Jersey Vector Surveillance

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NEW JERSEY AGRICULTURAL EXPERIMENT STATION

MOSQUITO RESEARCH AND CONTROL

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## Introduction

EEE Virus was confirmed from a New Jersey horse during the first week of August, showing that virus is again present in the State. The case was reported from an inland area of Gloucester County, very close to the main epizootic focus detected in 1982. A presumptive case was also reported that same week from Middlesex County. The dates of onset occurred within one week of a very marked population increase in Culiseta melanura at study sites where the species is being closely monitored for EEE virus. No virus has been detected in any of the mosquito samples to date, but specimens have not yet been tested from the dates in question.

## INFORMATION ON THE EQUINE CASES

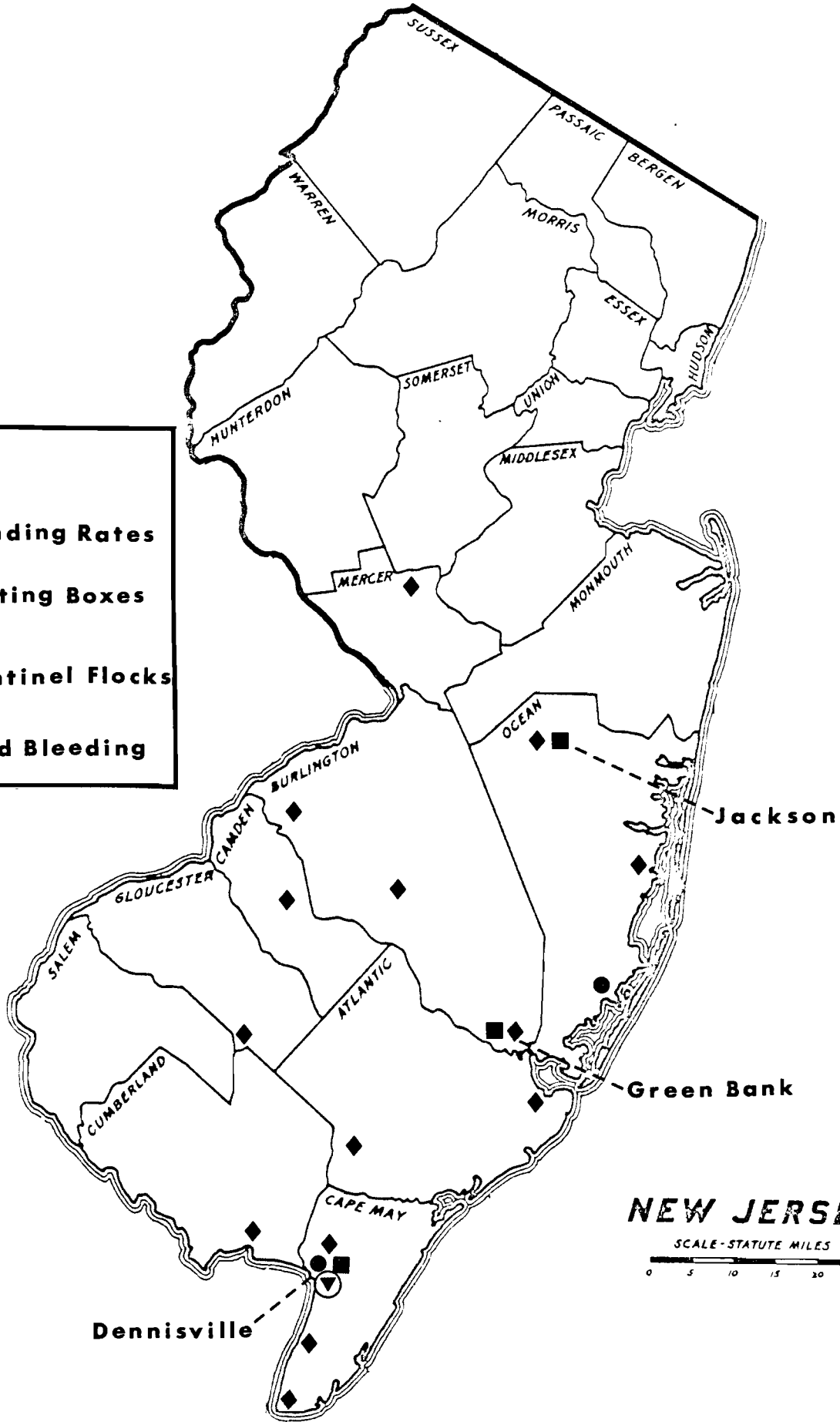
The first equine case involved a 4 year quarterhorse mare stabled near Williamstown, Gloucester County. The horse first showed symptoms on July 31 and went down on the following day. EEE virus was isolated from brain tissue confirming the first case of the season. The animal had been purchased 1 month earlier and was thought to have been vaccinated against EEE. When the horse first showed symptoms, the owners contacted the broker for information on the vaccination history. No documents could be found to substantiate that the animal had been protected and it is assumed that the mare was probably unvaccinated at the time of purchase.

On July 31, a 2 year Shetland pony from Monmouth Junction in Middlesex County died from what appeared to be an EEE infection. Blood drawn the day before death showed an HI titer to EEE but the owner refused acquisition of the brain for confirming tests.

No trapping results are yet available from the immediate vicinity of the horse deaths, but each area has been associated with Coquillettidia perturbans in the past. The Gloucester site is not far from the epizootic focus in 1982 where Cq. perturbans was the dominant species in collections made at affected horse farms. Monmouth Junction was chosen as a demonstration site in a Coquillettidia short course given earlier this year because of the numbers of larvae that were available in the local cattail swamps. Populations of Cq. perturbans, however, have been well below the levels experienced the past 2 years. Collections for virus isolation attempts are now being made to determine the exact composition of the mosquito populations at the sites where the equine deaths occurred.

**KEY**

- Landing Rates
- Resting Boxes
- ◆ Sentinel Flocks
- ▼ Bird Bleeding



**NEW JERSEY**

SCALE - STATUTE MILES



THE STATUS OF EEE AND ITS MOSQUITO VECTORS

The population increase exhibited by Culiseta melanura during the last days of July has slackened somewhat, but the numbers being collected from resting boxes are still quite high (Table 1). The trend is most obvious at the Green Bank site where the numbers are still rising on a rather steady basis. Ovarian dissections show that the parous rate has now reached 25%. No EEE virus has yet been detected in any of the samples, but HJ virus is still very evident at the Dennisville site (Table 2).

Table 1. Number of Cs. melanura per resting box at the 3 sites being monitored in New Jersey.

STUDY SITE	PRESENT POPULATION	7 YR. AVE.
Green Bank	10.5	6.2*
Dennisville	10.4	17.2
Jackson	2.8	-

\*7 yr. average compiled from New Gretna data.

The appearance of EEE in equines at inland sites suggests that the virus is once again being amplified at localized foci in New Jersey. For the second straight year, the virus has resulted in equine deaths before any indication of activity has been found at the standard monitoring sites. Data from the next several weeks will show if the discrepancy is a result of delays in testing. In previous years, EEE virus has always been detected in Cs. melanura prior to epizootic activity.

In 1983, the standard sites used for monitoring EEE virus were poor indicators for the rest of the State and the Jackson site was established as an additional monitor for inland areas. The appearance of equine fatalities this year suggests that a single inland area may not be adequate to measure vector potential on a statewide basis and that EEE is much more local in its distribution than previously thought.

Table 2. Virus isolations from mosquitoes collected at the three study sites in New Jersey \*

GREEN BANK			
HJ Virus			
1.	7/16/84	Cs. mel.	90 Engorged
2.	7/23/84	Cs. mel.	60 Engorged
EEE Virus			
No Isolations to Date			
DENNISVILLE			
HJ Virus			
1.	7/02/84	Cs. mel.	57 Engorged
2.	7/02/84	Cs. mel.	111 Black-blooded
3.	7/05/84	Cs. mel.	26 Engorged
4.	7/05/84	Cs. mel.	24 Gravid
5.	7/09/84	Cs. mel.	100 Empty
6.	7/09/84	Cs. mel.	100 Empty
7.	7/09/84	Cs. mel.	100 Empty
8.	7/09/84	Cs. mel.	38 Black-blooded
9.	7/12/84	Cs. mel.	90 Engorged
10.	7/12/84	Cs. mel.	100 Black-blooded
11.	7/16/84	Cs. mel.	47 Engorged
12.	7/16/84	Cs. mel.	48 Black-blooded
13.	7/19/84	Cs. mel.	100 Empty
14.	7/19/84	Cs. mel.	45 Black-blooded
15.	7/23/84	Cs. mel.	70 Engorged
EEE Virus			
No Isolations to Date			
JACKSON			
HJ Virus			
No Isolations to Date			
EEE Virus			
No Isolations to Date			

\* Tested Through 7/23/84

Table 3. Sentinel chicken flocks being monitored for arbovirus in New Jersey

County	Area	Tested Through	Results
<u>EEE SENTINELS</u>			
Ocean	Jackson	June 22	
	Forked River	June 29	
Burlington	Green Bank	July 02	
Atlantic	Smithville	July 03	
	Estelle Manor	July 03	
Cape May	Pond Creek	July 16	ALL FLOCKS NEG
	Fishing Creek	July 16	TO DATE
	Dennisville	July 16	
Cumberland	Port Norris	Not Yet Tested	
Gloucester	Iona Lake	July 03	
<u>SLE SENTINELS</u>			
Camden	Voorhees	June 27	
Burlington	Cinnaminson	July 11	ALL FLOCKS NEG
	Indian Mills	July 3	TO DATE
Mercer	Windsor	July 11	

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