the three almost coincided probable factors, each of which alone might well have been the cause of the sharp decrease of the local C. annulatus population, namely, intensive use of pesticides in the rice-fields, strong typhoon accompanied by torrential rains, and a few weeks of drought occurred shortly after the rains, the last named possibly was the decisive one.

(The significance of these findings will be discussed, with reference to the previous achievements and the future plans.)

EFFECTS OF IMMUNIZATION OF SWINE UPON THE ECOLOGICAL CYCLE OF JAPANESE ENCEPHALITIS VIRUS

KATSUMI TAKAHASHI, REIZO MATSUO, MASAAKI KUMA, JUNICHI BABA and HIDETARO NOGUCHI

Nagasaki Prefectural Institute of Public Health, Nagasaki

YUKISHIGE KANDA INOUE

Institute for Virus Research, Kyoto University, Kyoto

NORIMASA SASAKI and KAZUO KODAMA

Institute for Microbiological Chemistry, Uji-shi, Kyoto

Though it has been demonstrated that infected pigs are major natural source for amplification of the mosquito infection with Japanese encephalitis virus (JEV), there is no radical and efficient countermeasure to prevent the epidemic of JE among human beings. However, it should be worthy to examine that immunization of pigs might be effective on the control of vector mosquito to be infected with JE.

Following this conception, in 1966 and 1967, preliminary field experiments has been made at Karako hamlet and Aino village, both areas are contiguous to each other in the south district of the mainland of Nagasaki prefecture, and the former is the vaccinated area using inactivated vaccine and the latter is the untouched area. As compared with the virus isolation from the mosquito of Culex tritaeniorhynchus between the two areas, it may be taken to suggest that pigs immunization seems to be controllable for the mosquito infection with JE and also it becomes obvious that place for survey must be strictly isolated such as island, and more potential vaccine has to be applied.

Considering above facts, in 1967 the field experiment on a full scale has been undertaken on Iki island. Iki island is located 40 km north of the mainland of Kyushu across Genkai sea, and has 45,000 population.

In recent year, pig keeping has been extensively carried on and large epidemic outbreak of JE has been recorded with the increase in number of breeding pigs on the island.

All susceptible pigs (2,116) were immunized with live attenuated vaccine made
of m strain about one month prior to the epidemic season.

After then, pigs, mosquito and human infection with JEV in Iki island were investigated throughout the epidemic season.

The results obtained as follows.

1) A significant difference was recognized in antibody response against JEV in the sera of pigs between Iki island and the control area near the island, that is, after vaccination prior to appearance of the infected mosquitoes with JEV in Iki island 90 per cent or more of the slaughtered pigs showed to have antibody in low titer and 19-S antibody was found to be remarkably rare throughout the epidemic season.

2) The pattern of the virus isolation from Culex tritaeniorhynchus collected periodically at three points on the island was quite different from that of the control area. Isolation rate of the virus was unusually low without showing a peak and appearance of the infected mosquitoes was found to be intermittent.

3) In this year, only one unconfirmed case of JE patient was reported on the island. Compared with what it was, it has been remarkably decrease in number of occurrence of JE patient.

4) Harmfull effect seen to be caused by vaccination could not be recognized.

To make sure of these results, the same trial has been reported on Iki island during the following year's (1968) epidemic season. The result obtained in 1968 was also simillar to that of 1967.

Judging from the findings as the above, it was considered probable that immunization of pigs with vaccine might be effective to inhibit amplification of mosquito infection with JEV.

ECOLOGICAL CYCLE OF JAPANESE ENCEPHALITIS
VIRUS IN SWINE

NOBUHARU KUNITA
Osaka Prefectural Institute of Public Health and Hygiene

STUDY ON THE RESERVOIR OF JE VIRUS IN KOREA

HO WANG LEE

Department of Microbiology, College of Medicine, Seoul
National University Seoul, Korea

In Korea and Japan thorough understanding of the ecology of the encephalitis is the first step to mention the reservoir of the virus.

1. On overwintering mosquitoes.

During past four years we tried to collect the overwintering mosquitoes by