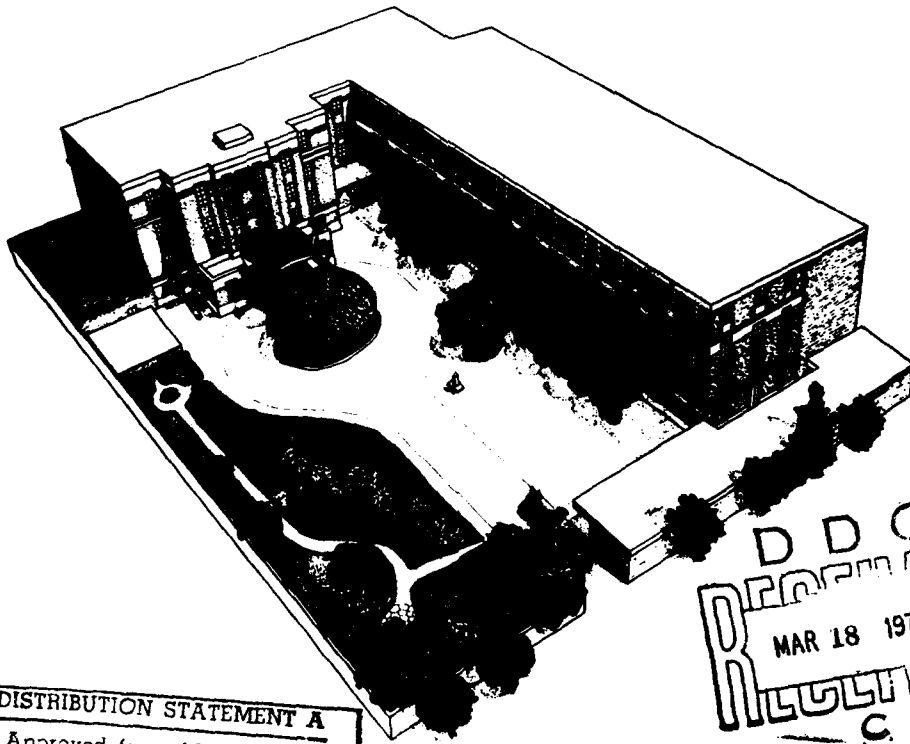


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VI. Serologic and Isolation Studies on Carabaos



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LEPTOSPIROSIS IN THE PHILIPPINES

VI. SEROLOGIC AND ISOLATION STUDIES ON CARABAOS †

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INTRODUCTION

The carabao is the most essential farming animal in the Philippines and as a probable host of leptospirosis is important from a public health standpoint. Unlike other zoonoses, the nature of leptospirosis in this species has not been clearly defined. The presence of urinary shedders may perpetuate a cycle of transmission which could endanger the unprotected human and animal hosts. Because of this it is imperative to determine the exact role played by carabaos as possible reservoirs and sources of infection. Previous investigations (Kryungier, 1963; Panda *et al.*, 1961; Ryu and Liu, 1968) have been inadequate. Cerebrospinal pathology has been reported but information on other diseases inflicted by the spirochete is practically nonexistent.

MATERIALS AND METHODS

A total of 27 carabaos were subjected to serologic and cultural studies. For the determination of leptospiral antibodies, sera were screened by the microscopic slide agglutination test and then titrated by the microscopic agglutination test (Carlos *et al.*, 1970). Isolation studies were conducted by

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the procedures of Galton *et al.*, (1962). Positive cultures were identified by cross agglutination tests and agglutinin-absorption techniques.

RESULTS AND DISCUSSION

Of the 27 carabaos analyzed for leptospiral antibodies, 20 showed significant titers. Table 1 summarizes the distribution of seropositives. Elevated levels to single serotypes were observed in the majority of the animals; two had levels to double serotypes and one to multiple serotypes. In the isolation studies three carabaos yielded *leptospirae (tarassovi)*.

Table 1
Distribution of Leptospiral Positives According to Serotype Among Carabaos.

Serotype	No. positive	% positive
Single serotype		
<i>L. tarassovi</i>	13	65
<i>L. sejroe</i>	5	25
Two serotypes		
<i>L. sejroe + poi</i>	1	5
Multiple serotypes		
<i>L. sejroe + javanica + wolffi</i>	1	5
Total	20	100

The serological survey depicts the incidence of the infection, and the high percentage

of reactors suggests that carabaos are susceptible to *tarassovi* and *sejroe*. These findings do not agree with the assertion of Ryu *et al.*, (1968) who theorized the relative resistance of water buffaloes to *leptospirae*. The basis for their conclusion was their inability to induce infection.

SUMMARY

Serologic studies on 27 carabaos showed that 20 had significant titers to leptospirosis. There were 18 reactors to a single serotype (13 *tarassovi* and 5 *sejroe*) while two had elevated titers to more than one serotype. The presumptive picture of infection is verified by the isolation *tarassovi* from three carabaos.

Although a limited number of animals was studied leptospirosis was found to exist. The findings reveal a relatively high incidence which shows that the status of this infection is underestimated in the country. More intensive investigations need to be conducted.

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