LEPTOSPIROSIS IN THE PHILIPPINES
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 (Krymger, 1963; Panda et al., 1961; Ryu and Liu, 1968) have been inade-
quate. 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
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
seroreactive. Elevated levels to single
serotypes were observed in the majority of
the animals; two had levels to double sero-
types 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.

<table>
<thead>
<tr>
<th>Serotype</th>
<th>No. positive</th>
<th>% positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single serotype</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L. tarassovi</td>
<td>13</td>
<td>65</td>
</tr>
<tr>
<td>L. sejroe</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>Two serotypes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L. sejroe + poi</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Multiple serotypes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| L. sejroe + jana-
  nica + wolfii         | 1            | 5          |
| Total                  | 20           | 100        |

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

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provided by the Bureau of Medicine and Surgery,
Navy Department, for Work Unit NO2.

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those of the authors and are not to be construed as
official or as reflecting the views of the Navy Depart-
ment or the Naval Service at large.
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 *leptospira*. The basis for their conclusion was their inability to induce infection.

**SUMMARY**

Serologic studies on 27 carabaos showed that 20 had significant titers to *leptospira*. 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 *leptospira* 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.

**REFERENCES**


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