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NEWCASTLE DISEASE IN FALCONS

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Abstract: Between March and October, 1975, 37 captive lanners *(Falcon biarmicus abyssinicus)* destined for exportation to Europe from Kano, Nigeria were examined for Newcastle Disease (ND) by the haemagglutination-inhibition technique in our laboratory. Twenty-one or 57% of the falcons showed high titres, presumably as the result of natural exposure to ND virus.

INTRODUCTION

In 1951, a tentative diagnosis of Newcastle Disease (ND) was made in Eastern Nigeria but it was not until 1953 that the disease was first confirmed by laboratory tests at Vom from outbreaks in Benue Province and Ibadan.[3,5] By 1954 ND virus was isolated from outbreaks in 11 areas of Nigeria, indicating the widespread nature of the disease.[2,6,7] The disease is now enzootic in poultry in this country, but has not been associated with wild birds.

In our laboratory we have examined sera of captured birds of prey, mainly falcons, meant for exportation. A report of serologic tests for ND carried out in this laboratory with limited numbers of sera sample is presented.

MATERIALS AND METHODS

An owner of an aviary requested that his birds be screened for ND to enable health certification and consequent sale to tourists. The aviary housed captured lanners *(Falcon biarmicus abyssinicus)* destined for exportation overseas. A serum sample was collected from each of 37 falcons. The birds were bled individually from the wing vein into sterile test tubes; blood was allowed to clot at room temperature. The sera were then poured into sterile screwcapped tubes, labelled and kept at -20 C prior to testing.

The antibody titre of each serum sample was determined by beta procedure haemagglutination-Inhibition (HI) test and the results expressed as HI titre. The serologic method employed in this study was the macro HI method used by Allan and Gough.[1] The number of antigenic units of virus employed was $4HA_{50}$.

The antigen used was a strain of Herts 33/64(8WP1) obtained from Central Veterinary laboratory, Weybridge, Surrey, U.K. This was derived from amnioallantoic fluid containing high concentrations of the virus. The virus was then inactivated and the HA_{50} value of the undiluted antigen assessed by haemagglutination (HA) according to the method described by Allan and Gough.[1] Standard positive ND serum and normal fowl serum were included in the tests.

RESULTS

Table 1 shows the HI titre of birds examined. The criterion used for interpretation of the HI test was the number of haemagglutination doses of virus inhibited by the test serum multiplied by the reciprocal of dilution of the serum. A serum having a titre of less than 40 was considered negative (O'Reilly, M. 1976, pers. commun.). Based on this criterion, 57% (21 of 37 falcons) of the sera had significant antibody titres to ND virus.

DISCUSSION

In Nigeria, the role of wild birds, including barnyard visitors, scavengers, raptors and migrants, in the

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TABLE 1. Haemagglutination - Inhibition Titre to Newcastle Disease virus in Falcons.

HI Titre	No. of Birds
Nil	12
1:20	4
1:40	5
1:80	9
1:160	3
1:320	2
1:640	2

epizootiology of ND has not been studied. These birds may harbor the virus; should they be carriers, they could pose a threat to the expanding poultry industry in the country. The high ND titers in a considerable proportion of the birds indicate that the serologic results are reliable indicators of ND virus antibody, and that infection in the falcons is relatively common. However, the antibody prevalence data must be interpreted cautiously. The birds sampled were not representative of the population of falcons throughout the country. Moreover, the presence of antibody does not necessarily indicate virus shedding. Further serologic studies and attempts to isolate and characterize the virulence are required to assess the role of the falcons as ND virus reservoirs. Since the falcons are a species included in the international bird trade, and movement of captive native birds has been responsible for dissemination of ND (reviewed by Lancaster and Alexander[4]), further evaluation of both free-flying and captive falcons as ND reservoirs is warranted.

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