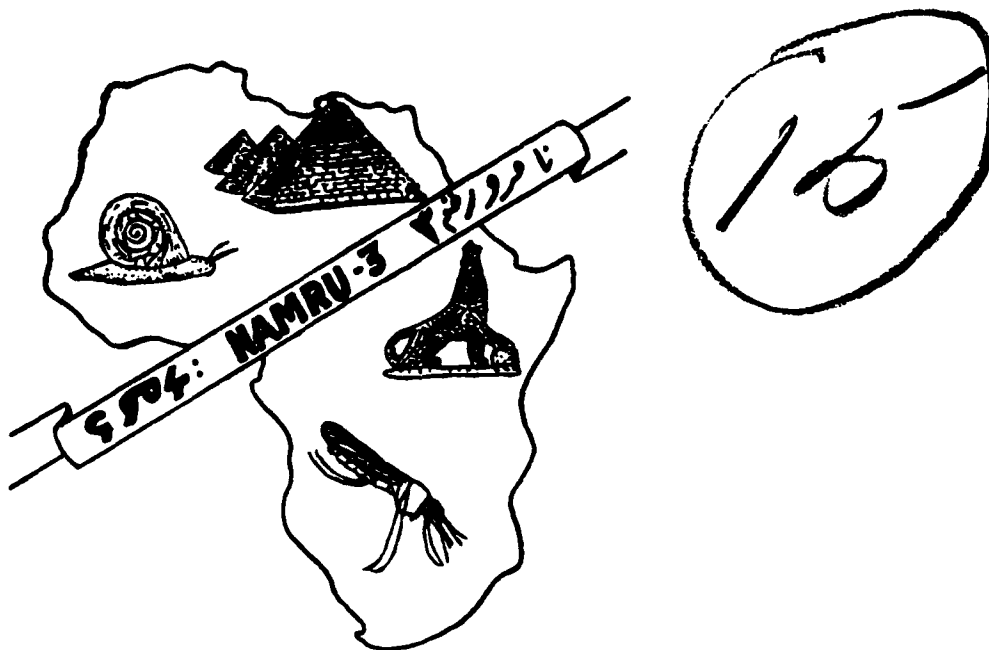


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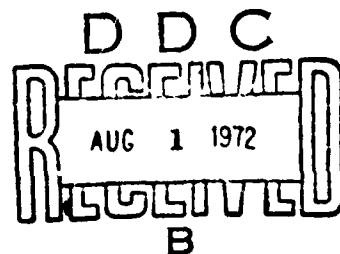
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CANINE LEPTOSPIROSIS IN CAIRO

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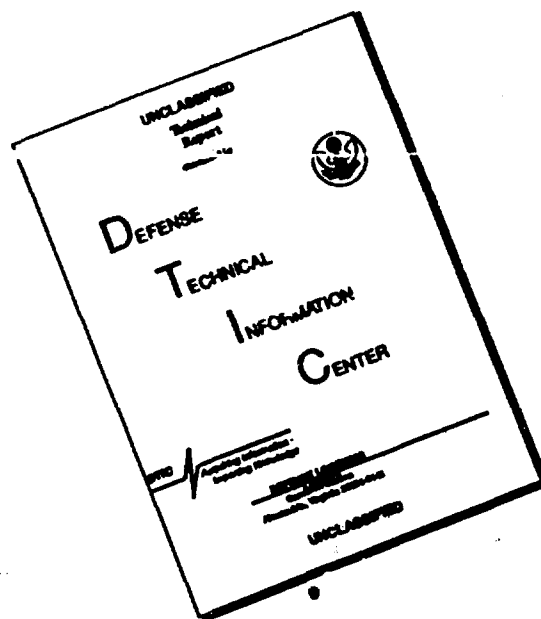
R.R. Maronpot, I.S. Barsoum and E. Ezzat

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## Canine Leptospirosis in Cairo

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The worldwide distribution of canine leptospirosis has been documented by isolation of *Leptospira*<sup>1</sup> and serologic surveys [1-4]. Frequencies of leptospiral antibodies in canine populations range from 3 to 65% [1-4]. Infections of dogs with *Leptospira* serotype *canicola* and *Leptospira* serotype *icterohemorrhagiae* produce serum agglutinins which may be detectable for years [5].

Naturally occurring canine leptospirosis has been associated with interstitial nephritis [6, 7], but this relationship is not always easily demonstrated experimentally [8-11]. Recently, Anderson [12] and Taylor et al. [13] have produced subacute interstitial nephritis following experimental infection of dogs with *canicola*. However, canine leptospiral infection has not been proved to cause chronic interstitial nephritis [14, 15].

Canine leptospirosis in Egypt, U.A.R., has been poorly studied. McGuire and Myers [16] reported that five of 30 sera from Cairo dogs, when tested by complement fixation (CF), had antibody titers of 1:8 to *Leptospira* but were negative by the microscopic agglutination test.

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The experiments reported herein were conducted according to the principles set forth in "Guide for Laboratory Animal Facilities and Care" prepared by the National Academy of Science, National Research Council.

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<sup>1</sup> Galton, M. M. 1966. Leptospiral Serotype Distribution Lists. Communicable Disease Center Zoonoses Surveillance, U. S. Department of Health, Education, and Welfare, Public Health Service, Atlanta, Georgia, 130 p

More recently, Hamed [17] documented that prevalence of leptospiral seropositivity in 98 dogs in Cairo was 15%. Leptospiral agglutinating antibodies have been reported in man and in non-canine domesticated and wild mammals in Egypt [16-19].

We undertook this study to assess the serologic status of dogs in Cairo with respect to *Leptospira* and to determine whether there is any consistent relationship between their serologic status and interstitial nephritic lesions.

### Methods

Jugular blood was obtained from 170 unselected stray dogs from different areas of Cairo; sera were harvested and stored at -20 C until used for leptospiral serology. Blood from 68 of these dogs was cultured by aseptic addition of two drops of whole blood to two tubes each of Fletcher's and Ellinghausen's media. All dogs were killed and necropsied. Urine was aseptically obtained from the urinary bladders of the same 68 dogs immediately after death and was inoculated with and without dilution into three tubes each of Fletcher's and Ellinghausen's media. Kidney and liver specimens were fixed in 10% formalin buffered at neutral pH and processed routinely. Sections were stained with hematoxylin and eosin; Warthin-Starry stains were made on kidney sections.

All sera were tested by the microscopic agglutination (MA) test [20, 21] with use of the following serotypes of *Leptospira*: *canicola*, *autumnalis*, *sentot*, *djasimana*, *bataviae*, *australis*, *javanica*, *grippotyphosa*, *icterohemorrhagiae*, *wolffi*, *hebdomadis*, *pomona*, *tarassovi*, *pyrogenes*, *ballum*, *butembo*, and *cynopteri*. The highest final twofold dilution of serum with at least 50% agglutination was the endpoint.

Significant interstitial nephritis is defined as active diffuse inflammation producing histologic



significant interstitial nephritis for this study were established to avoid the probability of associating cases of spontaneous or noninfectious nephritis with leptospiral seropositivity.

This study was intended to document the prevalence of leptospiral seropositivity and associated interstitial nephritis in dogs in Cairo, not to prove or disprove a causal relationship between naturally occurring canine leptospirosis and interstitial nephritis. The results do document a higher prevalence of severe interstitial nephritis associated with leptospiral seropositivity than with seronegativity. Although specimens that are positive by the Warthin-Starry stain and isolation of leptospire from seropositive dogs with severe nephritis are not absolute proof of a causal relationship between leptospiral infection and canine interstitial nephritis, such a relationship is at least suggested. Other factors may causally lead to interstitial nephritis.

#### Summary

Sera of 170 dogs in Cairo were tested for leptospiral antibodies by the microscopic agglutination test. Forty-one sera had detectable leptospiral agglutinins, most reacted against *Leptospira* serotype *canicola*. Subacute interstitial nephritic lesions were present in renal tissue from 27 seropositive and two seronegative dogs. *Leptospira* serotype *canicola* was isolated in cultures from urine of two dogs.

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