

A MORPHOLOGICAL STUDY OF PHLEBOTOMINE SANDFLIES  
AND THEIR ROLE IN THE TRANSMISSION OF  
HUMAN LEISHMANIASIS,  
WITH SPECIAL REFERENCE TO NAMIBIA.

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by Ian Hugh Davidson

Dissertation submitted to the Faculty of Medicine,  
University of the Witwatersrand, Johannesburg,  
in fulfilment of the requirements for the  
degree of Master of Science.

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DECLARATION BY CANDIDATE

I declare that this dissertation is my own work  
and that it has not been submitted for any degree  
to any other university. Throughout this study  
I have been an employee of the South African  
Institute for Medical Research.

A handwritten signature in dark ink, appearing to be 'I. H. Davidson', with a long, sweeping horizontal stroke extending to the right.

I H DAVIDSON

July 1987

#### ABSTRACT

In East Africa and Namibia leishmaniasis are transmitted by sandflies belonging to the subgenus Synphlebotomus.

The diagnosis of cutaneous leishmaniasis in Namibia led to the discovery of Phlebotomus rossi. Morphological and behavioural differences backed up by statistical analysis suggests that P. rossi may be more than one species. Data collected on the biology of P. rossi in Namibia leads to speculation on how these factors affect the transmission of the disease in nature.

This work shows that P. martini can be differentiated from P. vansomerenae and P. celiae but the discrimination of the latter two species is less clear.

The taxonomy of the subgenus Sergentomyia is revised as it has been implied that certain species in this group may confer partial immunity against infection with Leishmania donovani.

This dissertation is dedicated to my parents.

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