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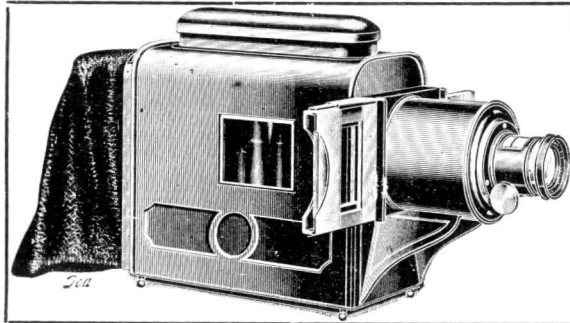
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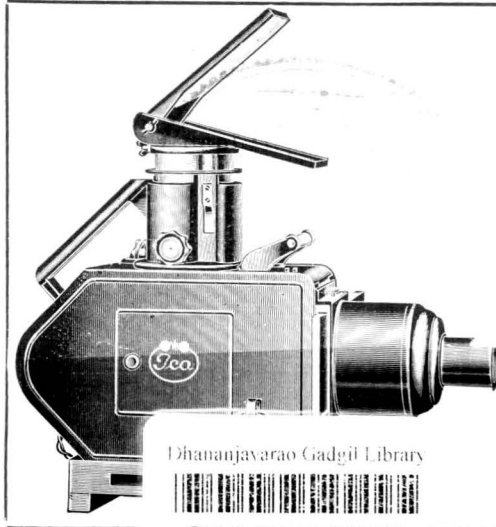


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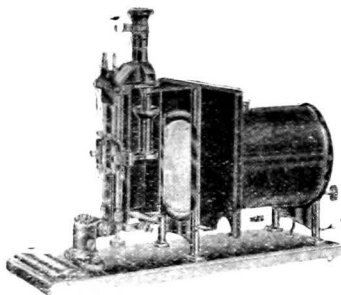
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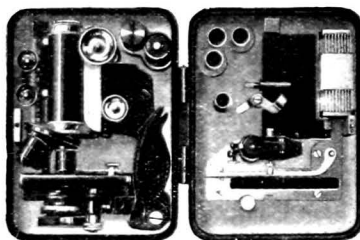
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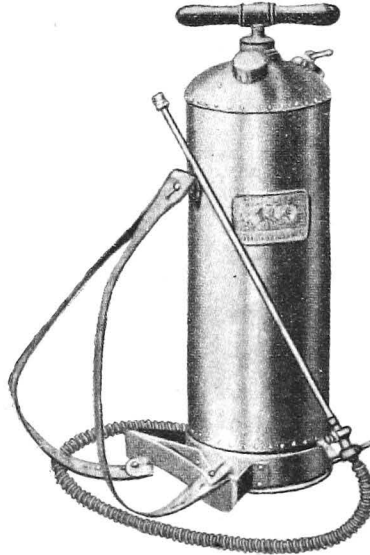
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M A L A R I A
Its Investigation and Control

MALARIA

Its Investigation and Control

with special reference to Indian conditions

BY

ROBERT KNOWLES

MAJOR, INDIAN MEDICAL SERVICE

*Professor of Protozoology,
Calcutta School of Tropical Medicine*

AND

RONALD SENIOR-WHITE

MALARIA RESEARCH OFFICER

*Central Malaria Bureau, Government of India;
formerly*

*Malariologist, The Kepitigalla Rubber Estates, Ltd.,
Ceylon, and*

Malariologist, Bengal-Nagpur Railway Co., Ltd.

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TO
THE WIVES OF RESEARCH WORKERS
(IN RECOGNITION OF THEIR SUFFERINGS IN THE CAUSE OF SCIENCE)

PREFACE

NUMEROUS as are the existing books on malaria, there at present exists in India no suitable handbook which can be put into the hands of medical men of the assistant surgeon class to help them in their malarial problems. Stephens and Christophers' *Practical Study of Malaria* has long been out of print: James' *Malaria at Home and Abroad* is now out of date with regard to its entomological side, whilst it contains much clinical matter which is beyond the purview of the malariologist engaged in the practical eradication of the disease; whilst the little book recently published on *Mosquito Reduction and Malarial Prevention* by Crawford and Chalam, although giving the layman an excellent idea of what can be done by the expert, is, in our opinion, rather too elementary for those actually engaged in anti-malarial campaigns. The preparation of the present volume was suggested to the authors by Colonel Martin-Leake, V.C., F.R.C.S., Chief Medical Officer, Bengal-Nagpur Railway; and it is hoped that in it the worker in the field will find the practical instructions that he may require; how to diagnose malaria in the laboratory; how to treat his patients; when, where, and how to look for his mosquitoes; how to set about and carry out a malaria survey; and what steps to take as the result of the knowledge gained by such a survey. The chapters on the life-cycles of the malaria parasites in man and in the mosquito, on the practical laboratory diagnosis of malaria, and on treatment are by the senior author; the chapters on malaria survey work, the design, construction and maintenance of anti-mosquito measures, and the appendices are by the junior author; whilst both authors have collaborated in the final putting together of the book. The Governing Body of the Endowment Fund of the Calcutta School of Tropical Medicine has very generously financed its publication, and the authors' gratitude is due to that body for making its publication possible.

To the crime of piracy the senior author at once pleads guilty. Much of Chapters I and II is taken from Wenyon's splendid *Protozoology*, together with several of the illustrations. The warmest thanks of both authors are due to

Messrs. Baillière, Tindall and Cox for permission to reproduce several of Dr. Wenyon's illustrations. The authors' warmest thanks are also due to Dr. C. Strickland, M.A., B.Ch., Professor of Entomology, Calcutta School of Tropical Medicine, for the loan of lantern slides and for his very kind permission to reproduce many of his illustrations. In the appendices the authors have further borrowed figures from James and Liston's *Anopheline Mosquitoes of India*, James' *Malaria at Home and Abroad*, from the monograph by Mr. H. F. Carter on the Anopheline Mosquitoes of Ceylon in the *Ceylon Journal of Science*, Patton and Cragg's *Text-book of Medical Entomology*, and papers by Iyengar, Bains Prashad, Edwards and Kirkpatrick. A special word of thanks is also due to Mr. H. M. Roy and Mr. J. K. Mullick, artists of the Calcutta School of Tropical Medicine, for their admirable execution of the illustrations.

When the publication of this book was first proposed, it was suggested to the authors that advertisements by reputable firms might be included in order to reduce the cost of publication. To this the authors consented: in the first place it was felt that this might help to place the book financially within the reach of the class of readers for whom it has been written; in the second place the inclusion of advertisements of microscopes and accessories, stains, cinchona derivatives, oil sprays, etc., might be of use to the reader in informing him where to buy materials. It would have been better for such material to have been relegated to the back of the book, but, by a misunderstanding, a number of advertisements have been inserted to precede the text. This is unavoidable as far as the present edition goes, but should a second edition be called for, it will not be repeated.

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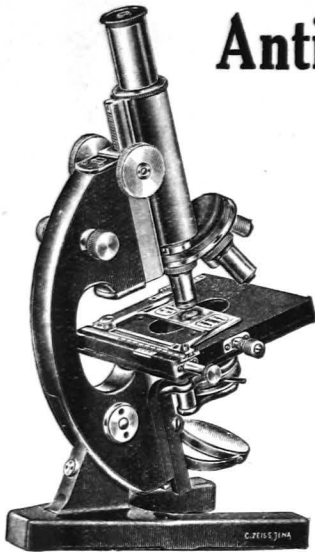
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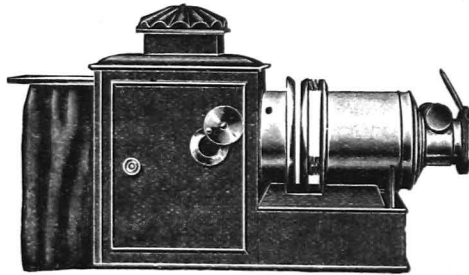
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With a Foreword

By **SIR RONALD ROSS, K.C.B., K.C.M.G., F.R.S.,**

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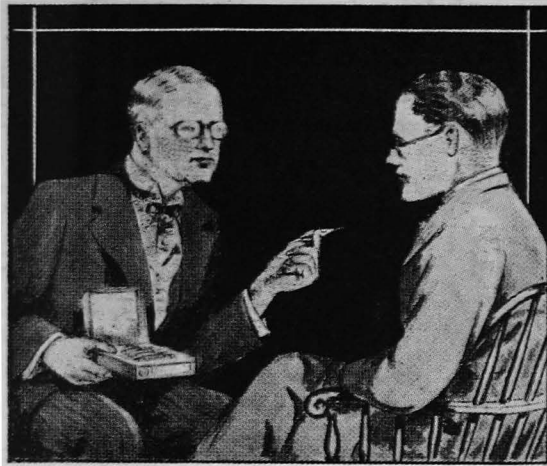
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