SCIENTIFIC BOOKS

The Epidemiology and Control of Malaria in Palestine. By ISRAEL J. KLIGLER, director, department of hygiene, Hebrew University, Jerusalem. The University of Chicago Press, 1930.

DR. ISRAEL J. KLIGLER, formerly of the American Museum of Natural History, later of the Rockefeller Institute and since 1921 working in Palestine, first as director of laboratories of the Hadassah Medical Unit, later with the Malaria Research Unit and since 1926 professor of hygiene in the Hebrew University, Jerusalem, has written an excellent book.

He thinks that the static condition of Palestine during the last several centuries is due almost entirely to malaria. While some antimalaria work was done in Egypt before the World War, nothing seems to have been done in Palestine until after the close of the great struggle. In 1921, however, Dr. Kligler took up such a study under the auspices of the Hadassah Medical Organization, then the American Zionist Medical Unit. The present book gives the results of the work since that time. Dr. Kligler is a broad medical investigator, but he is not a trained entomologist. Fortunately, in 1923 Dr. P. A. Buxton held the position of medical entomologist to the British government of Palestine and submitted a report published in the *Bulletin of Entomological Research* for March, 1924, the bulk of which was devoted to entomological matters of medical or veterinary interest. I imagine that the mosquito material collected by Dr. Buxton must have passed through the hands of the entirely competent culicidologist, F. W. Edwards, of the British Museum of Natural History. Therefore Dr. Kligler in his work is without doubt sound when he refers to the different species of Anopheles by name. He considers eight species of Anopheles, and his keys are based upon those of Buxton. The book is well planned and well illustrated, and the author shows a thorough familiarity with recently published work in different parts of the world. His chapters include: I. Topography and Climate; II. Social, Economic and Health Conditions; III. Actual and Potential Breeding Places of Anopheline Mosquitoes; IV. Bionomics of the Anopheles of Palestine; V. Incidence and Etiology of Malaria; VI. General Considerations of the Epidemiology; VII. Methods of Control; VIII. Results of Control Work; IX. Experiments with Various Control Measures in Districts where Antilarval Control was Unsuccessful. There is an appendix on typical drainage work of a permanent character. The book is therefore the result of a broad study, and all important facts have been considered carefully and at some length.

The methods of control are in the main those that have been used in other parts of the world, but there have been in Dr. Kligler's work some interesting variations. The brothers Sergent in Algeria were probably the first to suggest as a mechanical method the frequent changing of irrigating streams from one canal to another, bringing about the drying up of anopheline larvae. Dr. Kligler found it simple, with the breeding places caused by springs, to deflect the flow in a different direction from the natural course every five or six days, or, by damming the stream, storing the water behind the dam for two or more days and then releasing it, excellent results could be reached. Several variations of this general plan were tried with good effect. He insists, however, upon thorough drying, since he has found that the older larvae may remain alive for a considerable time in moist earth. Variations in the oiling method are described, and these experiments showed that the addition of 1 per cent. by volume of castor oil to a kerosene film is very advisable. Paris green was used in the proportion of one part to one hundred parts of fine sifted road dust or ashes.

The native cyprinodont fish are not effective as destroyers of larvae. They are not top-feeders. Imported Gambusias, however, were much more satisfactory, and they now occur in fairly large numbers in the open drainage canals and pools.

The volume contains much original and useful matter and should be very useful to antimalaria workers everywhere.

L. O. HOWARD

SCIENTIFIC APPARATUS AND LABORATORY METHODS

ELECTRODYNAMIC RECORDER

UNDER ordinary circumstances the kymograph upon which the responses of a stimulated muscle are recorded must be placed at no great distance from the muscle. With the device herein described, an attempt has been made to provide a means whereby kymograph records can be made at any convenient distance from the stimulated tissue.

The apparatus (Fig. 1.) is actuated like the direct, kymograph recording equipment now in use, *i.e.*, the muscle is hooked to a thread which, passing over a