BOOK REVIEWS

WALTER REED—A BIOGRAPHY. By William B. Bean, M.D. 1982. University of Virginia Press, Charlottesville, VA. xiv + 190 pp. $12.95.

It has been almost 40 years since a biography of Walter Reed has been published and it is to the credit of a noted medical historian that we now have a new biography. Dr. Bean has painstakingly sought the original papers, letters and works of Walter Reed for over a decade. During this process, he visited all the forts, posts and camps that Reed was stationed at and interviewed the living descendants of Walter Reed, including his grandaughter.

Although Dr. Bean intended to publish the above source material in its entirety, he has not been able to accomplish this task. The new biography is a distillation of these studies and virtually every page reveals some previously unpublished facet of the life and era of Walter Reed.

This biography, more than any other, portray's Walter Reed as an individual. We learn that he applied for admission at the age of 17 to the medical school of the University of Virginia, not due to an overriding desire to study medicine, but because the M.D. could be acquired in a much shorter time than the M.A. degree. Since Reed was the impoverished son of a parson, he followed the shorter path to an academic degree.

Details are given of his early life in the Army Medical Corps with a new bride at Fort Lowell (near Tucson, Arizona) in 1877. These were difficult times, as Congress did not appropriate funds for military salaries during the first 11 months of 1877. Throughout his life, Reed kept detailed account books and we learn that at intervals, he delayed visiting a barber for as long as five months due to his impecunious condition.

The turning point in his career was during 1890–1 when he attended a seven-months' postgraduate session in pathology and bacteriology at Johns Hopkins Hospital under the aegis of William Henry Welch. There he was exposed to the discoveries of Pasteur and Koch, and conducted experiments clarifying a problem in the pathology of typhoid fever. After the training at Hopkins, he anticipated an assignment to the Army Medical Museum in Washington, DC, but with dismay was given further tours of duty in the far West at Fort Keogh, Montana. One of his first duties there was to care for the survivors of the infamous Battle of Wounded Knee. These western assignments came to an end when the newly selected surgeon general, George Miller Sternberg, appointed the recently promoted Major Reed to the dual positions of curator of the Army Medical Museum and Professor of Clinical and Sanitary Microscopy at the Army Medical School, both in Washington. In his spare time, to augment continuing financial problems, he served on the faculty of the Columbian University Medical School for the sum of $500 a session. (At that time Army medical personnel were allowed to conduct private medical practices after normal duty.)

Approximately half of the book is devoted to Reed's involvement with yellow fever studies, the cause for his renown today. Although more than 80 years have elapsed since Reed worked in Cuba, we now learn that contrary to popular belief, he was not initially sent to study yellow fever. The orders on record commanded him "to set up a board of medical officers . . . to meet at Camp Columbia, Quemados, Cuba, for the purpose of pursuing scientific investigations with reference to the infectious disease prevalent on the Island of Cuba." As known, the board was to include James Carroll, Aristides Agramonte and Jesse Lazear. Additional details of the yellow fever saga are presented, some of which are at variance from those traditionally presented.

The book is well designed with a sturdy yellow and black binding. Reproductions of four photographs of Reed are included. Unfortunately, they represent the majority of the pictures of Reed that exist. (L. H. Howard once mentioned, "He was always very loath to have his picture published . . .")

This book deserves a prominent place in the library of any individual interested in the early history of yellow fever and its control.—R. A. Ward.

MANUAL OF MEDICAL ENTOMOLOGY, 4th edition. Illustrated. By Deanne P. Furman and E. Paul Catts. 1982. Cambridge University Press, 32 East 57th Street, New York, NY 10022. 207 pp. $11.95.

A *Manual of Medical Entomology*, 4th edition by Deanne F. Furman and E. Paul Catts certainly represents an advance for both students and instructors over previous offerings on the subject.

This manual is, as it should be, geared to students who have had some prior instruction in entomology. The text is logically organized, first giving a brief introduction to terms used in morphological descriptions, continuing on to describe collection and preservation techniques, and then proceeding with 17 chapters of taxonomic keys to nearly all arthropod groups of both major and minor medical and veterinary importance. There is also a good chapter on identification of venomous arthropods and mounting and dissection of mosquitoes. The chapter on blood meal and pathogen identification is good on the former and weak on the latter. The last chapter on rearing arthropods is short and will require extensive use of the references listed.

The taxonomic keys are state-of-the-art and fairly current with the latest in systematic thought. Although New World species are the primary emphasis, there is an international flavor to most of the keys presented except in the Diptera in which below family only North American genera and species are well represented. The keys are excellently illustrated although the figures are sometimes awkwardly separated from the pertinent couplets, forcing the would-be taxonomist to use his wits as well as his vision.

Although the manual is well illustrated, some of the terminology used (e.g., habitus and porrect) are unfamilar and would require ready access to Torre-Bueno's *Glossary of Entomology*. In some keys the descriptive terms are subjective without illustration (e.g., terms such as shaggy and broad), and hence can be misleading.

I have used several of the keys and found most of them to be very workable. Of those keys tested, I found the mosquito keys to be excellent, the tick keys quite good, and the flea keys difficult, partly due to several hard-to-decipher figures with unclear abbreviations. In some cases characteristics such as festoons for ticks and the cleaver cell for tsetse flies were not utilized where they might have been.

Taken in its entirety, the manual is so well done that it left this reviewer wishing for even more, although of course there is a limit to how detailed such a manual can be without losing its general perspective. Additionally, since the manual is excellently referenced, even the specialist can find a source from which to obtain more detailed information.

In summary, I believe most anyone with an inclination to medical or veterinary entomology will want to add this manual to his collection and it should also be strongly considered for laboratory courses in the same subject areas.—John B. Gingrich, Division of Tropical Public Health, Department of Preventive Medicine/Biometrics, Uniformed Services University of the Health Sciences, Bethesda, MD 20814.

BIONOMICS AND PHYSIOLOGY OF *Culex nigripalpus* (DIPTERA: CULICIDAE) OF FLORIDA: AN IMPORTANT VECTOR OF DISEASES. By J. K. Nayar. 1982. Florida Agricultural Experiment Stations Bulletin 827. 73 pages. Distributed by Florida Agricultural Experiment Stations, Institute of Food and Agricultural Sciences, University of Florida, Gainesville.

We are probably all familiar with papers on the bionomics of some mosquito species. For the most part, these are discussions of the basic biology of the species involved. They typically include such things as descriptions of egg, larval, pupal and adult morphology; rates of egg hatch, larval, pupal and adult survival under different environmental conditions; larval development times; pupal emergence rates; adult physiology and behavior studies; data on oviposition characteristics; and longevity studies. These are normally studies on the basic biology of the mosquito involved. They are essential reading as background for those doing further research or working on control of that mosquito, and are of peripheral interest to others. Nayar's effort goes beyond this.

Although it contains all of the above types of information, it contains more of it than many similar reports. It is really a summary of about 20 years of intensive research on this vector. In addition to the above information, Nayar also includes data on such important topics as larval aggregations, copulation and insemination studies, flight behavior, dispersal, feeding and metabolism, correlations of the daily survival rates with population on density and vector potentials, vector relationships with viruses, malarial and filarial parasites, insecticide resistance and control. This information is all logically arranged in sections on Materials and Methods, Egg, Larva and Pupa, Adult, Vector Relationships and Control.

Because of the length of the work (73 pages) much of the data are presented with little information on how they were obtained, their significance, or comparisons with other species. However, extensive references (over 160 citations) allow the reader to quickly find such information. The text is well organized and written.