

BOOK REVIEW

THE EPIDEMIOLOGY OF HUMAN PEDICULOSIS IN ETHIOPIA

L. Lance Sholdt, Marvin L. Holloway & W. Don Fronk. 1979. Special Publication, Navy Disease Vector Ecology and Control Center, Naval Air Station, Jacksonville, Florida 32212. 150 p. Hardcover.



Human pediculosis still persists in most parts of the world despite improved public health and hygiene. As pointed out in the International Symposium on the Control of Lice and Louse-borne Diseases in 1972, the occurrence of body louse infestations and louse-borne diseases remains very high in some areas of many developing countries (PAHO, 1973, Proc. Int. Symp., Wash., D.C. 4-6 Dec. 1972). A considerable increase in the frequency and distribution of crab lice, *Phthirus pubis* (L.), and head lice, *Pediculus capitis* De Geer, has also been noted throughout the world. In view of these worldwide trends, the need for accurate information on the infestations and population densities of human lice is acute.

This book presents the results of a study conducted in Ethiopia during a period of 2½ years from January 1974 to July 1976. Quantitative data basic to the control of human lice and louse-borne diseases are presented with relevant information on Ethiopian ethnology, culture and socioeconomics. The lack of quantitative information about the extent of infestations and their relation to biological, socioeconomic, and politico-cultural parameters has been noted time after time, since Buxton and his colleagues made comprehensive studies on human lice in the 1930's and 1940's. This timely publication will provide the badly needed data base for developing a model for the control of lice and louse-borne diseases. An important point is that this study was conducted in Ethiopia, one of the less-developed countries with chronic economic and political problems, and which is characterized by its diversity of ethnic and cultural groups, climate and environmental settings, and important foci for louse-borne typhus and relapsing fever.

This study was based on samples taken from 5878 persons involving 49 towns and villages, and 23 prisons, throughout Ethiopia. Climatic factors such as temperature, relative humidity and precipitation were studied. Personal and socioeconomic variables examined with respect to prevalence and density of body lice and head lice were: age, sex, ethnic group, religion, education level, marital status, occupation, residency, dwelling places, crowding, and hygiene.

The book is divided into 7 sections with appendices. In the first 2 sections, importance of human lice is discussed and recent literature on human lice and louse-borne diseases reviewed. While Busvine (1978, Syst. Entomol. 3: 1-8) is cited concerning the specific ranking of the head louse, supplementary evidence presented by Schaefer (1978, Trans. R. Soc. Trop. Med. Hyg. 72: 669-70) is omitted. For Anoplura taxonomy the monograph by Ferris (1951, Mem. Pac. Coast Entomol. Soc.

1: 1-320) is cited, but the most recent major work on the higher classification of Anoplura by Kim & Ludwig (1978, Syst. Entomol. 3: 249-84), which appeared in the same journal where Busvine's work was published, is overlooked.

The next 2 sections deal with the "Study Area" and "Subjects and Methods." The field and laboratory procedures and techniques used in surveys, longitudinal and hospital studies are described and illustrated with 8 informative photographs. It appears that 2 different louse counts were used in this study: (1) estimate of louse numbers and (2) actual louse numbers and location (Appendix fig. 6). However, no reference is made as to how these counts were treated in the data analyses. The results could have been more meaningful if the treatment of these counts were stated.

The "Results and Discussion" section is the major portion of the book (pp. 20-99), followed by "Summary" and "Conclusions." The "Appendix" includes numerous tables presenting basic data on biological and socioeconomic parameters measured in the study, survey forms and study worksheets. The book closes with a comprehensive "References Cited."

Throughout the book the percentage prevalence (%) and geometric means (GM) are consistently used to express infestation rate and population density of lice. However, these measures are not precisely defined. It is clear that the percentage prevalence is the number of persons infested with lice in a given population (or sampling unit). The use of geometric means, which is less affected by extremes in the overdispersed populations, is commendable.

Population distribution of lice is usually overdispersed and tends to be negatively binomial, as shown in fig. 21 and 22. Because of an overdispersed frequency distribution, it is more meaningful to present population density with frequency distribution and mode (Md) or even median (M) in addition to the mean and standard error. On p. 60 the frequency distributions are calculated for 4794 males and females from the Addis Ababa and town populations based on persons infested with lice. However, the density of lice expressed as the geometric mean (GM) can be interpreted to mean: (1) the average number of lice per individual of the infested subpopulation, or (2) the average number of lice per individual of the entire population. The total number of lice would have been different depending upon how the GM was computed.

In the last paragraph of p. 20, table 1-4 are incorrectly cited. Table 4 should have been in place of table 1-2, table 2 for table 3-4; table 1 and 3 are for head lice.

The term "density of infestations" used on p. 21 is not clear as to what measure it is supposed to express. Aside from these criticisms and errors, this book abounds with field and laboratory data for epidemiology and control of human lice and louse-borne diseases.

In summary, this book provides long-awaited ecological data for human lice, with excellent ethnocultural information on the foci of louse-borne diseases that serves as a basis for developing epidemiological models for the control of lice and louse-borne diseases in other

less-developed countries. The book should also serve medical entomologists, epidemiologists, public health workers, ecologists and zoologists involved in the population ecology, epidemiology and control of human lice and louse-borne diseases and as a model for other human ectoparasites.

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