1971

Bibliography of Human Paleopathology (Introduction)

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BIBLIOGRAPHY OF HUMAN PALEOPATHOLOGY

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Research Reports Number 8
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PREFACE

With the renewed interest in paleopathology, the need for a comprehensive bibliography has developed. It is our hope that compilation of sources will be helpful to researchers interested in the study of disease in prehistoric and ancient societies. We have taken the liberty to include some references to studies of modern man which are pertinent to paleopathology. For example, we have included a number of references on the role of infectious disease in modern populations which we feel are important for making inferences about disease in prehistoric groups.

The references are listed by author. We realize that annotation and classification by subject matter would be helpful, but we did not have the time necessary for this phase of the study. Although we have been collecting material for this publication since 1963, we are certain that there are some omissions in our list.

We would especially like to thank Nancy H. Owen, Charlene Smith, Janet Barbra and Jean Cameron for their help in preparing this bibliography. The Interlibrary Loan Department of the University of Massachusetts Library provided assistance in obtaining material not readily available. Finally, we would like to express our gratitude to the secretariat of the University of Massachusetts Graduate School for preparation of this manuscript.

We would appreciate any comments which would help to improve future editions of the bibliography.

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INTRODUCTION

Paleopathology, the study of disease in prehistoric populations, has experienced a resurgence in the last decade. Although there are a number of factors which have contributed to this renewed interest, the diverse types of information available from the study of paleopathology played an important part in its rebirth. For example, paleopathology can provide information on the spatial and chronological dimension of a number of diseases. By placing a disease in time and space we are better able to understand its history. Secondly, the analysis of the disease pattern of a population provides an index of the biological reaction to stress resulting from both cultural and non-cultural factors. It is this feature of paleopathology which has been of greatest interest to the anthropologist in general. Wells (1964:17) summarized this point succinctly:

The pattern of disease or injury that affects any group of people is never a matter of chance. It is invariably the expression of stresses and strains to which they are exposed, a response to everything in their environment and behavior. It reflects their genetic inheritance [which is their internal environment], the climate in which they live, the soil that gave them sustenance and animals or plants that share their homeland. It is influenced by their daily occupations, their habits of diet, their choice of dwellings and clothes, their social structure, even their folklore and mythology.

Finally, the analysis of specific pathological conditions in skeletal remains can provide important information on the processes involved in normal and abnormal bone development.

The literature of human paleopathology as attested by this bibliography is voluminous. However, there is an aspect of disappointment when the history of human paleopathology is reviewed. Although there
have been contributions to both medicine and anthropology, human paleopathology never reached its potential. A brief review of the history of paleopathology may provide insight into factors which have impeded its development. Roney (1959, 1966), following Pales (1930) discusses the history of paleopathology in terms of three periods:

1. 1774-1870 The paleopathology of Quaternary fauna.
2. 1870-1900 The beginnings of human paleopathology with an emphasis upon traumatic lesions and syphilis.
3. 1900-1930 The study of infectious disease and evidence for prehistoric medical practices.
4. 1930-Present The period of the paleoepidemiology approach. The study of the relationship of the host and the environmental factors influencing the occurrence of a disease in the population.

The first publications in paleopathology according to Moodie (1923:62) were concerned with diseases in Quaternary fauna. Esper in 1774 described an osteosarcoma on the lower half of a cave bear femur. Sporadically, other publications of a specialized nature emerged during this period.

From 1870-1900, the study of Quaternary fossils continued, but an interest in pathological lesions in human specimens became a major area of interest. Virchow's publications, the first by a pathologist in the field of paleopathology, were important since they lent credibility to the study of ancient diseases. During these first two phases of the history of paleopathology, the demonstration that a diagnosis could be
made from skeletal remains provided an impetus that was instrumental in the development during the third phase. This phase from 1900-1930 can be characterized by an interest in other infectious diseases in addition to syphilis, which was already under study. Roney (1966:99) noted that during this period an interest developed in prehistoric medical and surgical techniques. In addition, scientists began to utilize modern laboratory techniques for analysis. It was during this phase of research that many of the medical techniques presently used, such as radiological examination, were first instituted in the study of ancient disease. In most instances, the new techniques never gained widespread usage. Jarcho (1966:18) has pointed out that after Moodie's 1931 volume reporting the results of radiological examination of Egyptian mummies it was not used extensively. Wells' (1963:401-402) recent review indicates that radiological examination may again become an important tool in the diagnosis of prehistoric diseases.

The greatest contributions during the latter half of this period were undoubtedly made by Armand Ruffer. Ruffer's contributions were so outstanding that he has been referred to as the first modern paleopathologist. Among his accomplishments, Ruffer (1909) demonstrated the feasibility of making microscopic sections of mummified tissue and then (1910a, 1911) was able to show a pathological lesion by utilizing this method. His discovery (1910b) of Bilharzia hacmitobii in mummified remains was an example of his resourcefulness in applying techniques of then contemporary medicine. But there is a disappointing aspect to these studies. For example, Ruffer and his colleagues examined over 10,000 burials in the first Aswan salvage project yet a tremendous amount of
information was lost since the number of observations in most instances were not given. In other words, they approached their material from a clinical rather than epidemiological perspective. Their interest was in the diagnosis of the pathology rather than attempting to describe the pathologies in terms of the population in which it occurred. The failure of scientists to approach prehistoric and ancient disease from a population perspective has been one of the most important single factors inhibiting the development of paleopathology.

Roney has suggested that the fourth period (1930-Present) is one in which the paleoepidemiological approach is emphasized. It was during this period that paleopathologists became concerned with statistical procedures which helped to describe the disease conditions in a population. In fact, it would be more appropriate to consider this a period of statistical analysis since the term paleoepidemiology is a more encompassing term. The statistical approach is best exemplified by E. A. Hooton's (1930) analysis of the skeletal series from Pecos Pueblo. Although Hooton's analysis has been considered a model of paleopathological research, Stewart (1966:44) reports many deficiencies in Hooton's work.

Present Status

In 1966, Jarcho stated that since the 1930s, there has not been a single attempt at a major synthesis of our knowledge of paleopathology or even an outstanding fundamental contribution. Although Jarcho is fundamentally correct, there is evidence that some of his pessimism is not totally warranted. Wells' (1964) popular Bones, Bodies and Disease and Jarcho's (1966) publication of the proceedings of the symposium on human paleopathology are two recent attempts at providing a synthesis. More ambitious has been Brothwell and Sandison's (1967) compendium of
57 essays on both specific pathological conditions and techniques. Recently, the Smithsonian Institution has sponsored a seminar on paleopathology which to our knowledge is the first attempt to train paleopathologists in such an extensive manner.

The present techniques for paleopathological analysis haven't changed drastically in the last forty years. Macroscopic observation and radiographic examination are still the most important methods for analysis. There have been a few techniques in analysis that have recently appeared. At the 1971 Annual Meeting of the American Association of Physical Anthropologists, the use of photon absorptiometry was described as a method for evaluating decreases in bone mineralization. Although it is gratifying to see the utilization of modern technology in the study of ancient material, we are probably in need of some basic work in defining disease entities. Only recently have there appeared studies which suggest criteria for evaluating the degree of osteophytosis on the vertebral bodies (Rogers 1966) and osteoarthritis of the humerus (Ortner 1968). Methods for recording dental attrition, or dental carious lesions are left to the individual researcher. Microscopic analysis has played a relatively minor role in analysis since most disease entities do not appear distinct at this level of analysis. The suggestion by Frost (1966) for a morphometric analysis of osteon frequency as a means of analysis has met with little interest. This could be one of the most important areas of research. Most microscopic analysis of bone structure has focussed on the use of this technique as an ageing technique overlooking its utility in the study of disease process.

Research in paleopathology has been hampered by the lack of a comprehensive bibliography. This problem is magnified by the diverse contribution
to our knowledge of human paleopathology. Art, anthropology, history, and medicine are but a few of the disciplines which have made contribution to human paleopathology. Although *Index Medicus* has begun to utilize Paleopathology as one of its subject headings, maintaining a familiarity with the literature is still a difficult undertaking. The bibliography which follows may help to aid in this task.