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Introduction

Item Type	article;article
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Download date	2026-03-14 19:42:22
Link to Item	https://hdl.handle.net/20.500.14394/2470

INTRODUCTION

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Existing approaches to the study of prehistoric humans have often taken two major trajectories, the biological (physical anthropology), and the cultural (archaeological anthropology). In order to overcome the inherent limitations in utilizing isolated trajectories, this collection of papers presents approaches towards a more comprehensive and multi - methodological study of prehistoric human biocultural adaptation.

The papers in this volume were originally presented as part of a symposium on skeletal analyses of archaeological populations at the 1979 Northeastern Anthropological Association meetings at New England College, Henniker, New Hampshire. Both the symposium and this volume are presented as a single resource for archaeologists unfamiliar with the multitude of possibilities that currently exist for the examination of human skeletal remains. The papers also suggest ways in which archaeologists may use the information generated by these techniques to further refine their own interpretations of cultural prehistory.

Archaeologists have been, on the whole, left unaware of the new techniques currently being tested on prehistoric skeletal populations. With the development of these new techniques, skeletal biologists are now able to deal with such concepts as population structure, rates of morbidity and mortality, dietary quality and quantity, disease stress and other underlying processes which can affect the growth and development of individuals, and the consequent adaptation of prehistoric human groups.

As editors, we acknowledge the redundancy and segmentary nature in this volume as a whole. However, there is no single adequate approach in print which addresses the integration of skeletal biology and archaeological reconstruction. This volume is

offered as the first step in realizing the need for more direct cooperation between the methodologies of physical anthropology and archaeology.

Historically, cooperation between biological anthropologists and archaeologists has been limited to simple descriptions of pathologies and unusual bone growths of isolated individuals. Measurements, aging, sexing and descriptive statistics of the skeletal material was the most common type of information exchanged. Little regard was given to the meaning of these exchanges for human adaptation, either biologically or culturally.

Recent interest in paleopathology and paleonutrition has generated research into the potential ways that stress can be evaluated prehistorically. Within this area, human skeletal remains have thus far remained an underutilized resource. The reason for this lies in the historical descriptive approach to skeletal analysis. The traditional study of skeletal stress and skeletal lesions has been through a single-methodology approach. While this type of an approach has led to a better understanding of isolated skeletal pathologies, interpretations have failed to explain the role of biology, culture, and the environment on both the individual and the population. The study of dietary and disease adaptation in prehistoric population necessitates the understanding of skeletal responses to stress within the context of all potential variables which may have an affect on the skeletal system's ability to respond and survive.

Pathological conditions in bone reflect disturbances in growth, maintenance, and repair, and the environmental stressors which caused them can be inferred. The identification of single causative agents therefore is not the goal of skeletal analyses. The occurrence of stress markers at different parts of the life cycle can be examined and compared to the mortality rates of the group. Information from direct examination of skeletal remains can then be combined with environmental data to provide realistic reconstructions of the human response to stress in prehistory.

These collected papers represent four levels of analysis--the population, the individual, the microscopic, and the molecular. Sullivan and Katzenberg present demographic methods for analyzing population structure and population response to stress. The traditional approach to skeletal analyses has been to isolate and describe pathologies in space and time. This approach is represented in this volume by the paper by Guinness-Hey. A more comprehensive approach is utilized by placing the various pathologies

within an archaeological context, or a space-time continuum, as in the papers by Blakey, Goodman and Clark, Saitta, Kieth and Frank. One must also understand the underlying processes which contribute to the formation of an individual's response to stress within a biocultural context. With skeletal material, a microscopic analysis greatly aids in this understanding of process as reported by Huss-Ashmore and Martin. The finest level of analysis, the molecular, provides a way to return again from the individual context to the larger physical/biological/cultural environment, as represented by the paper by Bumsted.

Neither the biological analyses, nor the archaeological reconstruction alone can give a complete picture of past human lifeways. It is only through the combination of the two, or a comprehensive approach, that a realistic understanding of biocultural adaptation can be attained.