An African Population

African Pygmies. LUIGI LUCA CAVALLI-SFORZA, Ed. Academic Press, Orlando, FL, 1986. xxxiv, 461 pp., illus. $69.50; paper, $39.95.

This book presents summaries of findings from almost two decades of collaborative research, principally focusing on the Aka Pygmies of the Central African Republic, but including some comparative material on Pygmies from Cameroon, Zaire, and Rwanda. The editor, a renowned human geneticist now at Stanford Medical School, originated the project in 1966 while at the University of Pavia in Italy and has remained its chief director and guiding spirit. Under his editorship 34 authors from 21 institutions contribute 24 chapters of data and analysis, framed by the editor's own chapters of introduction and conclusion. The research reports are organized in three groups, Demographic and Anthropological Studies (six chapters), Physiological and Medical Data (five chapters), and Genetic Observations (13 chapters). Yet the intellectual thrust of the book is much narrower than even these headings would imply. As the editor acknowledges, the chief goal "was to gain an understanding of the genetic structure of a hunter-gatherer population, in the hope that it might give us some idea of conditions in the Paleolithic." It is the intensity of this focus that is both the strength and the weakness of the book.

African Pygmies are often referred to as the largest extant hunting and gathering group, numbering by some estimates as many as 200,000 and distributed discontinuously across the rainforest belt of tropical Africa from Cameroon to Rwanda. In fact, they are perhaps best referred to as "exchange foragers," since they are everywhere found in a mutualistic relationship with horticulturists, exchanging labor and forest products for manufactured items and garden produce. Among Pygmy groups themselves there is considerable cultural variation in residence patterns, foraging techniques, and degree of acculturation, nor do they speak a common language. Yet their short stature sets them apart from all other groups in central Africa. That and the assumption that their ancestors were the "primordial" inhabitants of the rainforest account for the fascination they hold for students of human biology and evolution.

The papers in this volume present a wealth of detailed, quantitative information on selected aspects of Pygmy biology, all the more impressive given the logistical difficulties presented by the remote field situation. The demographic and anthropometric studies are limited by the paucity of longitudinal data. This becomes particularly frustrating in the chapter by Van de Koppel and Hewlett on growth, where the important suggestion is made that Pygmy stature is due primarily to an absence of an adolescent growth spurt, a hypothesis that can hardly be tested without longitudinal data. Other chapters demonstrate beautifully how far limited data, if carefully collected, can take you, especially the chapters on exploration and mating ranges by Hewlett, Van de Koppel, and Cavalli-Sforza and on emic death etiology by Hewlett, Van de Koppel, and Van de Koppel. The section on medical data suffers from several inherent difficulties, principally the fact that nutritional analyses depend on data from only a single season of the year when the groups studied are relying most heavily on garden foodstuffs. Merimee and Rimoin review their studies of the endocrinology of Pygmy growth, championing the hypothesis that a specific deficiency of IGF-I is the cause of their short stature. Some question remains, however, concerning the adequacy of the control exercised over nutritional status in these studies.

The largest section of the book, representing the heart of the project as a whole, is devoted to the analysis of genetic polymorphisms, including blood groups, immunoglobin markers, HLA antigens, hemoglobins and transferrins, digestive enzymes, red cell enzymes, transport proteins, and phenotypic variants such as color blindness and dermatoglyphics. The sum of this information supports a few notable conclusions: that Pygmy groups are closer to each other, genetically, than to other African groups; that there has been considerable admixture of non-Pygmy genes in the Pygmies of Cameroon, the Central African Republic, and Rwanda; and that the Pygmies of Zaire's Ituri Forest show the least genetic adulteration. Analysis of the inheritance of height suggests that a very few loci without dominance may control the expression of short stature, while no evidence is found for active selection at any locus other than the expected absence of Hb-S homozygotes.

In his summary chapter Cavalli-Sforza focuses on a few questions: Are there special genetic consequences to be expected from the social demography of Pygmy groups? Can Pygmy stature be understood as a consequence of natural selection for thermal efficiency in a rainforest environment? What is the genetic relationship of Pygmies to other African groups? Yet when the final section returns to the theme of Pygmies as models for Paleolithic humanity I am unavoidably reminded of how narrow an exploration of that theme this book represents. The key question really seems to be whether Pygmies can be used as a model of Paleolithic population genetics. Unfortunately this is not a central question for most students of hunter-gatherer societies or human ecology, or even, any more, for most students of human evolution. This book may be the best example of an area of research that peaked over a decade ago.

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