

# Mountain Field and Family

The Economy  
and Human Ecology  
of an Andean Valley

Stephen B. Brush



**Mountain, Field, and Family:  
The Economy and Human Ecology  
of an Andean Valley**

---

**Stephen B. Brush**

**University of Pennsylvania Press • 1977**

**Library of Congress Cataloging in Publication Data**

Brush, Stephen B. 1943—  
Mountain, field, and family.

Bibliography: p.  
Includes index.

1. Peru—Economic conditions—1968      2. Indians  
of South America—Peru—Economic conditions.  
3. Peasantry—Peru. I. Title.

HC227.B79      330.9'85'063      77-24364  
ISBN 0-8122-7728-7

Copyright © 1977 by Stephen B. Brush

All rights reserved

Printed in the United States of America

## **Mountain, Field, and Family**

## Acknowledgments

The preparation of this book would not have been possible without the encouragement and wisdom of many other people. The restrictions of a preface such as this make it impossible to acknowledge all of the people who have, in one way or another, assisted me in my years as a student and traveler. The people of northern Peru have been most hospitable to me as a Peace Corps Volunteer and then as an anthropologist. They have given me hours of their time and food from their sometimes meager larders. Officials throughout the Peruvian government have been patient and helpful. Institutions that were particularly helpful include the *Instituto Geográfico Militar* for maps and air photographs, the *Biblioteca Nacional* and the *Archivo Nacional* for historical material, the *Ministerio de Relaciones Exteriores* for visas, and the *Prefectura del Departamento de la Libertad*. Both my wife and I owe our deepest gratitude to Enrique Mayer and his family for their hospitality to us in Lima.

In order to acknowledge our debt to individuals in Uchucmarca, I would have to list the Community roster. The officials of the Peasant Community of Uchucmarca, especially the President, Juan Abanto Merín, and the officials of the Municipal Council, especially the mayor, Tulio Navarro Díaz, were invaluable during the research period. Village schoolteachers were also especially helpful, particularly Ruperto Llaja Prieto and his wife Aurora Vega Rengifo, and Napoleon Navarro Prieto and his wife María Sánchez. Friends and neighbors surrounded us and made us feel at home in their lives. We were constantly welcome in the kitchen of Margarita Vega and her husband Gregorio Peyrera. The family of Julio Vega Navarro was kind enough to house and feed me for several weeks while I was in Pusac at the lower end of the Uchucmarca Valley. To Milciades Rojas Sagastegui and his wife Engma Rojas Navarro, I owe a special note of gratitude as my principal informants. I could extend this list out longer than anyone would care to read, but to those unnamed my debt is just as great.

My work was generously funded by the National Science Foundation (grant GS-2836) and by supplementary grants from the University of Wisconsin Ibero-American Studies Ford Fellowship programs. These allowed me to stay in Peru for extra months, and a Summer Fellowship gave me time to think and write. I am also indebted to the Faculty Research Committee of the College of William and Mary for supporting my continuing research in Uchucmarca and Peru.

To my friends, colleagues, and professors at the University of Wisconsin

sin and the College of William and Mary, I owe a great deal for their support and guidance. Dr. Donald Thompson, with whom we covered many adventuresome and enjoyable miles, was responsible for the funding that allowed me to conduct the research; and it was through his insights that the fascination of the eastern Andes became real to us. Dr. Arnold Strickon trained me in much of the anthropology I used in the field and later became a mentor in the preparation of this book. Dr. William Denevan primed me in cultural ecology and the importance of understanding a people's subsistence system. Dr. John Hitchcock has helped me to understand one Andean culture through his research into another mountain culture in the Himalayas. I am certain that no one writing about mountains or mountain peoples has had better or more tireless help in preparing their manuscript than that given me by Mrs. Susan Glendinning. Mrs. Sharon Vaughn helped with her preparation of Maps and Charts.

Finally to my wife Peggy, I owe a debt which is impossible to repay in words. Without her constant companionship and assistance through both happy and difficult times, this book might not have ever been completed. She made a home for us in the Andes that was very hard to leave. I dedicate this book to her.

## Preface

"Oye . . . Delfín," came the firm whisper and gentle tug on the heavy blanket pulled over his sleeping head. "It's early and time to go," said Rosa as she turned to go out to the kitchen where she had already laid a fire in preparation for breakfast. Delfín and Rosa did not own a radio to get the time from Radio Nacional like some of their neighbors, but the early cock's crow was warning enough that the day would soon begin. It was 4:30 A.M., and Delfín eased himself out of the bed trying not to awaken Carlitos. Rosa was popping maize into *cancha* and boiling water for their usual cinnamon and molasses tea. As she patted out the wheat cakes, she reminded herself to ask Delfín to bring her a length of bamboo from the banks of the river near Santa Cruz to make a blow pipe for the fire. Carlitos had broken the last one trying to break dirt clods in front of their house as he had seen his father do with a hoe in their fields.

As Delfín pulled on his sweater and pants and fastened his rubber tire sandals, he thought of the day ahead. Yesterday, he had brought the mare from her grazing area above the village so that he would not have to waste time on that today. If he could get off before the sky became too clear, he could be well into the lower valley before mid-morning. His ultimate destination that day was the maize field in Balón owned by his cousin Praxides. They had been partners on this plot for two seasons now. Delfín's neighbor Gregorio had spotted a pair of mules from the other side of the valley browsing in the field and had managed to scare them off with some shouts, but Delfín would have to go there himself to survey the damage; he would have to find the hole in the stone and brush barricade that had let the mules through. He hoped that the mending job would not be too serious. With luck Delfín could find the mules or someone who had seen them and could identify them so that he could seek retribution from the owner. Maybe the damage was not appreciable.

Delfín also wanted to check the fences around his field peas in the middle valley. From there he would climb to his other maize field; he would have to decide whether a second weeding would be necessary. If so, he would have to busy himself looking for friends and kinsmen to help him. He could at least count on his uncle, Eusebio, and on Tulio, whose crop he had helped weed last week. Besides these he would still have to hire a couple of peons. It looked like a good crop year in the lower valley with an abundance of rain. Delfín knew he had made a good decision in specializing in maize this year. If his harvest was large enough, the payments to the peons would

not make a serious dent in their maize supply. He should harvest enough maize to exchange for potatoes; his own potatoes had been almost ruined by an attack of late blight. Luckily, there were always people who wanted to trade potatoes for maize.

Delfin and Rosa ate in silence. As he pulled on his poncho, she reminded him about the blow pipe. He smiled at the thought of his son Carlitos trying to use the bamboo instead of a hoe. As he struck off down through the village toward the lower slopes, he reminded himself to keep an eye open for any ripe custard apples along the trail; they would make a special treat for his young wife and son. As he crossed the plaza, he greeted Geronimo who was headed to the pastures above the village with salt for his three cows. Delfin left the village alone, but he knew that he would meet several of his neighbors and kinsmen in the lower valley; this thought made him smile for the second time that day.

This describes the beginning of a typical day for one family in the village of Uchucmarca in northern Peru. It briefly traces the path of one man for one day. Later that year, the direction of his path will be reversed. Instead of going down the valley to the lower crop zones, he will hike upward to work in the potato fields which lie on the upper slopes of the valley. If we followed his pathways and the pathways of his fellow villagers in the valley throughout the year, their imprints would cover the terrain like a web. This book will describe and analyze some of the features of the physical and social environment of one Andean village and valley. I hope to show how the village culture and individual inhabitants have adapted to the Andean landscape which surrounds them. In doing this, I will discuss the decisions and actions taken by individual villagers in their attempt to meet the demands placed upon them by their culture and in the face of obstacles placed before them by the factors of time, space, and the social structure within which they live. Their environment includes natural resources (principally land) and human resources (principally labor), which are available to and can be used by a particular individual. In addition, there are a number of institutions and reciprocal relationships that an individual may utilize to gain access to the resources needed for subsistence.

In speaking of adaptation, I am referring to the process by which behavior is fashioned in such a way as to attain certain ends. My concern here is the set of cultural and personal patterns by which the people of one Andean valley in northern Peru produce and procure food.

The natural environment in which they live is marked by tremendous diversity owing to the nature of the steep environmental gradient of the Andean landscape. The adaptations designed to produce enough food to sustain the lives of the participants in the culture are treated as two separable, but interrelated, types. On one level are cultural adaptations that allow the people of Uchucmarca to extract adequate subsistence from the Andean envi-

ronment. I will examine three such adaptations here: spatial-demographic, technological, and socio-economic.

The second type of adaptation involves the day to day behavior of the individuals as they attempt to meet the need of feeding themselves. This type of adaptation is looked at as a strategic behavior for subsistence. These subsistence strategies are not only a response to the Andean environment but also a response to the socio-cultural environment of the village of Uchucmarca.

The initial stages of this project began in the spring of 1969 when Dr. Donald Thompson asked me to join a team that would go to the eastern slopes of the central Andes of Peru in 1970. The object of the project was to investigate late pre-Hispanic occupation of the eastern Andes, drawing on archaeological, ethnohistorical, and ethnographic sources. It was hoped that all three of these would provide information about the prehistoric and modern land use patterns of the Andes. Of particular interest was how people before and after the Spanish Conquest utilized the highly diverse Andean landscape. Besides Dr. Thompson and myself, other members of the project included Dr. Rogger Ravines of the Museo Nacional de Antropología y Arqueología and Mrs. Ann Saddleire Rovner.

The first field operation in Peru was an extended survey in the area of the upper Marañón River in order to locate a site that would be satisfactory to the different members of the project. This survey, which lasted four months, covered roughly 300 kilometers of the upper Marañón River from the Department of Huánuco to the Department of Amazonas. An extended survey was conducted in the area of Llamelín in eastern Ancash. At one point my wife and I traveled by horse and foot from the high jungle area of Monzón to the town of Rapayán on the western side of the Marañón. This trip took some five days and brought us within sight of the spectacular Cordillera Blanca of the Callejón de Huaylas.

Our first introduction to Uchucmarca came in early October 1970. On that first trip, which lasted five days, I sensed that this village would be a good one to live in and study. The Peasant Community of Uchucmarca controlled a valley that contained many of the Andean zones we had explored further south; the factors of size and isolation were satisfactory; the village was in an area that had hitherto been unstudied by anthropologists; finally, and perhaps most importantly, the people of Uchucmarca were among the most open and hospitable we had encountered in our months of surveying.

After deciding that Uchucmarca was, indeed, the place where the research would be most satisfactory, my wife Margaret and I prepared for the trip that would establish us in a permanent field station. We arrived with three mules laden with supplies in early December 1970. After renting a house from one of the village schoolteachers, laying a hearth, digging a latrine, and having a table and a couple of chairs built, the research on an An-

dean ecosystem began. A regular schedule of interviews with friends and informants was kept, and notes were recorded at night. With the help of a paid assistant, Sr. Milciades Rojas Sagastegui, I conducted a lengthy census covering over 90 percent of the village. Later on, Milciades and I surveyed a selected number of households to determine labor inputs into and outputs from agriculture. These households were visited several times in an effort to cross-check their information. Besides these surveys, censuses, and interviews, my wife and I worked on maps of the village and of the Uchucmarca Valley, and we made as many trips as possible into the surrounding area to observe people at work in the subsistence agriculture of the community. In November 1971, after eleven months in the village, we departed from the place and people who had taught us so much.

In 1974, I revisited the village from June to August, where I was greeted with the same hospitality that brought us to Uchucmarca in the first place. During the three years of my absence, the outward appearance of the village had undergone change: a cement border and walk had been completed around the plaza, construction of a market place had begun, and a vacant room under the municipality had been converted into Uchucmarca's first secondary school. These changes, I feel, are highly representative of how dynamic this "traditional peasant" village is. As I hope to show in the following pages, these changes are the latest steps in the on-going adaptation of the village to the Andean landscape and culture that surround it.

# Contents

Preface	xi
Acknowledgments	ix
<b>1 The Andean Way: Cultural Adaptation to a Mountain Environment</b>	<b>1</b>
Andean Geography	
Verticality: The Human Ecology of the Andes	
The Andean Resource System	
Patterns of Andean Zonation	
Studying Subsistence Systems among Mountain Peasants	
Field Methods	
<b>2 Uchucmarca: The Village and its People</b>	<b>22</b>
The Village of Uchucmarca	
The Upper Marañón River and the Eastern <i>Cordillera</i> Population	
<b>3 The Early History of Uchucmarca</b>	<b>40</b>
Pre-Hispanic History: Chachapoyas	
The Prehistory of Uchucmarca	
Inca Domination	
The Spanish Conquest	
Uchucmarca after the Spanish Conquest	
Cultural Development of Uchucmarca	
<b>4 The Formal Organization of Uchucmarca</b>	<b>54</b>
The Peasant Community	
District Organization	
Intercommunity Conflicts	
Religious Organization: Saints and Celebrations	
<b>5 Resources For Subsistence: Land</b>	<b>69</b>
Life Zones of the Uchucmarca Valley	
Crop Zones and the Folk Taxonomy	
The Determination of Crop Zones	
Settlement Location in the Valley	
Land Tenure	
Land Distribution	
Alternatives to Ownership: Sharecropping	

<b>6 Agricultural Technology and Labor</b>	<b>91</b>
Tools	
Farm Procedures	
Erosion Control and Fallow	
The Agricultural Calendar	
Phase of the Moon	
<b>7 The Exchange of Labor and Goods</b>	<b>104</b>
Reciprocal Labor	
Nonreciprocal Labor	
Exchange Mechanisms	
The Use of Cash	
Livestock	
<b>8 The Myth of the Idle Peasant</b>	<b>117</b>
The Employment Question	
Economists' Approach to Underemployment	
Economists' Critique of the Concept	
Anthropological Approaches to Underemployment	
Case Study of a Full-Employment Peasant Economy	
Nonagricultural Activities	
<b>9 How the Economy Works:</b>	<b>133</b>
<b>The Role of Kinship</b>	
Households	
Selecting a Marriage Partner	
The Extended Family	
The Role of Kinship in <i>Sociedad</i> : Case Studies	
The Role of Kinship in <i>Sociedad</i> : Overview	
Reciprocal Relationships as Action-Sets	
<b>10 A Peasant Economy in the Modern World</b>	<b>153</b>
Spatial-Demographic Adaptation	
Techno-Economic Adaptations	
Socio-Economic Adaptations	
Adapting to a Developing World	
<b>Appendix 1</b>	<b>165</b>
Religious Celebrations	
Secular Celebrations	
<b>Appendix 2 Potato Varieties</b>	<b>170</b>
<b>Appendix 3 Food Yields from</b>	<b>174</b>
Uchucmarca Agriculture	
<b>Bibliography</b>	<b>179</b>
<b>Index</b>	<b>193</b>

## List of Maps, Figures, Tables, and Illustrations

### Maps

1. Peru	3
2. Types of Andean Zonation	12
3. Location Map of Uchucmarca	23
4. Uchucmarca Valley	25
5. Uchucmarca	27
6. Life Zones of Uchucmarca Valley	71
7. Crop Zones of Uchucmarca Valley (Schematic Diagram)	75
8. Crop Zones of Uchucmarca Valley	76

### Figures

1. Immigration to Uchucmarca (Upper Valley Area)	34
2. Immigration to Pusac	36
3. Percentage of Total Population Per Age Group	38
4. Perceived Environmental Hazards Beyond Crop Zones	82
5. Agricultural Calendar	100
6. Planning Agricultural Activity According to Plot Fertility and Phase of the Moon	103
7. Average Labor Demands in Field Agriculture—Per Family	131

### Tables

1. Immigration and Marriage in Uchucmarca (by household)	31
2. Percentage of Certain Crops Planted in Different Zones during 1970	81
3. Acquisition of Chacras	84
4. Average Landholdings Per Household / Average Size Per <i>Chacra</i>	86
5. Land Under Sharecropping	88
6. Percentage of Households Involved in Agriculture	89
7. Labor Inputs Per Hectare in Man-Days	96
8. Percentage of Agricultural Labor by Crop	97
9. Timing and Nonworkdays Associated with Saints' Days	101

10. Payments in Crops Compared to Cash	108
11. Percentage of Crops Sold	115
12. Average Labor Requirements by Crop	130
13. Average Labor Requirements and Employment in Uchucmarca	132
14. Types of Kinship Relations of <i>Socios</i>	148
15. Outputs Per Man-Day and Per Hectare	174
16. Nutritional Values for Crops—Calories and Protein	175
17. Nutritional Outputs Per Man-Day and Per Hectare in Terms of Calories and Grams of Protein	175
18. Contributions of Crops to Available Calories and Proteins Per Day	177

### Illustrations

*between  
pages 90 and 91*

1. Aerial photograph (1962) of Uchucmarca.
2. Central plaza of Uchucmarca.
3. Typical house with kitchen on the left. Stairs on the right lead to a storage area where grains and tubers are kept.
4. Spinning and weaving.
5. House roofing *fiesta*. Women prepare a feast while the men finish the tile roof.
6. Guests at a *faena* feast on hominy, chicha, and mutton soup after threshing wheat.
7. Men and women along the side of the municipal building during a meeting of the Peasant Community of Uchucmarca.
8. A communal labor day to level village streets rutted during the rainy season.
9. Grandmother and her grandson.
10. A meeting of the Peasant Community of Uchucmarca. Men in foreground, women behind.

## **The Andean Way: Cultural Adaptations to a Mountain Environment**

Unlike so many people, I was not at all depressed by a sojourn in a narrow valley where the slopes, so close to one another as to take on the look of high walls, allowed one to glimpse only a small section of the sky and to enjoy at most a few hours of sunlight. On the contrary, I found an immense vitality in the upended landscape. Instead of submitting passively to my gaze, like a picture that can be studied without one's giving anything of oneself, the mountain scene invited me to a conversation, as it were, in which we both had to give of our best. I made over to the mountains the physical effort that it cost me to explore them, and in return their true nature was revealed to me. At once rebellious and provocative, never revealing more than half of itself at any one time, keeping the other half fresh and intact for those complementary perspectives which would open up as I clambered up or down its slopes, the mountain scene joined with me in a kind of dance—and a dance in which, I felt, I could move the more freely for having so firm a grasp of the great truths which had inspired it.

Claude Lévi-Strauss (1967: 334)

The environments and landscapes of the high Andes are among the most spectacular on earth, providing constant variety and challenge to inhabitants and travelers alike. The great altitudinal differences, which can be traversed in a matter of hours or days, offer a series of climates that in other parts of the world where latitude is the determining factor may take weeks and even months to cover. Mountainous terrain compresses the major climatic zones of the world into single hillsides and valleys. There are places in the Andes where one can stand in a temperate valley, surrounded by tropical crops and wild flowers and look up across a landscape where trees and other vegetation dwarf, become tundra, and eventually disappear beneath a cover of permanent snow and ice. The vitality of the land and climate constantly impresses itself upon the viewer.

As one travels through the Andes, two things become apparent by their repetition. The first is the immense variety of the mountain landscape with its multiple altitudinal floors, each characterized by different micro-climates and biotic communities. The second is the adaptation of the indige-

nous population to this landscape. This book examines these two factors and how they relate to one another in one Andean valley. For some eighteen months, my wife and I traveled and studied the relationship between these two factors in northern Peru. For eleven months of that time, we lived in one village which is characteristic of other isolated villages in the Peruvian Andes. The village was Uchucmarca, standing at some 3,000 meters in altitude. To the west of the village, within one long day's horse ride, flows the Marañón River, which has carved an immense canyon some 3,500 meters deep.

This rugged terrain has imposed isolation on the Andean people. The fragmented landscape divides and isolates the areas which are inhabited. Footpaths, horse trails, and roads must be laboriously carved into hillsides, and some are washed out yearly in the winter rains. Distances can be deceptive. I remember standing on a pass on a clear day and looking westward over the rolling ridges which characterize the northern Andes. Within easy eyeshot were a road and some houses; they would take some twenty hours to reach by conventional transportation: walking or perhaps riding a horse or mule. By using the modern means of transportation (horse plus pickup truck), this distance might be reduced to twelve hours.

Regional and national integration have been objectives of political regimes in the Andes for a thousand years. The fame of the Incas rests squarely on their success in this integration. For most Andean people, however, the links to the outside world have been too ephemeral and fragile to depend on. Thus they have adapted their cultures and economies to the local environment, creating independent and self-sufficient subsistence systems based on cultivation and herding.

### Andean Geography

Peru has attracted some of the world's finest geographers, such as Humboldt and Raimondi, and such well-informed travelers as von Tschudi and Squier. Like contemporary scholars, these men were drawn to an area where dramatic changes in altitude yield a series of environmental shifts (variations in temperature, rainfall, drainage, exposure, and slope) that in turn directly influence the natural biotic community. As one geographical observer noted about the Andes, "nowhere else on earth are greater physical contrasts compressed within such small spaces" (Milstead 1928: 97). The descriptive and analytical challenges which this natural complexity pose are obvious. The traditional starting point for students of the Andean area has been the three major zones which characterize Peru. These are the Pacific coastal desert (*costa*), the Andean highlands (*sierra*), and the Amazon lowland forest (*selva*). A fourth, which has gained increasing attention as a frontier zone, is the intermediate *montaña* lying between the highlands and the eastern low-



S. VAUGHN

MAP 1. Peru