



This is to certify that the

thesis entitled


REJUCAL: SOCIAL VALUES AND CHANGES  
IN AGRICULTURAL PRACTICES IN A  
CUBAN RURBAN COMMUNITY

presented by

GEORGE MILLER STABLER

has been accepted towards fulfillment  
of the requirements for

Ph.D. degree in Sociology and  
Anthropology



Major professor

Date July 29, 1958



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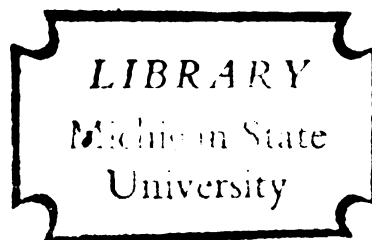
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BEJUCAL: SOCIAL VALUES AND CHANGES IN AGRICULTURAL  
PRACTICES IN A CUBAN RURAL COMMUNITY

By

George Miller Stabler

AN ABSTRACT

Submitted to the School of Graduate Studies of Michigan  
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in partial fulfillment of the requirements  
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DOCTOR OF PHILOSOPHY

Department of Sociology and Anthropology

Year 1958

Approved

W. A. Stabler



## ABSTRACT

Research conducted in Bejucal, Cuba, in 1954 employed a community ethnographic survey and a questionnaire interview survey of forty-four farmers. The ethnographic research was preliminary to the questionnaire study which was focussed upon the general question: What patterns of personal background, career experiences, social relationships, occupational definitions, value commitments, self-definitions, and operator role performances are associated with an advanced technological status for an individual family-sized farm operator?

The community survey found the municipality to be predominantly urban in population and in cultural orientation. The economy was privately owned, money-oriented, secular, and organized in many small shops, factories, retail outlets, and farms. Political life was organized in parties and personal followings. Governmental functions were administered bureaucratically. While Roman Catholic religious belief was widespread, participation in religious practice and ritual was limited to only a small number of people. Recreational and welfare activities were locally organized by family, kin-group, and voluntary associations. The family was the most important group in the lives and emotions of most people. Rural people composed a distinct class and lived in scattered homesteads on their farms. Most farms were small, owner or renter-operated units, producing milk, fresh vegetables, eggs, chickens, and pork for the Havana market.

A category of twenty-two of the most advanced Bejucal farm operators was identified by a panel of judges. Each of these farmers was paired with one of his adjacent neighbors not so advanced technologically. A survey of their farming equipment and methods of operation revealed systematic differences between the two categories of adjacent neighbors. The two categories were not significantly different in age, farm or career background, formal education, or mobility. Almost all were raised on farms, learned farming from their fathers, had married and had children. Both categories of farmers possessed strong family ties.

The formation of a debtor-creditor relationship between the more advanced farmers and commercial harvester-businessmen was the principal channel for the introduction of irrigation systems and the farm tractor complex in association with cash crop vegetables. The spread of new traits involving no changes in either power sources or enterprises occurred chiefly from farmer to farmer, most usually as friends and neighbors.

The higher technological status of the advanced category of farmers did not result in their breaking completely with the traditional social relationships, traditional evaluations, or traditional self, other, and role definitions held by their adjacent neighbors. Nor did they view themselves as deviants from the customs of the community. They were distinguished from their neighbors by farming larger acreages, doing a larger gross annual business, their greater likelihood to advocate and employ the services and counsel of the agricultural

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**BEJUCAL: SOCIAL VALUES AND CHANGES IN AGRICULTURAL  
PRACTICES IN A CUBAN RURBAN COMMUNITY**

**By  
GEORGE MILLER STABLER**

**A THESIS**

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Michigan State University of Agriculture and  
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the requirements for the degree of**

**DOCTOR OF PHILOSOPHY**

**Department of Sociology and Anthropology**

**1958**



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The field research in Cuba proceeded under the guidance and assistance of Dr. Olen E. Leonard and Professor Kenneth Tiedke. At Michigan State University, Dr. John Useem, Dr. Duane Gibson, and Dr. Joel Smith generously gave their advice concerning the analysis of the data.

The preparation of the final form of this dissertation has progressed under the direction and generous advice of Dr. Iwao Ishino. The writer also wishes to thank the other members of his guidance committee: Dr. Charles Hoffer, Dr. J. Allan Beegle, and Dr. Lawrence Witt. He is grateful for their encouragement and their suggestions.

For her many hours of typing and her unceasing encouragement, the writer thanks his wife, Jeanne J. Stabler. To his friends in Bejucal, too numerous to name, he is grateful. Without their kind hospitality and cheerful cooperation the research efforts of the writer would have been difficult indeed. The writer also extends his thanks to Dr. Ralph Allee of the Inter-American Institute of Agricultural Sciences and to the many able members of the Project 39 staff in Havana, in 1954.

# VITA

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inspector (county agent), and the use of credit for capital improvements on their farms. The technological innovations they had adopted were chiefly diffused from the more technologically advanced nations of North America and Europe, through inter-societal role networks of a governmental and commercial nature.

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## I. INTRODUCTION

### Background of the Research

From January to September of 1954 the writer was a research assistant in a joint research program in rural sociology and applied anthropology conducted by the Area Research Center of Michigan State University and the Inter-American Institute of Agricultural Sciences. This program of cooperative research, including social science research training was started in 1947. One of its educational purposes was to train scholars in sociology and anthropology and in social scientific research methodology. Its research objective was to provide reliable knowledge of Latin American rural communities and to learn how their residents might be assisted in raising their material levels of living through applied technology and adult education.

Before 1953, almost all of the research done under this program had been conducted in the Turrialba Valley in Costa Rica, site of the Inter-American Institute of Agricultural Sciences. Since then, rural sociological research was also conducted in Cuba as a part of the program of the Inter-American Institute of Agricultural Sciences' execution of Project 39 of the Organization of American States. Project 39 was, and is, aimed at raising rural levels of living by the development of Agricultural Extension agencies and community development methods. In 1954 leadership of the program was the responsibility of A. B. Lewis, Director of Project 39, Dr. Ralph H. Allee, Inter-American Institute of Agricultural Sciences, Dr. Olen E. Leonard,

Director of the Northern Zone of Project 39, and Dr. Charles P. Loomis, Director of the Area Research Center, Michigan State University. They collectively viewed social scientific research as essential to the development of the change promotion program of adult education and of great importance for the social scientific training of the graduate students and Extension personnel affiliated with the program.<sup>1</sup>

The writer, a graduate assistant in the Department of Sociology and Anthropology at Michigan State University, arrived in Cuba with his wife and a year old daughter in January of 1954. He moved almost immediately to a small city named Bejucal located about twenty miles south of Havana. Under the guidance of Professor Kenneth E. Tiedke of Michigan State University, who was in Cuba under the cooperative program, the writer began an ethnographic survey of the people of the town and its surrounding countryside. Using an ethnographic outline as a guide, the writer observed a wide variety of community activities and discussed the town's patterns of social relationships with informants drawn from many age and occupational levels.

In general, the people of Bejucal received the writer and his family warmly, after some initial suspicion concerning their motives for being in the locality and asking so many questions. Having

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1. Ralph H. Allee, "Turrialba Contribuye al Advance de la Ciencia Agricola en las Americas." Pamphlet. Turrialba, Costa Rica: Instituto Interamericano de Ciencias Agricolas, 10 pages. See also Olen E. Leonard, "Informe Anual -- 1953," Instituto Inter-Americano de Ciencias Agricolas, Programa de Cooperacion Tecnica sobre Ensenanza Tecnica para el Mejoramiento de la Agricultura y de la Vida Rural, Havana, Cuba. Mimeographed, 14 pages.

previously been interviewed for census and educational purposes, the adult citizens of Bejucal were familiar with the respondent's role in information-gathering surveys. It soon became quite widely known that this was the purpose of the writer's presence. His wife, through friendship with neighboring women gained additional information which a male interviewer could have gathered only with great difficulty, if at all. Part of each day was spent recording notes of observed events and information gained from informants. Occasionally short notes were taken in the field, but usually they were recorded upon returning home. The writer's rapport with informants was excellent in almost all cases.

The ethnographic survey lasted five and one-half months.

Then, in the summer of 1954, the writer interviewed forty-four Bejucal farm operators to learn more about their farming technology, their life experiences, their value commitments and their attitudes. This survey of farm operators forms the primary data of this dissertation. The ethnographic data provides background information for the survey findings.

#### Purposes of the Research

The investigation to be reported in this dissertation was intended to deal with a single major problem and a number of related sub-problems. The principal problem was as follows: What patterns of personal background, career experiences, social relationships, occupational definitions, value commitments, self definitions, and operator role performances are associated with an advanced technological status for an individual family-sized farm operator?

The problem arose in response to both practical and theoretical considerations. First, it arose in response to the practical desire of the agricultural educators connected with Project 39 to understand why some farmers readily accepted recommended innovations while others either delayed in accepting them or did not accept them at all. These educators also wished to be able to predict which farmers would make the most rapid progress if educational efforts were started in the community. Second, it grew out of the writer's theoretical interest in the relationship of technological change to social relationships and to value systems.

Third, it was believed that a contribution could be made to the Turrialba Valley, Costa Rica, research through the study of the technical changes of individual farm operators on family-sized farms. In the research in the Turrialba Valley, Charles P. Loomis and associates, found that in communities of relatively small family-sized farms certain farmers were much more important than others in spreading information and in influencing others to change their farming procedures. It was found that these farmers held central positions in informal networks of visiting and friendship relationships between neighbors and family members.<sup>2</sup> In his study of San Juan Norte, a community of family-sized farms in the Valley, Alers-Montalvo found that the adoption of a new practice in the fields of agriculture, health, and nutrition was dependent upon a need being felt for it, its

---

2. Charles P. Loomis, Julio Morales, Roy A. Clifford, and Olen E. Leonard, editors and directors. Turrialba: Social Systems and the Introduction of Change. Glencoe, Illinois: The Free Press, 1953.



ability to fit into the culture of the group and "objective proof" of its workability.<sup>3</sup> He also found other variables to be of lesser importance: the sponsor of the item, the image the group had of him, the method used in the attempt at change, the social status of the innovators in the group, and the position of the innovator in the leadership structure of the group.<sup>4</sup> These studies focused upon community social systems and upon case studies of particular changes.

This dissertation shifts the focus to the individual farm operator and his acceptance or rejection of change in a community which provides multiple opportunities for making changes. The Turrialba Valley findings encouraged such a shift, finding that in communities of small farms the operator generally has the authority to accept or reject changes proposed by others. Why he does so is not determined for him by others -- as in the hacienda -- but by his decisions as operator. But the Turrialba Valley data already suggest clearly that such "individual" decisions are not made without reference to community social arrangements, internalized socially shared values and definitions, and the experiences of social actors in interaction with others. The investigation reported in this dissertation is a study of the operation of such components of individual decisions to accept or reject technical change so that the general question posed above can be answered. While economic questions of resources, proportionality, and scale of

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3. Manuel Alers-Montalvo. Cultural Change in a Costa Rican Village. Unpublished Ph.D. Thesis, East Lansing: Michigan State College, 1953, 185 pages.

4. Ibid., p. 156.

enterprise are undoubtedly involved in the successful or unsuccessful adoption of technical change on family-sized farms, the focus of this dissertation is upon social, cultural, and social-psychological factors. Some attempt to control variations of this sort is made in the research design to be reported below.

### The Research Design

The solution of the major problem of this dissertation was undertaken in two steps, each of which is briefly sketched here. Each is considered in more detail in later chapters.

The operational definition of the phenomena of technological status in agricultural production in Bejucal, Cuba, and the development of a scaling procedure by which the relative technological status of individual farm operators could be determined was the first step. This was accomplished by: (a) the identification of a category of "the most advanced farmers" in the community by a panel of judges who knew the farmers well; (b) matching each "advanced farmer" identified by the panel with an adjacent neighbor not so identified but possessing natural resource opportunities approximately equal; (c) making a technological inventory survey of the machinery, implements, crops, and livestock employed on each of the farms in the sample of "advanced" farmers and paired "neighbor" farmers; (d) analysis of the survey data to determine which technological items differed (in any direction) between the two categories by statistical test; and (e) the ordering of the sample farmers on a technological scale by numerically weighting those items which differed between the categories to determine whether

or not the "advanced" farmers were more advanced by this objective set of criteria.

The idea of technological status in agricultural production was developed in somewhat the following manner. In Bejucal it was observed that farmers who lived on adjacent farms sometimes differed radically in the technology they employed. At the extreme of difference there were neighbors, one of whom employed modern irrigated mechanized farming practices in raising vegetables and livestock and the other of whom farmed with hand-powered and animal-powered implements of the sort that were developed in the eighteenth or nineteenth century (or even earlier). The "advanced" farmer kept his fields in activity all of the year by irrigation during the dry season and used fertilizers and insecticides. He had a reputation for being "advanced." The neighbor farmer using traditional methods was able to plant only in certain seasons, left his fields to fallow to restore some of their fertility, had no protection against insect damage and had no reputation of being "advanced." The research problem immediately presented itself: how could such obvious differences be reliably and validly measured so that technological status could be related to other variables?

The second step was the testing of certain concrete hypotheses concerning the differences between the category of farmers having relatively high technological status and a category of their adjacent neighbors having a relatively lower technological status. On the broadest level of generalization, it was proposed that there would be significant differences between the categories of farmers in their

personal backgrounds, career experiences, social relationships, occupational definitions, value commitments, self definitions, and operator role performances. The differences tested are given later in this dissertation. They were tested by the administration of a pre-tested questionnaire to each farmer in the two categories and a statistical analysis of the data gathered in this manner.

### The Organization of the Dissertation

The next chapter, Chapter Two, introduces the Cuban setting within which the city of Bejucal and its agricultural activity exist. Chapter Three presents a brief description of the community of Bejucal. It is an ethnographic survey emphasizing the farming people, their activities, and their changing culture in the community. These data are presented to provide background information for the sample survey of farmers. They were employed in the research operations both in the preparation of meaningful questions for the survey questionnaire and as a body of background information for the interpretation of the data gathered from the farmer respondents.

Chapter Four explains and considers the research procedures used in the study of two categories of Bejucal farmers. The findings are presented in Chapters Five, Six, and Seven. In Chapter Eight hypotheses and conclusions based upon the research data are presented. Also, in Chapter Eight, the findings are related to both the Turrialba Valley findings and to selected schemes devised by scholars for ordering modern Latin American socio-cultural materials.

## II. THE SETTING: CUBA, CUBANS, AND CUBAN-AMERICAN RELATIONSHIPS

### An Historical Sketch

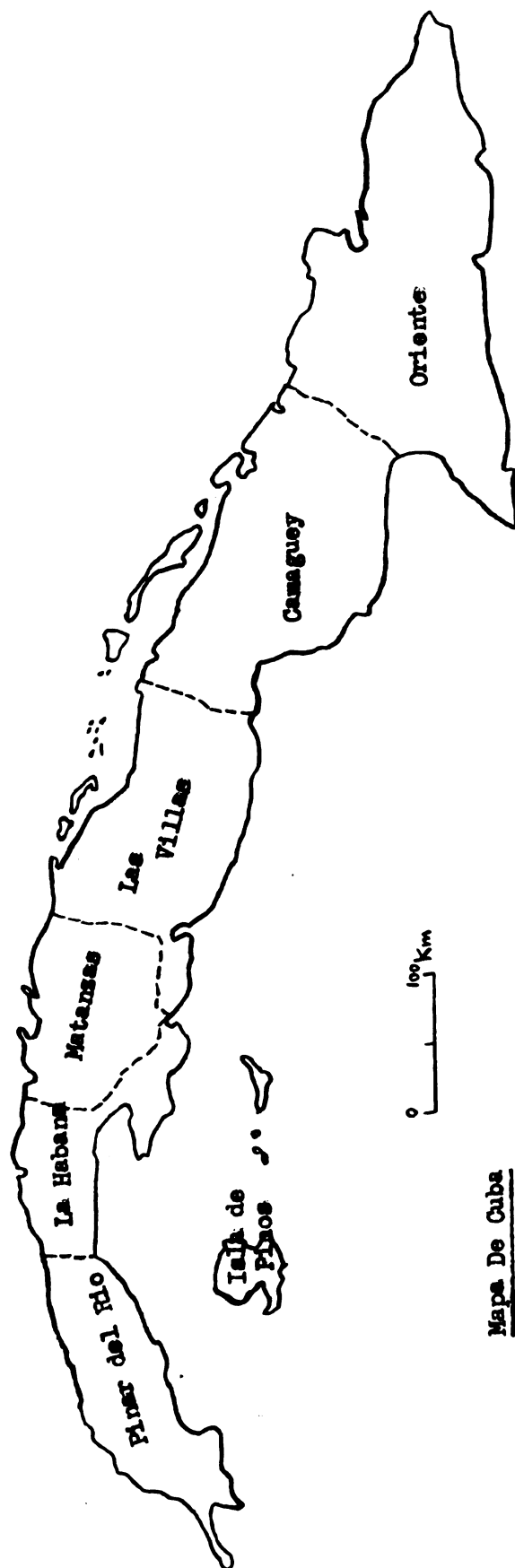
Discovered by Christopher Columbus and claimed by him for God and the Queen of Spain, Cuba was destined to play a crucial role in the Spanish conquest of the new world. The island became the most important Spanish base at the entrance of the Caribbean. Finding no gold nor other easily exploitable wealth, the Spaniards used Cuba as their northern American source of ships' stores and food, and as an expedition headquarters. The island received the name the "Key of the New World" (llave del Nuevo Mundo).<sup>1</sup> The city of Santiago at the eastern end of the island became important because of its excellent natural harbor. The exploitation of the inland areas proceeded slowly under Spanish rule with the growth of cattle-raising and horse-raising ranches.

The original Indian inhabitants of the Island were few in number. In only a few years the Spaniards had either exterminated them by warfare, destroyed them with European diseases, or driven them off the island. No aborigines remained. The Spaniards learned enough of their ways to build bohios (palm thatched huts), to smoke cigars of new world tobacco, to grow corn, and to incorporate a few words and place names into the emerging Spanish-Cuban tongue.<sup>2</sup>

---

1. Levi Marrero. Geographia de Cuba. La Habana:Alfa. 1951, p.11.

2. Ortiz, Fernando. Cuban Counterpoint: Tobacco and Sugar.  
Translated by Harriet de Onis. New York: A. A. Knopf. 1947.



Mapa De Cuba

Later it was discovered that Cuba had an almost perfect combination of soil, temperature, and rainfall for the raising of sugar cane. The rapidly rising Spanish population was supplemented with the introduction of Negro slaves from Africa. The Spaniards who came were Castilians, Andalusians, Galacians, Basques, Catalonians, and Spaniards from the Canary Islands; Portuguese and Mediterranean Jews also came. The slaves were brought from the Gold Coast, from Nigeria and other sections of Western Africa, from Senegal, Guinea, from the Congo, from Angola and from Mozambique on the eastern shore of Africa.<sup>3</sup> To the Caucasian segment of the population were later added a few Frenchmen, Englishmen, and North Americans. And, in the nineteenth century, Chinese laborers were brought from Macao, Canton, and other sections of China. All contributed their labor, their racial heritage and some of their cultural ways to the composition of the modern Cuban nation.<sup>4</sup>

The land of Cuba was granted by the King of Spain and his Viceroy to members of the Spanish nobility in large circular tracts. The grants were large haciendas, most commonly two leagues in radius.<sup>5</sup> In the interior the King also expected the recipients of grants to establish towns and cities. For example, in 1713, according to the Cuban historian Portuondo, the King created the title of the Marquese of San Felipe y Santiago and granted to Don Juan Nunez de Castilla the right

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3. Ibid., pp. 98-100.

4. Ibid.

5. Fernando Portuondo. Curso de Historia de Cuba, 3rd ed. Havana: Editorial Minerva, 1947, p. 341.

to found a city and establish a hacienda in a place called Bejucal. Later the Marquese was granted a senorio de vasallos, a Feudal charter, giving him Feudal lordship privileges over the people of the city which he had raised at his own expense.<sup>6</sup>

Thus, Spanish institutions and classes as well as Spanish people were transported to Cuba in the new world. Even the practice of slavery which took many new world forms had something of the Spanish in the way it operated. Cuba was destined to remain a part of the Spanish Empire longer than any other American possession with the exception of Puerto Rico.

Independence efforts started in Cuba during the American Civil War but were unsuccessful until the Spanish-American War brought the intervention of the United States and resulting independence, after a brief American occupation. Except for a short period of American intervention before World War I, Cuba has been a relatively sovereign nation. The "Platt Amendment" to the United States-Cuban treaty that ended the first occupation by United States forces, granted to the United States the right of intervention in Cuba if the government of Cuba could not maintain "public order." In 1934, however, the expansion of the "good neighbor policy" made such a treaty untenable, and the Platt Amendment was abolished.<sup>7</sup>

The two brief United States occupations resulted in some changes in Cuban institutions. Laws were codified, legal and administrative

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6. Ibid., p. 228.

7. Marrero, op.cit., p. 12.



practices changed, new governmental services (such as public primary education) established, and a formal division of legislative, executive, and judicial powers established. Private property and enterprise was encouraged in economic affairs. While these changes have subsequently been modified, they did leave a changed Cuba. Their influence is still felt.

#### Resources and Climate

Cuba is separated from the State of Florida only by the Strait of Florida through which flows the Gulf Stream. The island is long and relatively low. The geographer Marrero says that it was up and down under the sea many times in its geologic history, becoming a separate island about twenty million years ago.<sup>8</sup> The island possesses approximately three thousand, five hundred kilometers of coastline containing over two hundred bays and harbors. It is 44,164 square miles in area. Located between the Atlantic Ocean and both the Gulf of Mexico and the Caribbean Sea, and between North and South America, Cuba possesses a great strategic importance in this age of air and naval transportation, and of air and naval warfare. Cuba is the largest and most populous of the West Indies. The island lying east and west is 759 miles long and varies from thirty-six to one hundred and ninety-five miles in width.<sup>9</sup>

Besides her location the chief resource of Cuba is her soil. Much of the best soil is red clay formed from the dissolution and

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8. Ibid., p. 32.

9. The West Indies and Caribbean Yearbook, 1953-1954. London: Thomas Skinner & Co., 1954.

breakdown of limestone, of which the island has an abundance. A few minerals are present and some mining is being done at the present time. However, the annual value of minerals is small compared to income from other sources. Oil in commercial quantities was recently discovered in the Province of Camaguay and elsewhere.

The climate of Cuba is called savanna by the geographers. It is also termed subtropical. Part of the year, the winter and early spring, there is very little rain and the island is dry. The rainy season begins in May and June and lasts until the end of the hurricane season in early November. Cuba is close enough to the United States to be subject to the large cold air masses of the winter and early spring, although the island does not receive frost. Frequent thunder-showers in the rainy season and the Atlantic northeast-southwest trade winds keep the island cool, although its distance to the equator equals that of some of the earth's hottest lands. Temperatures over one hundred degrees Fahrenheit are very rare in any part of the island, although summer temperatures over ninety degrees are common.

Cuba is in one of the four principal hurricane areas of the world. The most western province, Pinar del Rio, experiences the most frequent blows as Caribbean or South Atlantic spawned hurricanes move into the Gulf of Mexico. Packing winds of seventy-five to one hundred and twenty-five miles per hour, these storms do great damage to farm houses and buildings, to crops and livestock, and considerable damage in the towns and cities. Since 1880 the Province of Havana has been hit directly by hurricanes in the following years: 1888, 1896, 1909,

1915, 1926, 1933, and 1944.<sup>10</sup> Hurricanes that pass near but do not hit directly may still cause wind and rain damage. The central area of the Province of Havana where the writer's field research was conducted usually receives fifty to sixty inches of rain a year. Much greater amounts of rain fall in hurricane years. The wettest months in the Province of Havana are June and October and the driest December, January, and February.

#### The Population of Cuba

The population of Cuba has increased steadily since the census of 1827. In his Atlas de Cuba, Gerardo Canet gives the following figures for the Cuban population:<sup>11</sup>

1827	- - - - -	704,487
1841	- - - - -	1,007,000
1861	- - - - -	1,357,800
1876	- - - - -	1,500,000
1887	- - - - -	1,631,687
1899	- - - - -	1,572,797
1910	- - - - -	2,388,000
1931	- - - - -	3,962,344
1943	- - - - -	4,779,000

Another census was taken in 1953 and the Skinner Year Book gives the figure of 5,870,528 as the result of that tabulation. This is slightly under 133 people per square mile which is over twice the density of the United States but much lower than the other large West Indian islands. In 1949 Canet reported about fifty-five per cent of

10. Marrero, op. cit., pp. 87-88.

11. Gerardo Canet, con la colaboracion de Erivin Raisz. Atlas de Cuba. Cambridge: Harvard University Press, 1949, pp. 10-11.

the people living in cities.<sup>12</sup> The population is distributed widely over the island with the greatest concentrations occurring in the eastern Province of Oriente and in the Havana metropolitan region. Canet believes that some concentration of rural people in villages is going on, in view of the steady increases in reported numbers of places under 2,500 in population. The age pyramid of Cuba shows an even decrease of age groups with the exception of the smaller size of those age groups born during the Revolution of Independence (1895-1898), and the larger proportion of males born in the immediate post-war years (1899-1900 especially).<sup>13</sup> The 1943 census showed a slightly higher median age for males than for females.

Today the Caucasian race accounts for about seventy per cent of the Cuban population, Negroes and mulattoes accounting for most of the remaining thirty per cent. From about 1790 to 1850 the colored population exceeded the white. While a few contraband slaves were shipped into Cuba until 1880, few slaves arrived after 1850.<sup>14</sup> Lowry Nelson cites white immigration before 1895, the successful conquest of yellow fever, the restoration of political stability, and the rapid economic expansion of the nation as the chief factors in the great population increase since 1850.<sup>15</sup> He shows that since 1898 the increase in the

12. Ibid., p. 28. The Encyclopedia Britannica World Atlas (1957 edition) reports 57% of the people living in places of 2,500 or more, 1953 census.

13. Ibid., pp. 28-29.

14. Lowry Nelson. Rural Cuba. Minneapolis: The University of Minnesota Press, 1950, p. 25.

15. Ibid., pp. 25-26.

Cuban population has closely followed the rise in sugar production -- the chief national enterprise.<sup>16</sup>

Cuba has over two hundred and eighty "Urban" centers with over 2,500 population; over thirty with over 10,000. Cities with over 8,000 inhabitants have been growing as is general over the world. Havana, the national capital and chief metropolis, has gradually increased at the expense of the country with over one-sixth of the entire Cuban population at this time living in the city or suburbs.<sup>17</sup>

With the elimination of yellow fever and the great reduction in malaria, the Cuban death rate approximates that of the industrialized nations at only eleven per thousand per year. The infant mortality rates for the first year of life are still high, twice that of the United States. A high percentage of the population, particularly the rural people, are afflicted with intestinal worms. A smaller percentage have amoebas.

In 1943 the average family of Cuba consisted of 5.18 people, and nine-tenths of the people lived in the 922,500 families then in existence. Less than one per cent of the population was divorced.<sup>18</sup>

Most of the families of Cuba are Roman Catholic in religious affiliation. There were 312 Catholic churches in the island in 1943 and 225 evangelical (protestant churches) and "varias" (various) Jewish synagogues as well.

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16. Ibid., pp. 26-27.

17. Canet, op. cit., p. 35.

18. Ibid., p. 34.

The work force of Cuba fluctuates by season. The greatest number of people are employed from January to May during the sugar cane harvest. This is the "busy season." The "dead season," the rest of the year, finds fewer people working. About one-third of the Cuban people are in the hired work force, not including women and children who work without wages on farms. Of the half million people who work in the mills and fields in the cane harvest, only about forty per cent have jobs during the rest of the year.<sup>19</sup>

Bejucal, the community studied in this dissertation, is located in the Province of Havana on the edge of the sugar cane growing areas of that province. It was to this town and municipality that the writer and his family came in 1954 to conduct his research.

#### Cuba and the United States

Within the first few weeks in Havana and Bejucal, it became obvious to the writer that Cuban people and, more particularly, Bejucalenses, were profoundly influenced by the people and culture of the United States. The geographical and functional nearness of the two societies, and the many connections they have with each other, clearly played a significant part in the social and cultural change occurring in Havana and Bejucal.

The adequate conceptualization of the nature of this influence of an expanding American society and culture is, in the opinion of this writer, of considerable importance for understanding agricultural

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19. Ibid., pp. 34-35.

change in Bejucal, to say nothing of other kinds of changes in the community. The paragraphs below represent the writer's attempt to understand what is happening.

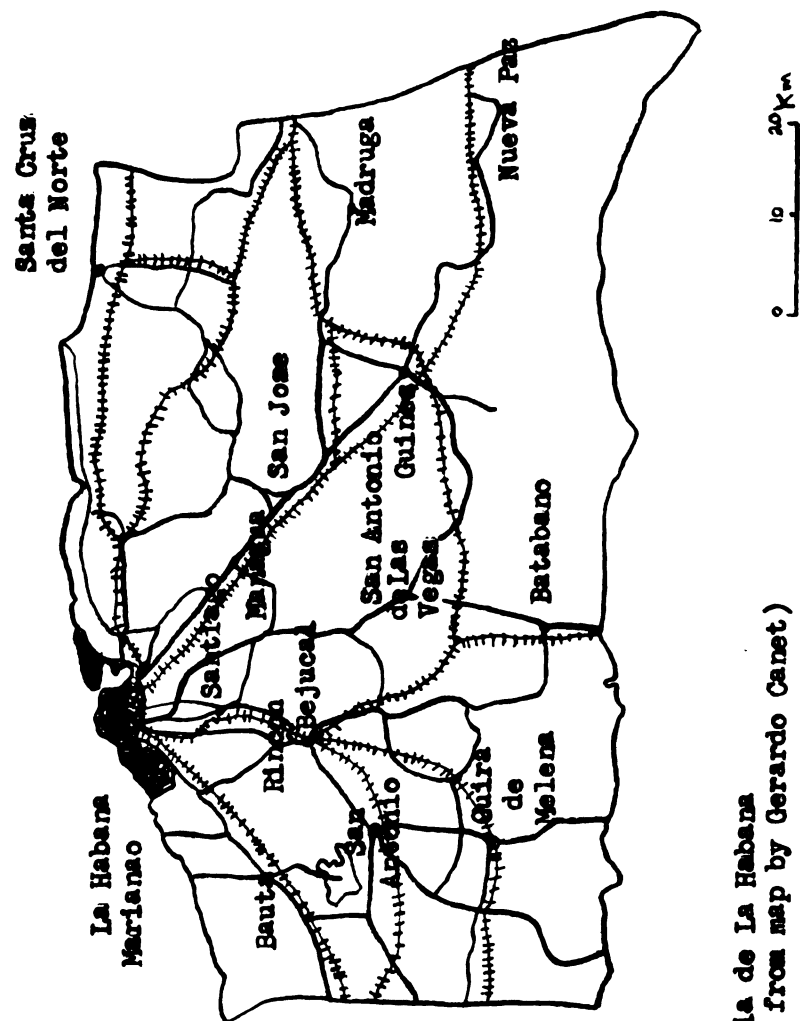
Although both Cuba and the United States are functionally independent of each other in the sense that either society could survive even if the other disappeared, the two societies inter-penetrate and relate themselves actively to one another in a great many ways. They are both geographically and socially near to each other. With such nearness has come interdependence but, as can be easily observed, this interdependence is not mutual; Cuba is very much more dependent upon the United States than vice-versa.

To the traveller to Cuba the most obvious interrelationship between Cuba and the United States is that of international trade in material goods. Almost everywhere in Cuba people ride in American-made cars, busses, and trucks, eat American imported rice, beans, and pork products, dress in clothing made in Cuba on American-built machinery according to American styles (in part), employing American yarn, use tools and machines made in the United States, see American movies, watch television sets and listen to radios manufactured in the United States, and so on. Cuba in return ships many thousands of tons of sugar to the United States (with which Americans sweeten their food) as well as small amounts of metallic ores, fruits, and other products. American corporations have established subsidiaries in Cuba to manufacture and distribute a wide variety of goods -- from baby foods to oil products, from washing detergents to drugs and medicines. American corporations also sell products through dealerships in the

distribution of goods. Automobiles and trucks, gas and oil, farm machinery and feeds, canned foods and movies are all distributed in this manner along with many other products.

In Bejucal, the writer observed, American-made machinery and finished goods play an important part in the economy of the city and the country. The many carpentry shops in the city employ American-made power and hand tools as well as tools from England, Germany, and Japan. The clothing factories employ American-made sewing machines and use American made yarn and dyes. The few telephones and telegraph are American made. The machine shops use American-made machines and repair American-made automobiles, trucks and other machinery. The people buy and consume large amounts of American-grown rice, beans, lard, hams, and canned goods. The farmers use American-made plows, machetes, and other hand tools, tractors, pumps, and so on. They may feed their cows American-produced soybean protein supplement or feed their chickens American-produced growing mash. They may raise American-bred chicks, or the descendants of imported cattle and pigs. In the commercial gardens of Bejucal, European and American flowers are grown to supply the Havana market for fresh flowers. The people of Bejucal watch television on American-made sets, listen to American-made radios, watch American movies, dance and listen to American music. Furthermore, they use a great variety of products made in Cuba in firms which are subsidiaries of American corporations. In return, much of the Bejucal manufactured tobacco is smoked in American-made cigars and in American pipes.





Provincia de La Habana  
(Traced from map by Gerardo Canet.)

The Cuban police and armed forces play a crucial role in Cuban politics. They are represented by strong contingents in Bejucal which are armed with American-made weapons and other equipment. Some of these weapons are purchased from the United States while some were granted free of charge as a part of reciprocal agreements for hemispheric defense.

The writer learned that interpersonal contacts between Cuba and the United States are of many kinds. They range from the formality of the relations between diplomats to the informality of a love affair. The content of the cooperative activities range from a mutually profitable business deal to a discussion of Afro-Cuban music between intellectuals. American tourists, businessmen, agricultural experts, musicians, boxers, winter baseball players, students, social scientists, communications technicians, engineers and many others come to Cuba to engage in professional, business, and leisure-time activities. Cubans also go to the United States for travel, for study, for business, on professional duties, and as diplomatic representatives. In each country the visitors meet people of the other in many contexts. Again such contacts may vary from the formal -- such as the waiter-patron relationship in a restaurant -- to the informal and intimate -- such as the friendships of a Cuban boy in a boarding school or college in the United States.

Bejucal people have been influenced directly by a great many of these contacts. Two American businessmen own plants in Bejucal -- one a cloth factory making cloth from imported synthetic fibers, the other a furniture factory making stuffed furniture of modern design.

An American surveyor has for some time lived in Bejucal while employed by a joint Cuban-American geographic survey program. American missionaries have worked and are working in Bejucal. In the past Baptist and Pentecostal missionaries have made efforts to convert Bejucaleños. More recently the efforts of the Wesleyan Methodists have been extended there. Bejucal men belong to fraternal and business groups spread from the United States such as the Chamber of Commerce, the Lions, and the Masons. They also play American developed sports such as baseball and basketball. Bejucal basketball teams have played games against teams of sailors from American ships visiting the Havana harbor.

Bejucaleños have contact with American tourists and some contact with American social scientists and agricultural and homemaking extension personnel. Many Bejucal families have relatives in the United States, particularly in Tampa, Florida. When American duties were imposed on imported cigars, many firms started to manufacture cigars in the United States using Cuban fillers and wrappers. Some of these firms moved to New York City, others to Tampa, Florida, and people followed from Bejucal, following their cigar-making trade. Letters are sent and visits made back and forth between these relatives, thereby communicating much information and many folkways as the Tampa-Cubans become increasingly acculturated to North American ways.

At the time of the investigation, at least one Bejucal youth attended school in the United States. Others have also studied there in the past.

Bejucaleños receive a great deal of information concerning the United States through the mass media. United States news is an

important part of the contents of a newspaper, radio news broadcast, or a news magazine. In Bejucal there are a few people who follow the personalities and events of United States politics. Many people can name the President. A few know the names of the ambassadors of Cuba to the United States and from the United States to Cuba. More people follow the fortunes of American baseball (particularly Cuban players) and the changes in American women's fashions. Others follow the boxing news very closely. Professionals (doctors, lawyers, teachers, agriculturalists, etc.) receive journals and professional news magazines directly from the United States and also learn of American developments in their fields through their own professional journals.

The Inter-American Institute with which the writer was affiliated in its conduct of Project 39 of the O.A.S. is attempting to get Cuban farmers to employ rational means and procedures largely developed in or inspired from the United States. A joint United States-Cuban project developed a hybrid seed corn adapted to Cuba's conditions which is being promoted to farmers. The use of American-made protein feed supplements, American-improved livestock, American-developed fertilizers and insecticides is being encouraged. The program is attempting to devise ways of transferring the American experience of agricultural extension to the Cuban Ministry of Agriculture and to the agricultural inspectors in the various Cuban municipalities. The Americans related to this program bring to Bejucal and to Cuba their notions of efficient program organization, efficient farm practice, research methodology, and so on. From the Cubans they learn the language, place-names, customs, and practices common to the situations which they encounter.

The training of Cuban professionals in the Program holds further portent for intersocietal-penetration and change.

In relative interdependency, it is clear that the size, power, and wealth of the United States result in Cuba being dependent to a considerable extent upon her continental neighbor. The United States would suffer only a temporary shortage of sugar and cigars and certain tropical fruits if Cuba were completely destroyed by some natural catastrophe. Even small changes in the United States are likely to have large repercussions in Cuba.

Cuba still maintains her boundaries with respect to the United States as with other nations. American citizens enter on visas (but not passports), and they must pass through legal ports of entry. American companies must operate under Cuban laws (some of which American businessmen dislike). But, it may be said that the boundaries of the two societies with respect to each other have an easily permeable nature. There has been official recognition of this social and cultural nearness in special advantages in trade treaties extended by each nation to the other and in the ease and freedom with which the nationals of each country may travel and study in the other. While there are persons and groups in each country who oppose this interdependency, on one ground or another, it seems likely to this writer that the present trends toward greater and greater interrelationship and mutual permeability will continue. The Cuban opposition to close United States-Cuban relations comes from both the extreme left -- who feel that Cuba has "sold" her autonomy to the "decadent Capitalist

United States" -- and from those on the right who strongly support traditional Colonial Cuban folkways and values. To the latter the introduction of great masses of American goods, of American family customs, the spread of religious diversity and the control of so much of Cuba's resources by Americans is a grave threat to their conception of the "good Cuba." Neither the left nor the right, at the present time, seems to have the power or even the potential following to reverse present trends. Certainly the extremes were not numerous in Bejucal.

Chapter Three describes the Bejucal community and the place of the farming people in its life.

### III. A SURVEY OF BEJUCAL, A CUBAN RURAL COMMUNITY<sup>1</sup>

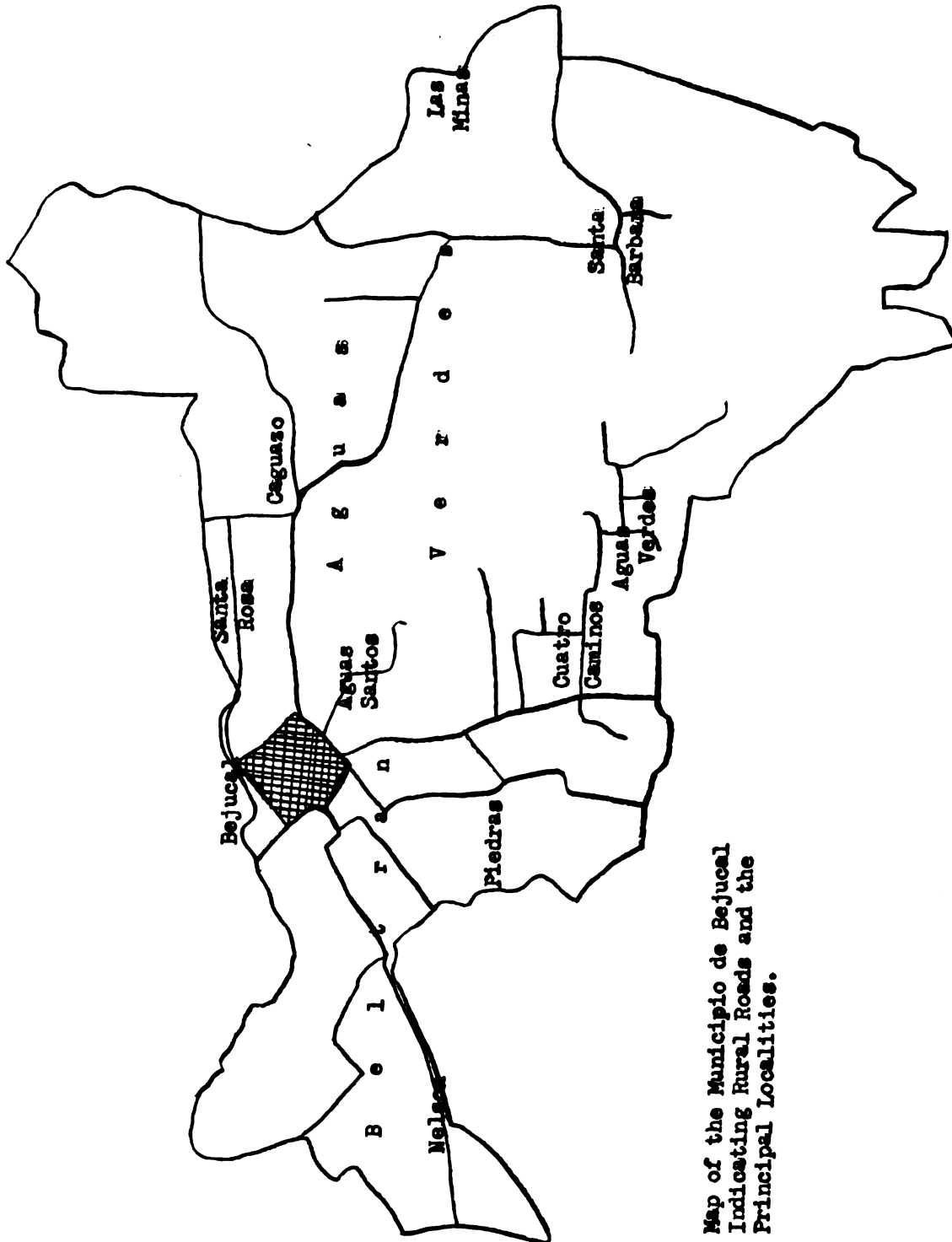
Bejucal is a city, a municipality, and a community. Located only about eighteen miles from the national capital, Havana, Bejucal contains an urban center of over eleven thousand people and a rural zone of about two thousand people.<sup>2</sup> In the rural zone there is one small line village, facing a highway, named Cuatro Caminos. The rest of the rural population is scattered on the two hundred and fifty farms of the rural zone (see map, page 27). As an ecological community Bejucal extends farther than its political limits as a Municipio (municipality or small county).

When the founder of Bejucal planned the city in 1712, he divided the land into square blocks, laying out streets which ran in a grid pattern.<sup>3</sup> The center of government and religion he placed facing a

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1. The ethnographic survey data were ordered in terms of the categories of the ethnographic survey outline prepared by Professor Kenneth E. Tiedke of the joint Michigan State and Inter-American Institute program. It was not possible to gather complete data about a community as complex as Bejucal on any one category. Still less possible was the obtaining of "complete" data on all categories of activities and social life of the community. The report to follow, consequently, should be considered as a preliminary introduction to the culture of the community focused upon the farm people of the community. Informants supplying information were people from all stations in life who were engaged by the writer in conversation. These conversations were as short as a few minutes and as long as many hours (extending over a number of days). The conversations were in Spanish. See outline in Appendix A.

2. The historical and population data were gathered from the Bejucal unofficial historian Sr. Miguel Llampart, a well educated man, life-long collector of historical information in the area and Secretary of the Junta Electoral, the governmental election-control and census office.



Map of the Municipio de Bejuical  
Indicating Rural Roads and the  
Principal Localities.



central square. The town was later divided politically into four barrios, or voting units numbered from one to four. The business district grew up around the central square. Thus, the governing, religious, and business centers were placed where they would be easily accessible to the residents of all sections of the city. The rural area was divided into large ranches and, later, sugar plantations. The rural zone took the names of these large farms and kept them as locality names even when, following World War I, the large tracts were broken up and sold as small farms. The four largest rural localities so named are Beltran, Cuatro Caminos, Santa Barbara, and Aguas Verdes. The map shows other locality names used by residents to indicate where they live.

Since its founding the city has grown considerably. Starting with thirty families, steady growth has raised the figure to about two thousand families today.<sup>4</sup> Physically the city has grown to accommodate these added people. Since it has not been conventional nor economical to build upward, the city has expanded laterally. New homes were being built on the southern, northern, and northwestern fringes while the community was being studied. New subdivisions, called repartos, are being started regularly.

Although exact figures are not available, the rural population of Bejucal has been declining in recent years.<sup>5</sup> The decline has been

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3. Ibid.

4. Ibid.

5. Ibid.

both a decline relative to the urban population and an absolute decline in numbers. Farm mechanization, the desire to have the conveniences and benefits of the city, and the spread of the small family pattern in the rural area have probably been responsible for the net out-migration from rural Bejucal to urban areas and in the absolute decline in rural population. Women, in particular, expressed to the writer a preference for living in town over country living. They cited the benefits of electricity, running water, convenient shopping and health facilities, less loneliness, and greater recreational opportunities of the town as their reasons.

The rural population lives on scattered family-sized farms for the most part. Sometimes the rural dwellings are located on the principal rural roads, but more often they are situated at the end of a lane to the house (away from the public rural road). Thus, most rural homes and farm buildings are located at the center of the farms (fincas). Consequently, many houses are one-third to three-quarters of a mile from any other house. Usually the farm lane leads off a public road or path, but there are some farms which must be reached through the private roads of others.

The stores and small population concentrations in Caguazo, Santa Barbara, Cuatro Caminos and Beltran make these locations neighborhood centers of trade, recreation, gossip, and informal interaction.

#### The Community

Peopled largely by Spanish Caucasian people, plus a few descendants of Negro slaves and imported Chinese laborers, the community of

Bejucal is a complex and changing community. Within the history of both the rural and the urban areas, there have been major shifts in activities and in social arrangements. The long-run trends, as well as could be gathered by this writer, have been these:

1. From a town and countryside of (a) craftsmen, tradesmen and livestock producers to (b) craftsmen, tradesmen and sugar cane producers, to (c) industrial producers, craftsmen, traders, dairy, vegetable and fruit producers and general farmers. Each of these activity shifts has resulted in increasing population and in changing local social organization. The latest change -- occurring largely since World War II -- is the growth of the suburban residential function of the town for people who work in Havana but prefer to reside in Bejucal.<sup>6</sup>

2. From a feudal social order based on Spanish renaissance institutions to an "open" capitalistic and "democratic" social order. This shift has meant that titled nobility who ruled in the early days (under grants from the Spanish crown) have been replaced with locally elected and appointed officials of commoner background. It has also meant that there has been a shift of political power toward the masses of citizens away from the control of the family-appointed few; it has meant the greater separation of economic and political power and position; it has meant the greater openness or accessibility of the community to outside influences and communications; and it has meant both the decline in the authority and influence of the Roman Catholic Church

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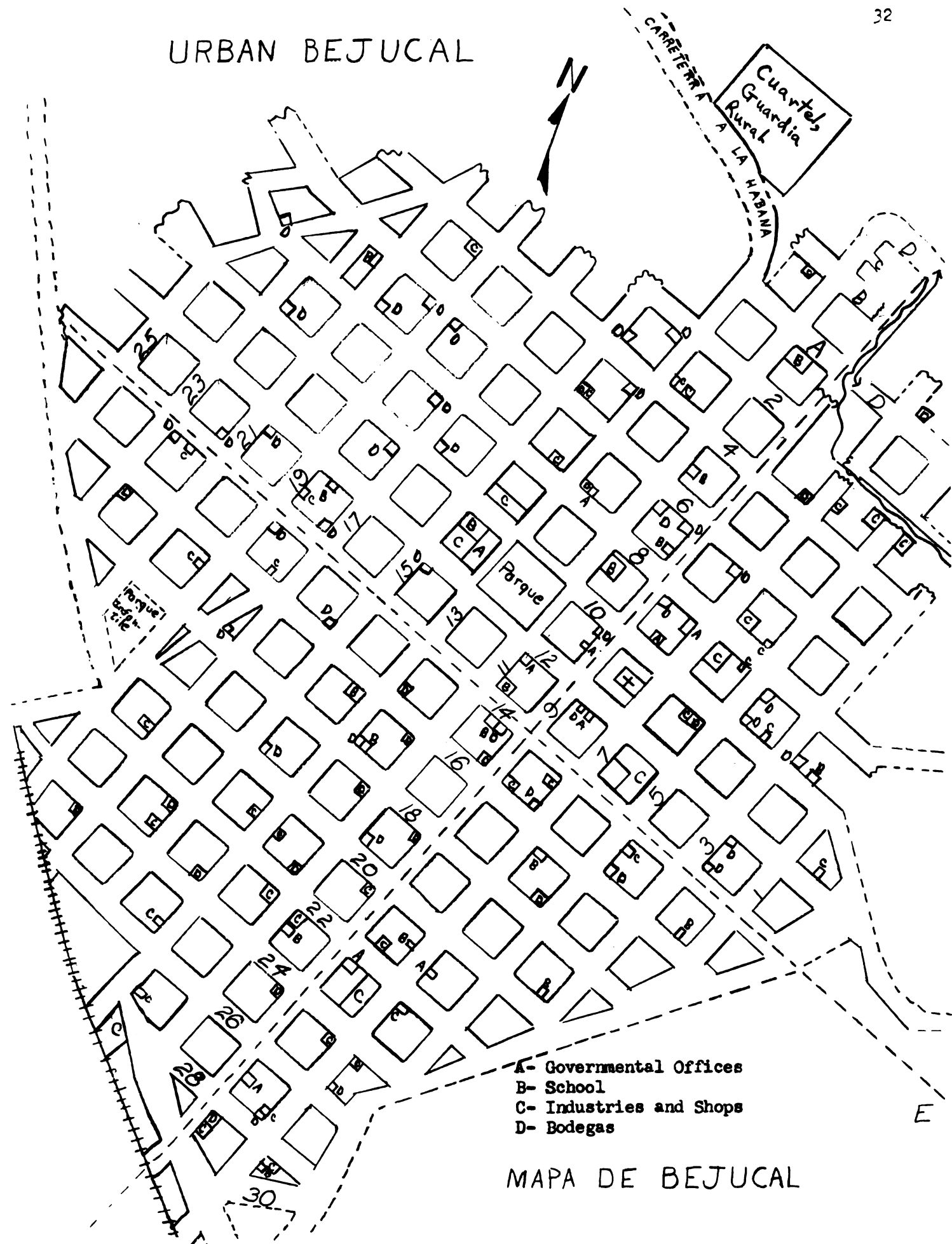
6. Ibid.

and an increase in religious diversity. It has also meant the breakdown of the feudal system of estates or inherited ranks and the emergence of an open class system permitting vertical social mobility.

The city today is a city of governmental buildings and offices, of stores and other business enterprises, factories, schools, parks, and private homes. As part of the survey a map was made of the city locating each of the major activities of the city. As the map on the following page indicates, within the rather compact city there are buildings housing a wide variety of activities. There are also about two thousand residential units -- often combined with small shops or trade outlets, but more often used exclusively as a home. As detailed as these maps are, they surely omit some of the small industries which are being carried on within homes and not visible from the street to the roving mapmaker (even with city children accompanying him).

As the writer moved through the streets, making his survey, he could see people talking on the corners, boys playing stick-ball, trucks taking fruit or vegetables to the Havana Central Market, businessmen having thick coffee in the small combination bars and coffee houses, housewives talking on the porches of their houses, students going to or coming from school, and many other sights common to many European and Latin American towns. Some of the buildings had solid walls and doors facing the street, but most homes, he observed, faced the street with pillared porches which he soon learned were favorite places to talk and rest. Above bars, clubs and a few homes were television aeri-als.

## URBAN BEJUCAL



- A- Governmental Offices
- B- School
- C- Industries and Shops
- D- Bodegas

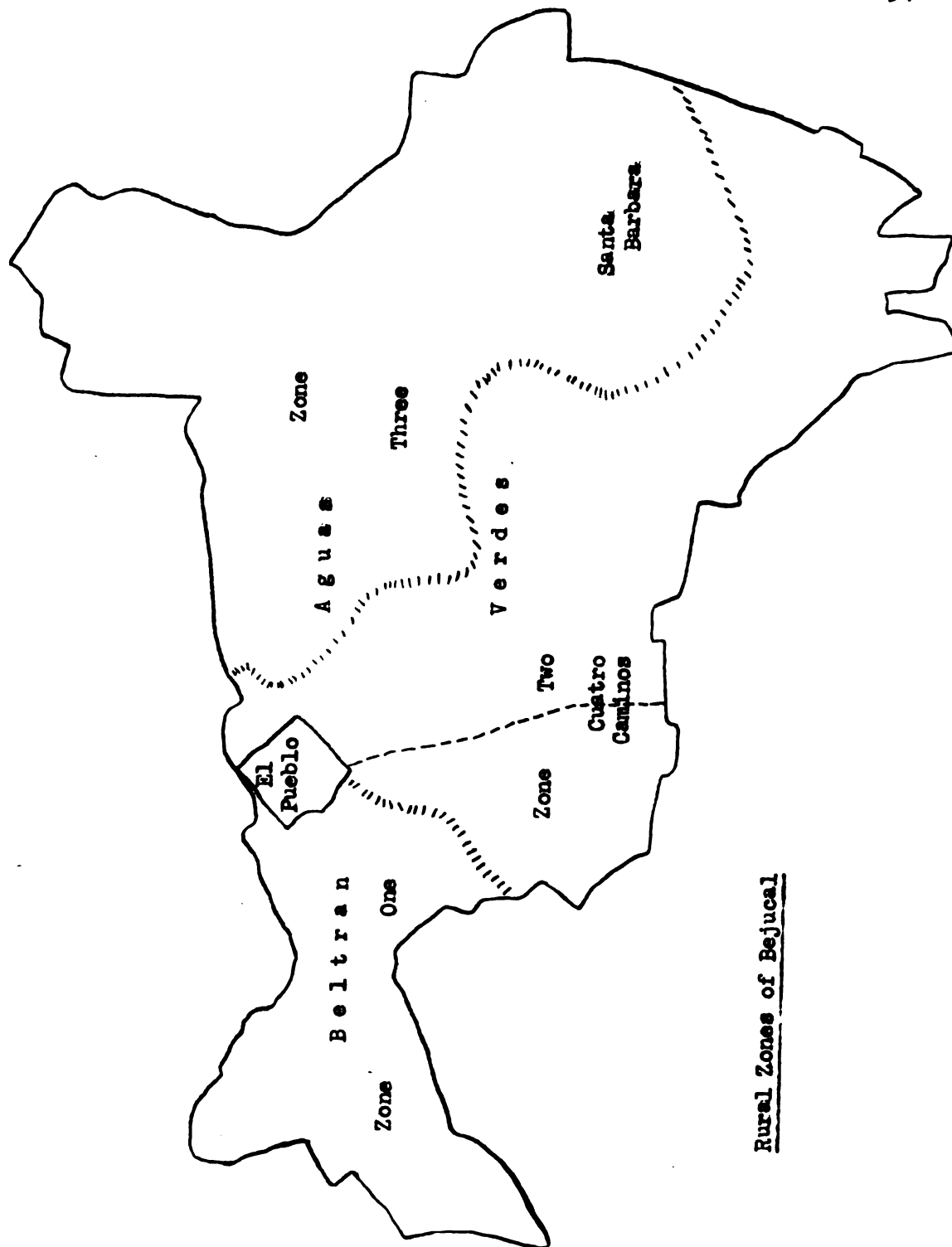
MAPA DE BEJUCAL

The writer saw many American-made cars and both European and American-made retail goods for sale. The people seen on the street were dressed in factory-made clothing, some in work clothes, others in casual dress, and others in western style uniforms and dress clothes. At most times of the day he could hear music issuing from a juke box or home radio. Occasionally it would be someone taking a piano lesson.

In the evening the writer would sometimes watch the promenade in the central square -- boys going one way and girls going the other. He sometimes visited one of the men's recreational societies facing the square and watched games of dominos, chess, cards (Spanish style), or he merely sat and talked. On Sundays he could see a baseball game if it was a winter or spring month. He might occasionally also watch basketball or a highway bicycle race. Or he might take a trip to the country.

The rural zone of Bejucal is today largely divided into small farms. Some of these are general farms producing little to sell. These are largely subsistence farms. There are other farms having one or more cash specialties. Probably dairying is the most common, with fruit and vegetable production close behind. There are only three or four farms producing sugar cane for shipment to the nearest sugar plant (Central Toledo) and only one producing any tobacco for commercial sale. Many farmers raise chickens (for eggs and meat), and a few raise pigs for urban sale. The map (on the next page) indicates some of the areas of specialization.

The rural barrio, named Beltran, is a relatively flat region of rich Matanzas red clay soil, having water for irrigation. Except for



Rural Zones of Bejuca

certain fields it is relatively stone-free. It is the best agricultural zone in Bejucal. The area around Cuatro Caminos has the same soil and typography as in the first zone, for the most part. However, drilling here has not discovered water veins of sufficient volume to make irrigation possible except on one farm. In the third zone, Aguas Verdes, grey and black clay soils predominate; it is hilly with rocky terrain and less well suited for plow agriculture.

In the first zone vegetable production produces the greatest amount of income although there are also excellent dairies and good flocks of chickens. In the second zone some vegetables are grown, but they are supplemented with sugar cane, grain, and general fruit and livestock farming. In the hilly zone, dairying is a big producer of wealth, with fruit production also significant. Here, there is a great deal of general farming. Both in Cuatro Caminos and at the western edge of the city, cultured flowers are grown on irrigated fields for the Havana fresh cut-flower market.

In the rural area a visitor could visit palm-thatched homes lacking any of the facilities of modern urban life. He could also come upon tile-roofed frame houses and an occasional steel-reinforced concrete roofed home with electricity, running water, and, sometimes, a bathroom. Almost everywhere he would meet a friendly people, polite and, with little encouragement, talkative. If, as was the case with the writer, the visitor comes to learn, he will have little difficulty in finding people, rural and urban, willing to talk with him about their experiences and beliefs.



### Agricultural Enterprises and Farm Technology

While the importance of the major agricultural enterprises varies considerably from farm to farm and zone to zone in Bejuical, there are a few subsistence or minor enterprises engaged in by all farmers. The raising of a flock of chickens, "una cria," is an almost universal farm trait. These are flocks of "crillo" (the traditional Cuban breed in every animal is called "crillo") or cross-bred chickens which live without pens or houses. They sleep in trees, nest in barns and hedge-rows, lay their eggs on the ground, and hunt for a large part of their feed. Every farmer must feed his cria some supplementary grain to prevent their wandering to some other farmer's flock. Grain, millet (millo), and corn (maiz), is scattered on the ground once or twice daily. Only one farmer encountered fed his chickens any commercially prepared mash. Raising chickens this way results in some losses to predatory animals and heavy losses to epidemics of Newcastle disease. However, this method is profitable. One farmer who keeps records reported better than thirty per cent profit on his large flock maintained in this fashion. Heavy infestations of lice were observed by the writer. Farmer informants knew little about such matters, believing, in many cases, that poultry diseases "came from the wind."

In flocks such as this, some hens' nests are not found until they appear with their broods. When this does not reproduce the flock rapidly enough, a farmer will set a willing hen on eggs in a simple wooden nestbox. New young stock is purchased only when the farmer desires to improve the size or the bloodline of his flock. Disease

and the rigors of complete out-of-doors raising are too much for most purebred chicks. Crosses with the "crillo" stock do well.

Dairy production may be a major enterprise on a Bejucal farm or only a subsistence activity. In the latter case, only one or two cows will be kept. In the former case, the farmer may have from five to twenty-five or more cows. The cows are chiefly holstein grade stock crossed with "crillo" stock. There are some purebred animals and the farmers are steadily improving their herds through purchase of higher producing cows and through breeding to higher quality bulls.

Most Bejucal farmers have milking barns or sheds in which they milk their cows twice a day. A few milk out-of-doors. Milking, with a few exceptions, is a male activity. Galvanized buckets and a small stool are the principal tools employed, plus an occasional rope to tie the hind legs of an uncooperative cow. The cows are usually fed chopped forage or smashed sweet potatoes during the milking process. The forage is occasionally the entire stalk and ear of green corn, but more often it is chopped sugar cane. Many farmers have gasoline motored forage grinders, but most chop forage by hand with a machete. Occasionally cattle are fed millet which has been thrashed by beating the grain from the chaff with a stick or walking horses around over the millet heads. Ground corn may also be a part of the dairy feed, but it is more often fed to pigs and chickens. Few of the smaller Bejucal dairy operations have bulls. The farmers generally take their cows to be bred by the bulls from larger dairies. By tradition there is no charge for the service when the farmers are neighbors. This practice has resulted in the rapid spread of superior blood lines to all

the farms of Bejucal, since the larger dairy farmers have been buying young bulls (calves or yearlings) from the dairies of wealthy upper class Cubans in other municipalities.

Calves are separated from their mothers a few days after birth and taught to drink from a bucket. They are raised in small pens in sheds or under trees. They are generally thin and poorly fed by modern (American) dairy standards. Bull calves, not desired for breeding purposes, are raised as beef unless they are suitable for use as oxen. In this case they may be sold or trained by the farmer himself.

The 1952 Census of Livestock of the Cuban Ministry of Agriculture found that the two hundred and fifty-three Bejucal farms had a total of 4743.9 hectares of land in farms of which 2217.6 hectares or 46.7 per cent was in pasture.<sup>7</sup> This pasture land is left fallow and naturally seeded with local weeds and grasses, many of which cattle will not eat. This pasture occupied an average of 8.8 hectares (21.8) acres) per farm.<sup>8</sup> This land was left fallow one to three years. Most farmers believed that this was necessary to replenish the fertility. No farmer encountered had heard of plowing under legumes as fertilizer. All knew that animal manure was excellent for enriching the land.

Two hundred and forty of Bejucal's farms, 94.9 per cent, reported having dairy cattle in the 1952 census.<sup>9</sup> They had a total of 1,866

7. Ministerio de Agricultura (Republica de Cuba). Memoria del Censo Ganadero 1952. La Habana: Seoane Fernandez y Cia. 1953, p. 50.

8. Ibid.

9. Ibid., p. 41.

head of which 1,415 were milk cows, and 514 oxen. In Aguas Verdes, 151 farms (93.2 per cent) reported 879 milk cows, 365 dairy bulls and young stock, and 326 oxen. In Beltran, 89 farms (98.8) reported 536 milk cows, 86 bulls and young stock, and 188 oxen.

The health treatment of cows involves an occasional visit of the veterinary to the larger Bejucal dairy farms. All farmers may purchase medicines in the city and carry them to their farms in order to treat an ailing cow. However, often the poorer farmers take no action at all. While no systematic count was taken, it appeared to the writer that losses to disease were frequent and the incidence of minor sores on cattle seemed higher on some farms than on others.

Almost every farm in Bejucal has some pigs. In some cases only one or two pigs are maintained to meet family demands. In this case they are probably raised largely on family garbage. Some farmers, however, are commercial breeders. Where they have good soil for producing grain they sometimes find hog production highly profitable. The 1952 Agricultural Census lists 1,862 head of pigs on 150 Aguas Verdes farms, and 862 pigs on 64 Beltran farms. Only a few Bejucal farmers have any American or European meat-type pure bred hogs. Most raise the fat, swaybacked, "crillo" breed or crosses between "crillo" and meat-type animals. The diet of hogs consisted of corn, millet, garbage, and palmiche (the fruit of the Royal palm). No one encountered fed protein supplement or even knew of its value (although a number of larger dairy farmers fed it to their milk cows).

Pigs are raised variously -- in the farmyard running loose (a declining method), in pig pens of several types, or in fenced lots

having shade trees. Vaccination for hog cholera is becoming more common since severe epidemics of the disease have swept through the community. In one epidemic, before the writer arrived in the community, the Inspector Agricola joined forces with the Rural Army to give free (government financed) injections on a mass scale.

Butchering hogs on the farm occurs once or twice a year. Since the farms do not have refrigeration, it is often a family affair with some division of the meat among kinship group members. The pig is killed, strung up, entrails removed, scalded, and cut up by men. Women cook the meat and that which is not immediately eaten is stored in glass jars under the strongly salted fat in which it was cooked. The meat will keep for many months like this even without an airtight seal.

A few sheep and goats are kept on the farms of Bejucal. They are raised chiefly for their meat although the goats are milked. A few goats are kept by poor people in the city and fed daily along the highways around the city. In the Census of 1952 the sheep and goats on Bejucal farms totaled 252.<sup>10</sup>

Horses are kept on many farms and in a few stables in the city. Fine horses are still widely admired as they were in colonial Cuba. Compared to the care they give their oxen, the horses of Bejucal are excellently treated by the owners. They use them for going to town, carrying their milk, eggs or chickens to the bodega, and for visiting and recreation. In Bejucal a few horses are hitched to small carts

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10. Ibid., pp. 70-71.

but most are ridden. No work horses are used in the fields. The Census found 150 Aguas Verdes farms reported 219 horses in 1952. Sixty-four Beltran farms reported 100 horses, some farms in each Barrio without any.<sup>11</sup> A blacksmith in Bejucal shoes some of these horses. A few farmers shoe their own.

Fruit trees are usually scattered along fencerows, along roads, and gathered around farm homes and buildings in Bejucal. Only occasionally are they grouped together in orchards. Even where this is the case, livestock are allowed to graze under the trees. The aguacate (avocado), which is the chief fruit income producer, is a tall tree with many branches. Chickens frequently sleep on its many limbs. Due to its size, picking its fruit, in June, July, and August, is an arduous task. Often one harvester climbs into the tree with a long pole having a hook on the end with which he breaks the stem of the aguacates, dropping them to another harvester, often a boy, on the ground, who holds a piece of canvas or cloth in which he catches the falling fruit one at a time. Except for the fall from the tree no great handling care is necessary because of its tough skin.

Some mangos, mame, lemons, and other fruit are grown for commercial sale, but most of these minor fruits are consumed on the farm or allowed to fall from the trees unused. One Bejucal middle-class businessman, owner of four farms in Aguas Verdes, developed an aguacate of superior size and flavor, and his variety is becoming spread throughout the community. Since the trees of this variety are still

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11. Ibid., p. 122.

small on most farms, farmers reserve these fruits for presents and home consumption.

Most of the farmers of Bejucal still do not own tractors, but over one-half of them hire men with tractors to plow and harrow their land at planting times, chiefly spring and fall. Where they do not own tractors, the planting, covering of the seed or plant section, and the digging of the root (if it is a root plant) is done by a team of oxen. Two types of plows are pulled behind the oxen which are yoked together with a wooden yoke above the horns. One is a wooden plow having a metal point which throws the dirt to the sides. The other is an iron plow with a steel point which has a moldboard for turning the soil. The home-made harrows in use on these farms are simply logs lashed or nailed together with wood or metal spikes on the underside. The traditional way of planting corn is for one man to precede with the team of oxen breaking the furrow. The other follows, dropping the grain and covering it with his foot. Malanga and sweet potatoes are dug the same way: the man in front with the team uncovers the row with a plow, and the man following picks up the uncovered vegetables.

Cane, corn, and millet are harvested with the machete, the Cuban farmer's all purpose tool. They are loaded on carts drawn by oxen or horses and carried to storage huts or barns. Corn and millet are planted two or three times per year. If the farmer has no irrigation, the winter planting will bear fodder but little grain. Corn and other row crops are hoed and sometimes harrowed to keep out weeds. Sometimes beans or melons are planted in the corn rows. Yucca, sugar cane, and some other root plants are planted by cutting pieces of the

stalk and planting them in the ground. Where they have a joint they send out roots and new shoots. Tomatoes are planted from seed in small well-watered patches near the house and later set out in the fields. They are then hoed and on a few farms watered. The farmers grow both a small Cuban developed tomato and the larger American varieties. The small Cuban tomato is preferred by many Cubans for its firmer body and stronger tomato flavor. It is often eaten green, either fried or smothered with olive oil. Green beans and lima beans are also grown to meet the Havana demand. Like the tomatoes they are often sold before they ripen to a marketer who harvests and hauls them.

Most farms have a barn or shed which is variously used for milking, housing of calves, pigpens, and storage of grains and tubers. Farm tools are also stored there. The storage of grain encounters the destruction of rats, mice, and insects. Insect damage may be severe. A few farms have storage houses, but they must use their grain rapidly. There is no haymaking or silage-making in Bejucal.

February, March, and the first part of April are the months when there is a severe shortage of green forages on Bejucal farms. During this dry period farmers feed chopped sugar cane to their horses and cattle. This feed will maintain energy and body fat but will not produce milk at the same level as natural grasses or corn. The fences on Bejucal farms are usually either barbed wire or thickly planted rows of a slow-growing cactus. There are also some stone walls. Gates are usually made of three or four barbed wires loosely strung between poles. A few of the wealthy farmers have purchased a single aluminum gate for their main entrance.



Farmers with tractors plow their fields, harrow and level them with their tractors and implements. They also often prepare the land of their neighbors to help pay for their machinery. Tractor repairs are made by some of the farmers and also by mechanics and the machine shops of the city. There are many fields in Aguas Verdes having large stones, and tractor owners are reluctant to do custom work on those fields for fear of breakage to their equipment. Since little harvesting machinery is as yet owned with tractors, they are idle much of the time. Import duties so raise the cost of tractors and implements that few farmers can afford to buy very much machinery.

Irrigation in Bejucal involves the digging of a deep well by a commercial well-driller, the use of a gasoline or diesel driven pump, and the delivery of water to the fields with pipes and hoses. The most usual way of applying the water is for the farmer to spread it with a large canvas hose, walking from one portion of his field to another in his bare feet or in rubber boots. Only a very few farmers use ditch methods and none have sprinklers.

Fertilizers and insecticides are universally applied by hand, and little control is maintained over the amount applied. The writer encountered one farmer in the hill region of Aguas Verdes who applied too much fertilizer in a season when it rained little and, as a consequence, burned his corn. This farmer believes that chemical fertilizers will not work on his grey soil as a result of his experience.

Besides the machinery and tools already mentioned, farmers typically have woven wood baskets for carrying grain. These baskets are made in Bejucal by people who know the skill. Axes, hammers and

nails, and hand saws are widespread. Picks, hatchets, digging bars, a knife for cutting cactus fence, grinding stones, and other small tools are also fairly common.

### Agricultural Marketing

The farmers of Bejucal produce a surplus of goods above their family needs. They market the surplus in a variety of ways depending both upon the product and upon the particular arrangements which they have made. The principal products marketed in Bejucal are milk and dairy products, poultry and eggs, tropical fruits, and truck and vegetable products. The nearness of the large and prosperous Havana market is the chief reason for the successful diversification of farm products in Bejucal.

Milk is marketed in three ways. Some produce milk for Havana. They place cans with milk at the end of their lanes if they are on an all-weather road; otherwise they may carry the cans on horseback or in carts to the highway for the truck to pick them up. Other farmers bottle the milk at their farms and carry it to Bejucal in cloth pockets on the sides of their horses or in small two-wheeled carts. These farmers sell their milk both to bodegas and households. The third system of marketing is for farmers to sell their milk to small middlemen who deliver the milk in Bejucal. These middlemen may be town or rural dwellers, and they own small horsedrawn carts or motored delivery trucks. In milk volume the first of these marketing systems is the most important.

The system of fresh vegetables and fruit marketing varies from that of the milk-marketing system described above. The Bejucal market

is able to absorb only a very small percentage of the vegetables and fruit produced by Bejucal farmers. Thus, most of these products move to the Havana market and to the international market. The small quantities purchased by the Bejucal customers are brought to Bejucal by the farmers on horseback or in carts and in the trucks of middlemen who do their major business in Havana. A few of the larger fruit and vegetable farms have trucks with which the farmers deliver their own produce, and sometimes the produce of their neighbors, to the central market in Havana.

In each of the cities of this region, including Bejucal, there are a number of people who make their living as middlemen. They are truck owners who purchase produce from farmers, assemble it, sort it, pack it, and sell it in Havana. It is customary for these middlemen to buy the entire harvest of fruit and certain vegetables before the farmers have grown it or before it ripens. The farmer does not have to wait until the harvest before he receives income for his efforts. Also the risk of crop failure due to insects, weather or other natural causes is removed from his shoulders and shifted to the middlemen. The farmer is also spared the necessity of locating labor to help him in the harvest, since generally the middlemen provide their own harvesters. Consequently, the farmer need not have any money saved to pay wages. On the other hand, if weather conditions are favorable and the harvest is very good, the middleman will reap the profits, not the farmer. Some of the fresh fruits and vegetables of Bejucal go directly to the harbor of Havana and are shipped to the United States.

Eggs and poultry are marketed in a similar manner. A few farmers have the facilities to deliver them personally to the Havana market. More farmers sell them to Bejucal bodegas for city consumption. Most eggs and chickens are marketed through the hands of middlemen who collect them in the country and sell them to both retail and wholesale outlets in the city of Havana.

#### Land Tenancy

Only about a third of the farmers of Bejucal are owner-operators. Slightly more than a third are renters. Farm renters in Cuba enjoy a special legal status designed to protect the renter and guarantee him security on the land. The renter enjoys the right of acción. This right guarantees him the privilege of staying on the present farm as long as he desires without being moved so long as he complies with the national laws, pays his rent, and complies with the terms of his written contract (if there is any). This right includes a system of rent control to protect the renter against being forced off the land by raising the rent. Under this system all rents are registered and can be raised only by agreement and upon the payment of increased municipal taxes. In practice this system goes far towards giving the rural renter security in his tenure and on the land. The law is generally obeyed. The right of acción also protects the renter in the value of improvements which he makes on the farm. Before the renter can be moved he must be paid what is considered a just (if necessary, assessed) price for the capital and physical improvements he has made to the farm. The acción, itself, has economic value and

must also be purchased. One farmer interviewed by the writer first developed a dairy farm as a renter until it was an efficient and prosperous unit. Then he sold out his acción and his accumulated capital, making it possible to buy a larger but undeveloped farm having greater ultimate potential in his evaluation. He was paid more than ten thousand pesos\* for his share. Informants reported that prosperous renters had more security under this law than poor renters.

A still lower ranking tenure class are the partidarios, or sharecroppers. This class of farmers receives fifty per cent of the net income of the farm. In this case the owner may provide the operating capital of the farm. There also are a few salaried managers operating farms in Bejucal.

Property relations toward capital goods may be very complex in Bejucal. The writer met, for example, a farmer who was buying a caterpillar tractor and a set of agricultural implements in partnership with an urban laborer who was a tractor driver and a mechanic. The total cost of the equipment was over ten thousand pesos. It was being purchased on time payments, making the farmer a debtor in partnership with his companion. To help finance the tractor, the farmer also borrowed from the government bank for agricultural development. This borrowed money made the farmer a debtor to the government corporation, and he was required to become a member of the farmers' loan program carried on by that bank. The farmer did the contracting for plowing and otherwise preparing land for his neighbors and others in the region.

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\* At the time of the study, one Cuban peso was equal to one U.S. dollar.

Contractual relations involving money, movable goods, and fixed goods are sometimes written and sometimes arranged by verbal agreement. Verbal agreement which was quite general in times past is gradually giving way to the written contract. It is interesting to note in this respect that when asked how well they read, many rural men answered, "I read well enough to defend myself." In number, if not in economic value, unwritten contracts still outnumber the written ones. In a week a small entrepreneur with a truck may make dozens of purchases without immediate cash and dozens of sales all conducted without the use of written notes or contractual agreements.

#### Other Roles in Agriculture

Besides the positions already mentioned, there are some other jobs of economic importance to Bejucal agriculture. The trepador is a royal palm fruit harvester. He travels from farm to farm with a rope, a climbing stirrup, and a knife, with which he climbs royal palm trees, bringing down their oily, berrylike fruit. He is paid by the tree and may earn from two to eight pesos a day. Customarily the farmer or hired man accompanies him, loading the fallen palmiche on an ox cart to be hauled to the pigs.

The veterinarian also plays a role in the production system. He engages in both preventive medicine, such as inoculation of animals, vaccination, advice on cleanliness, blood tests on cattle for tuberculosis; and curative medicine when farmers solicit his help in the saving of sick animals. Most farmers in Bejucal do not use his services. Dairy farmers are required to have tuberculosis and bangs tests on their milk cows, but some farmers avoided this obligation.

The Injertador is a farmer who makes a part-time living grafting fruit trees for farmers of the community. He buys high quality scions from nurseries near Havana and grafts them to stalks grown by the farmers from seeds. He has been responsible for introducing many high quality strains of tropical fruit on the farms of Bejucal.

Other roles found in rural Bejucal are the cattle buyers, egg and poultry buyers, and fruit and vegetable buyers. There are also men who gather forage in small carts to be fed livestock kept in town. Other men sell lottery tickets, tinware, cloth, and bread to farm families.

#### The Agricultural Inspector

Another important person in rural Bejucal life is the Agricultural Inspector. He is a technically trained agriculturalist hired by the national Ministry of Agriculture to maintain an office in the municipality dispensing agricultural advice, gathering agricultural statistics, and inspecting conformity to national agricultural laws. He is also responsible for contracting for the use of governmental machinery by farmers and for the administration of the national forestry laws which require a farmer to pay a fee in order to cut trees on his farm. Much of the Inspector's time is spent in correspondence with the various governmental officials to whom he must send reports. Since the income of the office is low, the Inspector in Bejucal spent only about one-half of his working time in this capacity. For his professional work the Inspector has a jeep. Officially, maintenance and repair of the jeep is the responsibility of the Ministry of

Agriculture; actually, in order to get repairs done, the Inspector must appeal to the Mayor's office for assistance. The Inspector in Bejucal is very popular with the farmers. It is significant to note that in the ten years in which he has been in Bejucal, he has never exercised his investigatory powers in such a manner as to injure any farmer.

In carrying out his administrative duties, the Inspector has the part-time assistance of a typist. The Inspector deals directly with the officers of the Rural Army, relative to the administration and upkeep of the farm machinery maintained in Bejucal under the government's program of farm mechanization. The machinery is under the surveillance of the Rural Army and is sent to farms only when the farmer presents the proper receipts of money paid to the Inspector. There is a civilian driver who is paid for managing the light tractor and the implements. The difficulty of gaining repairs to the tractor and the machinery, which must be obtained through the Captain of the Rural Army, reduces the effectiveness of the government's program. While the tractor does not run for need of repairs, farmers who have already paid their money must wait for repairs, thereby delaying their planting programs. Many farmers, consequently, hire more expensive tractor services from other tractor owners.

The Inspector is also responsible for assisting farmers who come to him requesting information to help solve their farm problems. Few farmers use this service, although many farmers mention the Inspector as the one to whom they could go if they had some question which needed answering.



### The Family Farm

While a few Bejucal farms are managed by Bejucal businessmen and a few are country retreats for wealthy people from Havana, over ninety per cent of the farms are family operated farms. On the vast majority the family lives on the farm and provides the bulk of the labor in the farm enterprises. The farm operator is both manager of the farm and father-head of the family.

As operator, the father directs the labor of the family members and any hired laborers employed on the farm. The operator, plus his sons, any other relatives, and his hired help, does the labor on the farm, and his wife is an almost indispensable helper in the maintenance of the farm home.

For Bejucal farm people it is almost unthinkable that a man might maintain a rural home without a woman to cook, wash, and otherwise care for him and the house. The farm wife works chiefly in the house and, except for gathering eggs, feeding pigs, chickens, and other livestock, she leaves the farm labor to her husband and his male help. When she, rarely, goes into the field to work alongside her husband or brothers, it is usually to harvest a labor-demanding crop such as tomatoes or green string beans. She may do other work if the husband is ill or otherwise unable to work.

Rural farm women, of necessity, work long hours. On dairy farms women may assist with the milk bottling, bottle washing, and loading if the farmer delivers milk in Bejucal. Women kill, pick, clean, and prepare chickens for the table. They also assist when a pig is

butchered to prepare the fat and meat for eating and for deep salty-lard storage. In the poorest homes women help with the milking and care of cattle and calves. Even in rural Bejucal the sphere of the woman is supposed to be within the home and, as the wealth of the family increases, her amount of outside work, other than some flower gardening, declines. (Many rural women prize flower gardens.) Some rural women help to maintain vegetable gardens with their husbands and children, but the pattern of growing a garden is not very widespread. Almost every rural home has a few fruit trees which rural homemakers use to add to the diet.

Children on Bejucal farms are given responsibility for farm and household tasks as soon as they are able to carry them out. Girls help their mother in the house, and boys help their fathers outside, first with the regular chores and later in the fields. Children are expected to play, however, and are encouraged to do so. Like urban people, rural parents show public affection for their children and express concern for their health, safety, and general welfare. Judging by verbalized responses, one of the prime work motives of Bejucal farmers is to provide for their children the food and clothing they need. As in the city, children are rarely punished by more than verbal shaming.

On the farms of Bejucal, father-son work groups are very common. In work situations, fathers tend to be strict and directive toward their sons. The latter are expected to be obedient and responsive. Such expressions of authority are not necessarily the dominant relations of father to son in other than work situations. If farm families

hire more distant related members of the family, the hired person will be treated as a member of the family although he will work as an employee.

Older persons in rural Bejucal continue to do economically important work as long as they are able. They therefore retain a high sense of personal morale and sense of personal worth. On farms elderly people pointed out with pride to the writer the fruits of their labors. Where the older couple continue to maintain a home separate from others, they continue to retain full authority over their respective spheres of activity. Where they live with their children, they accept the shift in economic and domestic authority to the younger couple. When elderly people become very old and possibly ill, the children then plan, apart from the elderly ones, what they think will be the best way to share the care of them. The family as a nuclear unit and as a kinship unit has prime responsibility for the care of its members.

#### Farm Labor

A large proportion of the farmers of Bejucal have no regularly employed labor. All but the very smallest hire supplementary help during the times of the year when they are planting or harvesting their crops. Sons who can help with the farm work are highly prized. But many farms require the employment of one or two wage laborers. These laborers, if related by kinship to the family, may live on the farm; otherwise they usually live in Bejucal and commute. At planting and harvesting times, supplemental day laborers are likely to be employed.

### Attitudes toward Land

While the farmers of Bejucal do not have sentimental attachments toward particular farms or the land in general, they do feel that it is wrong to sell land gained through inheritance. Otherwise land is considered as a commercial and status-granting commodity. As an investment farmers feel that land is a great source of security for themselves and for their descendants.

Land is one of the most important types of property in rural Bejucal. It is known that the amount of land a man farms is an important determinant of his wealth and status. In Bejucal the present trend is towards increasing size of farming units. Where the family owns sufficient land, it may be divided among the sons when they attain adulthood. Often, however, there is no division of the landed property. In one case encountered, the grandfather was the owner of the farm. The family now farms it as a unit, two brothers farming it cooperatively. Other brothers and sisters who have left the farm make no claim on it. In a second case, the farmer had one son and seven daughters. The son and grandsons now farm the place, the daughters making no claim on the property. Occasionally the land is sold, and the children divide the money among themselves. One farmer encountered was endeavoring to pay off his brothers to gain complete control of his farm.

The value of farm land varies considerably in Bejucal, from the irrigated, flat, rich soils of Beltran, to the hilly, rocky, grey soils of Aguas Verdes. As a consequence, the amount of taxes, rents, and the values of landed inheritances vary as well.

### The Daily Routine

The daily routine of the people of Bejucal varies considerably by the age, employment status, occupation, and family status of the individual. Farmers are among the earliest arisers. Most farm families are up between four-thirty and five-thirty in the morning. The men and boys go out to feed livestock and milk the cows. Their wives and mothers prepare the coffee-with-milk and cracker breakfast. After a brief break for this light breakfast, the morning work continues until ten-thirty or eleven o'clock, when lunch, almuerzo, is eaten. Almuerzo is a large meal, as is dinner at night, la comida, since they are the two chief meals of the day. La comida is eaten at times varying from five-thirty to eight o'clock. If the family is planning to go visiting or is going to town, the time will be earlier. If heavy farm work delays milking or feeding activities, it will be later. During the afternoon farm work is resumed except when it is interrupted by rainy season showers.

Rural women maintain the same general house maintenance schedule as urban women. This involves preparation of breakfast, washing dishes, making of beds, washing clothes (several times a week), cleaning of floors (mopped or swept daily), general house straightening and cleaning, preparation of almuerzo and care of children, if any, in the morning. After almuerzo the dishes are washed again, and then the women have free time to sew, listen to daytime serials on the radio or otherwise to amuse themselves. In late afternoon they wash, change clothes and put on makeup, prepare and serve la comida, wash dishes,

and talk in the family living room until bedtime. Outside work will vary this pattern, but the prime responsibility of rural women is in the home.

Children and older people generally arise with working adults unless the latter are very early risers. Depending upon their ages, children aid in housework and farmwork until it is time to dress for school. School hours in rural areas run from eleven-thirty A.M. to four or four-thirty P.M. (Most city children attend either morning or afternoon, there being two shifts.) Rigid time schedules are not the rule in rural Bejucal. Meal times, bedtimes, and even arrival at school may vary considerably from day to day. Special days, fiestas, trips to town, and other unusual events may upset the meal and activity schedule considerably. The family members accept these disturbances and look forward to holidays.

#### Changes in Family Norms

A small family ideal is spreading in Bejucal associated with rising living standards. Rural and urban families are limiting the size of their families by the use of birth control methods and techniques. Many families in which the mother is still young enough to bear more children indicate their desire to have no more, often stopping with only two or three. The age separations between children and the many years since the youngest was born in some families, indicate fairly secure control over conception. Contraceptive devices are purchased at drug stores. The valuational trend from the previous generation is fairly clear: fewer children are wanted and (in some families)

fewer are born. The attitudes of the people support small families strongly. "Many children create problems like the devil," said one man. "With many children there isn't enough to feed and clothe them," said another. Economic and educational considerations seemed important to the people with whom this matter was discussed. The table below of eighteen families in the rural zone may indicate that the adoption of the small family pattern is a relatively recent matter, for these families at least. The eighteen families do not represent a carefully drawn cross-section of rural Bejucal; they were encountered as the writer conducted the interviews.

TABLE 1

SIZE OF FAMILY OF ORIGIN CONTRASTED WITH FAMILY OF  
PROCREATION OF 18 NON-RANDOM BEJUCAL  
RURAL MARRIED COUPLES

Family	Number of Children in Family of Origin		Number of Children	Age of Youngest
	Husband	Wife		
1	8	9	3	6
2	-	4	1	2
3	10	10	2	2
4	9	3	3	3
5	7	6	0	-
6	8	11	3	1½
7	2	7	4	12
8	6	4	3	5
9	10	4	2	12
10	10	7	9	3
11	14	-	3	1½
12	7	-	3	16
13	9	15	8	7
14	5	3	5	21
15	6	7	0	-
16	6	-	2	6
17	7	8	2	8
18	8	15	3	5

The mean number of children possessed by the families of the fathers (excluding the families on which no data were gathered) was 7.8 (N=17), the mothers 7.5 (N=15), while in their current families there was an average of 3.1 (N=18). Clearly not all of these families have had all of the children they will have, so their average is lower than it will be when their families are completed.

### Rural Homes

Most of the rural homes in Bejucal are of the rustic type with whitewashed wood walls and palm thatched roofs. The poorest homes have only beaten earth for a floor, and few, if any, windows. In such homes the doors will be rough boards which, by urban standards, are crudely hung. There will be one dining table. The cooking will be done on a stove of a home-made variety, using firewood as a fuel. Having no chimney, such stoves blacken the roof of the bohio, as these houses are called. Their furniture is of the simplest wood-frame type. Chairs have leather seats, and beds have the least expensive of mattresses. More costly rural homes have tile roofs, and there are a few steel-reinforced concrete-roofed homes. They have either concrete or stone and concrete floors. Many rural homes have privies, but not all have them. Few of these are flyproof or otherwise sanitary. Town houses and the better rural homes have heavy shutters which are closed at night, and often during the day, to keep out the sun. Many city houses and a few country ones have bars on their windows.



### Diet

The diet of rural people in Bejucal is abundant in starches and fats. Besides beans and rice, the most basic starch staples, the people eat a great deal of sweet potatoes, yucca, malanga, Irish potatoes, and some green corn. The cooking banana, the platano, is also an ever-present starchy food in their diet. These starches are either boiled or deep-fat fried in lard. All of these starches are eaten in large quantities at the two main meals of the day. When they are boiled in stews and thick soups, green and yellow vegetables may be added in small quantities.

Coffee, sugar, salt, seasonings, white bread, eggs, milk, and meat are the remaining parts of the most typical diets. The meats consumed are locally raised chickens and other fowl, pork, and town-purchased beef. Chicken and pork are the preferred meats, but few rural families consume very much meat of any kind compared with the United States levels of consumption or upper-class Cuban consumption patterns. The very poorest families consume very little milk per person, and little meat. In season, vegetables, fruits, and ground green corn are added to this diet. No families are without an occasional soft drink, piece of candy, sweet cake or cookie, and the male population, with only a few exceptions, drinks coñac, rum, and beer.

Increasing wealth does not bring major shifts away from the basic foods, but higher family income does result in the consumption of more meat, cake, dairy products, costly oils, canned goods, and so on. In the meat category, increasing wealth greatly increases the consumption

of the preferred meats -- pork, ham, and chicken. Chicken with rice is probably the most widely liked dish of all classes below the highest. Even though starch consumption still predominates, certain families in the laboring and white collar classes have learned in school, from doctors, and from the mass media, about the nutritional value of fruits and fresh vegetables, and their sale is increasing.

Milk is consumed at breakfast by almost all people. Adults drink it in the form of "cafe con leche" or hot coffee and boiled milk mixed together. In some families children are given milk any time during the day they want it. Adults rarely drink any more milk during the day.

Although rural people have their own fruit trees and often have an abundance of fruit, except for an occasional pitcher of lemon or limeade, the chief use of citrus fruits is for seasoning. Their daily use for children and adults, while an inexpensive possibility, is not the custom. Other fruits, such as mangos, name, papaya, and avocados, are eaten in season. Rural people raise their own pigs, chickens, guinea hens, turkeys, and pigeons. These they rarely purchase in the city. Their food purchases are most frequently of rice, black beans, bread, coffee, salt, lard, sugar, and, occasionally, beef. In the city the higher economic levels eat eggs as a part of the daily diet -- usually fried and mixed with rice. Rural people, who almost all produce eggs, eat few of them. They are rarely fed to babies or small children; the common belief is that they are harmful.

Cubans prefer eggs produced in Cuba by native hens to eggs imported from the United States. They also prefer "country raised" chickens

to chicken-house raised poultry. The preference is reflected the year around in higher prices for country raised chickens and in higher summer prices for Cuban than imported eggs when, during this slack season due to both rains and moult, Cuban hens do not meet the urban demand.

The two chief meals of the day, almuerzo and la comida, are eaten with the whole family gathered at the table in most homes. In a few, however, the men eat at different times than the women. In any case, the women are responsible for serving the food and seeing that everyone is satisfied. In rural families extra starches are cooked for each almuerzo because the housewife is fattening a pig with family garbage.

Canned foods, being expensive, are purchased mainly by the upper economic classes. Laboring class families will purchase a can of preserved fruit for a special occasion such as a birthday party. Most Bejucal homes have no ovens, so foods are boiled, fried, and roasted over charcoal.

Babies are fed cow's milk from bottles from a fairly early age in Bejucal. Their diet consists chiefly of milk and mashed tubers (malanga believed to be especially beneficial). Orange juice is fed to a few babies, and hard bread is given to them when they are teething. The upper classes can afford to supplement this diet with canned baby food and they, therefore, sometimes feed their babies soup and fruit. Adult food is ordinarily started with soup and soft starches until the teeth of the child permit the eating of harder foods.

Cuban doctors and public health officials are concerned with the low vitamin and protein content of the diets of the Cuban people.



They believe that these lacks result in many cases of disease and in health problems such as low blood pressure and lack of vitality. On the basis of the writer's observation, the farmers who work the hardest in Bejucal (and expend the most bodily energy) are also those who have the most adequate diets by "modern" health standards.

### Rural Health

The farm families of Bejucal have a wide variety of traditional, non-scientific beliefs concerning the causes and cures of ill health. However, modern medical knowledge is slowly spreading in the community, and farm people are learning new ideas concerning disease. There were eleven medical doctors in Bejucal in 1954, and rural people patronized them for severe illnesses and for accidental injuries. There was no hospital in the city (excepting a hospital for aged people, maintained by an order of Roman Catholic nuns), and people needing operations or hospitalization for any other reason had to travel to Havana. The municipality of Bejucal maintained an ambulance for carrying severe cases or bedridden patients.

The doctors of the town generally carry out their private medical practice independently of each other. However, a group of doctors recently formed a prepaid insurance-type medical plan, open to anyone who desired to join. Members pay three pesos and fifty centavos per month per person and receive medical care and some medicine. This medical group has competition from a larger one located in Rancho Boyers, but this is too far for many people in Bejucal to go. While a few rural people are members, most rural families are unable or unwilling to pay the high cost.

Besides doctors, dentists, nurses, and midwives practice in Bejucal. Most babies are born in the home with a midwife in attendance. The pharmacies in the town dispense modern drugs and medicines. There is also a private medical laboratory for diagnostic tests.

### Dress

Clothing serves many important functions in Bejucal besides that of protecting the body from heat and cold. The people have adopted modern mass produced clothing, or homemade copies of such clothing. But different clothes indicate status and role differences in wealth, in age, in sex, in occasion, in occupation, and in group membership. Generally speaking, the lower the socio-economic level, the less expensive the clothes worn for working and for evening or festive occasions. Children wear special clothes made for them, and elderly people wear styles now out of fashion for younger adults. The clothes of play are not those of work, of a party not those of the classroom or a factory. White collar workers wear Western style business suits or white Cuban shirts called guayaberas and slacks. Laborers and farming people work in homemade and store purchased inexpensive washable clothing. It is usually loose fitting. Farmers tend to be easily identifiable in their work dress since they usually wear a broad-brimmed hat, a white or tan riding pant and leather leg-guards above high work shoes. Farmers who rise in wealth until they are equal to urban middle income store owners in wealth wear "urban style" sports wear when they visit town.

Many occupational groups besides farmers are identifiable by their dress. Members of the armed forces, the police force, medical doctors, nurses, dentists, pharmacists, Roman Catholic priests, bus drivers, chauffeurs, taxicab operators, and others wear uniforms indicating their occupational identity. Students wear uniform shirts and dresses to school. In the evening, after work hours, there are fewer occupational differences in dress because farmers, laborers, and others on the same socio-economic level dress in informal sports clothing, while white collar workers put on informal evening attire.

#### Farmer-Bodegero Relations

Every farmer in Bejucal maintains a continuing business relationship with a general store owner in the city of Bejucal or in some other nearby city. The general store manager, the bodegero, provides the farmer with short term credit, reduced prices, and special consideration, plus emergency assistance, in case of crop failure or sickness in the family. In return, the farmer is informally obligated to purchase all of his family's staples at that store. This means he will buy beans, rice, coffee, lard, salt, sugar, and countless other daily necessities from the bodegero. He may market some of his eggs, milk, tubers, or tomatoes through the bodegero as well. This relationship with his bodegero is one of the farmer's most important urban contacts and may function to assist the farmer in any development plans he might have for his farm and in spreading new information from the city to the farm. Some farmers maintain their relationship with a particular bodegero for many years.

### The Farmers' Cooperative: A Case Study

On the basis of the promotion of a professional man from Quivican (a neighboring city), the farmers of Bejucal organized a farmers' cooperative association shortly after World War II. Their enthusiasm was high, according to informants. The cooperative was designed both to supply farmers with food and household necessities and to market farm produce. However, it has largely failed at both. The writer tried to determine the reasons for this, and he decided that the effort failed for a number of reasons. The most important reasons for failure seemed to be the inability -- due to the lack of capital and the violation of custom -- to replace the services produced by the bodegero on the one hand, and by the commercial marketer on the other. For a farmer who has been a regular customer, the bodegero provides ready credit, security in case of crop failure, and a dependable urban supporter. The farmer cooperative bodega ran its business on cash and did not have credit or other aids to extend. Nor was the manager concerned with the relationship of the traditional bodegero to his farmer patrons. The marketing functions of the farmers' cooperative never really got going except for small amounts of Bejucal consumed produce. The assumption had been made that the farmers would harvest and deliver their fruits and vegetables, livestock and eggs, to Bejucal. However, the farmers of Bejucal are accustomed to receiving payment for their produce and livestock at the farm. The payment of the farmers before the harvest -- customary with fruit and some vegetables -- could not be financed nor could necessary transportation and harvesting activities.



Given these disadvantages, farmers were reluctant to commit themselves completely to an untried program, and many initial dues payers to the cooperative association dropped out. In 1954 there were only a few members left, although the bodega was still functioning. The failure of the attempt to fulfill their hopes resulted in a widespread cynicism among farmers who had expected a great deal. Local analyses of why the project failed are varied. Some heard by the writer from farmers were these: the failure of farmer leadership, the opposition of established merchants, the deep traditionalism and non-cooperative individualism of the farmers, the suspicion of corrupt management on the part of the bodega management, the fact that prices were no lower in the cooperative, and so on. Clearly the attempt to spread cooperative principles was abortive. But, the failure to provide the customary services seems to this writer to be a more significant reason; if the organization had had more capital and had organized to provide these services, plus extra benefits, it surely would have succeeded. The Cuban government at the time was favorably disposed toward such ventures.

#### Bejucal Stratification: The Farmer's Place

Farmers are conceived of as a special occupational class, distinct from others, by both themselves and by other classes in Bejucal. They are called guajiros. The highest income farmers rank as high as middle-income urban people. Slightly less prosperous farmers rank comparably to urban skilled craftsmen and small shopkeepers. Farmers who are only agricultural laborers or who have control over a minimum

of resources rank about the same as the lowest urban wage laborers -- just above the "people without shame." Agricultural laborers, while very low in rank, may receive meals and sometimes room and bed on the basis of equality with their small cash income. If they are young, they may look forward to climbing up the agricultural ladder of tenure.

People in Bejucal on the lower levels of the status continuum look on the system as being a dual one of "rich" and "poor." They, of course, define themselves as "poor people" and define their life chances as those of "poor people." People who work in the low paid professions, small businesses, clerical work, and low paid white collar jobs, either define themselves as poor people or as people of medium prosperity -- neither rich nor poor. Some farmers who have accumulated property and the symbols of higher status also identify with the middle group, although most farmers in Bejucal think of themselves, and are thought of by others, as belonging to the category of "poor people." There is differential association in recreational contexts, in marriage, and in voluntary groups among these categories -- upper, middle, lower, and farmer -- with farmers and urban "poor people" typically identifying each other as equals. Prosperous farmers who have risen in status do not segregate themselves and their families from other farmers unless they take up urban residence and cease to operate their farming activities themselves.

Racial identity is another criteria whereby people are ranked in Bejucal. People of Negro and Asiatic identity are ranked below Caucasian people. There were no non-Caucasian farm operators in Bejucal at the time of this survey, although a number of farmers employed Negro

hired help. There are a few Negro farm operators in other municipalities in the Province of Havana, and many in the more eastern provinces of Cuba. No Negro families lived in the rural zone of Bejucal.

### Friendship Networks

In Bejucal the best friends an adult person has are most commonly family friends. While children and youth may highly value peer group friendships, for adults the situation is often different. Friendship activities such as visiting and informal recreation are carried on largely within the family or kinship structure. This is even more true for rural Bejucal than for urban Bejucal. In the city there is more informal association of adults as unrelated neighbors and as people pursuing a common recreational interest. Even in the rural area women are sometimes intimates of neighbors they "grew up with" and rural men sometimes have friendships which are based upon common interests and not on kinship. But these are the exception. Most commonly friendship is perceived a family or family-like matter. One informant told the writer that he had many "conocidos" (people he knew), but only one "friend," his father, since his father was the only person he knew who was willing to sacrifice anything for his benefit and protection. Not all Bejucal farmers, however, define the content of friendship in the same way. Another farmer felt that he had a good friend in the person of a man with whom he had only occasional interaction. It seemed to the writer that the more mobile a farmer was the greater was the probability he had people he called friends who were not related to him by any kinship relationship.

### Education

Bejucal farm people learn most of their habits and attitudes within the family group. It is there that they learn the habits of language, of personal care, of proper behavior toward others, and of conventional ways of thinking. It is there that boys learn the occupational skills of farming and girls learn the skills of homemaking.

Neighborhood and community visiting brings farm children together with other children, generally children related to them by kinship. However, rural children interact less in age peer groups than urban children because of the isolation of their homes and because of their involvement in family and farming activities.

Farm people in Bejucal have ambivalent attitudes toward formal education for their children. Some education in reading, writing, and simple arithmetic is believed necessary, but additional formal education is often looked upon as unnecessary. However, if formal education involves professional training or training in some skilled trade, then it is looked upon as very valuable. To work with one's hands without skills is recognized as being the poorest paid and the lowest prestige kind of work. Thus, education or training which will result in a professional or skilled trade position is looked upon as worthy of considerable individual and family sacrifice. For farm boys leaving agriculture and taking up an urban occupation this is especially true. The study of Cuban history, national geography, and world affairs is supported by many parents, but few support a "wider" conception of education with any enthusiasm.

There were thirteen rural schools in Bejucal, with a total of three hundred and ninety students, in December of 1953. All but two of the schools were one-teacher, one-room schools, with both sexes and five grades (one to five) in the same room. In the two slightly larger schools there were two rooms and two teachers in each. Thus the fifteen rural teachers had an average of twenty-six students each. The attendance on any one day was usually less as a result of rainy weather, heavy farm work, or illness.

Rural parents are reluctant to send their daughters to mixed schools when they are near or beyond puberty. Table 2 shows clearly the impact of this reluctance. Mothers also desire their daughters at home to help them and to learn home-making skills.

Cuba has a law of compulsory education which can legally be enforced by the urban police and by the rural army (the Guardia Rural) who police the rural zone of Cuba. However, in Bejucal this power is not used. There are some children in both the urban and rural areas who rarely if ever attend school. They are generally from very low income families where little value is placed upon schooling. Clearly some rural Bejucal students did not start school at six or seven years of age, the legal ages. One reason for this given by informants was the reluctance of rural parents to allow their children to travel to and from school by themselves until they are eight or nine years old. Children of six or seven with older brothers and sisters also in school were allowed to go with them. There was in Bejucal a group (the Junta contra Analfabetismo) promoting the abolition of illiteracy, and there were two night schools having older students (as the table indicates)



conducted by the government in Cuatro Caminos and Caguazo (schools with electrical lighting as well as convenient location).

TABLE 2

DECEMBER 1953 SCHOOL ENROLLMENT IN RURAL BEJUCAL,  
GRADES 1-6, BY AGE AND SEX

Years of Age	In First Grade		All Grades	
	Males	Females	Males	Females
6	17	15	17	15
7	16	15	19	21
8	6	9	18	21
9	6	8	13	34
10	5	1	29	15
11	3	2	24	14
12	1	1	32	15
13	2		20	13
14	1		22	7
15	3		16	0
16			4	0
17			4	0
18			6	0
19 to 25			15	0
26 to 30			3	1
over 30			1	1

Source: Office of Education, Bejucal, Cuba

With all five grades in one room, the rural teachers divide the classroom day among the grades, working with each separately. Classroom discipline is strict; quiet, orderly behavior is maintained by the teachers.

#### Farm People and the Mass Media

Farm people in Bejucal read few newspapers or magazines, but radios are very widely spread throughout the population. Almost every home had a receiving set at the time of the survey. Since most rural

homes lack electricity, most sets were battery radios. Song programs, news, daily serials, and entertaining shows of various kinds were the preferred programs.

Only one Bejucal farmer encountered by the writer had a television set at the time of the survey (and it was not paid for). However, some rural people occasionally watched television shows in the city where sets were found in every bar-restaurant, in a political party headquarters set up by the mayor, and in a few homes.

There was no farm magazine which reached the homes of Bejucal's farm people. A very small minority of farmers did read the journal Agrotecnia published for agricultural engineers by their association and distributed by the Cuban Ministry of Agriculture. Although two weekly papers were published in Bejucal in 1954, the writer found no copies in rural homes. Few rural people read them unless they read them in the homes of city relatives.

#### Political Activities

While the survey was being carried out, there were vigorous political activities being conducted in the community. Party affiliations were being sought by each of the major parties having candidates for elective office. Voters were being registered, and campaigning was being carried out in both urban and rural areas.

In these varied and, at times, aggressive political activities, the rural people of Bejucal play largely a passive role. They move into political action only as compelled or led by the force of the state, for the most part. While, in the 1954 party affiliation drives,



about three per cent more of the rural electors affiliated than urban electors, this was probably the result of the more efficient house-to-house campaigns carried out in the rural areas. Rural people, being widely suspicious of the established regime, were slightly less willing to affiliate with the party in power than were urban people.

The rural people believe that Cuba has been governed for years by people ambitious for their own wealth, exploiting their authority to get money from farmers. Many rural people also expressed disapproval of the rural army which patrols and polices the rural areas.

#### Military and Police Organization

The locus of military and police power in Bejucal lies in the office of the highest officer in the Rural Army in Bejucal. He is the Captain of the Rural Guard. The Captain has charge of the activities of the Rural Army and the National Police unit stationed in the town. His subordinates have a monopoly on the legitimized use of violence between people in Bejucal. They are constantly ready for any attempt by revolutionaries or criminals to challenge that monopoly. Armed men remain on duty twenty-four hours a day at the cuartel, the headquarters of the Rural Army, and at the police station in the middle of town facing the Central Park. They have other functions as well. They are responsible for supervising public conformity to laws regarding property, public order, taxes, licensing, agricultural laws, and traffic regulations. In practice, they spend their time patrolling, supervising traffic, assisting at fiestas, and attending courses provided by specially trained officers of the army. Furthermore, they are responsible for supervising the execution of court orders.

The Rural Guard patrols the rural area on horseback daily. They also have men on duty at fiestas or big gatherings in town. Their area of control is generally limited to outside the city. They maintain rural peace, inspect farmer conformity to the forestry and agricultural laws, and bring rural law violators to court. In structure, the Rural Army is headed by a small group of commissioned officers and non-commissioned officers who are career men. Beneath them are the enlisted men who do the physical work of the police functions and maintaining the cuartel. All levels are responsible for personal cleanliness and neatness, at which they excel. As a consequence of the position of the army as the predominant political force in the nation, the Captain of the Rural Army is certainly the most powerful person in Bejucal, yet in practice he exercises this power only when there is a threat to public order and to his control over the monopoly of violence.

#### The Court System

The court structure in Cuba is separated from the legislative and administrative structures at the municipal level. Even with frequent administrative changes, the judge of the municipal court may retain his job. The occupant in Bejucal is a widely honored and respected person. Integrity and good works are his widespread reputation. All minor cases involving petty crimes or small disputes appear before his courts. Major crimes or disputes involving large sums of money are matters for the national court in Bejucal.

Rural Bejucal recognizes the police and the courts as the correct means to settle disputes involving property relations. When the



writer asked informants what would be done if a neighbor stole another's chickens and refused to return them, farmer informants answered that he would go to the police and to the courts with his complaint. However, a settlement of the wrong would be the chief objective, prosecution only being resorted to as a last resort. In matters of conformity of rural people to the norms controlling property, family relations, heterosexual relations outside of marriage, and financial obligations, informal controls are usually effective. Petty crime occurs in Bejucal, but it is usually blamed on "people from Havana." The only case of organized crime encountered by the writer in the eight months spent in Bejucal was a case involving a group of men who were stealing pigs and chickens to sell in Havana. One man was caught with a two hundred pound pig in the back of his car. He confessed to police that there were others, but the police were unable to catch them. The marketing of food products from Bejucal to Havana is one of the largest commercial activities in Bejucal. It is quite possible that more crime exists in this area than is detected.

#### Governmental Aid for Farmers

Besides the activities of the Agricultural Agent designed to assist farmers, the Cuban government has undertaken other welfare programs of benefit for rural people. The law protecting renters has already been mentioned. In another law of significance for rural people, the government established a program to assist localities in building all weather roads from highways already existing to their localities. The law provided that the residents of the locality desiring the road must

provide one-third of the necessary funds. In 1954 there were two groups of farmers in Bejucal who had organized themselves to collect money for this purpose. In each area the rainy season made the marketing of local products difficult, if not impossible. One of these roads had already been built, the other was under construction. This program was administrated through the provincial governments and the local mayors. The mayor of Bejucal was glad to assist. In the celebration of March 10, 1954, the second anniversary of General Batista's coup d'etat, the mayor presented a four thousand peso check to the farmer president of one road building committee. Farmer informants reported that political support for the mayor was an expected reciprocal obligation for his assistance in getting the money.

Rural people are also benefited by the anti-parasitical campaign being carried out by the Cuban government with school children. In the tests made as a part of the campaign, about sixty per cent of the rural school children of Bejucal proved to have had intestinal parasites of some kind, some having severe infestations. Medicine was distributed free of charge to infected children if their parents agreed to cooperate in the program. The rate of reinfestation was lower in urban Bejucal than in rural Bejucal, but many rural people are making the changes necessary to prevent it. Pigs were being shut up in pens and buildings more frequently than in the past; more homes had concrete or concrete and stone floors, and more rural children were wearing shoes.

#### Religion

While the rural people of Bejucal identify themselves as Roman Catholics, in terms of participation in rites and organization, they

are non-active Catholics. Less than ten per cent of rural people regularly go to Mass. There are no rural churches, although there is a small shrine for worship in Santa Barbara. There are shrines in a number of the homes, and all children are baptized. Rarely are the other rites of confirmation, marriage, death and burial consummated under church auspices. The chief reason, given by the people, is the expense of these rites. When a person requests a rite of a cura (priest), the people believe the cura states a fee proportionate to how rich he thinks the person is. The cura never goes to the rural areas except occasionally to baptize children. His fee for this is two or three pesos. Many rural men also explain their non-participation in church activities in terms of distance to the church.

#### Beliefs with Respect to Relations between Men

Beyond the family group, Bejucalenos believe there is a world full of risks and dangers. They believe these risks and dangers are the result of bad people who may hurt them. The way for the person to cope with this world is by knowing enough to "defend" himself, to have friends who protect him, and to have a strong family group to help when it is needed.

Not all members of all social classes view the world in this manner. For example, certain businessmen, professionals, and governmental leaders support an optimistic world outlook in which society and mankind are good and improving with time. However, these people are exceptions, for the dominant belief is one of pessimism. The rationalization given by farmers, laborers, and small entrepreneurs for the

benefits of education, hard work, individual self-interest, the joining of fraternal clubs, the giving of small presents, the maintenance of strong familial mutual aid, and the loaning of money to neighbors, was in terms of self-protection in this world of danger. Even some of the optimistic community leaders proved not to be so optimistic in world outlook when questioned pointedly about specific situations facing people in Bejucal or in Cuba.

Rural people share this mode of pessimism. The retort, "I am continuing to defend myself," was often made by farmers encountered after not having seen them for a week or two. Both rural and laboring class people expressed to the writer and his wife the sentiment that it must be terrible to be so far from one's family, as they obviously were. When asked for a reason, they invariably expressed the danger that existed for a person so far from his family.

The establishment of friendship or mutual aid relations beyond the family is widely held to be very important for self and family protection in this world of danger. For a man the necessity of engaging in economic and political relations beyond the family makes this more important than for a woman. Many men in Bejucal will go out of their way to do favors for people in high political and economic positions so that they might be in line for reciprocal favors at some later time.

This world outlook, coupled with the necessity of individual choice in the selection and pursuit of occupational goals, results in considerable stress upon the adolescent boy. However, both in his family and at the place where he works, he is likely to find others

who will befriend him and thereby give him a sense of security. Frequent violation of business and governmental norms by adult men is accepted as a part of life.

To a varying degree the people of Bejucal also hold an outlook on life which is morally righteous. Many farmers said that the reason behind their discouragement with the possibility of beneficial governmental aid or a successful farmers' cooperative helping them, was some specific instance of past corruption of an individual of a public trust in money or proper performance of a position which they had heard about . . . but which did not hurt them at all. Concerning the conduct of governmental officials, businessmen, and professionals, the adult Bejucal public has certain categorical ideas about what is just and right and what is unjust and wrong. Rural people often expressed their preference for country living in terms of the moral superiority of rural people like themselves.

Bejucaleños believe that an adult's primary responsibilities are his family's responsibilities. Government and the various agencies of government are believed responsible for community-wide welfare. Most mutual aid activities are either carried on within families or are the result of governmental services extended to the population. This does not mean that neighborhood and community programs designed to benefit others will not be supported. It does mean, however, that such programs will receive most enthusiastic support when they are clearly of both public and individual benefit. For example, after hurricanes have passed, the first duty of the Bejucal farmer is to locate his livestock and mend his fences so that his animals will not



do damage to others' farms. Hurricane damage to houses will be repaired by family and neighborhood exchanges of labor, but a person's first responsibility, respondents reported, is to his own family and property.

#### Mutual Aid Patterns in Rural Bejucal

Besides lending aid in emergency situations, rural neighbors help each other in other ways. Much, but not all, of such mutual aid is carried on by neighbors who are related by kinship. At the time of the study, farmers were working together in neighborhood patronatos to cooperatively build themselves rural roads, giving free service of improved bulls to their neighbors' native cows, helping each other build new farm buildings and put on palm roofing, and cooperating without cash payment in some harvest operations. Inter-farm gifts of improved animals and trees were also reported to the writer. Tool loaning and borrowing went on freely. Generous hospitality was the most approved norm of conduct toward the visitor whether he was a neighbor or a stranger. While not conformed to by all of the rural people of Bejucal, this norm received substantial behavioral support.

#### Bejucal and the Region

The people of Bejucal are not only engaged in local community affairs, they are also vigorously involved in regional activities involving other communities and other cities as well. Some of these activities that were either directly observed or were reported upon by informants are given below.

In economic activities, the ties of Bejucal to the metropolitan region of Havana are very close. Commuting to Havana for daily work has already been discussed, as has the marketing of Bejucal agricultural products and manufactured goods. The distribution of both imported and Cuban produced finished goods from Havana to Bejucal is a daily activity of many people. Land ownership is often a regional phenomenon with Bejucal people owning land in other communities and people in other communities owning land in Bejucal. The people of Bejucal do some shopping in Havana. The farmers buy most of their agricultural equipment, other than hand tools, in Rincon, Santiago de las Vegas, or Havana.

Political affairs are also organized regionally. Voluntary groups, both parties and special interest groups, have regional organizations or federations. Tax collection, the court system, the school inspection system, the armed forces and other national governmental services all have some kind of regional organization.

Education beyond the grade school level is a regional phenomenon. Specialized schools draw both their teachers and their students from the region and the nation. Health care is also regionally organized. Governmental inspections of many kinds are regionally conducted.

In certain forms recreation is a regional phenomenon. Baseball and basketball involve inter-city competition. Dances are attended in neighboring communities as well as in one's own. The mass media are regionally as well as nationally distributed. The traditional sport of cockfighting -- which still has a few proponents in Bejucal (urban and rural) -- is a regional sport. Trips to the beaches for

bathing and recreation are regional forms of pleasure seeking. Roving singers and radio personalities gain regional as well as national popularity. Higher income Bejucal people are more likely than lower income people to be actively involved in regular regional forms of recreation because of their greater ability to afford transportation. However, the lack of wealth by no means excludes lower income people from such participation.

These varied regional activities imply a number of socially important arrangements. The daily and weekly commuting from one city to another to work and a consequent separation of the place of work from the residence and from the "home" community is one implication. Another is the mobility of people from their original homes to new residences following changes in occupational locations. With such mobility come difficulties in fulfilling all the traditional reciprocal obligations of the extended kinship system.

#### IV. A STUDY OF TWO CLASSES OF BEJUCAL FARMERS

In the next three chapters the findings from a survey of two classes of Bejucal farmers are presented. The data were gathered to answer the chief research question of this thesis. It was: What patterns of personal background, career experiences, social relationships, occupational definitions, value commitments, self-definitions, and operator role performances are associated with an advanced technological status for an individual family-sized farm operator, which might be hypothesized as causal factors, in part accounting for this high technological status? It was recognized that this would be an exploratory project searching for relationships and patterns rather than a highly controlled natural experiment which would establish the validity of any specific propositions. The writer viewed this as an essential first step in the research process of discovering the causes of individual technological innovation on small family farms in Latin America. If relationships could be discovered, more specific hypotheses could be formulated and tested in later research.

It was learned in the ethnographic survey that most of the "modern" or twentieth century developed agricultural techniques employed by Bejucal farmers had been adopted since the end of World War II. This finding and the marked contrast in farming procedures on adjacent farms suggested that a study could be made relating a farmer's technological status with some factors in his background experiences, his definitions, and his role performances. It was believed that since the changes

resulting in these marked technological differences were of recent origin and widely known about, they could be studied as indices of farm operator acceptance or rejection of technological innovations as measured by a farmer's technological status.

### Research Design and Execution

The first task in the solution of the general problem was the development of a measure of technological status. This was conceived as a problem in the development of a scaling procedure by which the relative technological status of an individual farm operator could be determined. In the research design this was outlined as a five-step process. In the first step a panel of judges who knew the farmers well identified those farmers they believed were "the most advanced farmers of the community in the techniques they used" in the following manner. A sample list of the "most technically advanced" farmers in the community was prepared with the Agricultural Inspector of Bejucal and with the Sergeant of the Rural Army who made the agricultural census the year before. Eliminated from the list were the seven or eight Bejucal farms owned by upper-class Havana businessmen, professionals, and government policymakers. Also eliminated were the few Bejucal farms owned by wealthy Bejucal businessmen and operated as businesses, not as family farms. The list was then shown to a number of professionals and bodega owners with widespread knowledge of rural Bejucal to see if they had any additions or corrections. In its final form it contained twenty-two "advanced" family farm operators.

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In the next step it was planned that each of these "advanced" farmers was to be matched with an adjacent neighbor. As each "advanced" farmer was being interviewed, he was asked to list the names of the farm operators on the farms surrounding his. The names were then ordered alphabetically, and one was chosen by reference to a table of random numbers, thereby giving each an equal chance of being selected. As was true for the advanced farmers, non-operating farmers were excluded and the choices were limited to farmers actually resident in the Municipality of Bejucal. Farmers also on the list of advanced farmers were eliminated, so that each advanced farmer might be matched with a neighbor not so defined.

It was felt that the use of this matching technique, which did not produce extreme categories of farmers on the single criteria of technological status had distinct advantages for this study (along with certain disadvantages). First, the method employed tends to control the variations in technology which exist in Bejucal in response to land and water differences. There are, roughly speaking, three different types of soil and water table zones in Bejucal as were described in the last chapter. If a survey was made, ranking all Bejucal farmers on a technological status scale, and the extreme categories were selected for comparative analysis, the category at the most advanced extreme would be chiefly located in the flattest and richest of these zones, the least advanced category chiefly in the hilly and poorest of these zones. In this case, analysis would probably reveal more about the differences in the agricultural possibilities of these different zones

than in the role-playing or role-definitional differences between the farmers involved.

Secondly, it seemed reasonable to assume that there was a great probability of equality between adjacent neighbors on such matters as the distance to urban markets and facilities, and to sources of communication and information, variations in neighborhood centers of gossip and informal conversation, and the geographic accessibility of the farmer to salesmen or to community leadership, matters which might influence opportunities for technical change. The least advanced farmer among the adjacent neighbors was not systematically selected for matching with the advanced farmers because the investigator wanted to know how it happened that the advanced farmers differed from any and all of their adjacent neighbors. Only a random matching technique would give each adjacent neighbor an equal chance of selection.

The two chief difficulties of the method matching adjacent farmers employed here are the small number of matched pairs ( $N=22$ ) and the imperfect homogeneity of the two categories. These difficulties create problems for the statistical analysis and the interpretation of the findings. But within the time and financial limitations of the research project, compromise with "ideal" research considerations was necessary.

The next three steps of the research design aimed at measuring technological status involved: first, making a technological inventory of the machinery, implements, crops, and livestock employed on each of the farms in the sample of advanced farmers and paired adjacent neighbor farmers; second, statistical analysis of the survey data to

determine which technological items differed (in any direction) between the two categories; and third, the ordering of the sample farmers on a technological scale by numerically weighting those items which differed between the categories to determine whether or not the advanced farmers were more advanced than their neighbors by this objective set of criteria. The methodology and the findings are considered here.

### The Technological Inventory

From the ethnographic observations and from participant observation on two Bejucal farms, the writer was able to make up the following outline of the productive operations carried on in the principal farm enterprises in Bejucal. It is a highly generalized outline which ignores specific content concerning how the operations were executed, but it served as a guide in the preparation of more specific questions in the questionnaire.

#### Outline of Productive Processes Employed by Farm Operators, Bejucal 1954

##### Animal Production

1. Choice of variety and strain
2. Fencing
3. Housing
4. Breeding
5. Care of young
6. Feeding
7. Milking (of cattle)
8. Collecting or herding
9. Disease control and health maintenance
10. Transporting
11. Marketing
12. Home slaughtering





### Growing of Field Crops

1. Choice of variety and strain, selecting seed
2. Making of calendar decisions
  - (a) Number of times grown per year
  - (b) Season grown
3. Preparing seed and/or transplant
4. Preparing soil
5. Planting
6. Cultivating and fertilizing
7. Irrigating
8. Controlling insects -- spraying or dusting
9. Harvesting
10. Hauling from fields
11. Storing
12. Transporting
13. Marketing

### Fruit Production

1. Choice of variety and strain
2. Preparing seed or small plant and grafting
3. Guarding of trees from damage
4. Cultivating of trees and fertilizing
5. Insect fighting -- spraying or dusting
6. Pruning of trees
7. Harvesting of fruit
8. Transporting of fruit
9. Marketing

### Building and Equipment Maintenance

1. Constructing
2. Buying and transporting
3. Operating
4. Storing
5. Repairing

The writer observed that these operations might be variously one-man, two-man, or three-man operations. Sometimes even more people would be involved in a single operation on a single farm; most usually engaged in harvesting on the larger farms. The energy employed to carry out these operations was, variously, human labor alone, human and animal power, and human operation with machine power. On the basis

of this outline, a questionnaire check-list was prepared and pretested in combination with questions to be considered later.<sup>1</sup> The two categories were interviewed in their homes by the writer during June, July, and August of 1954. The data, transferred from the questionnaires to a master sheet, were subjected to analysis by both summary statistics and non-parametric analytical statistics.<sup>2</sup> The results follow in Chapter Five.

### Step Two

Having determined whether or not the pairs of adjacent neighbors were different by objective as well as reputational criteria, the second step of the research, if they were, was to test certain concrete hypotheses concerning the differences between them. On the broadest level of generalization, it was proposed that there would be significant differences between the categories of farmers in their personal backgrounds, career experiences, social relationships, occupational definitions, value commitments, self-definitions, and operator role performances. The technological innovations contributing to high technological status had been introduced by the present operators in almost every instance. Except for improved strains of livestock and the use of chemical fertilizers, the changes had almost invariably occurred since World War II. Consequently, it seemed reasonable to suggest that there should be researchable differences in the life experiences, relationships, role definitions, practices, etc., of the

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1. Appendix B.

2. Appendix C presents a discussion of the statistical tests employed.

advanced farmers and their adjacent neighbors which could be hypothesized as explanatory of the differences in technological status between the pairs.

No highly specific hypotheses were posed at this point. Rather it was proposed that the paired farmers would differ on the variables and attributes found on the list below. The list was composed of factors bearing on the principal problem of this dissertation. It also reflects the rural sociological research on technological change in the United States. Especially important were the studies of Wilkening, Beals and Bohlen, Coleman and Marsh, Neal, and other rural sociologists.<sup>3</sup>

A. Background Characteristics

Age of operator, place of birth, where he was reared, father's occupation, educational level attained, marital status, number and ages of children

B. Careers in Farming

Who taught him farming, work roles experienced, how operator obtained farm, resources he had at that time, original plans for his farm, length of time farming this place, size of land farmed, tenancy status, organizational participation

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3. Studies made by these scholars are found in the bibliography under their names. A summary treatment of their findings, printed after this research was carried out, is North Central Regional Publication No. 1, Agricultural Extension Services, How Farm People Accept New Ideas, Special Report No. 15, Agricultural Extension Service, Iowa State College, Ames, Iowa, November 1955, 1-12 pages.

C. Farm Operators

Location of farm, enterprises on farm, rotations, gross annual expenditures as index of scale and commercialization, savings, expected use of savings, equipment and livestock possessed, labor force employed, regular and seasonal employment, the daily round, visits to town, bodega buys in, years purchased there, marketing connections, credit employed, credit could secure, sources of credit, farm plans (daily and long term), bookkeeping methods

D. Changes in Farm Operation

Changes operator has introduced, who helped him, how did he make them, which he thought were hardest to make, plans for farm now, what he has done to carry them out, are his own resources sufficient, what is lacking, if anything, use of selected improvements, who recommended them, where he learns of improvements, reading of farm magazines, where he believes is best place to find information, use of credit to assist change, attitudes toward use of and extension of credit.

E. Conceptions of Farming

Definition of what makes a better farm in Bejucal, name of best farmer he ever knew, relation to him, why he considers him best, self-comparison with best farmer, people he believes have the most interest in his farm activities and success, does he think that they expect improvements, have

they spoken of improvements, does he believe that today's methods will work in the future, ranking of selected economic and social factors in improving a farm and for farmer getting ahead, attitudes toward how his father farmed, attitudes toward using large amounts of credit, attitudes toward necessity of land ownership in order to make farm improvements, attitudes toward governmental programs to aid farmers, attitudes toward informational programs, attitudes toward opportunities which exist for Bejucal farmers, attitudes toward loaning money to neighbors and friends, ranking of five hypothetical goals for the use of his wealth: earn more on his present farm by mechanization, increase the size of his farm or buy more land, educate his children (or grandchildren) in professions or trades, build a new house of reinforced concrete on his farm, build a good house, and live in town

F. Self-conceptions related to farming and change

Ratings of self in comparison to other Bejucal farmers in terms of wealth, the amount of work done daily, the number of changes introduced on his farm, success as a farmer, luck as family provider, his luck or success in urban business deals, the quality of his farm administration, his skill in repairing and using farm machinery, results in using insecticides and chemical fertilizers, his possibility of successfully paying off a loan from the governmental development bank or other bank, his political

influence, how well known he is in the community, knowledge of what is necessary to better himself, conformity with the laws and customs of the community, amount of agricultural education he has gained, the desire of the farmer to better himself, and his willingness to sacrifice for the advancement of the farm.

Questions embodying these hypothesized variables and attributes were prepared, pretested, and made part of the survey questionnaire administered at the same time as the technological inventory. During the pretest and during the interview, the writer often asked the respondent to answer why he answered as he did to learn both whether or not the question was understood and the context of experience and meaning related to the answer. No further reliability checks were possible at the time.

Some of the questions asked of respondents called for statements of fact, while others asked them to express an opinion on some subject. In this survey report, the writer assumed the farmer's statements of empirical fact to be accurate. On page 148 one case is presented where this assumption may not, in fact, have been justified.

#### Limitations of the Research

Limitations of research time and funds limited the range of possibilities open to a single student investigating the life of the people of a community as large as Bejucal. Virtually no time was available for checking the reliability or validity of either the ethnographic survey data or the sample survey findings. Sampling problems had to

be met at the moment and solved as expediently as possible within the personnel and resource limitations. However, even with these limitations, the writer has confidence in the bulk of the data and believes that the same general conclusions would result from any systematic replication of the study in the same community. His rapport was generally excellent and the questioning was extensive.

The problem of the generalizability of the findings to other farmers and to other communities is a serious one and not resolvable within the knowledge limitations of the writer. (It is possible that this is a serious weakness of the individual, narrow scope, research problem.) Some of the difficulty might have been avoided, however, if the writer had undertaken to test one or two highly specific hypotheses and had designed the research specifically to make this test. At the time when he undertook the research, both the practical demands for information of the agricultural demonstration program of the Project 39 office in Havana and the broad general interest of the author directed the research in the broad exploratory-research direction.

Statistical analysis of data from sample surveys is facilitated by larger samples than were used in the study of the two categories of farmers. Shorter, more focussed questionnaires would have permitted the expansion of the sample, provided the sample of advanced farmers had been extended to other communities in addition to Bejucal. However, in the situation it was more economical to learn more from each respondent and have fewer numbers.

The use of paired neighbors in the study has the difficulty that neither category of farmer by itself or combined with the other



category is representative of the universe of farmers in the community. However, it was believed, and has been demonstrated, that the sampling method used would supply information concerning the processes of technical change. A simple random sample from the entire universe of Bejucal farmers would have included only very few farmers who had made extensive changes and would not have been very useful for the particular purposes of this research.

## V. THE TECHNOLOGICAL INVENTORY RESULTS

### Animal Production and Food Crops

Within the first activity area, animal production, some differences existed between the farmer categories which were relevant to the problem of measuring farmer technological status. Most of the differences were not statistically significant, as determined by the Wilcoxon test, but most variations were in the direction of larger scale, more modern practices on the part of the advanced farmers (see Table 3). This is also true in the area of growing field crops (Table 4). The advanced farmers were significantly more likely to produce cash crop vegetables, such as Irish potatoes, tomatoes, and green beans, in commercial quantities; they were significantly more likely to own a tractor and equipment for plowing and cultivating; and they had field irrigation in significantly larger numbers. For farmers with irrigation, the planting and harvesting of crops could be continued through all seasons of the year -- wet, dry, and transitional. For those without irrigation, the number of harvests that could be grown depended upon the nature of the particular crop and the distribution of rainfall. Corn, for example, was ordinarily planted two or three times a year, with the expectation of two good harvests of grain and one of dry-season foraging for livestock without irrigation. The same was true for millet. All of the irrigated farms grew cash crop vegetables for the Havana market and depended less upon the traditional products, such as

TABLE 3

## SELECTED ELEMENTS OF ANIMAL PRODUCTION

Technological Item	Category of Farmers		Significance of Difference* (Wilcoxon Test)
	Advanced	Neighbor	
<u>ANIMALS</u>			
Number of Farmers Possessing			
Cross-bred cattle	19	20	N.S.D.
Pure-bred cattle	3	1	N.S.D.
Cross-bred pigs	10	7	N.S.D.
Pure-bred pigs	3	0	N.S.D.
Cross-bred chickens	9	12	N.S.D.
Pure-bred chickens	2	0	N.S.D.
<u>THE DAIRY ENTERPRISE</u>			
Number of Farmers Who			
Report Milk Production	13	16	N.S.D.
as a major enterprise			
Have ten or more producing	8	5	N.S.D.
milk cows			
Own thirty or more milk	4	3	N.S.D.
cows			
Have stable for cows	10	8	N.S.D.
Have corrals for cattle	16	15	N.S.D.
Have motored forage chopper	7	4	N.S.D.
Use medicines for sick cows	10	8	N.S.D.
Carry milk to Bejucal and			
and market it there -- door	4	9	N.S.D.
to door or to bodegas			
Sell milk to companies	11	7	N.S.D.
from Havana			
<u>OTHER ITEMS</u>			
Number of Farmers Who			
Use wire fencing	21	20	N.S.D.
Have a pigpen	19	17	N.S.D.
Have a pen for small chickens	15	16	N.S.D.
Mean Number of			
Cows owned	14.09	11.50	N.S.D.
Pigs owned	12.27	12.41	N.S.D.
Chickens owned	247.95	164.18	N.S.D.

\* N.S.D. = No significant difference at the .05 level of significance. The statistical tests employed here and in the tables to follow are discussed in Appendix B.

TABLE 4

## SELECTED ELEMENTS OF FIELD CROPS PRODUCTION

Technological Item	Category of Farmers		Significance of Difference* (See note*, p.100)
	Advanced	Neighbor	
<u>CROPS</u>			
1. Average number of man- zanas under cultivation	59.95	40.57	N.S.D.
Number of Farmers Who			
2. Grow crops of corn			
(a) 1 time per year	4	3	N.S.D.
(b) 2 times per year	15	17	N.S.D.
(c) 2.5-3 times per year	3	2	N.S.D.
3. Grow millet	21	22	N.S.D.
4. Grow squash	10	22	Significant Dif- ference, $\chi^2 p < .01$
5. Grow yucca	21	22	N.S.D.
6. Grow sweet potatoes	22	22	N.S.D.
7. Grow white (Irish) pot.	8	2	Significant Dif- ference, $\chi^2 p = .028$
8. Grow tobacco	1	0	N.S.D.
9. Grow mani	3	0	N.S.D.
10. Grow black beans	6	6	N.S.D.
11. Grow tomatoes	12	7	N.S.D.
12. Grow green beans	9	6	N.S.D.
(a) Average number of crops per year	2.83 (N=9)	2.25 (N=6)	N.S.D.
13. Grow cane for cattle	14	17	N.S.D.
14. Grow cane for sugar mill	1	0	N.S.D.
15. Grow cash crop vegetables as a major enterprise	15	6	Significant Dif- ference, $\chi^2 p = .006$
<u>AIDS TO CROP PRODUCTION</u>			
Number of Farmers Who			
16. Own tractors and equipment for cultivation	10	2	Significant Dif- ference, $\chi^2 = .007$ .
17. Hire custom tractor and equipment for cultivation	8	14	N.S.D. Exact $\chi^2 p = .0612$
18. Own or rent a planter for corn, millet, or potatoes	6	1	N.S.D.
19. Own pickup for transporting	2	0	N.S.D.
20. Use hybrid or selected seed	13	8	N.S.D., $p = .079$
21. Use insecticides	16	11	N.S.D., $p = .0767$
22. Use chemical fertilizers	17	17	N.S.D.
23. Have irrigation for field crops	9	2	Significant Dif- ference, $\chi^2 p = .015$

sweet potatoes, malanga, mani, yucca, black beans, and so on, for income. They still grew these crops for family consumption in most cases.

### Fruit Production

The production of fruit -- chiefly avocados and mangos -- is one of Bejucal's major agricultural activities (See Table 5). Most farms have enough fruit to sell some on the market. In the advanced farmer category, all but one farmer sold fruit, and every neighbor farmer sold some. On many farms, production was not large, however. One advanced farmer and two or three fruit harvesters in Bejucal packed avocados for the international market, chiefly for the United States. Most farmers sold their fruit to harvesters who marketed the fruit in Havana. Over half of the advanced farmers and exactly one-half of the neighbor farmers used grafted fruit trees. No farmer encountered pruned his trees, but all put cactus, wire, or stakes around small trees to protect them from animals. No farmer sprayed or dusted his trees, although some farmers desired to start doing so. Cultivation of the ground under avocados was common. The farmers reported that the practice increased yields, but they did not know why. Almost every farm had a long pole with a knife or hook on the end for harvesting avocados and mangos in the method already described. The fruit was carried in carts and in wicker, woven baskets and boxes. Some

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\* In Table 4 and tables to follow, the Wilcoxon test was used to test the significance of difference when means are given, Fisher's exact  $\chi^2$  test when frequencies are given. Where the latter test is used, the probabilities are given in the tables where they are statistically significant.

TABLE 5  
ELEMENTS OF FRUIT PRODUCTION

Technological Item	Category of Farmers		Result
	Advanced	Neighbor	
1. Estimates of total number of economically profitable fruit trees	2,600	1,820	N.S.D.
2. Methods of Harvesting Fruit: Number of Farmers Who			
(a) Sold crop to harvester, did not help himself	16	1	Significant difference, $\chi^2 p = .0008$
(b) Sold crop to harvester, helped to harvest	4	15	Significant difference, $\chi^2 p = .0009$
(c) Picked crop, transported it to, and marketed it at, Bejucal, himself	0	3	N.S.D.
(d) Picked crop, transported it to, and marketed it at, Havana, himself	2	0	N.S.D.
(e) Not determined	0	3	N.S.D.
3. Used Grafted Fruit Trees	15	11	N.S.D.



transportation of fruit was done on the backs of horses or in horse-drawn carts. However, most fruit was carried by trucks, varying in size from pickups to two or three ton trucks.

All farm buildings observed by the writer were farm constructed, chiefly of "natural" (unfinished) raw materials. Most had palm roofs and log walls, a few had tin or galvanized iron roofs (see Table 6).

TABLE 6  
FARM BUILDINGS

Technological Item	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
Number of Farmers Who			
1. Had stable for cattle	10	8	N.S.D.
2. Had storage bohios	19	21	N.S.D.
Average number per farm	18.2	1.77	N.S.D.
3. Used electricity	9	3	Significant Differ- ence, $p=.044$
From company	5	3	
From motor generator	4	0	
4. Had hurricane-proof bohio	17	15	N.S.D.

Most advanced farms and many neighbor farms had two storage buildings. Most, also, had a hurricane-proof bohio used for storage as well as safety for the family in case a hurricane should strike. On the more prosperous farms in each category, farmers were starting to get farm machinery under cover of buildings and sheds. Most farmers, however, do not cover their equipment except for hand tools.



### An Index of Technological Status

The development of an index to measure technological status rests, it was argued, upon both those matters which distinguish the two categories and which reflect technological change. The following items which differed between the categories were weighted in the indicated arbitrary manner to determine whether or not they could serve as the components of an index.

<u>Item</u>	<u>Weight</u>
Possession of pure-bred cattle	5
Possession of cross-bred pigs	3
Possession of pure-bred pigs	5
Possession of cross-bred chickens	3
Use of medicines for animals	5
Sells milk to commercial company	5
Has stable for cows	5
Has pigpen	5
Has motored forage chopper	5
Grows cash crop vegetables	5
Owens tractor and equipment	5
Rents tractor and equipment	3
Owens or rents planter	5
Owens pickup	5
Uses hybrid or selected seed	5
Uses insecticide	5
Has irrigation	5
Uses grafted fruit trees	5
Has electricity	5

The weighted items for each farmer were added, and the raw scores ranged from sixty-six to thirteen (See Table 7). The average score for the advanced farmers was 39.45, and for the neighbor farmers was 24.95. The two categories proved significantly different by the Wilcoxon test ( $p < .01$ ).<sup>1</sup> In only three cases did the adjacent

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1. The Mann-Whitney U test which assumes the distributions are independent of each other resulted in a  $z$  of 3.88,  $p < .001$ .

TABLE 7  
TECHNOLOGICAL STATUS SCORES

Pair Number	Category of Farmers	
	Advanced	Neighbor
1	56	15
2	34	13
3	43	13
4	33	39
5	66	19
6	56	29
7	40	16
8	35	15
9	33	31
10	40	38
11	41	29
12	43	26
13	38	30
14	30	13
15	23	51
16	48	28
17	23	19
18	40	23
19	51	26
20	28	20
21	46	18
22	21	38
<hr/>		
Total	868	549
Mean	39.45	24.95

neighbor have a higher score than the advanced farmer with whom he was paired. The chances are less than one in a thousand by the sign test of only three negative occurrences in twenty-two opportunities if chance alone determined the outcome ( $p=.50$ ,  $q=.50$ ).

Thus, the criteria identified and weighted, collectively proved to have some utility for the problems of this thesis. The chief difficulty lies in the weighting process. Surely, a tractor and equipment, for example, have more impact upon a farmer's technical operations than have a motored forage chopper or many other of the items included. But, the writer knows of no way of determining this amount from the data at hand. Possibly the solution lies in developing some measure of energy inputs and outputs over time. Also a matter of difficulty is the observation that some enterprises had been more subject to change than others within the two categories of farmer. For example, some Bejucal farmers had adopted the complex of advanced factors involved in commercial vegetables production: tractors for plowing, planting, and cultivation, irrigation for dry season watering of their fields, the use of chemical fertilizers and insecticides, and the use of hybrid or specially produced seed. But farmers who had dairying and fruit raising as their major enterprises had not as yet adopted many of the basic changes in their enterprise fields (for example, mechanical milking, sanitary dairy walk-in milking parlors, insecticides and fungicides for fruit trees, etc.). This is a problem, but the writer knows no way for equating different kinds of changes in different enterprises. Possibly, again, the future solution lies in measures of energy inputs and outputs over time.

A third difficulty lies in the danger of omitting elements which may be of high discriminatory value. The writer inadvertently omitted, for example, the use of protein supplements for milk cows. His observation is that many more of the advanced farmers than neighbor farmers used it, but data are lacking to prove this. Possibly this question is deserving of special investigation.

However, it was possible to state affirmatively: there are ways of measuring a farmer's technological status. Further refinement of the approach is obviously needed to test for reliability and validity and thereby to increase predictive ability. Likewise, it seems safe to say that according to the objective criteria studied, the advanced farmers were significantly more advanced than their adjacent neighbors in the farming technology they employed. The difference proved adequate to give considerable support to the original reputational identification by the panel of judges of the advanced farmers as the most advanced in the community.

Besides this major finding, that the two categories differed (objectively) in their technology, it was found that the advanced farmers had adopted, in significantly greater numbers, a twentieth century complex of power sources, implements, and techniques involved in the growing of irrigated cash crop vegetables. This involved the adoption of two major power sources: the gasoline or diesel-motored irrigation pump, and the gasoline tractor. And it also involved the use of new implements, new varieties of crops and commercial seed, insecticides, chemical fertilizers, and the adoption of continuous, year-round, cultivation of commercial vegetables. Not all of the farms possessing



some of these elements had or employed the use of them all. Advanced farmers in the zones of Bejucal lacking water for irrigation (at that time) had advanced their technological status by changes in fruit raising and in livestock production, chiefly by the introduction of new varieties of plants and new animal bloodlines. Data gathered on these changes are given later.

## VI. BACKGROUND CHARACTERISTICS AND LIFE EXPERIENCES IN FARMING

This chapter reports the survey findings concerning the respondents' background characteristics and life experiences in farming. The purpose is to see if these factors are significantly related to the differing reputational categories of farmers. As the data on Tables 8 and 9 indicate, the two categories of farmers proved to be almost identical in age and the work roles they had experienced. The mean age of the advanced farmers was forty-five years, and of their paired neighbors forty-five years and about eleven months. The data, however, did indicate a significantly larger number of neighbor farmers than advanced farmers under forty years of age ( $x_2$  probability = .03). But since the total of neighbor farmers under forty years of age was only eight farmers (36.4%) it is unlikely that age is a very important factor in distinguishing the two categories of farmers. It is, of course, possible that some of the younger of these farmers will be recognized as "advanced" farmers in the future.

Only two of the advanced farmers (9.1%) and three of their neighbors (13.6%) had worked at jobs unrelated to agriculture. As Table 9 indicates, the advanced farmers more frequently worked as wage laborers on the farms worked by their fathers, and less frequently on farms of others than their paired neighbors. However, these differences were too small to prove statistically significant.

Nor did geographic mobility prove to be associated with greater adoption of technological innovations and high technological status. (See Table 10.) The advanced farmers had not been any more mobile

TABLE 8  
AGE OF FARM OPERATORS

Category of Farmers	Age Category					
	20-29	30-39	40-49	50-59	60-69	70 and over
Advanced	1	1	17	0	2	1
Neighbor	2	6	10	0	2	2

TABLE 9  
PAST WORK ROLES EXPERIENCED

Work Roles	Category of Farmers	
	Advanced	Neighbor
Wage laborer	5	10
Share cropper	3	3
Renter on another farm	6	8
Owner on another farm	0	1
Wage labor for father	18	13
Fruit harvesting	0	3
Non-agricultural work	2	3



TABLE 10  
FARM OPERATOR GEOGRAPHIC MOBILITY

Degree of Mobility	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
Operate same farm on which they were born	4	4	N.S.D.
Operate farms in the same barrio in which they were born	11*	9*	N.S.D.
Operate farms in the other rural barrio of Bejucal	2	1	N.S.D.
Moved to Bejucal from neighboring munici- pality	9	12	N.S.D.

\* Includes four who operate same farm on which they were born.

horizontally than the neighbor farmers. The possibility that the advanced farmers had been more mobile up the "agricultural ladder" was not given very strong support (see Tables 11 and 12). More advanced farmers than neighbor farmers inherited the title to their land or inherited the acción (renter's rights), but the difference was not statistically significant. Of course, inheriting the title implies little mobility.

The data indicate that the two categories of farmers did not begin farming their present farm with exactly the same resources. While eighteen of the neighbor farmers (81.8%) had the same acreage of land they possessed at the time of this study, eight of the advanced farmers (36.4%) had less land than they later were to accumulate, and two advanced farmers had more. In each category the farmers had fewer buildings and less equipment than they now possess. Only one farm (a neighbor farm) had a motor powered irrigation system already in operation. None had tractors. Two advanced farmers had irrigation systems in which the water was raised by oxen, using a trip-bucket-tank system still used for household and barnyard water supply on a few farms. Most farmers brought with them a team or two of oxen and equipment for their use. Only three farmers in each category lacked even oxen when starting on their present farm. A few in each category brought cows and pigs, and most farmers brought some chickens to start a flock.

Thirteen farmers in each category (59.1%) had either saved money or borrowed, or both, to pay for buying the land and/or acción so that they could take over the operation of their present farms. Informants reported that little of this money was left after the expense of

TABLE 11

## METHOD OF OBTAINING FARMS OR PARTS OF FARMS

Method	Category of Farmers*		Significance of Difference
	Advanced	Neighbor	
Inherited title to land	9	6	N.S.D.
Inherited the renter's <u>acción</u>	5	3	N.S.D.
Purchased full title	5	4	N.S.D.
Purchased <u>acción</u>	7	6	N.S.D.
Negotiated shares	0	5	N.S.D.
Received some land by exchange with another farmer	0	1	N.S.D.
Was hired as administrator	0	1	N.S.D.

\* The columns add to more than 22 because a few farmers have more than one such status.

TABLE 12

## A. "AGRICULTURAL LADDER" MOVEMENTS

Movement	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
Moved from wage laborer to renter to owner	5	4	N.S.D.
Moved from wage laborer to share cropper to renter	3	3	N.S.D.
Moved from wage laborer to renter	2	3	N.S.D.

## B. TENANCY STATUS OF FARMERS

Highest Tenancy Status	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
Owner	13	10	N.S.D.
Renter	9	6	N.S.D.
Share cropper	0	5	N.S.D.
Salaried worker	0	1	N.S.D.

entering the farm. The advanced farmers saved or borrowed a total of 21,770 pesos, and the neighbor farmers 15,310 pesos. This difference did not prove to be statistically significant by the Mann-Whitney U Test. (The tests for related samples were not applicable.) The seven advanced farmers who borrowed money, borrowed considerably more than the four neighbor farmers (average of 2,210 pesos to an average of 850 pesos). These did not prove to be statistically different by the Mann-Whitney U Test.

All but one of the advanced farmers and all of the neighbor farmers were reared on farms (see Table 13). Twenty farmers in each category gave their father credit for teaching them how to farm (see Table 13). There was no statistical difference between the categories of farmers in the amount of formal schooling they had attained. However, the mean school grade attainment of the advanced farmers was nearly a full grade more than most of their neighbors. In every case in both categories, the principal occupation of the farmer's father had been farming, although some of their fathers had had other employment as well.

Almost all of the farmers in the two categories were or once were married (see Table 14). Twenty-one farmers in the advanced category had had children, and nineteen in the neighbor category. Since the operators' ages varied widely, it is not surprising that the ages of their children varied from small children of two and three to adults in their late thirties and early forties (see Tables 15 and 16). It was expected that the advanced farmers would be more likely than their adjacent neighbors to have smaller families, and to have teen-age

TABLE 13  
EDUCATION OF FARM OPERATORS

A. Item: Where the Farmer Grew Up

Category of Farmers	Location		Significance of Difference
	Farm	Town	
Advanced	21	1	N.S.D.
Neighbor	22	0	

B. Item: Source of Early Farm Training

Category of Farmers	Source			Significance of Difference
	Father	Uncle	Neighbor	
Advanced	20	2	0	N.S.D.
Neighbor	20	1	1	

C. Item: Highest School Grade Attained

Category of Farmers	Grade Attained					Significance of Difference
	None	1-3	4-6	7-8	Mean	
Advanced	3	4	13	2	3.95	N.S.D., Wilcoxon Test ( $p > .05$ )
Neighbor	5	7	10	0	3.05	

TABLE 14  
THE MARITAL STATUS OF THE FARMERS SURVEYED

Category of Farmers	Marital Status			
	Single	Married	Divorced	Widowed
Advanced	1	20	1	0
Neighbor	3	18	0	1

TABLE 15  
POSITION IN THE FAMILY CYCLE

Stages in Family Cycle*	Category of Farmer	
	Advanced	Neighbor
Childless couples of childbearing age	0	0
Families with children, oldest under 14	8	9
Families with children, oldest 15 to 36	11	8
Families with grown children, none dependent	2	2

\* From Loomis, Charles P., and Beegle, J. Allan, Rural Social Systems, New York: Prentice-Hall, Inc., 1950, p. 83.

TABLE 16  
NUMBER OF CHILDREN

Category of Farmers	Number of Children				Mean
	1-3	4-6	7-9	10 and over	
Advanced	14	4	2	1	3.62 (N=21)
Neighbor	11	4	1	3	4.63 (N=19)
No Significant Difference					

working sons than the neighbor farmers, since large families compete with expensive technological changes, and working teen-age sons may provide the work force or source of ideas to stimulate the adoption of changes. The data did not support these expectations conclusively, but they varied in the predicted direction.

#### Careers in Farming

The data summarized in Table 17 indicated that the advanced farmers had been farming their present farms for an average of about two years and four months longer than their adjacent neighbors at the time of the study. They averaged fourteen years and approximately eleven months, while the neighbor farmers had averaged twelve years and seven months. The difference was not statistically significant.

TABLE 17  
YEARS OPERATING PRESENT FARM

Category of Farmers	Number of Years				Significance of Difference
	1-5	6-15	16-25	25-50	
Advanced (Mean = 14 years, 11 months)	4	8	8	2	N.S.D.
Neighbor (Mean = 12 years, 7 months)	2	14	3	3	Wilcoxon T = 105, $p > .05$

A basic index of scale in farming within a single community is the amount of land farmed by the farm operators. Using this item as a criterion, the advanced farmers were significantly larger scale operators than their adjacent neighbors; their farms were significantly larger. Only five neighbor farmers operated larger farms than their

paired advanced farmer partner. Three pairs operated the same acreage. The sign test shows that such a difference would be expected only thirty-two times out of a thousand if the pairs had been randomly selected ( $N=19$ ). The mean number of manzanas farmed by the advanced farmers were 84.78, while the mean number for the neighbor farmers was 62.57. The Mann-Whitney U Test showed this difference to be significant ( $p=.0427$ ).

Other variables reflecting the influence of size of operations likewise varied between the categories. The amount of money spent on all farm expenses the year before the survey proved to vary significantly in the same direction by both the Wilcoxon T Test ( $p<.01$ ) and the Mann-Whitney U Test ( $p=.0028$ ). Significantly greater numbers of the advanced farmers spent over one thousand pesos in all of their farming operations (exact  $\chi^2 p=.0101$ )(see Table 18). The amount of money invested and spent in any one year is not, of course, merely an index of scale of operations, but it is also an index of involvement in urban markets and commercial networks, and it may serve as an index of ability to make future innovations which may involve considerable expense (although some data on profits may be necessary at this point as well).

The amount of taxes paid by owner operators to the municipality and the amount of rent paid by the renters varied in the same direction (see Tables 19 and 20). The advanced farmers paid more taxes and higher rents, for the most part, than their adjacent neighbors, although these differences were not statistically significant.



TABLE 18  
REPORTED FARM EXPENDITURES YEAR BEFORE SURVEY

Expenditures Reported (Pesos)	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
0 - 100	0	5	Wilcoxon Test T=49, $p < .01$
101 - 500	6	7	
501 - 1000	3	5	
1001 - 1500	2	2	Mann-Whitney U Test, $p = .0028$
1501 - 2000	3	2	
2001 - 5000	6	1	
over 5000	2	0	

TABLE 19  
REPORTED FARM TAXES FOR 1953 OF OWNER OPERATORS

Amount of Taxes (Pesos)	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
0 - 10	0	2	Mann-Whitney U Test, $U = 30.5$
11 - 30	5	6	
31 - 50	5	2	
51 - 70	1	0	N.S.D.
	<u>1</u>	<u>0</u>	
	N=11	N=10	

TABLE 20  
AMOUNT OF RENT PAID BY RENTERS, 1953

Amount Paid (Pesos)	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
0 - 100	1	3	Mann-Whitney U Test, U=32.5
101 - 200	2	2	
201 - 300	4	2	
301 - 400	0	1	No Significant Difference
over 400	4	1	
	N=11	N=9	

Another index of scale of operations in farming is the amount of labor employed on farms. Data was collected concerning both permanent and seasonal employment. For youth and elderly laborers each farmer respondent was asked to estimate the proportion of a full man's labor they could perform. From this information it was possible to estimate the number of man-months of permanent labor performed on each farm as well as the number of man-days of seasonal labor.

Excluding the labor of the operator himself, the advanced farmers averaged 23.56 man-months of permanent labor per year, or slightly under two full-time hired men. The neighbor farmers averaged 14.14 man-months, or just over one full-time hired man. The two distributions proved significantly different by the Wilcoxon Test ( $p < .01$ ). The farmer respondents did not prove to be very clear of memory concerning the number of man-days of seasonal labor they hired in the year preceding the survey. Even with failures of memory affecting the data, it was possible to show that the advanced farmers had probably used more, significantly more, seasonal labor than had the neighbor farmers. Sixteen of the advanced farmers (72.7 per cent) could remember using more than fifty man-days of seasonal labor, as against only four of the neighbor farmers (18.2 per cent) (exact  $\chi^2 = .01$ ). The modal farmer in each category used seasonal labor two to three times per year.

For the pairs of farmers studied, it can be seen that higher rank on these indices of scale was associated with the higher technological status of the advanced farmers. As Tables 21 and 22 indicate, the two categories of farmers did not differ in the infrequency with which they kept financial notes and books or made written planting plans.

TABLE 21  
FARMER PRACTICE OF KEEPING BOOKS

Practice	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
Keeps Notes	3	3	N.S.D.
Keeps Books	1	1	N.S.D.
Does Not Use Practice	18	18	N.S.D.

TABLE 22  
FARMER PLANTING PLANS

Plans	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
Has Planting Plans	21	22	N.S.D.
Has No Planting Plans	1	0	N.S.D.
Has Written Plans	0	0	N.S.D.

These administrative techniques which can contribute to greater rational control of the farm enterprise had been adopted by very few farmers in either category.

#### Communication and Group Relations

Another broad category of variables and attributes investigated dealt with the communication and reception of information and with the group relationships important to the farmer respondents. The findings seemed to indicate that for particular kinds of changes certain types of communications and relationships had been quite important in promoting technological change.

Each farmer respondent in the two categories was asked who were the people with the greatest interest in his activities and success. As Table 23 indicates, the two categories proved about equally likely to name family members, friends, neighbors, and people with whom they had commercial connections. The total number of persons mentioned by the two categories was almost identical. The interviewer did not "probe" relationships to discover other people important to the respondent since relationships of high saliency in the thinking of the farmers were desired. Although the differences were not statistically significant, the neighbor farmers seemed to have their important commercial connections more exclusively with their bodega owner, a traditional relationship, than with non-traditional, change-oriented commercial connections in addition to the traditional pattern. Such non-traditional relationships existed as those between farmers and salesmen, prestamistas, and business partners. Why neighbor farmers named

TABLE 23

RELATIONSHIP OF PERSONS AND NUMBERS OF TIMES PERSONS REPORTED  
TO BE "PEOPLE WITH THE GREATEST INTEREST" IN  
"THE FARMER'S ACTIVITIES AND SUCCESS"

Category of Relationship	Number of Persons and Times Mentioned by Category of Farmer		Significance of Difference
	Advanced	Neighbor	
Conjugal Family Total	39	34	N.S.D.
Wife	20	17	N.S.D.
Children	19	17	N.S.D.
Extended Family Total	35	42	N.S.D.
Brothers and Sisters	14	13	N.S.D.
Parents and Grandparents	8	9	N.S.D.
Aunts, Uncles, Cousins	2	5	N.S.D.
Grandchildren	0	1	N.S.D.
In-laws	8	14	S.D., $p=.0486$
Other family members	3	0	N.S.D.
Friends and Neighbors	21	18	N.S.D.
Owner of Farm	1	4	N.S.D.
Commercial Connections	21	21	N.S.D.
Bodega Owner	12	17	N.S.D., $p=.074$
Other	9	4	N.S.D., $p=.070$
Agricultural Inspector	6	1	S.D., $p=.043$
Total Persons	123	120	N.S.D.

in-laws more often than advanced farmers while they named other family members in about equal frequency, is not known.

The respondents were also asked if they believed that these people expected them to make improvements on their farms and whether or not they had spoken to them about such improvements. Three more advanced farmers than neighbor farmers reported that they believed improvements were expected, but two less advanced farmers than neighbor farmers reported that any of these people had spoken with them about improvements (see Tables 24 and 25). These differences did not prove statistically significant.

TABLE 24

FARMER RESPONSES TO QUESTION "DO THEY EXPECT IMPROVEMENTS?"

Category of Farmer	Response			Significance of Difference
	Yes	No	Doesn't Know	
Advanced	15	6	1	N.S.D.
Neighbor	12	10	0	N.S.D.

TABLE 25

FARMER RESPONSES TO QUESTION "HAVE THEY SPOKEN OF IMPROVEMENTS?"

Category of farmer	Response		Significance of Difference
	Yes	No	
Advanced	15	7	N.S.D.
Neighbor	17	5	N.S.D.

Every advanced farmer and all but five neighbor farmers labor on their farms with one or more hired workers under their authority. Eighteen of the advanced farmers (81.8%) and nine of the neighbor farmers have two or more workers they direct, including both full-time family members and hired non-family workers. The amount of labor employed has already been discussed. Here it is enough to note that part of the occupational task of almost every farmer in the two categories was the coordination of the work activities of a plurality of workers. Often this included hired men, family-related male laborers, and part-time assistance from women, children, and old people. It seems reasonable to assume, although it was not investigated, that extensive changes in agricultural practices would considerably affect the farm operator directed activities of these workers. Observation of work operations on different Bejucal farms supported such an assumption.

Three farmers in each category were in debt at the time of the study, involving them in another kind of social relationship. Any proposition stating that the advanced farmers would have been making more extensive use of credit than the neighbor farmers was not supported by the findings.

The nine advanced farmers who rented their land, the six neighbor farmers who were also renters, the five neighbor farmers who were sharecroppers, and the one neighbor farmer who was a salaried worker-administrator, maintained other kinds of social relations as well. The renters had to pay their rents to their landlords, the sharecroppers not only had to turn over a fifty per cent share of the farm



proceeds, but also were responsible for maintaining the farm owner's capital equipment; and the one worker-administrator had to carry food weekly to the country estate of the patron in the municipality of Santiago de Las Vegas as well as do the bidding of his employer.

More frequent urban contacts and greater time spent visiting seem to be characteristic of advanced farmers as contrasted with their paired neighbors (See Tables 26 and 27). In neither case did the difference prove to be statistically significant, and in the second case the difference was of very small magnitude on the crude scale employed (the number of hours spent visiting daily).

TABLE 26

## NUMBER OF TIMES PER WEEK FARM OPERATOR VISITS BEJUCAL

Category of Farmers	Number of Visits		Significance of Difference
	0 - 2	3 or more	
Advanced*	6	15	( Positive,
Neighbor*	11	10	( N.S.D.,
			( p=.075

\* Note: One farmer in each category lived in town and was excluded from the table.

TABLE 27

## NUMBER OF HOURS HE SPENDS VISITING DAILY

Category of Farmers	Number of Hours			Significance of Difference
	0 - 1	1 - 2	2 - 3	
Advanced	20	0	2	N.S.D.
Neighbor	20	2	0	N.S.D.

As has already been indicated, one of the most important economic relationships formed by a Bejucal farmer and his family is that relationship formed with the urban store owner from whom he buys staples. These relationships last many years and involve a traditional reciprocity. It was speculatively hypothesized that the advanced farmers might patronize bodegas different from those patronized by the neighbor farmers, that they might have purchased at their bodegas for more or for less time than the neighbor farmers, and that they might spend more time or less time per week in interaction with their urban bodega owner.

It was found that the forty-four farmers traded with twenty-five different bodegas. The cooperative bodega had the most total patrons with eleven, seven advanced farmers and four neighbor. No other bodega had more than four farmer patrons from the two categories of farmers combined. The data, given in Table 28, show that fourteen of the advanced farmers (63.6%) patronize the same five bodegas that nine neighbor farmers (40.9%) patronize. While these data slightly support the speculative hypothesis, the difference was not statistically significant ( $p=.079$ , Fisher's exact  $\chi^2$  test).

TABLE 28

## BODEGAS PATRONIZED BY FARM OPERATORS

Patronage	Category of Farmers		Number of Bodegas
	Advanced	Neighbor	
Patronized same bodegas	14	9	5
Patronized different bodegas	8	13	20

In number of years of affiliation the advanced farmers averaged 8.0 years purchasing at the same bodega, while the neighbor farmers averaged 10.5 years (see Table 29). The range was from less than one year to forty years. The distributions did not prove significantly different from each other by statistical test. The same was true for the amount of time per week spent in his bodega. The farmers reported from one-half hour to as much as five and one-half hours, but the means were close together (2.06 and 2.18 hours respectively) and the distributions were not significantly different statistically (see Table 30).

TABLE 29

## NUMBER OF YEARS PURCHASED AT SAME BODEGA

Category of Farmers	Number of Years					Mean
	0 - 2	3 - 6	7 - 10	11 - 15	over 15	
Advanced	5	6	6	3	2	8.0
Neighbor	1	5	10	3	3	10.5

TABLE 30

## TIME SPENT PER WEEK AT HIS BODEGA

Category of Farmers	Time in Hours				Did Not Know
	Less Than 1 hour	1 - 2	2.25 - 3	Over 3	
Advanced	1	9	7	3	2
Neighbor	3	9	4	5	1

Few differences existed in the categories of people to whom the farmers in the two surveyed categories were related by non-kinship relations. However, when questions were asked about sources of information some significant differences did turn up. When asked, for example, where they received information about agricultural practices, significantly greater numbers of advanced farmers than neighbor farmers mentioned the Agricultural Inspector as a source (see Table 31). Also, significantly fewer advanced farmers than neighbor farmers said that they did not use or did not need information.

TABLE 31

## REPORTED SOURCES OF INFORMATION ABOUT AGRICULTURAL PRACTICES

Source Mentioned	Category of Farmers		Significance of Difference*
	Advanced	Neighbor	
Agricultural Inspector	12	4	S.D., $p=.0114$
Other Farmers	9	9	N.S.D.
Mass Media and Advertising	10	12	N.S.D.
Prestamistas	1	2	N.S.D.
Engineers of the Inter-American Institute	4	0	N.S.D.
His Own Experience	4	2	N.S.D.
Other Sources	2	4	N.S.D.
Does Not Need or Use Information	2	8	S.D., $p=.0298$

\* Significance of Difference determined by Fisher's Exact  $x^2$  Test.

The advanced farmers strongly supported going to the Inspector as the best source of information, and more of them had actually gone somewhere in search of information in the last year (see Tables 32 and 33). Significantly fewer advanced farmers than neighbor farmers mentioned

friends and neighbors as the best sources of information. However, an equal number of farmers in each category reported other farmers as actual sources of information.

TABLE 32

SOURCE FARM OPERATOR BELIEVES IS THE BEST PLACE TO GET INFORMATION

Source Mentioned	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
Agricultural Inspector	16	9	S.D., $p=.0263$
Friends and Neighbors	2	8	N.S.D., $p=.0298$
Commercial Companies	1	2	N.S.D.
Ministry of Agriculture or Experiment Station	1	2	N.S.D.
Prestamista	0	1	N.S.D.
Does not know	2	1	N.S.D.

TABLE 33

WHEN THE FARMER LAST SEARCHED FOR INFORMATION

Category of Farmers	Time					Significance of Difference
	Few Days Ago	1-6 mos.	Last Year	Many Yrs. Ago	Never	
Advanced	5	2	7	0	8	Test combining categories into 2 by 2 table $p=.0271$
Neighbor	1	2	4	4	11	

Both categories of farmers reported receiving information from the mass media (see Table 31). The neighbor farmers seemed slightly more likely to report learning from the mass media than the advanced farmers. The significance of this is not clear if it is valid (the difference

was not statistically significant). The advanced farmers were only slightly more likely to read agricultural magazines than the neighbor farmers (see Table 34). A few more of the former category were members of organized farmer groups than the latter category (see Table 35). The organizations in which membership was held were the following: the association of dairymen, associations of harvesters of tobacco and potatoes, the industrial and investment bank membership organization (BANFIAC) -- all located outside of Bejucal -- plus the agricultural cooperative in Bejucal.

TABLE 34

## FARMER READERS OF AGRICULTURAL MAGAZINES

Category of Farmers	Read	Did Not Read	Significance of Difference
Advanced	8	14	N.S.D.
Neighbor	5	17	N.S.D.

TABLE 35

## ORGANIZED FARM GROUP MEMBERSHIP

Category of Farmers	Member	Not Member	Significance of Difference
Advanced	10	12	N.S.D.
Neighbor	7	15	N.S.D.

To study the operation of social relationships and communication networks in farmer decisions to make changes in their agricultural



practices and techniques, five practices of recent introduction were investigated. These five practices were being promoted by the Inter-American Institute's (Project 39) agricultural engineers and the Agricultural Inspector as "good" and "profitable" practices at the time of the survey. The practices were (1) the use of chemical fertilizer, (2) the use of improved (hybrid) seed, (3) the use of chemical insecticide, (4) the planting and use of grafted fruit trees, and (5) the use of "improved" strains of cattle. Excepting the case of the use of chemical fertilizer, more advanced farmers than neighbor farmers had used each practice (see Table 36). The process of summing the data for the five practices showed the advanced farmers had, to a significant degree, been more frequent users of these practices than the neighbor farmers. There are few differences between the categories in the frequency with which they learned of the improvement from one source or another. The only exception to this generalization is the observation that a significantly greater number of advanced farmers than neighbor farmers learned of these suggested techniques from the Agricultural Inspector. Even in this case the importance of learning from the Inspector is relatively slight compared to learning from other sources for both categories of farmers. Considering all forty-four farmers, the chief sources of recommendation of the practices were, in the following order: friends and neighbors, prestamistas, the Inspector, and salesmen. It is interesting that the two practices unrelated to the production of cash crop vegetables -- the use of grafted fruit trees and improved strains of cattle -- were not spread by the prestamistas but predominantly by friends and neighbors. Taken



TABLE 36

COMMUNICATION AND USE OF SELECTED, RECENTLY  
INTRODUCED TECHNOLOGICAL CHANGES

**A. Item: Use and Source of Chemical Fertilizer**

Use	Category of Farmers		Significance of Difference (Fisher's exact $\chi^2$ probability test)
	Advanced	Neighbor	
Had used	17	17	N.S.D.
Had not used	5	5	N.S.D.

Who Recommended It?

Prestamista	7	6	N.S.D.
Salesmen	1	3	N.S.D.
Friends and Neighbors	2	4	N.S.D.
Agricultural Inspector	1	2	N.S.D.
Saw in store	2	1	N.S.D.
Father used it	1	0	N.S.D.
Other	3	1	N.S.D.

**B. Item: Use and Source of Improved Seed**

Use	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
Had used	13	8	S.D., $p=.079$
Had not used	9	14	

Who Recommended It?

Prestamista	7	6	N.S.D.
Salesmen	1	0	N.S.D.
Friends and Neighbors	0	1	N.S.D.
Agricultural Inspector	4	0	N.S.D.
Saw in store	0	1	N.S.D.
Father used it	1	0	N.S.D.
Other	0	0	N.S.D.

TABLE 36 (Continued)

## C. Item: Use and Source of Chemical Insecticide

Use	Category of Farmers		Significance of Difference
	Advanced	Neighbor	(Fisher's exact $x^2$ probability)
Had used	16	11	N.S.D., $p=.0767$
Had not used	6	11	
<u>Who Recommended It?</u>			
Prestamista	4	5	N.S.D.
Salesmen	2	2	
Friends and Neighbors	2	2	
Agricultural Inspector	6	0	S.D., $p=.0106$
Saw in store	1	0	
Father used it	0	2	N.S.D.
Other	1	0	N.S.D.

## D. Item: Use and Source of Grafted Fruit Trees

Use	Category of Farmers Advanced	Neighbor	Significance of Difference
Had used	15	11	N.S.D.
Had not used	7	11	
<u>Who Recommended It?</u>			
Prestamista	0	0	
Salesmen	2	1	N.S.D.
Friends and Neighbors	8	4	N.S.D.
Agricultural Inspector	1	0	N.S.D.
Saw in store	0	0	
Father used it	1	0	N.S.D.
Were on farm	3	1	N.S.D.
Other	0	5	N.S.D.

TABLE 36 (Continued)

## E. Item: Use and Source of Improved Cattle

Use	Category of Farmers		Significance of Difference (Fisher's exact $x^2$ probability)
	Advanced	Neighbor	
Had used	18	17	N.S.D.
Had not used	4	5	

Who Recommended It?

Prestamista	0	0	N.S.D.
Salesmen	0	0	
Friends and Neighbors	12	14	
Agricultural Inspector	0	0	
Saw in store	0	0	N.S.D.
Father used them	0	0	
Were on farm	0	1	
Veterinarian	0	1	
From work experience	4	1	N.S.D.
Other	2	0	N.S.D.

## F. Item: Summary of Use of Five Practices

Category of Farmers	Instances of Use		Significance of Difference
	Used	Did Not Use	
Advanced	79	31	$x^2 = 4.4954$
Neighbor	64	46	$p < .05$

## G. Item: Summary of Sources of All Five Improvements

Source	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
Prestamista	18	17	N.S.D.
Salesmen	6	6	N.S.D.
Friends and Neighbors	24	25	
Agricultural Inspector	12	2	S.D., $p = .0013$
Saw in store	3	2	N.S.D.
Father used them	3	2	N.S.D.
Were on farm	3	2	N.S.D.
Veterinarian	0	2	N.S.D.
From work experience	4	1	N.S.D.
Other	6	5	N.S.D.

collectively, these practices seem to have been channeled to the farmer by the initiative or assistance of family member, friends and neighbors, commercial prestamistas, salesmen, and the Agricultural Inspector, with different practices being promoted primarily by different categories of people.

### Summary

On factors of personal background, such as age, occupational experience, and mobility, the two categories of farmers were not clearly distinguishable. The only statistically significant finding was that there were significantly greater numbers of neighbor farmers under forty years of age. They had had very much the same mobility experiences. Almost all of them were raised on farms, learned farming from their fathers, and almost all had married and had children. They had received about the same amount of formal education.

Most farmers in each category had started farming their present farms with few resources beyond their own strength and their land. In the years since they had started farming their present farms, more of the advanced farmers had been able to increase their acreages and to adopt other means to increase the scale of their farming enterprise. At the time of the survey, the advanced farmers farmed significantly larger acreages, had spent significantly greater amounts of money on all of their farm operations the year before, and they employed significantly more man-months of permanent labor and significantly more man-days of seasonal labor. On other indices of management procedures surveyed, the two categories of farmers did not differ greatly.

With the exception of the unexplainable greater importance of in-laws to the neighbor farmers, and the greater importance of the Agricultural Inspector to the advanced farmers, the farmers in two categories were very similar in the persons they reported as those with the greatest interest in their activities and success. Members of both categories were strongly family-oriented in response to the question. This finding supports the prominent place of the family in their lives discussed in the ethnographic report.

Other kinds of social relationship, likewise, showed little difference between the categories, except when questions were directed toward the acts of searching for and using agricultural information. Here the advanced farmers placed significantly greater value on the Agricultural Inspector as a source of information. They placed greater value on new information from any source. They had more recently searched for information. The advanced farmers in significantly greater numbers supported the value of a governmental program of information concerning how the farmer can improve himself with his own resources.

When five particular technical practices were investigated to learn whether or not the farmers practiced them and from whom they had learned about them, friends and neighbors proved to be the most important source of new ideas for both categories. However, chemical fertilizer, improved seed, and other practices closely related to the production of cash crop vegetables were most frequently spread by commercial prestamistas, salesmen, and the Agricultural Inspector.

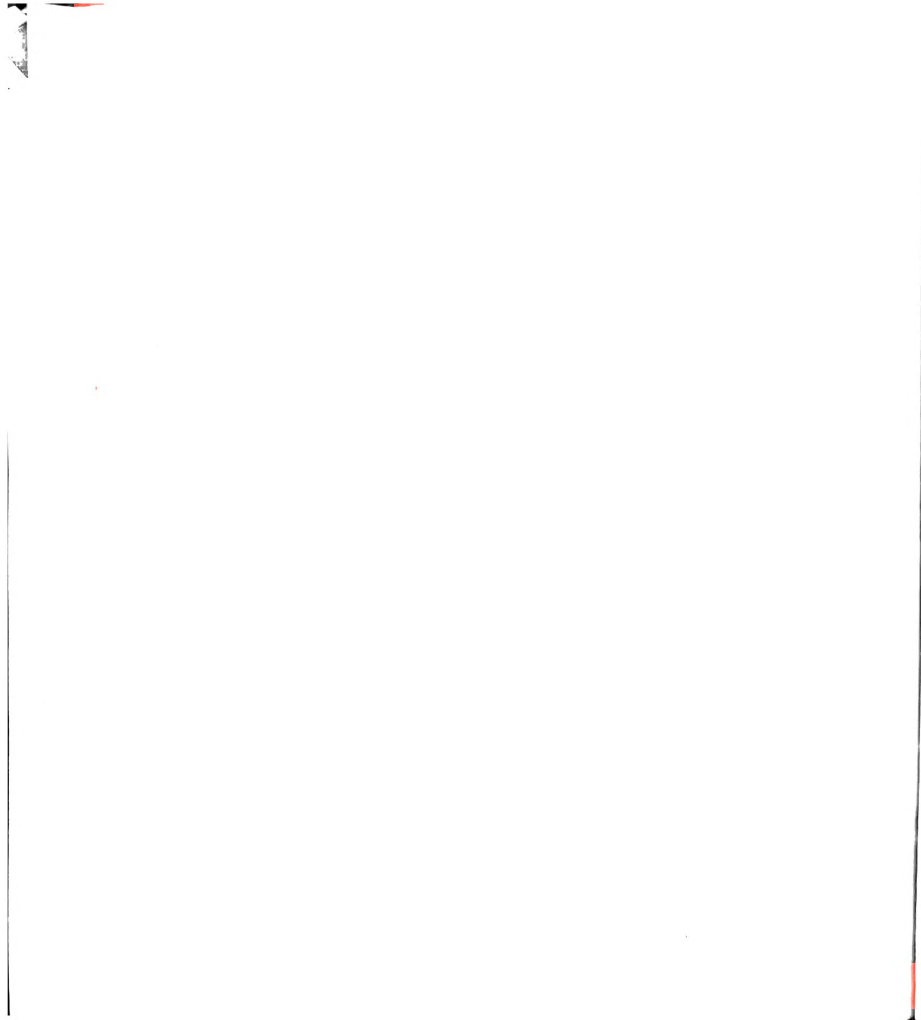
## VII. FARM OPERATOR ROLE CONCEPTIONS AND SELF-DEFINITIONS

In the last chapter the survey findings relative to the life histories and experiences in farming of the two categories of farmers were examined and compared. In this chapter, data relative to their farm operator role conceptions and self-definitions are presented. As was the case in the last chapter, materials from the ethnographic survey were extensively used in the formation of the survey questions.

### Farm Operator Role Conceptions

Another group of variables investigated concerned the differences between the two categories of farmers with respect to their definitions of farming. The definitions and beliefs investigated were the following (stated as affirmations):

- (1) The resources the farmers of Bejucal have, generally do not provide the opportunity to get ahead on the farm.
- (2) There are few opportunities for improvements on a farm if the operator is not the owner of his land.
- (3) It is dangerous to borrow money in large amounts.
- (4) The best way to be a farmer is the way one's father farmed.
- (5) The individuals in Bejucal who loan money, exploit the farmers and charge very high interest.
- (6) It is better to save for one's old age than to spend to live comfortably now.



(7) "Agricultural science" will work on one's (the respondent's farm).

(8) Chemical fertilizers can help the crops on one's farm.

As Table 37 indicates, in no case was there a significant difference between the categories of farmers on their attitudes of agreement or disagreement with these affirmations. The two categories of farmers seem to have very similar beliefs on these matters.

In the ethnographic survey, the writer, while interviewing, asked a number of farmers how they accounted for the occupational success of this farmer or that relative to the success of themselves or other farmers. The respondents commonly said that in comparison with himself or others, the farmer under discussion had had more or less luck, knowledge of farming, management skill, land resources, credit opportunities, and so on. In order to probe more deeply into farmer definitions of the factors that contribute to occupational success or prosperity, five factors Bejucal farmers thought important for this outcome were presented to each survey respondent for rank ordering. The factors were (1) (good) management, (2) (amount of) knowledge, (3) credit, (4) land, and (5) a generous bodegero. These factors were selected from the field notes of the ethnographic survey. Each farmer interviewed was presented with five cards having these factors printed on them, and was asked to order them in terms of their contribution to farmer advancement on a farm. If the respondent protested that all were important and helpful, and many did, then they were asked to rank them two by two, under the condition that they decide which of the two they would rather have a great deal of if they had insufficient



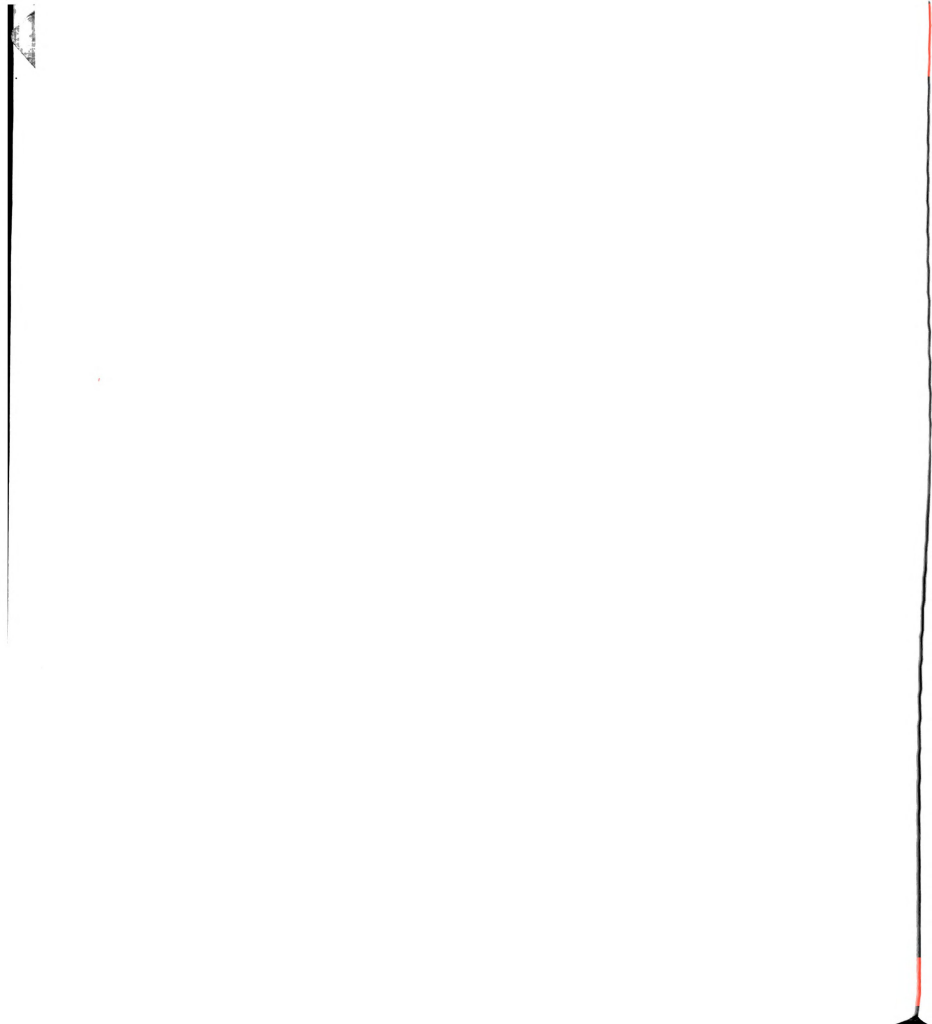


TABLE 37  
SOME FARM OPERATOR ROLE CONCEPTIONS

Category of Farmer	Item			Significance of Difference
	(1) Resources and Opportunities to Get Ahead in Bejucal			
	Agree	Disagree		
Advanced	19	3		
Neighbor	21	1		N.S.D.
	(2) Opportunities for Improvement and Ownership of Land			
	Agree	Disagree		
Advanced	19	3		
Neighbor	19	3		
	(3) Danger of Borrowing Money in Large Amounts			
	Agree	Disagree		
Advanced	20	2		
Neighbor	21	1		N.S.D.
	(4) Best Way to Be Farmer Is Like Father Was			
	Agree	Disagree		
Advanced	20	2		
Neighbor	19	3		N.S.D.
	(5) Creditors and Exploitation of Farmers			
	Agree	Disagree	Don't Know	
Advanced	5	16	1	
Neighbor	6	12	4	N.S.D.
	(6) Save for Old Age Versus Spending Now			
	Save	Spend		
Advanced	9	13		
Neighbor	9	13		



TABLE 37 (Continued)

Category of Farmer	Item			Significance of Difference
	(7) "Agricultural Science" Will Work on One's Farm			
	Agree	Disagree	Don't Know	
Advanced	12	9	1	N.S.D.
Neighbor	11	9	2	
	(8) Chemical Fertilizers Will Help One's Harvests			
	Agree	Disagree		
Advanced	22	0		
Neighbor	22	0		

resources to have a great deal of each (assuming still that the goal was farmer economic advancement on a farm). In this case the respondents were given each pair of cards until a rank order for all five factors had been established. The cards were then presented in the entire array and the farmer was asked if that was the order he thought they fell into. Thus, each respondent indicated the order of importance he gave to these factors in advancing farmer occupational success (considered in terms of wealth). Every respondent ranked the five factors.

The results of this ranking process are given in Table 38. It is an indication of considerable agreement within the categories that the advanced farmers employed only nine out of the theoretically possible one hundred and twenty pattern arrangements, and the neighbor farmers used only eleven. Five particular patterns were employed by sixteen of the advanced farmers and by fifteen of the neighbor farmers.



TABLE 38

FARMER RANKINGS OF MANAGEMENT, LAND, CREDIT, KNOWLEDGE  
AND GENEROUS BODEGERO AS FACTORS CONTRIBUTING TO  
FARMING ADVANCEMENT AND PROSPERITY

A. Patterns Chosen by Advanced Farmers (by Rank)										Patterns Chosen by Neighbor Farmers (by Rank)									
RANK	Land	Management	Knowledge	Credit	G. Bodegero	Frequency Pattern Used		Land	Management	Knowledge	Credit	G. Bodegero	Frequency Pattern Used						
	4	2	3	1	5	6	↔	4	2	3	1	5	1						
	4	1	3	2	5	2	↔	4	1	3	2	5	1						
	3	2	4	1	5	3		3	1	5	2	4	1						
	3	1	4	2	5	2	↔	3	1	4	2	5	1						
	3	1	2	4	5	3	↔	3	1	2	4	5	6						
	3	2	1	4	5	1		2	1	4	3	5	1						
	2	1	3	4	5	3	↔	2	1	3	4	5	6						
	2	3	4	1	5	1		4	1	2	3	5	1						
	5	3	4	2	1	1		1	2	4	3	5	2						
						22		1	3	4	2	5	1						
								1	4	5	2	3	1						
													22						

B. Internal Analysis of Farmer Rankings

Category of Farmer	Number Placing Management			
	Over Land	...Over Bodegero		
Advanced	21	21		
Neighbor	18	21	N.S.D.	
	Number Placing Knowledge			
	Over Land	...Over Bodegero		
Advanced	13	21	N.S.D.	
Neighbor	9	20	N.S.D.	
	Number Placing Credit			
	Over Land	...Over Bodegero		
Advanced	15	21	N.S.D.	
Neighbor	5	22		
	S.D., p=.002			

Consequently, in terms of pattern selection there was little difference between the categories. The number of advanced farmers placing management over land and knowledge over land in importance for farmer advancement is greater than the number of neighbor farmers making the same decisions; however the differences are not statistically significant. With respect to credit and land, the matter is clear: the number of advanced farmers placing credit over land was significantly larger. The factor management had the highest average rank of any of the factors for each of the categories. The neighbor farmers ranked management significantly higher (by the sign test,  $p < .046$ ) than the advanced farmers. On the other hand, the advanced farmers gave credit a significantly higher importance than the neighbor farmers by the same test ( $p < .025$ ). While the advanced farmers tended to place land in a position of less importance than their adjacent neighbors, the difference did not prove statistically significant by the sign test ( $p = .072$ ).<sup>1</sup> There were no significant differences between the categories on their relative ranking of knowledge and a generous bodegero as factors in farmer advancement.

Six "social factors" were ranked by the farmers in the same manner. The six factors were likewise drawn from the ethnographic survey, and the respondents were similarly asked to rank the factors in terms of their contribution to getting ahead or being prosperous on a Bejucal

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1. When ranks 1 and 2 and 3, 4 and 5 are combined in a two by two table, the rank of land proved statistically different by Fisher's exact  $\chi^2$  test,  $p = .022$ .





farm. The factors were: (1) To be a well known and popular person, (2) To live decently in conformity with the customs of the community, (3) To have a large and wealthy family, (4) To obey the law all the time, (5) To have friends in politics and commerce, and (6) To be a good Catholic. Internal analysis revealed no significant differences between the categories of farmers concerning their ordering of the six factors (see Table 39).

The farmers were also asked which of the two factors they ranked first in the two processes of ranking was the most important for farmer advancement. A possible hypothesis was that the advanced farmers would rank "economic" over "social" factors in greater number than the neighbor farmers. As Table 40 indicates, this hypothesis received no support.

In order to learn if there were any differences between the farmer categories in their definitions of the capital accumulation process, questions were prepared dealing with savings and the use of credit. The advanced farmers proved no more likely than the neighbor farmers to support the rightness or necessity of those having money to loan some to friends, neighbors, and family members (see Table 41). As Table 42 indicates, the advanced farmers proved more likely to have employed commercial sources of credit in addition to "traditional" sources in the past.

Each farmer was asked how much money he felt he could borrow if he had any need to borrow a large amount of money. Most farmers in each category felt that they could borrow little. Table 43 gives the findings. The Wilcoxon matched pairs test showed no significant

TABLE 39

FARMER RANKING OF CONTRIBUTION OF SIX "SOCIAL FACTORS"  
TO FARMER ADVANCEMENT OR PROSPERITY

Factor	Average Rank (1=Highest, 6=Lowest) (Means)	
	Advanced Farmers	Neighbor Farmers
1. Be well known and popular	2.86	2.64
2. Live decently and conform to customs	2.68	2.41
3. Have large wealthy family	2.46	2.32
4. Obey the law all of the time	3.00	3.73
5. Have friends in politics and commerce	4.54	4.45
6. Be a good Catholic	5.45	5.45

TABLE 40

FARMER RANKING OF HIGHEST "ECONOMIC" AND HIGHEST "SOCIAL"  
FACTORS IN SUCCESS OR PROSPERITY

Ranking	Advanced Farmers	Neighbor Farmers
Placed "Economic" Factor First	17	19
Placed "Social" Factor First	5	3

TABLE 41

FARMER RESPONSES TO QUESTION: IF A PERSON HAS MONEY, OUGHT HE TO  
LOAN SOME TO FRIENDS, NEIGHBORS, AND FAMILY MEMBERS?

Category of Farmers	Yes	No	Do Not Know
Advanced Farmers	21	1	0
Neighbor Farmers	19	2	1

TABLE 42  
SOURCES OF LOANS IN THE PAST

Source	Category of Farmers, Number Mentioning Advanced	Neighbor
1. Bodegero	7	3
2. Prestamista	9	4
3. Milk Company	1	0
4. Family Members	4	4
5. Friends	4	8
6. Farm Owner	0	1
7. Does Not Borrow Money	5	8
Commercial Sources (1, 2, and 3 combined)	17	7 (Differ- ence
"Traditional" Sources (4, 5, 6, and 7 combined)	13	21 Signi- ficant, exact $\chi^2 p = .011$ )

TABLE 43  
AMOUNT OF MONEY FARMER BELIEVES HE COULD BORROW

Category of Farmer	Amount of Money (Pesos)			
	0-1000	1001-2000	2001-4000	Over 4000
Advanced (mean 1,679.55 pesos)	10	2	5	2
Neighbor (mean 1,318.18 pesos)	14	2	3	2
No Significant Difference (Wilcoxon Test)				



difference between the categories on their estimation of the amount of money they could borrow. However, the categories did prove significantly different in their beliefs concerning their ability to take the risk of borrowing money. Significantly greater numbers of advanced farmers felt they could take the risk if it was necessary (see Table 44).

TABLE 44

## FARMER BELIEFS AND THE RISKS OF BORROWING MONEY

	Advanced Farmers	Neighbor Farmers
Believe They Cannot Take Risk	9	19
Believe They Can Take Risk	13	9
Difference Significant, exact $\chi^2 p = .002$		

Nine advanced farmers, as contrasted with four neighbor farmers, had any money saved at the time of the interview. Table 45 presents the findings. The average advanced farmer saver had saved over twice as much money as the average neighbor farmer saver; however, the frequencies were too small and the overlap (between the categories) too great for there to be any statistically significant difference between the categories.

Each farmer with savings was asked what uses he had in mind for his savings. Only three of the nine advanced farmer savers had farm improvement expenditures planned for their savings. The rest were going to use them for paying laborers, for meeting family expenses, planting and labor expenses, and for guaranteeing security. Only one

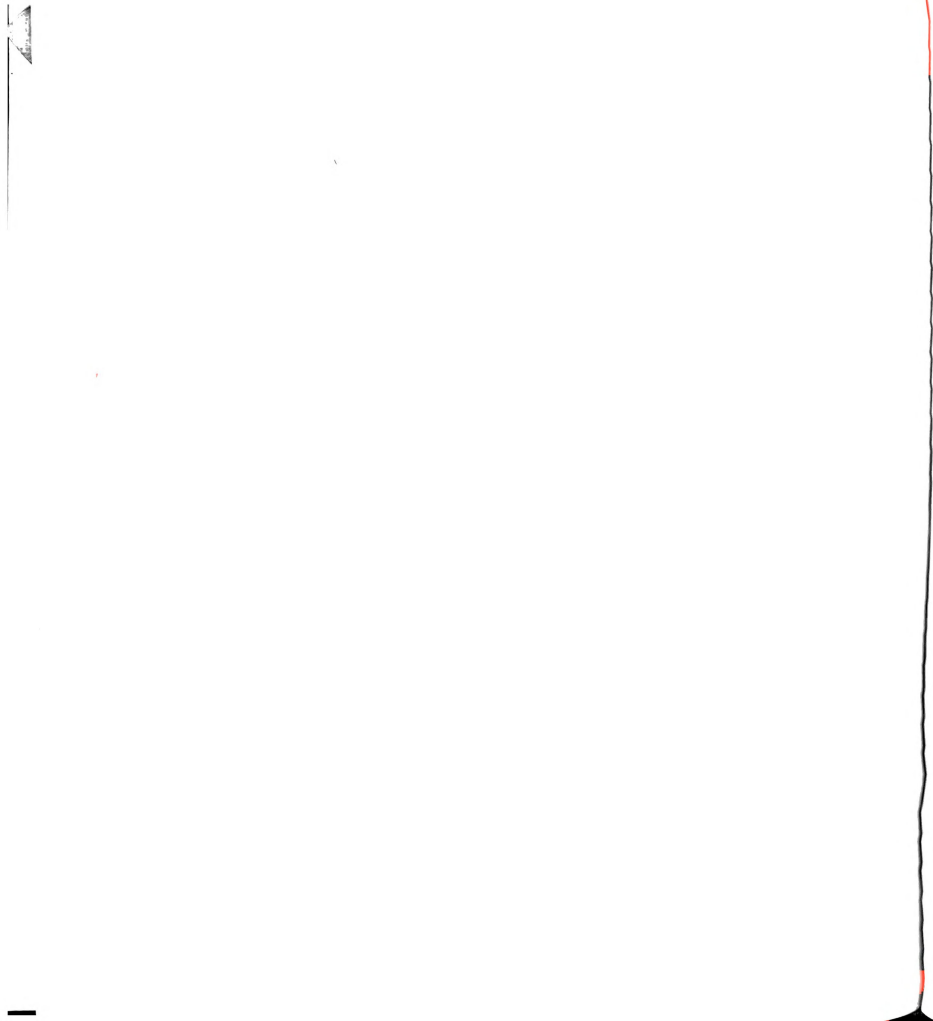
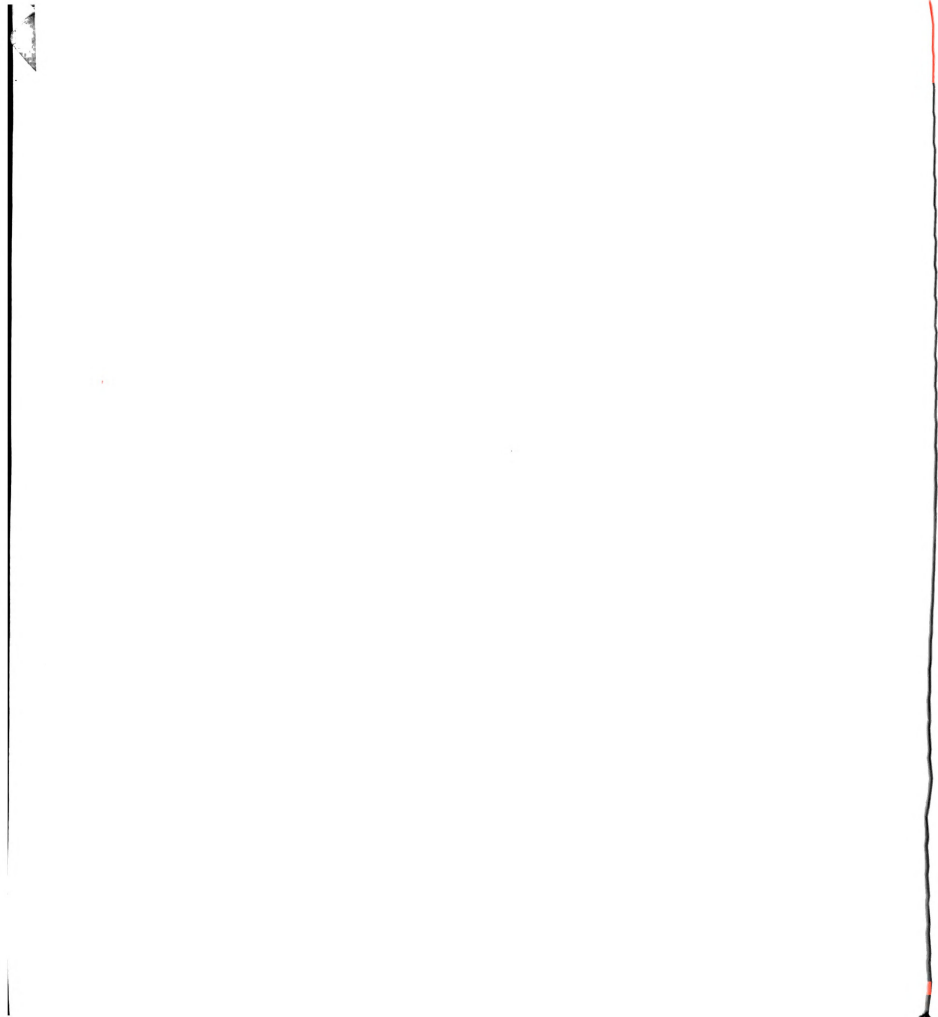


TABLE 45  
FARMERS SAVINGS

	Advanced Farmers	Neighbor Farmers	Significance of Difference
Number of Farmers Having Savings	9	4	N.S.D., $x^2p=.070$
Range of Amount Saved (Pesos)	200-7000	90-2000	
Average Amount Saved (Mean)	1288.88 (N=9)	622.50 (N=4)	
No Significant Differences, exact $x^2$ or Mann-Whitney Test			

of the three neighbor farmer savers had any improvements planned. The rest were planning to spend their savings on the rent, family expenses, and general farm operating expenses.

In order to learn how the farmer respondents defined the changes they had made on their farms, questions were asked of them as follows. Each farmer was asked what changes and improvements he made on his farm(s). The respondents recalled such projects as these: improving the house, building a stable, purchase and installation of pump and motor for irrigation, purchase of a tractor, purchase of pure bred or "improved" cross-bred cows, chickens, and swine, planting of new vegetables such as green beans, purchase of land, planting of grafted fruit trees, digging a well, and building a corn crib. However, the above list should not be thought of as exhaustive. Almost without exception, a stroll around the farm after the interview revealed that the farmer





had made improvements that he had forgotten to mention. The advanced farmers mentioned a total of forty-eight improvements, and the neighbor farmers mentioned thirty-six; however, the nature of the improvements varied considerably. The advanced farmer made more of the costly and more extensive changes (in their effects). When asked which of these changes were the hardest to make, seven (31.8%) of the advanced farmers and two (9.1%) of the neighbor farmers immediately responded that the purchase, installation, and learning to use an irrigation system was the hardest. Two (9.1%) farmers in each category mentioned their tractors as the most difficult changes they had made. Four of the advanced farmers (18.2%) and two of the neighbor category (9.1%) mentioned the purchase and care of improved strains of cattle and swine as a difficult change. One of the advanced farmers and three of the neighbor farmers (13.6%) mentioned the accumulation of wealth for the purchase of land as being very difficult.

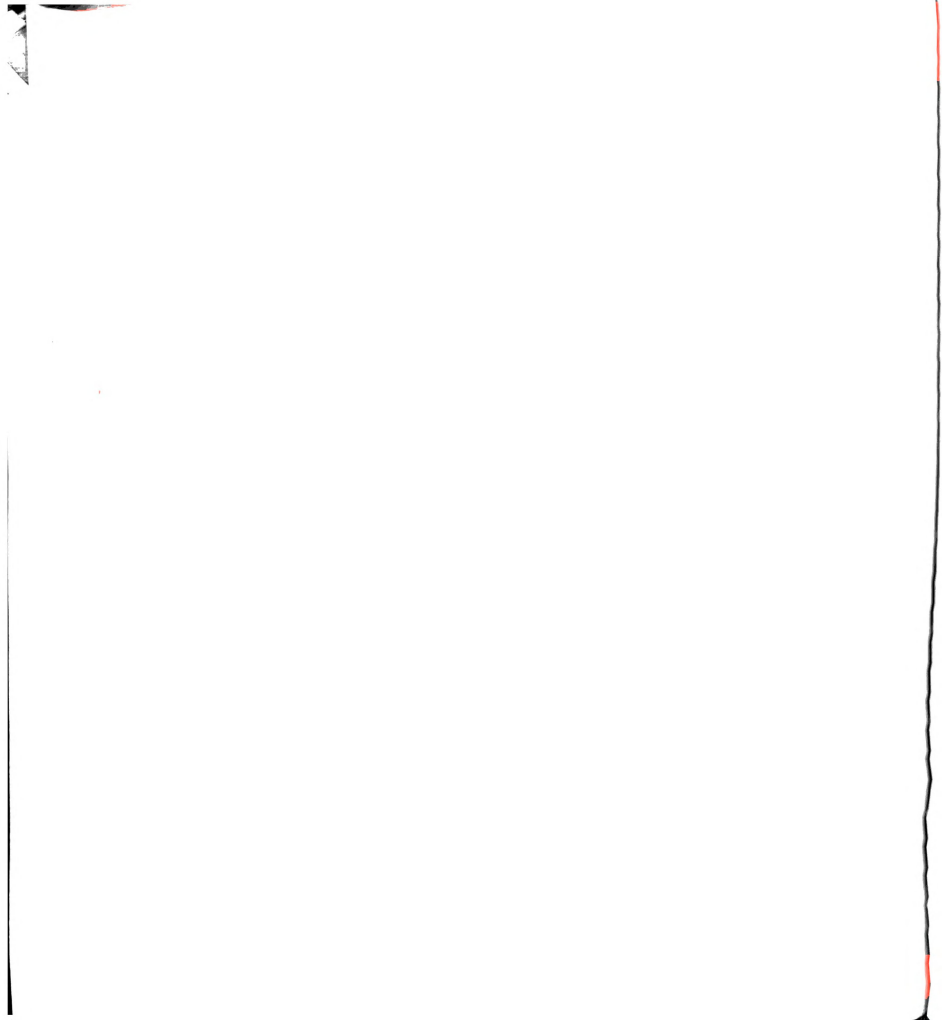
#### The Values in Farming and in Farm Changes

In order to study the goals, ambitions, standards, and norms held by farmers in the two categories, questions were asked of each respondent concerning these matters. Both direct and non-direct questions were used.

Farmer respondents were asked what plans they had had when they began farming their present farms. As has already been seen, the advanced farmers had been farming their present farms an average of fourteen years and approximately eleven months, while the neighbor farmers had averaged twelve years and seven months (counting only the

farm of residence for those in each category who farmed more than one farm). The farmers were each asked to tell what their plans had been when they started operating the present farm. Their answers were highly general and seemed to indicate a vagueness of memory, if not a vagueness of purpose. This was true for most farmers in both categories. To provide a living for themselves and their families by growing crops and raising animals was the most common theme in the replies from both categories of farmers. Also, fairly common was the desire to "echar adelante" ("to get ahead") and "to see if he could better himself." For those who had borrowed money to buy the farm or rental rights to the farm, paying off of the debt was a prominent goal. Eleven advanced farmers (50%) and six neighbor farmers (27.3%) mentioned that some particular agricultural improvement was a part of their original plans. It might have been expected that the advanced farmers would have been more likely to have improvements involving innovations in their original plans. While this difference is in the predicted direction, it did not prove statistically significant ( $\chi^2 p = .077$ ).

Each respondent was also asked a series of questions relevant to the person who was "the best farmer he ever knew." It was believed that responses to this question could serve as an indirect index of respondent farmer values, since it was assumed that their choices would reflect their evaluations. Any proposition that the two categories would name the same farmers or would name different farmers but agree within categories was not supported. Four farmers were mentioned by



at least one farmer in each category, while twenty-two other farmers were chosen by either one or two farmers in one of the categories. The four farmers chosen by respondents in both categories received eight nominations from the advanced farmer category and five from the neighbor farmer category. The other choices were scattered widely enough to indicate little consensus among the pairs of adjacent neighbors (see Table 46), or among the farmers in each category. Thus, the two categories of farmers did choose different people in response to the question "Who is the best farmer you ever knew?" However, there is clearly as much within category variation as across category variation indicating that within the two categories there is little consensus concerning who the best farmers are or were. This suggests that possibly the standards of what makes a farmer "the best," vary as well.

Table 47 indicates that in neither category were farmers very likely to name a member of their family as the best farmer they ever knew. No significant differences exist between the categories concerning the relationship of the persons named to the farmers choosing. With respect to the residence of the best farmer, the data are the same (see Table 48). Fourteen of the farmers in each category (63.3%) chose someone from their own barrio. Any idea that the advanced farmers were more likely to name someone outside their neighborhood is not supported by the data.

No significant differences were found between the categories with regard to their answers to the question of why the best farmer they had ever known was the best. The twenty-two advanced farmers mentioned very much the same criteria as the neighbor farmers. As Table 49

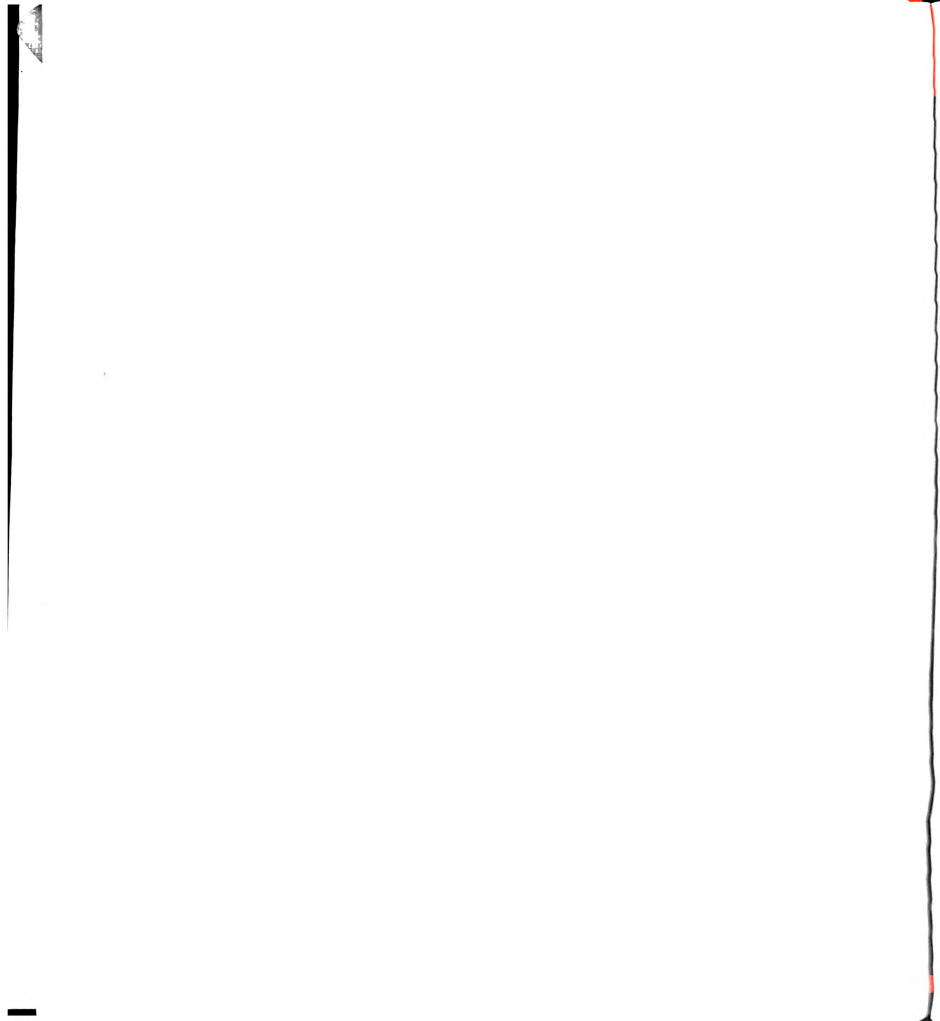


TABLE 46

SUMMARY OF DATA IN RESPONSE TO QUESTION: WHO IS THE  
BEST FARMER YOU EVER KNEW?

Category of Farmers	Number Choosing Same Four Farmers	Number Choosing Other Farmers	Significance of Difference
Advanced	8	14	N.S.D.
Neighbor	5	17	

Agreement between Pairs

Number of Pairs Making Same Choice	= 2
Number of Pairs Making Different Choice	= 14
Number of Pairs in Which One Farmer "Could Not Say Who Was Best"	= 6

Agreement within Each Category

Number of Advanced Farmers Choosing Same Four Farmers	= 8
Number of Neighbor Farmers Choosing Same Two Farmers	= 4

TABLE 47

RELATION OF FARMERS NAMED BEST TO RESPONDENT FARMER

Relation	Category of Farmers*		Significance of Difference
	Advanced	Neighbor	
Member of Family	5	4	N.S.D.
Friend	7	7	
Neighbor	5	7	N.S.D.
Person Known	3	1	N.S.D.
Former Boss	0	1	N.S.D.
No Reply to Question in Table	2	2	

\* Some farmers named more than one farmer, saying that they  
could not say which one was best.

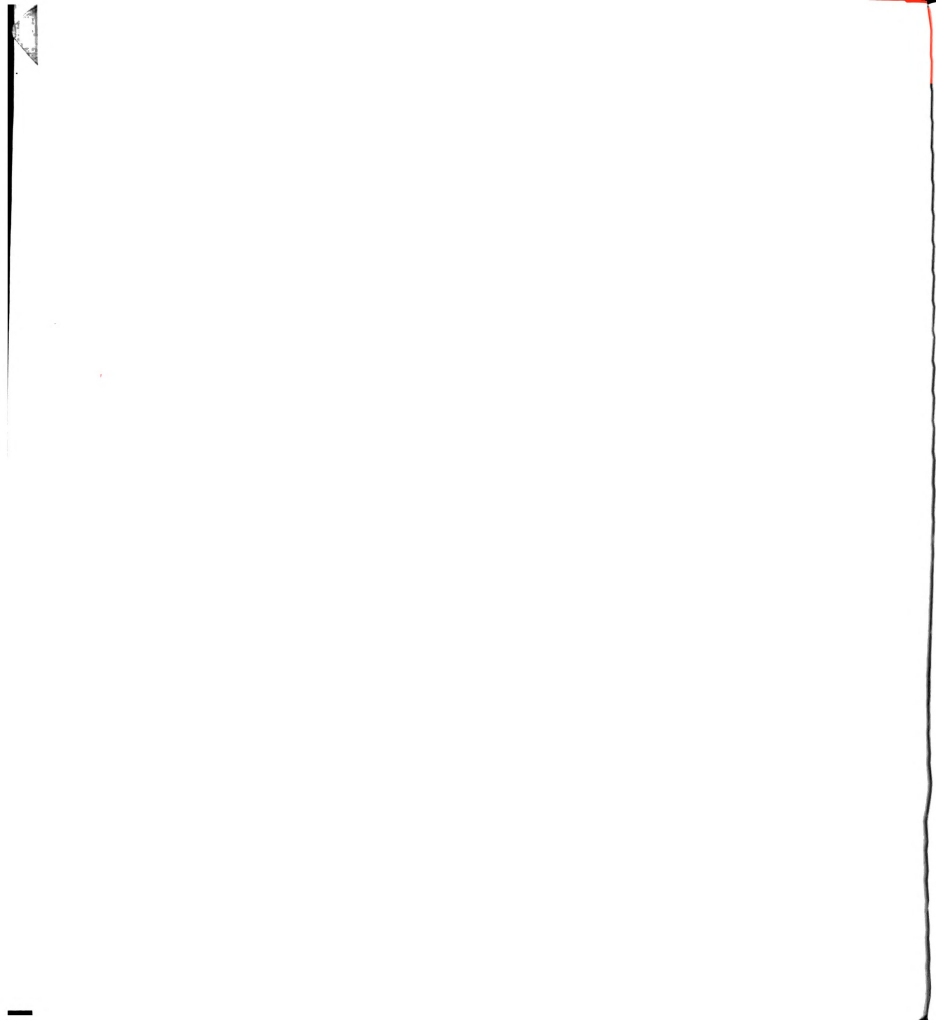


TABLE 48

RESIDENCE LOCATION OF FARMERS NAMED BEST AND LOCALITY  
DIRECTION OF FARMER CHOICE

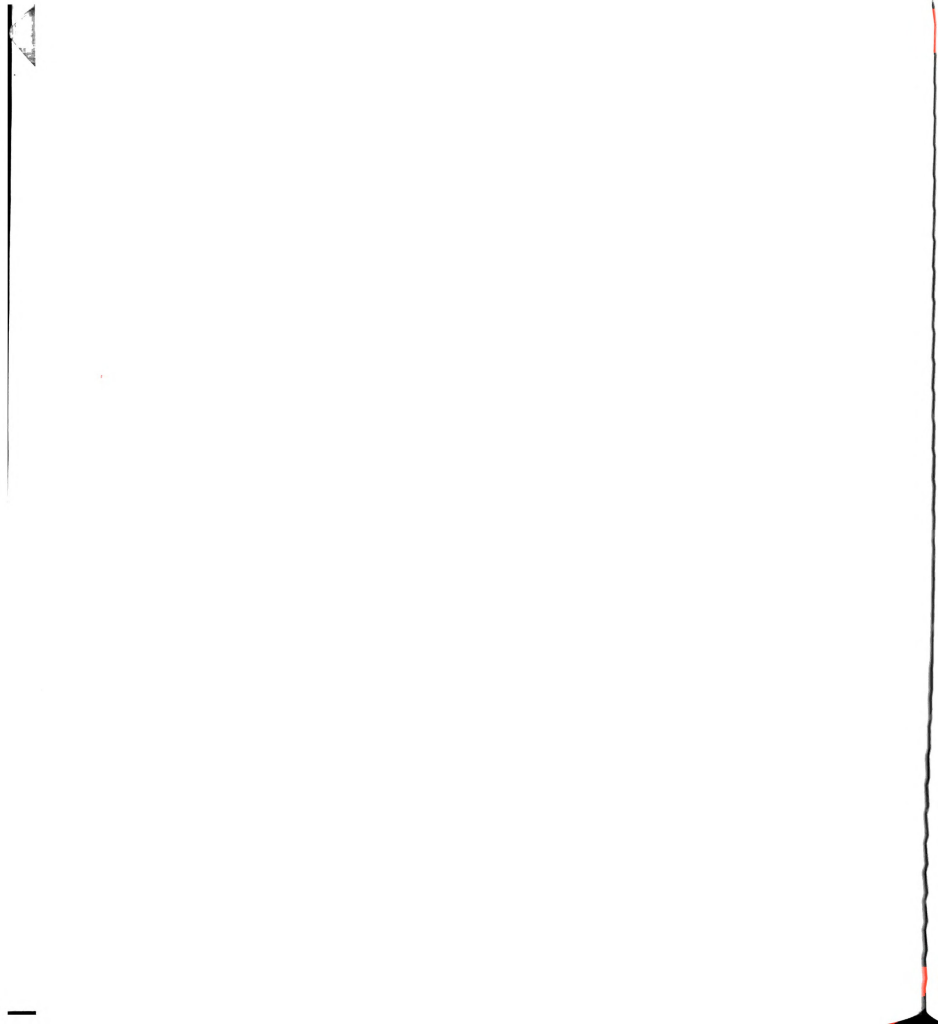
Residence Location of Farmer Chosen Best	Category of Farmers Choosing (By Frequency)	
	Advanced	Neighbor
City of Bejucal	2	1
Barrio of Beltran	10	8
Barrio of Aguas Verdes	6	6
Outside Municipio de Bejucal	2	3
Chose Within Own Barrio	14	14
Chose Outside Own Barrio	6	3

TABLE 49

CATEGORIES OF RESPONSES TO QUESTION, "WHY WAS BEST FARMER  
THE BEST FARMER YOU EVER KNEW?"

Response Category (by theme)	Category of Farmers by Numbers of Responses Made	
	Advanced	Neighbor
<b>Farmer Occupational</b>		
<u>Role Performance</u> <u>Total</u>	34	34
Matters of Administration	10	10
Matters of Knowledge	6	9
Matters of Harvests and Wealth	5	4
Matters of Occupational Advancement	4	2
Other answers	9	9
<b>Resources Possessed</b> <u>Total</u>	6	5
<u>Was Well Prepared in Land, and</u> Capital, Had Property	4	4
Had Good Farm	1	0
Had Irrigation	1	0
Had Good Cows	0	1
<u>Farmer Neighborhood Role Performances</u>	3	8





indicates, the answers were categorized into three classes referring to farmer occupational role performances, wealth and resources possessed, and farmer neighborhood role performances. The most frequently mentioned criteria in the area of farmer occupational role performances were the following: his farm was well administered, he was a good administrator, took good care of his farm, of his livestock; he worked hard, was a hard worker, he had good ideas for working, intelligent, knew specialities, knew how to coordinate work, was advanced in ideas; he had high production, good harvests; he was poor and advanced to greater wealth, bought his own farm. Others mentioned were that the best farmer had had his family help him, he knew business deals, that he was "a country farmer," saved his money, was not afraid, he lived better, and he was dedicated to good harvests.

In the class of responses referring to the resources possessed by the "best" farmer, the most common theme was that he was "well prepared" in land and capital; he had property. Also mentioned were the possession of irrigation and good cows. The most common response in the area of farmer neighborhood role performance was that the "best" farmer helped his neighbors, got along with everyone, that he was a good neighbor, a man of good character, a good person who protected and looked after his family. One neighbor farmer also mentioned that the best farmer he ever knew "lived on his farm" as a factor in his favor.

Questions were also asked concerning the current plans for farm improvements (if any) held by farmer respondents. More advanced farmers than neighbor farmers had plans for improvements at the time



of the survey, more had plans involving technological innovation, more had concrete plans for carrying out these desired improvements, and more had done something to carry out these plans. However, in no case were these differences of sufficient magnitude to be statistically significant (see Table 50). The plans varied also in how ambitious they were in terms of expense and the amount of innovation they involved. However, the variation was as great within each category as across the categories (see Table 50).

If the two categories of farmers had systematically differing standards of farming, it could be argued that they would differ in the criteria by which they would define the components of "a better farm" in Bejucal. Table 51 summarizes the findings which did not support the hypothesis. The two categories used very much the same definitional terms to give their conceptions of what was involved in "a better farm in Bejucal."

Had they held systematically differing standards of value, the two categories of farmers might have preferred to spend wealth in ways reflecting these value commitments. To discover whether or not this was true, each respondent was asked to choose between each of the following goals (presented in random pairs) as alternative uses for wealth, should he have it and want to spend it. (The goals were taken from the ethnographic survey.) The goals were: farm mechanization, increased land, building a new place (concrete, hurricane-proof) house on his farm, or building a good house and living in town. They were alternatives farmers talked about in the presence of the writer.

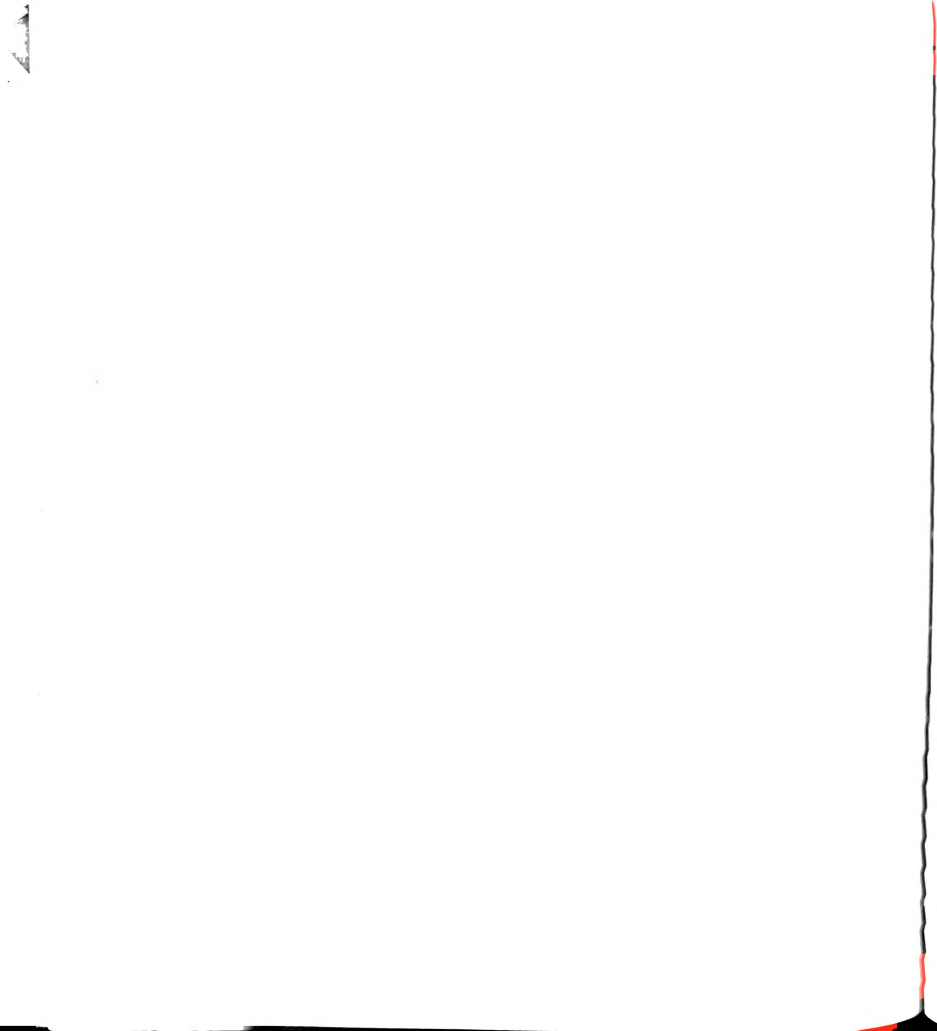


TABLE 50  
CURRENT PLANS FOR HIS FARM

(a) Does He Have Plans for Improvement of His Farm?			
Category of Farmers	Yes	No	Significance of Difference
Advanced	14	8	N.S.D.
Neighbor	11	11	

(b) Nature of Current Plans for Farm Improvement			
Category of Farmers	Have Plans Involving Innovations	Have Plans Not Presently Involving Innovations	Significance of Difference
Advanced	10	4	N.E.D.
Neighbor	5	6	

(c) Does He Have Concrete Plans Made Now?			
Category of Farmers	Yes	No	Significance of Difference
Advanced	11	4	N.S.D.
Neighbor	6	5	

(d) Has He Done Anything to Carry Out His Plans?			
Category of Farmers	Yes	No	Significance of Difference
Advanced	7	7	N.S.D.
Neighbor	4	7	



TABLE 50 (Continued)

## (e) Kinds of Plans and Hopes Farmers Have

Item or Improvement	Category of Farmers	
	Advanced	Neighbor
Improve Cattle	5	1
Buy Irrigation System	1	3
Build a Stable	3	2
Increase Number of Livestock	1	3
Sell Here and Buy Land Elsewhere	1	1
Buy Tractor and Machinery	2	0
Plow with Tractor	0	1
Build Two-Wheeled Cart	2	0
Reconstruct and Build House	2	0
Improve Flock	2	0
Fumigate Trees	2	0
Others	<u>2</u>	<u>2</u>
Total Number of Improvements Desired	23	13





TABLE 51

COMPONENTS OF A BETTER FARM BY FARMER DEFINITION

Factors Relating to Land	Category of Farmers (Number Mentioning)	
	Advanced	Neighbor
Good land	15	12
Few Rocks	5	7
Water for Irrigation	6	3
Level Terrain	2	6
Deep Soil		3
Well Fertilized	4	4
Close to Transportation	2	
Not Separated by Railroad or by Arroyo	1	
Large in Size	1	2
Has Rested Land	1	1
Has Little Mud		1
Has Rocks		1
Has Red Soil		1
Has Black Soil		1
Factors Relating to Management		
Good Management	5	3
Farmer Knows Farming	1	
Farmer Has Confidence	1	
Crops Sown in Season		1
Better Income	1	
High Production, Good Harvests	6	8
Factors Relating to Capital of Farm		
Better Preparation of Order and Capital	4	6
Has Irrigation	2	4
Has Good Orchard	1	6
Has Dairy		2
Has Good Fences		1
Has Good House		1

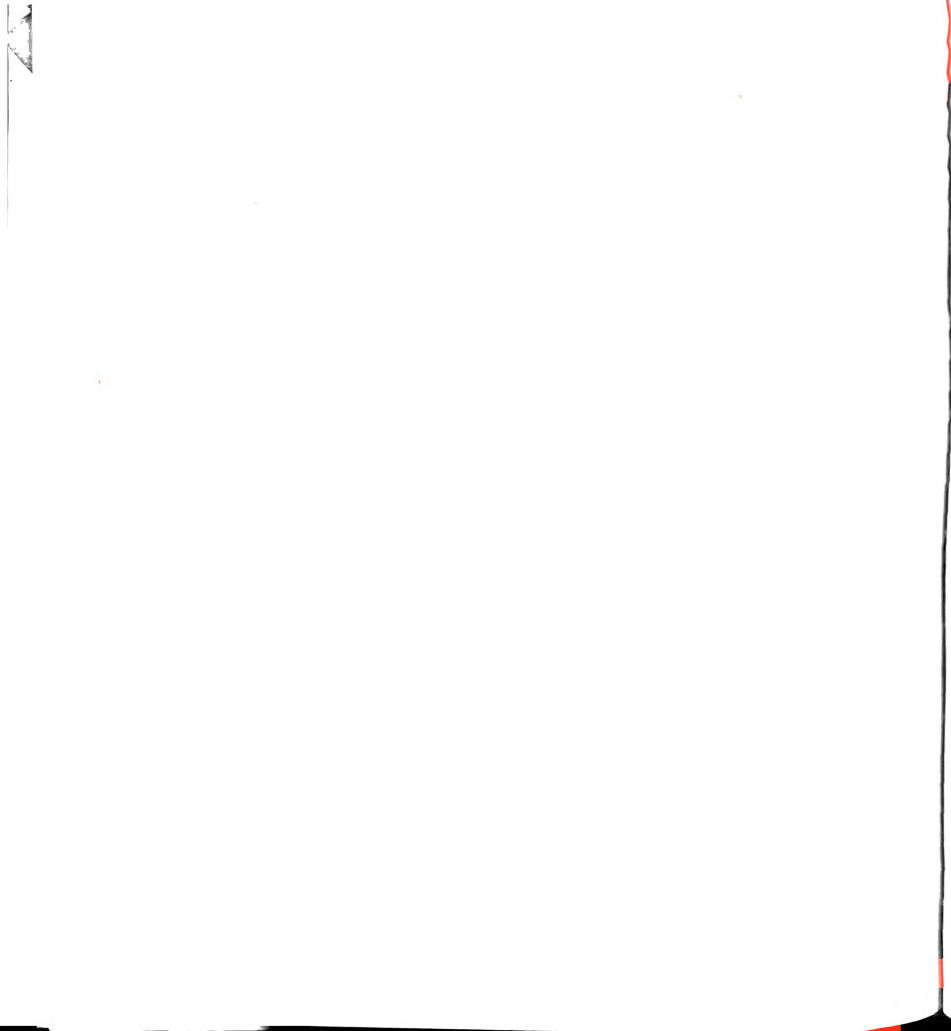


Table 52 shows that the advanced farmers would, more frequently than the neighbor farmers, prefer to spend on farm mechanization rather than increased land holdings. There was no significant difference between the categories on the other goals. Both advanced farmers and neighbor farmers preferred spending to mechanize their farms to building a place (concrete, hurricane-proof) house on their farms, or building a town house and moving to the city. The two categories of farmers were presented the alternatives in every possible two-by-two combination. Had they not held any ranking of preferences or values, then there would have been only 37.5 per cent of the farmers in each category ranking the four alternatives in a perfect hierarchy of 1,2,3,4 ranking.<sup>2</sup> However, 86.4 per cent of the advanced farmers, and 90.0 per cent of the neighbor farmers ranked them in perfect hierarchies. The statistical test suggested by William R. Catton, Jr., showed these differences to be statistically significant. It is safe to conclude that although the differences between the categories were not great, the farmers in the two categories had hierarchies of preferences by which they ordered the four alternatives.<sup>3</sup>

Other farmer role definitions were studied. The advanced farmers proved significantly more likely to think it necessary to sacrifice

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2. Catton, William R., Jr., "Exploring Techniques for Measuring Human Values." American Sociological Review, Vol. 19, No. 1, p. 50.

3. In the questionnaire, another alternative was used for all of the married farmers, namely, "to educate your children (or grandchildren) in trades or professions." Every married farmer in the advanced category and thirteen married farmers in the neighbor category ranked this alternative in first position.

TABLE 52

## FARMER RANKING OF FOUR EXPENDITURE ALTERNATIVES

(a) <u>Proportion of Advanced Farmers</u>				
Rank Order	Increase Land Size	Earn More by Mechanization	Build Place House on Farm	Build Town House and Live in Town
1	.3636	.2273	.2273	.0455
2	.2727	.5909	.2727	.1364
3	.2727	.1364	.4091	.1454
4	.0909	.1455	.0909	.7727

Number of Farmers Ranking Four Alternatives in  
Perfect 4,3,2,1 Hierarchy = 19

in 1,1,1,4 Pattern = 3

$p < .02$ , Significant Difference from Random Response by Catton Test,\*  
 $\chi^2/6 = 2.52$

<u>Proportion of Neighbor Farmers</u>				
Rank Order	Increase Land Size	Earn More by Mechanization	Build Place House on Farm	Build Town House and Live in Town
1	.5454	.1818	.0909	.0455
2	.2273	.4545	.2273	.0909
3	.0909	.2727	.5000	.1818
4	.0455	.0909	.1818	.6818

Number of Farmers Ranking Four Alternatives in  
Perfect 4,3,2,1 Hierarchy = 20

in 4,1,1,1 Pattern = 2

$p < .01$ , Significant Difference from Random Response by Catton Test,  
 $\chi^2/6 = 3.18$

(TABLE 52 continued on following page)

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\* In "Exploring Techniques for Measuring Human Values," American Sociological Review, Volume 19, No. 1 (February 1954), pp. 47-55, William R. Catton, Jr., presents a table of statistical norms for "Score Vectors, Hierarch Indices, and Probabilities among Four Items," see p. 50.

TABLE 52 (Continued)

(b) Number of Farmers Preferring Increased Earnings from Mechanization to Other Alternatives

Alternative	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
Prefer to Earn More from Mechanization	10	3	( S.D., $p=.0192$ ( ( exact $\chi^2$ Test
No Preference	3	2	
Prefer to Buy More Land	9	17	
Prefer to Earn More by Mechanization	13	14	( N.S.D. ( (
No Preference	2	2	
Prefer to Build Place House on Farm	7	6	
Prefer to Earn More by Mechanization	18	20	( N.S.D. ( (
No Preference	1	0	
Prefer to Build House and Move to Town	3	2	

family expenses to get ahead on the farm than their adjacent neighbors. Many neighbor farmers responded that it would be impossible for them to sacrifice family expenses to get ahead; their incomes would not permit it. Both categories of farmers indicated that they would support a strong governmental program to provide facilities for farmers. The advanced farmers saw more value in a governmental program of information "on how the farmer can improve himself with his own resources" than the neighbor farmers (see Tables 53, 54, and 55).

#### Farmers Self Conceptions

The ethnographic survey had indicated that Bejucal farmers were thought of as a distinctive occupational class having both a distinctive

TABLE 53

FARMER RESPONSES TO QUESTION: DO YOU THINK THAT IT IS NECESSARY  
TO SACRIFICE FAMILY EXPENSES TO GET AHEAD ON THE FARM?

Category of Farmers	Answer		Significance of Difference
	Yes	No	
Advanced	17	5	S.D., Exact $\chi^2_p = .0248$
Neighbor	10	12	

TABLE 54

FARMER RESPONSES TO QUESTION: DO YOU THINK THAT THE FARMERS  
OF BEJUCAL NEED A STRONG GOVERNMENTAL PROGRAM TO PROVIDE CREDIT  
AND OTHER FACILITIES?

Category of Farmers	Answer		Significance of Difference
	Yes	No	
Advanced	21	1	N.S.D.
Neighbor	20	2	

TABLE 55

FARMER RESPONSES TO QUESTION: DO YOU THINK THAT THE FARMERS  
OF BEJUCAL NEED BADLY A PROGRAM OF INFORMATION ON HOW THEY  
CAN IMPROVE THEMSELVES WITH THEIR OWN RESOURCES?

Category of Farmers	Answer		Significance of Difference
	Yes	No	
Advanced	20	2	S.D., Exact $\chi^2_p = .0071$
Neighbor	12	10	

occupation and a special way of life by themselves and by others. It also was observed that the farmer respondents compared themselves in prosperity, luck, and other matters with the rest of the farmers of the municipality. Consequently, it was felt that one way to gain information concerning their self-conceptions would be to ask respondents to rate themselves in comparison with other Bejucal farmers on various criteria or standards of comparisons. If there existed any significant differences between the categories of farmers in their self-conceptions, then it might suggest that self-conceptions may increase or decrease farmer willingness to change.

In each interview the farmer respondent was asked to place himself in one of three categories of Bejucal farmers with respect to each category. For example, on the criteria of wealth, each respondent was asked into which of these categories he fell: the poorest farmers, the farmers who are somewhat poor, and the richest farmers. Besides wealth, the following criteria of self-comparison were employed: the amount of work done daily, the number of changes made on their farms, his success as a farmer, his luck as provider for his family, his luck or success in urban business dealing, type of administration of farm (conservative or advanced), his facility for using and repairing machinery, the results he has had with the use of insecticides and chemical fertilizers, the possibility of successfully paying off a bank loan from BANFIAC or other bank, his influence in politics, how well known he is in the community, knowledge of what is necessary to better himself, his conformity with the laws and customs of the community, amount of agricultural education had by the farmer, amount of



desire to improve himself, and his willingness to sacrifice himself for the progress of his farm. Each respondent was also asked a few other questions: Are your own resources sufficient to allow you to make the changes you desire to make on your farm? Do all of your neighbors have the same improvements you have? If not, why not? How do you compare with the best farmer you ever knew? What is the difference between you and him?

On most of the criteria of self-rating there were no significant differences. To test for significance the data were grouped in two by two chi-square tables and tested by Fisher's exact  $\chi^2$  test (see Table 56). The advanced farmers proved significantly more likely to place themselves in the category of those who are somewhat poor rather than the poorest farmers. No farmer placed himself among "the richest" farmers. Besides this matter of wealth, the advanced farmers, as contrasted with the neighbor farmers, thought that they had (1) had more luck as providers for their families, (2) more luck or success in urban business dealing, (3) more advanced in type of administration (less conservative), (4) more facility for using and repairing machinery, (5) more likelihood of successfully paying off a bank loan from BANFLAC or some other bank, (6) more influence in politics, and (7) more conformity with the laws and customs of the community.

The advanced farmers desiring improvements, believed more frequently than their similar-minded neighbors that their own resources were sufficient to allow them to make the changes they desired to make. (See Table 57.) More advanced farmers than neighbor farmers believed

TABLE 56

## FARMER SELF-CONCEPTIONS WITH BEJUCAL FARMERS AS REFERENCE GROUP

Items and Categories	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
<b>Item: <u>Wealth Possessed</u></b>			
Group: The poorest	5	13	S.D., exact $x^2p = .014$
Those who are somewhat poor	17	9	
<b>Item: <u>The Amount of Work Done Daily</u></b>			
Those who work almost all day	5	2	N.S.D.
Those who work hard all day	17	20	
<b>Item: <u>The Number of Changes They Have Made on Their Farms</u></b>			
Those who have made few	10	14	N.S.D.
Those who have made many	12	8	
<b>Item: <u>His Success as Farmer</u></b>			
Those who had little	2	5	N.S.D.
Those who had good	16	15	
Those who had much	4	2	
<b>Item: <u>His Luck as Provider</u></b>			
Those who had some	6	12	S.D., exact $x^2p = .0469$
Those who had much	16	10	
<b>Item: <u>His Luck in Urban Business Dealing</u></b>			
Those who had little	4	13	S.D., exact $x^2p = .005$
Those who had some or much	18	9	
<b>Item: <u>Type of Administration on Farm</u></b>			
Those who administrate conservatively	1	11	S.D., exact $x^2p = .0007$
Those who administrate in somewhat advanced fashion	21	11	

TABLE 56 (Continued)

Items and Categories	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
<hr/>			
Item: <u>His Facility for Using and Repairing Machinery</u>			
Those who had little	9	16	S.D., exact $\chi^2 p = .027$
Those who had some	13	6	
Item: <u>The Results He Has Had with the Use of Insecticides and Chemical Fertilizers</u>			
Those who had few	8	9	N.S.D.
Those who had some or good	14	13	
Item: <u>The Possibility of Successfully Paying Off a Bank Loan from BANFIAC or Other Bank</u>			
Those who had little or some possibility	9	17	S.D., exact $\chi^2 p = .00004$
Those who had good possibility	11	2	
Item: <u>His Influence in Politics</u>			
Those who had little	8	15	S.D., $\chi^2 p = .0276$
Those who had some or much	14	7	
Item: <u>How Well Known He Is in the Community</u>			
Those who are known only in their barrios	1	4	N.S.D.
Those who are known in all Bejucal	21	18	
Item: <u>The Knowledge of What Is Necessary to Better Himself</u>			
Those who know little	2	5	N.S.D.
Those who know some	12	14	
Those who know much	8	3	
Item: <u>His Conformity with the Laws and Customs of the Community</u>			
Those who conform little or some	7	14	S.D., exact $\chi^2 p = .027$
Those who conform absolutely	15	8	

TABLE 56 (Continued)

Items and Categories	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
Item: <u>Amount of Agricultural Education Had by Farmers</u>			
Those who had little or some	17	19	N.S.D.
Those who had much	5	3	
Item: <u>The Desire of the Farmer to Improve Himself</u>			
Those who desired little or some	7	9	N.S.D.
Those who desired greatly	15	13	
Item: <u>His Willingness to Sacrifice Himself for the Progress of His Farm</u>			
Those who are not willing	3	6	N.S.D.
Those who are somewhat willing	10	9	
Those who are very willing	9	7	

TABLE 57

FARMER ANSWERS TO THE QUESTION: ARE YOUR OWN RESOURCES  
SUFFICIENT TO ALLOW YOU TO MAKE THE CHANGES YOU DESIRE?

Category of Farmers	Answer		Significance of Difference
	Yes	No	
Advanced	14	1	S.D., exact $\chi^2 p = .0023$
Neighbor	4	6	

that not all of their neighbors had the same improvements they had, but the difference was not statistically significant (see Table 58). Table 58 also gives the responses to the question concerning the reasons they gave for their neighbors not having the same improvements they possess. The responses are approximately evenly divided between those referring to differences in wealth and resources and those referring to differences in role performance.

TABLE 58

FARMER ANSWERS TO THE QUESTION: DO ALL OF YOUR NEIGHBORS  
HAVE THE SAME IMPROVEMENTS YOU HAVE?

Category of Farmers	Answer		Significance of Difference
	Yes	No	
Advanced	7	15	N.S.D.
Neighbor	12	10	

(a) "If Not, Why Not?"

Answers	Frequency of Response Use by	
	Category of Farmers Advanced	Neighbor
They lack resources, are poorer	6	2
My farm is larger	3	
They don't have the same ideas, they don't dedicate themselves to the same goals	2	3
I produce more	1	
They don't fight for these improvements	1	
I have more ideas	1	
I have more luck	1	
They don't own their land	1	
A certain prestamista is my friend	1	
I fight hard		1
Sometimes they don't have water		1
I save money and they don't		1
I administrate the farm business better		1
I make more and don't go out and drink		1
Doesn't want to say	3	

When asked to compare themselves with the best farmer they ever knew, practically identical answers were obtained from the two categories of farmer respondents (see Table 59). When asked further to explain the difference between themselves and the best farmer they ever knew, the farmer respondents gave answers similar to those in the former paragraph.

TABLE 59

## FARMER COMPARISONS OF THEMSELVES WITH THE BEST FARMER THEY EVER KNEW

Evaluation	Category of Farmers		Significance of Difference
	Advanced	Neighbor	
Better than him	0	0	N.S.D.
Equal to him	13	14	
Worse than him	8	6	
Don't know, no answer	1	2	

(a) "What Is the Difference between You and Him?"

Answers	Category of Farmers	
	Advanced	Neighbor
He has (had) more productive power, more resources, more capacity	5	5
He knows more about farming	4	1
He has come out better	1	1
He has more money	1	1
He has more water for irrigation	1	
He knows more about the weather and natural agriculture	1	
I produce more	1	
I irrigate more	1	
One ought not put oneself before others	1	
He works more		1
I work more		1
Some have more, some have less		2
I am old now		1
I know only agriculture (not business)		1

### Summary

Questions directed toward farm operator role conceptions found few significant differences between the categories. When ranking five "factors in farmer advancement," the advanced farmers gave significantly greater importance to credit than the neighbor farmers did. The advanced farmers also ranked credit over land in significantly greater frequency. This finding may be important since many Bejucal farmers feel themselves relatively deprived in land acreage and quality.

The criteria by which the two categories of farmers judged the excellence of the "best farmer they ever knew" were closely similar. Possibly the farmers of Bejucal hold very similar standards of farming excellence even though they do not attain or approximate them equally.

The topic of credit (and its use) was one of the most distinguishing subjects in the survey. While the members of neither category were very much involved in debt at the time of the survey, major differences existed in their perception of the value of credit for farmer advancement (the advanced farmers ranked it more important or higher than the neighbor farmers ranked it) and their estimation of their ability to successfully pay off a loan if they borrowed money in large amounts. In significantly larger numbers, the advanced farmers felt that they could pay off large debts if it was necessary, and placed themselves ahead of other Bejucal farmers in this capacity. Since more of the advanced farmers than neighbor farmers had contracted and paid off relatively large loans involved in the purchase of farm machinery and land, this result is not surprising. As a possible

reflection of this, the advanced farmers tended to direct their requests for funds more toward commercial, non-traditional sources and depend less on family members, friends, and their bodegeros.

However, on many attitudes toward the use of credit, the paired farmers did not significantly differ. They all seemed to view being in debt as a very undesirable state. All but one of the forty-four farmers felt that it was dangerous to borrow money in large amounts.

In response to questions on farm improvements they had made, it was clear that members of both categories of farmers defined "changes" and "improvements" broadly. In both cases their definitions covered both the accumulation of traditional instruments and resources of production and the adoption of instruments and methods newly introduced to the community. The advanced farmers in significantly greater numbers said they would prefer to spend money, if they had it, for mechanization rather than for land -- a traditional and highly-valued expenditure for peasants with a surplus income above consumption needs. Some sacrifice in family expenses for the advancement of the farm was looked upon as both possible and necessary by more advanced farmers than neighbor farmers.

In their self-conceptions revealed by self-comparisons with other farmers in Bejucal, it was found that the advanced farmers were more likely to think of themselves as more wealthy, prosperous, more successful in business and with the use of modern farming techniques and credit, better educated in agriculture, more influential in politics, and more conforming with the laws and customs of the community. They



believed in significantly greater numbers that their own resources would allow them to make the changes they now desired to make.

This concludes the presentation of the survey findings. The next chapter presents some hypotheses growing out of the Bejucal research and places the findings in the context of Latin American research findings.

## VIII. HYPOTHESES AND CONCLUSIONS

One of the customary objectives of exploratory research projects is to develop hypotheses which summarize and account for the findings and which give direction to future research. In this, the final chapter, some hypotheses of this sort are presented for the Bejucal survey of technologically advanced farmers and their adjacent neighbors.

Beyond these hypotheses, the ethnographic survey and the sample survey findings lend themselves to comparison and contrast with other research in Latin American rural life. The data also have implications for the agricultural extension work of the Project 39 staff in the research and demonstration area in the Province of Havana. In this chapter a few such comparisons with other studies and practical implications of the findings are presented. They represent the major findings of this dissertation.

### Two Types of Farming Technology

The adequate conceptualization of the differences observed in the farm techniques employed by the farmers of Bejucal is a difficult problem. The techniques observed ranged from the use of simple hand tools to the most complicated mechanized enterprises. It is here proposed that the farmers of Bejucal were (and are) in transition from a type of agriculture which can be termed a Nineteenth Century Peasant Farming Technology to a Twentieth Century Commercial Farming Technology. —  
In the paragraph to follow, this statement will be explained and

employed as a hypothesis to order the changes taking place in Bejucal Farming methods. The theoretical method employed is that of "constructive typology."<sup>1</sup>

Nineteenth Century peasant farming technology.<sup>2</sup> Most Bejucal farmers employed farming methods and used implements characteristic of southern European peasantry in the nineteenth century. This technology can be characterized by human and animal-powered implements and tools; the use of management techniques passed from father to son (and therefore, traditional); a relatively high expenditure of time and resources for each unit of output; direct human hand contact to all plant products produced in the planting, harvesting, and transporting stages; dependence upon family labor and the use of cooperative inter-farm labor exchanges or hired labor only at planting and/or harvesting times; little or no control over the effects of non-productive natural forces such as insects, disease, fungi, dry seasons, and so on; and the production of much of the produce of the farm for farm family consumption. Specifically, in this type of agriculture the principal sources of energy are those of animals, human energy plus natural energy combined in plant food. It involves the two-wheeled cart, the wooden and iron plow, hand tools for cutting, harvesting, and building housing

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1. Becker, Howard. Through Values to Social Interpretation. Durham, North Carolina: Duke University Press, 1950.

2. The concepts developed here are based upon the writer's observations in Cuba and Mexico and the treatments of Robert Redfield, Peasant Society and Culture, An Anthropological Approach to Civilization. Chicago: University of Chicago Press, 1956; and T. Lynn Smith, The Sociology of Rural Life, Third Edition. New York: Harper and Bros. 1953.

and implements. In this type of agriculture the farmer is peasant-like to the extent that he is tradition-oriented, respecting or revering the traditional means learned from his father or other family member, and not searching for new techniques or market opportunities which promise new rewards in monetary income. He is reluctant to take risks and thinks of himself as a rustic person relative to townsmen of higher station than himself. He is sentimentally attached to his land and places high value on land ownership.

Twentieth Century commercial farming technology. By contrast, Twentieth Century commercial farming technology is characterized by motor-powered machinery, machine tools, factory-produced implements for use with the power-driven machines, rational and opportunistic management procedures, relatively low expenditures of labor-time and resources for each unit of output, a minimum of hand labor, limited dependence upon family labor, use of employed and contracted workers, and a high degree of predictive control over output by use of irrigation, insecticides, fertilizers, etc. This type of technology is characterized as commercial because it is dependent primarily upon production for commercial sale and, secondarily, for family use; the marketing of large volumes of products to make the factory-produced machinery, implements, and tools profitable; and farmer involvement in networks of credit, banking, and voluntary associational relationships for the defense of specific economic interests.

The first hypothesis proposed here is that Bejucal farmers were (and are) in transition from a Nineteenth Century peasant-like farming technology to a Twentieth Century commercial-like farming technology.

No farmer encountered by the author had completed the transition to the point that techniques or instruments characteristic of the first had been completely supplanted by those of the second. Nor would it have been necessarily economically rational to do so for most of the farmers of Bejucal.

### Channels for Technological Change

The discovery that the two categories did differ objectively in their technological status prepared the way for research on associated variables which might be hypothesized as contributing to the high technological status of the more advanced farmers as contrasted with their adjacent neighbors not so advanced. Variables of personal background, career experience, social relationship, occupational definition, value commitment, self-definition, and operator role performance were examined through the gathering of data in a questionnaire administered to the twenty-two pairs of farmers.

In Bejucal the formation of a debtor-creditor relationship between farmers and prestamistas was the principal channel for the introduction of irrigation systems and the farm tractor complex and the introduction of cash-crop vegetable production. The spread of new traits involving no changes either in power sources or enterprises (such as grafted fruit trees or improved blood lines) occurred chiefly from farmer to farmer, most usually as friends and neighbors.

Where changes in techniques resulted from the establishment of the new economic relationships with prestamistas and others, they resulted in changes in marketing and consumption experiences. Such

changes could occur in Bejucal as a consequence of the proximity of the large Havana market for farm products. And such changes operated to bring about some changes in farmer attitudes, readiness to borrow further credit, and eagerness to continue the process of changing from a Nineteenth Century farming technology to Twentieth Century techniques.

However, it is clear that the higher technological status of the advanced farmers did not result in their breaking completely with traditional social relationships, traditional evaluations or traditional "self," "other," and "role" definitions held by their adjacent neighbors. Nor did they view themselves as deviants from the customs of the community.

By relating some of the ethnographic data to these survey findings, it is possible to pose certain hypotheses of a more general nature which may be applicable to other rural communities in Latin America characterized by family-sized farming. In such communities, other things being equal,

1. Farmer adoption of newly introduced agricultural techniques involving new enterprises and/or new power sources is a result of the establishment of interactive relationships with commercial or governmental change agents. At a minimum, these relationships involve (a) the communication of information concerning alternative techniques and their desirability, (b) some farmer confidence in the dependability and value of the change agent and his information, (c) persuasive influence toward specific changes by the change agent, and (d) (for the more expensive changes) the extension of facilities or credit by

the change agent or some other agency, under the condition (e) that the agency extending the credit or facilities evaluates the farmer as "trustworthy" and "a good credit risk."

Channels of communication offered by family and friendship networks proved very important in Bejucal in spreading certain types of technical changes to the farmers in the two categories studied. All of the Bejucal farmers surveyed seemed involved in large family networks. The establishment of the commercial and governmental connections and obligations did not result in any shattering of familial ties for those who entered them.

2. Technological changes in agriculture which result from individual farm operator decisions to adopt technical alternatives may diffuse from farmer to farmer without the involvement of any change agency if the changes exist as alternatives in the community, if they involve no substitution or adoption of expensive new enterprises, and if they necessitate the use of no new power sources and convertors.

With the urban "explosion" in Latin America, there may be a great many other farming areas on the outskirts of large cities where similar changes are, or could be, taking place. It is clear that in the case of Bejucal, intersocietal role networks (or chains) between agencies in the United States and in Cuba facilitated the transfer of both technical information and instruments (physical goods, livestock, and plants). It might be hypothesized that:

3. Given legal and normative sanctions encouraging (or at least permitting) such transfers of technology, the greater the number of intersocietal role-networks the greater the technological change in

the less technologically complex society. And the hypothesis may apply to change between communities as well.

The significance of United States-Cuban interdependency and permeability for Cuban cultural change can be hypothesized:

4. As the two societies relate themselves "intimately" to each other, the range of cultural alternatives of action open to Cubans in a wide variety of social positions will expand; those Cuban farmers who perceive benefit for themselves and for the groups to which they belong in adopting certain of these alternatives, will adopt these alternatives when they believe that they can do so advantageously.

In both the ethnographic survey and the sample study of Bejucal farmers, it was observed that technological change was a regional phenomenon. The changes occurring in Bejucal were occurring in the entire region of small farms surrounding the city of Havana.

For a strategy of change, the implication is clear that the multi-community region should not be ignored in favor of community and neighborhood work, although certainly the former will not substitute for the latter. Since participation in regional organization and events is a socially differentiated phenomenon, it cannot be expected that region-wide programs of directed change will have equal impact upon all groups, classes, and communities of people. However, they may be an inexpensive means of starting some people in relatively "open" secular communities toward desired changes.

Also implied in these varied regional activities is the growth of specialized associations of all kinds both to carry on these activities



and to regulate activities and interactions in accordance with mores and law. These implications are social facts in Bejucal.

The spread of technological innovations in agriculture is already a regional phenomenon in many ways. Farmers buy new machinery, implements, chemicals, seeds, and livestock from regionally oriented distributors. The cash products they produce go into regional, national, and international marketing channels. The more mobile of Bejucal farmers are already observing how other farmers conduct their affairs in other communities and adopting changes on that basis. Improved livestock strains, imported by Cuba's wealthy "gentlemen farmers" have diffused to farmer milk producers within the region. New plant varieties developed at the Santiago de las Vegas Experiment Station are becoming diffused throughout the region.

Given the existence of alternative technological instruments and methods, the selective factors which influence farmer adoption or rejection of innovations seem to be multiple rather than simple. In Bejucal a few farmers said that they were too old to adopt new methods. Others were judged by commercial change agents as being poor credit risks. Still others lived on farms so small or so bereft of natural advantages for farming that they were limited to only the least expensive changes, whatever might be their ambitions toward adopting new techniques. No simple law or regularity to deal with this variety of factors is immediately apparent to this writer. The findings suggest that:

5. Decisions to accept or reject technological changes involving innovations are a function of certain shared beliefs and expectations.

Especially important seem to be the following: farmer expectations of having the ability to successfully use the particular changes they are adopting and similar estimations of their prospects for success by socially important change agents (or agents of diffusion) with whom the farmers interact. (The hypothesis might hold even when the techniques, the perceived bases of expectation, and the standards of estimation and success varied.)

If the Bejucal findings are generalized to communities of the same type, then:

6. Changes in agricultural technology are associated (a) with few changes in farm operator social values, standards, and attitudes toward others (excepting those persons and groups directly stimulating the changes), (b) with measurable changes in the scale of farming operations, (c) with few changes in farm operator role definitions and standards of excellence or desirability in farming, and (d) with changes in farmer self-conceptions on indices of wealth, success, and progressiveness. In Bejucal the advanced farmers considered themselves as distinct or different from others in matters relating to farm operation and farm resources, but not necessarily distinctive in other matters.

#### Some Practical Implications for Programs of Stimulated Change

Some of the practical implications of a study such as this may be fairly obvious. Others are less distinctly self-evident. It should be understood, of course, that the implications (like the hypotheses) may apply only to communities of this sort.

Some of the implications for programs of stimulated or directed technical change in agriculture are discussed below. It is assumed that the change program will be introduced within the existing institutions of property ownership and management.

First, change programs designed to be made by individual farm-operator decision may have to include the extension of credit and other facilities in order to bring about the adoption of technical changes too costly to be paid for by the surplus of income from any one crop season or year. Changes involving the introduction of new power converters may most commonly be of this kind.

Second, programs of stimulated change in agricultural technology may be assisted by socio-cultural factors in the life of the community. Such patterns as the following may be of positive value in Bejucal and similar communities:

(a) The patterns of individual farmer acquisitive achievement, symbolized as a struggle or fight to advance and to defend oneself (now and in old age), possess considerable and widespread support and may be of distinct motivational advantage for the change agent if employed in change-oriented propaganda.

(b) The high value placed upon assisting the career advancement of youth (particularly, but not exclusively, sons) is another such motivational resource which can be mobilized for change.

(c) While individualism is strong, patterns of farmer cooperation are not absent in the community. They may be stimulated to encourage change. At the time of the study, farmers were working together in patronatos to cooperatively build themselves rural roads, giving free

service of native cows to improved bulls, and, through visiting and intra-family mutual aid, spreading knowledge about other alternative technical means of farming. Inter-farm gifts of improved animals and trees also were reported to the writer. Organizational energy could greatly increase the change potential of such cooperative patterns if coupled with adequate demonstration of the practicality and economic advantages to be gained through specific changes.

Third, no major changes are necessary in the farming standards or<sup>7</sup> occupational values of Bejucal farmers to persuade them to make changes in their technology. What is necessary is to persuade them of the feasibility and profitability of the change for their farm, economic situation, and position in life. At the time of the survey, this was being done by friends and neighbors, by the Agricultural Inspector, and by prestamistas who stood to profit by farmer changes. Expanded activities by the Agricultural Inspector and by prestamistas could increase the rate of technological change. It is improbable with the low level of education of the farmers that they will be greatly influenced by either the mass media or written propaganda material. Visual materials and television could be used to stimulate change. At present, however, the low purchasing power of most Bejucal farmers makes home television reception impossible. More than likely, personal, face-to-face persuasive influence will be the most effective method in bringing about farmer decisions to change farming techniques.

### Bejucal and Turrialba

One of the purposes of the sociological and anthropological research in the Turrialba valley in Central Costa Rica was to make a contribution to the developing body of knowledge of Latin American people, their patterns of social organization, their institutions, their ways of living and working, and their potentialities for economic and technological change. In order to assist the achievement of this purpose, some consideration of how the Bejucal findings compare with the Turrialba findings may be of insightful value.

The cooperative research program established by the Inter-American Institute of Agricultural Sciences and the Area Research Center of Michigan State University have already resulted in one book, four Ph.D. dissertations, one Master's thesis, and numerous journal articles.<sup>3</sup> The book is a cooperative research monograph entitled Turrialba, Social Systems and the Introduction of Change, and it is edited by Charles P. Loomis, Julio O. Morales, Roy A. Clifford, and Olen E. Leonard. The principal theoretical frame of reference in the monograph is the relationship of social systems to programs of change. The study includes a description of the setting of the research; findings concerning social status and communication, informal social systems, economic systems (especially large and small land holdings); studies of the ecological bases and demographic characteristics of the community; findings on the community health facilities, their use and the health

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3. Cf. the materials by Loomis, Alers-Montalvo, Arce, Norris, Powell, Painter, and Allee in the bibliography.

of the people; data on the religious organization and practices of the community, on the educational system and its use, on the political systems, and on Agricultural Extension; analysis of levels of living on haciendas and small farms; and a concluding chapter on the study of the "strategy of change on large estates and small farms in Latin America." The research procedures employed in the monograph and in the field research reported in the dissertations included sample surveys of the city of Turrialba and of the thirty-two outlying villages and open country households, participant observation of community life, and intensive surveys of particular villages and neighborhoods. The data analysis was carried out largely at the research center of the Inter-American Institute of Agricultural Sciences at Turrialba.

There is not space here for a complete discussion of the Turrialba findings. A number of the significant conclusions of the research can be especially pointed out as pivotal ideas for the relating of the Bejucal findings to Turrialba.

First, is the major discovery that the two chief forms of rural land and work organization differed in many respects of crucial importance for strategies of change. They were the hacienda -- the large, centrally administered estate community -- and the community of relatively small family farms. Systems of social ranking, patterns of communication, and decision-making all varied significantly between these contrasting types of communities, as did a great many other social patterns and processes. The authors concluded that for most programs involving change, particularly in their early stages, the authority pattern of the formal organization of the hacienda has the highest

priority of importance for communities of that type. In family-sized farming communities, the channels of communication offered by family-friendship groups are of highest importance for programs of change.

By comparison of the information gained during an afternoon spent at Central Toledo (a corporate sugar plantation located near Havana) with his Bejucal data, the writer believes that some of the same vital differences between hacienda and family-farming types of communities apply to the Cuban scene as well as the Costa Rican. Bejucal is, of course, a community of small, family-operated farms, and any conclusions from this dissertation probably cannot be extended to the other type of community.

Second, in family farming communities in the Turrialba valley, the leadership and influence of high status, family-friendship leaders proved essential to gaining legitimation of change efforts by outsiders and the communication of change information. In Bejucal, legitimation of the writer's research and the affiliated agricultural demonstration change program was effected through acceptance by the Agricultural Inspector and the Mayor of the Municipality. No separate farmer leadership structure existed from which clearance was necessary. Consequently, no evidence from the Bejucal study was contrary to the hypothesis based on the Turrialba findings:

"The greater the rights of individuals and families, the less essential it is for the change agent advancing changes involving home life to gain permission, clearances, or support of the authorities."<sup>4</sup>

Third, the Turrialba research indicated that rural people more commonly identified with the neighborhood villages than with the trade center community. In Bejucal, the farmer people divided the rural zones into named localities, but these accounted for only a minor portion of the interaction and did not involve strong sentiments. Their identification and the bulk of their interactions were family, trade-centered community, and occupational class oriented.

Fourth, the social and cultural similarities between Turrialba and Bejucal are striking while not surprising, since the population of each community is predominantly composed of transplanted and adapted Spanish people and cultures. Similarities in recreational, educational, health, and religious aspects of life are easily observed, although differences also exist. In the area of religion, the farm people of Bejucal are much less devotedly Roman Catholic than the farm people of Turrialba. Religion is much less important in their organizational life. In Bejucal, as in Turrialba, the small farmers value their way of life and its security. They value independence and desire to leave something for their sons (or educate them) so that they will be independent also. In each area they are proud of being land owners even if the amount of land is small. However, in Bejucal there was no evidence of love of the earth and the assumption of responsibility toward it, as there was in Turrialba.<sup>5</sup> In both areas the farmer can

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4. Loomis, Charles P., et al., editors. Turrialba, Social Systems and The Introduction of Change. Op.cit., p. 282.

5. Arce, Antonio Manuel. Socio-Economic Differentials Associated with Leadership in Turrialba, Costa Rica. Unpublished M.A. Thesis. East Lansing: Michigan State College, 1952, 110 numb. leaves.



be characterized as hard-working and highly conservative, both with regard to his style of life and agricultural technology.

No contrary evidence was encountered in Bejucal to Alers-Montalvo's hypothesis concerning technical changes: "An item or practice will be accepted by a group so long as a need is felt for it, it fits into the culture of the group and there is objective proof of its workability." Nor was there any negative evidence to his conclusion that some changes are promoted more rapidly than others through the same channels.<sup>6</sup> The farmer perception of a "social chasm" between themselves and the "learned" change agent (making communication difficult) was encountered in Bejucal but seemed to be an attitude of only a minority of farmers toward the Agricultural Inspector.

The emphasis in the Turrialba valley research conclusions was upon the necessity for change agents to reach farm people in the localities where they live. In Cuba, change agents should not ignore the regional, multi-community, aspects of change if the number of people reached by change program is to be considered important.

#### Bejucal and Latin America

Numerous attempts have been made by scholars to order Latin American cultural data on a grand scale, one that applies to all of Latin America. In his article, "Modern Latin American Culture," John

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6. Alers-Montalvo, Manuel. Cultural Change in a Costa Rican Village. Unpublished Ph.D. Thesis. East Lansing: Michigan State College, 1953, p. 156.

Gillin lists thirteen complexes of cultural traits which he finds very widespread in the region.<sup>7</sup> The Bejucal findings do not indicate that Bejucalenses are exactly typical of Latin America if the thirteen characteristics comprising Gillin's modern Latin American culture complex are considered as collectively comprising a norm. Specifically, the culture of Bejucal, as this researcher found it, was less Roman Catholic, more "puritanical" (especially the rural people), more pragmatic and practical in the application of mechanics, more secular, placed less importance on ritual kinship and church festivals, less dependent upon the ox and the ass as traction and transport animals, more ready to adopt improved plows and other farming techniques, and more influenced in legal and governmental forms by North American patterns.

In another paper on Latin American culture, John Gillin identifies four "Ethos Components" or cultural "themes," which are widespread, if not universal, in Latin America.<sup>8</sup> His first ethos component, the value put upon individual distinctiveness, personal dignity and pride, and self-assurance, was observed in Bejucal. However, the writer observed that not all adults, even all adult men, expressed this behavior to the same extent.

7. Gillin, John. "Modern Latin American Culture." Social Forces, Vol. 25 (1946-47), pp. 243-248.

8. Gillin, John. "Ethos Components in Modern Latin American Culture." American Anthropologist, Vol. 57, No. 3, Part I (June 1955), pp. 488-500.

The second major theme Gillin identifies in Latin American culture is the acceptance of social inequality. This was observed in Bejucal. The third ethos component he labels the "idealistic or transcendental world view." In this, the Latin Americans are said to place a higher value upon words and concepts than things. While the writer observed this tendency in public oratory and in the philosophies of some people he interviewed, philosophies of pragmatism, materialism, and utilitarianism were very strongly supported by people in widely varying class positions.

The fourth component Gillin names is the "search" of Latin Americans for "something more" beyond everyday life. He gives as examples, the "almost universal preoccupation with death," the emphasis upon fiestas, and the educated man's "virtuosity of argumentation, phraseology, and theory" as his approach to truth and knowledge.<sup>9</sup> There was little evidence in Bejucal to support the hypothesis that this might be a central theme of the people there.

Charles Wagley and Marvin Harris have made another attempt to create an empirically valid "Typology of Latin American Subcultures."<sup>10</sup> They identify nine subcultures which they believe are variations of a larger cultural tradition and "represent the way of life of significant segments of the Latin American population."<sup>11</sup> In Bejucal the writer

9. Ibid., pp. 491-499.

10. Wagley, Charles, and Marvin Harris. "A Typology of Latin American Subcultures." American Anthropologist, Vol. 57, No. 3 (June 1955), pp. 428-451.

11. Ibid.

found no "tribal Indian," "modern Indian," "Engenho Plantation," "Usina Plantation," and "Metropolitan Upper Class" subcultures. However, "Peasant," "Town," "Metropolitan Middle Class," and "Urban Proletariat" -- like subcultures were observed.

Using a quite different approach, Richard N. Adams has classified Central American peoples in terms of their cultures or subcultures.<sup>12</sup> For those Central Americans whose predominant "Cultural Tradition" he terms "Spanish American" (comparable to the people of Bejucal), he identifies seven "Cultural Components," as follows:<sup>13</sup>

1. Cosmopolitan
2. Local Upper Class
3. Emergent Middle Class
4. Mobile Rural Labor
5. Stable Rural Labor
6. Independent Farmer
7. Urban Labor

To some degree all of these cultural components were present in both Turrialba and Bejucal, although in both communities the first, the Cosmopolitan, was represented by only a few individuals and families.

In their study of Puerto Rico, Julian H. Steward, Robert A. Manners, and associates, identified, in addition to the horizontal strata of classes, certain special regional zones of the island produced by topography and agricultural specialization in sugar cane

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12. Adams, Richard N. "Cultural Components of Central America." American Anthropologist, Vol. 58, No. 5 (October 1956), pp. 881-907.

13. Ibid., p. 887.

production, coffee production, and tobacco and minor crops production.<sup>14</sup> They found that the manifest patterns of kinship, religion, work, neighborhood ties, and property ownership were affected greatly by the influences of geography and crop specialization.

Lowry Nelson's study of Rural Cuba found similar regional and crop specialization variations.<sup>15</sup> In terms of Nelson's study, this dissertation represents a more intensive study of town and farm life in the dairy and garden crop fringe area around the city of Havana. The findings of this study of Bejucal farmers complement, on a narrower and more intensive scale, the rather broad, survey-type findings of his research.

#### Suggestions for Further Study

Given the findings from the research in the Turrialba valley, this Bejucal report, and other materials accumulating on social and cultural changes in Latin America, the time has arrived for the designing of more rigorous studies of particular problems and particular hypotheses. The exploratory research studies have prepared the way by (1) defining various research situations, (2) providing data of a general sort on Latin American societies, occupational, and ethnic groups, and (3) raising a number of research problems and hypotheses

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14. Manners, Robert A., and Julian H. Steward. "The Cultural Study of Contemporary Societies: Puerto Rico." American Journal of Sociology, Vol. LIX, No. 2 (September 1953), pp. 123-130.

15. Nelson, Lowry. Rural Cuba. Minneapolis: The University of Minnesota Press, 1950.

relevant both to theories of applied social science as an "arm" of change programs and to general theories of social and cultural change.

What is needed now is for research to be undertaken on specific problems and to test particular hypotheses in which sufficient controls will be introduced to provide some confidence of the answers to the problems and in the validity of the tests.<sup>16</sup> In some cases the experimental changes might be deliberately introduced to classes or communities of farmers (or other subjects of change) by cooperating change agencies. In others, changes already occurring could be observed and measured in situations offering contrasts and similarities, approaching the "natural experiment." If such studies are undertaken, the body of dependable knowledge of social and cultural changes in Latin America should increase rapidly.

The great worldwide demand for social scientific guidance in programs of directed change have "put" the various social scientific disciplines "on the spot." They are individually and collectively faced with the task of providing general principles or laws of human behavior in contexts of change. In each of the disciplines, scholars are laboring to meet the challenge and the opportunity provided by this new demand for their ideas and services. All are, however, painfully aware of the inadequacy of their theoretical orientations, conceptions, and "established" generalizations for dealing with particular kinds of behavior in contexts of change.

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16. The same concern for greater methodological rigor is found in recent articles on technological change in American agriculture. For an excellent example see Fliegel, Frederick C. "A Multiple Correlation Analysis of Factors Associated with Adoption of Farm Practices." Rural Sociology, Vol. 21, Nos. 3-4 (Sept.-Dec., 1956), pp. 284-292.

In sociology and cultural anthropology, the search for greater comprehension of change phenomena has been directed in various directions. One such direction is toward the development of "middle-range" theories which specify particular classes of situations and the change in human behavior within each class under specified circumstances. Such theories do not, for example, seek to explain all kinds of cultural change occurring when any kind of promotion effort is carried on in any type of community. Rather, they seek knowledge which specifies what kinds of changes occur when particular classes of promoters of change use particular kinds of change techniques in particular types of communities, characterized by particular customs, etc. This dissertation was designed to be a first exploratory step toward the development of this kind of knowledge for a single rural community in Cuba, namely Bejucal. It is hoped that further research may broaden the basis for generalization of the findings to other similar communities in Latin America.





## APPENDIX

- A. Categorías para una Exploración Etnográfica en  
Área de Demostración Compiladas por Mr. K. E. Tiedke
- B. The Survey Questionnaire
- C. The Statistical Analysis

A.

INSTITUTO INTERAMERICANO DE CIENCIAS AGRICOLAS  
Programa de Cooperacion Tecnica-Proyecto 39  
Zona Norte  
Habana-Cuba

--

CATEGORIAS PARA UNA EXPLORACION ETNOGRAFICA EN AREA DE DEMOSTRACION  
COMPILADAS POR MR. K. E. TIEDKE

---

DOCUMENTACION:

- 1 - Notas y memorias descriptivas de incidentes y observaciones.
- 2 - Mapas, planos, diagramas, delineaciones y fotografias.
- 3 - Textos.
- 4 - Datos genealogicos y censuales.

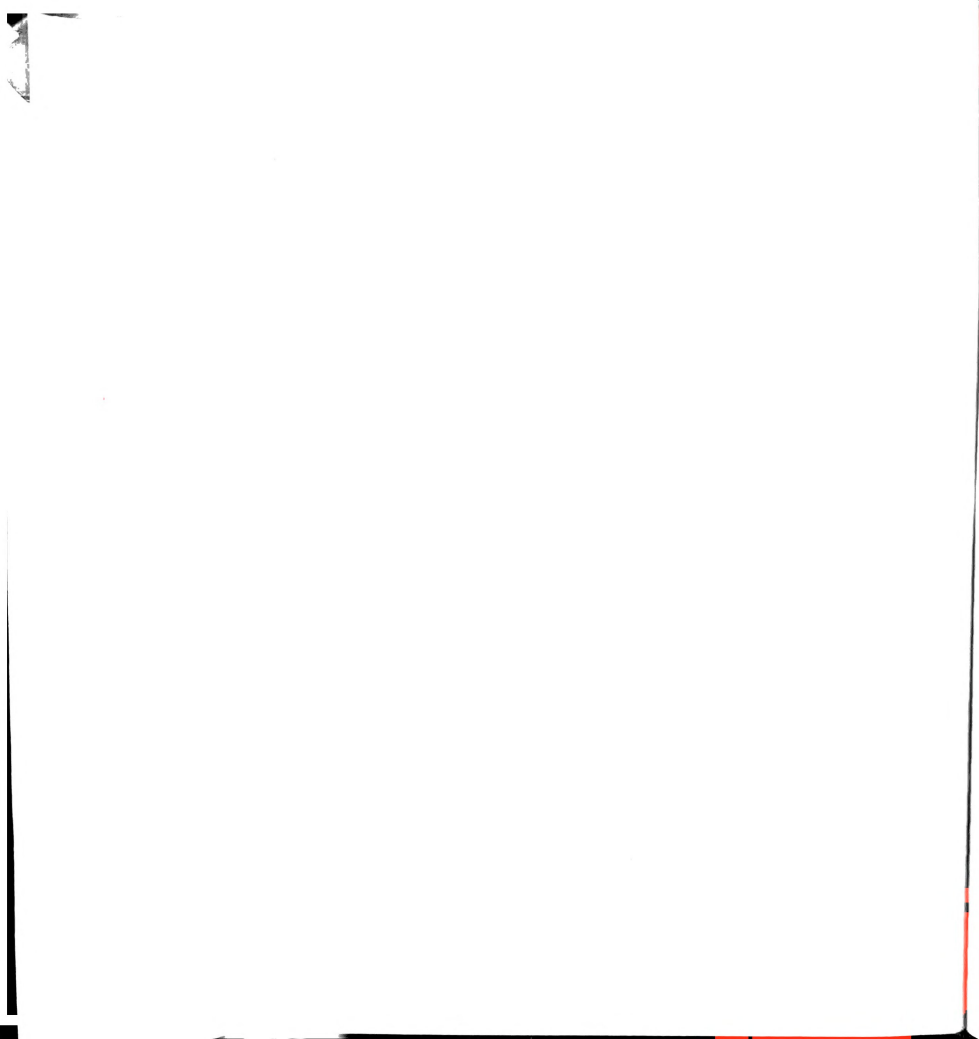
Nota: Siempre es aconsejable el llevar un diario de actividades, el cual permite registrar incidentes cronologicamente y suministra un medio adecuado de controlar las categorias de documentacion que se mantienen separadas en los archivos.

I - LA ESTRUCTURA SOCIAL

- 1 - Distribucion territorial de la poblacion.
- 2 - Formas de conducta relacionadas con diversas categorias culturales de sexos y edad.
- 3 - La estructura familiar: status, rol y funcion de sus miembros.
- 4 - Adopcion y cuidado de los adoptados.
- 5 - Formas de amistad.
- 6 - Parentesco: cognaticos, agnaticos, uterinos y de afinidad.
- 7 - Configuraciones y normas de conducta particularmente relacionados con las formas de embromar y de respetar.
- 8 - Estratificacion social.

II - VIDA SOCIAL DEL INDIVIDUO

- 1 - Rutina diaria (varones y hembras, horarios y calendarios)
- 2 - Comida
- 3 - Sueño
- 4 - Vestido
- 5 - Etiqueta, cortesía y hospitalidad
- 6 - Adiestramiento, disciplina y educación
- 7 - Ciclo de vida:
  - a) Concepcion
  - b) Metodos preventivos y de control de la natalidad



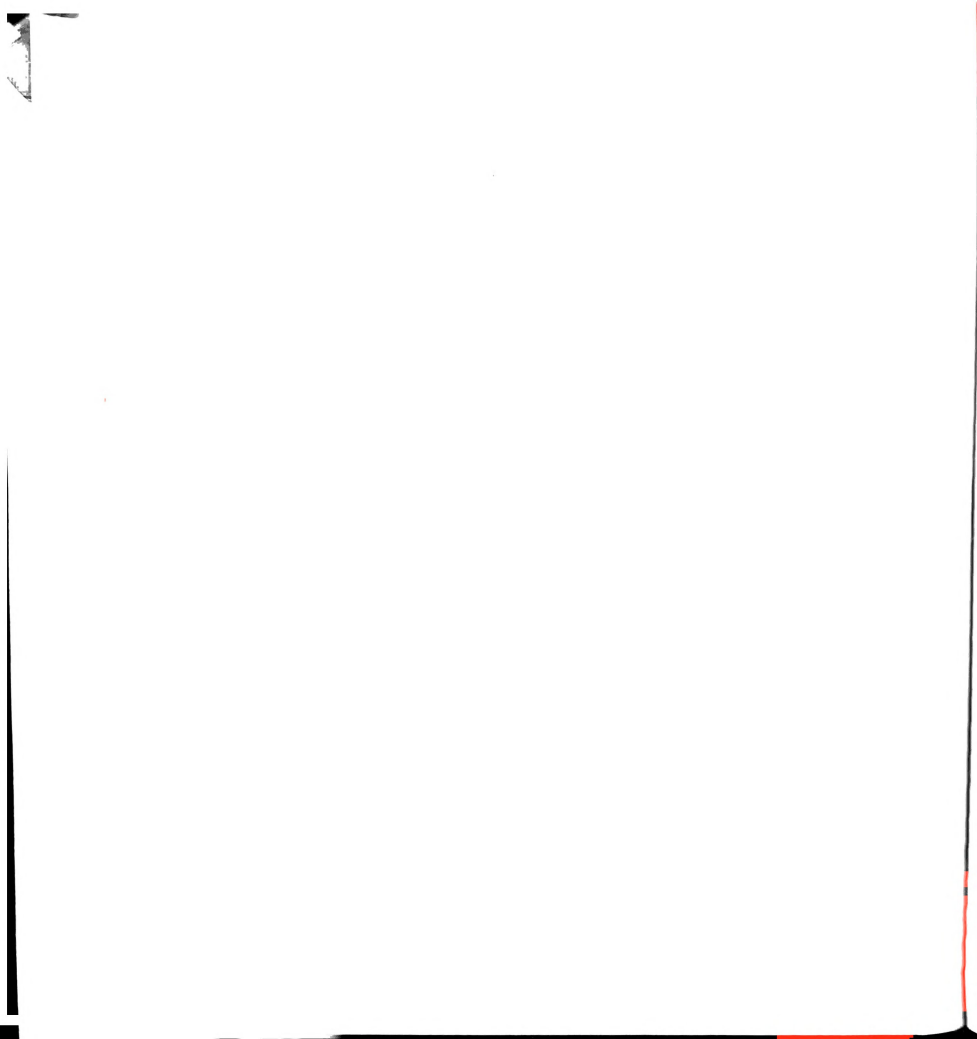
- c) Embarazo
- d) Aborto
- e) Nacimiento
- f) Infanticidio
- g) Formas y practicas de la lactancia
- h) Formas y practicas de destetar
- i) Origen y caracter de nombres y sobrenombres
- j) Pubertad
- k) Desviaciones del desarrollo normal (v.g. frigidez, impotencia, etc.)
- l) Adolescencia
- m) Matrimonio (edad, compromiso, prohibiciones, matrimonio obligado, dote, cambio de regalos, fuga, ceremonias, actitud antes y despues de la boda con respecto a la conducta sexual, etc.)
- n) Vejez y muerte (Creencias respecto de la muerte, el suicidio, la disposicion de los cadaveres, tratamiento diferencial en terminos de status y condicion, reliquias, formas conmemorativas, etc.)

### III - ORGANIZACION POLITICA

- 1 - Organizacion territorial
- 2 - Relaciones entre grupos
- 3 - Sistema de gobierno
- 4 - Relaciones de jefatura
- 5 - Consejos y funcionarios
- 6 - Organizacion militar y policiaca
- 7 - Derecho y justicia
  - a) Sanciones
  - b) Opinion publica
- 8 - Propiedad
  - a) Clases de propiedad
  - b) Derechos de las personas
  - c) Herencia
  - d) Tenencia de la tierra
  - e) Renta
- 9 - Economia
  - a) Produccion
  - b) Mercadeo
  - c) Consumo
  - d) Credito
  - e) Division del trabajo
  - f) Ideologia
  - g) Organizacion y caracteristicas de grupos

### IV - RITOS Y CREENCIAS

- 1 - Con respecto a las relaciones entre hombres
- 2 - Con respecto a lo sobrenatural
- 3 - Supersticiones



**V - CONOCIMIENTO Y TRADICION**

- 1 - Medidas (peso, distancia, area, capacidad, tiempo, valor)
- 2 - Medicina folklorica
- 3 - Mitos y otras creencias folkloricas
- 4 - Refranes (dichos, acertijos, etc.)

**VI - LENGUAJE**

- 1 - Signos (gestos no vocales)
- 2 - Modismos (sobre todo, los que demuestran actitudes sociales)

**VII - CULTURA MATERIAL**

- 1 - El cuidado personal, decoracion y saneamiento
- 2 - Vestido (Clases, materiales y situaciones en que se usan, actitudes)
- 3 - Habitaciones
- 4 - Comida (clases e instrumentos)
- 5 - Instrumentos (tipos, metodos de preparacion, actitudes, materiales, propositos)
- 6 - Tecnologia (Conocimientos y Resultados del uso de utiles)
- 7 - Juegos y diversiones.



B.

-1-

Numero \_\_\_\_\_ Fecha \_\_\_\_\_

## Confidencial

Los fines de este estudio son puramente educacionales. No tienen relacion alguna con problemas de impuestos o de investigacion judicial. Tampoco sera usados estos datos en forma individual.

1. Hombre de la finca \_\_\_\_\_ Barrio \_\_\_\_\_  
(locate on map)

2. Hombre del jefe de la familia

\_\_\_\_\_ Hombre \_\_\_\_\_ 1st apellido \_\_\_\_\_ 2nd apellido \_\_\_\_\_

3. Edad \_\_\_\_\_.

4. Lugar de nacimiento \_\_\_\_\_  
Barrio \_\_\_\_\_ Termino \_\_\_\_\_

5. Donde se crio usted?

\_\_\_\_\_ En una finca

\_\_\_\_\_ En un caserio

\_\_\_\_\_ En una ciudad

6. Grado mas alto en la escuela \_\_\_\_\_ Otros estudios? \_\_\_\_\_

7. Estado civil

\_\_\_\_\_ Casado \_\_\_\_\_ Divorciado

\_\_\_\_\_ Viudo \_\_\_\_\_ Soltero

8. Cuantos hijos tiene usted \_\_\_\_\_.  
numero

9. Cuantos anos de edad tienen? Varones \_\_\_\_\_ Hembras \_\_\_\_\_.

10. Ocupacion de su padre? \_\_\_\_\_

11. Cuantos anos hace usted vive en esta finca? \_\_\_\_\_  
anos



## 12. Tenencia de la finca?

Propietario de \_\_\_\_\_ cabellerias. Cuanto contribucion \_\_\_\_\_?

Arrendatario de \_\_\_\_\_ cabellerias. Cuanto renta paga \_\_\_\_\_?

Socio de \_\_\_\_\_ cabellerias.

Partidario de \_\_\_\_\_ cabellerias. Paga  $\frac{1}{2}$  \_\_\_\_\_ Paga otra \_\_\_\_\_.

Encargador de \_\_\_\_\_ cabellerias

## 13. Historia de trabajo. Qual fue su primero trabajo?

Trabajo-RolDuracion

- (a) \_\_\_\_\_
- (b) \_\_\_\_\_
- (c) \_\_\_\_\_
- (d) \_\_\_\_\_

-2-

Inventario de Ganado	Numero	Raza		
		Criollo	Cruzado	Puro
Vacas Lecheras-----				
en produccion-----				
secas-----				
Vacas de carne-----				
Novillos (lano y mas)---				
Novillas-----				
Terneros (menos lano)---				
Toros-----				
Bueyes-----				
Caballos-----				
Chivos-----				
Puercos-----				
Carneros y ovejas-----				
Gallinas y Pollos-----				
Guanajos-----				
Guineos-----				
Otros-----				



Arboles Frutales	Raza		
	Numero	criollo	Inyectada
Aguacates			
Mangas			
Mangos			
Platanos			
Mamey			
Mamoncillo			
Lemonas			
Naranja china			
Naranja agria			
Coco			
Limas			
Guayaba			
Cuayavana			
Zapotes			

Cultivos			
	Planta	En produccion	Cosechas por Ano
Cana para Central			
Cana para Ganado			
Papas Rosado			
Papas Blanca			
Tobaco			
Maiz			
Calabaza			
Millo			
Yuca			
Boniato			
Malanga			
Mani			
Tomatoes			
Frijoles			
Name			
Otros?			

-3-

Camino a la casa
Otros caminos
Campos en cultivacion
Potreros en pastos
Potreros en arboleda
Otros potreros
cercas de pina
Cercas de alambre
Otros cercas
Corrales para puercos



Chiqueros  
Corrales para ganado vacuno  
Otros corrales  
Polleros  
Bohías de depósito  
Bohía Barentietta  
Establos para Ganado  
    canao  
    tranka  
Pozos crillos  
Pozos mejoradas  
Caseta Turbina  
Turbina  
Motor  
Caja distribución  
Canales concreto  
Canales maderas  
Tubería y pipa  
Mangueras

Tractor  
Yugo de bueyes  
    Albadas, yugos y equipo  
Transtorne de discos  
Arado crillo  
Arado Americano  
Grada  
Carretones  
Atomizadora  
Espolvoreadora  
Cosechadora de papas  
Rastra para halar agua  
cubos  
Modassa  
Molinos de maíz de fuerza  
Molinos de maíz de piedra  
Picadora de pastos  
Botijas de leche  
Botellas de leche  
Enfriadora  
Luz de electricidad  
    de compañía  
    de motorcito  
Otros motores  
Insecticidas  
    Flit  
Medicinas para animales  
Canastas  
Picos  
Palas  
Hachas



Machetes  
Guatacas  
Cajas para frutas  
Cuchillo saca pına  
Piedra amolar  
Yunke  
Martillos  
Sierras y ceruchos  
  
Camion  
Pickup  
Machina  
Jeep  
trailer  
garage  
  
Casa de placa  
Casa de techos  
Casa de guana con  
pizo de cemento  
pizo de madera  
pizo de tierra  
  
Servicio  
Servicio Sanitario fuera de la casa  
Servicio Sanitario dentro de la casa  
Electricidad en la casa

(This page is left blank for additional comments and information.)

14. Como logro ser propietario, arrendatorio, socio, partidario, etc.

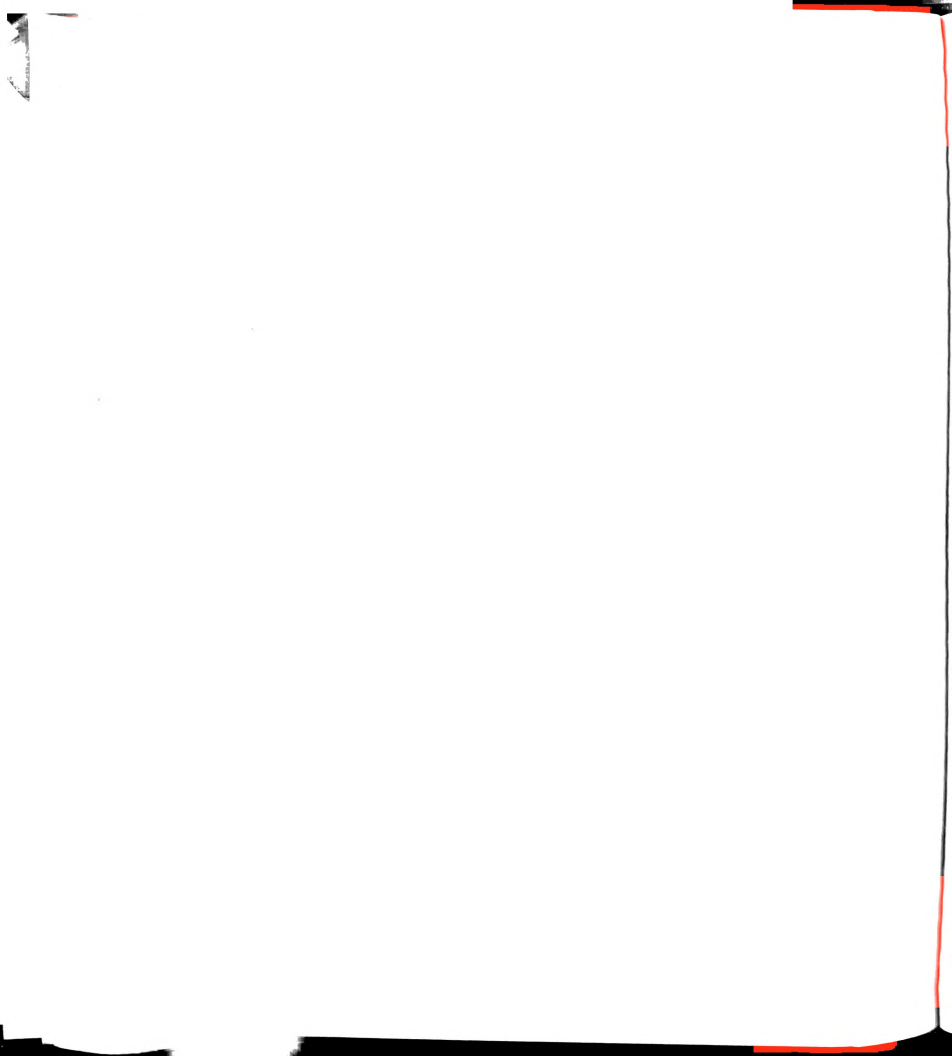
Comprado (para cuanto?) pesos  
Heredado  
Otro. Specify

(if inherited: (1) why did he get finca, (2) how was property divided?)

16. Cuando comenzo en esta finca cuantos recursos tenía?

En terrano cabellerias.

En edificios establos bohias de almanacen





Otros \_\_\_\_\_ Maquinaria \_\_\_\_\_

Dinero tomado a prestamo \_\_\_\_\_ pesos.

Dinero Ahorrado \_\_\_\_\_ pesos.

Obreros pagados \_\_\_\_\_ hombres.

17. Cuando comenzo en esta finca que planes or ideas tenia para el desarrollo de la finca?

18. Con quien aprendio usted el trabajo de campo?

\_\_\_\_\_ Padre \_\_\_\_\_ Otro familia

\_\_\_\_\_ Otro (Specify) \_\_\_\_\_

19. Ha aprendido usted metodos o ideas sobre su manera de trabajo de gente no familiar? Si \_\_\_\_\_ No \_\_\_\_\_/

(a) Quien? \_\_\_\_\_

Relaccion a usted

20. Le usted alguna revista sobre agricultura? Si \_\_\_\_\_ No \_\_\_\_\_.

(a) En el mes pasado? Si \_\_\_\_\_ No \_\_\_\_\_.

21. Usted es socio de alguna organizacion? Si \_\_\_\_\_ No \_\_\_\_\_.

(a) Cual? \_\_\_\_\_

22. Tiene usted algunos planos para el mejoramiento de su finca?

Si \_\_\_\_\_ No \_\_\_\_\_

(a) Cuales \_\_\_\_\_

(b) Para sus edificios \_\_\_\_\_

(c) Para su maquinario \_\_\_\_\_

(d) Para su ganado \_\_\_\_\_

(e) Para su cria \_\_\_\_\_

(f) Para su tierra \_\_\_\_\_

(g) Para otro \_\_\_\_\_



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23. Que ha hecho usted para llevar al cabo estos planes?

(a) Tiene planes ya hecho? Si\_\_\_ No\_\_\_.

24. Para hacer estos mejoramientos es suficiente su propio trabajo y recursos? Si\_\_\_ No\_\_\_.

25. Que le falta para hacer los cambios que desea hacer?

Dinero\_\_\_\_\_ Otra\_\_\_\_\_

26. Usa usted planes para el rotacion de sus campos? Si\_\_\_ No\_\_\_.

27. Cuanto dinero invirtio el ano pasado en su finca? Menos de  
100\_\_\_; 100-500\_\_\_; 500-1000\_\_\_; 1000-2000\_\_\_; 2000-5000\_\_\_;  
over 5000\_\_\_.

(a) fue mayor cantidad que lo que usualmente invierte o no?

(b) Que cantidad de dinero espera invertir este ano?\_\_\_\_\_

28. En su opinion, sus vecinos tienen los mismos ambiciones?

Si\_\_\_ No\_\_\_ No sabe\_\_\_ Otro\_\_\_\_\_

29. Donde obtiene usted informacion sobre practicas de agricultura?

\_\_\_Otros campesinos

\_\_\_Inspectores agricolas

\_\_\_Estacion experimentales

\_\_\_Boletines

\_\_\_Periodicos

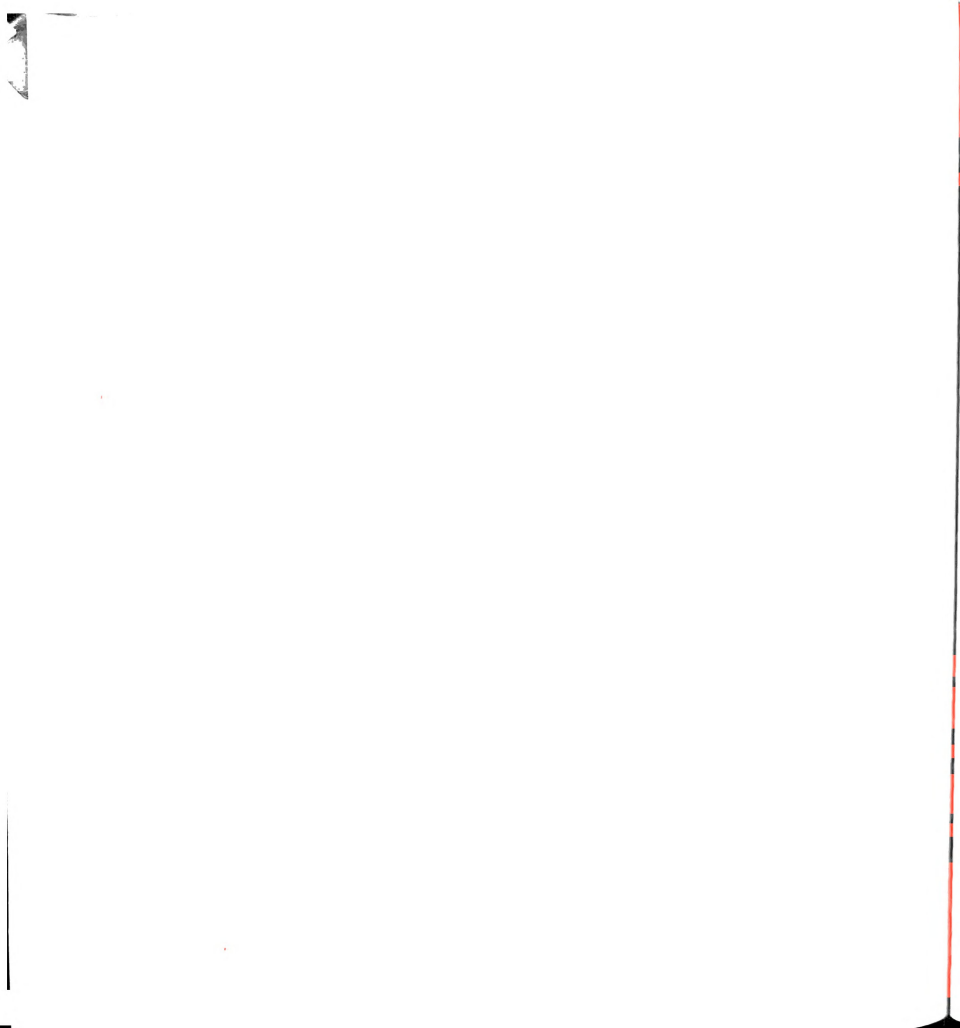
\_\_\_Radio

\_\_\_Cias Comerciales

\_\_\_El Central

\_\_\_Otros

\_\_\_Nonecessita



30. Si un campesino necesita informacion sobre practicas agricolas cual es el mayor fuente de informacion para ayudarlo?

(a) Cuando fue la ultima vez que usted ha buscado informacion?

31. Lleva usted libros de contabilidad? Si \_\_\_ No \_\_\_ Otro \_\_\_

-8-

32. A que hora se levanto usted hoy? \_\_\_\_\_ AM

(a) A que hora se levanto usted generalmente? \_\_\_\_\_ AM.

33. Ayer que hizo usted en su finca? (or last full day of labor)?

(a) por la manana

(b) por la tarde

(c) fue un dia de mas trabajo, menos trabajo, o un dia typico en el cantidad de trabajo que hizo usted?

\_\_\_ Mas; \_\_\_ Menos; \_\_\_ Typico.

34. Tiene planes para manana? Si \_\_\_ No \_\_\_. Cuales \_\_\_\_\_

35. Cuanto tiempo dedica usted diariamente a visitar a sus vecinos or familiares?

\_\_\_ Menos de una hora; \_\_\_ 1-2 horas; \_\_\_ 2-3 horas; \_\_\_ mas.

36. Cuantos veces a la semana o al mes va usted a los pueblos cercanos \_\_\_\_\_

(a) a la Habana \_\_\_\_\_

37. En que bodega compra usted? \_\_\_\_\_

38. Por cuantos anos ha comprado usted en esta bodega? \_\_\_\_\_

39. Cuando usted va al pueblo durante el dia, cuantos horas dedica allí generalmente? \_\_\_\_\_

40. Cuando a usted le falta dinero para la siembra u otra cosa donde va para conseguirlo?

\_\_\_ Bodegero; \_\_\_ Banco \_\_\_; migo o vecino; \_\_\_ familiar o pariente;

\_\_\_ Prestamista (Indique quien) \_\_\_\_\_; \_\_\_ Banfiac.



41. Cuanto dinero puede conseguir para hacer una mejora en su finca?

\_\_\_\_\_ pesos; Otro \_\_\_\_\_

42. Tiene dinero tomado en prestamo ahora? Si \_\_\_ No \_\_\_. Cuanto \_\_\_\_\_

43. Tiene usted dinero ahorrado ahora mismo? Si \_\_\_ No \_\_\_. \_\_\_\_\_ pesos.

44. Para que fin tiene este dinero ahorrado? Uso familiar \_\_\_\_\_  
Seguro \_\_\_\_\_; Mejores de la finca \_\_\_\_\_; otros (specify) \_\_\_\_\_.

45. Tiene usted trabajo fuera de su finca? Si \_\_\_ No \_\_\_.

(a) Que hace usted con el dinero que gana?

(b) Gana mas de la finca or de negocios? Finca \_\_\_; Negocios \_\_\_\_\_.

-9-

46. Fuerza de trabajo. Todo el ano.

Trabajadores	Edad	Relacion al operator	Meses traba- jados	Promedio dias tra- bajados per mes	Habilidad comparado a un hombre	Actividad chores	trabajo del campo

47. Trabajadores estacionales (incluyendo alquiler de macineria).

Arado, Siembra Limpia,  
fertilizacion, Aporque,  
etc. Recolecion Otros

No.	Dias	No.	Dias	No.	Dias	No.	Dias





## 48. Manera de venta

Los principales ventas	Lleva al pueblo usted mismo	Lleva al mer- cado de la Hab- ana usted mismo	Vende a uno que recoge	Vende a un famil- iar

49. Cree usted que los metodos de trabajo que usa hoy en dia servian en los anos futuros? Si \_\_\_ No \_\_\_. Otro \_\_\_\_\_

Comentario \_\_\_\_\_

50. En que consiste una finca <sup>mejor</sup> en Bejucal.

(Numero de items: \_\_\_ specificity, High \_\_\_ Medium \_\_\_ low \_\_\_.)

51. Quien es el mejor campesino que usted ha conocido en su vida?

Nombre \_\_\_\_\_

(a) Todavia vive? Si \_\_\_ No \_\_\_.

(b) Relacion con usted? \_\_\_\_\_

(c) Donde vive (vivía) \_\_\_\_\_

(d) Porque es el mejor? \_\_\_\_\_

(specificity: High \_\_\_ medium \_\_\_ low \_\_\_)

(e) En su opinion usted es tan buen campesino como el \_\_\_\_\_;  
mejor que el \_\_\_\_\_; or peor que el \_\_\_\_\_.

(f) En que consiste la diferencia entre el y usted?



52. Cuales son los nuevos equipos o mejor practicas que usted ha introducido en su finca?

Equipimientos	Practices	Ganado	Arboles ingertados

(a) Quien le ayudo a hacer estos cambios?

(b) Todos sus vecinos tambien tienen estos mejoras? Si \_\_\_ No \_\_\_  
No sabe \_\_\_

(c) Si no, porque tiene usted estas mejoras mientras ellos no las tienen?

53. Entre las mejoras que usted ha hecho, cuales fueron las mas dificiles de realizar?

(a) Por que?

54. Quienes son las personas que tienen el mayor enteres en sus actividades y suceso como campesino?

De familia:

Otros Campesinos:

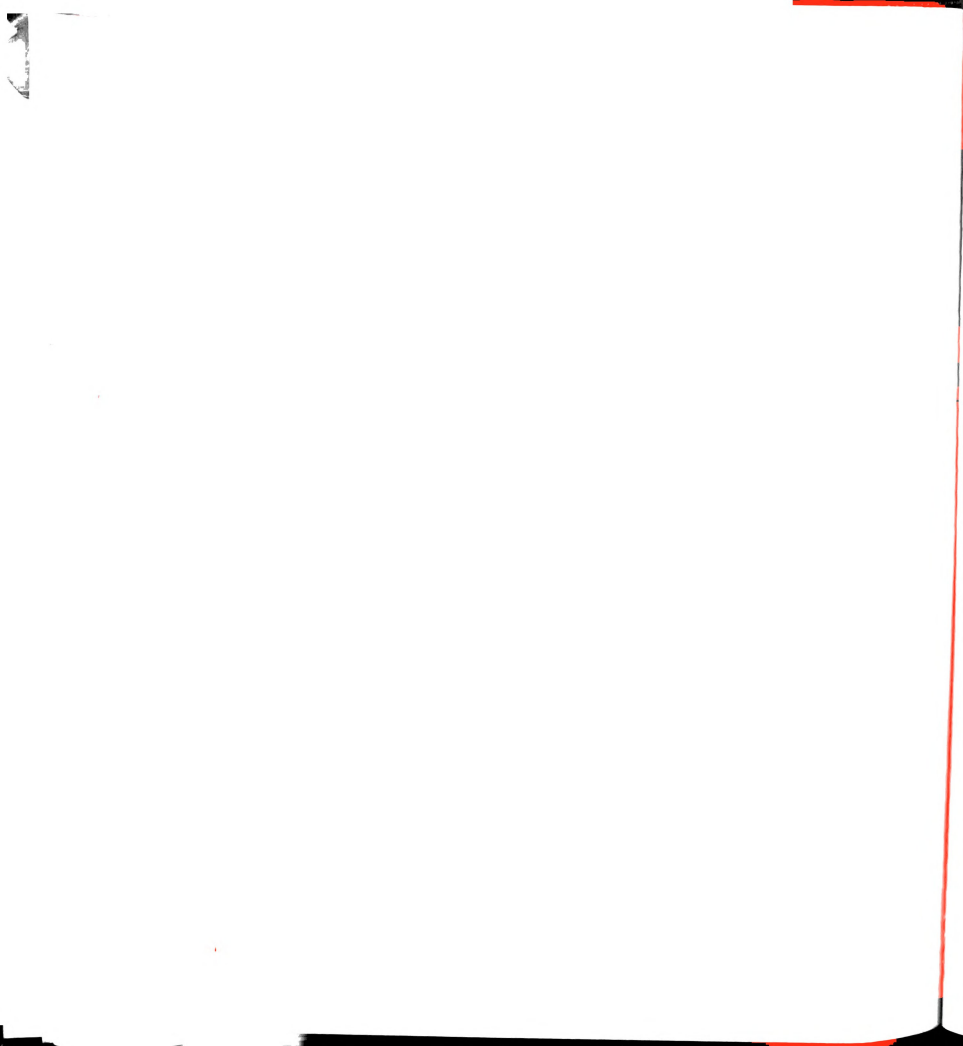
Gente de la ciudad:

(Numero: \_\_\_ personas, de familia \_\_\_; campesinos \_\_\_ urban \_\_\_)

(a) Que es mas cerca de la verdad: (1) \_\_\_ Estan contentos conque usted siga trabajando como ahora, (2) \_\_\_ o esperan que usted haga mejoras en sus practicas.

(b) Han hablado de mejoras en su finca algunos de estas gente en conversacion con usted? Si \_\_\_ No \_\_\_ No recuerda \_\_\_

(1) Quien? \_\_\_\_\_



55. Ha usado usted:

- (a) abonos quimicos Si\_\_\_ No\_\_\_  
 (b) semilla mejorado Si\_\_\_ No\_\_\_  
 (c) frutales ingertadas Si\_\_\_ No\_\_\_  
 (d) insecticidas Si\_\_\_ No\_\_\_  
 (e) ganado mejorado Si\_\_\_ No\_\_\_

(a) Quien le recomiendo el uso de estos?

- (a) \_\_\_\_\_  
 (b) \_\_\_\_\_  
 (c) \_\_\_\_\_  
 (d) \_\_\_\_\_  
 (e) \_\_\_\_\_

(b) Dieron buenos resultados?

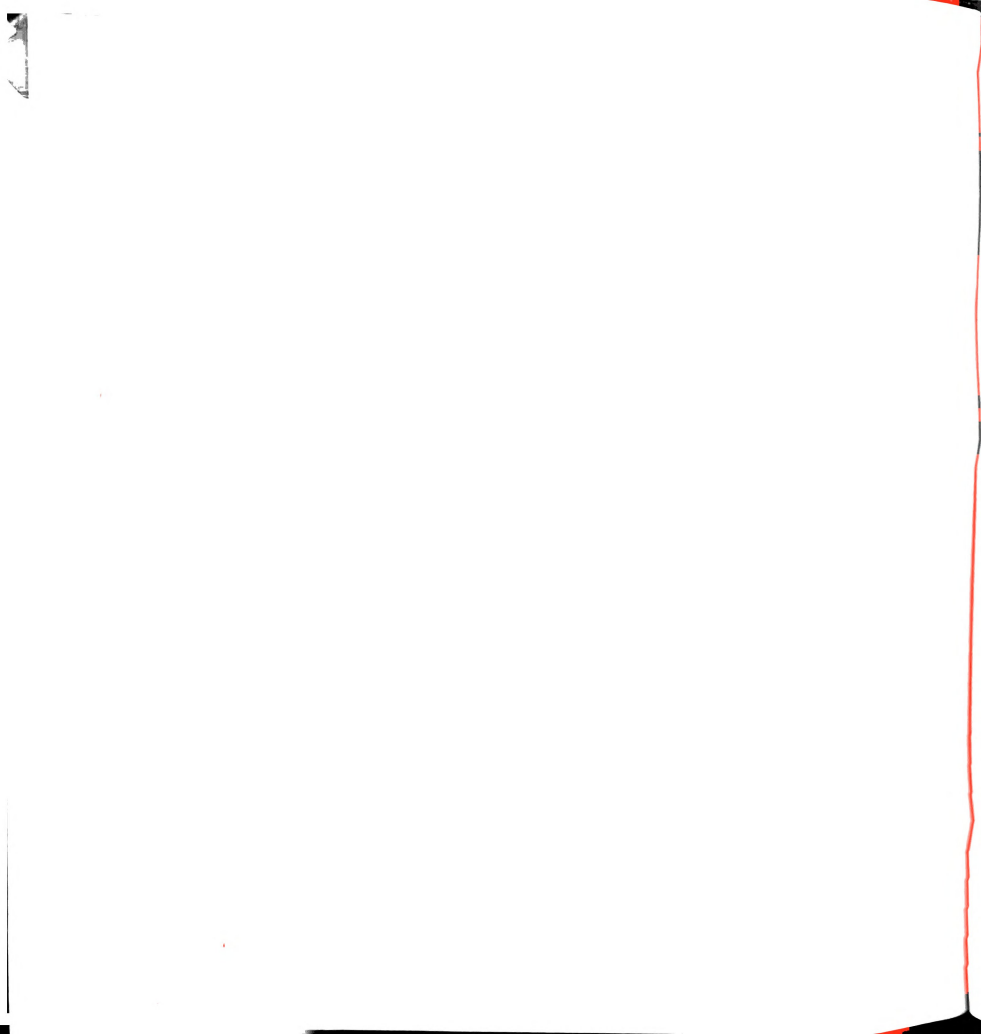
- (a) Si\_\_\_ No\_\_\_  
 (b) Si\_\_\_ No\_\_\_  
 (c) Si\_\_\_ No\_\_\_  
 (d) Si\_\_\_ No\_\_\_  
 (e) Si\_\_\_ No\_\_\_

56. (a) Hay campesinos en Cuba que dicen que la ciencia agricola trabajo bastante bien en las estaciones experimentales pero no sirve en sus fincas. Usted esta de acuerdo\_\_\_? o al contrario\_\_\_?

(b) Cree usted que los abonos quimicos pueden ayudar sus cosechas en la finca? Si\_\_\_ No\_\_\_.

(c) Que es lo mas importante en su opinion: ahorra dinero para sus ancianidad\_\_\_, or gastan dinero para vivir comfortable ahora\_\_\_? Tiene usted dinero ahorrado para su ancianidad? Si\_\_\_ No\_\_\_.

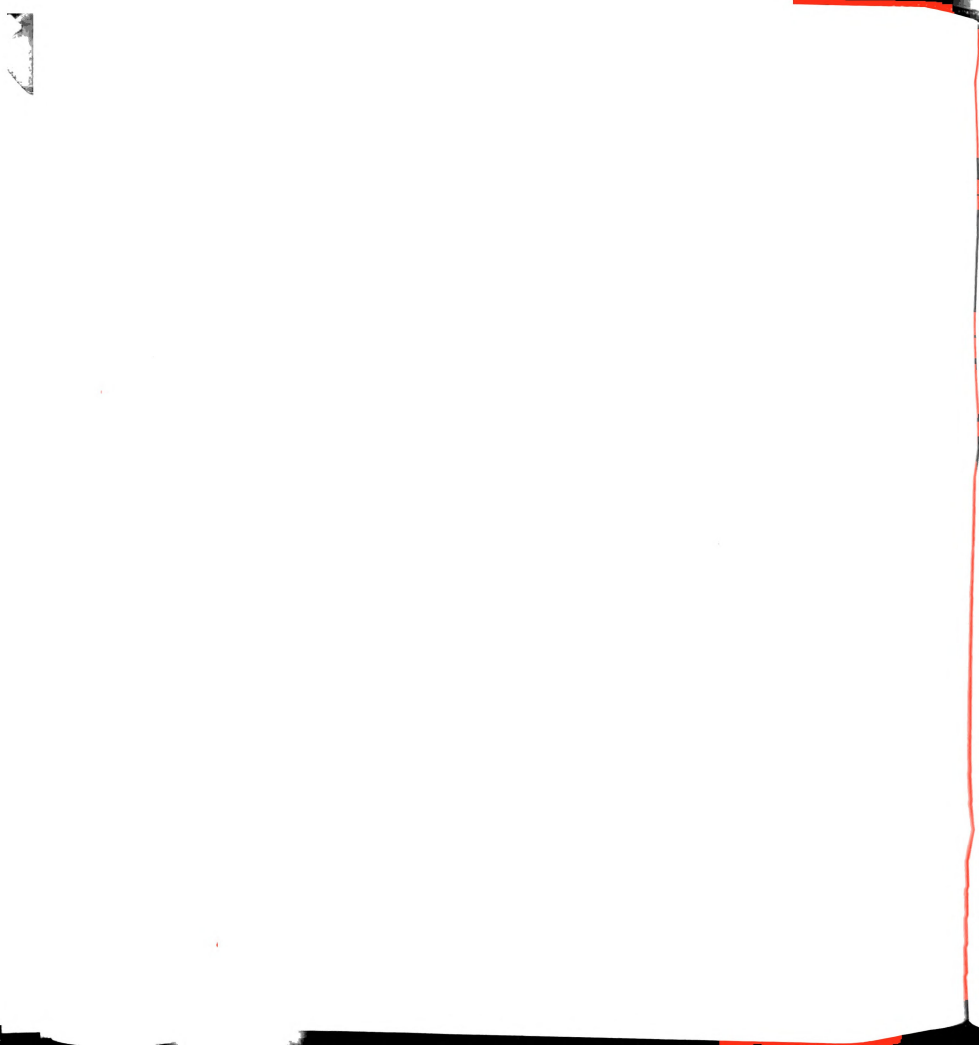
(d) Que cree usted ayuda mas a un agricultor de Bejucal para echar adelante en una finca (1)\_\_\_ gastan su dinero para comprar mas terreno o mejor terrenos, o (2)\_\_\_ gastan su dinero para hacer cambios in su metodos de trabajo.



- (e) Hay campesinos en Bejucal que dicen eso: "Generalmente los individuos que prestan dinero en Bejucal explotan al agricultor y cargan intereses muy altos? Usted esta de acuerdo \_\_\_? or no esta la acuerdo \_\_\_?
- (f) Cree usted que es necesario sacrificiarse mucho los gastos de la familia para echar adelante la finca? Si \_\_\_ No \_\_\_. Que sacrificios hace (hizo) usted?

57. Voy a leer unas declaraciones. Digame por favor si usted esta de acuerdo o no esta de acuerdo.

- (a) Si \_\_\_ No \_\_\_ La manera mejor de ser campesino es como hizo mi padre.
- (b) Si \_\_\_ No \_\_\_ Para un campesino de Bejucal como usted es muy peligroso coger dinero prestado en cantidades grandes. (1) Es un riesgo que usted puede aceptar Si \_\_\_ No \_\_\_.
- (c) Si \_\_\_ No \_\_\_ Hay muy poca oportunidad para mejoras una finca si el agricultor no es dueño de su terreno.
- (d) Si \_\_\_ No \_\_\_ Lo que necesita mas los campesinos de Bejucal es una programa fuerte del gobierno para dar facilidades.
- (e) Si \_\_\_ No \_\_\_ Lo que necesita mucho el agricultor de Bejucal es una programa de informacion sobre como puede mejorarse con sus propios recursos. Cual es mas importante (d) \_\_\_ or (e) \_\_\_.
- (f) Si \_\_\_ No \_\_\_ Generalmente los recursos que tienen los campesinos de Bejucal no proveen la oportunidad para ir adelante en una finca.
- (g) Si \_\_\_ No \_\_\_ Si uno tiene dinero debe prestar algo a sus amigos, vecinos y gente de la familia?





58. Para mejorar una finca unos condiciones son mas importante que otros. Puede poner ostos en el orden de su importancia?

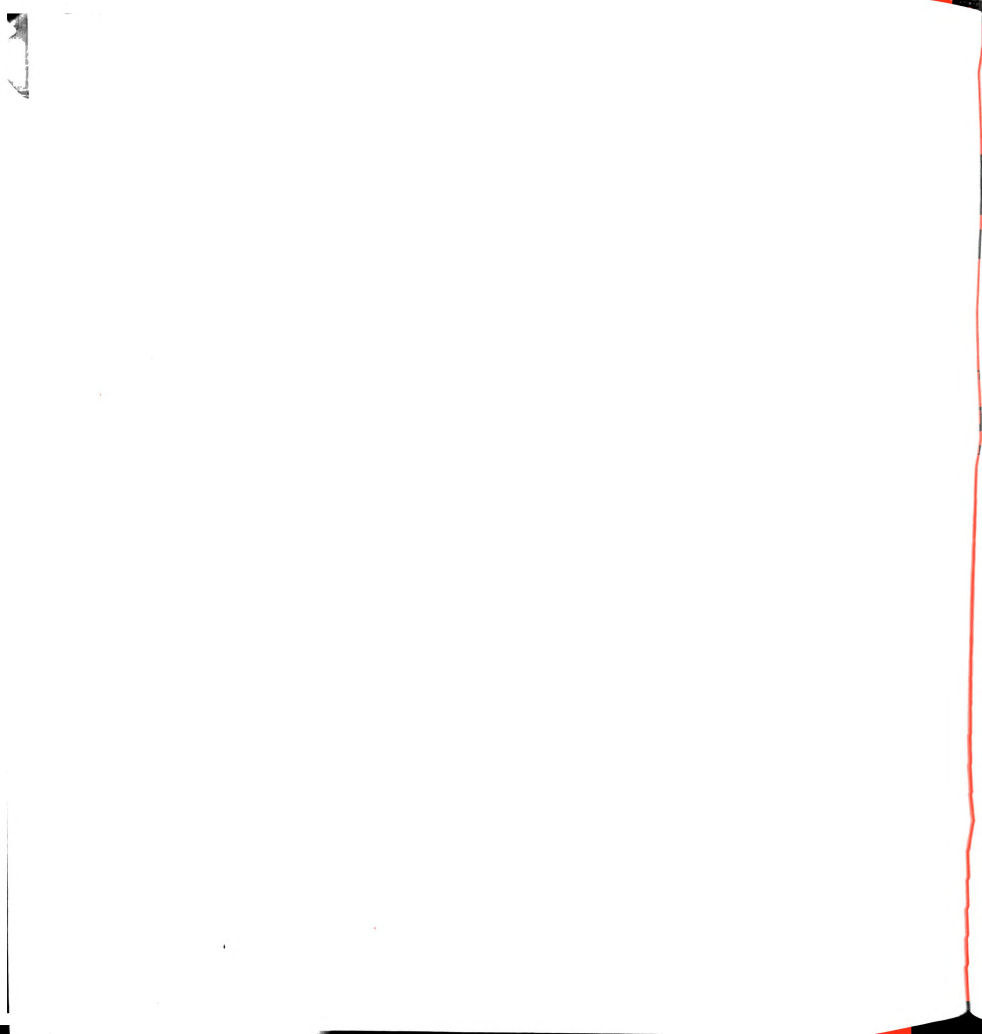
- | Economic factors   | Social factors  |
|--|---|
| <input type="checkbox"/> Tener mucho terreno o buen terreno                        | <input type="checkbox"/> Ser una persona bien conocida y popular                        |
| <input type="checkbox"/> Buen administracion de la finca                           | <input type="checkbox"/> Vivir decentemente, de acuerdo con las costumbres de comunidad |
| <input type="checkbox"/> Saber mucho sobre agricultura                             | <input type="checkbox"/> Tener una familia grande y con recursos                        |
| <input type="checkbox"/> Tener buen credito de algun prestamista, familiar o amigo | <input type="checkbox"/> Cumplir la ley todo el tiempo                                  |
| <input type="checkbox"/> Tener un bodegero rico y generoso                         | <input type="checkbox"/> Tener amigos en la politica y comercio                         |
|  | <input type="checkbox"/> Ser buen Catolico  |

Hay otros condiciones que son importante para el progreso de un agricultor en Bejucal? Sí ☐ No ☐ . Cuales \_\_\_\_\_

59. Sobre estas ideas la gente tienen diferente opiniones. Quiero saber la suyo.

(a) Para usted cual de estos oportunidades prefiere?

- ☐ Ganar mas el la finca que ya tiene por mecanizacion.
- ☐ Mejorar el tamano de la finca o comprar mas terreno.
- (b) ☐ Educar sus hijos (o nietos) en oficios.
- ☐ Hacer nuevo casa de placa en la finca
- (c) ☐ Hacer buena casa y vivir en el pueblo
- ☐ Educar sus hijos (o nietos) en oficios
- (d) ☐ Hacer nuevo casa de placa en la finca
- ☐ Ganar mas de la finca que ya tiene por mecanizacion
- (e) ☐ Mejorar el tamano de la finca o comprar mas terreno
- ☐ Educar sus hijos (o nietos) en oficios
- (f) ☐ Hacer buena casa y vivir en el pueblo
- ☐ Mejorar el tamano de la finca o comprar mas terreno
- (g) ☐ Hacer nuevo casa de placa en la finca
- ☐ Hacer buena casa y vivir en el pueblo
- (h) ☐ Educar sus hijos (o nietos) en oficios
- ☐ Ganar mas de la finca que ya tiene por mecanizacion



- (i) ☐ Mejorar el tamaño de la finca o comprar mas terreno  
☐ Hacer nueva casa de placa en la finca

- (j) ☐ Hacer buena casa y vivir en el pueblo  
☐ Ganar mas de la finca que ya tiene por mecanizacion

60. Si todos los campesinos viven en Bejucal han de ser dividido dentro de tres grupos de los siguientes asuntos a que grupo cree usted que pertenece?

(a) Asunto: La riqueza que tienen

- (1) ☐ los mas pobres  
 (2) ☐ los que son algo pobres  
 (3) ☐ los mas ricos

(b) Asunto: La cantidad de trabajo que hacen diariamente

- (1) ☐ los que trabajan solamente unos horas del día  
 (2) ☐ los que trabajan casi todo el día  
 (3) ☐ los que trabajan duro todo el día

(c) Asunto: El número de cambios que han hecho en sus fincas

- (1) ☐ Los que han hecho pocos cambios  
 (2) ☐ Los que han hecho algunos cambios  
 (3) ☐ Los que han hecho muchos cambios

(d) Asunto: El éxito como campesino

- (1) ☐ Los que tienen poco éxito como campesino  
 (2) ☐ Los que tiene bueno éxito como campesino  
 (3) ☐ Los que tienen mucho éxito como campesino

(e) Asunto: Su suerte como proveedor para su familia

- (1) ☐ los que han tenido poco suerte como proveedores para sus familias  
 (2) ☐ los que han tenido algo de suerte como proveedores para sus familias  
 (3) ☐ los que han tenido mucho suerte como proveedores para sus familias.

(f) Asunto: Su "suerte" en negocios urbanos (alternative "éxito")

- (1) ☐ los que han tenido pocas resultados en su negocios urbanos  
 (2) ☐ los que han tenido algunos resultados en sus negocios urbanos



## 60. (f) (continued)

- (3) \_\_\_ los que han tenido muchos resultados en sus negocios urbanos

## (g) Asunto: Administracion que tiene el campesino

- (1) \_\_\_ los que tienen administracion conservadora  
(2) \_\_\_ los que tienen administracion algo avanzado  
(3) \_\_\_ los que tienen administracion muy avanzado

## (h) Asunto: El facilidad del campesino para usar y reparar maquinaria

- (1) \_\_\_ los que tienen poco facilidad para usar y reparar maquinaria  
(2) \_\_\_ los que tienen mediano facilidad para usar y reparar maquinaria  
(3) \_\_\_ los que tienen much facilidad para usar y reparar maquinaria

## (i) Asunto: El resultado que han tenido con el uso de insecticidas y abonos quimicos

- (1) \_\_\_ los que han tenido poco resultados con el uso de insecticidas y abonos quimicos  
(2) \_\_\_ los que han tenido algunos resultados con el uso de insecticidas y abonos quimicos  
(3) \_\_\_ los que han tenido muy buen resultados con el uso de insecticidas y abonos quimicos

## (j) Asunto: La posibilidad de una buena salida en el uso de credito del Banfiac e otro banco

- (1) \_\_\_ los que tienen poca posibilidad de una buena salida  
(2) \_\_\_ los que tienen mediana posibilidad de una buena salida  
(3) \_\_\_ los que tienen buena posibilidad de una buena salida

## (k) Asunto: La influencia politica

- (1) \_\_\_ los campesinos que tienen poca influencia politicamente  
(2) \_\_\_ los campesinos que tienen alguna influencia politicamente  
(3) \_\_\_ los campesinos que tienen mucha influencia politicamente

## (l) Asunto: El conocimiento de la comunidad sobre el agricultor

- (1) \_\_\_ los que son conocidos solamente por sus familias  
(2) \_\_\_ los que son conocidos en su barrio  
(3) \_\_\_ los que conocidos en todo Bejucal



(m) Asunto: El conocimiento del agricultor sobre lo que es necesario para mejorarse.

- (1) ☐ los que saben poco sobre lo que es necesario mejorarse
- (2) ☐ los que saben algo sobre lo que es necesario para mejorarse
- (3) ☐ los que saben mucho sobre lo que es necesario para mejorarse

(n) Asunto: La conformidad con las leyes y costumbres de la comunidad

- (1) ☐ los que se conforman poco con las leyes y costumbres
- (2) ☐ los que se conforman generalmente a leyes y costumbres
- (3) ☐ los que se conforman absolutamente a leyes y costumbres

(o) Asunto: La educacion agricola que tienen los agricultores

- (1) ☐ los que tienen poca educacion agricola
- (2) ☐ los que tienen mediana educacion agricola
- (3) ☐ los que tienen mucha educacion agricola

(p) Asunto: El deseo del agricultor para mejorarse

- (1) ☐ los que quieren poco aprender para mejorarse
- (2) ☐ los que quieren algo aprender para mejorarse
- (3) ☐ los que quieren mucho aprender para mejorarse

(q) Asunto: El esta bien dispuesto a sacrificarse por el progreso de la finca

- (1) ☐ los que no estan preparado
- (2) ☐ los que estan algo preparado
- (3) ☐ los que estan muy bien preparado





### C. THE STATISTICAL ANALYSIS

In the analysis of the data gathered by the survey, two interpretations were given to the sample of farmers. First, they were considered as two related samples and statistical tests appropriate to such samples were employed. Second, they were considered as two unrelated or independent samples and appropriate tests were performed. In the first case, the fact that the two sets of farmers are matched pairs, chosen because they are adjacent neighbors, is the focus of statistical analysis. It is assumed that they may be the same unless they have had experiences which have differentiated them. In the second case, the assumption is made that the advanced farmers are a sample of all similarly advanced farmers and that the neighbor farmers are a sample of all neighboring non-advanced farmers in communities of this type.

While the first interpretation is certainly the most conservative and most closely related to the actual research operations, the second may prove to be substantially correct when (and if) more data are available. To make both assumptions made it possible to employ both those statistical tests used for testing the significance of difference between two related samples and those used for the same purpose between two independent samples.

The two tests employed for testing the significance of difference between related samples were the "sign test" and the "Wilcoxon Matched-Pairs Signed-Ranks Tests." Where possible, the second of these tests



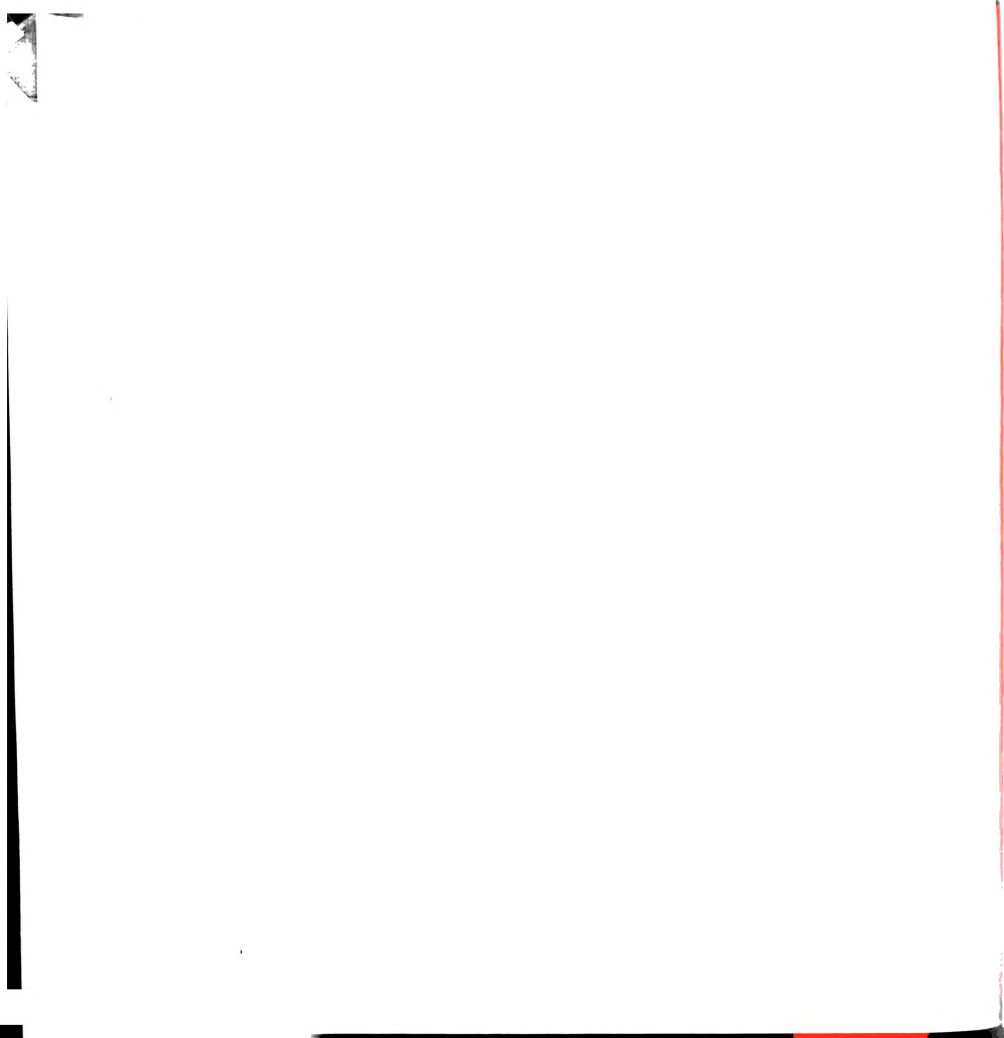
was used as it is more "powerful" than the first since it utilizes magnitudes of differences as well as the sign of the difference which is all the information required for the "sign test." Where the second assumption was made, Fisher's "exact probability  $\chi^2$  test" and the Mann-Whitney U test were used. The Fisher test determines the probability of the association in the columns and rows of a 2 x 2 table which the data would have if they were randomly assigned in the empirically discovered manner. Since it determines the probability directly, no reference to  $\chi^2$  tables was necessary. Any probability below .05 was considered "significant." The Mann-Whitney U Test tests whether or not two independent groups have been drawn from the same population.

Source: Siegel, Sidney. Nonparametric Statistics for the Behavioral Sciences. New York, McGraw Hill Book Co., 1956.



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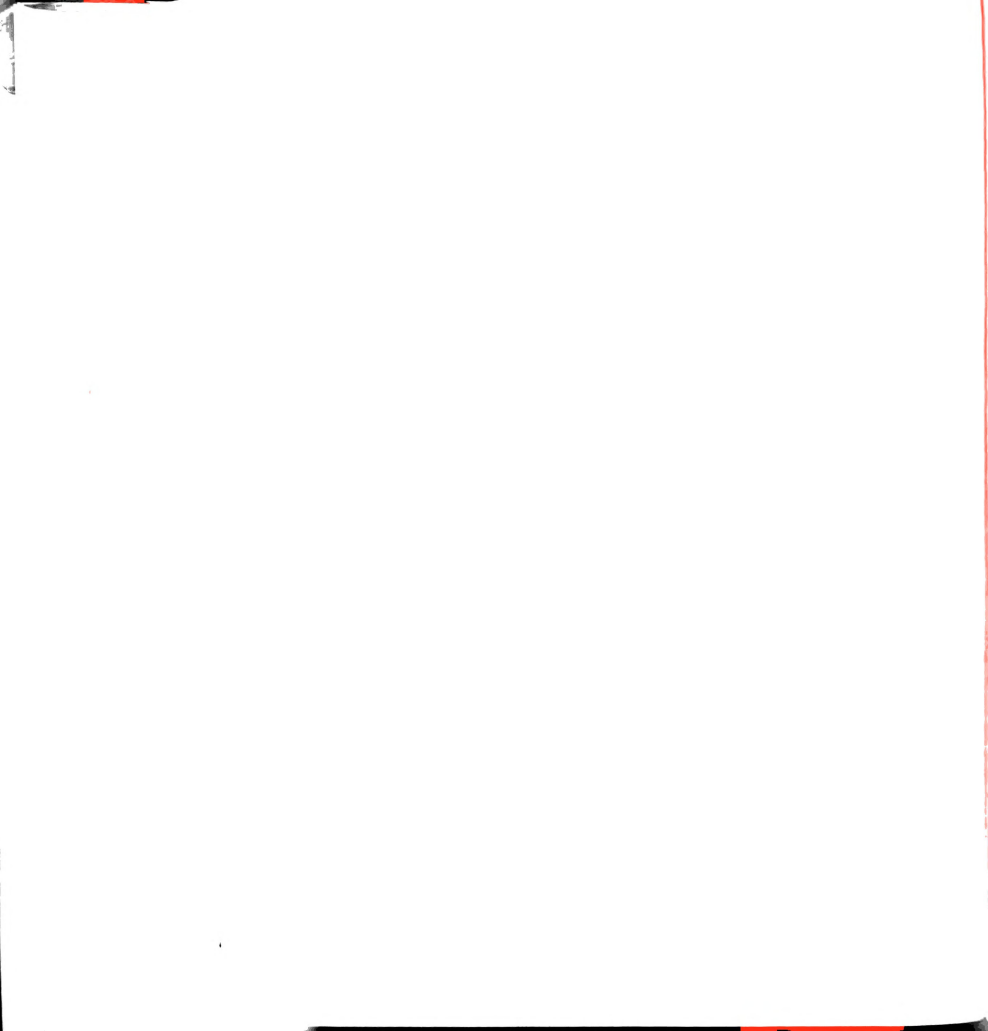
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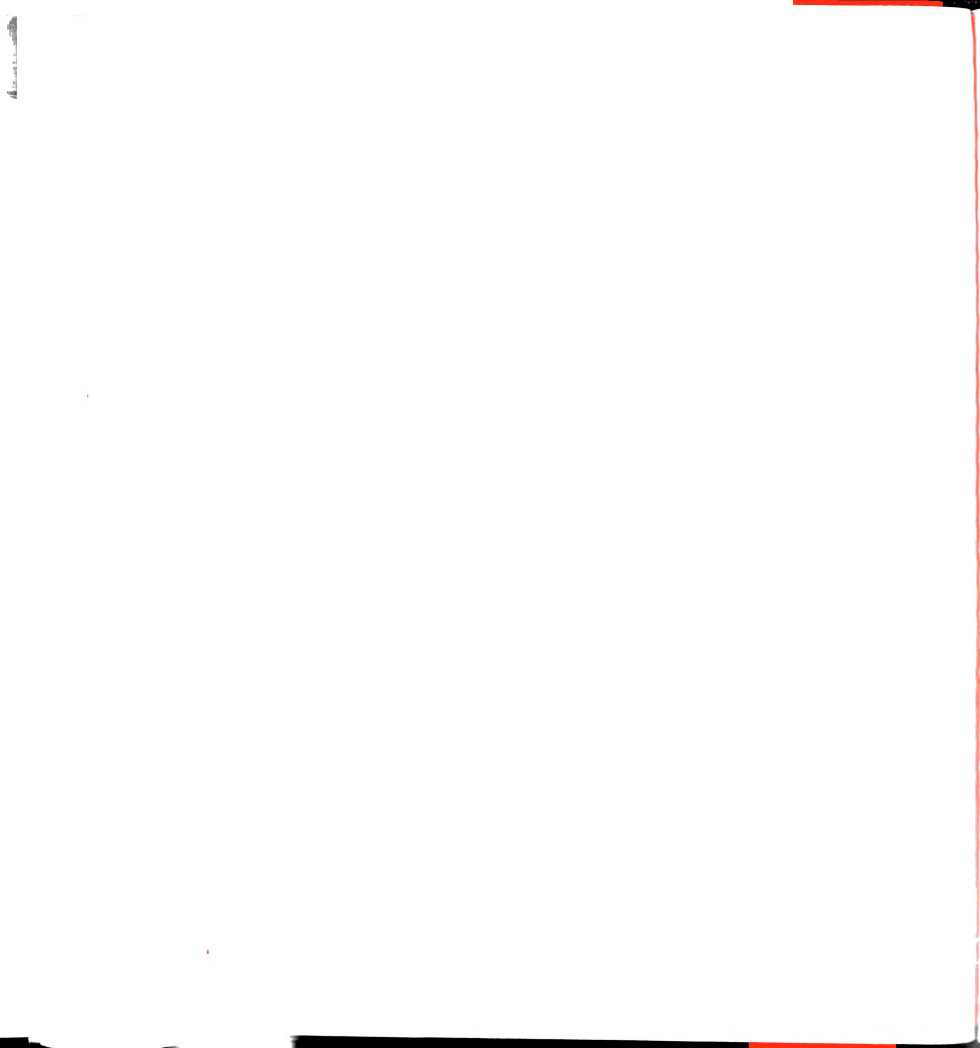
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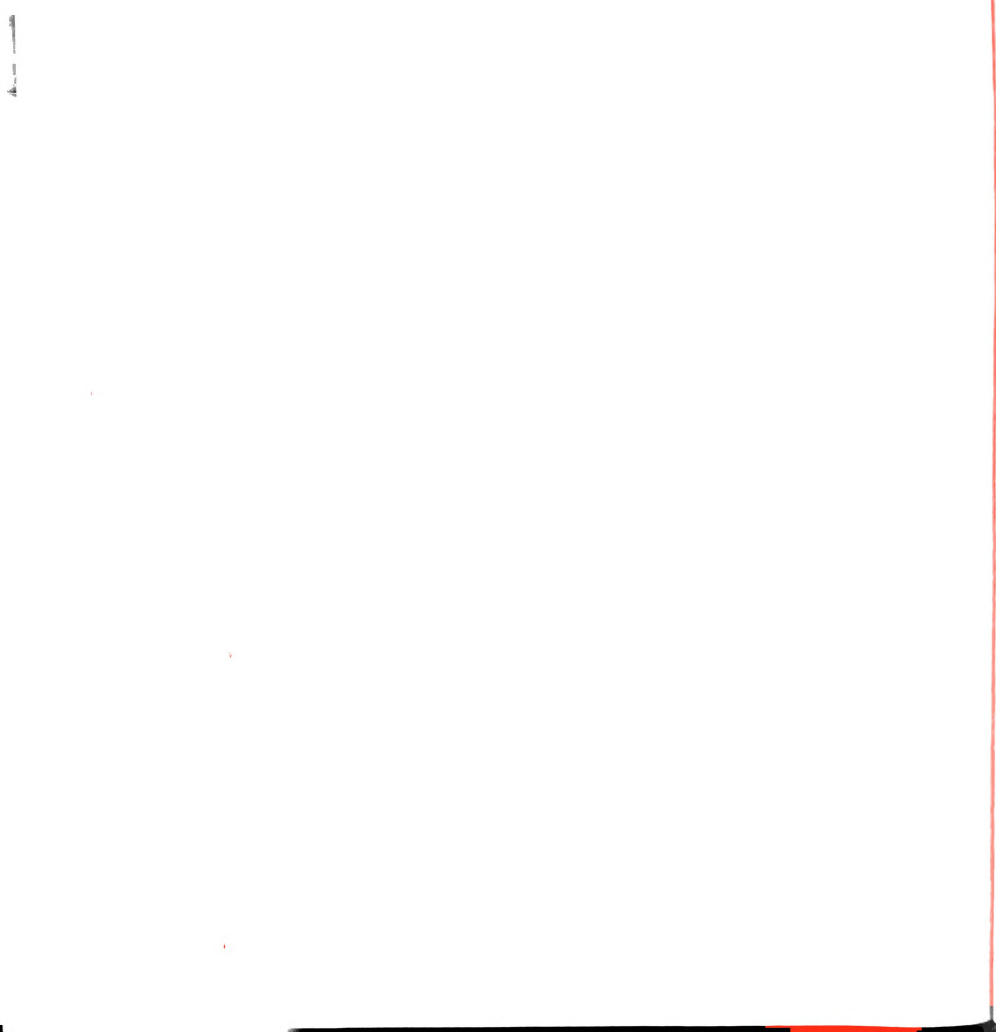
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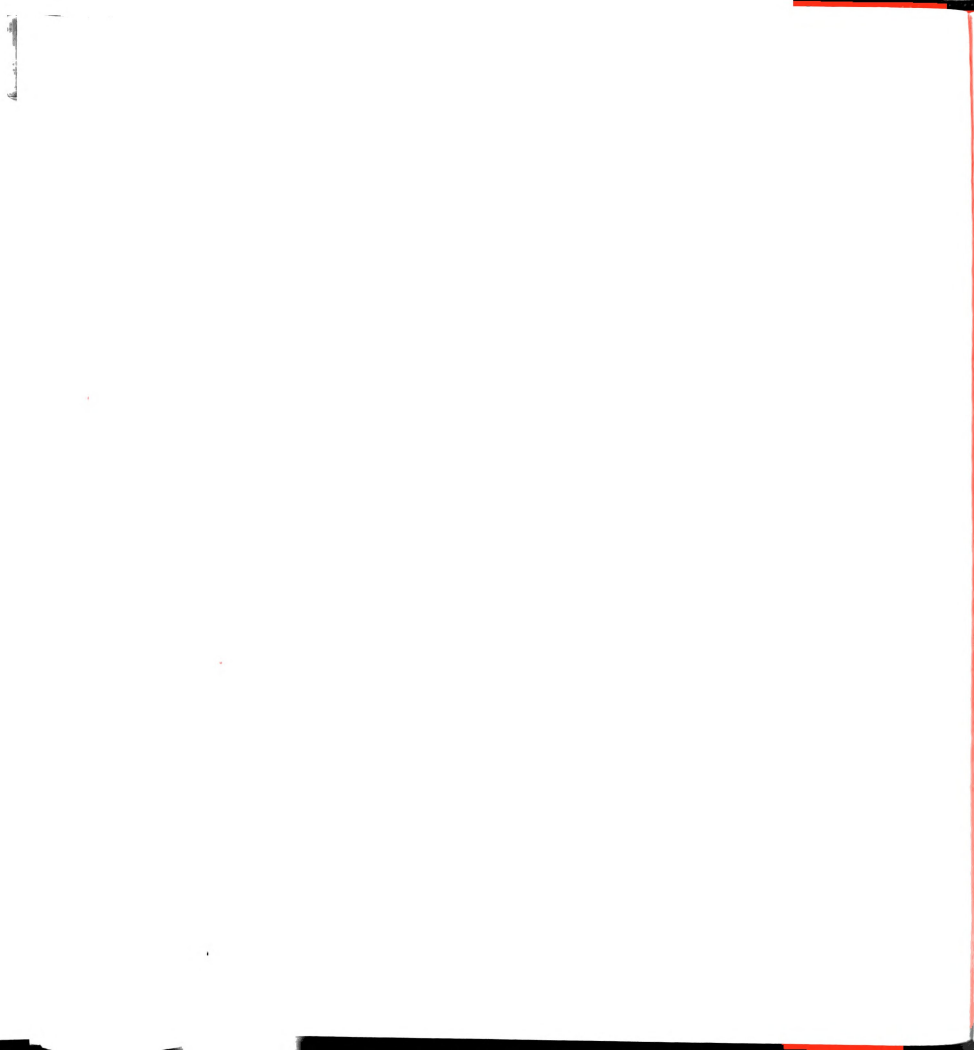
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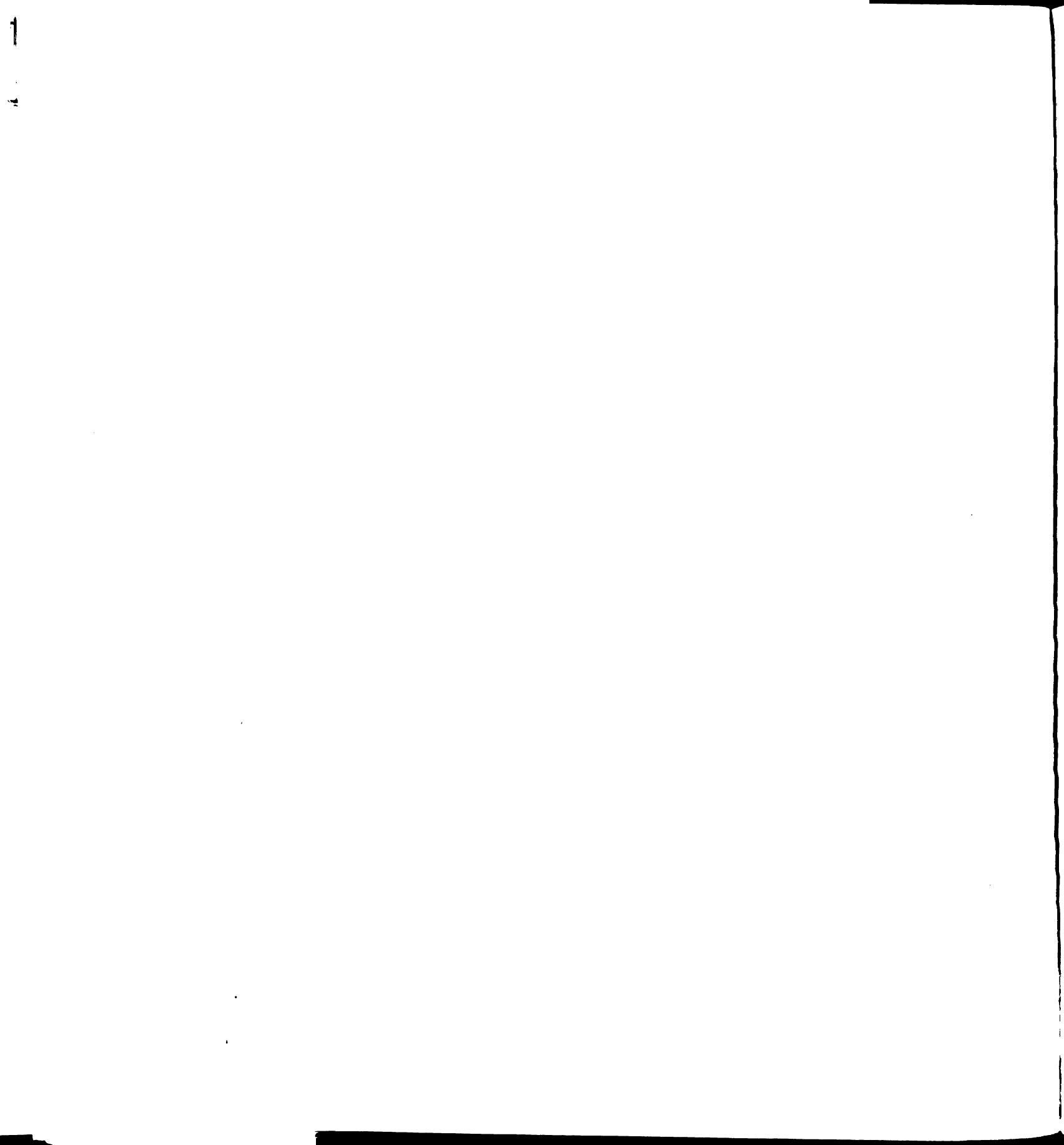
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